

EXECUTIVE SUMMARY

Revisions to UMKC's PhD Program Portfolio

In support of the University of Missouri-Kansas City's (UMKC) comprehensive strategy to improve academic and research excellence and attain Carnegie R1 classification, UMKC seeks approval for a reorganization of its PhD portfolio.

In addition to standalone PhDs in Nursing and Psychology, UMKC offers the Interdisciplinary PhD (IPhD) program, which serves as a catch-all from which students can select a focus area. UMKC has identified shortcomings with this model, including the possibility that students and/or employers perceive the program as being less rigorous than traditional, standalone programs; and concerns about how degree completions are reported from the umbrella program and its impact on recruitment efforts, rankings, and reputation.

Following an evaluation of the current program by consultants from the Council of Graduate Schools (CGS), UMKC has proposed discontinuing the IPhD, creating eight standalone PhD programs, each of which were embodied in the existing program.

1. Civil Engineering
2. Electrical and Computer Engineering
3. Mechanical Engineering
4. Computer Science
5. Economics
6. Education
7. Humanities
8. Natural Sciences

The curriculum for each of the proposed programs is substantially similar to what was offered for each of these disciplines when part of the IPhD. Of note, many of the programs maintain an interdisciplinary component, such as the Education, Humanities, and Natural Sciences programs. Given the rationale for each program proposal is identical and the programs are currently being offered in some form, this request has been submitted to the Board as a single action item. Individual proposals for each of the eight programs are included in the Appendix. This change is anticipated to have a positive impact on UMKC's ability to achieve its goals of R1 status and has the support of the UMKC Chancellor and Provost.

No. 2

Recommended Action – Revisions to the UMKC PhD Program Portfolio

It was recommended by the University of Missouri System Office of Academic Affairs, endorsed by President of the University of Missouri Mun Y. Choi, recommended by the Academic, Student Affairs and Research & Economic Development Committee, moved by Curator _____, seconded by Curator _____ that the following action be approved:

that the University of Missouri – Kansas City be authorized to submit the attached proposals for Doctor of Philosophy (PhD) degrees in Civil Engineering, Electrical and Computer Engineering, Mechanical Engineering, Computer Science, Economics, Education, Humanities, and Natural Sciences to the Coordinating Board for Higher Education for approval.

Roll call vote of the Committee: YES NO

Curator Blitz

Curator Graves

Curator Sinquefield

Curator Williams

The motion _____.

Roll call vote of Board: YES NO

Curator Blitz

Curator Brncic

Curator Fry

Curator Graves

Curator Holloway

Curator Layman

Curator Sinquefield

Curator Wenneker

Curator Williams

The motion _____.

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Executive Summary

UMKC currently offers a PhD in Interdisciplinary Studies under CIP code 30.0000 (Multi-/Interdisciplinary Studies, Other; Defined as “any instructional program multi/interdisciplinary studies not listed above,” National Center for Education Statistics). As part of a comprehensive strategy to improve academic and research excellence, inclusive of Carnegie R1 classification, UMKC seeks to close the current, catch-all interdisciplinary PhD and create eight (8) discipline-specific and more narrow interdisciplinary PhD programs from the over 20 primary disciplines within it.

This transition will allow for the following: Carnegie credit for degree conferrals across STEM, Social Science, and Humanities disciplines, improved research ranking and reputation as a discovery enterprise, advantage in recruiting high quality students and faculty, and enhanced clarity and validity with students and employers regarding the curricula offered as part of our doctoral degrees.

This proposal focuses on a new **Civil Engineering PhD** that can be delivered with existing courses, faculty, staff, student support services, assistantship funding, and other resources currently allocated to the engineering primary discipline within the Interdisciplinary PhD.

The Civil Engineering PhD program’s main goal is to prepare the next generation of scholars for a wide range of research opportunities in academia, industry, and national labs. It will continue to provide students with the background, research skills, and tools to advance the state of the art in Engineering, as the current engineering primary discipline does within the Interdisciplinary PhD program. Additionally, the program underscores the importance of fostering independent critical thinking, problem-solving abilities, and innovative skills within the civil engineering arena.

We currently supervise a wide range of doctoral dissertations in the following areas of Civil Engineering:

1. Structures
2. Materials
3. Construction
4. Water resources

The proposed PhD program in Civil Engineering mirrors the existing doctoral program, maintaining academic rigor through a balanced curriculum. The curriculum includes foundational courses, advanced coursework, research seminars, and a comprehensive doctoral dissertation, all drawn from the existing courses and resources of the interdisciplinary doctoral program.

As with the current doctoral program, a minimum of 30 classroom credits are required, including fundamental and advanced courses along with seminars. Additionally, a doctoral dissertation necessitates a minimum of 12 research credits.

1. Introduction

The PhD in Interdisciplinary Studies (30.0000) was launched in 1989. For many years it has provided UMKC students the opportunity to develop as scientists and scholars in their chosen field by combining two or more disciplines of study. The Interdisciplinary PhD at UMKC originally included 26 distinct disciplines, ranging from STEM to social sciences to the humanities. Despite its strength as a highly flexible doctoral degree, it limits our ability to attract highly competitive PhD students who want a narrower disciplinary focus, as well as prospective students who are seeking STEM certified doctoral education. Most recently, we have learned that the current Interdisciplinary PhD program is not recognized by Carnegie in their university classification system—a significant barrier in our progress toward becoming a Carnegie R1 institution.

To address these challenges, we aim to transition the current Interdisciplinary PhD program into eight (8) distinct PhD programs that will be attractive to students (evidenced by historical enrollment data) and that will be recognized by Carnegie. These include **Computer Science, Economics, Education, Engineering (Electrical and Computing; Civil; and Mechanical), Humanities, plus a multidisciplinary PhD in Natural Sciences.** These doctoral research programs were selected after extensive review and discussion with doctoral faculty across the university because they are the strongest historic enrollments, core faculty of active researchers, and greatest potential for ongoing success at UMKC. Together they promise to have a significant impact on our ranking as a research institution, and the workforce in the Kansas City and greater MO area through the research and post-graduate employment outcomes produced by the graduates.

This proposal focuses on the **PhD in Civil Engineering.**

Impact:

The impact of this broad degree transition, including the **PhD in Civil Engineering**, will be the following: Carnegie credit for degree conferrals across STEM, Social Science, and Humanities disciplines, improved research ranking and reputation as a discovery enterprise, advantage in recruiting high quality students and faculty, and enhanced clarity and validity with students and employers regarding the curricula offered as part of our doctoral degrees.

2. University Mission & Program Analysis

2.A. Alignment with University Mission & Goals

The needs of the Greater Kansas City region are of the utmost importance and drive what UMKC is doing. The university is a change agent and plays a vital role in economic development and workforce development for the region. The new proposed PhD degrees in Engineering will support our mission of economic development of the region and the nation by educating the specialized graduate-level engineers necessary to build the

necessary infrastructure for economic development. Therefore, the proposed Engineering PhD programs align seamlessly with the broader goals of the campus, college, and department as detailed in <https://www.umkc.edu/about/strategic-plan.html>.

Successful PhD programs are necessary for the department and the college to show a comprehensive program that attracts future students to maintain the increase in enrollment at the BS, MS, and PhD levels. In addition, PhD students are the key components of maintaining and expanding our research excellence at the department and college levels. Finally, Engineering PhD programs in Electrical and Computer Engineering, Civil Engineering, and Mechanical Engineering will expand the number and quality of our STEM graduates, which will help advance the research classification of UMKC in general.

2.B. Duplication & Collaboration within Campus, Across System

The proposed Civil Engineering PhD program already exists in the form of the engineering primary discipline within the Interdisciplinary PhD program and there is no threat of duplication with programs across the UM System. The proposed title and code changes reflect the correct Engineering CIP codes as per the current course requirements: this will attract students who might have been deterred by the esoteric Interdisciplinary PhD title. This change will make our existing doctoral program more attractive.

The Civil Engineering PhD is diverse and wide enough to allow for multiple successful programs across the UM System. Moreover, we have established several niche areas in this area of Engineering with several years of demonstrated success.

3. Business-Related Criteria & Justification

3.A. Market Analysis

3.A.1. Rationale & Workforce Demand for the Program

Civil engineering PhDs can have various titles in the industry. The table below shows the current open positions listed on indeed.com, a job search engine commonly used for engineering job postings, with a requirement or preference of a PhD or PhD level education as an alternative to experience requirements. In addition to the total number of listed positions in the US, specific numbers for MO or KS are also listed.

Employment Search Data on Indeed.com

Job Description	US	MO or KS
Geotechnical engineer	133	2
Highway engineer	133	4
Bridge engineer	270	8

Employment opportunities for civil engineers in Missouri are expected to increase by 19 percent from 2020 to 2030. Worn-out bridges, damaged water mains, and cracked highways all need repair. Therefore, whenever state funding permits, they will hire civil and environmental engineers to meet future transportation and architectural needs. Missouri has the seventh largest transportation system in the country and MoDOT projects are varied needing many civil engineering specialized in different emphasis areas that will be offered as part of the proposed program. Recently, a \$10 million federal grant was awarded to the School of Science and Engineering to develop innovative approaches to improve the sustainability and equity of transportation infrastructure. The proposed PhD Civil Engineering program will help attract additional students from the region, the nation, and internationally to perform the cutting-edge research necessary to build an environmentally responsible, 21st century infrastructure.

3.A.2. Student Demand for the Program

Student demand is evidenced by our previous five-year enrollment trends in the catch-all engineering primary discipline within the current UMKC interdisciplinary PhD program. The engineering primary discipline has ranged from 17-21 students/year with an average of 19.6 students/year. The proposed Civil Engineering PhD is estimated to represent approximately ½ of those students. We anticipate the new program will start with 8-10 students and grow to a steady state of approximately 20 students/year as faculty research, and consequently grant-funded research assistantships, grow in the next 3-5 years. Pending approval, we will encourage current interdisciplinary PhD students to switch to the new degree program in Fall 24; those who want to complete their degree within the existing interdisciplinary PhD program will be allowed to do so. Admission to the existing interdisciplinary PhD program will be suspended in Fall 24 and program teach out will begin. This period of transition is reflected in the enrollment projections below.

Table 1a. Student Enrollment Projections (anticipated total number of students enrolled in the program during the first five fall semesters following implementation.)

Year:	1	2	3	4	5
Full-time	7	10	13	17	20
Part-time	0	0	0	0	0
Total	7	10	13	17	20

Table 1b. Projected Number of Degrees Awarded

Year:	1	2	3	4	5	6	7	8	9	10
# of Degrees Awarded	3	3	3	3	3	3	3	3	3	3

3.B. Financial Projections

Research-based doctoral education (i.e., PhD) differs in key ways from professional doctoral education (e.g., JD, MD, PharmD, DDS, etc.). These differences can be found in the curricular and academic experiences, size of the student cohorts, and relationship of the program to the University mission. As such, there are significant differences in the financial models between research-based and professional doctoral programs. PhD programs, in contrast to professional doctoral programs, generally accept a smaller cohort of new students each year and often offer full or partial financial support in the form of tuition waivers and graduate assistantships. PhD students, in turn, make significant contributions to faculty research through their work on research studies (e.g., data collection), dissemination of research findings (e.g., manuscript/monograph writing), and grant writing. PhD students also provide critical support to the educational mission of the University through mentorship and instruction of undergraduate students. In most instances, PhD programs are revenue neutral or have a financial cost that is offset by positive impact on University research productivity and support of undergraduate education.

In the sections that follow, we have estimated the costs and revenues associated with the PhD in Civil Engineering. *Notably, because we are using the same resources, the net revenue and financial impact of the PhD in Civil Engineering is the same as the engineering primary discipline within the existing interdisciplinary PhD program.* We anticipate adding grant funded assistantships in years 3-5 in order to grow the cohort size to maintain academic viability.

3.B.1. Additional Resources Needed

No new instructional, marketing, or other university overhead resources are needed. In order to grow the program size to 20 total students/year, research-funded assistantships are expected by year 3. These are included in expenditure estimates.

3.B.2. Revenue

Revenues are generated from tuition (net scholarship) and remain the same as the existing interdisciplinary PhD program.

3.B.3. Net Revenue

No new one-time expenses are needed because all resources exist within the current interdisciplinary PhD program. Recurring expenses are estimated based on the current interdisciplinary PhD program. Because we are growing the program size beyond the current engineering primary discipline within the interdisciplinary PhD, assistantship funding beginning in year 3 will be supported by externally-funded faculty research grants. The other existing recurring expenses and revenues will shift from the interdisciplinary PhD to the new PhD, with the majority of that shift happening in year 1, as most current students transfer to the new degree program.

Faculty salaries are estimated at .10 FTE (representing 25% of their overall teaching workload) for the current faculty who participate in teaching and mentorship within the interdisciplinary PhD. Notably, most courses are co-taught with advanced undergraduate and/or master’s level students, thereby inflating the FTE specific to PhD students; this inflation is offset by the variable amount of time spent mentoring dissertations. Staff estimates represent staff support time within the academic unit. Institutional overhead includes library and all central campus enrollment management and student support staff. “Other” includes assistantship stipends and associated tuition remission.

Table 2. Financial Projections for Proposed Program for Years 1 Through 5.

	Year 1	Year 2	Year 3	Year 4	Year 5
1. Expenses per year					
A. One-time					
<i>New/Renovated Space</i>	0	0	0	0	0
<i>Equipment</i>	0	0	0	0	0
<i>Library</i>	0	0	0	0	0
<i>Consultants</i>	0	0	0	0	0
<i>Other</i>	0	0	0	0	0
Total one-time	0	0	0	0	0
B. Recurring					
<i>Faculty</i>	52749	52749	52749	52749	52749
<i>Staff</i>	5000	5000	5000	5000	5000
<i>Benefits</i>	20789	20789	20789	20789	20789
<i>Equipment</i>	0	0	0	0	0
<i>Library</i>	0	0	0	0	0
<i>Institutional Overhead</i>	2352	3360	4368	5712	6720
<i>Other</i>	81568	122352	183528	244704	305880
Total recurring	162,458	204,250	266,434	328,954	391,138
Total expenses (A+B)	162,458	204,250	266,434	328,954	391,138
2. Revenue per year					
<i>Tuition/Fees</i>	35221	50316	65410	85537	100632
<i>Institutional Resources</i>	0	0	0	0	0
<i>State Aid -- CBHE</i>	0	0	0	0	0
<i>State Aid -- Other</i>	0	0	0	0	0
Total revenue	35221	50316	65410	85537	100632
3. Net revenue (loss) per year	(127,237)	(153,934)	(201,024)	(243,417)	(290,506)

3.B.4. Academic and Financial Viability

There is no net difference in academic and financial viability between the existing engineering primary discipline within the interdisciplinary PhD and the new PhD in Civil Engineering. The enrollment projections described above will ensure we achieve a degree conferral threshold consistent with MDHE expectations, as well as advance our Carnegie ranking. There is a financial cost, consistent with doctoral education in general. In addition to new assistantship funds generated through faculty research grants, funds will be reallocated from the existing PhD program to the new PhD program so that we remain financially net neutral.

3.C. Business Plan: Marketing, Student Success, Transition & Exit Strategies

3.C.1. Marketing Plan

The marketing plan for UMKC's newly coded and titled PhD programs in Engineering will continue to use the following strategies, which we have used successfully for the interdisciplinary PhD:

- 1- Offer new research areas with many exciting employment opportunities.
- 2- Advertise the success of previous doctoral students in terms of local, national, and international awards. We will encourage our doctoral students to participate more in these competitions.
- 3- Use our alums as ambassadors to recruit new students.
- 4- Focus heavily on online platforms and social media, considering their extensive reach and the tech-oriented nature of our target audience. Platforms such as LinkedIn, Facebook, and academic forums can facilitate reaching prospective students locally, nationally, and internationally.

The target population will continue to be highly qualified graduates of other state schools and domestic students across the nation, including local UMKC undergraduates and the international population of students through our extensive global network in countries like India, Pakistan, Bangladesh, Saudi Arabia, and Egypt. Employees of local industry interested in pursuing a PhD degree as part of their existing duties or in a part-time format will also continue to be a primary target.

3.C.2. Student Success Plan

No additional student support services will be needed to support or retain students in the PhD in Civil Engineering program. Current enrollment, retention and graduation trends for this program are on track with institution and national averages, and the program will continue to provide current levels of faculty and staff resources to support students through graduation.

3.C.3. Transition Plan

The people primarily responsible for the success of the PhD in Civil Engineering program are: Professor Masud Chowdhury, EMS Division Director, Professor John Kevern, NBE Division Director, and Kevin Truman, SSE Dean. Program leadership is supported by program faculty and the School of Graduate Studies staff.

3.C.4. Exit Strategy

If full-time enrollment in the PhD in Civil Engineering drops below 10 students, the School of Science and Engineering will evaluate a temporary hiatus or program closure, depending on the reason for the low enrollment (e.g., temporary funding challenge, market demand, etc.).

4. Institutional Capacity

The proposed PhD in Civil Engineering is designed to utilize existing infrastructure, faculty, and resources, thereby negating the necessity for any additional expenses. The program will repurpose the existing faculty resources, student support services, laboratories, equipment, and technology from the current doctoral program.

5. Program Characteristics

5.A. Program Outcomes

Program Goals

Students in the Ph.D. Program will acquire:

- grounding in the discipline
- the ability to integrate the principles and theories of the disciplines
- the ability to effectively communicate findings and approaches to solving research problems;
- research skills, such as approaches, methods, ethical principles, and tools to pursue a research line of inquiry;
- the ability to form effective teams to solve novel research questions

5.B. Program Design & Content

The course requirements for the Civil Engineering Ph.D. will remain largely consistent with those of the previous engineering discipline within the Interdisciplinary PhD program. No new resources will be required. The coursework requirements include:

- A total of 30 credit hours of total coursework beyond an MS degree in Engineering;
- At least 12 dissertation hours

5.C. Program Structure

Program Structure Form

1. **Total Credits Required for Graduation:** 42
2. **Residence requirements, if any:** Ph.D. students must satisfy the doctoral residency requirement by satisfactory completion of at least 18 credits in no more than 24 consecutive months. When satisfying the residency requirement, all Ph.D. students are subject to the following restrictions:
 - The doctoral residency requirement must be satisfied no later than the end of the semester in which the student completes his or her comprehensive examinations.
 - Students must achieve a cumulative graduate grade-point average of at least 3.0 in all courses counted toward satisfying the residency requirement.
3. **General education**
 - a. Total general education credits: **n/a**

Courses (specific course or distribution area and credit hours):

The PhD in Civil Engineering offers courses designed to provide students with advanced knowledge and skills in Civil Engineering topics. Students can select their required courses from those offered within the unit. Non-Civil Engineering courses can also be selected after discussion and approval by the student's Primary Advisor. After completing coursework, students entering the program with an MS must complete at least 30 credit hours, inclusive of the 12 dissertation hours. The table below shows existing courses that will be offered under this program.

Number	Title	SCH
CE 5505	Capital Project Delivery Methods	3
CE 5506	Construction Project Risk Management	3
CE 5517	Advanced Structural Analysis	3
CE 5523	Advanced Structural Steel Design	3
CE 5531	Fundamentals of Geomaterial Characterization	3
CE 5547	Legal Topics for Engineers	3
CE 5553	Hydraulics and Variability of Rivers	3
CE 5567	Introduction to Construction Management	3
CE 5568	Construction Planning and Scheduling	3
CE 5529	Design of Structures for Blast and Fire	3
CE 5501	Intro to Geoenvironmental Engineering	3
CE 5501	Intro to Freight Railroads Engineering	3
CE 5504	Project Management of Integrated Design and Construction	3
CE 5516	Advanced Engineering Mathematics	3
CE 5521	Matrix Methods of Structural Analysis	3
CE 5527	Advanced Reinforced Concrete Design	3
CE 5549	Environmental Compliance, Auditing, & Permitting	3
CE 5552	Hydraulics of Open Channels	3
CE 5563	Construction Law	3
CE 5569	Construction Methods and Equipment	3
CE 5570	Corrosion Engineering	3
CE 5554	River Stability and Scour	3
CE 5556	Urban Hydrology	3
CE 5575	Seismic Design of Structures	3
CE 5526	Prestressed Concrete	3
CE 5571	Advanced Portland Cement Concrete	3
CE 5532	Foundation Engineering	3

4. Free elective credits

b. Total free elective credits: n/a

5. Requirement for thesis, internship, or other capstone experience:

12 credit hours of dissertation are required.

6. Any unique features such as interdepartmental cooperation:

n/a

5.D. Program Goals and Assessment

All UMKC programs are required to submit an annual summary of program assessment efforts (assessment plans, findings & discussions, and recommendations). The Civil Engineering Ph.D. program will maintain the established assessment protocol currently in place for all Interdisciplinary Ph.D. disciplines. The following outcomes have been identified:

1. Students will demonstrate a thorough degree of knowledge in the discipline.
2. Students will demonstrate an ability to use proper investigation techniques for the discipline.
3. Students will effectively use oral and written forms of communication to convey their ideas.

Applicable student learning outcomes will be assessed at the following program, academic milestones: 1) Comprehensive Exams; 2) Dissertation/Research Proposal; and 3) Dissertation Defense.

At the milestone of Dissertation Defense, program targets for student performance across all Student Learning Outcomes have been set to meet or exceed average ratings of 3.5 for all (100% of) students assessed. For example, one component of students' ability to use proper investigation techniques will be evaluated by the following rubric and rating scale:

Superior (4)	Good (3)	Acceptable (2)	Unacceptable (1)	Cannot Judge
Cutting edge methodology or novel application of existing method	Incremental advance in application of methodology and careful plan for execution of research	Conventional use of methodology and adequate plan for execution of research	Inappropriate use of method; use of method that cannot adequately address research question	Outside area of expertise

5.E. Student Preparation

The minimum criteria for admission to the UMKC graduate school can be found via the UMKC [catalog](#).

Civil Engineering Admission Requirements

A student who satisfies the general requirements for admission and meets the minimum requirements stated below will be considered for regular admission to the Civil Engineering Ph.D. program. A student who does not meet some of the requirements but shows high potential for advanced-level work may be considered for provisional admission. Admission also depends on factors such as number of seats available, resources available in the area of the student's interest, the quality of previous work, etc. Requirements for admission are the same whether the applicant is requesting Engineering as the primary discipline or the co-discipline.

1. The applicant must have a bachelor's degree or a master's degree in civil or mechanical engineering or related disciplines with a grade-point average of at least 3.0 on a 4.0 scale in the last 60 hours of undergraduate engineering coursework. In addition, a GPA of 3.5 or better in all post-baccalaureate coursework is required. Pre-program requirements may be specified in case the bachelor's degree is in a discipline different than that to which the candidate is applying.
2. The GRE test is preferred but not required. It is beneficial to applicants to take the test and submit scores.
3. TOEFL or IELTS scores are required for international students without prior U.S. degrees. The minimum required score is 80 or 6.5 on TOEFL or IELTS, respectively. TOEFL requirements may be waived for applicants with a baccalaureate from an ABET accredited program.
4. The student must provide at least three recommendation letters from professors at previous institutions or mentors at work. The application can be initially reviewed with just one recommendation letter.
5. The applicant must provide a maximum 300-word statement on their goals and objectives in pursuing the Ph.D. The statement at the least should indicate which of the areas (civil or mechanical) the student is interested in and preferably indicate the sub-discipline the student is interested in as well, such as structures, construction management, biomechanical, HVAC etc.
6. Provisional admission may be granted if the minimum GPA and GRE requirements are not met, but other indicators promise the student's success in the program. To be fully admitted to the Interdisciplinary Ph.D. program, the provisionally admitted student must obtain a grade of B or better in the first nine hours of coursework and submit a satisfactory GRE score within their first year of the program.

5.F. Faculty and Administration

The faculty and administration primarily responsible for the success of the PhD in Civil Engineering program are: Professor Masud Chowdhury, EMS Division Director, Professor John Kevern, NBE Division Director, and Kevin Truman, SSE Dean.

All faculty with teaching responsibilities in the PhD, Civil Engineering program will have a terminal degree, PhD or professional doctoral degree (MD, DDS, PharmD). Full time faculty will teach 100% of coursework/credit hours in the program. Faculty teaching in the program will be expected to engage in professional activities and teaching/learning innovation activities including research, and participation and presentations at professional organizations and societies. Faculty will also be expected to mentor and advise students while enrolled in the program and while engaging in independent research.

5.G. Alumni and Employer Survey

The UMKC Alumni Affairs Office, and External Relations team engage with UMKC alumni and the community through several opportunities designed to maintain connections, gather feedback, provide engagement opportunities, and create an environment of continuous improvement.

Graduating students are surveyed through an exit survey at the point of graduation and followed up with at 6-months post degree conferral if the student was still seeking employment at graduation or did not respond to the initial survey request. Alumni affairs and external relations provides opportunities for alumni to participate in student research competitions such as the Three Minute Thesis. Alumni are also engaged through on campus events, opportunities to serve on boards, volunteer, and nominate and receive alumni awards.

5.H. Program Accreditation

The proposed Civil Engineering PhD program falls under the purview of the university's institutional accreditation. The university is accredited by the Higher Learning Commission, one of the regional accrediting bodies recognized by the US Department of Education. It ensures that the institution and all its programs, including the proposed PhD program, meet the established standards of academic quality.

To ensure our PhD programs meet the highest standards, we will adhere to guidelines and curricular recommendations provided by influential professional organizations the American Society of Civil Engineers (ASCE). Although not equivalent to accreditation, these guidelines offer a robust framework for maintaining academic and research excellence. Additionally, we will continually monitor and evaluate the program's performance in areas like faculty research output, student success, and alignment with

industry trends and demands. This continuous assessment will enhance our program's reputation and ensure we deliver a high-quality education to our doctoral students. Lastly, while there is no specific timeline for accreditation given the context of doctoral programs, we commit to maintaining the university's existing institutional accreditation status and upholding the standards expected by our accrediting body, the Higher Learning Commission.

6. Appendices

- Letters of Support
 - Ian M. Colrain; President and CEO, MRIGlobal
 - Chris Isaacson; EVP & COO, Cboe Global Markets
 - Kevin Truman; Dean, School of Science and Engineering- UMKC
 - Praveen Edara; Interim Dean, College of Engineering- MU
 - Robin Stubenhofer; National Security Campus, Kansas City
 - David Borrok; Vice-Provost and Dean, College of Engineering and Computing- Missouri S&T
 - Jennifer Lundgren; Provost and Executive Vice Chancellor- UMKC
 - Stephen John Dilkes; Associate Dean, School of Graduate Studies- UMKC

Letters of Support
PhD in Engineering



The science you expect.
The people you know.

Ian M. Colrain, PhD
President & Chief Executive Officer
icolrain@mriglobal.org

To: University of Missouri Board of Curators

MRIGlobal is an independent not for profit research institute in its 80th year, headquartered in Kansas City adjacent to UMKC. Our mission is “to improve the lives of people through innovative scientific and engineering research”, and we provide advanced biology, chemistry and engineering services to the US federal government and multiple national and international companies. We are constantly looking to hire Ph.D. level scientists in Kansas City and our other locations.

I am in full support of the re-categorizing UMKC’s current iPhD to regular Ph.D.s in Engineering, Computer Science, and the Natural Sciences disciplines—namely Physics, Chemistry, Mathematics and Statistics, Biology, and Earth and Environmental Science. This change will offer multifaceted benefits to your students and to industry.

Ph.D. is standard designation for those completing such an intensive course of graduate study in a specialized area in their chosen field. Employers that hire Ph.D.’s value the degree program and what it represents. When looking for interns, post-doctoral fellows or new hires, the current iPhD designation likely is a hindrance for the student. Funding agencies might also be confused as to what an iPhD program represents. I have reviewed hundreds of NIH grant applications over the past two decades and admit that I would be puzzled by such a degree title, assuming it reflected a less prestigious degree. In the highly challenged current funding environment, it is likely leaving UMKC graduates at a disadvantage when applying for competitive grant mechanisms.

MRIGlobal serves clients from around the world. The current iPhD program designation would be a challenge to explain or categorize to international collaborators or partners. A shift to the more universally understood Ph.D. label will make it clear that students are earning Ph.D.s when they complete their program and that they would be able to add the value to the customer, usually associated with attainment of that degree.

Sincerely,

A handwritten signature in blue ink, appearing to read "I. Colrain".

Ian M. Colrain Ph.D

President and CEO, MRIGlobal.

Professorial Fellow, School of Psychological Sciences, The University of Melbourne, Australia.

Professor of Internal Medicine (Volunteer), KU Medical Center, The University of Kansas.



October 9, 2023

To: University of Missouri Board of Curators

Cboe Global Markets (Cboe) is a large, international financial services company. We do hire Ph.D graduates as they have specialized knowledge in various fields that Cboe values. As a member of the School of Science and Engineering (SSE) Executive Advisory Board, Dean Kevin Truman has asked me for a letter of support related to the proposed change from iPhD designation to Ph.D designation for these programs in the SSE.

I am in complete support of this change. It makes sense to change the designation to Ph.D. which is what is on the diploma when the student graduates. I can well imagine the challenges in their home countries and institutions when international students try to explain or categorize the unusual 'iPhD' designation. These likely impact UMKC graduate student recruitment rates as well as hiring decisions made by companies that do not understand what iPhD program means.

It is also my understanding that this change will help UMKC correctly count their awarded doctoral degrees in ranking systems such as Carnegie's. This is expected to elevate their research status, enhance their ranking, and bolster their enrollment figures. Ph.D students are vital to innovation and creative solutions in many industries which require a highly trained workforce.

I have no doubt that this change will improve the reputation of the UM system and the higher education landscape within Missouri. Please feel free to contact me if you need any additional information.

Sincerely,

A handwritten signature in blue ink that reads "Christopher A. Isaacson". The signature is fluid and cursive, with a long horizontal stroke at the end.

Chris Isaacson, EVP, COO Cboe Global Markets

8050 Marshall Drive, Ste. 120 › Lenexa, KS 66214 › [cboe.com](https://www.cboe.com)

OPEN -- ASARED -- 2-18

February 8, 2024



School of Science and Engineering
Office of the Dean

September 29, 2023

To: University of Missouri Board of Curators

Re: Support and Commitment to the SSE's iPhD to Ph.D. Transition

As Dean of the School of Science and Engineering I am writing to express my full commitment to transitioning our interdisciplinary Ph.D. (iPhD) degrees to Ph.D. for the School of Science and Engineering (SSE)'s Computer Science, Engineering, and Natural Sciences programs.

I want to emphasize that this transition primarily consists of code and title changes that do not necessitate allocating new resources. We intend to name programs with industry and academic standards, ensuring that we are appropriately recognized for the exceptional work already underway at our school, and improve our faculty and student recruitment and retention.

By transitioning to standard and well-known Ph.D. designations, we strategically position UMKC to enhance its research status especially through Carnegie ranking: historically, under the iPhD moniker, our related activities have not been correctly recognized given that we could not use the right CIP codes. Further, our international students have struggled to justify this unconventional naming to their host countries and institutions. This no-cost move is essential to rectify these issues, ensuring that our institution receives the recognition it deserves for its outstanding contributions to STEM research in our state and beyond.

In conclusion, I would like to reiterate the dedication of my team and myself to this transition. We believe these changes will strengthen our institution's reputation and bolster our research and enrollment, making us an even more effective member of the UM system. We look forward to accomplishing this positive shift together.

Sincerely,

A handwritten signature in blue ink, appearing to read "Kevin Z. Truman".

Kevin Z. Truman, Ph.D., F.ASCE
Dean, School of Science and Engineering



University of Missouri

Dean's Office

College of Engineering

W1006 Thomas & Nell Lafferre Hall
Columbia, MO 65211

PHONE 573-882-0948

EMAIL muengrdean@missouri.edu

WEB engineering.missouri.edu

October 5, 2023

Dear UM Board of Curators:

I am writing this letter to support Dean Truman's proposal to transition the iPhD program to PhD program at UMKC's School of Science and Engineering. The College of Engineering at MU has partnered with UMKC's Engineering School for many years on both teaching and research initiatives and we look forward to continued collaborations after this transition.

Sincerely,

Praveen Edara

Praveen Edara, Ph.D., P.E. Interim Dean
College of Engineering
University of Missouri-Columbia Email: edarap@missouri.edu



National Security campus

14520 Botts Road
Kansas City, MO 64147
\\ 816-488-2000

8 kcns.c.doe.gov



October 4, 2023

To: University of Missouri Board of Curators

I fully support the proposed change from iPhD designation to Ph.D designation. While there are many reasons to support this change, I will focus on those that are very impactful for the students and the university.

The current designation is confusing to industry as it is unclear what it means. This lack of understanding can hurt the UMKC School of Science and Engineering iPhD graduates during the hiring process. It can also hurt funding opportunities by federal agencies such as NSF, DoD, DoE, etc. because the iPhD is not well understood. Prospective Ph.D students will be easier to recruit leading to more Ph.D graduates. I would expect many positive impacts from changing the name (and CIP coding) of the UMKC iPhD. programs to the traditional Ph.D.

Honeywell has been involved with UMKC programs for several years via senior design programs, career fairs, serving on advisory boards and equipment donations. Please let me know if you need any additional information.

Sincerely,

Robin Stubenhofer



October 9, 2023

To: University of Missouri Board of Curators

Cboe Global Markets (Cboe) is a large, international financial services company. We do hire Ph.D graduates as they have specialized knowledge in various fields that Cboe values. As a member of the School of Science and Engineering (SSE) Executive Advisory Board, Dean Kevin Truman has asked me for a letter of support related to the proposed change from iPhD designation to Ph.D designation for these programs in the SSE.

I am in complete support of this change. It makes sense to change the designation to Ph.D. which is what is on the diploma when the student graduates. I can well imagine the challenges in their home countries and institutions when international students try to explain or categorize the unusual 'iPhD' designation. These likely impact UMKC graduate student recruitment rates as well as hiring decisions made by companies that do not understand what iPhD program means.

It is also my understanding that this change will help UMKC correctly count their awarded doctoral degrees in ranking systems such as Carnegie's. This is expected to elevate their research status, enhance their ranking, and bolster their enrollment figures. Ph.D students are vital to innovation and creative solutions in many industries which require a highly trained workforce.

I have no doubt that this change will improve the reputation of the UM system and the higher education landscape within Missouri. Please feel free to contact me if you need any additional information.

Sincerely,

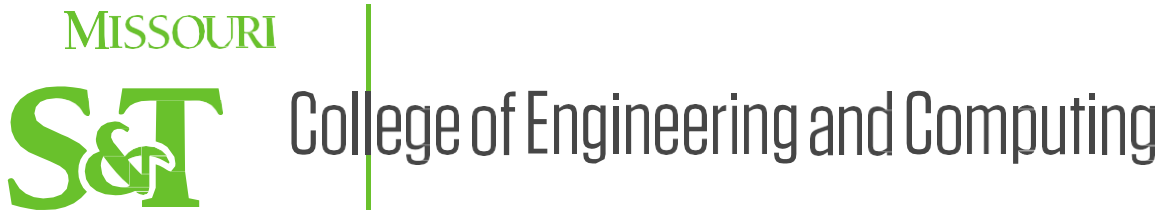
A handwritten signature in blue ink that reads "Christopher A. Isaacson".

Chris Isaacson, EVP, COO Cboe Global Markets

8050 Marshall Drive, Ste. 120 > Lenexa, KS 66214 > [cboe.com](https://www.cboe.com)

OPEN -- ASARED -- 2-22

February 8, 2024



October 6, 2023

Dear University of Missouri Board of Curators,

I am writing to express my support for the proposed transition of UMKC's interdisciplinary PhD programs within their School of Science and Engineering to several individual Ph.D. programs with new CIP codes.

Our understanding is that this change will correct and improve how their degrees are being counted through the CIP code system. This change should benefit UMKC and the UM System and will have no foreseeable impact at Missouri S&T.

Sincerely,

A handwritten signature in black ink that reads "David Borrok". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

David Borrok
Vice-Provost and Dean
College of Engineering and Computing





Office of the Provost and Executive Vice Chancellor

October 5, 2023

Dear University of Missouri Board of Curators-

UMKC aims to achieve Carnegie R1 classification in the next 5-7 years. A critical action step toward this goal is to appropriately classify our research-based doctoral program CIP codes so that they are recognized in the Carnegie classification system. With this goal in mind, I am in full support of the transition of the PhD program in interdisciplinary studies (*iPhD*; not currently recognized by Carnegie) into eight independent PhD programs that are recognized in the Carnegie classification system. In addition to the critical role these programs will play in our degree program conferral data, this transition aligns with our strategic plan goals of: exceptional student learning, success, and experience (pillar one), helping UMKC become a thriving discovery enterprise (pillar two), transforming our community and region with impactful engagement (pillar three), and preparing students for the global workforce (pillar four). The program transition has been fully considered and planned by the faculty and leadership of UMKC, and is supported by the appropriate curricula, staffing, and market demand.

The *curricula* for the eight PhD programs will remain largely unchanged and is reviewed in detail on a program-by-program basis in the proposal. No additional instructional, student support, library, or assistantship resources will be necessary for this transition to be successful. Students will continue to be supported by existing faculty, staff, and student support structures on campus, and we will transition as many students as possible into the new degree programs by Fall 2024 to maximize doctoral degree conferrals in the coming years. Notably, students who do not want to transition will have the opportunity to remain in the iPhD program through degree completion; if our doctoral program proposal is approved, no new students will be admitted to the iPhD in the future and the program will be closed.

The *market demand* for each of these programs is currently strong, and we anticipate the transition will only enhance it. The 8 programs included in our proposal have the highest rates of student interest, graduation, employment, and long-term research synergy potential at UMKC. While we anticipate demand for each program to remain stable in the short term, the renaming of these programs is likely to have an immediate impact on our national and regional reputation as a

Administrative Center, Room 300g | 5115 Oak Street | Kansas City, MO 64112
o: 816-235-1107 | provost@umkc.edu umkc.edu/provost

UMKC Doctor of Philosophy Program Letter of Support

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research institution. Although we will keep our enrollments stable in the early years of this transition, faculty will be expected to increase assistantship funding through externally funded grants, thereby allowing us to increase student enrollment while also supporting our campus research goals.

I'm happy to answer any questions about this overall doctoral program transition or the individual programs included in it.

Best regards,



Jennifer D. Lundgren, PhD
Provost and Executive Vice Chancellor



School of Graduate Studies

October 5, 2023

Dear Members of the Board of Curators,

The Graduate Council at UMKC has voted to express its full support for the proposed transition from our current Interdisciplinary Ph D program to PhD's in the areas of Computer Science, Economics, Education, Engineering, Humanities, and Natural Sciences.

We are convinced that this transition would elevate the university's research status by giving us credit for doctoral research in the areas of STEM, Humanities, and Social Sciences. While we would be using new CIP codes and titles, these doctoral degrees can be delivered with existing faculty, courses, and administrative staff. The required courses for the newly titled and coded doctorates are unchanged from those required in the current Interdisciplinary PhD program, except that the secondary disciplines now only require nine hours of courses (under the current system, the "co-discipline" sometimes requires as many as fifteen hours of coursework). This promises to improve completion rates.

This change of codes and titles will better reflect the specialized research and academic focus within these designated areas, which can significantly contribute to elevating the university's research profile. This has the potential to increase funding opportunities from federal agencies, private organizations, and philanthropic sources. With focused academic programs, we can tailor our research proposals to meet the specific needs and priorities of these funding agencies, ultimately increasing our chances of securing research grants and contracts.

We strongly believe that these more narrowly focused doctoral programs will elevate our research reputation, improving our university's standing as a discovery enterprise, attracting a higher caliber of faculty and students, enhancing our regional, national, and international appeal as a go-to institution for advanced research and education.

In sum, because the proposed transition aligns with our university's long-term goals and aspirations, potentially giving us greater research prominence, increased funding, and a more dynamic academic environment that will advance the mission and reputation of UMKC and the entire UM-System, we request the Board of Curators to approve this proposal.

Thanks for your consideration.

Stephen Dilks

Stephen John Dilks,
Associate Dean, School of Graduate Studies
Chair, UMKC Graduate Council.

Executive Summary

UMKC currently offers a PhD in Interdisciplinary Studies under CIP code 30.0000 (Multi-/Interdisciplinary Studies, Other; Defined as “any instructional program multi/interdisciplinary studies not listed above,” National Center for Education Statistics). As part of a comprehensive strategy to improve academic and research excellence, inclusive of Carnegie R1 classification, UMKC seeks to close the current, catch-all interdisciplinary PhD and create eight (8) discipline-specific and more narrow interdisciplinary PhD programs from the over 20 primary disciplines within the current within it.

This transition will allow for the following: Carnegie credit for degree conferrals across STEM, Social Science, and Humanities disciplines, improved research ranking and reputation as a discovery enterprise, advantage in recruiting high quality students and faculty, and enhanced clarity and validity with students and employers regarding the curricula offered as part of our doctoral degrees.

This proposal focuses on a new **Electrical and Computer Engineering PhD** that can be delivered with existing courses, faculty, staff, student support services, assistantship funding, and other resources currently allocated among three electrical and computer engineering primary disciplines within the Interdisciplinary PhD.

The Electrical and Computer Engineering PhD program’s main goal is to prepare the next generation of scholars for a wide range of research opportunities in academia, industry, and national labs. It will continue to provide students with the background, research skills, and tools to advance the state of the art in Engineering. The transition from an Interdisciplinary PhD to a PhD in Electrical and Computer Engineering is beneficial because a significant number of our current doctoral students are from overseas, where the current name confuses potential employers and researchers. In some countries who seek to send large numbers of students to UMKC, the Interdisciplinary PhD is deemed to be unacceptable.

We currently supervise a wide range of doctoral dissertations in the following areas of Electrical and Computer Engineering:

1. Computer Engineering, VLSI, and Embedded Systems Design
2. Hardware Security, Cyber-Physical Systems, and Engineering
3. Materials, Devices, and Sensors at the Nanoscale
4. Electromagnetics, Radio Frequency (RF) circuits, Microwave, Terahertz (THz) Science and Engineering
5. Communication and Signal Processing
6. Computer Vision, Multimedia, and Artificial Intelligence (AI)
7. Power Systems and Renewable Engineering
8. Robotics and Control
9. Electric Vehicles (EV) and Batteries

The proposed PhD program in Electrical and Computer Engineering mirrors the existing doctoral program, maintaining academic rigor through a balanced curriculum. This curricula includes foundational courses, advanced coursework, research seminars, and a comprehensive doctoral dissertation, all drawn from the existing structure and resources of the doctoral program.

As with the current doctoral program, a minimum of 30 classroom credits are required, including fundamental and advanced courses along with seminars. Additionally, a doctoral dissertation necessitates a minimum of 12 research credits. Students can select their 30 credits of coursework from ECE topics. Non-ECE courses can also be selected after discussion and approval by the student's Primary Adviser.

1. Introduction

The PhD in Interdisciplinary Studies (30.0000) was launched in 1989. For many years it has provided UMKC students the opportunity to develop as scientists and scholars in their chosen field by combining two or more disciplines of study. The Interdisciplinary PhD at UMKC originally included 26 distinct disciplines, ranging from STEM to social sciences to the humanities. Despite its strength as a highly flexible doctoral degree, it limits our ability to attract highly competitive PhD students who want a narrower disciplinary focus, as well as prospective students who are seeking STEM certified doctoral education. Most recently, we have learned that the current Interdisciplinary PhD program is not recognized by Carnegie in their university classification system—a significant barrier in our progress toward becoming a Carnegie R1 institution.

To address these challenges, we aim to transition the current Interdisciplinary PhD program into eight (8) distinct PhD programs that will be attractive to students (evidenced by historical enrollment data) and that will be recognized by Carnegie. These include **Computer Science, Economics, Education, Engineering (Electrical and Computing; Civil; and Mechanical), Humanities, plus a multidisciplinary PhD in Natural Sciences.** These doctoral research programs were selected after extensive review and discussion with doctoral faculty across the university because they are the strongest historic enrollments, core faculty of active researchers, and greatest potential for ongoing success at UMKC. Together they promise to have a significant impact on our ranking as a research institution, and the workforce in the Kansas City and greater MO area through the research and post-graduate employment outcomes produced by the graduates.

This proposal focuses on the **PhD in Electrical and Computer Engineering.**

Impact:

The impact of this broad degree transition, including the **PhD in Electrical and Computer Engineering**, will be the following: Carnegie credit for degree conferrals across STEM, Social Science, and Humanities disciplines, improved research ranking and reputation as a discovery enterprise, advantage in recruiting high quality students and faculty, and enhanced clarity and validity with students and employers regarding the curricula offered as part of our doctoral degrees.

2. University Mission & Program Analysis

2.A. Alignment with University Mission & Goals

The needs of the Greater Kansas City region are of the utmost importance and drive what UMKC is doing. The university is a change agent and plays a vital role in economic development and workforce development for the region. The new proposed PhD degrees in Engineering will support our mission of economic development of the region and the nation by educating the specialized graduate-level engineers necessary to build the necessary infrastructure for economic development. Therefore, the proposed Engineering PhD programs align seamlessly with the broader goals of the campus, college, and department as detailed in <https://www.umkc.edu/about/strategic-plan.html>.

Successful PhD programs are necessary for the department and the college to show a comprehensive program that attracts future students to maintain the increase in enrollment at the BS, MS, and PhD levels. In addition, PhD students are the key components of maintaining and expanding our research excellence at the department and college levels. Finally, PhD programs in Civil Engineering, Electrical and Computer Engineering, and Mechanical Engineering will expand the number and quality of our STEM graduates, which will help advance the research classification of UMKC in general.

2.B. Duplication & Collaboration within Campus, Across System

The proposed Electrical and Computer Engineering PhD program already exists in the form of the three electrical and computer engineering related primary disciplines within the Interdisciplinary PhD program, and there is no threat of duplication with programs across the UM System. The proposed title and code changes reflect the correct Engineering CIP codes as per the current course requirements: this will attract students who might have been deterred by the esoteric Interdisciplinary PhD title. This change will make our existing doctoral program more attractive.

The Electrical and Computer Engineering PhD program is diverse and wide enough to allow for multiple successful programs across the UM System. Moreover, we have established several niche areas in this area of Engineering with several years of demonstrated success.

Examples of these areas, which are unique to UMKC, are Radio Frequency and Electromagnetics, which have received tens of millions of funding from ONR, DARPA, and NSF over the last few years. Through this funding, we acquired state of the art equipment and facilities only available in a handful of universities worldwide. Therefore, UMKC has a significant edge over these competitors in terms of equipment in areas of national and international interest.

3. Business-Related Criteria & Justification

3.A. Market Analysis

3.A.1. Rationale & Workforce Demand for the Program

Electrical and Computer Engineering (ECE) applications are pervasive in all industries and all aspects of our lives. Even industries such as the automobile industry have been transformed into mainstream ECE with the surge in interest in Electric Vehicles (EV). EV's share of the global market is expected to increase to 30% by 2030, which is expected to lead to a surge in demand for ECE PhD graduates in a wide range of areas offered by UMKC, such as "6. Computer Vision, Multimedia and Artificial Intelligence (AI)", "7. Power Systems and Renewable Engineering", "9. Electric Vehicles and Batteries". In addition, even though 5G telecommunication has only been recently introduced, plans for 6G are already underway to meet an insatiable demand for higher data rates and bandwidth. This will also lead to significant demand for ECE PhD graduates to generate devices compatible with the new 6G capabilities in the coming decades. To serve the 6G demand, PhD graduates in "1. Computer Engineering, VLSI, and Embedded Systems Design", "2. Hardware Security, Cyber-Physical Systems and Engineering", "3. Materials, Devices, and Sensors at the Nanoscale," "4. Electromagnetics, Radio Frequency (RF) circuits, Microwave, Terahertz (THz) Science and Engineering", "5.

Communication and Signal Processing". Similarly, estimates predict that 70% of the world's population will live in a smart city by 2050. The technology necessary to achieve this vision will require many ECE PhD graduates over the coming few decades. The previous areas are just a few examples out of many emerging areas like nanotechnology, biomedical, biometrics, and defense-related applications. Evidence of this huge demand for ECE PhD graduates is demonstrated in the several lucrative offers our recent ECE interdisciplinary PhD graduates receive from institutes such as Amazon, Apple, Google, intel, Qualcomm, IBM, Black and Veatch, Burns McDonnell. The interdisciplinary PhD program's broad curriculum serves as an excellent basis for the proposed program. A seamless transition to the new program can be facilitated by leveraging the resources, faculty, and infrastructure currently dedicated to the interdisciplinary PhD program, obviating the need for additional expenditure.

The impact of the proposed Electrical and Computing Engineering PhD can be projected from the current success of the interdisciplinary PhD program with ECE as the primary discipline. Over the last decade, ECE interdisciplinary PhD graduates have received numerous international, national and UMKC awards from the leading conferences in their respective areas. This has been a great marketing element in helping to recruit further doctoral and BS/MS students to the ECE program at UMKC. Furthermore, ECE

interdisciplinary PhD students have helped us perform the proposed tasks in several grants from NSF, DARPA, NIST, ONR, and ARL. This success enabled us to generate additional grants to push the research portfolio of UMKC and the state of Missouri. Finally, interdisciplinary PhD ECE graduates have joined leading institutes upon graduation. By serving as UMKC ambassadors, they helped transfer their industrial experience back to UMKC through teaching courses, providing ideas and funding for senior design projects, and helping with grants to UMKC. Therefore, our interdisciplinary PhD ECE alumni serve as role models to our current students by demonstrating their success. Finally, the proposed PhD program will continue to train students in some of the hottest areas in Electrical and Computer Engineering over the coming few decades. Many of these graduates stay in the Kansas City area bolstering the success of the technological capabilities and institutes within Kansas City and the wider Missouri area.

3.A.2. Student Demand for the Program

Student demand is evidenced by our previous five-year enrollment trends in three primary disciplines within the current UMKC interdisciplinary PhD program (Computer Networks and Computer Systems, Electrical and Computer Engineering, and Telecommunication Networking). These primary discipline have ranged from 1-40 students/year with an average of 32.8 students/year. Combined, the proposed Electrical and Computing Engineering PhD is estimated to have between 32-33 students/year. Pending approval, we will encourage current interdisciplinary PhD students to switch to the new degree program in Fall 24; those who want to complete their degree within the existing interdisciplinary PhD program will be allowed to do so. Admission to the existing interdisciplinary PhD program will be suspended in Fall 24 and program teach out will begin. This period of transition is reflected in the enrollment projections below.

Table 1a. Student Enrollment Projections (anticipated total number of students enrolled in the program during the first five fall semesters following implementation.)

Year:	1	2	3	4	5
Full-time	28	33	33	33	33
Part-time	0	0	0	0	0
Total	30	33	33	33	33

Table 1b. Projected Number of Degrees Awarded

Year:	1	2	3	4	5	6	7	8	9	10
# of Degrees Awarded	5	5	5	5	5	5	5	5	5	5

3.B. Financial Projections

Research-based doctoral education (i.e., PhD) differs in key ways from professional doctoral education (e.g., JD, MD, PharmD, DDS, etc.). These differences can be found in the curricular and academic experiences, size of the student cohorts, and relationship of the

program to the University mission. As such, there are significant differences in the financial models between research-based and professional doctoral programs. Research-based doctoral programs (e.g., PhD), in contrast to professional doctoral programs (e.g., JD, MD, PharmD, etc.), generally accept a smaller cohort of new students each year and often offer full or partial financial support in the form of tuition waivers and graduate assistantships. PhD students, in turn, make significant contributions to faculty research through their work on research studies (e.g., data collection), dissemination of research findings (e.g., manuscript/monograph writing), and grant writing. PhD students also provide critical support to the educational mission of the University through mentorship and instruction of undergraduate students. In most instances, PhD programs are revenue neutral or have a financial cost that is offset by positive impact on University research productivity and support of undergraduate education.

In the sections that follow, we have estimated the costs and revenues associated with the PhD in Electrical and Computer Engineering. ***Notably, because we are using the same resources, the net revenue and financial impact of the PhD in Electrical and Computer Engineering is the same as the three primary disciplines within the existing interdisciplinary PhD program.***

3.B.1. Additional Resources Needed

No new resources are needed, inclusive of instructional costs, assistantship funding, marketing, or other university overhead.

3.B.2. Revenue

Revenues are generated from tuition (net scholarshiping) and remain the same as the existing interdisciplinary PhD program.

3.B.3. Net Revenue

No new one-time expenses are needed because all resources exist within the current interdisciplinary PhD program. Similarly, recurring expenses are not new, and are estimated based on the current interdisciplinary PhD program. Existing recurring expenses and revenues will shift from the interdisciplinary PhD to the new PhD, with the majority of that shift happening in year 1, as most current students transfer to the new degree program.

Faculty salaries are estimated at .10 FTE (representing 25% of their overall teaching workload) for the current faculty who participate in teaching and mentorship within the interdisciplinary PhD. Notably, most courses are co-taught with advanced undergraduate

and/or master’s level students, thereby inflating the FTE specific to PhD students; this inflation is offset by the variable amount of time spent mentoring dissertations. Staff estimates represent staff support time within the academic unit. Institutional overhead includes library and all central campus enrollment management and student support staff. Other includes assistantship stipends and associated tuition remission.

Table 2. Financial Projections for Proposed Program for Years 1 Through 5.

	Year 1	Year 2	Year 3	Year 4	Year 5
1. Expenses per year					
A. One-time					
New/Renovated Space	0	0	0	0	0
Equipment	0	0	0	0	0
Library	0	0	0	0	0
Consultants	0	0	0	0	0
Other	0	0	0	0	0
Total one-time	0	0	0	0	0
B. Recurring					
Faculty	98572	98572	98572	98572	98572
Staff	5000	5000	5000	5000	5000
Benefits	37285	37285	37285	37285	37285
Equipment	0	0	0	0	0
Library	0	0	0	0	0
Institutional Overhead	9408	11088	11088	11088	11088
Other	407840	509800	509800	509800	509800
Total recurring	558105	661,745	661,745	661,745	661,745
Total expenses (A+B)	558105	661,745	661,745	661,745	661,745
2. Revenue per year					
Tuition/Fees	138297	162993	162993	162993	162993
Institutional Resources	0	0	0	0	0
State Aid -- CBHE	0	0	0	0	0
State Aid -- Other	0	0	0	0	0
Total revenue	138297	162993	162993	162993	162993
3. Net revenue (loss) per year	(419,808)	(498,752)	(498,752)	(498,752)	(498,752)

3.B.4. Academic and Financial Viability

There is no net difference in academic and financial viability between the existing primary disciplines within the interdisciplinary PhD and the new PhD in Electrical and Computer

Engineering. The enrollment projections described above will ensure we achieve a degree conferral threshold consistent with MDHE expectations, as well as advance our Carnegie ranking. There is a financial cost, consistent with doctoral education in general, and funds will be reallocated from the existing PhD program to the new PhD program so that we remain financially net neutral.

3.C. Business Plan: Marketing, Student Success, Transition & Exit Strategies

3.C.1. Marketing Plan

The marketing plan for UMKC's newly coded and titled PhD programs in Engineering will continue to use the following strategies, which we have used successfully for the interdisciplinary PhD:

- 1- Offer new research areas with many exciting employment opportunities.
- 2- Advertise the success of previous doctoral students in terms of local, national, and international awards. We will encourage our doctoral students to participate more in these competitions.
- 3- Use our alums as ambassadors to recruit new students.
- 4- Focus heavily on online platforms and social media, considering their extensive reach and the tech-oriented nature of our target audience. Platforms such as LinkedIn, Facebook, and academic forums can facilitate reaching prospective students locally, nationally, and internationally.

The target population will continue to be highly qualified graduates of other state schools and domestic students across the nation, including local UMKC undergraduates and the international population of students through our extensive global network in countries like India, Pakistan, Bangladesh, Saudi Arabia, and Egypt. Employees of local industry interested in pursuing a PhD degree as part of their existing duties or in a part-time format will also continue to be a primary target.

3.C.2. Student Success Plan

No additional student support services will be needed to support or retain students in the PhD in Electrical and Computer Engineering program. Current enrollment, retention and graduation trends for this program are on track with institution and national averages, and the program will continue to provide current levels of faculty and staff resources to support students through graduation.

3.C.3. Transition Plan

The people primarily responsible for the success of the PhD in Electrical and Computer Engineering program are: Professor Masud Chowdhury, EMS Division Director, and Kevin Truman, SSE Dean. Program leadership is supported by program faculty and the School of Graduate Studies staff.

3.C.4. Exit Strategy

If full-time enrollment in the PhD in Electrical and Computer Engineering drops below 20 students, the School of Science and Engineering will evaluate a temporary hiatus or program closure, depending on the reason for the low enrollment (e.g., temporary funding challenge, market demand, etc.).

4. Institutional Capacity

The proposed PhD in Electrical and Computer Engineering is designed to utilize existing infrastructure, faculty, and resources, thereby negating the necessity for any additional expenses. The program will repurpose the existing faculty resources, student support services, laboratories, equipment, and technology from the current doctoral program.

5. Program Characteristics

5.A. Program Outcomes

Program Goals

Students in the Ph.D. Program will acquire:

- grounding in the discipline
- the ability to integrate the principles and theories of the disciplines
- the ability to effectively communicate findings and approaches to solving research problems;
- research skills, such as approaches, methods, ethical principles, and tools to pursue a research line of inquiry;
- the ability to form effective teams to solve novel research questions

5.B. Program Design & Content

The course requirements for the Electrical and Computer Engineering Ph.D. will remain consistent with those of the previous Interdisciplinary PhD program. No new resources will be required. The coursework requirements include:

- A total of 30 credit hours of total coursework beyond an MS degree in Engineering;
- At least 12 dissertation hours in the primary area;

5.C. Program Structure

5.C.1. Program Structure Form

1. Total Credits Required for Graduation: 42

2. **Residence requirements, if any:** Ph.D. students must satisfy the doctoral residency requirement by satisfactory completion of at least 18 credits in no more than 24 consecutive months. When satisfying the residency requirement, all Ph.D. students are subject to the following restrictions:

- The doctoral residency requirement must be satisfied no later than the end of the semester in which the student completes his or her comprehensive examinations.
- Students must achieve a cumulative graduate grade-point average of at least 3.0 in all courses counted toward satisfying the residency requirement.

3. General education

- a. Total general education credits: **n/a**

Courses (specific course or distribution area and credit hours):

The PhD in Electrical and Computer Engineering offers a rigorous curriculum designed to provide students with advanced knowledge and skills in a wide range of ECE topics. Students must complete 30 credits of coursework plus 12 dissertation research credits. Students can select their 30 credits of coursework from ECE topics. Non-ECE courses can also be selected after discussion and approval by the student's Primary Adviser.

Computer Engineering, VLSI, and Embedded Systems Design

E&C-ENGR 5528	Advanced Embedded Systems	3
E&C-ENGR 5535	HDL-Based Digital Systems Design	3
E&C-ENGR 5542	Introduction to VLSI Design	3
E&C-ENGR 5590	Special Topics in Electrical And Computer Engineering (Advanced Computer Architecture)	3
E&C-ENGR 5533	Analog Integrated Circuit Design	3
E&C-ENGR 5534	Computer Arithmetic	3
E&C-ENGR 5537	Mixed-Signal Integrated Circuit Design	3
E&C-ENGR 5642	Advanced VLSI Design	3

Hardware Security, Cyber-Physical Systems and Engineering

E&C-ENGR 5528	Advanced Embedded Systems	3
E&C-ENGR 5535	HDL-Based Digital Systems Design	3
E&C-ENGR 5542	Introduction to VLSI Design	3
E&C-ENGR 5590	Special Topics In Electrical And Computer Engineering (Advanced Computer Architecture)	3
E&C-ENGR 5534	Computer Arithmetic	3
E&C-ENGR 5642	Advanced VLSI Design	3
CSEE 5110	Network Architecture I	3
E&C-ENGR 5577	Wireless Communications	3
E&C-ENGR 5580	Digital Signal Processing	3
E&C-ENGR 5570	Principles of Digital Communication Systems	3
CSEE 5111	Network Architecture II	3
CSEE 5113	Network Routing	3

Materials, Devices, and Sensors at the Nanoscale

E&C-ENGR 5590	Nanoscale Devices & Circuits	3
E&C-ENGR 5535	Nanoelectronics II: Nanoscale Integration & Manufacturing	3
E&C-ENGR 5647	Emerging Interdisciplinary Research in Nanotechnology	3
E&C-ENGR 5590	Nanoelectromagnetics and Plasmonics	3
PHYSICS 5530	Quantum Mechanics I	3
PHYSICS 5531	Quantum Mechanics II	3
PHYSICS 5535	Optical Properties of Matter	3

Electromagnetics, Radio Frequency (RF) circuits, Microwave, Terahertz (THz) Science and Engineering

E&C-ENGR 5513	Advanced Principles of RF/Microwave Engineering	3
E&C-ENGR 5590	Terahertz in 6G and beyond: from imaging to communications	3
E&C-ENGR 5590	Nanoelectromagnetics and Plasmonics	3
E&C-ENGR 5590	Numerical Methods in EM	3
E&C-ENGR 5590	Introduction to Microwave Engineering	3
E&C-ENGR 5518	Advanced Radar Systems & Techniques	3
E&C-ENGR 5512	Microwave Remote Sensing	3
E&C-ENGR 5590	RF Experimental Design	3
PHYSICS 5535	Optical Properties of Matter	3
PHYSICS 5520	Electromagnetic Theory and Applications I	3
PHYSICS 5521	Electromagnetic Theory and Applications II	3

Communication and Signal Processing

CSEE 5110	Network Architecture I	3
E&C-ENGR 5577	Wireless Communications	3
E&C-ENGR 5580	Digital Signal Processing	3
E&C-ENGR 5570	Principles of Digital Communication Systems	3
CSEE 5111	Network Architecture II	3
CSEE 5113	Network Routing	3
COMP-SCI 5514	Optical Fiber Communications	3
COMP-SCI 5573	Information Security and Assurance	3

Computer Vision, Multimedia and Artificial Intelligence (AI)

E&C-ENGR 5578	Multimedia Communication	3
E&C-ENGR 5582	Computer Vision	3
E&C-ENGR 5316	Neural and Adaptive Systems	3
E&C-ENGR 5590	Supervised Learning and Feature Extraction	3
E&C-ENGR 5586	Pattern Recognition	3
E&C-ENGR 5584	Advanced Digital Image Processing	3
COMP-SCI 5530	Principles of Data Science	3
COMP-SCI 5540	Principles of Big Data Management	3
COMP-SCI 5542	Big Data Analytics and Applications	3
COMP-SCI 5561	Advanced Artificial Intelligence	3
COMP-SCI 5565	Introduction to Statistical Learning	3
COMP-SCI 5565	Deep Learning	3

Power Systems and Renewable Engineering

E&C-ENGR 5536	Power Electronics II (Utility Applications)	3
E&C-ENGR 5567	Power Systems II	3
E&C-ENGR 5590	Introduction to Smart Grid	3
E&C-ENGR 5560	Electric Power Distribution Systems	3
E&C-ENGR 5557	Fundamentals of Solar Photovoltaic Cells	3
E&C-ENGR 5559	Introduction to Photovoltaic Systems	3
E&C-ENGR 5590	Introduction to Photovoltaic Systems	3
E&C-ENGR 5590	Wind Energy	3
E&C-ENGR 5563	Sustainable Energy System Engineering	3
E&C-ENGR 5590	Introduction to Power System Protection	3
E&C-ENGR 5590	Power Quality	3
E&C-ENGR 5565	Auxiliary Electric System Design	3
E&C-ENGR 5664	Lightning and Switching Surges in Power Systems	3
E&C-ENGR 5672	Advanced Power System Protection	3
E&C-ENGR 5590	Transmission System Planning	3

Robotics and Control

E&C-ENGR 5558	Automatic Control System Design	3
E&C-ENGR 5556	Advanced Instrumentation and Control	3
E&C-ENGR 5582	Computer Vision	3
E&C-ENGR 5316	Neural and Adaptive Systems	3
E&C-ENGR 5590	Supervised Learning and Feature Extraction	3
E&C-ENGR 5584	Advanced Digital Image Processing	3
MEC-ENGR 5559	Robotics and Unmanned Systems	3
MEC-ENGR 5557	Mechatronics System Design	3

Electric Vehicles and Batteries

E&C-ENGR 5536	Power Electronics II (Utility Applications)	3
MEC-ENGR 5559	Robotics and Unmanned Systems	3
MEC-ENGR 5557	Mechatronics System Design	3
MEC-ENGR 460	Electromechanical Conversion	3

4. Free elective credits

a. Total free elective credits: n/a

5. Requirement for thesis, internship or other capstone experience:

12 credit hours of dissertation are required.

6. Any unique features such as interdepartmental cooperation:

n/a

5.D. Program Goals and Assessment

All UMKC programs are required to submit an annual summary of program assessment efforts (assessment plans, findings & discussions, and recommendations). The Electrical and Computer Engineering Ph.D. program will maintain the established assessment protocol currently in place for all Interdisciplinary Ph.D. disciplines. The following outcomes have been identified:

1. Students will demonstrate a thorough degree of knowledge in the discipline.
2. Students will demonstrate an ability to use proper investigation techniques for the discipline.
3. Students will effectively use oral and written forms of communication to convey their ideas.

Applicable student learning outcomes will be assessed at the following program, academic milestones: 1) Comprehensive Exams; 2) Dissertation/Research Proposal; and 3) Dissertation Defense.

At the milestone of Dissertation Defense, program targets for student performance across all Student Learning Outcomes have been set to meet or exceed average ratings of 3.5 for all (100% of) students assessed. For example, one component of students' ability to use proper investigation techniques will be evaluated by the following rubric and rating scale:

Superior (4)	Good (3)	Acceptable (2)	Unacceptable (1)	Cannot Judge
Cutting edge methodology or novel application of existing method	Incremental advance in application of methodology and careful plan for execution of research	Conventional use of methodology and adequate plan for execution of research	Inappropriate use of method; use of method that cannot adequately address research question	Outside area of expertise

5.E. Student Preparation

The minimum criteria for admission to the UMKC graduate school can be found via the [UMKC catalog](#).

Electrical and Computer Engineering Program Admission Requirements

A student who meets the minimum discipline requirements stated below will be considered for regular admission to the Ph.D. program. A student who does not meet some of the requirements but shows high potential for advanced-level work, may be considered for provisional admission. Admission also depends on factors such as number of seats available, resources available in the area of student's interest, the quality of previous work, etc. A student who does not qualifying for admission to the Ph.D. program, may be considered for admission to the M.S. in Electrical Engineering program.

Minimum Recommended Ph.D. Admission Requirements:

1. GPA (Bachelor or equivalent Degree): 3.5 in the scale of 4 (or equivalent)
2. GPA (MS or equivalent Degree if any): 3.5 in the scale of 4 (or equivalent)
3. GRE (Quantitative) minimum score = 85%
4. TOEFL iBTS minimum Score = 89 or IELTS minimum score = 6.5
5. Prior Projects or Publications (Preferred)*
6. Internationally Acceptable Accreditation of the Prior Degree Awarding Institutes
 - ***Prior research project and/or publication record is not required for admission into ECE Ph.D. program. However, doctoral faculty members give very high value to the students with such backgrounds.***

Direct or Expedited Ph.D. Program

It is not required to have an MS or equivalent degree to apply to ECE Ph.D. program. We accept well-qualified and motivated students with a Bachelor's degree directly into our Ph.D. program. We actively encourage students in the ***Direct Ph.D. Program*** to try to complete the doctoral study within 4 or 5 years after the Bachelor degree. To complete the Ph.D. degree in an expedited timeline, first, the student has to be dedicated and well qualified. Second, the student must make a comprehensive plan at the beginning of the doctoral study to complete all the relevant steps within a strict timeline, which is challenging but not impossible.

Clarification of Minimum Requirements and Decision Process

Academic Preparation

The applicant must have a bachelor and/or a master's degree in electrical and/or computer engineering, electronics, communications engineering or any other field requiring substantial training in at least one of the above fields and in mathematics with a GPA of 3.5 or better, cumulative as well as in the major field; and a GPA of 3.5 or better in all post-baccalaureate or post-master's degree work.

Aptitude for Advanced Work

The student must demonstrate an aptitude for advanced-level work through national/international standardized examinations such as the GRE. The expected performance level is the 85th percentile in the quantitative portion of the GRE examination.

- In rare occasion, ECE Ph.D. Discipline Coordinator exempts GRE requirement for students with outstanding publication or scholarly records in internationally renowned journals, conferences or similar forums.

Proficiency in English

The student must demonstrate his or her proficiency in oral and written communication in English through national/international standardized English examinations such as TOEFL, verbal portion of the GRE, etc. Because of this test, the student may be required to improve his or her oral and written communication in English before enrollment in the courses of the chosen disciplines.

- For students with a North American (USA and Canada) B.S. or M.S. degree the English Proficiency requirement is exempt.

Recommendation Letters

The student must provide at least three recommendation letters from professors from his or her previous institution(s). If the applicant has been out of school for several years, recommendation letters from his or her supervisors (technical) will be acceptable. However, even in this situation, a recommendation letter from his or her last academic institution is highly recommended. A recommendation from a faculty member in the Computer Science Electrical Engineering (CSEE) Department at UMKC must be provided if the student has taken courses from or worked with the CSEE faculty.

Statement of Goals and Objectives

The applicant must provide a 250 to 500 words essay on his/her goals and objectives of pursuing the Ph.D. in the chosen fields.

5.F. Faculty and Administration

The people primarily responsible for the success of the PhD in Electrical and Computer Engineering program are: Professor Masud Chowdhury, EMS Division Director, and Kevin Truman, SSE Dean

All faculty with teaching responsibilities in the PhD, Electrical and Computer Engineering program will have a terminal degree, PhD or professional doctoral degree (MD, PharmD). Full time faculty will teach 100% of coursework/credit hours in the program. Faculty teaching in the program will be expected to engage in professional activities and teaching/learning innovation activities including research, and participation and presentations at professional organizations and societies. Faculty will also be expected to mentor and advise students while enrolled in the program and while engaging in independent research.

5.G. Alumni and Employer Survey

The UMKC Alumni Affairs Office, and External Relations team engage with UMKC alumni and the community through several opportunities designed to maintain connections, gather feedback, provide engagement opportunities, and create an environment of continuous improvement.

Graduating students are surveyed through an exit survey at the point of graduation and followed up with at 6-months post degree conferral if the student was still seeking employment at graduation or did not respond to the initial survey request. Alumni affairs and external relations provides opportunities for alumni to participate in student research competitions such as the Three Minute Thesis. Alumni are also engaged through on campus events, opportunities to serve on boards, volunteer, and nominate and receive alumni awards.

5.H. Program Accreditation

The proposed Engineering PhD programs fall under the purview of the university's institutional accreditation. The university is accredited by the Higher Learning Commission, one of the regional accrediting bodies recognized by the US Department of Education. It ensures that the institution and all its programs, including the proposed PhD program, meet the established standards of academic quality.

To ensure our PhD programs meet the highest standards, we will adhere to guidelines and curricular recommendations provided by influential professional organizations such as the Institute of Electrical and Electronics Engineers (IEEE). Although not equivalent to

accreditation, these guidelines offer a robust framework for maintaining academic and research excellence. Additionally, we will continually monitor and evaluate the program's performance in areas like faculty research output, student success, and alignment with industry trends and demands. This continuous assessment will enhance our program's reputation and ensure we deliver a high-quality education to our doctoral students. Lastly, while there is no specific timeline for accreditation given the context of doctoral programs, we commit to maintaining the university's existing institutional accreditation status and upholding the standards expected by our accrediting body, the Higher Learning Commission.

6. Appendices

- Letters of support
 - Ian M. Colrain; President and CEO, MRIGlobal
 - Chris Isaacson; EVP & COO, Cboe Global Markets
 - Kevin Truman; Dean, School of Science and Engineering- UMKC
 - Praveen Edara; Interim Dean, College of Engineering- MU
 - Robin Stubenhofer; National Security Campus, Kansas City
 - David Borrok; Vice-Provost and Dean, College of Engineering and Computing- Missouri S&T
 - Jennifer Lundgren; Provost and Executive Vice Chancellor- UMKC
 - Stephen John Dilkes; Associate Dean, School of Graduate Studies- UMKC

Letters of Support
PhD in Engineering



The science you expect.
The people you know.

Ian M. Colrain, PhD

President & Chief Executive Officer
icolrain@mriglobal.org

To: University of Missouri Board of Curators

MRIGlobal is an independent not for profit research institute in its 80th year, headquartered in Kansas City adjacent to UMKC. Our mission is “to improve the lives of people through innovative scientific and engineering research”, and we provide advanced biology, chemistry and engineering services to the US federal government and multiple national and international companies. We are constantly looking to hire Ph.D. level scientists in Kansas City and our other locations.

I am in full support of the re-categorizing UMKC’s current iPhD to regular Ph.D.s in Engineering, Computer Science, and the Natural Sciences disciplines—namely Physics, Chemistry, Mathematics and Statistics, Biology, and Earth and Environmental Science. This change will offer multifaceted benefits to your students and to industry.

Ph.D. is standard designation for those completing such an intensive course of graduate study in a specialized area in their chosen field. Employers that hire Ph.D.’s value the degree program and what it represents. When looking for interns, post-doctoral fellows or new hires, the current iPhD designation likely is a hindrance for the student. Funding agencies might also be confused as to what an iPhD program represents. I have reviewed hundreds of NIH grant applications over the past two decades and admit that I would be puzzled by such a degree title, assuming it reflected a less prestigious degree. In the highly challenged current funding environment, it is likely leaving UMKC graduates at a disadvantage when applying for competitive grant mechanisms.

MRIGlobal serves clients from around the world. The current iPhD program designation would be a challenge to explain or categorize to international collaborators or partners. A shift to the more universally understood Ph.D. label will make it clear that students are earning Ph.D.s when they complete their program and that they would be able to add the value to the customer, usually associated with attainment of that degree.

A handwritten signature in blue ink, appearing to read "I. Colrain", is positioned above the typed name.

Sincerely,
Ian M. Colrain Ph.D

President and CEO, MRIGlobal.

Professorial Fellow, School of Psychological Sciences, The University of Melbourne, Australia. Professor of Internal Medicine (Volunteer), KU Medical Center, The University of Kansas.



October 9, 2023

To: University of Missouri Board of Curators

Cboe Global Markets (Cboe) is a large, international financial services company. We do hire Ph.D graduates as they have specialized knowledge in various fields that Cboe values. As a member of the School of Science and Engineering (SSE) Executive Advisory Board, Dean Kevin Truman has asked me for a letter of support related to the proposed change from iPhD designation to Ph.D designation for these programs in the SSE.

I am in complete support of this change. It makes sense to change the designation to Ph.D. which is what is on the diploma when the student graduates. I can well imagine the challenges in their home countries and institutions when international students try to explain or categorize the unusual 'iPhD' designation. These likely impact UMKC graduate student recruitment rates as well as hiring decisions made by companies that do not understand what iPhD program means.

It is also my understanding that this change will help UMKC correctly count their awarded doctoral degrees in ranking systems such as Carnegie's. This is expected to elevate their research status, enhance their ranking, and bolster their enrollment figures. Ph.D students are vital to innovation and creative solutions in many industries which require a highly trained workforce.

I have no doubt that this change will improve the reputation of the UM system and the higher education landscape within Missouri. Please feel free to contact me if you need any additional information.

Sincerely,

A handwritten signature in blue ink that reads "Christopher A. Isaacson". The signature is fluid and cursive, with a long horizontal stroke at the end.

Chris Isaacson, EVP, COO
Cboe Global Markets



School of Science and Engineering
Office of the Dean

September 29, 2023

To: University of Missouri Board of Curators

Re: Support and Commitment to the SSE's iPhD to Ph.D. Transition

As Dean of the School of Science and Engineering I am writing to express my full commitment to transitioning our interdisciplinary Ph.D. (iPhD) degrees to Ph.D. for the School of Science and Engineering (SSE)'s Computer Science, Engineering, and Natural Sciences programs.

I want to emphasize that this transition primarily consists of code and title changes that do not necessitate allocating new resources. We intend to name programs with industry and academic standards, ensuring that we are appropriately recognized for the exceptional work already underway at our school, and improve our faculty and student recruitment and retention.

By transitioning to standard and well-known Ph.D. designations, we strategically position UMKC to enhance its research status especially through Carnegie ranking: historically, under the iPhD moniker, our related activities have not been correctly recognized given that we could not use the right CIP codes. Further, our international students have struggled to justify this unconventional naming to their host countries and institutions. This no-cost move is essential to rectify these issues, ensuring that our institution receives the recognition it deserves for its outstanding contributions to STEM research in our state and beyond.

In conclusion, I would like to reiterate the dedication of my team and myself to this transition. We believe these changes will strengthen our institution's reputation and bolster our research and enrollment, making us an even more effective member of the UM system. We look forward to accomplishing this positive shift together.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Kevin Z. Truman', is written over a white background.

Kevin Z. Truman, Ph.D., F.ASCE
Dean, School of Science and Engineering



University of Missouri

Dean's Office

College of Engineering

W1006 Thomas & Nell Lafferre Hall
Columbia, MO 65211

PHONE 573-882-0948

EMAIL muengrdean@missouri.edu

WEB engineering.missouri.edu

October 5, 2023

Dear UM Board of Curators:

I am writing this letter to support Dean Truman's proposal to transition the iPhD program to PhD program at UMKC's School of Science and Engineering. The College of Engineering at MU has partnered with UMKC's Engineering School for many years on both teaching and research initiatives and we look forward to continued collaborations after this transition.

Sincerely,

Praveen Edara

Praveen Edara, Ph.D., P.E.
Interim Dean
College of Engineering
University of Missouri-Columbia
Email: edarap@missouri.edu



14520 Botts Road
Kansas City, MO 64147
V. 816-488-2000
8 kcncsc.doe.gov



October 4, 2023

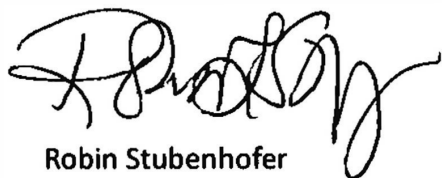
To: University of Missouri Board of Curators

I fully support the proposed change from iPhD designation to Ph.D designation. While there are many reasons to support this change, I will focus on those that are very impactful for the students and the university.

The current designation is confusing to industry as it is unclear what it means. This lack of understanding can hurt the UMKC School of Science and Engineering iPhD graduates during the hiring process. It can also hurt funding opportunities by federal agencies such as NSF, DoD, DoE, etc. because the iPhD is not well understood. Prospective Ph.D students will be easier to recruit leading to more Ph.D graduates. I would expect many positive impacts from changing the name (and CIP coding) of the UMKC iPhD programs to the traditional Ph.D.

Honeywell has been involved with UMKC programs for several years via senior design programs, career fairs, serving on advisory boards and equipment donations. Please let me know if you need any additional information.

Sincerely,



Robin Stubenhofer



October 9, 2023

To: University of Missouri Board of Curators

Cboe Global Markets (Cboe) is a large, international financial services company. We do hire Ph.D graduates as they have specialized knowledge in various fields that Cboe values. As a member of the School of Science and Engineering (SSE) Executive Advisory Board, Dean Kevin Truman has asked me for a letter of support related to the proposed change from iPhD designation to Ph.D designation for these programs in the SSE.

I am in complete support of this change. It makes sense to change the designation to Ph.D. which is what is on the diploma when the student graduates. I can well imagine the challenges in their home countries and institutions when international students try to explain or categorize the unusual 'iPhD' designation. These likely impact UMKC graduate student recruitment rates as well as hiring decisions made by companies that do not understand what iPhD program means.

It is also my understanding that this change will help UMKC correctly count their awarded doctoral degrees in ranking systems such as Carnegie's. This is expected to elevate their research status, enhance their ranking, and bolster their enrollment figures. Ph.D students are vital to innovation and creative solutions in many industries which require a highly trained workforce.

I have no doubt that this change will improve the reputation of the UM system and the higher education landscape within Missouri. Please feel free to contact me if you need any additional information.

Sincerely,

A handwritten signature in blue ink that reads "Chris Isaacson". The signature is fluid and cursive, with a long horizontal stroke at the end.

Chris Isaacson, EVP, COO
Cboe Global Markets



College of Engineering and Computing

October 6, 2023

Dear University of Missouri Board of Curators,

I am writing to express my support for the proposed transition of UMKC's interdisciplinary PhD programs within their School of Science and Engineering to several individual Ph.D. programs with new CIP codes.

Our understanding is that this change will correct and improve how their degrees are being counted through the CIP code system. This change should benefit UMKC and the UM System and will have no foreseeable impact at Missouri S&T.

Sincerely,

A handwritten signature in black ink that reads "David Borrok".

David Borrok
Vice-Provost and Dean
College of Engineering and Computing





Office of the Provost and Executive Vice Chancellor

October 5, 2023

Dear University of Missouri Board of Curators-

UMKC aims to achieve Carnegie R1 classification in the next 5-7 years. A critical action step toward this goal is to appropriately classify our research-based doctoral program CIP codes so that they are recognized in the Carnegie classification system. With this goal in mind, I am in full support of the transition of the PhD program in interdisciplinary studies (*iPhD*; not currently recognized by Carnegie) into eight independent PhD programs that are recognized in the Carnegie classification system. In addition to the critical role these programs will play in our degree program conferral data, this transition aligns with our strategic plan goals of: exceptional student learning, success, and experience (pillar one), helping UMKC become a thriving discovery enterprise (pillar two), transforming our community and region with impactful engagement (pillar three), and preparing students for the global workforce (pillar four). The program transition has been fully considered and planned by the faculty and leadership of UMKC, and is supported by the appropriate curricula, staffing, and market demand.

The *curricula* for the eight PhD programs will remain largely unchanged and is reviewed in detail on a program-by-program basis in the proposal. No additional instructional, student support, library, or assistantship resources will be necessary for this transition to be successful. Students will continue to be supported by existing faculty, staff, and student support structures on campus, and we will transition as many students as possible into the new degree programs by Fall 2024 to maximize doctoral degree conferrals in the coming years. Notably, students who do not want to transition will have the opportunity to remain in the iPhD program through degree completion; if our doctoral program proposal is approved, no new students will be admitted to the iPhD in the future and the program will be closed.

The *market demand* for each of these programs is currently strong, and we anticipate the transition will only enhance it. The 8 programs included in our proposal have the highest rates of student interest, graduation, employment, and long-term research synergy potential at UMKC. While we anticipate demand for each program to remain stable in the short term, the renaming of these programs is likely to have an immediate impact on our national and regional reputation as a

UMKC Doctor of Philosophy Program Letter of
Support Page2
October 5,2023

research institution. Although we will keep our enrollments stable in the early years of this transition, faculty will be expected to increase assistantship funding through externally funded grants, thereby allowing us to increase student enrollment while also supporting our campus research goals.

I'm happy to answer any questions about this overall doctoral program transition or the individual programs included in it.

Best regards,



Jennifer D. Lundgren, PhD

Provost and Executive Vice Chancellor



School of Graduate Studies

October 5, 2023

Dear Members of the Board of Curators,

The Graduate Council at UMKC has voted to express its full support for the proposed transition from our current Interdisciplinary Ph D program to PhD's in the areas of Computer Science, Economics, Education, Engineering, Humanities, and Natural Sciences.

We are convinced that this transition would elevate the university's research status by giving us credit for doctoral research in the areas of STEM, Humanities, and Social Sciences. While we would be using new CIP codes and titles, these doctoral degrees can be delivered with existing faculty, courses, and administrative staff. The required courses for the newly titled and coded doctorates are unchanged from those required in the current Interdisciplinary PhD program, except that the secondary disciplines now only require nine hours of courses (under the current system, the "co-discipline" sometimes requires as many as fifteen hours of coursework). This promises to improve completion rates.

This change of codes and titles will better reflect the specialized research and academic focus within these designated areas, which can significantly contribute to elevating the university's research profile. This has the potential to increase funding opportunities from federal agencies, private organizations, and philanthropic sources. With focused academic programs, we can tailor our research proposals to meet the specific needs and priorities of these funding agencies, ultimately increasing our chances of securing research grants and contracts.

We strongly believe that these more narrowly focused doctoral programs will elevate our research reputation, improving our university's standing as a discovery enterprise, attracting a higher caliber of faculty and students, enhancing our regional, national, and international appeal as a go-to institution for advanced research and education.

In sum, because the proposed transition aligns with our university's long-term goals and aspirations, potentially giving us greater research prominence, increased funding, and a more dynamic academic environment that will advance the mission and reputation of UMKC and the entire UM-System, we request the Board of Curators to approve this proposal.

Thanks for your consideration.

Stephen Dilks

Stephen John Dilks,
Associate Dean, School of Graduate Studies
Chair, UMKC Graduate Council.

120 Atterbury | 5000 Holmes Street | Kansas City, MO 64110-2499 | p 816-235-1301 | f 816-235-1310 | sgs.umkc.edu

OPEN -- ASARED -- 2-53

University of Missouri-Kansas City

February 8, 2024

Executive Summary

UMKC currently offers a PhD in Interdisciplinary Studies under CIP code 30.0000 (Multi-/Interdisciplinary Studies, Other; Defined as “any instructional program multi/interdisciplinary studies not listed above,” National Center for Education Statistics). As part of a comprehensive strategy to improve academic and research excellence, inclusive of Carnegie R1 classification, UMKC seeks to close the current, catch-all interdisciplinary PhD and create eight (8) discipline-specific and more narrow interdisciplinary PhD programs from the over 20 primary disciplines within it.

This transition will allow for the following: Carnegie credit for degree conferrals across STEM, Social Science, and Humanities disciplines, improved research ranking and reputation as a discovery enterprise, advantage in recruiting high quality students and faculty, and enhanced clarity and validity with students and employers regarding the curricula offered as part of our doctoral degrees.

This proposal focuses on a new **Mechanical Engineering PhD** that can be delivered with existing courses, faculty, staff, student support services, assistantship funding, and other resources currently allocated to the mechanical engineering primary discipline within the Interdisciplinary PhD.

The Mechanical Engineering PhD program’s main goal is to prepare the next generation of scholars for a wide range of research opportunities in academia, industry, and national labs. It will continue to provide students with the background, research skills, and tools to advance the state of the art in Mechanical Engineering, just as the engineering primary discipline does in the current Interdisciplinary PhD program. We currently supervise doctoral dissertations across a diverse mechanical engineering field, including:

1. Robotics and controls
2. Thermal-Fluid sciences
3. Renewable energy
4. Biomechanics
5. Materials
6. Manufacturing
7. Aerospace

Curriculum:

The proposed PhD program in Mechanical Engineering mirrors the existing doctoral program, maintaining academic rigor through a balanced curriculum. This curriculum includes foundational courses, advanced coursework, research seminars, and a comprehensive doctoral dissertation, all drawn from the existing courses and resources of the doctoral program.

As with the current doctoral program, a minimum of 30 classroom credits are required, including fundamental and advanced courses along with seminars. Additionally, a doctoral dissertation necessitates a minimum of 12 research credits.

The PhD in Mechanical Engineering offers courses designed to provide students with advanced knowledge and skills in Mechanical Engineering topics. Students can select their required courses from those offered within the unit. Non-Mechanical Engineering courses can also be selected after discussion and approval by the student's Primary Advisor. After completing coursework, students must complete at least 12 dissertation hours while preparing a dissertation to summarize their research during the PhD program.

1. Introduction

The PhD in Interdisciplinary Studies (30.0000) was launched in 1989. For many years it has provided UMKC students the opportunity to develop as scientists and scholars in their chosen field by combining two or more disciplines of study. The Interdisciplinary PhD at UMKC originally included 26 distinct disciplines, ranging from STEM to social sciences to the humanities. Despite its strength as a highly flexible doctoral degree, it limits our ability to attract highly competitive PhD students who want a narrower disciplinary focus, as well as prospective students who are seeking STEM certified doctoral education. Most recently, we have learned that the current Interdisciplinary PhD program is not recognized by Carnegie in their university classification system—a significant barrier in our progress toward becoming a Carnegie R1 institution.

To address these challenges, we aim to transition the current Interdisciplinary PhD program into eight (8) distinct PhD programs that will be attractive to students (evidenced by historical enrollment data) and that will be recognized by Carnegie. These include **Computer Science, Economics, Education, Engineering (Electrical and Computing; Civil; and Mechanical), Humanities, plus a multidisciplinary PhD in Natural Sciences.** These doctoral research programs were selected after extensive review and discussion with doctoral faculty across the university because they are the strongest historic enrollments, core faculty of active researchers, and greatest potential for ongoing success at UMKC. Together they promise to have a significant impact on our ranking as a research institution, and the workforce in the Kansas City and greater MO area through the research and post-graduate employment outcomes produced by the graduates.

This proposal focuses on the **PhD in Mechanical Engineering.**

Impact:

The impact of this broad degree transition, including the **PhD in Mechanical Engineering,** will be the following: Carnegie credit for degree conferrals across STEM, Social Science, and Humanities disciplines, improved research ranking and reputation as a discovery enterprise, advantage in recruiting high quality students and faculty, and enhanced clarity and validity with students and employers regarding the curricula offered as part of our doctoral degrees.

2. University Mission & Program Analysis

2.A. Alignment with University Mission & Goals

The needs of the Greater Kansas City region are of the utmost importance and drive what UMKC is doing. The university is a change agent and plays a vital role in economic development and workforce development for the region. The new proposed PhD degree in Mechanical Engineering will support our mission of economic development of the region and the nation by educating specialized graduate-level engineers who contribute to both workforce development and industry research and development. Therefore, the proposed Engineering PhD programs align seamlessly with the broader goals of the campus, college, and department as detailed in <https://www.umkc.edu/about/strategic-plan.html>.

Successful PhD programs are necessary for the department and the college to show a comprehensive program that attracts future students to maintain the increase in enrollment at the BS, MS, and PhD levels. In addition, PhD students are the key components of maintaining and expanding our research excellence at the department and college levels. Finally, the PhD program in Mechanical Engineering will expand the number and quality of our STEM graduates, which will help advance the research classification of UMKC in general.

2.B. Duplication & Collaboration within Campus, Across System

The proposed Mechanical Engineering PhD program already exists in the form of the engineering primary discipline within the Interdisciplinary PhD program and there is no threat of duplication with programs across the UM System. The proposed title and code changes reflect the correct Engineering CIP codes as per the current course requirements: this will attract students who might have been deterred by the esoteric Interdisciplinary PhD title. This change will make our existing doctoral program more attractive.

The Mechanical Engineering PhD program is diverse and wide enough to allow for multiple successful programs across the UM System. Moreover, we have established several niche areas in this area of Engineering with several years of demonstrated success.

3. Business-Related Criteria & Justification

3.A. Market Analysis

3.A.1. Rationale & Workforce Demand for the Program

The demand for doctoral graduates in Mechanical Engineering is on the rise, both nationally and within the dynamic job market of Missouri. According to the Bureau of Labor Statistics, the field of Mechanical Engineering is projected to experience a 5% increase in employment opportunities from 2020 to 2030, in line with the average for all

occupations. Missouri, renowned for its thriving industries, presents exceptional prospects for Mechanical Engineering doctoral graduates. Companies such as Boeing, General Motors, and Emerson Electric, which have a significant presence in the state, actively seek candidates with advanced research capabilities and specialized knowledge. These corporations rely on doctoral graduates to spearhead innovation in product design, enhance manufacturing processes, and drive sustainable engineering solutions.

With its strategic location as a transportation hub and a commitment to research and development initiatives, Missouri offers an attractive environment for doctoral graduates to excel and contribute significantly to the growth and advancement of these renowned companies, as well as emerging startups in the region.

A PhD in Mechanical Engineering from the University of Missouri-Kansas City (UMKC) represents a transformative educational journey that equips students with the knowledge and skills to drive innovation and address pressing challenges in the field. At UMKC, we recognize the paramount importance of conducting cutting-edge research across diverse domains, including materials and manufacturing, robotics, and thermal-fluid systems. This emphasis on advanced research empowers our students to become pioneers in their respective areas of specialization, contributing to the ever-evolving landscape of mechanical engineering and is particularly prudent given the recent increase in externally funded research grants/contracts. Through rigorous academic pursuits and hands-on experiences, our PhD candidates are poised to make meaningful contributions to society by developing novel materials, designing cutting-edge robotics solutions, and optimizing thermal-fluid systems for enhanced efficiency. In a world that increasingly relies on technological advancements, a PhD in Mechanical Engineering from UMKC positions students for success while empowering them to be at the forefront of regional, national, and international innovation and progress in these critical fields.

3.A.2. Student Demand for the Program

Student demand is evidenced by our previous five-year enrollment trends in the catch-all engineering primary discipline within the current UMKC interdisciplinary PhD program. The engineering primary discipline has ranged from 17-21 students/year with an average of 19.6 students/year. The proposed Mechanical Engineering PhD is estimated to represent approximately $\frac{1}{2}$ of those students. We anticipate the new program will start with 8-10 students and grow to a steady state of approximately 20 students/year as faculty research, and consequently grant-funded research assistantships, grows in the next 3-5 years. Pending approval, we will encourage current interdisciplinary PhD students to switch to the new degree program in Fall 24; those who want to complete their degree within the existing interdisciplinary PhD program will be allowed to do so. Admission to the existing interdisciplinary PhD program will be suspended in Fall 24 and program teach out will begin. This period of transition is reflected in the enrollment projections below.

Table 1a. Student Enrollment Projections (anticipated total number of students enrolled in the program during the first five fall semesters following implementation.)

Year:	1	2	3	4	5
Full-time	7	10	13	17	20
Part-time	0	0	0	0	0
Total	7	10	13	17	20

Table 1b. Projected Number of Degrees Awarded

Year:	1	2	3	4	5	6	7	8	9	10
# of Degrees Awarded	3	3	3	3	3	3	3	3	3	3

3.B. Financial Projections

Research-based doctoral education (i.e., PhD) differs in key ways from professional doctoral education (e.g., JD, MD, PharmD, DDS, etc.). These differences can be found in the curricular and academic experiences, size of the student cohorts, and relationship of the program to the University mission. As such, there are significant differences in the financial models between research-based and professional doctoral programs. Research-based doctoral programs (e.g., PhD), in contrast to professional doctoral programs (e.g., JD, MD, PharmD, etc.), generally accept a smaller cohort of new students each year and often offer full or partial financial support in the form of tuition waivers and graduate assistantships. PhD students, in turn, make significant contributions to faculty research through their work on research studies (e.g., data collection), dissemination of research findings (e.g., manuscript/monograph writing), and grant writing. PhD students also provide critical support to the educational mission of the University through mentorship and instruction of undergraduate students. In most instances, PhD programs are revenue neutral or have a financial cost that is offset by positive impact on University research productivity and support of undergraduate education.

In the sections that follow, we have estimated the costs and revenues associated with the PhD in Mechanical Engineering. ***Notably, because we are using the same resources, the net revenue and financial impact of the PhD in Mechanical Engineering is the same as the engineering primary discipline within the existing interdisciplinary PhD program.*** We anticipate adding grant funded assistantships in years 3-5 in order to grow the cohort size to maintain academic viability.

3.B.1. Additional Resources Needed

No new instructional, marketing, or other university overhead resources are needed. In order to grow the program size to 20 total students/year, research-funded assistantships are expected by year 3. These are included in expenditure estimates.

3.B.2. Revenue

Revenues are generated from tuition (net scholarshiping) and remain the same as the existing interdisciplinary PhD program.

3.B.3. Net Revenue

No new one-time expenses are needed because all resources exist within the current interdisciplinary PhD program. Recurring expenses are estimated based on the current interdisciplinary PhD program. Because we are growing the program size beyond the current engineering primary discipline within the interdisciplinary PhD, assistantship funding beginning in year 3 will be supported by externally-funded faculty research grants. The other existing recurring expenses and revenues will shift from the interdisciplinary PhD to the new PhD, with the majority of that shift happening in year 1, as most current students transfer to the new degree program.

Faculty salaries are estimated at .10 FTE (representing 25% of their overall teaching workload) for the current faculty who participate in teaching and mentorship within the interdisciplinary PhD. Notably, most courses are co-taught with advanced undergraduate and/or master's level students, thereby inflating the FTE specific to PhD students; this inflation is offset by the variable amount of time spent mentoring dissertations. Staff estimates represent staff support time within the academic unit. Institutional overhead includes library and all central campus enrollment management and student support staff. Other includes assistantship stipends and associated tuition remission.

Table 2. Financial Projections for Proposed Program for Years 1 Through 5.

	Year 1	Year 2	Year 3	Year 4	Year 5
1. Expenses per year					
A. One-time					
<i>New/Renovated Space</i>	0	0	0	0	0
<i>Equipment</i>	0	0	0	0	0
<i>Library</i>	0	0	0	0	0
<i>Consultants</i>	0	0	0	0	0
<i>Other</i>	0	0	0	0	0
Total one-time	0	0	0	0	0
B. Recurring					
<i>Faculty</i>	79164	79164	79164	79164	79164
<i>Staff</i>	5000	5000	5000	5000	5000
<i>Benefits</i>	30299	30299	30299	30299	30299
<i>Equipment</i>	0	0	0	0	0
<i>Library</i>	0	0	0	0	0
<i>Institutional Overhead</i>	2352	3360	4368	5712	6720
<i>Other</i>	81568	122352	183528	224704	305880
Total recurring	198,401	240,175	302,359	344,879	427,063
Total expenses (A+B)	198,383	240,175	302,359	344,879	427,063
2. Revenue per year					
<i>Tuition/Fees</i>	35221	50316	65410	85537	100632
<i>Institutional Resources</i>	0	0	0	0	0
<i>State Aid -- CBHE</i>	0	0	0	0	0
<i>State Aid -- Other</i>	0	0	0	0	0
Total revenue	35221	50316	65410	85537	100632
3. Net revenue (loss) per year	(163,162)	(189,859)	(236,949)	(259,342)	(326,431)

3.B.4. Academic and Financial Viability

There is no net difference in academic and financial viability between the existing engineering primary discipline within the interdisciplinary PhD and the new PhD in Mechanical Engineering. The enrollment projections described above will ensure we achieve a degree conferral threshold consistent with MDHE expectations, as well as advance our Carnegie ranking. There is a financial cost, consistent with doctoral education in general. In addition to new assistantship funds generated through faculty research grants, funds will be reallocated from the existing PhD program to the new PhD program so that we remain financially net neutral.

3.C. Business Plan: Marketing, Student Success, Transition & Exit Strategies

3.C.1. Marketing Plan

The marketing plan for UMKC's newly coded and titled PhD programs in Engineering will continue to use the following strategies, which we have used successfully for the interdisciplinary PhD:

- 1- Offer new research areas with many exciting employment opportunities.
- 2- Advertise the success of previous doctoral students in terms of local, national, and international awards. We will encourage our doctoral students to participate more in these competitions.
- 3- Use our alums as ambassadors to recruit new students.
- 4- Focus heavily on online platforms and social media, considering their extensive reach and the tech-oriented nature of our target audience. Platforms such as LinkedIn, Facebook, and academic forums can facilitate reaching prospective students locally, nationally, and internationally.

The target population will continue to be highly qualified graduates of other state schools and domestic students across the nation, including local UMKC undergraduates and the international population of students through our extensive global network in countries like India, Pakistan, Bangladesh, Saudi Arabia, and Egypt. Employees of local industry interested in pursuing a PhD degree as part of their existing duties or in a part-time format will also continue to be a primary target.

3.C.2. Student Success Plan

No additional student support services will be needed to support or retain students in the PhD in Mechanical Engineering program. Current enrollment, retention and graduation trends for this program are on track with institution and national averages, and the program will continue to provide current levels of faculty and staff resources to support students through graduation.

3.C.3. Transition Plan

The people primarily responsible for the success of the PhD in Mechanical Engineering program are: Professor Masud Chowdhury, EMS Division Director, Professor John Kevern, NBE Division Director, and Kevin Truman, SSE Dean. Program leadership is supported by program faculty and the School of Graduate Studies staff.

3.C.4. Exit Strategy

If full-time enrollment in the PhD in Mechanical Engineering drops below 10 students, the School of Science and Engineering will evaluate a temporary hiatus or program closure, depending on the reason for the low enrollment (e.g., temporary funding challenge, market demand, etc.).

4. Institutional Capacity

The proposed PhD in Mechanical Engineering is designed to utilize existing infrastructure, faculty, and resources, thereby negating the necessity for any additional expenses. The program will repurpose the existing faculty resources, student support services, laboratories, equipment, and technology from the current doctoral program.

5. Program Characteristics

5.A. Program Outcomes

Program Goals

Students in the Ph.D. Program will acquire:

- grounding in the discipline
- the ability to integrate the principles and theories of the disciplines
- the ability to effectively communicate findings and approaches to solving research problems;
- research skills, such as approaches, methods, ethical principles, and tools to pursue a research line of inquiry;
- the ability to form effective teams to solve novel research questions

5.B. Program Design & Content

The course requirements for the Mechanical Engineering Ph.D. will remain largely consistent with those of the previous engineering primary discipline within the Interdisciplinary PhD program. No new resources will be required. The coursework requirements include:

- A total of 30 credit hours of total coursework beyond an MS degree in Engineering;
- At least 12 dissertation hours in the primary area;

5.C. Program Structure

Program Structure Form

1. Total Credits Required for Graduation: 42

2. Residence requirements, if any: Ph.D. students must satisfy the doctoral residency requirement by satisfactory completion of at least 18 credits in no more than 24 consecutive months. When satisfying the residency requirement, all Ph.D. students are subject to the following restrictions:

- The doctoral residency requirement must be satisfied no later than the end of the semester in which the student completes his or her comprehensive examinations.
- Students must achieve a cumulative graduate grade-point average of at least 3.0 in all courses counted toward satisfying the residency requirement.

3. General education

- a. Total general education credits: **n/a**

Courses (specific course or distribution area and credit hours):

The PhD in Mechanical Engineering offers courses designed to provide students with advanced knowledge and skills in mechanical engineering topics. Students can select their required courses from those offered within the unit. Non-Mechanical Engineering courses can also be selected after discussion and approval by the student's Primary Advisor. After completing coursework, students entering the program with an MS must complete at least 30 credit hours, inclusive of the 12 dissertation hours. The table below shows existing courses that will be offered under this program.

ME 5506	Introduction to Biomaterials	3
ME 5507	Advanced Dynamics and Modeling	3
ME 5511	Introduction to Biomechanics	3
ME 5512	Biomechanics	3
ME 5513	Experimental Biomechanics of Human Motion	3
ME 5516	Biomedical Device design	3
ME 5525	Failure Analysis	3
ME 5526	Introduction to Manufacturing Management	3
ME 5529	Additive Manufacturing	3
ME 5533	Advanced Thermodynamics	3
ME 5547	Contracts and Law for Engineers	3
ME 5554	Power Generation Systems	3
ME 5557	Mechatronic Systems Design	3
ME 5558	Intermediate Dynamics	3
ME 5559	Robotics and Unmanned Systems	3
ME 5562	Applied Computational Fluid Dynamics	3
ME 5564	Turbomachines	3
ME 5570	Experimental Design & Analysis	3
ME 5586	Applied Finite Element Analysis	3
ME 5594	Robotic System Identification	3
ME 5501	Unmanned Aircraft Combat Survivability	3
ME 5501	Flight and Road Test Engineering	3
ME 5501	Aircraft Design	3
ME 5501	Advanced Heat Transfer	3
ME 5501	Econ/Mgmt Sustainable Energy	3
ME 5501	Advanced Control Theory	3
ME 5501	Composite Materials	3
ME 5567	Fuel Cells and Renewable Energy Systems	3
ME 5501	Vibration Analysis	3
ME 5501	Advanced Topics in Fluid Mechanics	3
ME 5501	Industrial Metrology	3
ME 5501	Imaging to Modeling	3

4. Free elective credits

a. Total free elective credits: n/a

5. Requirement for thesis, internship or other capstone experience:

12 credit hours of dissertation are required

6. Any unique features such as interdepartmental cooperation: n/a

5.D. Program Goals and Assessment

All UMKC programs are required to submit an annual summary of program assessment efforts (assessment plans, findings & discussions, and recommendations). The Mechanical Engineering Ph.D. program will maintain the established assessment protocol currently in place for all Interdisciplinary Ph.D. disciplines. The following outcomes have been identified:

1. Students will demonstrate a thorough degree of knowledge in the discipline.
2. Students will demonstrate an ability to use proper investigation techniques for the discipline.
3. Students will effectively use oral and written forms of communication to convey their ideas.

Applicable student learning outcomes will be assessed at the following program, academic milestones: 1) Comprehensive Exams; 2) Dissertation/Research Proposal; and 3) Dissertation Defense.

At the milestone of Dissertation Defense, program targets for student performance across all Student Learning Outcomes have been set to meet or exceed average ratings of 3.5 for all (100% of) students assessed. For example, one component of students' ability to use proper investigation techniques will be evaluated by the following rubric and rating scale:

Superior (4)	Good (3)	Acceptable (2)	Unacceptable (1)	Cannot Judge
Cutting edge methodology or novel application of existing method	Incremental advance in application of methodology and careful plan for execution of research	Conventional use of methodology and adequate plan for execution of research	Inappropriate use of method; use of method that cannot adequately address research question	Outside area of expertise

5.E. Student Preparation

The minimum criteria for admission to the UMKC graduate school can be found via the [UMKC catalog](#).

Mechanical Engineering Program Admission Requirements

A student who satisfies the general requirements for admission and meets the minimum requirements stated below will be considered for regular admission to the Mechanical Engineering Ph.D. program. A student who does not meet some of the requirements but shows high potential for advanced-level work may be considered for provisional admission. Admission also depends on factors such as number of seats available, resources available in the area of the student's interest, the quality of previous work, etc. Requirements for admission are the same whether the applicant is requesting Engineering as the primary discipline or the co-discipline.

1. The applicant must have a bachelor's degree or a master's degree in civil or mechanical engineering or related disciplines with a grade-point average of at least 3.0 on a 4.0 scale in the last 60 hours of undergraduate engineering coursework. In addition, a GPA of 3.5 or better in all post-baccalaureate coursework is required. Pre-program requirements may be specified in case the bachelor's degree is in a discipline different than that to which the candidate is applying.
2. The GRE test is preferred but not required. It is beneficial to applicants to take the test and submit scores.
3. TOEFL or IELTS scores are required for international students without prior U.S. degrees. The minimum required score is 80 or 6.5 on TOEFL or IELTS, respectively. TOEFL requirements may be waived for applicants with a baccalaureate from an ABET accredited program.
4. The student must provide at least three recommendation letters from professors at previous institutions or mentors at work. The application can be initially reviewed with just one recommendation letter.
5. The applicant must provide a maximum 300-word statement on their goals and objectives in pursuing the Ph.D. The statement at the least should indicate which of the areas (civil or mechanical) the student is interested in and preferably indicate the sub-discipline the student is interested in as well, such as structures, construction management, biomechanical, HVAC etc.
6. Provisional admission may be granted if the minimum GPA and GRE requirements

are not met, but other indicators promise the student's success in the program. To be fully admitted to the Interdisciplinary Ph.D. program, the provisionally admitted student must obtain a grade of B or better in the first nine hours of coursework and submit a satisfactory GRE score within their first year of the program.

5.F. Faculty and Administration

The people primarily responsible for the success of the PhD in Mechanical Engineering program are: Professor Masud Chowdhury, EMS Division Director, Professor John Kevern, NBE Division Director, and Kevin Truman, SSE Dean

All faculty with teaching responsibilities in the PhD, Mechanical Engineering program will have a terminal degree, PhD or professional doctoral degree (MD, DDS, PharmD). Full time faculty will teach 100% of coursework/credit hours in the program. Faculty teaching in the program will be expected to engage in professional activities and teaching/learning innovation activities including research, and participation and presentations at professional organizations and societies. Faculty will also be expected to mentor and advise students while enrolled in the program and while engaging in independent research.

5.G. Alumni and Employer Survey

The UMKC Alumni Affairs Office, and External Relations team engage with UMKC alumni and the community through several opportunities designed to maintain connections, gather feedback, provide engagement opportunities, and create an environment of continuous improvement.

Graduating students are surveyed through an exit survey at the point of graduation and followed up with at 6-months post degree conferral if the student was still seeking employment at graduation or did not respond to the initial survey request. Alumni affairs and external relations provides opportunities for alumni to participate in student research competitions such as the Three Minute Thesis. Alumni are also engaged through on campus events, opportunities to serve on boards, volunteer, and nominate and receive alumni awards.

5.H. Program Accreditation

The proposed Mechanical Engineering PhD program falls under the purview of the university's institutional accreditation. The university is accredited by the Higher Learning Commission, one of the regional accrediting bodies recognized by the US Department of Education. It ensures that the institution and all its programs, including the proposed PhD program, meet the established standards of academic quality.

We will continually monitor and evaluate the program's performance in areas like faculty research output, student success, and alignment with industry trends and demands. This continuous assessment will enhance our program's reputation and ensure we deliver a high-quality education to our doctoral students. Lastly, while there is no specific timeline

for accreditation given the context of doctoral programs, we commit to maintaining the university's existing institutional accreditation status and upholding the standards expected by our accrediting body, the Higher Learning Commission.

6. Appendices

- Letters of support
 - Ian M. Colrain; President and CEO, MRIGlobal
 - Chris Isaacson; EVP & COO, Cboe Global Markets
 - Kevin Truman; Dean, School of Science and Engineering- UMKC
 - Praveen Edara; Interim Dean, College of Engineering- MU
 - Robin Stubenhofer; National Security Campus, Kansas City
 - David Borrok; Vice-Provost and Dean, College of Engineering and Computing- Missouri S&T
 - Jennifer Lundgren; Provost and Executive Vice Chancellor- UMKC
 - Stephen John Dilkes; Associate Dean, School of Graduate Studies- UMKC

Letters of Support

PhD in Engineering



The science you expect.
The people you know.

Ian M. Colrain, PhD

President & Chief Executive Officer

icolrain@mriglobal.org

To: University of Missouri Board of Curators

MRIGlobal is an independent not for profit research institute in its 80th year, headquartered in Kansas City adjacent to UMKC. Our mission is “to improve the lives of people through innovative scientific and engineering research”, and we provide advanced biology, chemistry and engineering services to the US federal government and multiple national and international companies. We are constantly looking to hire Ph.D. level scientists in Kansas City and our other locations.

I am in full support of the re-categorizing UMKC’s current iPhD to regular Ph.D.s in Engineering, Computer Science, and the Natural Sciences disciplines—namely Physics, Chemistry, Mathematics and Statistics, Biology, and Earth and Environmental Science. This change will offer multifaceted benefits to your students and to industry.

Ph.D. is standard designation for those completing such an intensive course of graduate study in a specialized area in their chosen field. Employers that hire Ph.D.’s value the degree program and what it represents. When looking for interns, post-doctoral fellows or new hires, the current iPhD designation likely is a hindrance for the student. Funding agencies might also be confused as to what an iPhD program represents. I have reviewed hundreds of NIH grant applications over the past two decades and admit that I would be puzzled by such a degree title, assuming it reflected a less prestigious degree. In the highly challenged current funding environment, it is likely leaving UMKC graduates at a disadvantage when applying for competitive grant mechanisms.

MRIGlobal serves clients from around the world. The current iPhD program designation would be a challenge to explain or categorize to international collaborators or partners. A shift to the more universally understood Ph.D. label will make it clear that students are earning Ph.D.s when they complete their program and that they would be able to add the value to the customer, usually associated with attainment of that degree.

A handwritten signature in blue ink, appearing to read "I. Colrain", is written over a light blue horizontal line.

Sincerely,
Ian M. Colrain Ph.D

President and CEO, MRIGlobal.
Professorial Fellow, School of Psychological Sciences, The University of Melbourne,
Australia. Professor of Internal Medicine (Volunteer), KU Medical Center, The University of
Kansas.



October 9, 2023

To: University of Missouri Board of Curators

Cboe Global Markets (Cboe) is a large, international financial services company. We do hire Ph.D graduates as they have specialized knowledge in various fields that Cboe values. As a member of the School of Science and Engineering (SSE) Executive Advisory Board, Dean Kevin Truman has asked me for a letter of support related to the proposed change from iPhD designation to Ph.D designation for these programs in the SSE.

I am in complete support of this change. It makes sense to change the designation to Ph.D. which is what is on the diploma when the student graduates. I can well imagine the challenges in their home countries and institutions when international students try to explain or categorize the unusual 'iPhD' designation. These likely impact UMKC graduate student recruitment rates as well as hiring decisions made by companies that do not understand what iPhD program means.

It is also my understanding that this change will help UMKC correctly count their awarded doctoral degrees in ranking systems such as Carnegie's. This is expected to elevate their research status, enhance their ranking, and bolster their enrollment figures. Ph.D students are vital to innovation and creative solutions in many industries which require a highly trained workforce.

I have no doubt that this change will improve the reputation of the UM system and the higher education landscape within Missouri. Please feel free to contact me if you need any additional information.

Sincerely,

A handwritten signature in blue ink that reads "Christoph A. Isaacson".

Chris Isaacson, EVP, COO Cboe Global Markets



School of Science and Engineering
Office of the Dean

September 29, 2023

To: University of Missouri Board of Curators

Re: Support and Commitment to the SSE's iPhD to Ph.D. Transition

As Dean of the School of Science and Engineering I am writing to express my full commitment to transitioning our interdisciplinary Ph.D. (iPhD) degrees to Ph.D. for the School of Science and Engineering (SSE)'s Computer Science, Engineering, and Natural Sciences programs.

I want to emphasize that this transition primarily consists of code and title changes that do not necessitate allocating new resources. We intend to name programs with industry and academic standards, ensuring that we are appropriately recognized for the exceptional work already underway at our school, and improve our faculty and student recruitment and retention.

By transitioning to standard and well-known Ph.D. designations, we strategically position UMKC to enhance its research status especially through Carnegie ranking: historically, under the iPhD moniker, our related activities have not been correctly recognized given that we could not use the right CIP codes. Further, our international students have struggled to justify this unconventional naming to their host countries and institutions. This no-cost move is essential to rectify these issues, ensuring that our institution receives the recognition it deserves for its outstanding contributions to STEM research in our state and beyond.

In conclusion, I would like to reiterate the dedication of my team and myself to this transition. We believe these changes will strengthen our institution's reputation and bolster our research and enrollment, making us an even more effective member of the UM system. We look forward to accomplishing this positive shift together.

Sincerely,

A handwritten signature in blue ink, appearing to read "Kevin Z. Truman".

Kevin Z. Truman, Ph.D., F.ASCE
Dean, School of Science and Engineering



University of Missouri

Dean's Office

College of Engineering

W1006 Thomas & Nell Lafferre Hall
Columbia, MO 65211

PHONE 573-882-0948

EMAIL muengrdean@missouri.edu

WEB engineering.missouri.edu

October 5, 2023

Dear UM Board of Curators:

I am writing this letter to support Dean Truman's proposal to transition the iPhD program to PhD program at UMKC's School of Science and Engineering. The College of Engineering at MU has partnered with UMKC's Engineering School for many years on both teaching and research initiatives and we look forward to continued collaborations after this transition.

Sincerely,

Praveen Edara

Praveen Edara, Ph.D., P.E. Interim Dean
College of Engineering
University of Missouri-Columbia Email: edarap@missouri.edu



14520 Botts Road
Kansas City, MO 64147
T. 816-488-2000
8 kcns.c.doe.gov



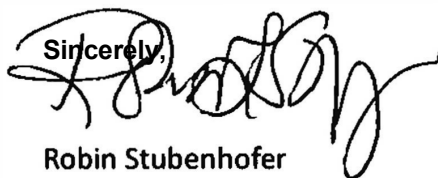
October 4, 2023

To: University of Missouri Board of Curators

I fully support the proposed change from iPhD designation to Ph.D designation. While there are many reasons to support this change, I will focus on those that are very impactful for the students and the university.

The current designation is confusing to industry as it is unclear what it means. This lack of understanding can hurt the UMKC School of Science and Engineering iPhD graduates during the hiring process. It can also hurt funding opportunities by federal agencies such as NSF, DoD, DoE, etc. because the iPhD is not well understood. Prospective Ph.D students will be easier to recruit leading to more Ph.D graduates. I would expect many positive impacts from changing the name (and CIP coding) of the UMKC iPhD. programs to the traditional Ph.D.

Honeywell has been involved with UMKC programs for several years via senior design programs, career fairs, serving on advisory boards and equipment donations. Please let me know if you need any additional information.

Sincerely,

Robin Stubenhofer



October 9, 2023

To: University of Missouri Board of Curators

Cboe Global Markets (Cboe) is a large, international financial services company. We do hire Ph.D graduates as they have specialized knowledge in various fields that Cboe values. As a member of the School of Science and Engineering (SSE) Executive Advisory Board, Dean Kevin Truman has asked me for a letter of support related to the proposed change from iPhD designation to Ph.D designation for these programs in the SSE.

I am in complete support of this change. It makes sense to change the designation to Ph.D. which is what is on the diploma when the student graduates. I can well imagine the challenges in their home countries and institutions when international students try to explain or categorize the unusual 'iPhD' designation. These likely impact UMKC graduate student recruitment rates as well as hiring decisions made by companies that do not understand what iPhD program means.

It is also my understanding that this change will help UMKC correctly count their awarded doctoral degrees in ranking systems such as Carnegie's. This is expected to elevate their research status, enhance their ranking, and bolster their enrollment figures. Ph.D students are vital to innovation and creative solutions in many industries which require a highly trained workforce.

I have no doubt that this change will improve the reputation of the UM system and the higher education landscape within Missouri. Please feel free to contact me if you need any additional information.

Sincerely,

A handwritten signature in blue ink that reads "Christoph A. Isaacson". The signature is fluid and cursive, with a long horizontal stroke at the end.

Chris Isaacson, EVP, COO Cboe Global Markets



October 6, 2023

Dear University of Missouri Board of Curators,

I am writing to express my support for the proposed transition of UMKC's interdisciplinary PhD programs within their School of Science and Engineering to several individual Ph.D. programs with new CIP codes.

Our understanding is that this change will correct and improve how their degrees are being counted through the CIP code system. This change should benefit UMKC and the UM System and will have no foreseeable impact at Missouri S&T.

Sincerely,

A handwritten signature in black ink that reads "David Borrok". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

David Borrok
Vice-Provost and Dean
College of Engineering and Computing



OPEN -- ASARED -- 2-75

February 8, 2024



Office of the Provost and Executive Vice Chancellor

October 5, 2023

Dear University of Missouri Board of Curators-

UMKC aims to achieve Carnegie R1 classification in the next 5-7 years. A critical action step toward this goal is to appropriately classify our research-based doctoral program CIP codes so that they are recognized in the Carnegie classification system. With this goal in mind, I am in full support of the transition of the PhD program in interdisciplinary studies (*iPhD*; not currently recognized by Carnegie) into eight independent PhD programs that are recognized in the Carnegie classification system. In addition to the critical role these programs will play in our degree program conferral data, this transition aligns with our strategic plan goals of: exceptional student learning, success, and experience (pillar one), helping UMKC become a thriving discovery enterprise (pillar two), transforming our community and region with impactful engagement (pillar three), and preparing students for the global workforce (pillar four). The program transition has been fully considered and planned by the faculty and leadership of UMKC, and is supported by the appropriate curricula, staffing, and market demand.

The *curricula* for the eight PhD programs will remain largely unchanged and is reviewed in detail on a program-by-program basis in the proposal. No additional instructional, student support, library, or assistantship resources will be necessary for this transition to be successful. Students will continue to be supported by existing faculty, staff, and student support structures on campus, and we will transition as many students as possible into the new degree programs by Fall 2024 to maximize doctoral degree conferrals in the coming years. Notably, students who do not want to transition will have the opportunity to remain in the iPhD program through degree completion; if our doctoral program proposal is approved, no new students will be admitted to the iPhD in the future and the program will be closed.

The *market demand* for each of these programs is currently strong, and we anticipate the transition will only enhance it. The 8 programs included in our proposal have the highest rates of student interest, graduation, employment, and long-term research synergy potential at UMKC. While we anticipate demand for each program to remain stable in the short term, the renaming of these programs is likely to have an immediate impact on our national and regional reputation as a

Administrative Center, Room 300g | 5115 Oak Street | Kansas City, MO 64112
o: 816-235-1107 | provost@umkc.edu umkc.edu/provost

UMKC Doctor of Philosophy Program Letter of Support


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research institution. Although we will keep our enrollments stable in the early years of this transition, faculty will be expected to increase assistantship funding through externally funded grants, thereby allowing us to increase student enrollment while also supporting our campus research goals.

I'm happy to answer any questions about this overall doctoral program transition or the individual programs included in it.

Best regards,



Jennifer D. Lundgren, PhD

Provost and Executive Vice Chancellor



School of Graduate Studies

October 5, 2023

Dear Members of the Board of Curators,

The Graduate Council at UMKC has voted to express its full support for the proposed transition from our current Interdisciplinary Ph D program to PhD's in the areas of Computer Science, Economics, Education, Engineering, Humanities, and Natural Sciences.

We are convinced that this transition would elevate the university's research status by giving us credit for doctoral research in the areas of STEM, Humanities, and Social Sciences. While we would be using new CIP codes and titles, these doctoral degrees can be delivered with existing faculty, courses, and administrative staff. The required courses for the newly titled and coded doctorates are unchanged from those required in the current Interdisciplinary PhD program, except that the secondary disciplines now only require nine hours of courses (under the current system, the "co-discipline" sometimes requires as many as fifteen hours of coursework). This promises to improve completion rates.

This change of codes and titles will better reflect the specialized research and academic focus within these designated areas, which can significantly contribute to elevating the university's research profile. This has the potential to increase funding opportunities from federal agencies, private organizations, and philanthropic sources. With focused academic programs, we can tailor our research proposals to meet the specific needs and priorities of these funding agencies, ultimately increasing our chances of securing research grants and contracts.

We strongly believe that these more narrowly focused doctoral programs will elevate our research reputation, improving our university's standing as a discovery enterprise, attracting a higher caliber of faculty and students, enhancing our regional, national, and international appeal as a go-to institution for advanced research and education.

In sum, because the proposed transition aligns with our university's long-term goals and aspirations, potentially giving us greater research prominence, increased funding, and a more dynamic academic environment that will advance the mission and reputation of UMKC and the entire UM-System, we request the Board of Curators to approve this proposal.

Thanks for your consideration.

Stephen Dilks

Stephen John Dilks,
Associate Dean, School of Graduate Studies
Chair, UMKC Graduate Council.

Executive Summary

UMKC currently offers a PhD in Interdisciplinary Studies under CIP code 30.0000 (Multi-/Interdisciplinary Studies, Other; Defined as “any instructional program multi/interdisciplinary studies not listed above,” National Center for Education Statistics). As part of a comprehensive strategy to improve academic and research excellence, inclusive of Carnegie R1 classification, UMKC seeks to close the current, catch-all interdisciplinary PhD and create eight (8) discipline-specific and more narrow interdisciplinary PhD programs from the over 20 primary disciplines within it.

This transition will allow for the following: Carnegie credit for degree conferrals across STEM, Social Science, and Humanities disciplines, improved research ranking and reputation as a discovery enterprise, advantage in recruiting high quality students and faculty, and enhanced clarity and validity with students and employers regarding the curricula offered as part of our doctoral degrees.

This proposal focuses on a new **Computer Science PhD** that can be delivered with existing courses, faculty, staff, student support services, assistantship funding, and other resources currently allocated to the computer science primary discipline within the Interdisciplinary PhD.

The primary aim of the Computer Science (CS) PhD program is to shape research scholars who are proficient in computing principles and practices, capable of generating new knowledge through research, while being adept at communicating their expertise. The program, like the current computer science primary discipline within the Interdisciplinary PhD program, seeks to enhance the understanding of computer science as a discipline of abstraction, design, and innovation. Its comprehensive curriculum and research opportunities are designed to impart both the fundamental principles of computing and the latest technological advancements, as well as the methodologies essential for advanced research. The program underscores the importance of fostering independent critical thinking, problem-solving abilities, and innovative skills within the computer science arena. Its goal is to equip graduates with the necessary tools to assume roles as thought leaders, researchers, and educators, thereby spearheading future technological advancements. The program also emphasizes the importance of ethical computing practices, data privacy, and security due to the extensive influence of technology on society. With this new program, we will continue producing graduates capable of carrying out significant original research in computer science, pushing the boundaries of current knowledge, contributing to the scholarly corpus in computer science, and paving the way for future advancements in this rapidly evolving field.

Curriculum:

The proposed PhD program in Computer Science mirrors the existing doctoral program, maintaining academic rigor through a balanced curriculum. This curriculum includes foundational courses, advanced coursework, research seminars, and a comprehensive doctoral dissertation, all drawn from the existing structure and resources of the doctoral program.

As with the current doctoral program, a minimum of 30 classroom credits are required, including fundamental and advanced courses along with seminars. Additionally, a doctoral dissertation requires a minimum of 12 research credits.

1. Introduction

The PhD in Interdisciplinary Studies (30.0000) was launched in 1989. For many years it has provided UMKC students the opportunity to develop as scientists and scholars in their chosen field by combining two or more disciplines of study. The Interdisciplinary PhD at UMKC originally included 26 distinct disciplines, ranging from STEM to social sciences to the humanities. Despite its strength as a highly flexible doctoral degree, it limits our ability to attract highly competitive PhD students who want a narrower disciplinary focus, as well as prospective students who are seeking STEM certified doctoral education. Most recently, we have learned that the current Interdisciplinary PhD program is not recognized by Carnegie in their university classification system—a significant barrier in our progress toward becoming a Carnegie R1 institution.

To address these challenges, we aim to transition the current Interdisciplinary PhD program into eight (8) distinct PhD programs that will be attractive to students (evidenced by historical enrollment data) and that will be recognized by Carnegie. These include **Computer Science, Economics, Education, Engineering (Electrical and Computing; Civil; and Mechanical), Humanities, plus a multidisciplinary PhD in Natural Sciences.** These doctoral research programs were selected after extensive review and discussion with doctoral faculty across the university because they are the strongest historic enrollments, core faculty of active researchers, and greatest potential for ongoing success at UMKC. Together they promise to have a significant impact on our ranking as a research institution, and the workforce in the Kansas City and greater MO area through the research and post-graduate employment outcomes produced by the graduates.

This proposal focuses on the **PhD in Computer Science.**

Impact:

The impact of this broad degree transition, including the **PhD in Computer Science**, will be the following: Carnegie credit for degree conferrals across STEM, Social Science, and Humanities disciplines, improved research ranking and reputation as a discovery enterprise, advantage in recruiting high quality students and faculty, and enhanced clarity and validity with students and employers regarding the curricula offered as part of our doctoral degrees.

2. University Mission & Program Analysis

2.A. Alignment with University Mission & Goals

The PhD program in Computer Science is in perfect harmony with the broader research aspirations of the university. At UMKC, our ethos and our students share a forward-looking perspective, embodied in our ambitious vision for the future, succinctly encapsulated in our guiding mantra: Changing the world starts here. This new program echoes UMKC's steadfast commitment to research, innovation, and community involvement at the campus level, with an emphasis on original research, the advancement of technology, and impacts that are regional, national, and international. This initiative will serve to further cultivate UMKC's research culture, advancing the frontiers of computer science knowledge, and positioning our campus as a hub for technological innovation. Within the college framework, the program is in step with the mission of promoting rigorous academic pursuit, encouraging interdisciplinary collaboration, and driving excellence in education. By encouraging pioneering research and interdisciplinary studies in burgeoning fields such as data science, cybersecurity, AI, and their healthcare applications, the program bolsters the academic stature of the college. Additionally, the program pledges to continually nurture top-tier educators who will play a pivotal role in fulfilling the college's commitment to superior educational quality.

From a departmental perspective, the proposed program supports the Computer Science Department's goals of providing innovative education, fostering research, and preparing students for leadership roles in industry and academia. Like the existing doctoral program, the program will help the department stay ahead of the rapid advancements in the field, ensuring its curriculum and research initiatives remain relevant and impactful. Therefore, the PhD program in Computer Science aligns well with the mission and goals at various levels of the institution - campus, college, and department - enhancing UMKC's overall educational and research stature.

2.B. Duplication & Collaboration within Campus, Across System

There is no new duplication within the University of Missouri System because our program's unique framework already exists, thereby posing no new duplication risk to other campuses. While our current doctoral program provides students with an opportunity to delve into computer science research within an interdisciplinary framework, our proposed Computer Science PhD program introduces a specialized focus, a necessity borne out of the rapid advancement and increasing specialization in the field. The proposed program aims to address the escalating demand for specialized expertise in computer science, both within academic circles and the wider employment landscape. It prioritizes vital domains such as data science, artificial intelligence, the hardware and software aspects of data science, cybersecurity, and the application of these technologies in the healthcare sector.

Moreover, although similar programs may exist within the University of Missouri System, our proposed program is specifically designed to cater to the unique needs of the Kansas City region.

Kansas City, with its diverse industrial base and growing tech sector, has distinctive demands best addressed by a specialized program rooted in the community but with national and international appeal and applications.

In conclusion, potential duplication concerns are recognized, but the specificity and focus of the degree programs, the market responsiveness, the national and international appeal and applications, and the proven track record of success reinforce the validity of our proposed Computer Science PhD program.

3. Business-Related Criteria & Justification

3.A. Market Analysis

3.A.1. Rationale & Workforce Demand for the Program

Technology's ubiquitous role across all economic sectors has magnified the need for advanced expertise in computer science fields, such as data science, cybersecurity, artificial intelligence, and related healthcare applications. UMKC plays a pivotal role in nurturing this vital talent pool. Current trends in the Kansas City job market underscore a compelling need for PhD graduates equipped with a research-based understanding of computer science and innovative problem-solving skills. Such individuals are crucial to the dynamic evolution of the tech industry and play a significant role in the education of future computer science professionals.

A seamless transition to the newly coded and titled program will be facilitated by leveraging existing resources, faculty, and infrastructure that are currently dedicated to the interdisciplinary PhD program. No new faculty, staff, student support services, or other resources are needed.

3.A.2. Impact:

The proposed PhD program in Computer Science at UMKC continues our impact at regional, state, and national levels. First, the program already contributes to the cultivation of a highly skilled talent pool in computer science, bolstering the technological capabilities within Kansas City and the wider Missouri area. This expertise attracts, and will continue to attract, more technology-based businesses to the region, enhancing local economic growth and diversifying the job market. Second, graduates from the interdisciplinary PhD program already find prominent roles within local industries and academia, becoming drivers of innovation and technological advancement.

By being at the forefront of research in critical areas such as data science, cybersecurity, AI, and their applications in healthcare, these individuals foster technological advancements that improve the region's quality of life and healthcare outcomes.

The program's impact will extend even further into the educational sector once our CIP code is more amenable to a prominent research profile. A strong PhD program has the potential to promote sustained growth in STEM education within the state. The revised code and title will make the program an even more noted hub for computer science education and research in the Midwest, drawing students and researchers from the surrounding areas and enhancing Missouri's reputation in the tech education sphere. In conclusion, the proposed change from an interdisciplinary PhD to a PhD in Computer Science at UMKC has the potential to improve our success in making transformative changes in the regional and state-level economy, technology sector, and educational landscape.

3.A.3. Student Demand for the Program

Student demand is evidenced by our previous five-year enrollment trends in the Computer Science primary discipline within the current UMKC interdisciplinary PhD program. The Computer Science primary discipline has ranged from 27-36 students/year with an average of 31.4 students/year. The Computer Science PhD program is estimated to have approximately 32 students/year. Pending approval, we will encourage current interdisciplinary PhD students to switch to the new degree program in Fall 24; those who want to complete their degree within the existing interdisciplinary PhD program will be allowed to do so. Admission to the existing interdisciplinary PhD program will be suspended in Fall 24 and program teach out will begin. This period of transition is reflected in the enrollment projections below.

Table 1a. Student Enrollment Projections (anticipated total number of students enrolled in the program during the first five fall semesters following implementation.)

Year:	1	2	3	4	5
Full-time	27	32	32	32	32
Part-time	0	0	0	0	0
Total	27	32	32	32	32

Table 1b. Projected Number of Degrees Awarded

Year:	1	2	3	4	5	6	7	8	9	10
# of Degrees Awarded	5	5	5	5	5	5	5	5	5	5

3.B. Financial Projections

Research-based doctoral education (i.e., PhD) differs in key ways from professional doctoral education (e.g., JD, MD, PharmD, DDS, etc.). These differences can be found in the curricular and academic experiences, size of the student cohorts, and relationship of the program to the University mission. As such, there are significant differences in the financial

models between research-based and professional doctoral programs. Research-based doctoral programs (e.g., PhD), in contrast to professional doctoral programs (e.g., JD, MD, PharmD, etc.), generally accept a smaller cohort of new students each year and often offer full or partial financial support in the form of tuition waivers and graduate assistantships. PhD students, in turn, make significant contributions to faculty research through their work on research studies (e.g., data collection), dissemination of research findings (e.g., manuscript/monograph writing), and grant writing. PhD students also provide critical support to the educational mission of the University through mentorship and instruction of undergraduate students. In most instances, PhD programs are revenue neutral or have a financial cost that is offset by positive impact on university research productivity and support of undergraduate education.

In the sections that follow, we have estimated the costs and revenues associated with the PhD in Computer Science. *Notably, because we are using the same resources, the net revenue and financial impact of the PhD in Computer Science is the same as the Computer Science primary discipline within the existing interdisciplinary PhD program.*

3.B.1. Additional Resources Needed

No new resources are needed, inclusive of instructional costs, assistantship funding, marketing, or other university overhead.

3.B.2. Revenue

Revenues are generated from tuition (net scholarship) and remain the same as the existing interdisciplinary PhD program.

3.B.3. Net Revenue

No new one-time expenses are needed because all resources exist within the current interdisciplinary PhD program. Similarly, recurring expenses are not new, and are estimated based on the current interdisciplinary PhD program. Existing recurring expenses and revenues will shift from the interdisciplinary PhD to the new PhD, with the majority of that shift happening in year 1, as most current students transfer to the new degree program.

Faculty salaries are estimated at .10 FTE (representing 25% of their overall teaching workload) for the current faculty who participate in teaching and mentorship within the interdisciplinary PhD. Notably, most courses are co-taught with master's students, thereby inflating the FTE specific to PhD students; this inflation is offset by the variable amount of time spent mentoring dissertations. Staff estimates represent staff support time within the academic unit. Institutional overhead includes library and all central campus enrollment management and student support staff. Other includes assistantship stipends and associated tuition remission.

Table 2. Financial Projections for Proposed Program for Years 1 Through 5.

	Year 1	Year 2	Year 3	Year 4	Year 5
1. Expenses per year					
A. One-time					
<i>New/Renovated Space</i>	0	0	0	0	0
<i>Equipment</i>	0	0	0	0	0
<i>Library</i>	0	0	0	0	0
<i>Consultants</i>	0	0	0	0	0
<i>Other</i>	0	0	0	0	0
Total one-time	0	0	0	0	0
B. Recurring					
<i>Faculty</i>	83510	83510	83510	83510	83510
<i>Staff</i>	5000	5000	5000	5000	5000
<i>Benefits</i>	31863	31863	31863	31863	31863
<i>Equipment</i>	0	0	0	0	0
<i>Library</i>	0	0	0	0	0
<i>Institutional Overhead</i>	9072	10752	10752	10752	10752
<i>Other</i>	393624	447300	447300	447300	447300
Total recurring	523,069	578425	578425	578425	578425
Total expenses (A+B)	523,069	578,425	578,425	578,425	578,425
2. Revenue per year					
<i>Tuition/Fees</i>	135853	161011	161011	161011	161011
<i>Institutional Resources</i>	0	0	0	0	0
<i>State Aid -- CBHE</i>	0	0	0	0	0
<i>State Aid -- Other</i>	0	0	0	0	0
Total revenue	135,853	161,011	161,011	161,011	161,011
3. Net revenue (loss) per year	(387,216)	(417,414)	(417,414)	(417,414)	(417,414)

3.B.4. Academic and Financial Viability

There is no net difference in academic and financial viability between the existing computer science primary discipline within the interdisciplinary PhD and the new PhD in Computer Science. The enrollment projections described above will ensure we achieve a degree conferral threshold consistent with MDHE expectations, as well as advance our Carnegie ranking. There is a financial cost, consistent with doctoral education in general, and funds will be reallocated from the existing PhD program to the new PhD program so that we remain financially net neutral.

3.C. Business Plan: Marketing, Student Success, Transition & Exit Strategies

3.C.1. Marketing Plan

UMKC's proposed PhD program in Computer Science will extend current marketing initiatives with a broad, multi-channel strategy. The primary audience—comprising current students in computer science and related disciplines, professionals pursuing advanced skills in computer science, and international students—will continue to be our focus. Our proven engagement activities like research-a-thons, providing hands-on research exposure, and revealing UMKC opportunities, will persist. Regular online information sessions, detailing the program, faculty, and prospective career paths, will continue to reach a broad audience. Alumni testimonials, currently shared via our website and social media platforms, will remain a crucial marketing tool, offering a realistic portrayal of program benefits. We'll also uphold partnerships with local industries and institutions, highlighting practical opportunities to entice students seeking career progression in a range of regional, national, and international industries. Lastly, we will persist with our digital-focused strategy on platforms such as LinkedIn, Facebook, and academic forums, connecting with potential students on various scales. Hence, the marketing strategy for our PhD program in Computer Science will require no new resources, instead, it will amplify existing efforts to attract a diverse student base.

3.C.2. Student Success Plan

No additional student support services will be needed to support or retain students in the PhD in Computer Science program. Current enrollment, retention and graduation trends for this program are on track with institution and national averages, and the program will continue to provide current levels of faculty and staff resources to support students through graduation.

3.C.3. Transition Plan

The people primarily responsible for the success of the PhD in Computer Science program are: Dianxiang Xu, CAM Division Director Kevin Truman, SSE Dean. Program leadership is supported by program faculty and the School of Graduate Studies staff.

3.C.4. Exit Strategy

If full-time enrollment in the PhD in Computer Science drops below 20 students, the School of Science and Engineering will evaluate a temporary hiatus or program closure, depending on the reason for the low enrollment (e.g., temporary funding challenge, market demand, etc.).

4. Institutional Capacity

The proposed PhD program in Computer Science at UMKC will leverage the existing infrastructure, faculty, and resources of the current doctoral program. This approach eliminates the need for any significant additional expenses, ensuring an efficient and cost-effective operation. The faculty and staff resources, laboratories, equipment, and technology from the current program will serve as the backbone for the new program without the need for any additional resources. The primary focus of this proposal is to gain credit for the research and degrees we already offer, while attracting students, faculty, and grant opportunities. A new CIP code classification raises our research profile at the federal level, thus enhancing our ability to attract grant dollars. This improved positioning will generate interest among potential students, academics, and federal agencies, boosting enrollments, faculty recruitment, and research funding opportunities respectively. Moreover, the specialization of the PhD program in pivotal areas like data science, AI, and cybersecurity provides a robust platform to secure research funding from federal agencies, private foundations, and industry partners. The possibility of fruitful collaborations with local industries can foster sponsorships or endowments to support the program, given the shared interest in cultivating a highly skilled workforce with the ability to make regional, national, and international contributions.

In conclusion, the new PhD program in Computer Science is designed to be cost-efficient by utilizing the existing resources of the interdisciplinary PhD program. At the same time, it strategically positions UMKC to attract grant dollars, students, faculty, and industry partnerships in the future.

5. Program Characteristics

5.A. Program Outcomes

Program Goals

Students in the Ph.D. Program will acquire:

- grounding in the discipline
- the ability to integrate the principles and theories of the disciplines
- the ability to effectively communicate findings and approaches to solving research problems;
- research skills, such as approaches, methods, ethical principles, and tools to pursue a research line of inquiry;
- the ability to form effective teams to solve novel research questions

5.B. Program Design & Content

The course requirements for the Computer Science Ph.D. program will remain consistent with those of the previous Interdisciplinary PhD program. No new resources will be required. The coursework requirements include:

- A total of at least 30 credit hours of coursework.
- And at least 12 dissertation hours in the primary area.

5.C. Program Structure

Program Structure Form

1. Total Credits Required for Graduation: 42

2. Residence requirements, if any: Ph.D. students must satisfy the doctoral residency requirement by satisfactory completion of at least 18 credits in no more than 24 consecutive months. When satisfying the residency requirement, all Ph.D. students are subject to the following restrictions:

- The doctoral residency requirement must be satisfied no later than the end of the semester in which the student completes his or her comprehensive examinations.
- Students must achieve a cumulative graduate grade-point average of at least 3.0 in all courses counted toward satisfying the residency requirement.

3. General education

- a. Total general education credits: **n/a**.

4. Courses (specific courses and credit hours):

The course requirements for the Computer Science Ph.D. program will remain consistent with those of the previous Interdisciplinary PhD program. No new resources will be required. The coursework requirements include:

- A total of at least 30 credit hours of coursework.
- And at least 12 dissertation hours in the primary area.

Computer Science has a list of suggested coursework in their area for students to use as a guide when working with their advisors to choose appropriate courses.

Coursework in Computer Science		
<ul style="list-style-type: none"> • A minimum of 12 credit hours in coursework and 12 dissertation hours • Courses are selected from those offered in the discipline and in conjunction with a primary advisor 		
Course Number	Course Title	Credit Hours
Comp Sci 5540	Principles of Big Data Management	3
Comp Sci 5565	Intro to Statistical Learning	3
Comp Sci 5582	Computer Vision	3
Comp Sci 5590	Special Topics – Multimedia Communication	3
Comp Sci 5590	Special Topics – Distributed Computing	3
CSEE 5690	Adv. Special Topics – Deep Learning	3
Comp Sci 5590	Special Topics – Intro to Blockchain	3
Comp Sci 5590	Special Topics – Internet of Things / Embedded Systems	3
Comp Sci 5590	Special Topics – Intro to Blockchain	3
CSEE 5690	Adv. Special Topics – Research and Experimental Design	3
	Dissertation	12
	Total hours toward the degree:	42

5. Free elective credits

a. Total free elective credits: n/a.

6. Requirement for thesis, internship or other capstone experience:

12 credit hours of dissertation are required

7. Any unique features such as interdepartmental cooperation:

n/a

5.D. Program Goals and Assessment

All UMKC programs are required to submit an annual summary of program assessment efforts (assessment plans, findings & discussions, and recommendations). The Computer Science Ph.D. program will maintain the established assessment protocol currently in place for all Interdisciplinary Ph.D. disciplines. The following outcomes have been identified:

1. Students will demonstrate a thorough degree of knowledge in the discipline.
2. Students will demonstrate an ability to use proper investigation techniques for the discipline.
3. Students will effectively use oral and written forms of communication to convey their ideas.

Applicable student learning outcomes will be assessed at the following program, academic milestones: 1) Comprehensive Exams; 2) Dissertation/Research Proposal; and 3) Dissertation Defense.

At the milestone of Dissertation Defense, program targets for student performance across all Student Learning Outcomes have been set to meet or exceed average ratings of 3.5 for all (100% of) students assessed. For example, one component of students' ability to use proper investigation techniques will be evaluated by the following rubric and rating scale:

Superior (4)	Good (3)	Acceptable (2)	Unacceptable (1)	Cannot Judge
Cutting edge methodology or novel application of existing method	Incremental advance in application of methodology and careful plan for execution of research	Conventional use of methodology and adequate plan for execution of research	Inappropriate use of method; use of method that cannot adequately address research question	Outside area of expertise

5.E. Student Preparation

The minimum criteria for admission to the UMKC graduate school can be found via the [UMKC catalog](#).

Computer Science Program Admission Requirements

A student who meets the minimum discipline requirements stated below will be considered for regular admission to the Ph.D. program. A student, who does not meet some of the requirements but shows high potential for advanced-level work, may be considered for provisional admission.

Admission also depends on factors such as number of seats available, resources available in the area of student's interest, the quality of previous work, etc. A student who does not qualify for admission to the Ph.D. program, may be considered for admission to the M.S. in computer science program. Requirements for admission are similar, whether the applicant is requesting computer science as the primary or co-discipline.

Minimum Recommended Ph.D. Admission Requirements:

1. GPA (Bachelor or equivalent Degree): 3.5 in the scale of 4 (or equivalent)
2. GPA (MS or equivalent Degree if any): 3.5 in the scale of 4 (or equivalent)
3. GRE (Quantitative) minimum score: 80%
4. TOEFL iBTS minimum Score: 89 or IELTS minimum score: 6.5
5. Prior Projects or Publications (Preferred)*
6. Internationally Acceptable Accreditation of the Prior Degree Awarding Institutes

* Prior research project and/or publication record is not required for admission into CS Ph.D. program. However, doctoral faculty members give very high value to the students with such backgrounds.

5.F. Faculty and Administration

The faculty and administration primarily responsible for the success of this program are: Dianxiang Xu, CAM Division Director and Kevin Truman, SSE Dean.

All faculty with teaching responsibilities in the PhD, Computer Science program will have a terminal degree, PhD or professional doctoral degree (MD, DDS, PharmD). Full time faculty will teach 100% of coursework/credit hours in the program. Faculty teaching in the program will be expected to engage in professional activities and teaching/learning innovation activities including research, and participation and presentations at professional organizations and societies. Faculty will also be expected to mentor and advise students while enrolled in the program and while engaging in independent research.

5.G. Alumni and Employer Survey

The UMKC Alumni Affairs Office, and External Relations team engage with UMKC alumni and the community through several opportunities designed to maintain connections, gather feedback, provide engagement opportunities, and create an environment of continuous improvement.

Graduating students are surveyed through an exit survey at the point of graduation and followed up with at 6-months post degree conferral if the student was still seeking employment at graduation or did not respond to the initial survey request. Alumni affairs and external relations provides opportunities for alumni to participate in student research competitions such as the Three Minute Thesis. Alumni are also engaged through on campus events, opportunities to serve on boards, volunteer, and nominate and receive alumni awards.

5.H. Program Accreditation

Like the current I PhD program, the proposed PhD program in Computer Science at UMKC falls under the purview of the university's institutional accreditation. The university is accredited by the Higher Learning Commission, one of the regional accrediting bodies recognized by the U.S. Department of Education, which ensures that the institution and all its programs, including the proposed PhD program, meet the established standards of academic quality.

While ABET is indeed a recognized accrediting body for programs in applied and natural science, computing, engineering, and engineering technology, its scope primarily covers associate, bachelor's, and master's degree programs, rather than doctoral ones. To ensure our PhD program meets the highest standards, we will adhere to guidelines and curricular recommendations provided by influential professional organizations such as the Association for Computing Machinery (ACM) and the Institute of Electrical and Electronics Engineers (IEEE).

These guidelines, although not equivalent to accreditation, offer a robust framework for maintaining academic and research excellence. Additionally, we will continually monitor and evaluate the program's performance in areas like faculty research output, student success, and alignment with industry trends and demands. This continuous assessment will aid in enhancing our program's reputation and ensuring we deliver a high-quality education to our doctoral students. Lastly, while there is no specific timeline for accreditation given the context of doctoral programs, we commit to maintaining the university's existing institutional accreditation status and upholding the standards expected by our accrediting body, the Higher Learning Commission.

6. Appendices

- Letters of Support
 - Jennifer Lundgren; Provost and Executive Vice Chancellor- UMKC
 - Stephen John Dilkes; Associate Dean, School of Graduate Studies- UMKC
 - Kevin Truman; Dean, School of Science and Engineering- UMKC
 - Ravi Chandra; SVP, Engineering- Cisco Systems

Letters of Support
PhD in Computer Science



School of Science and Engineering
Office of the Dean

September 29, 2023

To: University of Missouri Board of Curators

Re: Support and Commitment to the SSE's iPhD to Ph.D. Transition

As Dean of the School of Science and Engineering I am writing to express my full commitment to transitioning our interdisciplinary Ph.D. (iPhD) degrees to Ph.D. for the School of Science and Engineering (SSE)'s Computer Science, Engineering, and Natural Sciences programs.

I want to emphasize that this transition primarily consists of code and title changes that do not necessitate allocating new resources. We intend to name programs with industry and academic standards, ensuring that we are appropriately recognized for the exceptional work already underway at our school, and improve our faculty and student recruitment and retention.

By transitioning to standard and well-known Ph.D. designations, we strategically position UMKC to enhance its research status especially through Carnegie ranking: historically, under the iPhD moniker, our related activities have not been correctly recognized given that we could not use the right CIP codes. Further, our international students have struggled to justify this unconventional naming to their host countries and institutions. This no-cost move is essential to rectify these issues, ensuring that our institution receives the recognition it deserves for its outstanding contributions to STEM research in our state and beyond.

In conclusion, I would like to reiterate the dedication of my team and myself to this transition. We believe these changes will strengthen our institution's reputation and bolster our research and enrollment, making us an even more effective member of the UM system. We look forward to accomplishing this positive shift together.

Sincerely,

A handwritten signature in blue ink, appearing to read "Kevin Z. Truman".

Kevin Z. Truman, Ph.D., F.ASCE
Dean, School of Science and Engineering

From: Ravi Chandra (rchandra) rchandra@cisco.com
Subject: Transition from iPh.D to Ph.D
Date: October 9, 2023 at 2:44 PM
To: Truman, Kevin Z. trumank@umkc.edu, Vogl, Jane voglj@umkc.edu

WARNING: This message has originated from an External Source. This may be a phishing expedition that can result in unauthorized access to our IT System. Please use proper judgment and caution when opening attachments, clicking links, or responding to this email.

To: University of Missouri Board of Curators

The fields of engineering and computer science experience rapid changes as new technologies and systems are created and implemented at an accelerated rate compared to many fields. Typically, innovation in these fields is driven by state-of-the-art educated individuals through highly specialized programs. At Cisco Systems, we hire both master's and Ph.D. students. As a UMKC alum, I am aware that the iPh.D program is comparable to a Ph.D program. However, those not familiar with UMKC would be concerned that the education received under the iPh.D program was not comparable to a program designated as Ph.D.

In addition, as an alum I would be thrilled to see UMKC become a R1 ranked Carnegie institution which is impossible under the current designation's CIP codes. UMKC's potential elevation to Carnegie R1 status would benefit every student, faculty, and alumnus in their programs. It is my understanding this change is the first step needed for UMKC to pursue this very worthy goal.

In summary, I strongly recommend the proposed change to Ph.D designation be approved. Please let me know if you have any questions.

Sincerely,
Ravi Chandra
(SVP, Engineering, Cisco Systems.)



Office of the Provost and Executive Vice Chancellor

October 5, 2023

Dear University of Missouri Board of Curators-

UMKC aims to achieve Carnegie R1 classification in the next 5-7 years. A critical action step toward this goal is to appropriately classify our research-based doctoral program CIP codes so that they are recognized in the Carnegie classification system. With this goal in mind, I am in full support of the transition of the PhD program in interdisciplinary studies (*iPhD*; not currently recognized by Carnegie) into eight independent PhD programs that are recognized in the Carnegie classification system. In addition to the critical role these programs will play in our degree program conferral data, this transition aligns with our strategic plan goals of: exceptional student learning, success, and experience (pillar one), helping UMKC become a thriving discovery enterprise (pillar two), transforming our community and region with impactful engagement (pillar three), and preparing students for the global workforce (pillar four). The program transition has been fully considered and planned by the faculty and leadership of UMKC, and is supported by the appropriate curricula, staffing, and market demand.

The *curricula* for the eight PhD programs will remain largely unchanged and is reviewed in detail on a program-by-program basis in the proposal. No additional instructional, student support, library, or assistantship resources will be necessary for this transition to be successful. Students will continue to be supported by existing faculty, staff, and student support structures on campus, and we will transition as many students as possible into the new degree programs by Fall 2024 to maximize doctoral degree conferrals in the coming years. Notably, students who do not want to transition will have the opportunity to remain in the iPhD program through degree completion; if our doctoral program proposal is approved, no new students will be admitted to the iPhD in the future and the program will be closed.

The *market demand* for each of these programs is currently strong, and we anticipate the transition will only enhance it. The 8 programs included in our proposal have the highest rates of student interest, graduation, employment, and long-term research synergy potential at UMKC. While we anticipate demand for each program to remain stable in the short term, the renaming of these programs is likely to have an immediate impact on our national and regional reputation as a

UMKC Doctor of Philosophy Program Letter of Support

Page 2

October 5, 2023

research institution. Although we will keep our enrollments stable in the early years of this transition, faculty will be expected to increase assistantship funding through externally funded grants, thereby allowing us to increase student enrollment while also supporting our campus research goals.

I'm happy to answer any questions about this overall doctoral program transition or the individual programs included in it.

Best regards,



Jennifer D. Lundgren, PhD

Provost and Executive Vice Chancellor



School of Graduate Studies

October 5, 2023

Dear Members of the Board of Curators,

The Graduate Council at UMKC has voted to express its full support for the proposed transition from our current Interdisciplinary Ph D program to PhD's in the areas of Computer Science, Economics, Education, Engineering, Humanities, and Natural Sciences.

We are convinced that this transition would elevate the university's research status by giving us credit for doctoral research in the areas of STEM, Humanities, and Social Sciences. While we would be using new CIP codes and titles, these doctoral degrees can be delivered with existing faculty, courses, and administrative staff. The required courses for the newly titled and coded doctorates are unchanged from those required in the current Interdisciplinary PhD program, except that the secondary disciplines now only require nine hours of courses (under the current system, the "co-discipline" sometimes requires as many as fifteen hours of coursework). This promises to improve completion rates.

This change of codes and titles will better reflect the specialized research and academic focus within these designated areas, which can significantly contribute to elevating the university's research profile. This has the potential to increase funding opportunities from federal agencies, private organizations, and philanthropic sources. With focused academic programs, we can tailor our research proposals to meet the specific needs and priorities of these funding agencies, ultimately increasing our chances of securing research grants and contracts.

We strongly believe that these more narrowly focused doctoral programs will elevate our research reputation, improving our university's standing as a discovery enterprise, attracting a higher caliber of faculty and students, enhancing our regional, national, and international appeal as a go-to institution for advanced research and education.

In sum, because the proposed transition aligns with our university's long-term goals and aspirations, potentially giving us greater research prominence, increased funding, and a more dynamic academic environment that will advance the mission and reputation of UMKC and the entire UM-System, we request the Board of Curators to approve this proposal.

Thanks for your consideration.

Stephen Dilks

Stephen John Dilks,
Associate Dean, School of Graduate Studies
Chair, UMKC Graduate Council.

Executive Summary

UMKC currently offers a PhD in Interdisciplinary Studies under CIP code 30.0000 (Multi-/Interdisciplinary Studies, Other; Defined as “any instructional program multi/interdisciplinary studies not listed above,” National Center for Education Statistics). As part of a comprehensive strategy to improve academic and research excellence, inclusive of Carnegie R1 classification, UMKC seeks to close the current, catch-all interdisciplinary PhD and create eight (8) discipline-specific and more narrow interdisciplinary PhD programs from the over 20 primary disciplines within it.

This transition will allow for the following: Carnegie credit for degree conferrals across STEM, Social Science, and Humanities disciplines, improved research ranking and reputation as a discovery enterprise, advantage in recruiting high quality students and faculty, and enhanced clarity and validity with students and employers regarding the curricula offered as part of our doctoral degrees.

This proposal focuses on a new **Economics PhD** that can be delivered with existing courses, faculty, staff, student support services, assistantship funding, and other resources currently allocated to the economics primary discipline within the Interdisciplinary PhD.

The purpose of the PhD program in Economics is to prepare graduate students for careers as professional economists at the highest level. Currently, UMKC awards interdisciplinary doctoral degrees with a primary discipline in Economics. Graduates of this program are in very high demand for positions in business, finance, government, and academia.

Current co-discipline requirements range from 12 to 18 student credit hours and may include a separate comprehensive exam. Cumulatively this can add an additional year of study to degree completion. Economics doctoral students are overwhelmingly hired into positions requiring a terminal degree in the field, so eliminating the co-discipline requirement would not adversely affect them. Transitioning to a discipline-specific PhD program in Economics would increase our regional, national, and international research status, which would, in turn, improve recruitment, retention, and completion, benefiting students, the university, the region, and the state.

Curriculum:

The proposed PhD program in Economics mirrors the existing doctoral program, maintaining academic rigor through a balanced curriculum. This curriculum includes foundational courses, advanced coursework, research seminars, and a comprehensive doctoral dissertation, all drawn from the existing courses and resources of the doctoral program.

As with the current Interdisciplinary PhD, a minimum of 30 credit hours are required, including fundamental and advanced courses along with seminars. Additionally, a doctoral dissertation requires a minimum of 12 research credits.

1. Introduction

The PhD in Interdisciplinary Studies (30.0000) was launched in 1989. For many years it has provided UMKC students the opportunity to develop as scientists and scholars in their chosen field by combining two or more disciplines of study. The Interdisciplinary PhD at UMKC originally included 26 distinct disciplines, ranging from STEM to social sciences to the humanities. Despite its strength as a highly flexible doctoral degree, it limits our ability to attract highly competitive PhD students who want a narrower disciplinary focus, as well as prospective students who are seeking STEM certified doctoral education. Most recently, we have learned that the current Interdisciplinary PhD program is not recognized by Carnegie in their university classification system—a significant barrier in our progress toward becoming a Carnegie R1 institution.

To address these challenges, we aim to transition the current Interdisciplinary PhD program into eight (8) distinct PhD programs that will be attractive to students (evidenced by historical enrollment data) and that will be recognized by Carnegie. These include **Computer Science, Economics, Education, Engineering (Electrical and Computing; Civil; and Mechanical), Humanities, plus a multidisciplinary PhD in Natural Sciences**. These doctoral research programs were selected after extensive review and discussion with doctoral faculty across the university because they are the strongest historic enrollments, core faculty of active researchers, and greatest potential for ongoing success at UMKC. Together they promise to have a significant impact on our ranking as a research institution, and the workforce in the Kansas City and greater MO area through the research and post-graduate employment outcomes produced by the graduates.

This proposal focuses on the **PhD in Economics**.

Impact:

The impact of this broad degree transition, including the **PhD in Economics**, will be the following: Carnegie credit for degree conferrals across STEM, Social Science, and Humanities disciplines, improved research ranking and reputation as a discovery enterprise, advantage in recruiting high quality students and faculty, and enhanced clarity and validity with students and employers regarding the curricula offered as part of our doctoral degrees.

2. University Mission & Program Analysis

2.A. Alignment with University Mission & Goals

UMKC is an urban research university whose mission is to “promote learning through the discovery, preservation and dissemination of knowledge of public value across a broad spectrum of disciplines and fields of study” (UMKC 2023, Mission, Vision, Values).” The

University also aspires “to be an exemplary public urban research university of the 21st Century.” A defining feature of a research university is doctoral education. By giving us credit in the area of Social Sciences, this transition would significantly improve UMKC’s ability to provide education at this level.

This program would also allow the School of Humanities and Social Sciences to fulfill its role as an integral part of the research mission of the university. The Department of Economics has been actively involved in the Interdisciplinary PhD program since its inception and sees the doctoral program as central to the mission of the department. The tremendous success of our graduate programs is a point of pride for the department and is integral to the planning for the future of the department.

2.B. Duplication & Collaboration within Campus, Across System

There is an existing doctoral program in economics in the UM System at the University of Missouri – Columbia. But, because of the vigorous demand for highly trained economists in industry, finance, government, and academia, a PhD program in economics at UMKC would enhance and augment economic development in the Kansas City metro and throughout Missouri, the region, and the nation. UMKC is the only research university in the Kansas City metropolitan area and plays a vital role in workforce development for the city and its surrounding area.

3. Business-Related Criteria & Justification

3.A. Market Analysis

3.A.1. Rationale & Workforce Demand for the Program

The Economics interdisciplinary PhD primary discipline has existed for over thirty years with consistently good enrollments. The Department typically limits incoming cohorts to 6- 8 students. Since 2000 an average of four students per year have graduated from the existing doctoral program with a primary discipline in Economics, resulting in a completion rate of approximately 60%, which exceeds the national average for economics PhD programs. Applications averaged about 30 per year over the last decade, so the demand for this program is strong. With a more streamlined program, we anticipate slightly more graduates/year.

There is currently a shortage of doctoral-level economists in all employment areas. Missouri is the only state in the U.S. with two Federal Reserve Banks (Kansas City and St. Louis) and Kansas City is home to the USDA Economic Research Service, as well as many large financial, engineering, and technology firms. Our graduates are employed across all these areas.

The department frequently receives inquiries from employers seeking to recruit graduates from our existing interdisciplinary PhD program; transitioning to an Economics PhD program would allow us to increase the number of graduates and more effectively satisfy the demand for economists with the highest academic credential.

3.A.2. Student Demand for the Program

Student demand is evidenced by our previous five-year enrollment trends in the Economics primary discipline within the current UMKC interdisciplinary PhD program. The Economics primary discipline has ranged from 35-47 students/year with an average of 43.6students/year; The proposed Economics PhD is estimated to have approximately 43 students/year. Pending approval, we will encourage current interdisciplinary PhD students to switch to the new degree program in Fall 24; those who want to complete their degree within the existing interdisciplinary PhD program will be allowed to do so. Admission to the existing interdisciplinary PhD program will be suspended in Fall 24 and program teach out will begin. This period of transition is reflected in the enrollment projections below.

Table 1a. Student Enrollment Projections (anticipated total number of students enrolled in the program during the first five fall semesters following implementation.)

Year:	1	2	3	4	5
Full-time	40	43	43	43	43
Part-time	0	0	0	0	0
Total	40	43	43	43	43

Table 1b. Projected Number of Degrees Awarded

Year:	1	2	3	4	5	6	7	8	9	10
# of Degrees Awarded	6	6	6	6	6	6	6	6	6	6

3.B. Financial Projections

Research-based doctoral education (i.e., PhD) differs in key ways from professional doctoral education (e.g., JD, MD, PharmD, DDS, etc.). These differences can be found in the curricular and academic experiences, size of the student cohorts, and relationship of the program to the University mission. As such, there are significant differences in the financial models between research-based and professional doctoral programs. Research-based doctoral programs (e.g., PhD), in contrast to professional doctoral programs (e.g., JD, MD, PharmD, etc.), generally accept a smaller cohort of new students each year and often offer full or partial financial support in the form of tuition waivers and graduate assistantships. PhD students, in turn, make significant contributions to faculty research through their work on research studies (e.g., data collection), dissemination of research findings (e.g., manuscript/monograph writing), and grant writing. PhD students also provide critical

support to the educational mission of the University through mentorship and instruction of undergraduate students. In most instances, PhD programs are revenue neutral or have a financial cost that is offset by positive impact on University research productivity and support of undergraduate education.

In the sections that follow, we have estimated the costs and revenues associated with the PhD in Economics. *Notably, because we are using the same resources, the net revenue and financial impact of the PhD in Economics is the same as the Economics primary disciplines within the existing interdisciplinary PhD program.*

3.B.1. Additional Resources Needed

No new resources are needed, inclusive of instructional costs, assistantship funding, marketing, or other university overhead.

3.B.2. Revenue

Revenues are generated from tuition (net scholarshiping) and remain the same as the existing interdisciplinary PhD program.

3.B.3. Net Revenue

No new one-time expenses are needed because all resources exist within the current interdisciplinary PhD program. Similarly, recurring expenses are not new, and are estimated based on the current interdisciplinary PhD program. Existing recurring expenses and revenues will shift from the interdisciplinary PhD to the new PhD, with the majority of that shift happening in year 1, as most current students transfer to the new degree program.

Faculty salaries are estimated at .10 FTE (representing 25% of their overall teaching workload) for the current faculty who participate in teaching and mentorship within the interdisciplinary PhD. Notably, most courses are co-taught with advanced undergraduate and/or master's level students, thereby inflating the FTE specific to PhD students; this inflation is offset by the variable amount of time spent mentoring dissertations. Staff estimates represent staff support time within the academic unit. Institutional overhead includes library and all central campus enrollment management and student support staff. Other includes assistantship stipends and associated tuition remission.

Table 2. Financial Projections for Proposed Program for Years 1 Through 5.

	Year 1	Year 2	Year 3	Year 4	Year 5
1. Expenses per year					
A. One-time					
<i>New/Renovated Space</i>	0	0	0	0	0
<i>Equipment</i>	0	0	0	0	0
<i>Library</i>	0	0	0	0	0
<i>Consultants</i>	0	0	0	0	0
<i>Other</i>	0	0	0	0	0
Total one-time	0	0	0	0	0
B. Recurring					
<i>Faculty</i>	58081	58081	58081	58081	58081
<i>Staff</i>	5000	5000	5000	5000	5000
<i>Benefits</i>	22709	22709	22709	22709	22709
<i>Equipment</i>	0	0	0	0	0
<i>Library</i>	0	0	0	0	0
<i>Institutional Overhead</i>	13440	14448	14448	14448	14448
<i>Other</i>	290340	290340	290340	290340	290340
Total recurring	389570	390578	390578	390578	390578
Total expenses (A+B)	389570	390578	390578	390578	390578
2. Revenue per year					
<i>Tuition/Fees</i>	163968	172265	172265	172265	172265
<i>Institutional Resources</i>	0	0	0	0	0
<i>State Aid -- CBHE</i>	0	0	0	0	0
<i>State Aid -- Other</i>	0	0	0	0	0
Total revenue	163968	172265	172265	172265	172265
3. Net revenue (loss) per year	(225,602)	(218,313)	(218,313)	(218,313)	(218,313)

3.B.4. Academic and Financial Viability

There is no net difference in academic and financial viability between the existing Economics primary discipline within the interdisciplinary PhD and the new PhD in Economics. The enrollment projections described above will ensure we achieve a degree conferral threshold consistent with MDHE expectations, as well as advance our Carnegie ranking. There is a financial cost, consistent with doctoral education in general, and funds will be reallocated from the existing PhD program to the new PhD program so that we remain financially net neutral.

3.C. Business Plan: Marketing, Student Success, Transition & Exit Strategies

3.C.1. Marketing Plan

No new marketing is anticipated as part of the transition from the interdisciplinary PhD to a PhD in Economics. Applications are currently adequate for the existing program and would likely increase with the transition to a PhD in Economics.

3.C.2. Student Success Plan

No additional student support services will be needed to support or retain students in the PhD in Economics program. Current enrollment, retention and graduation trends for this program are on track with institution and national averages, and the program will continue to provide current levels of faculty and staff resources to support students through graduation.

3.C.3. Transition Plan

The person primarily responsible for the success of the PhD in Economics program is: Erik K. Olsen, Associate Professor and Chair, UMKC Department of Economics. Program leadership is supported by program faculty and the School of Graduate Studies staff.

3.C.4. Exit Strategy

If full-time enrollment in the PhD in Economics drops below 20 students, the School of Humanities and Social Sciences will evaluate a temporary hiatus or program closure, depending on the reason for the low enrollment (e.g., temporary funding challenge, market demand, etc.).

4. Institutional Capacity

There would be no additional cost associated with a transition from the current interdisciplinary PhD primary discipline in Economics to a PhD program. All required courses are currently being offered, and no additional faculty or staff lines are required. Existing student support services will continue to support the new program.

5. Program Characteristics

5.A. Program Outcomes

Program Goals

Students in the Ph.D. Program will acquire:

- grounding in the discipline
- the ability to integrate the principles and theories of the disciplines
- the ability to effectively communicate findings and approaches to solving research problems;
- research skills, such as approaches, methods, ethical principles, and tools to pursue a research line of inquiry;
- the ability to form effective teams to solve novel research questions

5.B. Program Design & Content

The course requirements for the Ph.D. program in Economics will remain similar with those of the previous Interdisciplinary PhD program, although a secondary/co-discipline is no longer required. No new resources will be required. The coursework requirements include:

- A minimum of 30 coursework hours and 12 dissertation hours in economics

5.C. Program Structure

5.C.1. Program Structure Form

1. Total Credits Required for Graduation: 51

2. **Residence requirements, if any:** Ph.D. students must satisfy the doctoral residency requirement by satisfactory completion of at least 18 credits in no more than 24 consecutive months. When satisfying the residency requirement, all Ph.D. students are subject to the following restrictions:

- The doctoral residency requirement must be satisfied no later than the end of the semester in which the student completes his or her comprehensive examinations.
- Students must achieve a cumulative graduate grade-point average of at least 3.0 in all courses counted toward satisfying the residency requirement.

3. General education

- a. Total general education credits: n/a

4. Courses (specific course or distribution area and credit hours):

The course requirements for the Ph.D. program in Economics will remain consistent with those of the economics primary discipline within the Interdisciplinary PhD program; possible courses are listed below. No new resources will be required. The coursework requirements include:

Primary discipline coursework in Economics		
• A minimum of 30 credit hours in coursework and 12 dissertation hours		
Course Number	Course Title	Credit Hours
Econ 5501	Adv. Macroeconomics Analysis	3
Econ 5502	Adv. Microeconomics Analysis	3
Econ 5506	Adv. History of Economic Thought	3
Econ 5521	Mathematical Economics	3
Econ 5525	Econometric Methods	3
Econ 5551	Adv. Institutional Theory	3
Econ 5601	Colloquium in Adv. Macroeconomics	3
Econ 5602	Colloquium in Adv. Microeconomics	3
Econ 5625	Colloquium in Econometrics	3
Econ 5688	Colloquium in Political Economy	3
Econ 5699	Doctoral Dissertation	12
Total hours toward the degree:		42

5. General education Free elective credits

- b. Total free elective credits: n/a.

6. Requirement for thesis, internship or other capstone experience:

12 credit hours of dissertation required.

7. Any unique features such as interdepartmental cooperation: n/a.

5.D. Program Goals and Assessment

All UMKC programs are required to submit an annual summary of program assessment efforts (assessment plans, findings & discussions, and recommendations). The Economics Ph.D. program will maintain the established assessment protocol currently in place for all Interdisciplinary Ph.D. disciplines. The following outcomes have been identified:

1. Students will demonstrate a thorough degree of knowledge in the discipline.
2. Students will demonstrate an ability to use proper investigation techniques for the discipline.
3. Students will effectively use oral and written forms of communication to convey their ideas.

Applicable student learning outcomes will be assessed at the following program, academic milestones: 1) Comprehensive Exams; 2) Dissertation/Research Proposal; and 3) Dissertation Defense.

At the milestone of Dissertation Defense, program targets for student performance across all Student Learning Outcomes have been set to meet or exceed average ratings of 3.5 for all (100% of) students assessed. For example, one component of students' ability to use proper investigation techniques will be evaluated by the following rubric and rating scale:

Superior (4)	Good (3)	Acceptable (2)	Unacceptable (1)	Cannot Judge
Cutting edge methodology or novel application of existing method	Incremental advance in application of methodology and careful plan for execution of research	Conventional use of methodology and adequate plan for execution of research	Inappropriate use of method; use of method that cannot adequately address research question	Outside area of expertise

5.E. Student Preparation

The minimum criteria for admission to the UMKC graduate school can be found via the UMKC [catalog](#).

Economics Program Admission Requirements

1. A score of at least 154 in verbal reasoning, a score of at least 154 in quantitative reasoning and at least a 4.0 on the analytical portions of the general Graduate Record Examination.
2. A grade-point average of at least 3.0 (on a 4.0 scale) covering all college work taken prior to the bachelor's degree, or a grade-point average of at least 3.0 (on a 4.0 scale) covering all post-baccalaureate work completed to date.
3. Recommendations for provisional or full admission by the doctoral faculty
4. Applicants must have at least 18 undergraduate semester credit hours in economics, including intermediate microeconomics and macroeconomics and a course in elementary statistics. In addition, it is strongly recommended that applicants have some of the following courses: econometrics, mathematical economics, history of economic thought, heterodox economics, economic history, calculus and linear algebra. Students with fewer than 18 credit hours will be admitted only on a provisional status.
5. Applicants who wish to transfer to the UMKC Ph.D. program in Economics from other institutions must have obtained a grade-point average of at least 3.0 covering all their graduate work. Transfer students must apply for transfer credits toward the Ph.D. as soon as possible after completion of a minimum of 12 credits at UMKC with a grade-point average of 3.0 or better. Up to 30 transfer credit hours may be granted. No transfer credit will be granted for any courses not relevant to the Ph.D. in Economics or for any course with a GPA of less than 3.0.

5.F. Faculty and Administration

The faculty and administration primarily responsible for the success of this program are: Erik K. Olsen, Associate Professor and Chair, UMKC Department of Economics.

All faculty with teaching responsibilities in the PhD, Economics program will have a terminal degree, PhD or professional doctoral degree (MD, EdD). Full time faculty will teach 100% of coursework/credit hours in the program. Faculty teaching in the program will be expected to

engage in professional activities and teaching/learning innovation activities including research, and participation and presentations at professional organizations and societies. Faculty will also be expected to mentor and advise students while enrolled in the program and while engaging in independent research.

5.G. Alumni and Employer Survey

The UMKC Alumni Affairs Office, and External Relations team engage with UMKC alumni and the community through several opportunities designed to maintain connections, gather feedback, provide engagement opportunities, and create an environment of continuous improvement.

Graduating students are surveyed through an exit survey at the point of graduation and followed up with at 6-months post degree conferral if the student was still seeking employment at graduation or did not respond to the initial survey request. Alumni affairs and external relations provides opportunities for alumni to participate in student research competitions such as the Three Minute Thesis. Alumni are also engaged through on campus events, opportunities to serve on boards, volunteer, and nominate and receive alumni awards.

5.H. Program Accreditation

The proposed PhD program in Economics at UMKC falls under the purview of the university's institutional accreditation. The university is accredited by the Higher Learning Commission, one of the regional accrediting bodies recognized by the U.S. Department of Education, which ensures that the institution and all its programs, including the proposed PhD program, meet the established standards of academic quality.

6. Appendices

- Letters of support
 - Dimitri Papadimitriou; President, Levy Economics Institute
 - Gary Dymski; President, Association for Evolutionary Economics
 - Karol Gil Vasquez; AFIT- President, Associate Professor of Economics, Nichols College
 - Darrick Hamilton; President- On behalf of the executive council of the association for social economics
 - Tamara Falicov; Dean, School of Humanities and Social Sciences- UMKC
 - Angelino Viceisza; NEA President, Professor of Economics- Spelman College
 - Geoffrey Schneider; Executive Director of ICAPE, Presidential Professor of Economics- Bucknell University
 - Barbara Hopkins; Professor of Economics, Wright State University
 - Jennifer Lundgren; Provost and Executive Vice Chancellor- UMKC
 - Stephen John Dilkes; Associate Dean, School of Graduate Studies- UMKC

**Letters of Support
PhD in Economics**

Dimitri B. Papadimitriou
President



September 25, 2023

University of Missouri Board of Curators
316 University Hall
Columbia, Missouri 65211
Email: boardofcurators@umsystem.edu

RE: Letter of support for stand-alone Economics doctoral degree at UMKC.

Dear Curators of the University of Missouri,

On behalf of the **Levy Economics Institute of Bard College**, I am pleased to write in support of the effort to transition the interdisciplinary doctoral program (IPhD) in Economics at the University of Missouri-Kansas City (UMKC) to a stand-alone economics PhD.

The UMKC Department of Economics is well-known as a center for innovative thinking and policy proposals, and for its successful doctoral program. In recent decades, many faculty and students from the department have been research scholars of the Levy Economics Institute significantly contributing to its research, publication and outreach public programs. Economics doctoral students from UMKC have a reputation for being broadly trained and familiar with a variety of different schools of economic thought, and many have been visiting Assistant Professors at Bard College. The transition to a stand-alone PhD program will encourage many of the Levy Institute's graduating MA and MS students to pursue the economics PhD at UMKC. Furthermore, the stand-alone PhD will not only preserve an important and distinctive feature of the existing program, but also enhance the competitiveness with other universities' existing economics PhD programs.

UMKC should be commended for embracing interdisciplinarity, but an interdisciplinary PhD is unusual in academia. Graduates of the stand-alone PhD program will see their academic career opportunities enhanced especially given the distinction of UMKC faculty.

In short, even though the Levy Economics Institute supports the pluralistic and interdisciplinary training of economists, the preferred way is through the conventional structure of the doctoral degree. The transition to a stand-alone economics doctoral degree program that maintains the current commitment to interdisciplinarity and pluralism would be advantageous for degree recipients, for UMKC, and for the discipline of economics.

I encourage you to approve this new degree program. Please do not hesitate to contact me if I can provide additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Dimitri Papadimitriou". The signature is fluid and cursive, with a long horizontal line extending to the right.

Dimitri Papadimitriou
President, Levy Economics Institute
Jerome Levy Professor of Economics, Bard College

Leeds University Business School

Maurice Keyworth Building
University of Leeds
Leeds LS2 9JT UK
www.leeds.ac.uk/lubs



UNIVERSITY OF LEEDS

September 29, 2023

University of Missouri Board of Curators
316 University Hall
Columbia, Missouri 65211
Email: boardofcurators@umsystem.edu

RE: Letter of support for a stand-alone Economics doctoral degree at UMKC

Dear Curators of the University of Missouri,

I am writing in my capacity as President of the Association for Evolutionary Economics (AFEE) in support of the proposal to transition the interdisciplinary doctoral program (IPhD) in Economics at the University of Missouri-Kansas City (UMKC) to a stand-alone economics PhD.

The UMKC Department of Economics has earned a national and international reputation for excellence in economics, and in particular for its successful doctoral program. UMKC faculty members and former doctoral students from this program have held leadership positions in AFEE and participated vigorously in the organization's activities. Economics doctoral students from UMKC also regularly participate in our annual conference. UMKC economists, faculty and students alike, have established the department's reputation for producing well-trained economists who are pluralistic in outlook and focused on economic policy issues. This sustained success of the UMKC program is of special importance to our organization, which builds on the 'original institutionalist' approach to economic theory and policy: for UMKC has historically been, as it remains today, an important hub of institutionalist economics. These defining features of UMKC's program will certainly continue after its transitions to a stand-alone Ph.D,

UMKC's embrace of interdisciplinarity is laudable and should be preserved. However, the current requirements of UMKC's doctoral program, which requires UMKC doctoral students to complete the standard requirements for a doctoral degree in economics as well as master's level coursework in another discipline, can put these degree holders at a competitive disadvantage in the academic job market. Degree recipients would benefit by being awarded the doctoral degree in economics while demonstrating interdisciplinarity in the body of their work. Establishing the proposed economics doctoral degree program would permit that to occur.

Writing as President of AFEE, I stand in support of the establishment of a stand-alone economics doctoral degree program at UMKC that maintains the current commitment to interdisciplinarity. Permitting UMKC's transition to a stand-alone economics Ph.D. program would – in light of the UMKC Department of Economics' record of excellence in training doctoral students – benefit its degree recipients, UMKC, and the discipline of economics as a whole.



Gary Dymski

President, Association for Evolutionary Economics

Professor of Economics, Leeds University Business School
Leadership Chair, University of Leeds



Association for Institutional Thought

University of Missouri Board of Curators
316 University Hall
Columbia, Missouri 65211
Email: boardofcurators@umsystem.edu

RE: Letter of support for stand-alone Economics doctoral degree at UMKC.

September 28, 2023

Dear Curators of the University of Missouri,

I am writing on behalf of the Association for Institutional Thought (AFIT) in support of making the Interdisciplinary Doctoral Program (iPh.D.) in Economics at the University of Missouri-Kansas City (UMKC) a stand-alone Ph.D. program. We are a professional association with a membership of over one hundred academics and practitioners in economics, law, sociology, political science, anthropology, and related fields. As I will elaborate below, the iPh.D. program in economics at UMKC is well-regarded for its emphasis on pluralism and interdisciplinarity, but a stand-alone Ph.D. program would be advantageous to both doctoral students and the University without threatening the program strong.

The Economics Department at UMKC is internationally renowned for its innovative and pluralistic approach to economics. Our association has benefited from both research and service contributions from students and faculty from this department for decades. Consider, as just one indication of the quality of the iPh.D. program there, the following: AFIT offers a yearly competition for the highest quality student papers submitted to and presented at the annual meetings of the World Social Science Association. Of the last twelve winning papers for this contest, four came from doctoral students in UMKC's Economics Department.¹

We applaud UMKC for promoting a doctoral program that trains its students in multiple perspectives, both within economics and across disciplines. We understand that a transition away from an interdisciplinary Ph.D. structure to a stand-alone Ph.D. may suggest a movement away from the cross-disciplinary component that has been part the of program's success; however, we do not believe this would be the ultimate outcome. The faculty in the Department of Economics, as well as the pluralistic nature of the doctoral program's design, will continue to allow for the multiple perspectives, methods, and so on that have been primary strengths of the current program.

While the proposed transition would not diminish the quality of the education doctoral students receive in the program, the award of a Ph.D. specifically in economics would significantly advantage them. This is one of the more prestigious degrees awarded in academia, and, indeed, having a program awarding such a degree would not only be to the benefit of students but also to the University.

¹ Winners of recent years' competitions are recognized at <https://www.institutionalthought.org/student-paper-competition>

The Association for Institutional Thought is grateful for the contributions faculty and doctoral students from UMKC's Department of Economics have made over the years. The emphasis on multiple schools of economic thought and interdisciplinarity has helped the Department's doctoral students thrive academically in our organization and elsewhere, and we know that this will continue to be the case after a transition to a stand-alone Ph.D. program. This transition would, moreover, be to the advantage of current students as well as the University. On behalf of AFIT's board of governance, I would like to encourage you to approve this transition. If you are interested in any further information, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Karol Gil Vasquez', with a stylized flourish at the end.

Karol Gil Vasquez, PhD.
AFIT - President
Associate Professor of Economics
Nichols College
Lecturer - Boston University
Email: karilyva@bu.edu



ASE THE ASSOCIATION FOR SOCIAL ECONOMICS

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hamiltod@newschool.edu

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barbara.hopkins@wright.edu

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broman@stmarytx.edu

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christine.ngo@bucknell.edu

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Villanova University
Villanova, PA 19085
chris.jeffords@villanova.edu

Program Secretary:

Veronika Dolar
Assistant Professor of
Economics
SUNY Old Westbury
Old Westbury, NY 11568
dolarv@oldwestbury.edu

October 2, 2023

University of Missouri Board of Curators
316 University Hall
Columbia, Missouri 65211
Email: boardofcurators@umsystem.edu

or stand-alone Economics doctoral degree at UMKC.

Dear Curators of the University of Missouri,

On behalf of **The Association of Social Economics**, I am pleased to write in support of the effort to transition the interdisciplinary doctoral program (IPhD) in Economics at the University of Missouri-Kansas City (UMKC) to a stand-alone economics PhD.

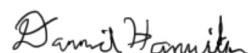
The UMKC Department of Economics is one of only a handful of PhD programs that provide training in economics that is pluralist. Its innovative thinking and policy proposals have had a substantial impact. Economics doctoral students from UMKC have a reputation for being broadly trained and familiar with a variety of different schools of economic thought. This is something that has helped make the existing program successful, and I understand it will continue to be one of the distinctive features of economics training at UMKC after the transition to a stand-alone Ph.D. This will preserve an important and distinctive feature of the existing program.

UMKC should be commended for embraced interdisciplinarity, but an interdisciplinary PhD is unusual in academia. Interdisciplinarity is typically achieved within conventional doctoral programs, rather than through an interdisciplinary doctorate. While UMKC Economics produces excellent economists, the economics doctoral degree is one of the most prestigious in academia and graduates of the UMKC program would benefit from this prestige.

In short, the Board of Trustees of the Association for Social Economics has voted to endorse the transition from an interdisciplinary doctoral program to a stand-alone economics PhD. We support the pluralistic and interdisciplinary training of economists. But the preferred way to do this is through the conventional structure of the doctoral degree rather than through an interdisciplinary doctoral degree. The transition to a stand-alone economics doctoral degree program that maintains the current commitment to interdisciplinarity and pluralism would be advantageous for degree recipients, for UMKC, and for the discipline of economics. I encourage you to approve this new degree program.

Please do not hesitate to contact me if I can provide additional information.

Sincerely,

A handwritten signature in cursive script that reads "Darrick Hamilton".

Darrick Hamilton, PhD
President
On Behalf of the Executive Council of the Association for Social Economics



School of Humanities and Social Sciences
Office of the Dean

October 4, 2023

University of Missouri Board of
Curators 316 University Hall
Columbia, Missouri 65211
Email: boardofcurators@umsystem.edu

Dear Curators of the University of Missouri,

I am writing to express my strong support for the proposed Economics PhD. The primary rationale for this change is to ensure that we receive appropriate credit for the PhDs we produce. Under the current Interdisciplinary Doctoral Program, all UMKC IPhDs are categorized as “general” in national research classifications. Transitioning to a standalone Economics PhD program means that we will receive research credit in Social Sciences for our graduates. In short, the change would capture the doctoral research UMKC is already doing, improving our research ranking without the need for any additional resources. Furthermore, as consultants from the National Council of Graduate Schools observed in a comprehensive analysis of our current IPhD program in November 2021, the “Interdisciplinary” title is confusing to students, employers, and grant-issuing bodies, and the co-discipline requirement can add an additional year of study for IPhD students with a primary discipline of Economics. We anticipate that the transition to a standalone Economics PhD will improve recruitment, retention, and completion rates, which will benefit both students and the businesses, organizations, and agencies in need of trained economists.

The proposed curriculum of the standalone Economics PhD is unchanged from the current requirements of the primary discipline in Economics for the IPhD program: a minimum of 30 classroom credits, including fundamental and advanced courses along with seminars, plus a minimum of 12 research credits for the doctoral dissertation. There is currently a shortage of doctoral-level economists in all employment areas. The department frequently receives inquiries from employers seeking to recruit graduates from our existing IPhD program. The streamlined standalone Economics PhD program would help the department meet the demand for highly trained economists, without compromising the rigorous education that our students receive.

UNIVERSITY OF MISSOURI-KANSAS CITY

Scofield Hall, Room 302 | 711 E. 51st St. | Kansas City, MO 64110
o: 816-235-1136 | shss@umkc.edu | shss.umkc.edu

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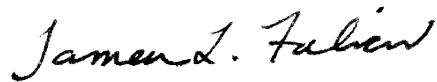
February 8, 2024

While there is an existing doctoral program in Economics in the UM System at the University of Missouri-Columbia, the vigorous demand for highly trained economists in industry, finance, government, and academia means that neither I nor Dr. Drury, Dean of the College of Arts and Sciences at MU, have any concerns about competition. The departments are also different; the UMKC Economics Department focuses on urban applications and workforce development appropriate to the Kansas City metropolitan area.

UMKC is the only research university in the KC metropolitan area, and we are proud of the tremendous impact that our Economics graduates have had on our city and region.

I am confident that transitioning to a standalone Economics PhD will benefit our students, our institution, and the communities we serve, and I am committed to making the standalone PhD programs in the School of Humanities and Social Sciences a success. Please do not hesitate to contact me if I can provide additional information.

Sincerely,

A handwritten signature in cursive script that reads "Tamara L. Falicov".

Tamara L. Falicov, PhD
Dean, School of Humanities and Social Sciences
Professor, Media, Art and Design/Race, Ethnic and Gender Studies
University of Missouri-Kansas City



September 27, 2023

University of Missouri Board of Curators
316 University Hall
Columbia, Missouri 65211
Email: boardofcurators@umsystem.edu

RE: Le'er of support for stand-alone Economics doctoral degree at UMKC

Dear Curators of the University of Missouri,

I write on behalf of the National Economic Association (NEA) in support of the proposal to transition the interdisciplinary doctoral program (IPhD) in Economics at the University of Missouri-Kansas City (UMKC) to a stand-alone economics Ph.D.

The UMKC Department of Economics has a national and international reputation for excellence in economics, and for its successful doctoral program. Faculty from UMKC Economics have held leadership positions in the NEA or otherwise contributed to the organization. Economics doctoral students from UMKC also regularly participate in our annual conference. They bring a reputation for being well-trained economists who are pluralistic in outlook. This helps make the existing graduate program successful, and I expect this will continue to be one of the distinctive features of economics training at UMKC after the transition to a stand-alone Ph.D. This will preserve an important and distinctive feature of the existing program.

UMKC's embrace of interdisciplinarity is laudable and innovative. However, an interdisciplinary PhD is not common in economics, and this can put these degree holders at a competitive disadvantage on the academic job market in economics. UMKC doctoral students presently complete the standard requirements for a doctoral degree in economics as well as master's level coursework in another discipline. Degree recipients would benefit by being awarded the doctoral degree in economics while demonstrating their interdisciplinarity in their work. Establishing the proposed economics doctoral degree program would allow that to occur.

On behalf of the NEA, I support the establishment of a stand-alone economics doctoral degree program at UMKC that maintains the current commitment to interdisciplinarity. The UMKC Department of Economics currently does an excellent job of training doctoral students and the transition to a stand-alone economics Ph.D. program would benefit the degree recipients, UMKC, and the discipline of economics.

If there are any questions, please do not hesitate to contact me at aviceisz@spelman.edu.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Angelino Viceisza', written in a cursive style.

Angelino Viceisza, Ph.D.
NEA President, 2023-24
<https://neaecon.org>

Full Professor of Economics, Spelman College
Research Associate, National Bureau of Economic Research



Department of Economics
Bucknell University
Lewisburg, Pennsylvania 17837

Phone: 570-577-1666
Fax: 570-577-3451

September 28, 2023

University of Missouri Board of Curators
316 University Hall
Columbia, Missouri 65211
Email: boardofcurators@umsystem.edu

RE: Letter of support for stand-alone Economics doctoral degree at UMKC.

Dear Curators of the University of Missouri,

As Executive Director of the International Confederation of Associations for Pluralism in Economics (ICAPE), I am pleased to write in support of the proposal to transition from the interdisciplinary doctoral program (IPhD) in Economics at the University of Missouri-Kansas City (UMKC) to a stand-alone economics PhD.

The UMKC Department of Economics has a national and international reputation for excellence in economics, and for its successful doctoral program. Several faculty members from UMKC Economics have held leadership positions in ICAPE or otherwise contributed significantly to the organization. Economics doctoral students from UMKC also regularly participate in our annual conference. They bring a reputation for being well-trained economists and pluralistic in outlook. This helps make the existing graduate program successful, and I expect this will continue to be one of the distinctive features of economics training at UMKC after the transition to a stand-alone Ph.D. This will preserve an important and distinctive feature of the existing program.

UMKC's embrace of interdisciplinarity is laudable and innovative. However, an interdisciplinary PhD is not common in academia, and this can put these degree holders at a significant competitive disadvantage on the academic job market. Degree recipients would benefit from being awarded the doctoral degree in economics while demonstrating their interdisciplinarity and pluralistic perspective in their work. Establishing the proposed economics doctoral degree program would allow that to occur. This would preserve the strengths of the existing program, while eliminating some of the barriers to success that an interdisciplinary PhD program creates in economics.

On behalf of ICAPE, I am happy to support the establishment of a stand-alone economics doctoral degree program at UMKC that maintains the current commitment to interdisciplinarity and pluralism. The UMKC Department of Economics currently does an excellent job of training doctoral students, and the transition to a stand-alone economics Ph.D. program would strengthen the program, benefitting the degree recipients, UMKC, and the discipline of economics.

Sincerely,

Geoffrey E. Schneider

Executive Director of ICAPE, Presidential Professor of Economics at Bucknell University



October 4, 2023

University of Missouri Board of Curators
316 University Hall
Columbia, Missouri 65211
Email: boardofcurators@umsystem.edu

RE: Letter of support for stand-alone Economics doctoral degree at UMKC.

Dear Curators of the University of Missouri,

I am pleased to write in support of the effort to transition the interdisciplinary doctoral program (iPhD) in Economics at the University of Missouri-Kansas City (UMKC) to a stand-alone economics PhD. I am the member of the board in three different organizations in economics all of which support pluralism in economics. I am a past president of the Association for Institutional Thought. I am on the board of the Association for Evolutionary Economics and I am the President-Elect of the Association for Social Economics.

The iPhD program offered by the UMKC Department of Economics is rare in that the curriculum embraces pluralism, offering education in many different schools of thought within economics. Our economics department has been fortunate to have hired one of their graduates and encourage our students interested in doctoral study of economics to attend UMKC. The commitment to pluralism has helped make the existing program successful, and I understand it will continue to be one of the distinctive features of economics training at UMKC after the transition to a stand-alone Ph.D. This will preserve an important and distinctive feature of the existing program.

UMKC's interdisciplinarity contributed a lot of value to economics education, but in the current academic market the innovation and openness of UMKC's brand of economics PhD is better served with a stand-alone program.

In short, the transition to a stand-alone economics doctoral degree program that maintains the current commitment to interdisciplinarity and pluralism would be advantageous for degree recipients, for UMKC, and for the discipline of economics. I encourage you to approve this new degree program. Please do not hesitate to contact me if I can provide additional information.

Sincerely,

Barbara E. Hopkins, Professor of Economics
Barbara.Hopkins@wright.edu



Office of the Provost and Executive Vice Chancellor

October 5, 2023

Dear University of Missouri Board of Curators-

UMKC aims to achieve Carnegie RI classification in the next 5-7 years. A critical action step toward this goal is to appropriately classify our research-based doctoral program CIP codes so that they are recognized in the Carnegie classification system. With this goal in mind, I am in full support of the transition of the PhD program in interdisciplinary studies (*iPhD*; not currently recognized by Carnegie) into eight independent PhD programs that are recognized in the Carnegie classification system. In addition to the critical role these programs will play in our degree program conferral data, this transition aligns with our strategic plan goals of: exceptional student learning, success, and experience (pillar one), helping UMKC become a thriving discovery enterprise (pillar two), transforming our community and region with impactful engagement (pillar three), and preparing students for the global workforce (pillar four). The program transition has been fully considered and planned by the faculty and leadership of UMKC, and is supported by the appropriate curricula, staffing, and market demand.

The *curricula* for the eight PhD programs will remain largely unchanged and is reviewed in detail on a program-by-program basis in the proposal. No additional instructional, student support, library, or assistantship resources will be necessary for this transition to be successful. Students will continue to be supported by existing faculty, staff, and student support structures on campus, and we will transition as many students as possible into the new degree programs by Fall 2024 to maximize doctoral degree conferrals in the coming years. Notably, students who do not want to transition will have the opportunity to remain in the iPhD program through degree completion; if our doctoral program proposal is approved, no new students will be admitted to the iPhD in the future and the program will be closed.

The *market demand* for each of these programs is currently strong, and we anticipate the transition will only enhance it. The 8 programs included in our proposal have the highest rates of student interest, graduation, employment, and long-term research synergy potential at UMKC. While we anticipate demand for each program to remain stable in the short term, the renaming of these programs is likely to have an immediate impact on our national and regional reputation as a

UMKC Doctor of Philosophy Program Letter of Support

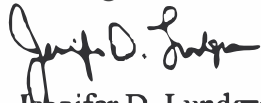
Page 2

October 5, 2023

research institution. Although we will keep our enrollments stable in the early years of this transition, faculty will be expected to increase assistantship funding through externally funded grants, thereby allowing us to increase student enrollment while also supporting our campus research goals.

I'm happy to answer any questions about this overall doctoral program transition or the individual programs included in it.

Best regards,



Jennifer D. Lundgren, PhD

Provost and Executive Vice Chancellor



School of Graduate Studies

October 5, 2023

Dear Members of the Board of Curators,

The Graduate Council at UMKC has voted to express its full support for the proposed transition from our current Interdisciplinary Ph D program to PhD's in the areas of Computer Science, Economics, Education, Engineering, Humanities, and Natural Sciences.

We are convinced that this transition would elevate the university's research status by giving us credit for doctoral research in the areas of STEM, Humanities, and Social Sciences. While we would be using new CIP codes and titles, these doctoral degrees can be delivered with existing faculty, courses, and administrative staff. The required courses for the newly titled and coded doctorates are unchanged from those required in the current Interdisciplinary PhD program, except that the secondary disciplines now only require nine hours of courses (under the current system, the "co-discipline" sometimes requires as many as fifteen hours of coursework). This promises to improve completion rates.

This change of codes and titles will better reflect the specialized research and academic focus within these designated areas, which can significantly contribute to elevating the university's research profile. This has the potential to increase funding opportunities from federal agencies, private organizations, and philanthropic sources. With focused academic programs, we can tailor our research proposals to meet the specific needs and priorities of these funding agencies, ultimately increasing our chances of securing research grants and contracts.

We strongly believe that these more narrowly focused doctoral programs will elevate our research reputation, improving our university's standing as a discovery enterprise, attracting a higher caliber of faculty and students, enhancing our regional, national, and international appeal as a go-to institution for advanced research and education.

In sum, because the proposed transition aligns with our university's long-term goals and aspirations, potentially giving us greater research prominence, increased funding, and a more dynamic academic environment that will advance the mission and reputation of UMKC and the entire UM-System, we request the Board of Curators to approve this proposal.

Thanks for your consideration.

Stephen Dilks

Stephen John Dilks,
Associate Dean, School of Graduate Studies
Chair, UMKC Graduate Council.

Executive Summary

UMKC currently offers a PhD in Interdisciplinary Studies under CIP code 30.0000 (Multi-/Interdisciplinary Studies, Other; Defined as “any instructional program multi/interdisciplinary studies not listed above,” National Center for Education Statistics). As part of a comprehensive strategy to improve academic and research excellence, inclusive of Carnegie R1 classification, UMKC seeks to close the current, catch-all interdisciplinary PhD and create eight (8) discipline-specific and more narrow interdisciplinary PhD programs from the over 20 primary disciplines within it.

This transition will allow for the following: Carnegie credit for degree conferrals across STEM, Social Science, and Humanities disciplines, improved research ranking and reputation as a discovery enterprise, advantage in recruiting high quality students and faculty, and enhanced clarity and validity with students and employers regarding the curricula offered as part of our doctoral degrees.

This proposal focuses on a new **Education PhD** that can be delivered with existing courses, faculty, staff, student support services, assistantship funding, and other resources currently allocated to the education primary discipline within the Interdisciplinary PhD.

The purpose of the Education PhD program is to support students in developing refined knowledge and skills regarding scholarship and research to advance theory and practice in education. This degree program utilizes a broad definition of “education.” Rather than treating it as a homogenous field with a relatively uniform knowledge base, education encompasses several specialized areas with their own scholarly traditions. As such, a defining feature of this doctoral program is the integration of multidisciplinary perspectives through coursework and research opportunities.

Depending on students’ background and research and career interests, students may combine study of issues of curriculum, instruction, and/or leadership and policy studies, and may also integrate subject area disciplines (e.g., music, mathematics, sciences, English), or the foundational social sciences. Students are expected to integrate these diverse perspectives in their theories, approaches and/or methods when conducting educational research.

Curriculum:

The proposed PhD program in Education has been designed to mirror the existing doctoral program, maintaining academic rigor through a balanced curriculum. This curriculum includes foundational courses, advanced coursework, research seminars, and a comprehensive doctoral dissertation, all drawn from the existing structure and resources of the doctoral program. We already have the CIP code for the EdD; the PhD in Education allows a mechanism for us to continue to support students who are seeking a research-based (vs. applied) education degree.

There are three proposed emphasis areas in this degree program:

- 1) Curriculum and Instruction
- 2) Educational Leadership, Policy and Foundations
- 3) Music Education

These are the three education-related disciplines that exist in the current Interdisciplinary PhD program. For each option, students must take at least 36 credit hours in a discipline corresponding to their degree option, including substantive courses and research methodology courses. At least twelve additional credit hours must be taken in a corollary subject area related to the student's research and approved by the student's supervisory committee. Students also take at least twelve dissertation hours in an education field. In total, the Education PhD is comprised of at least 60 credit hours.

This degree will rely on existing coursework faculty, and staff support. These courses are taught by graduate faculty in SESWPS, the UMKC Conservatory, and other academic units across campus. In addition, there are ample doctoral faculty already on staff to serve as committee chairs and members (curriculum and instruction n = 8; educational leadership, policy, and foundations n = 8; music education n = 5). Many courses are shared with other graduate programs across campus.

1. Introduction

The PhD in Interdisciplinary Studies (30.0000) was launched in 1989. For many years it has provided UMKC students the opportunity to develop as scientists and scholars in their chosen field by combining two or more disciplines of study. The Interdisciplinary PhD at UMKC originally included 26 distinct disciplines, ranging from STEM to social sciences to the humanities. Despite its strength as a highly flexible doctoral degree, it limits our ability to attract highly competitive PhD students who want a narrower disciplinary focus, as well as prospective students who are seeking STEM certified doctoral education. Most recently, we have learned that the current Interdisciplinary PhD program is not recognized by Carnegie in their university classification system—a significant barrier in our progress toward becoming a Carnegie R1 institution.

To address these challenges, we aim to transition the current Interdisciplinary PhD program into eight (8) distinct PhD programs that will be attractive to students (evidenced by historical enrollment data) and that will be recognized by Carnegie. These include **Computer Science, Economics, Education, Engineering (Electrical and Computing; Civil; and Mechanical), Humanities, plus a multidisciplinary PhD in Natural Sciences**. These doctoral research programs were selected after extensive review and discussion with doctoral faculty across the university because they are the strongest historic enrollments, core faculty of active researchers, and greatest potential for ongoing success at UMKC. Together they promise to have a significant impact on our ranking as a research institution, and the workforce in the Kansas City and greater MO area through the research and post-graduate employment outcomes produced by the graduates.

This proposal focuses on the **PhD in Education**.

Impact:

The impact of this broad degree transition, including the **PhD in Education**, will be the following: Carnegie credit for degree conferrals across STEM, Social Science, and Humanities disciplines, improved research ranking and reputation as a discovery enterprise, advantage in recruiting high quality students and faculty, and enhanced clarity and validity with students and employers regarding the curricula offered as part of our doctoral degrees.

2. University Mission & Program Analysis

2.A. Alignment with University Mission & Goals

The Education PhD program aligns well with several pillars of UMKC's strategic plan:

Pillar 2: One of the major objectives of the PhD programs is to train students in conducting independent research. The dissertations themselves are major scholarly outputs and are available for citation via MOspace. In addition, doctoral students present and publish research, often in collaboration with their faculty mentors. Some work as grant- or gift-funded assistants to faculty members; this degree of support and collaboration is, in turn, a draw of research-minded faculty to positions at UMKC.

Pillar 3: The PhD is a terminal degree in education and, as such, is a critical component of our pipeline for developing professional educators (see "demand" and "impact" for further details).

2.B. Duplication & Collaboration within Campus, Across System

The Education doctoral disciplines have existed for years as part of the current doctoral program alongside UMKC's Education Doctorate (EdD) program and other education PhD programs across the system. Given the similarities between the existing primary disciplines in the interdisciplinary PhD program and the Education PhD being proposed, we anticipate that our program will similarly serve a unique purpose and audience. The interdisciplinary nature of this program distinguishes it from other PhD and EdD programs across the system. This program also tends to uniquely serve those who both live and work in the Kansas City metro area, while other system schools (notably UMSL) draw from other regions of the state.

3. Business-Related Criteria & Justification

3.A. Market Analysis

3.A.1. Rationale & Workforce Demand for the Program

Because these three disciplines currently exist as part of UMKC's interdisciplinary PhD program, historical enrollment data can be used to demonstrate demand. Across the three education-related primary disciplines of the current interdisciplinary PhD program, there are 42 students currently enrolled, and the program has graduated 30 students in the past five years (from fall 2018-spring 2023).

Like doctoral degrees in other disciplines, a PhD in education is a needed credential for individuals wishing to work as faculty in colleges and universities. Many of the students who have enrolled in the interdisciplinary PhD program and specialized in education have done so with the intent of working as faculty at institutes of higher education, either full-time or part-time in addition to other professional duties. In addition, terminal degrees also provide opportunities for K-12 faculty and university staff to move into leadership positions and/or up the salary schedule. Graduates have also used their training as independent researchers to work in government and non-profit sectors on educational policy issues.

Impact:

Doctoral studies in education present opportunities for practitioners in the field to highlight pertinent contemporary issues in practice and direct cutting-edge research that serves as contributions to the literature and may also be applied to improving teaching and the learning experiences. This program provides a flexible option for advanced study that can be tailored to a variety of career paths. As a result, it will prepare those taking administrative and curricular leadership positions in a variety of educational settings as well as those preparing the next generation of educators as college and university faculty. In short, graduates of this program will serve as supervisors, mentors, teachers, and thought leaders, advancing the field across the state and region. Furthermore, doctoral study in education often supports career advancement among practicing educators, making this program complementary to other programming in SESWPS and the Conservatory that prepares teachers and leaders as they enter their fields.

3.A.2. Student Demand for the Program

Student demand is evidenced by our previous five-year enrollment trends in the three primary disciplines within the current UMKC interdisciplinary PhD program that will comprise the PhD in Education. The number of students/year has ranged from 2 in music education to 25 in curriculum and instruction; with an average of 44.4 students/year across all three. Pending approval, we will encourage current interdisciplinary PhD students to switch to the new degree program in Fall 24; those who want to complete their degree within the existing interdisciplinary PhD program will be allowed to do so.

Admission to the existing interdisciplinary PhD program will be suspended in Fall 24 and program teach out will begin. This period of transition is reflected in the enrollment projections below.

Table 1a. Student Enrollment Projections (anticipated total number of students enrolled in the program during the first five fall semesters following implementation.)

Year:	1	2	3	4	5
Full-time	10	12	12	12	12
Part-time	30	32	32	32	32
Total	40	44	44	44	44

Table 1b. Projected Number of Degrees Awarded

Year:	1	2	3	4	5	6	7	8	9	10
# of Degrees Awarded	5	5	5	5	5	5	5	5	5	5

3.B. Financial Projections

Research-based doctoral education (i.e., PhD) differs in key ways from professional doctoral education (e.g., JD, MD, PharmD, DDS, etc.). These differences can be found in the curricular and academic experiences, size of the student cohorts, and relationship of the program to the University mission. As such, there are significant differences in the financial models between research-based and professional doctoral programs. Research-based doctoral programs (e.g., PhD), in contrast to professional doctoral programs (e.g., JD, MD, PharmD, etc.), generally accept a smaller cohort of new students each year and often offer full or partial financial support in the form of tuition waivers and graduate assistantships. PhD students, in turn, make significant contributions to faculty research through their work on research studies (e.g., data collection), dissemination of research findings (e.g., manuscript/monograph writing), and grant writing. PhD students also provide critical support to the educational mission of the University through mentorship and instruction of undergraduate students. In most instances, PhD programs are revenue neutral or have a financial cost that is offset by positive impact on University research productivity and support of undergraduate education.

In the sections that follow, we have estimated the costs and revenues associated with the PhD in Education. *Notably, because we are using the same resources, the net revenue and financial impact of the PhD in Education is the same as the three primary disciplines within the existing interdisciplinary PhD program.*

3.B.1. Additional Resources Needed

No new resources are needed, inclusive of instructional costs, assistantship funding, marketing, or other university overhead.

3.B.2. Revenue

Revenues are generated from tuition (net scholarship) and remain the same as the existing interdisciplinary PhD program.

3.B.3. Net Revenue

No new one-time expenses are needed because all resources exist within the current interdisciplinary PhD program. Similarly, recurring expenses are not new, and are estimated based on the current interdisciplinary PhD program. Existing recurring expenses and revenues will shift from the interdisciplinary PhD to the new PhD, with the majority of that shift happening in year 1, as most current students transfer to the new degree program.

Faculty salaries are estimated at .05 FTE (representing 12.5% of their overall teaching workload) for the current faculty who participate in teaching and mentorship within the interdisciplinary PhD. Notably, most courses are required for the existing EdD and master's program, thereby inflating the FTE specific to PhD students; this inflation is offset by the variable amount of time spent mentoring dissertations. Staff estimates represent staff support time within the academic unit. Institutional overhead includes library and all central campus enrollment management and student support staff. Other includes assistantship stipends and associated tuition remission.

Table 2. Financial Projections for Proposed Program for Years 1 Through 5.

	Year 1	Year 2	Year 3	Year 4	Year 5
1. Expenses per year					
A. One-time					
<i>New/Renovated Space</i>	0	0	0	0	0
<i>Equipment</i>	0	0	0	0	0
<i>Library</i>	0	0	0	0	0
<i>Consultants</i>	0	0	0	0	0
<i>Other</i>	0	0	0	0	0
Total one-time	0	0	0	0	0
B. Recurring					
<i>Faculty</i>	64582	64582	64582	64582	64582
<i>Staff</i>	5000	5000	5000	5000	5000
<i>Benefits</i>	25049	25049	25049	25049	25049
<i>Equipment</i>	0	0	0	0	0
<i>Library</i>	0	0	0	0	0
<i>Institutional Overhead</i>	13440	14784	14784	14784	14784
<i>Other</i>	252840	252840	252840	252840	252840
Total recurring	360,911	362,255	362,255	362,255	362,255
Total expenses (A+B)	360,911	362,255	362,255	362,255	362,255
2. Revenue per year					
<i>Tuition/Fees</i>	243840	268224	268224	268224	268224
<i>Institutional Resources</i>	0	0	0	0	0
<i>State Aid -- CBHE</i>	0	0	0	0	0
<i>State Aid -- Other</i>	0	0	0	0	0
Total revenue	243840	268224	268224	268224	268224
3. Net revenue (loss) per year	(117,071)	(94,031)	(94,031)	(94,031)	(94,031)

3.B.4. Academic and Financial Viability

There is no net difference in academic and financial viability between the existing primary disciplines within the interdisciplinary PhD and the new PhD in Education. The enrollment projections described above will ensure we achieve a degree conferral threshold consistent with MDHE expectations, as well as advance our Carnegie ranking. There is a financial cost, consistent with doctoral education in general, and funds will be reallocated from the existing PhD program to the new PhD program so that we remain financially net neutral.

3.C. Business Plan: Marketing, Student Success, Transition & Exit Strategies

3.C.1. Marketing Plan

The target population for this program are professionals who work in local school districts, institutes of higher education (including UMKC itself), and other local education-based organizations. Many of these organizations serve as formal or informal partners to UMKC and SESWPS, hosting students for practicum, internship, and student teaching placements. Marketing materials (e.g., physical and electronic degree sheets) can be shared with representatives from these organizations. In addition, many students studying education within the current interdisciplinary PhD join the program after earning master's degrees from UMKC. Information about this program can be shared with current graduate students who might be interested in going on to further study. Finally, information about this program will be shared on the SESWPS website, and the program can also be highlighted on social media (e.g., through stories on current students or mentor/mentee pairings).

3.C.2. Student Success Plan

No additional student support services will be needed to support or retain students in the PhD in Education program. Current enrollment, retention and graduation trends for this program are on track with institution and national averages, and the program will continue to provide current levels of faculty and staff resources to support students through graduation.

3.C.3. Transition Plan

The person primarily responsible for the success of the PhD in Education program is: Sara Helfrich, PhD, Dean, SESWPS. Program leadership is supported by program faculty and the School of Graduate Studies staff.

3.C.4. Exit Strategy

If full-time enrollment in the PhD in Education drops below 20 students, the School of Education, Social Work, and Psychological Sciences will evaluate a temporary hiatus or program closure, depending on the reason for the low enrollment (e.g., temporary funding challenge, market demand, etc.).

4. Institutional Capacity

The costs for offering these programs are already accounted for in our current budget and include faculty salary/benefits, supplies, marketing costs, equipment costs (e.g., maintenance of computer labs), and miscellaneous expenses. Based on historical data from the education disciplines of the existing interdisciplinary PhD program, it is anticipated

that most students will complete their degrees while working full-time. Some may also work as graduate instructors; costs for these positions are accounted for in academic unit adjunct pools. Students are eligible for graduate assistantships or graduate research assistantships as they become available; these include a small number of operationally funded assistantships focused on program support as well as grant- and gift-funded research assistantships. No assistantship lines will be re-allocated to support this PhD program, and no new lines will be created. Because few students in this program receive graduate assistantships or graduate research assistantships, most pay tuition and fees. This income serves as the primary revenue source for this program.

5. Program Characteristics

5.A. Program Outcomes

Program Goals

Students in the Ph.D. Program will acquire:

- grounding in the discipline
- the ability to integrate the principles and theories of the disciplines
- the ability to effectively communicate findings and approaches to solving research problems;
- research skills, such as approaches, methods, ethical principles, and tools to pursue a research line of inquiry; the ability to form effective teams to solve novel research questions

5.B. Program Design & Content

The course requirements for the Ph.D. program in Education will remain consistent with those of the previous Interdisciplinary PhD program. No new resources will be required. The coursework requirements include:

- A minimum of 36 coursework hours in the primary area, which may include 12 hours of research-focused courses, as well as a minimum of 12 dissertation hours in the primary area;
- And a minimum of 12 coursework hours in a secondary area outside of the primary area.

5.C. Program Structure

5.C.1. Program Structure Form

- 1. Total Credits Required for Graduation: 60**
- 2. Residence requirements, if any:** Ph.D. students must satisfy the doctoral residency requirement by satisfactory completion of at least 18 credits in no more than 24 consecutive months. When satisfying the residency requirement, all Ph.D. students are

subject to the following restrictions:

- The doctoral residency requirement must be satisfied no later than the end of the semester in which the student completes his or her comprehensive examinations.
- Students must achieve a cumulative graduate grade-point average of at least 3.0 in all courses counted toward satisfying the residency requirement.

3. General education

- a. Total general education credits: n/a

Courses (specific course or distribution area and credit hours):

The course requirements for the Ph.D. program in Education will remain consistent with those of the previous Interdisciplinary PhD program. No new resources will be required. The coursework requirements include:

- A minimum of 36 coursework hours in the primary area, which may include 12 hours of research-focused courses, as well as a minimum of 12 dissertation hours in the primary area;
- And a minimum of 12 coursework hours in a secondary area outside of the primary area. The emphasis areas in Education – Curriculum & Instruction; Educational Leadership, Policy & Foundations; and Music Education – all have lists of suggested coursework in their areas for students to use as a guide when working with their advisors to choose appropriate courses.

Example:

To illustrate, consider the example program of study of a current student (listed below) with Curriculum and Instruction as their primary discipline and Educational Leadership, Policy and Foundations as their secondary discipline:

Primary discipline coursework:

Curriculum and Instruction (a minimum of 36 credit hours in coursework and 12 dissertation hours). Students select courses from those offered in conjunction with a primary advisor:

- o Survey of Research in Curriculum (3)
- o Assessing the Role of Technology in Education (3)
- o Individual Studies – Effective Teaching (3)
- o Curriculum for the 21st Century (3)
- o Seminar in Multicultural Perspectives (3)
- o Special Topics in Education (3)
- o Apprenticeship in College Teaching (3)
- o Special Problems in Curriculum and Instruction (3)
- o Intro to Graduate Research (3)
- o Statistical Methods I (3)
- o Qualitative Research I (3)
- o Qualitative Research II (3)
- o Dissertation hours (12)

Secondary discipline coursework:

Educational Leadership, Policy and Foundations (a minimum of 12 credit hours). Students select courses from those offered by the secondary discipline in conjunction with an advisor:

- o Leadership for School Improvement (3)
- o Philosophical Foundations of Education (3)
- o Topics in Higher Education (3)
- o Student Staff and Organizational Development (3)
- o Problems and Issues in Education (3)

Primary discipline coursework in Curriculum and Instruction		
<ul style="list-style-type: none">• A minimum of 36 credit hours in coursework and 12 dissertation hours• Courses are selected from those offered in the discipline and in conjunction with a primary advisor		
Course Number	Course Title	Credit Hours
Educ-CI 5490	Special Problems in Curriculum and Instruction	3
Educ-CI 5572	Assessing the Role of Technology in Education	3
Educ-CI 5589	Special Topics in Education	3
Educ-CI 5591	Curriculum for the 21 st Century	3
Educ-CI 5598	Individual Studies – Effective Teaching	3
Educ-CI 5618	Survey of Research in Curriculum	3
Educ-CI 5626	Seminar in Multicultural Perspectives	3
Educ-CI 5641	Apprenticeship in College Teaching	3
Educ-RP 5505	Statistical Methods I	3
Educ-RP 5608	Intro to Graduate Research	3
Educ-RP 5615	Qualitative Research I	3
Educ-RP 5616	Qualitative Research II	3
Educ-CI 5697	Dissertation in Curriculum and Instruction	12

Secondary discipline coursework in Educational Leadership, Policy and Foundations		
<ul style="list-style-type: none"> • A minimum of 12 credit hours in coursework • Courses are selected from those offered in the discipline 		
Educ-UL 5503	Student Staff and Organizational Development	3
Educ-UL 5518	Leadership for School Improvement	3
Educ-UL 5526	Philosophical Foundations of Education	3
Educ-UL 5635	Topics in Higher Education	3
Educ-UL 5685	Problems and Issues in Education	3
Total hours toward the degree:		63

4. Free elective credits

a. Total free elective credits: n/a

5. Requirement for thesis, internship or other capstone experience:

12 credit hours of dissertation are required.

6. Any unique features such as interdepartmental cooperation: n/a

5.D. Program Goals and Assessment

All UMKC programs are required to submit an annual summary of program assessment efforts (assessment plans, findings & discussions, and recommendations). The Education Ph.D. program will maintain the established assessment protocol currently in place for all Interdisciplinary Ph.D. disciplines. The following outcomes have been identified:

1. Students will demonstrate a thorough degree of knowledge in the discipline.
2. Students will demonstrate an ability to use proper investigation techniques for the discipline.
3. Students will effectively use oral and written forms of communication to convey their ideas.

Applicable student learning outcomes will be assessed at the following program, academic milestones: 1) Comprehensive Exams; 2) Dissertation/Research Proposal; and 3) Dissertation Defense.

At the milestone of Dissertation Defense, program targets for student performance across all Student Learning Outcomes have been set to meet or exceed average ratings of 3.5 for all (100% of) students assessed. For example, one component of students' ability to use proper investigation techniques will be evaluated by the following rubric and rating scale:

Superior (4)	Good (3)	Acceptable (2)	Unacceptable (1)	Cannot Judge
Cutting edge methodology or novel application of existing method	Incremental advance in application of methodology and careful plan for execution of research	Conventional use of methodology and adequate plan for execution of research	Inappropriate use of method; use of method that cannot adequately address research question	Outside area of expertise

5.E. Student Preparation

The minimum criteria for admission to the UMKC graduate school can be found via the [UMKC catalog](#).

Education Program Admission Requirements:

Curriculum and Instruction Discipline-Specific Admission Requirements

Applicants who designate Curriculum and Instruction as their primary discipline will be expected to have a Master's degree; and a GPA of at least 3.5 on a 4.0 scale, covering all post-baccalaureate work completed to date.

The applicant must provide the following supplementary documentation:

1. Written recommendations from appropriate professors and practitioners in the field (selected by student).
2. Brief narrative stating research interest
3. Sample research or scholarly writing

Education-Leadership Emphasis-Specific Admission Requirements

Applicants will be expected to have a grade-point average of at least 3.0 on a 4.0 scale, covering all college work taken prior to the bachelor's degree, or a GPA of at least 3.5 on a 4.0 scale, covering all post-baccalaureate work completed to date. The applicant must provide the following supplementary documentation:

1. Written recommendations from appropriate professors and practitioners in the field (selected by the applicant).

2. An autobiographical sketch. (This should be a brief resume of academic and professional goals and the applicant's personal, academic and career history as it relates to those goals. It should also include reasons for choosing Educational Leadership, Policy and Foundations as a field of study.)
3. Evidence of graduate-level writing ability provided by writing samples, prior scholarly writing or the successful completion of an essay examination.

When evaluating applications, faculty members will consider evidence in the applications of such factors as communication and academic skills, a clear and important research agenda, demonstrated leadership skills and commitment to education. There is no minimum aggregate GRE score required for applications to be considered for ELPF.

Music Education Emphasis-Specific Admission Requirements

In addition to the general criteria, applicants selecting music education as a discipline must:

- Have an aggregate minimum undergraduate GPA of 3.0 and graduate GPA of 3.5 on a 4.0 scale.
- Submit a thesis or equivalent evidence of written scholarship.
- Have an acceptable on-campus interview with doctoral faculty members from this discipline.
- Demonstrate comprehensive musicianship by providing a video link which should include a rehearsal, performance, and classroom teaching. Each video should be between 5 and 10 minutes.
- Minimum of 3 years K-12 teaching experience.

Alternate Admission Criteria

Applicants may ask to be considered under the following alternate admission criteria:

- Have an acceptable off-campus interview with at least two UMKC music education/therapy doctoral faculty.
- Have two written recommendations from UMKC doctoral faculty.
- Demonstrated competence in alternative teaching experiences.
- Comprehensive musicianship evidenced by videotaped or live demonstrations in solo performance, ensemble performance/conducting, classroom teaching, or clinical applications.

5.F. Faculty and Administration

The faculty and administration primarily responsible for the success of the PhD in Education program is: Sara Helfrich, PhD, Dean, SESWPS.

All faculty with teaching responsibilities in the PhD, Education program will have a terminal degree, PhD or professional doctoral degree (MD, EdD). Full time faculty will teach 100% of coursework/credit hours in the program. Faculty teaching in the program will be expected to engage in professional activities and teaching/learning innovation activities including research, and participation and presentations at professional organizations and societies. Faculty will also be expected to mentor and advise students while enrolled in the program and while engaging in independent research.

5.G. Alumni and Employer Survey

The UMKC Alumni Affairs Office, and External Relations team engage with UMKC alumni and the community through several opportunities designed to maintain connections, gather feedback, provide engagement opportunities, and create an environment of continuous improvement.

Graduating students are surveyed through an exit survey at the point of graduation and followed up with at 6-months post degree conferral if the student was still seeking employment at graduation or did not respond to the initial survey request. Alumni affairs and external relations provides opportunities for alumni to participate in student research competitions such as the Three Minute Thesis. Alumni are also engaged through on campus events, opportunities to serve on boards, volunteer, and nominate and receive alumni awards.

5.H. Program Accreditation

The proposed PhD program in Education at UMKC falls under the purview of the university's institutional accreditation. The university is accredited by the Higher Learning Commission, one of the regional accrediting bodies recognized by the U.S. Department of Education, which ensures that the institution and all its programs, including the proposed PhD program, meet the established standards of academic quality

There are no applicable program accreditation requirements for the Education PhD. The UMKC Conservatory is accredited by the National Association for Schools of Music (NASM). General information about the music education option of the Education PhD program will be included in subsequent reports to NASM.

In SESWPS, educator preparation (licensure) programs are accredited nationally by the Council for the Accreditation of Educator Preparation and statewide by the Missouri Department of Elementary and Secondary Education. Because the Education PhD program will not be tied to educator licensure, it will not be under the auspices of these accreditations.

6. Appendices

- Letters of support
 - Mehrzad Boroujerdi; Dean, College of Arts, Sciences, and Education- Missouri S&T
 - Sara Helfrich; Dean, School of Education, Social Work, and Psychological Sciences- UMKC
 - Chris Riley-Tillman; Dean and Professor, College of Education and Human Development- MU
 - Ann Taylor; Professor and Dean, College of Education- UMSL
 - Jennifer Lundgren; Provost and Executive Vice Chancellor- UMKC
 - Stephen John Dilkes; Associate Dean, School of Graduate Studies- UMKC

**Letters of Support
PhD in Education**



College of Arts, Sciences, and Education

September 21, 2023

Dear Members of the Board of Curators:

I am writing this letter in support of the University of Missouri Kansas City's (UMKC) efforts to gain doctoral research credit in Carnegie by transitioning the current Interdisciplinary Doctoral Program (iPhD) to five standalone PhD programs (Engineering; Computer Science; Education; Economics; Humanities) that are classified as STEM, Social Sciences, and Humanities. As Dean, I am writing in support specifically of the Education PhD program that will be housed within UMKC's School of Education, Social Work, and Psychological Sciences.

Dean Sara Helfrich has shared that the program currently exists under the context of the iPhD program and does not conflict with existing programs within the UM System. She and the faculty of the School are committed to taking on the responsibility for the Education PhD and are looking forward to continued positive outcomes within this program. This program code and title shift will boost UMKC's research status, which will strengthen the entire UM System.

Sincerely,

Mehrzaad Boroujerdi

Mehrzaad Boroujerdi
Vice Provost and Dean
College of Arts, Sciences, and Education



OPEN -- ASARED -- 2-142

September 26, 2023

Dear Members of the Board of Curators:

It is with great enthusiasm that I submit this letter in support of the University of Missouri Kansas City's (UMKC) efforts to gain doctoral research credit in Carnegie by transitioning the current Interdisciplinary Doctoral Program (iPhD) to five standalone PhD programs. As Dean of the School of Education, Social Work, and Psychological Sciences (SESWPS), I am writing in support specifically of the Education PhD program. This program will be housed within SESWPS and supported by myself, school leadership, and our outstanding faculty.

We are

excited also by the opportunity to collaborate with our Music Education colleagues in the Conservatory on this endeavor.

The program currently exists under the context of UMKC's iPhD program and does not conflict with existing programs within the UM System. This program code and title shift will not require additional resources. I and my faculty and staff colleagues remain committed to supporting the program and are looking forward to its continued positive outcomes for students and those they

will serve in their chosen field. Additionally, this program code and title shift will have a positive impact on UMKC's research status, which will not only strengthen our reputation as a school and university, but will strengthen the entire UM System as a whole.

Sincerely,



Sara R. Helfrich, PhD

Dean

School of Education, Social Work, and Psychological Sciences

University of Missouri Kansas City



September 21, 2023

Dear Members of the Board of Curators:

I am writing this letter in support of the University of Missouri Kansas City's (UMKC) efforts to gain doctoral research credit in Carnegie by transitioning the current Interdisciplinary Doctoral Program (iPhD) to five standalone PhD programs (Engineering; Computer Science; Education; Economics; Humanities) that are classified as STEM, Social Sciences, and Humanities. As Dean, I am writing to support specifically of the Education PhD program that will be housed within UMKC's School of Education, Social Work, and Psychological Sciences.

Dean Sara Helfrich has shared that the program currently exists under the context of the iPhD program and does not conflict with existing programs within the UM System. She and the faculty of the School are committed to taking on the responsibility for the Education PhD and are looking forward to continued positive outcomes within this program. This program code and title shift will boost UMKC's research status, which will strengthen the entire UM System.

Sincerely,

A handwritten signature in black ink, appearing to read 'C Riley-Tillman'.

Chris Riley-Tillman, Ph.D.
Dean and Professor

26 September 2023

Dear Members of the Board of Curators:

I am writing this letter in support of the University of Missouri Kansas City's (UMKC) efforts to gain doctoral research credit in Carnegie by transitioning the current Interdisciplinary Doctoral Program (iPhD) to five standalone PhD programs (Engineering; Computer Science; Education; Economics; Humanities) that are classified as STEM, Social Sciences, and Humanities. As Dean, I am writing to specifically support the Education PhD program that will be housed within UMKC's School of Education, Social Work, and Psychological Sciences, and serve students local to Kansas City, western Missouri, and Kansas.

Dean Sara Helfrich has shared that the program currently exists under the context of the iPhD program and does not conflict with existing programs within the UM System. She and the faculty of the School are committed to taking on the responsibility for the Education PhD and are looking forward to continued positive outcomes within this program. This program code and title shift will boost UMKC's research status, which will strengthen the entire UM System.

Yours sincerely,



Ann Taylor, Ph.D.
Professor and Dean



Office of the Provost and Executive Vice Chancellor

October 5, 2023

Dear University of Missouri Board of Curators-

UMKC aims to achieve Carnegie R1 classification in the next 5-7 years. A critical action step toward this goal is to appropriately classify our research-based doctoral program CIP codes so that they are recognized in the Carnegie classification system. With this goal in mind, I am in full support of the transition of the PhD program in interdisciplinary studies (*iPhD*; not currently recognized by Carnegie) into eight independent PhD programs that are recognized in the Carnegie classification system. In addition to the critical role these programs will play in our degree program conferral data, this transition aligns with our strategic plan goals of: exceptional student learning, success, and experience (pillar one), helping UMKC become a thriving discovery enterprise (pillar two), transforming our community and region with impactful engagement (pillar three), and preparing students for the global workforce (pillar four). The program transition has been fully considered and planned by the faculty and leadership of UMKC, and is supported by the appropriate curricula, staffing, and market demand.

The *curricula* for the eight PhD programs will remain largely unchanged and is reviewed in detail on a program-by-program basis in the proposal. No additional instructional, student support, library, or assistantship resources will be necessary for this transition to be successful. Students will continue to be supported by existing faculty, staff, and student support structures on campus, and we will transition as many students as possible into the new degree programs by Fall 2024 to maximize doctoral degree conferrals in the coming years. Notably, students who do not want to transition will have the opportunity to remain in the iPhD program through degree completion; if our doctoral program proposal is approved, no new students will be admitted to the iPhD in the future and the program will be closed.

The *market demand* for each of these programs is currently strong, and we anticipate the transition will only enhance it. The 8 programs included in our proposal have the highest rates of student interest, graduation, employment, and long-term research synergy potential at UMKC. While we anticipate demand for each program to remain stable in the short term, the renaming of these programs is likely to have an immediate impact on our national and regional reputation as a

UMKC Doctor of Philosophy Program Letter of Support

Page 2

October 5, 2023

research institution. Although we will keep our enrollments stable in the early years of this transition, faculty will be expected to increase assistantship funding through externally funded grants, thereby allowing us to increase student enrollment while also supporting our campus research goals.

I'm happy to answer any questions about this overall doctoral program transition or the individual programs included in it.

Best regards,



Jennifer D. Lundgren, PhD

Provost and Executive Vice Chancellor



School of Graduate Studies

October 5, 2023

Dear Members of the Board of Curators,

The Graduate Council at UMKC has voted to express its full support for the proposed transition from our current Interdisciplinary Ph D program to PhD's in the areas of Computer Science, Economics, Education, Engineering, Humanities, and Natural Sciences.

We are convinced that this transition would elevate the university's research status by giving us credit for doctoral research in the areas of STEM, Humanities, and Social Sciences. While we would be using new CIP codes and titles, these doctoral degrees can be delivered with existing faculty, courses, and administrative staff. The required courses for the newly titled and coded doctorates are unchanged from those required in the current Interdisciplinary PhD program, except that the secondary disciplines now only require nine hours of courses (under the current system, the "co-discipline" sometimes requires as many as fifteen hours of coursework). This promises to improve completion rates.

This change of codes and titles will better reflect the specialized research and academic focus within these designated areas, which can significantly contribute to elevating the university's research profile. This has the potential to increase funding opportunities from federal agencies, private organizations, and philanthropic sources. With focused academic programs, we can tailor our research proposals to meet the specific needs and priorities of these funding agencies, ultimately increasing our chances of securing research grants and contracts.

We strongly believe that these more narrowly focused doctoral programs will elevate our research reputation, improving our university's standing as a discovery enterprise, attracting a higher caliber of faculty and students, enhancing our regional, national, and international appeal as a go-to institution for advanced research and education.

In sum, because the proposed transition aligns with our university's long-term goals and aspirations, potentially giving us greater research prominence, increased funding, and a more dynamic academic environment that will advance the mission and reputation of UMKC and the entire UM-System, we request the Board of Curators to approve this proposal.

Thanks for your consideration.

Stephen Dilks

Stephen John Dilks,
Associate Dean, School of Graduate Studies
Chair, UMKC Graduate Council.

Executive Summary

UMKC currently offers a PhD in Interdisciplinary Studies under CIP code 30.0000 (Multi-/Interdisciplinary Studies, Other; Defined as “any instructional program multi/interdisciplinary studies not listed above,” National Center for Education Statistics). As part of a comprehensive strategy to improve academic and research excellence, inclusive of Carnegie R1 classification, UMKC seeks to close the current, catch-all interdisciplinary PhD and create eight (8) discipline-specific and more narrow interdisciplinary PhD programs from the over 20 primary disciplines within it.

This transition will allow for the following: Carnegie credit for degree conferrals across STEM, Social Science, and Humanities disciplines, improved research ranking and reputation as a discovery enterprise, advantage in recruiting high quality students and faculty, and enhanced clarity and validity with students and employers regarding the curricula offered as part of our doctoral degrees.

This proposal focuses on a new **Humanities PhD** that can be delivered with existing courses, faculty, staff, student support services, assistantship funding, and other resources currently allocated to the humanities primary discipline within the Interdisciplinary PhD.

The Humanities PhD is a thirty-six-hour degree program with a clear path to degree completion in three years. Students in this program will engage in coursework and collaborate with faculty to write a dissertation that integrates various methods (which may include digital methods for portfolio creation) with research in the Humanities. This degree program is designed to prepare students for careers in the academy and several other sectors by combining traditional academic training with applied research experience in the Humanities. This will equip them to bring Humanities content to broad public audiences using traditional and/or digital tools. It will also allow students the option to think creatively about the application of quantitative data analysis methods and digital communication tools to diverse datasets that are not traditionally subjected to this sort of inquiry.

Curriculum:

The proposed PhD program in Humanities has been designed to mirror the existing doctoral program, maintaining academic rigor through a balanced curriculum. This curriculum includes foundational courses, advanced coursework, research seminars, and a comprehensive doctoral dissertation, all drawn from the existing structure and resources of the doctoral program.

All courses already exist, together with the faculty necessary to deliver the courses. No new resources are required to deliver this program.

36 Credit Hours Minimum: 21 hours of formal coursework, 3 hours for portfolio creation, and 12 dissertation hours. Students will pursue coursework in English, History, Digital and Public Humanities, and/or General Humanities.

Divided as follows:

1. A minimum of twelve hours of Humanities coursework in a primary discipline as specified by the departments. These would be drawn from the existing inventory of graduate-level Humanities classes.
2. A minimum of nine hours of coursework in a second humanities discipline, which could include digital and public Humanities-specific coursework. In the initial iteration of the program, these could be doctoral-level cross-listed sections with our existing Digital and Public Humanities offerings, or existing doctoral-level courses in a second discipline.
3. Three hours for completion of the portfolio, which can include a body of creative and scholarly work from coursework, literature review essays or comprehensive examination questions connected to subject matter reading lists, Digital and Public Humanities projects, and the dissertation proposal.
4. Twelve hours of dissertation. The dissertation would involve either a traditional dissertation or a substantial digital project, which will include a written component that describes the methodology, components, the scholarly context of the work, etc.

This program would not require any additional courses, faculty, staff, student support services, or other resources.

1. Introduction

The PhD in Interdisciplinary Studies (30.0000) was launched in 1989. For many years it has provided UMKC students the opportunity to develop as scientists and scholars in their chosen field by combining two or more disciplines of study. The Interdisciplinary PhD at UMKC originally included 26 distinct disciplines, ranging from STEM to social sciences to the humanities. Despite its strength as a highly flexible doctoral degree, it limits our ability to attract highly competitive PhD students who want a narrower disciplinary focus, as well as prospective students who are seeking STEM certified doctoral education. Most recently, we have learned that the current Interdisciplinary PhD program is not recognized by Carnegie in their university classification system—a significant barrier in our progress toward becoming a Carnegie R1 institution.

To address these challenges, we aim to transition the current Interdisciplinary PhD program into eight (8) distinct PhD programs that will be attractive to students (evidenced by historical enrollment data) and that will be recognized by Carnegie. These include **Computer Science, Economics, Education, Engineering (Electrical and Computing; Civil; and Mechanical), Humanities, plus a multidisciplinary PhD in Natural Sciences**. These doctoral research programs were selected after extensive review and discussion with doctoral faculty across the university because they are the strongest historic enrollments, core faculty of active researchers, and greatest potential for ongoing success at UMKC. Together they promise to have a significant impact on our ranking as a research

institution, and the workforce in the Kansas City and greater MO area through the research and post-graduate employment outcomes produced by the graduates.

This proposal focuses on the **PhD in Humanities**.

Impact:

The impact of this broad degree transition, including the **PhD in Humanities**, will be the following: Carnegie credit for degree conferrals across STEM, Social Science, and Humanities disciplines, improved research ranking and reputation as a discovery enterprise, advantage in recruiting high quality students and faculty, and enhanced clarity and validity with students and employers regarding the curricula offered as part of our doctoral degrees.

2. University Mission & Program Analysis

2.A. Alignment with University Mission & Goals

The Humanities doctoral program will allow UMKC students to discover, explore, experiment, and develop critical research skills that integrate doctoral-level techniques of analysis and communication with digital methods and applied scholarship in the Humanities. Training in the Humanities, enhanced by training in advanced methods of communication and analysis and doctoral-level work in Digital Humanities and Public Humanities, will provide opportunities for innovative work on high impact, applied projects that are widely beneficial. This training equips students for success in the workforce by preparing them to think creatively about the specialized application of quantitative data analysis methods and digital communication tools.

Multidisciplinary training in doctoral-level analysis and communication, together with the creative application of data science methods and digital tools, enhances students' prospects for employment well beyond the areas typically associated with degrees in History, English, and Media Arts. This is especially true in new areas of employment where the materials being analyzed have not traditionally been subject to data analytics. Our curriculum will provide students with opportunities for employment in organizations such as libraries, archives, museums, and research institutions, providing them with advanced data science and digital communication skills that are broadly applicable to a wide range of careers in many fields.

2.B. Duplication & Collaboration within Campus, Across System

This proposed Humanities degree differs from the more discipline-specific doctoral offerings at the University of Missouri – Columbia in its integration of faculty and courses from a broader range of departments, and its focus on preparing students for a variety of careers.

Our Humanities program is unique because it combines doctoral-level training in traditional Humanities areas with training in complex data analysis. The other universities in UM system do not have doctoral degree programs in the Humanities that include the possibility of training in the digital and public humanities. The proposed PhD also differs from the other offerings by offering a formal curriculum and career pathways as part of its design.

The University of Missouri-Columbia offers a graduate certificate in Digital Humanities that is based in its School of Information Science and Learning Technologies. The program description is available online at <https://gradschool.missouri.edu/degrecategory/digital-humanities/>

The University of Missouri-St. Louis has a Museum, Heritage, and Public History degree at the MA level but does not offer a PhD degree for that program or digital and public humanities <https://www.umsl.edu/museums/> . The program description is available online at <https://www.umsl.edu/museums/> .

The Missouri University of Science and Technology has launched a digital humanities collaborative space that is similar to the Digital Collaboration Studio in the University Libraries. They do not appear to have a formal degree program for the faculty who use this space. A description of their Digital Humanities Collaboratory is available online at <https://collaboratory.mst.edu/>.

3. Business-Related Criteria & Justification

3.A. Market Analysis

3.A.1. Rationale & Workforce Demand for the Program

Current enrollments in Humanities courses are strong. We expect increased demand for Humanities doctorates that pair a traditional Humanities discipline with digital and public humanities.

The proposed curriculum provides Humanities students with training and research skills that will make them more employable within the academy and several other sections (e.g., business, government agencies, research firms). A doctorate in Humanities provides students with advanced preparation for careers in project innovation and management in organizations such as libraries, archives, and museums. Further, the program provides opportunities to enhance traditional Humanities projects with data science and digital communication skills that are broadly applicable to a wide range of careers in many fields.

The Bureau of Labor Statistics projects that demand for employees who are trained in the Humanities with additional data science skills will grow significantly through 2026 (as much as 28%). This program will help students take advantage of the demand for employees who combine doctoral-level training in the Humanities with data science skills,

thus preparing students for a wide range of careers, including web and digital interface design. O*NET projects that demand for employees with advanced web and interface design skills will grow by 8% through 2029. This degree lays the foundations for a career as a Library and Media collections specialist. O*NET projects that demand for employees in this field will increase by 5-7% through 2029. The degree also lays the foundations for employment in the public humanities field, such as work as an archivist or at a museum or historic sites. O*NET projects that demand for both fields will increase by 8% or more through 2029.

Impact:

The proposed degree program will impact the state of Missouri as well as the surrounding region and the nation by producing graduates who hold unique and in-demand skillsets. Private and non-profit businesses, institutions of education (both K-12 and higher education), and government agencies need employees who can synthesize complex information from a variety of disciplines, while also bringing that information into the digital space for preservation as well as further analysis. In addition, our graduates will possess advanced reading and writing skills, and will have been trained extensively in the communication of complex themes to the broadest audience possible.

3.A.2. Student Demand for the Program

Student demand is evidenced by our previous five-year enrollment trends in the English and History primary disciplines within the current UMKC interdisciplinary PhD program. The English primary discipline has ranged from 14 to 18 students/year with an average of 16.6 students/year; the History primary discipline has ranged from 10 to 14 students/year, with an average of 12 students/year. Combined, the proposed Humanities PhD is estimated to have between 25-30 students/year. Pending approval, we will encourage current interdisciplinary PhD students to switch to the new degree program in Fall 24; those who want to complete their degree within the existing interdisciplinary PhD program will be allowed to do so. Admission to the existing interdisciplinary PhD program will be suspended in Fall 24 and program teach out will begin. This period of transition is reflected in the enrollment projections below.

Table 1a. Student Enrollment Projections (anticipated total number of students enrolled in the program during the first five fall semesters following implementation.)

Year:	1	2	3	4	5
Full-time	20	25	30	30	30
Part-time	0	0	0	0	0
Total	20	25	30	30	30

Table 1b. Projected Number of Degrees Awarded

Year:	1	2	3	4	5	6	7	8	9	10
# of Degrees Awarded	4	4	4	4	4	4	4	4	4	4

3.B. Financial Projections

Research-based doctoral education (i.e., PhD) differs in key ways from professional doctoral education (e.g., JD, MD, PharmD, DDS, etc.). These differences can be found in the curricular and academic experiences, size of the student cohorts, and relationship of the program to the University mission. As such, there are significant differences in the financial models between research-based and professional doctoral programs. Research-based doctoral programs (e.g., PhD), in contrast to professional doctoral programs (e.g., JD, MD, PharmD, etc.), generally accept a smaller cohort of new students each year and often offer full or partial financial support in the form of tuition waivers and graduate assistantships. PhD students, in turn, make significant contributions to faculty research through their work on research studies (e.g., data collection), dissemination of research findings (e.g., manuscript/monograph writing), and grant writing. PhD students also provide critical support to the educational mission of the University through mentorship and instruction of undergraduate students. In most instances, PhD programs are revenue neutral or have a financial cost that is offset by positive impact on University research productivity and support of undergraduate education.

In the sections that follow, we have estimated the costs and revenues associated with the PhD in Humanities. *Notably, because we are using the same resources, the net revenue and financial impact of the PhD in Humanities is the same as the English and History primary disciplines within the existing interdisciplinary PhD program.*

3.B.1. Additional Resources Needed

No new resources are needed, inclusive of instructional costs, assistantship funding, marketing, or other university overhead.

3.B.2. Revenue

Revenues are generated from tuition (net scholarship) and remain the same as the existing interdisciplinary PhD program.

3.B.3. Net Revenue

No new one-time expenses are needed because all resources exist within the current interdisciplinary PhD program. Similarly, recurring expenses are not new, and are estimated based on the current interdisciplinary PhD program. Existing recurring expenses and revenues will shift from the interdisciplinary PhD to the new PhD, with the majority of that shift happening in year 1, as most current students transfer to the new degree program.

Faculty salaries are estimated at .10 FTE (representing 25% of their overall teaching workload) for the current faculty who participate in teaching and mentorship within the interdisciplinary PhD. Notably, most courses are co-taught with advanced undergraduate

and/or master's level students, thereby inflating the FTE specific to PhD students; this inflation is offset by the variable amount of time spent mentoring dissertations. Staff estimates represent staff support time within the academic unit. Institutional overhead includes library and all central campus enrollment management and student support staff. Other includes assistantship stipends and associated tuition remission.

Table 2. Financial Projections for Proposed Program for Years 1 Through 5.

	Year 1	Year 2	Year 3	Year 4	Year 5
1. Expenses per year					
A. One-time					
<i>New/Renovated Space</i>	0	0	0	0	0
<i>Equipment</i>	0	0	0	0	0
<i>Library</i>	0	0	0	0	0
<i>Consultants</i>	0	0	0	0	0
<i>Other</i>	0	0	0	0	0
Total one-time	0	0	0	0	0
B. Recurring					
<i>Faculty</i>	142000	142000	142000	142000	142000
<i>Staff</i>	5000	5000	5000	5000	5000
<i>Benefits</i>	53055	53055	53055	53055	53055
<i>Equipment</i>	0	0	0	0	0
<i>Library</i>	0	0	0	0	0
<i>Institutional Overhead</i>	6720	8400	10080	10080	10080
<i>Other</i>	187500	225000	287500	287500	287500
Total recurring	394275	433455	497635	497635	497635
Total expenses (A+B)	394275	433455	497635	497635	497635
2. Revenue per year					
<i>Tuition/Fees</i>	70272	87840	105408	105408	105408
<i>Institutional Resources</i>	0	0	0	0	0
<i>State Aid -- CBHE</i>	0	0	0	0	0
<i>State Aid -- Other</i>	0	0	0	0	0
Total revenue	70272	87840	105408	105408	105408
3. Net revenue (loss) per year	(324,003)	(345,615)	(392,227)	(392,227)	(392,227)

3.B.4. Academic and Financial Viability

There is no net difference in academic and financial viability between the existing English and History primary disciplines within the interdisciplinary PhD and the new PhD in Humanities. The enrollment projections described above will ensure we achieve a degree conferral threshold consistent with MDHE expectations, as well as advance our Carnegie ranking. There is a financial cost, consistent with doctoral education in general, and funds will be reallocated from the existing PhD program to the new PhD program so that we remain financially net neutral.

3.C. Business Plan: Marketing, Student Success, Transition & Exit Strategies

3.C.1. Marketing Plan

The program will be marketed in four ways that mirror our current efforts to market our existing program:

- We will work with each of our affiliated departments to inform students interested in pursuing graduate school about the new program.
- We will publicize the program and digital and public humanities projects through the digital signage and other offerings of the Digital Collaboration Studio in the library.
- Affiliated faculty will communicate the formal curriculum that is available to students who pursue research projects with us.
- We will market the program to regional, state-wide, and national humanities departments.

3.C.2. Student Success Plan

No additional student support services will be needed to support or retain students in the PhD in Humanities program. Current enrollment, retention and graduation trends for this program are on track with institution and national averages, and the program will continue to provide current levels of faculty and staff resources to support students through graduation.

3.C.3. Transition Plan

The person primarily responsible for the success of the PhD in Humanities is Tamara Falicov, Dean of the School of Humanities and Social Sciences. Program leadership is supported by program faculty and the School of Graduate Studies staff.

3.C.4. Exit Strategy

If full-time enrollment in the PhD in Humanities drops below 10 students, the School Humanities and Social Sciences will evaluate a temporary hiatus or program closure, depending on the reason for the low enrollment (e.g., temporary funding challenge, market demand, etc.).

4. Institutional Capacity

No new costs or other resources are required to deliver this program.

5. Program Characteristics

5.A. Program Outcomes

Program Goals

Students in the Ph.D. Program will acquire:

- grounding in the discipline
- the ability to integrate the principles and theories of the disciplines
- the ability to effectively communicate findings and approaches to solving research problems;
- research skills, such as approaches, methods, ethical principles, and tools to pursue a research line of inquiry;
- the ability to form effective teams to solve novel research questions

5.B. Program Design & Content

The course requirements for the Ph.D. program in Humanities will remain consistent with those of the previous Interdisciplinary PhD program. No new resources will be required. The coursework requirements include:

- A minimum of 15 coursework hours and 12 dissertation hours in the primary area;
- And a minimum of 9 coursework hours in an area outside of the primary area.

5.C. Program Structure

5.C.1. Program Structure Form

1. Total Credits Required for Graduation: 36

2. Residence requirements, if any: Ph.D. students must satisfy the doctoral residency requirement by satisfactory completion of at least 18 credits in no more than 24 consecutive months. When satisfying the residency requirement, all Ph.D. students are subject to the following restrictions:

- The doctoral residency requirement must be satisfied no later than the end of the semester in which the student completes his or her comprehensive examinations.
- Students must achieve a cumulative graduate grade-point average of at least 3.0 in all courses counted toward satisfying the residency requirement.

3. General education

a. Total general education credits: **n/a**

Courses (specific course or distribution area and credit hours):

The course requirements for the Ph.D. program in Humanities will remain consistent with those of the previous Interdisciplinary PhD program. No new resources will be required. The coursework requirements include:

- A minimum of 15 coursework hours and 12 dissertation hours in the primary area;
- And a minimum of 9 coursework hours in an area outside of the primary area.

To illustrate, consider the example below:

Primary discipline coursework in English		
<ul style="list-style-type: none">• A minimum of 15 credit hours in coursework and 12 dissertation hours• Courses are selected from those offered in the discipline and in conjunction with a primary advisor		
Course Number	Course Title	Credit Hours
English 5477EM	Early Modern Studies	3
English 5477TS	Twentieth and Twenty-First Century Studies	3
English 5500	Graduate Study in English	3
English 5518	Nineteenth Century American Literature	3
English 5533	History of Writing, Reading, and Publishing	3
English 5547	Intro to Critical Theory	3
English 5699	Research and Dissertation	12

Secondary discipline coursework in History		
<ul style="list-style-type: none"> • A minimum of 9 credit hours in coursework • Courses are selected from those offered in the discipline 		
History 5534	History of Technology	3
History 5549	The Civil War in Memory and Film	3
History 5581GR	How-To-History I	3
History 5585GR	Colloquium in U.S. History	3
Total hours toward the degree:		42

4. Free elective credits

a. Total free elective credits: n/a

5. Requirement for thesis, internship or other capstone experience:

12 credit hours of dissertation required.

6. Any unique features such as interdepartmental cooperation: n/a

5.D. Program Goals and Assessment

All UMKC programs are required to submit an annual summary of program assessment efforts (assessment plans, findings & discussions, and recommendations). The Humanities Ph.D. program will maintain the established assessment protocol currently in place for all Interdisciplinary Ph.D. disciplines. The following outcomes have been identified:

1. Students will demonstrate a thorough degree of knowledge in the discipline.
2. Students will demonstrate an ability to use proper investigation techniques for the discipline.
3. Students will effectively use oral and written forms of communication to convey their ideas.

Applicable student learning outcomes will be assessed at the following program, academic milestones: 1) Comprehensive Exams; 2) Dissertation/Research Proposal; and 3) Dissertation Defense.

At the milestone of Dissertation Defense, program targets for student performance across all Student Learning Outcomes have been set to meet or exceed average ratings of 3.5 for all (100% of) students assessed. For example, one component of students' ability to use proper investigation techniques will be evaluated by the following rubric and rating scale:

Superior (4)	Good (3)	Acceptable (2)	Unacceptable (1)	Cannot Judge
Cutting edge methodology or novel application of existing method	Incremental advance in application of methodology and careful plan for execution of research	Conventional use of methodology and adequate plan for execution of research	Inappropriate use of method; use of method that cannot adequately address research question	Outside area of expertise

5.E. Student Preparation

The minimum criteria for admission to the UMKC PhD program can be found via the [UMKC catalog](#).

English Discipline-Specific Admission Requirements

Applicants who select English as their primary discipline will be expected to have the M.A. in English or equivalent coursework as determined by the English department doctoral committee. Applicants who select English as a secondary discipline should have completed a master's degree or equivalent coursework. In most cases, students will be expected to have completed, with a grade of B or better, 12 hours of English courses at the 300- or 400-level (or appropriate equivalents) that are approved by the English department doctoral committee.

An applicant who plans to pursue a degree with English as a discipline is required to provide the English department doctoral committee with the names of three individuals who are academically or professionally qualified to assess the applicant's ability to pursue doctoral work. Applicants also are required to submit samples of written work to the English department doctoral committee. The applicant must submit a sample of academic prose with a research component that demonstrates the applicant's ability to undertake graduate course work in English and to engage in a scholarly conversation, preferably on a subject closely related to the applicant's proposed doctoral studies. The applicant's narrative statement, submitted with the application form, should provide a well-focused justification of the proposed course of study that is compatible with the department's resources.

History Discipline-Specific Admission Requirements

- Possess a master's degree in History or its equivalent.
- Have earned a GPA of 3.5 on a 4.0 scale in graduate courses.
- A sample of written work.
- A brief statement of academic and professional goals.
- A 1,000-word essay that specifies a research topic, demonstrates its interdisciplinary nature and shows how historical methods and approaches would be utilized.

5.F. Faculty and Administration

The faculty and administration primarily responsible for the success of this program is: Tamara Falicov, School of Humanities and Social Sciences Dean.

All faculty with teaching responsibilities in the PhD, Humanities program will have a terminal degree, PhD or professional doctoral degree (MD, EdD). Full time faculty will teach 100% of coursework/credit hours in the program. Faculty teaching in the program will be expected to engage in professional activities and teaching/learning innovation activities including research, and participation and presentations at professional organizations and societies. Faculty will also be expected to mentor and advise students while enrolled in the program and while engaging in independent research.

5.G. Alumni and Employer Survey

The UMKC Alumni Affairs Office, and External Relations team engage with UMKC alumni and the community through several opportunities designed to maintain connections, gather feedback, provide engagement opportunities, and create an environment of continuous improvement.

Graduating students are surveyed through an exit survey at the point of graduation and followed up with at 6-months post degree conferral if the student was still seeking employment at graduation or did not respond to the initial survey request. Alumni affairs and external relations provides opportunities for alumni to participate in student research competitions such as the Three Minute Thesis. Alumni are also engaged through on campus events, opportunities to serve on boards, volunteer, and nominate and receive alumni awards.

5.H. Program Accreditation

Like the current Interdisciplinary PhD program, the proposed PhD program in Humanities at UMKC falls under the purview of the university's institutional accreditation. The university is accredited by the Higher Learning Commission, one of the regional accrediting bodies recognized by the U.S. Department of Education, which ensures that the institution and all its programs, including the proposed PhD program, meet the established standards of academic quality.

6. Appendices

- Letters of support
 - Neil Coffee; Co-Chair, Digital Classics Association
 - Tamara Falicov; Dean, UMKC School of Humanities and Social Sciences
 - Jonathan Kemper; Chairman and Co-Trustee, William T. Kemper Foundation
 - Stephen Kidd; Executive Director, National Humanities Alliance
 - Jennifer Lundgren; Provost and Executive Vice Chancellor- UMKC
 - Stephen John Dilks; Associate Dean, School of Graduate Studies- UMKC

Letters of Support

PhD in Humanities



University at Buffalo
The State University of New York

Department of Classics

September 22, 2023

University of Missouri Board of Curators
316 University Hall
Columbia, Missouri 65211

Dear Board Members,

I write to you in my capacity as the Co-Chair of the Digital Classics Association (DCA), to express our strong support for the Digital and Public Humanities Ph.D. program proposal. The DCA is an organization that promotes the understanding and use of novel digital methods for the study of the classical Greek and Roman worlds. We at DCA believe the Digital and Public Humanities Ph.D. program would be an exceptional addition to your academic offerings and merits your consideration.

The proposed program, with its integration of diverse research methods, including digital tools, into Humanities research, represents a pioneering approach to higher education. This innovative curriculum will equip students with versatile skills applicable to various career paths suitable to today's digital era. The emphasis on merging quantitative data analysis methods and digital communication tools with Humanities research will give students completing the program a distinct perspective and advantage in the current and upcoming job markets.

The success of the Digital and Public Humanities undergraduate minor and workshop series gives us confidence that a related program at the Ph.D. level will be successful, not least because the same team that designed and implemented the minor will be working on the Ph.D. initiative.

Furthermore, the program's potential to benefit students and contribute to the economy of Kansas City and the State of Missouri is noteworthy. Producing graduates with advanced skills in data science and digital communication addresses the growing demand for professionals in these fields, as projected by the Bureau of Labor Statistics.

The distinctive integration of Digital and Public Humanities into the Ph.D. program sets it apart as a unique offering within the state of Missouri. This distinction reflects positively on the University and positions it as a leader in providing innovative academic programs.

We fully support this proposal and believe it has the potential to make a substantial and positive impact on both higher education and the broader community. If you require any additional information or would like to discuss this further, please do not hesitate to reach out to me.

Yours sincerely,

A handwritten signature in black ink that reads "Neil Coffee". The signature is written in a cursive style with a large, stylized 'N' and 'C'.

Neil Coffee
Co-Chair, Digital Classics Association
Professor
ncoffee@buffalo.edu



School of Humanities and Social Sciences

Office of the Dean

September 29, 2023

University of Missouri Board of Curators
316 University Hall
Columbia, Missouri 65211
Email: boardofcurators@umsystem.edu

Dear Curators of the University of Missouri,

I am writing to express my strong support for the proposed Humanities PhD. Transitioning from the current Interdisciplinary PhD (IPhD) program to standalone programs does not require any additional resources, and will ensure that we receive appropriate credit for the Humanities PhDs that we produce, which will help improve our ranking as a research institution. The benefit to our institutional ranking is reason enough to support the proposed program, but the Humanities PhD also has been designed to address issues that have arisen with the current IPhD program. The Humanities PhD will better serve our students by offering a clear path to timely degree completion and by allowing students to receive training in the in-demand subfield of Digital and Public Humanities. Digital and Public Humanities equips students to bring Humanities content to public audiences using traditional and/or digital methods. It also trains students to think creatively about the application of quantitative data analysis methods and digital communication tools to diverse datasets that are not traditionally subjected to this sort of inquiry.

Students in the current IPhD program often select English and History as their two disciplines. A student enrolling with English as their primary discipline would be required to take a total of 18 hours in English. If they selected History as their co-discipline, they would be required to take, at the minimum, 15 hours of graduate-level History courses, making their combined coursework 33 hours. The Humanities PhD will require a minimum of 21 hours of formal coursework – 12 hours in a primary discipline and 9 hours in a secondary discipline – plus 3 hours for the completion of a portfolio. (Both the current IPhD and proposed Humanities PhD require 12 hours of dissertation credit.) The Humanities PhD curriculum maintains a rigorous and balanced course of study and incorporates a portfolio requirement, which will be of use to students as they enter the job market, while cutting down the time needed to earn the degree.

UNIVERSITY OF MISSOURI-KANSAS CITY

Scofield Hall, Room 302 | 711 E. 51st St. | Kansas City, MO 64110

o: 816-235-1136 | shss@umkc.edu | shss.umkc.edu

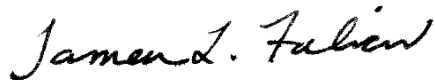
OPEN -- ASARED -- 2-165

February 8, 2024

The combination of research experience in the Humanities with training in various methods will prepare students for a variety of careers, both within and outside the academy. We expect to see increased demand for Humanities doctorates that pair a traditional Humanities discipline like English or History with Digital and Public Humanities. For example, the Bureau of Labor Statistics projects that demand for employees who are trained in the Humanities with additional data science skills will grow significantly through 2026 – as much as 28%. Private and non-profit businesses, educational and cultural institutions, and government agencies need employees with first- rate time and project management skills who can conduct research; analyze, synthesize and preserve information, including in the digital space; and communicate clearly to a variety of audiences and across multiple platforms. A Humanities PhD will provide graduates with opportunities for innovative work on high impact, applied projects that are widely beneficial to the region and state.

I am committed to making the Humanities PhD program a success. Please do not hesitate to contact me if I can provide additional information.

Sincerely,

A handwritten signature in black ink that reads "Tamara L. Falicov". The signature is written in a cursive, flowing style.

Tamara L. Falicov, PhD
Dean, School of Humanities and Social Sciences
Professor, Media, Art and Design/Race, Ethnic and Gender Studies
University of Missouri-Kansas City

William T. Kemper Foundation

COMMERCE BANK, TRUSTEE

September 29, 2023

University of Missouri Board of Curators
316 University Hall
Columbia, MO 65211

To the Board of Curators,

I am pleased to write on behalf of the William T. Kemper Foundation in support of the effort to create a Humanities PhD program at the University of Missouri-Kansas City.

Over the past six years, the Kemper Foundation has worked closely with UMKC's College of Humanities and Social Sciences, supporting multiple public and digital humanities projects. We have also facilitated a series of training sessions to help faculty and staff from several departments collaborate towards the furtherance of this effort using "agile" project management concepts. Also notably, our support in the Humanities at UMKC has included the work of Dr. David Trowbridge. Prior to joining UMKC's faculty, Dr. Trowbridge created Clio, an internet-based history platform being used nationally by numerous individuals and institutions to support research and access to local historic and cultural institutions and sites.

We are especially excited by the new degree's relevance, as it addresses current challenges and opportunities for both scholarship and workforce preparation. By combining traditional academic training with applied research experience in the Humanities, the Humanities PhD program is designed to prepare students for careers in the academy and several other sectors, equipping them to bring Humanities content to broad public audiences using traditional and/or digital tools. It will also allow students opportunities to think creatively about the application of quantitative data analysis methods and digital communication tools to diverse datasets that are not traditionally subjected to this sort of inquiry. This degree would benefit students by offering them training in a dynamic subfield: Digital and Public Humanities.

The current interest shown by faculty, students, and the community in the digital and public humanities is evidence of the desirability for this PhD program. Graduates with advanced preparation for careers in project innovation and management, and with broadly applicable skills in data science and digital communication will benefit the local and state talent pool and economy. The Bureau of Labor Statistics projects that demand for employees trained in the Humanities with additional data science skills will grow significantly in the near future.

We are encouraged by our past experience in this area and are pleased to now support this important proposal.

Sincerely,



Jonathan Kemper
Chairman and Co-Trustee

922 Walnut Street, Suite 200
Kansas City, Missouri 64106
OPEN -- ASARED -- 3-167

February 8, 2024



National Humanities Alliance

September 28, 2023

University of Missouri Board of Curators
316 University Hall
Columbia, MO 65211

Dear University of Missouri Board of Curators,

I am writing as the executive director of the National Humanities Alliance in support of University of Missouri Kansas City's proposal for a new Humanities PhD program. Among other areas of research into the public value of the humanities, the National Humanities Alliance researches career pathways for those who have studied the humanities. From this work, we know that labor market experts predict that demand for the skills honed through the humanities will increase as more tasks are automated through artificial intelligence and robotics. Further, we know that those educated in the humanities are sought after by employers—especially in technology innovation. As Vivek Wadhwa, director of Research at the Center for Entrepreneurship and Research Commercialization at the Pratt School of Engineering at Duke University has said, "I believe humanities majors make the best project managers, the best product managers, and, ultimately, the most visionary technology leaders." The Bureau of Labor Statistics projects that demand for employees who are trained in the Humanities with additional data science skills will grow significantly through 2026 (as much as 28%).

UMKC's proposed Humanities PhD is designed to cultivate advanced humanities skills in a concentrated three-year period that will position graduates to join the workforce quickly. The degree program will prepare students for careers in the academy and several other sectors by combining traditional academic training with applied research experience in the Humanities. This will equip graduates to bring Humanities content to broad public audiences using traditional and/or digital tools. It will also allow students the option to think creatively about the application of quantitative data analysis methods and digital communication tools to diverse datasets that are not traditionally subjected to this sort of inquiry.

This degree would benefit students by offering them training in a dynamic subfield: Digital and Public Humanities. It would also benefit the local and state economy by producing graduates with advanced preparation for careers in project innovation and management, and with broadly applicable skills in data science and digital communication. This PhD program would be an asset to the University of Missouri system and the entire state.

Sincerely,

Stephen Kidd
Executive Director
National Humanities Alliance



Office of the Provost and Executive Vice Chancellor

October 5, 2023

Dear University of Missouri Board of Curators-

UMKC aims to achieve Carnegie R1 classification in the next 5-7 years. A critical action step toward this goal is to appropriately classify our research-based doctoral program CIP codes so that they are recognized in the Carnegie classification system. With this goal in mind, I am in full support of the transition of the PhD program in interdisciplinary studies (*iPhD*; not currently recognized by Carnegie) into eight independent PhD programs that are recognized in the Carnegie classification system. In addition to the critical role these programs will play in our degree program conferral data, this transition aligns with our strategic plan goals of: exceptional student learning, success, and experience (pillar one), helping UMKC become a thriving discovery enterprise (pillar two), transforming our community and region with impactful engagement (pillar three), and preparing students for the global workforce (pillar four). The program transition has been fully considered and planned by the faculty and leadership of UMKC, and is supported by the appropriate curricula, staffing, and market demand.

The *curricula* for the eight PhD programs will remain largely unchanged and is reviewed in detail on a program-by-program basis in the proposal. No additional instructional, student support, library, or assistantship resources will be necessary for this transition to be successful. Students will continue to be supported by existing faculty, staff, and student support structures on campus, and we will transition as many students as possible into the new degree programs by Fall 2024 to maximize doctoral degree conferrals in the coming years. Notably, students who do not want to transition will have the opportunity to remain in the *iPhD* program through degree completion; if our doctoral program proposal is approved, no new students will be admitted to the *iPhD* in the future and the program will be closed.

The *market demand* for each of these programs is currently strong, and we anticipate the transition will only enhance it. The 8 programs included in our proposal have the highest rates of student interest, graduation, employment, and long-term research synergy potential at UMKC. While we anticipate demand for each program to remain stable in the short term, the renaming of these programs is likely to have an immediate impact on our national and regional reputation as a

Administrative Center, Room 300g | 5115 Oak Street | Kansas City, MO 64112
o: 816-235-1107 | provost@umkc.edu umkc.edu/provost

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research institution. Although we will keep our enrollments stable in the early years of this transition, faculty will be expected to increase assistantship funding through externally funded grants, thereby allowing us to increase student enrollment while also supporting our campus research goals.

I'm happy to answer any questions about this overall doctoral program transition or the individual programs included in it.

Best regards,



Jennifer D. Lundgren, PhD

Provost and Executive Vice Chancellor



School of Graduate Studies

October 5, 2023

Dear Members of the Board of Curators,

The Graduate Council at UMKC has voted to express its full support for the proposed transition from our current Interdisciplinary Ph D program to PhD's in the areas of Computer Science, Economics, Education, Engineering, Humanities, and Natural Sciences.

We are convinced that this transition would elevate the university's research status by giving us credit for doctoral research in the areas of STEM, Humanities, and Social Sciences. While we would be using new CIP codes and titles, these doctoral degrees can be delivered with existing faculty, courses, and administrative staff. The required courses for the newly titled and coded doctorates are unchanged from those required in the current Interdisciplinary PhD program, except that the secondary disciplines now only require nine hours of courses (under the current system, the "co-discipline" sometimes requires as many as fifteen hours of coursework). This promises to improve completion rates.

This change of codes and titles will better reflect the specialized research and academic focus within these designated areas, which can significantly contribute to elevating the university's research profile. This has the potential to increase funding opportunities from federal agencies, private organizations, and philanthropic sources. With focused academic programs, we can tailor our research proposals to meet the specific needs and priorities of these funding agencies, ultimately increasing our chances of securing research grants and contracts.

We strongly believe that these more narrowly focused doctoral programs will elevate our research reputation, improving our university's standing as a discovery enterprise, attracting a higher caliber of faculty and students, enhancing our regional, national, and international appeal as a go-to institution for advanced research and education.

In sum, because the proposed transition aligns with our university's long-term goals and aspirations, potentially giving us greater research prominence, increased funding, and a more dynamic academic environment that will advance the mission and reputation of UMKC and the entire UM-System, we request the Board of Curators to approve this proposal.

Thanks for your consideration.

Stephen Dilks

Stephen John Dilks,
Associate Dean, School of Graduate Studies
Chair, UMKC Graduate Council.

Executive Summary

UMKC currently offers a PhD in Interdisciplinary Studies under CIP code 30.0000 (Multi-/Interdisciplinary Studies, Other; Defined as “any instructional program multi/interdisciplinary studies not listed above,” National Center for Education Statistics). As part of a comprehensive strategy to improve academic and research excellence, inclusive of Carnegie R1 classification, UMKC seeks to close the current, catch-all interdisciplinary PhD and create eight (8) discipline-specific and more narrow interdisciplinary PhD programs from the over 20 primary disciplines within it.

This transition will allow for the following: Carnegie credit for degree conferrals across STEM, Social Science, and Humanities disciplines, improved research ranking and reputation as a discovery enterprise, advantage in recruiting high quality students and faculty, and enhanced clarity and validity with students and employers regarding the curricula offered as part of our doctoral degrees.

This proposal focuses on a new **Natural Sciences PhD** that can be delivered with existing courses, faculty, staff, student support services, assistantship funding, and other resources currently allocated to the natural sciences primary discipline within the Interdisciplinary PhD.

The new PhD in Natural Sciences will now align itself with CIP Code 30.1801 (Multidisciplinary - Natural Sciences), earning a STEM and Carnegie eligibility. It will encompass 10 science disciplines carried over from our previous Interdisciplinary PhD Program, including Biomedical & Health Informatics, Cell Biology & Biophysics, Chemistry, Geosciences, Mathematics, Molecular Biology & Biochemistry, Oral & Craniofacial Sciences, Pharmaceutical Science, Pharmacology, and Physics.

The primary advantage of this transition to a PhD in Natural Sciences is that it will enable UMKC to receive doctoral research recognition in the STEM domain, further enhancing our academic and research standing. This strategic change reflects our commitment to providing a dynamic and specialized educational experience while ensuring that current students are supported throughout their academic journey.

Curriculum:

The proposed PhD program in Natural Sciences has been designed to mirror the existing interdisciplinary doctoral program, maintaining academic rigor through a balanced curriculum. This curriculum includes foundational courses, advanced coursework, research seminars, and a comprehensive doctoral dissertation, all drawn from the existing structure and resources of the doctoral program. As with the current interdisciplinary doctoral program, a minimum of 30 classroom credits is required, including fundamental and advanced courses along with seminars. Additionally, a doctoral dissertation necessitates a minimum of 12 research credits.

The curriculum of each participating discipline will not change from current offerings. The program will be administered by the School of Graduate Studies using existing resources. No additional faculty, staff, student support services, or other resources will be needed.

1. Introduction

The PhD in Interdisciplinary Studies (30.0000) was launched in 1989. For many years it has provided UMKC students the opportunity to develop as scientists and scholars in their chosen field by combining two or more disciplines of study. The Interdisciplinary PhD at UMKC originally included 26 distinct disciplines, ranging from STEM to social sciences to the humanities. Despite its strength as a highly flexible doctoral degree, it limits our ability to attract highly competitive PhD students who want a narrower disciplinary focus, as well as prospective students who are seeking STEM certified doctoral education. Most recently, we have learned that the current Interdisciplinary PhD program is not recognized by Carnegie in their university classification system—a significant barrier in our progress toward becoming a Carnegie R1 institution.

To address these challenges, we aim to transition the current Interdisciplinary PhD program into eight (8) distinct PhD programs that will be attractive to students (evidenced by historical enrollment data) and that will be recognized by Carnegie. These include **Computer Science, Economics, Education, Engineering (Electrical and Computing; Civil; and Mechanical), Humanities, plus a multidisciplinary PhD in Natural Sciences**. These doctoral research programs were selected after extensive review and discussion with doctoral faculty across the university because they are the strongest historic enrollments, core faculty of active researchers, and greatest potential for ongoing success at UMKC. Together they promise to have a significant impact on our ranking as a research institution, and the workforce in the Kansas City and greater MO area through the research and post-graduate employment outcomes produced by the graduates.

This proposal focuses on the **PhD in Natural Sciences**.

Impact:

The impact of this broad degree transition, including the **PhD in Natural Sciences**, will be the following: Carnegie credit for degree conferrals across STEM, Social Science, and Humanities disciplines, improved research ranking and reputation as a discovery enterprise, advantage in recruiting high quality students and faculty, and enhanced clarity and validity with students and employers regarding the curricula offered as part of our doctoral degrees.

2. University Mission & Program Analysis

2.A. Alignment with University Mission & Goals

The change will allow UMKC's STEM specific fields to have a greater impact on UMKC's research goals, grant funding, and Carnegie Rankings.

2.B. Duplication & Collaboration within Campus, Across System

The UM System does not offer another multi-disciplinary structure for a STEM doctoral program in the Natural Sciences.

3. Business-Related Criteria & Justification

3.A. Market Analysis

3.A.1. Rationale & Workforce Demand for the Program

Student demand in STEM fields has been steady over the past five years. According to the U.S. Bureau of Labor Statistics (<https://www.bls.gov/>), overall employment of scientists and mathematicians is projected to grow 5% to 31% from 2021 to 2031, depending on the field. PhD-trained natural scientists and mathematicians are needed for jobs, such as college-level faculty, researchers at National Laboratories, Research Institutes, Biotechnology and Pharmaceutical companies, and as researchers/data analysts for a wide range of not-for-profit, insurance or financial institutions.

Pharmaceutical Sciences and Pharmacology have high demand from employers both in Missouri and nationally. Pharmaceutical Sciences has a predicted growth of approximately 15% by 2027 in Missouri and 24% nationally (Lightcast data). Historically, PhD students in both Pharmaceutical Sciences and Pharmacology from UMKC have been in high demand with those seeking jobs having a 100% employment rate either in industry or in academia after graduation. Within the Kansas City region, major employers include Bayer, Pfizer, Merck, Eurofins, and others (MARC data), while some of our graduates seek employment in regional CROs including KCAS, Xenotech, and others.

UMKC School of Pharmacy is the only public pharmacy school in Missouri and one of only two Pharmacy schools in the state. As such, students graduating from the UMKC School of Pharmacy with a PhD have high demand skills that can be used in pharmaceutical manufacturing, drug discovery, regulatory oversight, and in other areas such as technical writing. Students who have graduated from the program and gone into academia have a strong record of accomplishment, with some bypassing post-docs entirely and landing tenure-track positions both within and outside of the United States. For our PhD program, enrollment in either discipline has averaged about 33 students over the past 3 years.

Impact:

While at UMKC, doctoral students in the sciences and mathematics engage in innovative, basic research. Not only does this further the research mission of UMKC, but it provides publications that support UMKC faculty in obtaining external research funding from local, regional, and national sources. Many doctoral students have also been employed as GTAs during their studies and receive training in how to be effective teachers.

After graduation, UMKC-trained students are employed locally, regionally, and nationally in academic, public, and private institutions, and local and federal government agencies, contributing to educating the next generation and the economic development of the Kansas City region and beyond.

- UMKC PhD graduates are college faculty, lecturers, and researchers at institutions in the state of Missouri and the Kansas City region, as well as academic institutions throughout the U.S. and foreign countries. Examples include University of Missouri – Columbia, UMKC, Northwest Missouri State, Drury University, Washburn University, Johnson County Community College, Kansas City Kansas Community College, Adams State University, Arizona State University, East Carolina University, Florida Polytechnic University, Rosalind Franklin University of Medicine and Science, University of Florida, University of Kansas, University of Southern California, University of Tennessee- Knoxville, University of Wisconsin-Parkside and Umm Al-Qura University (Saudi Arabia).
- UMKC PhD graduates are hired as research scientists and data analysts at local institutions, and federal and state government agencies, including Catalant Pharma Solutions, KCAS Bioanalytical Services, MRI Global, Immunophotonics, H&R Bloch, Valorem Reply, U.S. Department of Agriculture, Missouri Department of Natural Resources, Foreign Military Studies Office at Fort Leavenworth, Kansas, and Leavenworth County, Kansas.
- UMKC PhD graduates have been hired as research scientists and data analysts across the US, including KBI Biopharma (North Carolina), Bristol Myers Squibb (Massachusetts), and Intermountain Precision Genomics (Utah).

Students in Pharmacy have been instrumental in powering the growth of research at UMKC with many of our faculty having successful extramural grants from the NIH and other groups supporting our students averaging to about \$1.2M funding annually over the past 5 years.

Additionally, our students are well published, having contributed to approximately 40 papers in the 3-year period covering 2020 through 2022, with about 30 posters at national or regional meetings in the same period. Additionally, our students often serve as graduate teaching assistants, which helps keep the PharmD program running smoothly. Students contribute to about 50% of PharmD professional courses.

3.A.2. Student Demand for the Program

Student demand is evidenced by our previous five-year enrollment trends in the 10 primary disciplines within the current interdisciplinary PhD that will comprise the new Natural Sciences PhD. These ten disciplines have varied widely in their frequency of admitting students and total student enrollment, ranging from 1 student/year in oral and cranifacial sciences to 31 students/year in physics. Combined, the five year average of all 10 primary disciplines is 123.6 students/year. Pending approval, we will encourage current interdisciplinary PhD students to switch to the new degree program in Fall 24; those who want to complete their degree within the existing interdisciplinary PhD program will be allowed to do so. Admission to the existing interdisciplinary PhD program will be suspended in Fall 24 and program teach out will begin.

This period of transition is reflected in the enrollment projections below.

Table 1a. Student Enrollment Projections (anticipated total number of students enrolled in the program during the first five fall semesters following implementation.)

Year:	1	2	3	4	5
Full-time	100	123	123	123	123
Part-time	0	0	0	0	0
Total	100	123	123	123	123

Table 1b. Projected Number of Degrees Awarded

Year:	1	2	3	4	5	6	7	8	9	10
# of Degrees Awarded	20	20	20	20	20	20	20	20	20	20

3.B. Financial Projections

Research-based doctoral education (i.e., PhD) differs in key ways from professional doctoral education (e.g., JD, MD, PharmD, DDS, etc.). These differences can be found in the curricular and academic experiences, size of the student cohorts, and relationship of the program to the University mission. As such, there are significant differences in the financial models between research-based and professional doctoral programs. Research-based doctoral programs (e.g., PhD), in contrast to professional doctoral programs (e.g., JD, MD, PharmD, etc.), generally accept a smaller cohort of new students each year and often offer full or partial financial support in the form of tuition waivers and graduate assistantships. PhD students, in turn, make significant contributions to faculty research through their work on research studies (e.g., data collection), dissemination of research findings (e.g., manuscript/monograph writing), and grant writing. PhD students also provide critical support to the educational mission of the University through mentorship and instruction of undergraduate students. In most instances, PhD programs are revenue neutral or have a financial cost that is offset by positive impact on University research productivity and support of undergraduate education.

In the sections that follow, we have estimated the costs and revenues associated with the PhD in Natural Sciences. *Notably, because we are using the same resources, the net revenue and financial impact of the PhD in Natural Sciences is the same as the 10 primary disciplines within the existing interdisciplinary PhD program.*

3.B.1. Additional Resources Needed

No new resources are needed, inclusive of instructional costs, assistantship funding, marketing, or other university overhead.

3.B.2. Revenue

Revenues are generated from tuition (net scholarship) and remain the same as the existing interdisciplinary PhD program.

3.B.3. Net Revenue

No new one-time expenses are needed because all resources exist within the current interdisciplinary PhD program. Similarly, recurring expenses are not new, and are estimated based on the current interdisciplinary PhD program. Existing recurring expenses and revenues will shift from the interdisciplinary PhD to the new PhD, with the majority of that shift happening in year 1, as most current students transfer to the new degree program.

Faculty salaries are estimated at .10 FTE (representing 25% of their overall teaching workload) for the current faculty who participate in teaching and mentorship within the interdisciplinary PhD. Notably, many courses are taught as part of master's or professional doctoral programs, thereby inflating the FTE specific to PhD students; this inflation is offset by the variable amount of time spent mentoring dissertations. Staff estimates represent staff support time within the academic units. Institutional overhead includes library and all central campus enrollment management and student support staff. Other includes assistantship stipends and associated tuition remission.

Table 2. Financial Projections for Proposed Program for Years 1 Through 5.

	Year 1	Year 2	Year 3	Year 4	Year 5
1. Expenses per year	0	0	0	0	0
A. One-time	0	0	0	0	0
<i>New/Renovated Space</i>	0	0	0	0	0
<i>Equipment</i>	0	0	0	0	0
<i>Library</i>	0	0	0	0	0
<i>Consultants</i>	0	0	0	0	0
<i>Other</i>	0	0	0	0	0
Total one-time	0	0	0	0	0
B. Recurring					
<i>Faculty</i>	663,366	663,366	663,366	663,366	663,366
<i>Staff</i>	5000	5000	5000	5000	5000
<i>Benefits</i>	240,611	240,611	240,611	240,611	240,611
<i>Equipment</i>	0	0	0	0	0
<i>Library</i>	0	0	0	0	0
<i>Institutional Overhead</i>	33,600	41,328	41,328	41,328	41,328
<i>Other</i>	1,925,280	2,139,200	2,139,200	2,139,200	2,139,200
Total recurring	2,867,857	3,089,505	3,089,505	3,089,505	3,089,505
Total expenses (A+B)	2,867,857	3,089,505	3,089,505	3,089,505	3,089,505
2. Revenue per year					
<i>Tuition/Fees</i>	409,920	504,201	504,201	504,201	504,201
<i>Institutional Resources</i>	0	0	0	0	0
<i>State Aid -- CBHE</i>	0	0	0	0	0
<i>State Aid -- Other</i>	0	0	0	0	0
Total revenue	409,920	504,201	504,201	504,201	504,201
3. Net revenue (loss) per year	(2,457,937)	(2,585,304)	(2,585,304)	(2,585,304)	(2,585,304)

3.B.4. Academic and Financial Viability

There is no net difference in academic and financial viability between the existing natural science primary disciplines within the interdisciplinary PhD and the new PhD in Natural Sciences. The enrollment projections described above will ensure we achieve a degree conferral threshold consistent with MDHE expectations, as well as advance our Carnegie ranking. There is a financial cost, consistent with doctoral education in general, and funds will be reallocated from the existing PhD program to the new PhD program so that we remain financially net neutral.

3.C. Business Plan: Marketing, Student Success, Transition & Exit Strategies

3.C.1. Marketing Plan

Marketing will be expanded and modified from its current state to highlight that the current Interdisciplinary PhD (26 programs in numerous disciplines) has changed to a more focused STEM degree (10 disciplines) in the Natural Sciences.

3.C.2. Student Success Plan

No additional student support services will be needed to support or retain students in the PhD in Natural Sciences program. Current enrollment, retention and graduation trends for this program are on track with institution and national averages, and the program will continue to provide current levels of faculty and staff resources to support students through graduation.

3.C.3. Transition Plan

The people primarily responsible for the success of the PhD in Natural Sciences are: During the transition Professor Parisi, the current I PhD Program Director, will be responsible in collaboration with the following discipline-specific coordinators. Professor Parisi will continue to direct the I PhD and the Natural Sciences PhD during the transition; a new director will be appointed with expertise in the disciplines reflected in the STEM program.

Dr. Jenifer Allsworth – Biomedical and Health Informatics

Dr. Karen Bame -- Biology

Dr. Xiaobo Chen -- Chemistry

Dr. Fengpeng Sun -- Geosciences

Dr. Liana Segal -- Mathematics

Dr. Mary Walker – Oral and Craniofacial Sciences

Dr. Kun Cheng – Pharmacy

Dr Paul Rulis – Physics

Program leadership is supported by program faculty and the School of Graduate Studies staff.

3.C.4. Exit Strategy

If full-time enrollment in the PhD in Natural Sciences drops below 20 students, the School of Graduate Studies will evaluate a temporary hiatus or program closure, depending on the reason for the low enrollment (e.g., temporary funding challenge, market demand, etc.).

4. Institutional Capacity

No new expenses. Discipline Coordinators will receive the same annual stipend as within the previous program, and the Program Director is a paid position within the School of Graduate Studies. Revenue comes from student enrollment in the various areas. No additional courses, staff, or student support services are necessary to support the program.

5. Program Characteristics

5.A. Program Outcomes

Program Goals

Students in the Ph.D. Program will acquire:

- grounding in the primary and secondary disciplines
- the ability to integrate the principles and theories of the disciplines
- the ability to effectively communicate findings and approaches to solving research problems;
- research skills, such as approaches, methods, ethical principles, and tools to pursue a research line of inquiry;
- the ability to form effective interdisciplinary teams to solve novel research questions

5B. Program Design & Content

Biomedical and Health Informatics

Course requirements are remaining the same from the previous Interdisciplinary PhD program to the PhD in Natural Sciences.

Core coursework in the Biomedical and Health Informatics Primary discipline will include a minimum of 18 credit hours of courses in the table below: 6 credit hours should be taken from Biostatistics; 6 credit hours should be taken from Research methodology and ethics area and 6 credit hours should be taken from informatics area. Courses taken to meet this requirement may be adjusted to reflect the courses taken in the chosen secondary discipline.

Area	Credit Hours	Available Courses (3 credit hours each)	
Biostatistics	6	MEDB 5501 ** MEDB 5502 ** MEDB 5503 MEDB 5535	Applied Biostatistics I Applied Biostatistics II Biostatistics III: Mixed-Effects Models Quantitative Aspects of Epidemiologic Research
Research Methodology	3	MEDB 5510 MEDB 5511 MEDB 5512	Clinical Research Methodology Principles and Applications of Epidemiology Clinical Trials
Research Ethics	3	MEDB 5561	Responsible Conduct of Research
Informatics	6	MEDB 5520 MEDB 5521 BIOL 5525 COMP-SCI 5565 COMP-SCI 5590	Introduction to Medical Informatics Clinical Bioinformatics Bioinformatics and Data Analysis Introduction to Statistical Learning Special Topics, Machine Learning

**Required course

Cell Biology and Biophysics

Course requirements are remaining the same from the previous Interdisciplinary Ph D program to the Ph D in Natural Sciences.

Primary discipline:

Course Number	Credits	Course Title
LSCBB 5530	3	Cell & Molecular Biology I
LSCBB 5520	3	Cell & Molecular Biology II
LSCBB 5596 or LSCBB 5597	2	Advanced Experimental Cell Biology I or II
2X LSCBB 5612	2 x 1	Seminar in CBB
LSCBB 5690	5-8	Analytical Methods in CBB (research b/f advancing to candidacy)
BIOL 5501	1	Proposal Writing
Electives	3-7	Courses in discipline or related discipline courses

Secondary Discipline

Course Number	Credits	Course Title
LSCBB 5530	3	Cell & Molecular Biology I
LSCBB 5520	3	Cell & Molecular Biology II
LSCBB 5612	1	Seminar in CBB
Electives	≥ 3	Biology graduate courses for a minimum of 10 total cr. hr.

Chemistry

Course requirements are remaining the same from the previous Interdisciplinary Ph D program to the Ph D in Natural Sciences.

Students must successfully complete a minimum of fifteen credit hours and a maximum of eighteen credit hours of didactic chemistry graduate coursework, among which one course must be from Group A, one course from Group B, and a minimum of two additional courses (six credit hours) from any graduate chemistry course numbered 5500 to 5589, excluding [CHEM 5520R](#), [CHEM 5530](#), and CHEM 5540R. The remaining required chemistry credit hours may be satisfied with directed studies ([CHEM 5590](#)).

Group A

CHEM 5530	Systematic Physical Chemistry	3
CHEM 5531	Classical Thermodynamics	3
CHEM 5532	Chemical Kinetics	3
CHEM 5533	Quantum Chemistry	3
CHEM 5534	Molecular Spectroscopy	3
CHEM 5535	Statistical Thermodynamics	3

Group B

CHEM 5520R	Survey Of Organic Chemistry	3
CHEM 5521R	Mechanisms Of Organic Reactions	3
CHEM 5522	Synthetic Organic Chemistry	3

Other

CHEM 5611	Chemistry Seminar	1
CHEM 5590	Directed Studies	1-3

Geosciences

Course requirements are remaining the same from the previous Interdisciplinary Ph D program to the Ph D in Natural Sciences.

Course Number	Credits	Course Title
GEOG 5507	4	Advanced Geographic Information Science
GEOG 5544	4	Advanced Spatial Data Analysis
GEOG/GEOLOGY 5597	3	Graduate Seminar in Geosciences
GEOG 5502	4	Environmental Remote Sensing and Digital Image Analysis
GEOG 5506	3	Global Environmental Change
GEOG 5546	3	Global Water & Sustainability
GEOG 5548	4	Satellite Climatology
GEOG 5598	1-3	Special Topics in Geography
GEOG 5598D	1-3	Special Topics in Advanced GIS and Remote Sensing
GEOG 5598F	1-3	Special Topics: Geostatistics and Modeling
GEOG 5690	1-3	Special Research Topics
GEOG 5699R	1-10	Research and Dissertation
GEOLOGY 5516	3	Understanding and Living with Volcanoes
GEOLOGY 5521	3	Advanced Methods for Earth and Environmental Science
GEOLOGY 5598	1-3	Special Topics in Urban Environmental Geology
GEOLOGY 5598E	1-3	Special Topics in Energy and Mineral Resources Ray
GEOLOGY 5598I	1-3	Special Topics In Urban Environmental Geology
GEOLOGY 5690	1-3	Special Research Topics

Mathematics

Course requirements are remaining the same from the previous Interdisciplinary Ph D program to the Ph D in Natural Sciences.

Doctoral coursework, Mathematics:

Course Number	Credits	Course Title
MATH 5519	3	Algebra II
MATH 5523	3	Real Variables II
MATH 5542	3	Advanced Numerical Analysis
STAT 5576 or STAT 5578 or STAT 5588	3	Probability or Advanced Mathematical Statistics or Theory of Linear Model

Satisfy secondary discipline requirements.

The requirements for Mathematics as a secondary discipline are: 9 graduate course hours in MATH or STAT with at least 3.0 average GPA, out of which at most 3 can be undergraduate approved for graduate credit.

Doctoral coursework, Statistics:

Course Number	Credits	Course Title
STAT 5576	3	Probability
STAT 5578	3	Advanced Mathematical Statistics
STAT 5588	3	Theory of Linear Model
MATH 5519 or MATH 5523 or MATH 5542	3	Algebra II Real Variables II Advanced Numerical Analysis

Multidisciplinary coursework: Take 9 graduate credit hours in 1-2 discipline(s) other than STAT with at least 3.0 average GPA. At most 3 credit hours can be undergraduate approved for graduate credit. This coursework needs to be approved in advance by the advisor or interim advisor.

Molecular Biology and Biochemistry

Course requirements are remaining the same from the previous Interdisciplinary Ph D program to the Ph D in Natural Sciences.

Primary discipline:

Course Number	Credits	Course Title
LSMBB 5561	4*	Biochemistry I
LSMBB 5562	3	Biochemistry II
LSMBB 5596 or LSMBB 5597	2	Advanced Experimental Molecular Biology I or II
2X LSMBB 5611	2 x 1	Seminar in MBB
LSMBB 5690	5-8	Analytical Methods in MBB (research before advancing to candidacy)
BIOL 5501	1	Proposal Writing
Electives	3-7	Courses in discipline or related discipline courses

Secondary discipline:

Course Number	Credits	Course Title
LSMBB 5561	4*	Biochemistry I
LSMBB 5562	3	Biochemistry II
LSMBB 5611	1	Seminar in MBB
electives	≥ 2-3	Biology graduate courses for a minimum of 10 total cr. hr.

Oral and Craniofacial Sciences

Course requirements are remaining the same from the previous Interdisciplinary Ph D program to the Ph D in Natural Sciences.

Primary Discipline Curriculum

Course Number	Credits	Course Title
Required Core Curriculum		
BIO-SCI 5751	1-2	Elements of the Scientific Method
BIO-SCI 5752	1-5	Research Methods in Oral & Craniofacial Sciences
RES-ME 5700	2-3	Introduction to Research Methodology
RES-ME 5704	2-3	Introduction to Biostatistics
Additional courses applicable to the discipline		
BIO-SCI 5710	2	Genetics & Biochemistry of Craniofacial Biology
BIO-SCI 5739	1	Biomaterials for the Dental Specialist
BIO-SCI 5740	2	Oral Pathology
BIO-SCI 5742	2	Biomaterials for the Restorative & General Dentist

BIO-SCI 5759	2	Special Problems in Pharmacology
BIO-SCI 5760	2	Physiology of Oral Mineralized Tissues
BIO-SCI 5790	1-6	Directed Research in Oral & Craniofacial Sciences
BIO-SCI 5802	2	Immunopathology
BIO-SCI 5805	2-3	Molecular Biology of Oral Microflora
MEDB 5561	3	Responsible Conduct of Research
Additional courses as appropriate from related disciplines (I.e., secondary discipline) Co-Discipline Curriculum Course Options		
Course Number	Credits	Course Title
BIO-SCI 5751	1-2	Elements of the Scientific Method (Required)
BIO-SCI 5752	1-5	Research Methods in Oral & Craniofacial Sciences
RES-ME 5700	2-3	Introduction to Research Methodology
RES-ME 5704	2-3	Introduction to Biostatistics
BIO-SCI 5710	2	Genetics & Biochemistry of Craniofacial Biology
BIO-SCI 5739	1	Biomaterials for the Dental Specialist
BIO-SCI 5742	2	Biomaterials for the Restorative & General Dentist
BIO-SCI 5760	2	Physiology of Oral Mineralized Tissues
MEDB 5561	3	Responsible Conduct of Research

Minimum total: 9 credit hrs.

Pharmaceutical Science

Course requirements are remaining the same from the previous interdisciplinary program to the Ph D in Natural Sciences.

Primary discipline students must take at least 12 hours; secondary discipline students must take at least 9 hours. Offered courses include:

Course Number	Credits	Course Title
Pharm 5521	3	Advanced Organic Medicinal Chemistry
Pharm 5527	3	Analytical Methods
Pharm 5533	3	Advanced Biopharmaceutics & Pharmacokinetics
Pharm 5588	3	Techniques in Biotechnology
Pharm 5605	3	Foundations of Pharmaceutical Sciences
Pharm 5631	3	Drug Product Design & Regulatory Affairs
Pharm 5632	3	Novel Drug Delivery Systems
Pharm 5634	3	Protein & Nucleic Acid Drug Delivery
Pharm 5501	1	Introduction to Research

Pharmacology

Course requirements are remaining the same from the previous Interdisciplinary Ph D program to the Ph D in Natural Sciences.

Pharmacology Primary Discipline:

Core Program Requirements Pharmacology as Primary Discipline		
Specific course requirements will be determined by the student in consultation with the research advisor and the supervisory committee.		
Pharmacology Courses (specific courses OR distribution area and credits)		
Pharmacology Requirements		
Course Number	Credits	Course Title
PHARM 5519	2	Pharmacology I
PHARM 5520	4	Pharmacology II
PHARM 5530	4	Pharmacology III
PHARM 5509	3	Toxicology
PHARM 5615	3	Methods In Pharmacology and Toxicology
PHARM 5580C	3	Seminar in Pharmacology/Toxicology
Additional Requirements		
EDUC-R&P 5505	3	Statistical Methods I
Secondary Discipline courses ¹	7-11	
Advanced courses (5500-level or above) ²	3-7	
Total	45	
¹ 7-11 credit hours in one or a combination secondary discipline, which may include Cell Biology and Biophysics, Chemistry, Molecular Biology and Biochemistry, Oral and Craniofacial Sciences, Pharmaceutical Science or other pertinent areas as approved by the supervisory committee.		
² 2-6 credit hours of advanced courses (5500 level or above) Pharmacology or related areas as approved by the supervisory committee.		

Pharmacology Secondary Discipline:

Pharmacology Secondary discipline Requirements		
Course Number	Credits	Course Title
PHARM 5519	2	Pharmacology I
PHARM 5520	4	Pharmacology II
PHARM 5580C	1	Seminar in Pharmacology/Toxicology
Plus, sufficient courses constituting the required percentage of their program of study, as approved by the supervisory committee.		

Several courses offered by the Division of Pharmaceutical Sciences may be appropriate electives. Many of these are listed below:

Course Number	Credits	Course Title
5521	3	Advanced Organic Medicinal Chemistry
5527	3	Analytical Methods
5533	3	Advanced Biopharmaceutics & Pharmacokinetics
5588	3	Techniques in Biotechnology
5631	3	Drug Product Design & Regulatory Affairs
5632	3	Novel Drug Delivery Systems
5634	3	Protein & Nucleic Acid Drug Delivery
5690A	3	Foundations of Pharmaceutical Sciences

Physics

Course requirements are remaining the same from the previous Interdisciplinary Ph D program to the Ph D in Natural Sciences.

Students must complete 12 dissertation hours and 30 total coursework hours, 15 hours of which are chosen from the following:

- Physics 5510 – Theoretical Mechanics I
- Physics 5520 – Electromagnetic Theory and Applications I
- Physics 5521 – Electromagnetic Theory and Applications II
- Physics 5530 – Quantum Mechanics I
- Physics 5531 – Quantum Mechanics II
- Physics 5540 – Statistical Physics I

5.C. Program Structure

1. **Total Credits Required for Graduation: 42**
2. **Residence requirements, if any:** Ph.D. students must satisfy the doctoral residency requirement by satisfactory completion of at least 18 credits in no more than 24 consecutive months. When satisfying the residency requirement, all Ph.D. students are subject to the following restrictions:
 - The doctoral residency requirement must be satisfied no later than the end of the semester in which the student completes his or her comprehensive examinations.
 - Students must achieve a cumulative graduate grade-point average of at least 3.0 in all courses counted toward satisfying the residency requirement.
3. **General education**
 - a. Total general education credits: **n/a**
4. **Courses (specific course or distribution area and credit hours):**

The course requirements for the Natural Sciences interdisciplinary program will remain consistent with those of the previous Interdisciplinary PhD program. No new resources will be required. The coursework requirements encompass:

1. A minimum of 12 credit hours of coursework within the primary area, accompanied by at least 12 dissertation hours. The primary disciplines retain the flexibility to potentially request more than the minimum credit hours.
2. A minimum of 9 credit hours within a secondary discipline area, with the secondary discipline also having the option to specify additional credit hours beyond the minimum.
3. A minimum of 30 classroom credits is required, including fundamental and advanced courses along with seminars.
4. Any primary area discipline can be combined with any secondary area discipline. Coursework available in each discipline (primary and secondary) can be found in section 5.B of this proposal.

The participating disciplines encompass a range of fields, including:

- Biomedical and Health Informatics
- Cell Biology and Biophysics
- Chemistry
- Geosciences
- Mathematics
- Molecular Biology and Biochemistry
- Oral and Craniofacial Sciences

- Pharmaceutical Science
- Pharmacology
- Physics

Example:

To illustrate, consider the example program of study of a current student (listed below) with Pharmaceutical Science as their primary discipline and Chemistry as their secondary discipline:

Primary discipline coursework e.g.:

Pharmaceutical Science (a minimum of 12 credit hours in coursework and 12 dissertation hours). Students select courses from those offered in the discipline:

- Advanced Organic Medicinal Chemistry (3)
- Analytical Methods (3)
- Techniques in Biotechnology (3)
- Protein and Nucleic Acid Drug Delivery (3)
- Special Topics – Foundations of Pharmaceutical Science (3)
- Seminar in Pharmaceutical Science (3)
- Dissertation hours (12)

Secondary discipline coursework example:

Chemistry (a minimum of 9 credit hours). Students select courses from those offered by the secondary discipline:

- Synthetic Organic Chemistry (3)
- Selected Topics in Organic Chemistry (3)
- Survey of Organic Chemistry (3)
- Advanced Bio-organic Chemistry (3)
- Survey of Organic Chemistry (3)

Primary discipline coursework in Pharmaceutical Science		
<ul style="list-style-type: none"> • A minimum of 12 credit hours in coursework and 12 dissertation hours • Courses are selected from those offered in the discipline 		
Course Number	Course Title	Credit Hours
Pharm 5521	Advanced Organic Medicinal Chemistry	3
Pharm 5527	Analytical Methods	3
Pharm 5588	Techniques in Biotechnology	3
Pharm 5634	Protein and Nucleic Acid Drug Delivery	3
Pharm 5690A	Special Topics – Foundations of Pharmaceutical Science	3
Pharm 5580A	Seminar in Pharmaceutical Sciences	3
Pharm 5699A	Research and Dissertation	12

Secondary discipline coursework in Chemistry		
<ul style="list-style-type: none"> • A minimum of 9 credit hours in coursework • Courses are selected from those offered in the discipline 		
Chem 5520R	Survey of Organic Chemistry	3
Chem 5522	Synthetic Organic Chemistry	3
Chem 5529	Selected Topics in Organic Chemistry	3
Chem 5567	Advanced Bio-organic Chemistry	3
	Total hours toward the degree:	42

5. Free elective credits

b. Total free elective credits: n/a

6. Requirement for thesis, internship or other capstone experience:

12 credit hours of dissertation required

7. Any unique features such as interdepartmental cooperation: n/a

5.D. Program Goals and Assessment

All UMKC programs are required to submit an annual summary of program assessment efforts (assessment plans, findings & discussions, and recommendations). The Natural Sciences Ph.D. program will maintain the established assessment protocol currently in place for all Interdisciplinary Ph.D. disciplines. The following outcomes have been identified:

- Students will demonstrate a thorough degree of knowledge in the discipline.
- Students will demonstrate an ability to use proper investigation techniques for the discipline.
- Students will effectively use oral and written forms of communication to convey their ideas.

Applicable student learning outcomes will be assessed at the following program, academic milestones: 1) Comprehensive Exams; 2) Dissertation/Research Proposal; and 3) Dissertation Defense.

At the milestone of Dissertation Defense, program targets for student performance across all Student Learning Outcomes have been set to meet or exceed average ratings of 3.5 for all (100% of) students assessed. For example, one component of students' ability to use proper investigation techniques will be evaluated by the following rubric and rating scale:

Superior (4)	Good (3)	Acceptable (2)	Unacceptable (1)	Cannot Judge
Cutting edge methodology or novel application of existing method	Incremental advance in application of methodology and careful plan for execution of research	Conventional use of methodology and adequate plan for execution of research	Inappropriate use of method; use of method that cannot adequately address research question	Outside area of expertise

5.E. Student Preparation

The minimum criteria for admission to the UMKC graduate school can be found via the [UMKC catalog](#).

Biomedical and Health Informatics Discipline-Specific Admissions Requirements

Please visit the School of Medicine website for information on applying to the Biomedical and Health Informatics primary discipline and co-discipline to learn about the discipline specific application requirements. Your application to the Biomedical and Health Informatics primary discipline is NOT complete until you submit a one-page goal statement explaining your interest in the discipline through the School of Medicine Supplemental Application.

Cell Biology and Biophysics Discipline-Specific Admission Requirements

A cumulative GPA of at least 3.0 (on a 4.0 scale) on all college work for bachelor's degree or post-baccalaureate work. Due to the sequencing of coursework, new students selecting cell biology and biophysics as their primary discipline will normally only be admitted in the fall term.

Qualifying Requirements for Full Admission

Minimum of 16 hours of approved graduate coursework at UMKC toward the Ph.D. program with a grade-point average of at least 3.0 on a 4.0 scale. International students must establish English proficiency.

Chemistry Discipline-Specific Admission Requirements

Normally, only applications to full-time academic status will be considered. To qualify for full admission (Note: full admission is unrelated to full-time academic status), applicants are expected to have the equivalent of an American Chemical Society-approved bachelor's degree in chemistry, which includes coursework in general chemistry, analytical chemistry, one year of organic chemistry, inorganic chemistry and one year of physical chemistry requiring calculus and physics as prerequisites. (For example, see UMKC's B.S. program in the Chemistry section in this catalog.) Applicants will be admitted as provisional students with a limited number of undergraduate deficiencies. They will be notified, at the time admission is offered, of any requirements to be met for reclassification as fully admitted. Undergraduate courses included in these requirements must be completed with grades of "C" or higher.

Applicants should take particular note of the physical chemistry requirement. Applications are only accepted through the online system, and include:

1. Official, confidentially transmitted transcripts.
2. Statement of purpose
3. Three confidentially transmitted letters of recommendation (academic and/or professional).
4. English language proficiency requirement.

Geosciences Discipline-Specific Admission Requirements

Specific admission requirements defined by the faculty in Geosciences follow the guidelines established by the School of Graduate Studies. Typically, a student would be expected to hold an undergraduate or master's degree in environmental sciences, geology, geography or a closely related field. Opportunities within the department range from the physical sciences to the humanities. Because of the wide range of faculty expertise, and in keeping with the general spirit of the entire PhD program, the faculty in Geosciences has deliberately chosen to establish broad guidelines for admission of Ph.D. students. All prospective graduate students must attain a GPA of 3.0 or above, on a 4.0 scale, in all university work prior to admission. Three letters of recommendation from professors as well as a proposal from the prospective student detailing goals and expectations are needed for an evaluation of the application. Students are expected to have an advisor at the time of admission.

Non-native English-speaking applicants seeking Geosciences as a primary discipline must demonstrate proficiency in English. This requirement can be satisfied by obtaining English proficiency certification from UMKC.

Mathematics Discipline-Specific Admission Requirements

For applicants electing mathematics as the primary discipline: To get full admission, an applicant should have a bachelor's degree or a master's degree in mathematics/statistics (or equivalent) from an accredited college or university. Applicants who do not have a master's degree are expected to provide strong evidence of academic ability and research capability. GRE General scores are required in most cases, but may be waived under extenuating circumstances, provided there are sufficient other indicators of academic ability. Applicants are encouraged to contact the discipline coordinator to inquire whether a waiver can be granted. A student who is admitted to the PhD program while having not completed all of the qualifying/pre-requisite coursework as described below must complete the missing courses with a GPA of 3.0 or better to be deemed qualified to continue in the PhD program.

Qualifying coursework, Mathematics:

Course Number	Credits	Course Title
MATH 5509	3	Algebra I
MATH 5513	3	Real Variables I
MATH 5532	3	Numerical Linear Algebra
MATH 5510	3	Complex Variables I
MATH 5521	3	Differential Equations

Qualifying coursework, Statistics:

Course Number	Credits	Course Title
STAT 5501	3	Statistical Design of Experiments
STAT 5513	3	Real Variables I
STAT 5537	3	Mathematical Statistics I
STAT 5547	3	Mathematical Statistics II
STAT 5551	3	Applied Statistical Analysis
STAT 5565	3	Regression Analysis
STAT 5572	3	Multivariate Analysis

For applicants electing mathematics as a co-discipline: To get full admission, an applicant should have a bachelor's degree in mathematics/statistics from an accredited college or university, or a bachelor's degree in another subject including evidence of a strong performance in at least three mathematics courses beyond Calculus I, II, and III.

Applicants may get provisional admission if the above conditions are not fully satisfied at the time of application.

Molecular Biology Discipline-Specific Admission Requirements

A cumulative GPA of at least 3.0 (on a 4.0 scale) on all college work for bachelor's degree or post-baccalaureate work. Due to the sequencing of coursework, new students selecting molecular biology and biochemistry as their primary discipline will normally only be admitted in the fall term.

Oral and Craniofacial Sciences Discipline-Specific Admission Requirements

In addition to the general minimum requirements for admission to Ph.D. study, an applicant must hold either (1) a baccalaureate degree, (2) an M.S degree, or (3) a D.D.S. or equivalent degree. In general, an applicant will be expected to have a minimum cumulative GPA of 3.0 based on a 4.0 scale for previous education programs, including dental school (if applicable).

Applicants must also meet the following minimum GRE requirements:

- Quantitative: 150
- Verbal: 155
- Analytical Writing: 4.0

The TOEFL is required for all international applicants, who must have a score of at least 80. An IELTS score of 6.0 or above may be accepted in place of the TOEFL.

All application materials should be submitted prior to March 1 for students wishing to begin their study in the fall semester; however, applications will be accepted throughout the year. Evaluation criteria include the following:

- Transcripts. Analysis of transcripts from all prior institutions is required.
- Letters of recommendation. Three letters of recommendation are required from current or former teachers who are familiar with the applicant's past achievements and research ability.

- Personal statement from applicant. The applicant must submit a letter describing why he or she is interested in pursuing a Ph.D. study in oral and craniofacial sciences, how the experience of the program may be used by the candidate in the future, and a list of potential research interests.
- Interviews. Interviews are not required; however, interviews are preferred and will be arranged upon the candidate's request. Successful interviews may enhance the candidate's chance of acceptance.

Pharmaceutical Science Discipline-Specific Admission Requirements

Applicants must hold a professional degree in pharmacy (Pharm.D. or B.S.) or a baccalaureate degree in a related field such as chemistry, biology or biomedical engineering with an undergraduate GPA of at least 3.0 on a 4.0 scale. Students who hold a master's degree in an appropriate discipline may be admitted on satisfaction of the general requirements of the School of Graduate Studies. Application deadlines are October 1st for the spring semester and February 1st for the fall semester.

Pharmacology Discipline-Specific Admission Requirements

Due to course sequencing, new students will ordinarily be accepted only in the fall term. Applicants must hold a professional degree in pharmacy (Pharm.D. or B.S.) or a baccalaureate degree in biological, chemical science or health science. In special situations, baccalaureate degrees in other disciplines will be evaluated for possible admission. For graduates of foreign schools, the applicant must have completed a course of study at least the equivalent of a U.S. baccalaureate degree.

Prospective students must have an aggregate minimum grade-point average of 3.0 on a 4.0 scale for all college work taken prior to the bachelor's degree, or an aggregate GPA of at least 3.5 on all post-baccalaureate work to date (minimum of nine hours). For graduates of foreign schools, the applicant must have above-average grades in previous college study. Prospective students must have a minimum aggregate GRE score of 295 for verbal and quantitative and 3.5 out of 6.0 for analytical writing.

For graduates of foreign schools, the applicant must have a minimum score of 550 on written or 213 computer-based or 79 on Internet-based TOEFL exam or alternatively, a minimum score of 6 on the IELTS.

Physics Discipline-Specific Admission Requirements

For admission to the program, an applicant must meet the requirements of the [School of Graduate Studies](#), the International Student Affairs Office (if applicable), and specific Physics and Astronomy admission requirements described below.

The Faculty of Physics and Astronomy does not require general or subject-specific GRE scores as part of the Ph.D. application.

The graduate studies committee of the Faculty of Physics and Astronomy will review applications and make admission recommendations to the School of Graduate Studies. The basic criterion for admission is the likelihood that an applicant will be successful in the Ph.D. program, particularly in the research component of the program. All applicants must satisfy the graduate studies committee that they meet this criterion through evidence such as transcripts, letters of recommendation, statements of purpose, performance on a written Ph.D. qualifying examination, etc. Furthermore, a member of the doctoral faculty must be willing to accept the applicant as a research student.

5.F. Faculty and Administration

The people primarily responsible for the success of the PhD in Natural Sciences are: Professor Parisi, the current I PhD Program Director, Dr. Jenifer Allsworth – Biomedical and Health Informatics, Dr. Karen Bame – Biology, Dr. Xiaobo Chen – Chemistry, Dr. Fengpeng Sun – Geosciences, Dr. Liana Segal – Mathematics, Dr. Mary Walker – Oral and Craniofacial Sciences, Dr. Kun Cheng – Pharmacy, and Dr Paul Rulis – Physics.

All faculty with teaching responsibilities in the PhD, Natural Sciences program will have a terminal degree, PhD or professional doctoral degree (MD, DDS, PharmD). Full time faculty will teach 100% of coursework/credit hours in the program. Faculty teaching in the program will be expected to engage in professional activities and teaching/learning innovation activities including research, and participation and presentations at professional organizations and societies. Faculty will also be expected to mentor and advise students while enrolled in the program and while engaging in independent research.

5.G. Alumni and Employer Survey

The UMKC Alumni Affairs Office, and External Relations team engage with UMKC alumni and the community through several opportunities designed to maintain connections, gather feedback, provide engagement opportunities, and create an environment of continuous improvement.

Graduating students are surveyed through an exit survey at the point of graduation and followed up with at 6-months post degree conferral if the student was still seeking employment at graduation or did not respond to the initial survey request. Alumni affairs and external relations provides opportunities for alumni to participate in student research competitions such as the Three Minute Thesis. Alumni are also engaged through on campus events, opportunities to serve on boards, volunteer, and nominate and receive alumni awards.

5.H. Program Accreditation

Like the current I PhD program, the proposed PhD program in Natural Sciences falls under the purview of the university's institutional accreditation. The university is accredited by the Higher Learning Commission, one of the regional accrediting bodies recognized by the U.S. Department of Education, which ensures that the institution and all its programs, including the proposed PhD program, meet the established standards of academic quality.

6. Appendices

- Letters of Support
 - Ian M. Colrain; President and CEO, MRIGlobal
 - Kevin Truman; Dean, School of Science and Engineering- UMKC
 - Mary Anne Jackson; Dean, School of Medicine- UMKC
 - Russel Melchert; Dean, School of Pharmacy- UMKC
 - Steven Hass; Dean, School of Dentistry- UMKC
 - IPhD Executive Committee- UMKC
 - David Borrok; Vice-Provost and Dean, College of Engineering and Computing- Missouri S&T
 - Jennifer Lundgren; Provost and Executive Vice Chancellor- UMKC
 - Stephen John Dilkes; Associate Dean, School of Graduate Studies- UMKC

Letters of Support

PhD in Natural Sciences



The science you expect.
The people you know.

Ian M. Colrain, PhD
President & Chief Executive Officer
icolrain@mriglobal.org

To: University of Missouri Board of Curators

MRIGlobal is an independent not for profit research institute in its 80th year, headquartered in Kansas City adjacent to UMKC. Our mission is “to improve the lives of people through innovative scientific and engineering research”, and we provide advanced biology, chemistry and engineering services to the US federal government and multiple national and international companies. We are constantly looking to hire Ph.D. level scientists in Kansas City and our other locations.

I am in full support of the re-categorizing UMKC’s current iPhD to regular Ph.D.s in Engineering, Computer Science, and the Natural Sciences disciplines—namely Physics, Chemistry, Mathematics and Statistics, Biology, and Earth and Environmental Science. This change will offer multifaceted benefits to your students and to industry.

Ph.D. is standard designation for those completing such an intensive course of graduate study in a specialized area in their chosen field. Employers that hire Ph.D.’s value the degree program and what it represents. When looking for interns, post-doctoral fellows or new hires, the current iPhD designation likely is a hindrance for the student. Funding agencies might also be confused as to what an iPhD program represents. I have reviewed hundreds of NIH grant applications over the past two decades and admit that I would be puzzled by such a degree title, assuming it reflected a less prestigious degree. In the highly challenged current funding environment, it is likely leaving UMKC graduates at a disadvantage when applying for competitive grant mechanisms.

MRIGlobal serves clients from around the world. The current iPhD program designation would be a challenge to explain or categorize to international collaborators or partners. A shift to the more universally understood Ph.D. label will make it clear that students are earning Ph.D.s when they complete their program and that they would be able to add the value to the customer, usually associated with attainment of that degree.

Sincerely,

A handwritten signature in blue ink, appearing to read "I. Colrain", is written over a light blue horizontal line.

Ian M. Colrain Ph.D

President and CEO, MRIGlobal.

Professorial Fellow, School of Psychological Sciences, The University of Melbourne, Australia.

Professor of Internal Medicine (Volunteer), KU Medical Center, The University of Kansas.



School of Science and Engineering
Office of the Dean

September 29, 2023

To: University of Missouri Board of Curators

Re: Support and Commitment to the SSE's iPhD to Ph.D. Transition

As Dean of the School of Science and Engineering I am writing to express my full commitment to transitioning our interdisciplinary Ph.D. (iPhD) degrees to Ph.D. for the School of Science and Engineering (SSE)'s Computer Science, Engineering, and Natural Sciences programs.

I want to emphasize that this transition primarily consists of code and title changes that do not necessitate allocating new resources. We intend to name programs with industry and academic standards, ensuring that we are appropriately recognized for the exceptional work already underway at our school, and improve our faculty and student recruitment and retention.

By transitioning to standard and well-known Ph.D. designations, we strategically position UMKC to enhance its research status especially through Carnegie ranking: historically, under the iPhD moniker, our related activities have not been correctly recognized given that we could not use the right CIP codes. Further, our international students have struggled to justify this unconventional naming to their host countries and institutions. This no-cost move is essential to rectify these issues, ensuring that our institution receives the recognition it deserves for its outstanding contributions to STEM research in our state and beyond.

In conclusion, I would like to reiterate the dedication of my team and myself to this transition. We believe these changes will strengthen our institution's reputation and bolster our research and enrollment, making us an even more effective member of the UM system. We look forward to accomplishing this positive shift together.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Kevin Z. Truman', is written over a white background.

Kevin Z. Truman, Ph.D., F.ASCE
Dean, School of Science and Engineering



School of Medicine
Department of Biomedical and Health Informatics

Wednesday, September 27, 2023

RE: Natural Sciences CIP code for Doctoral Degree

To: The University of Missouri Board of Curators

I am writing to express my wholehearted endorsement and unwavering support for the proposed transition of our IPhD to a PhD program in Natural Sciences. The changes being considered, specifically the Department of Education's Classification of Instructional Program (CIP) code and title modifications, are a crucial step forward in our continuous pursuit of academic excellence.

First and foremost, it is essential to emphasize that these proposed changes do not necessitate any additional resources. Our current CIP code classification lacks recognition within the DOE's CIP taxonomy system. The proposed transition is a straightforward alteration of the CIP code and program title. This strategic shift is a testament to our institution's ability to adapt and evolve within our existing framework, maximizing the resources at our disposal while staying committed to our academic mission, educational quality, and commitment to our student's career opportunities.

The transition we are embarking upon holds immense potential to significantly enhance our university's research status and engage more students who are interested in the STEM sciences. By clarifying our existing and ongoing contributions to recognized STEM research designations by the Department of Homeland Security, which were not fully acknowledged for technical reasons under the previous IPhD program, we can expect a substantial improvement in our standing within the academic community and toward Carnegie designated R1 status. This recognition is not only a testament to our dedication to scientific inquiry but also an acknowledgment of the quality and impact of our research endeavors. Several further benefits include enhanced funding opportunities, increased grant allocations, and improved Carnegie classification for the university. The adjustments proposed will ensure that we receive due credit for the exceptional research conducted within our specialized areas, which are not adequately acknowledged under our existing CIP code and IPhD structure. Such recognition is vital for advancing our research reputation, as well as for attracting top-tier faculty and students. It is also clear that we are not generating any concerns with the Deans of other programs within the UM system regarding competition or duplication of any of their existing PhD programs.



School of Medicine
Department of Biomedical and Health Informatics

In conclusion, I believe that the modifications of our program to the Natural Sciences PhD program are warranted and are an essential step in our journey to academic excellence. I am confident that these changes will benefit our institution and contribute significantly to the advancement of STEM research and education. I stand ready to lend my full support and commitment to ensure the successful implementation of these modifications.

Thank you for considering my endorsement and support for this important initiative. I look forward to witnessing the positive impact these changes will have on our academic community, research success at UMKC, and the field of Natural Sciences as a whole.

Sincerely,

Mary Anne Jackson, MD, FAAP, FIDSA, FPIDS

Dean, School of Medicine, UMKC



School of Pharmacy
Dean's Office

September 26, 2023

RE: Letter of Support for the PhD in Natural Sciences Program

To the University of Missouri Board of Curators-

I enthusiastically support the new Doctor of Philosophy (PhD) program in Natural Sciences and happy that our interdisciplinary tracks in Pharmacology & Toxicology and Pharmaceutical Sciences will be able to join the program.

The School of Pharmacy, in conjunction with and offered through the School of Graduate Studies, has a long and prosperous history of offering two tracks within the Interdisciplinary PhD program at UMKC. On average, across both tracks we have approximately 30-35 PhD students in any given year and graduate anywhere from 5-10 students each year. The majority of the graduates of our tracks go on to research careers in pharmaceutical industry, yet a good portion go on to post-doctoral fellowships in academia (several over the past few years in such prestigious institutions as Stanford, Cambridge, MIT, and other significant universities), and yet others go directly into academia in schools or colleges of pharmacy. I cannot remember a time in my 13 years at UMKC where a PhD graduate from one of our tracks was unable to find placement. Importantly, our graduates compete so well for positions because they graduate typically with 4-10 publications in high impact journals contributing significantly to the knowledge within their areas of research and often leading to their coauthorship and development of disclosures of intellectual property. Of course, the reason our PhD graduates have been so successful is that they are led by an outstanding faculty whose research has been supported by grants from the National Institutes of Health, the National Science Foundation, Department of Defense, private foundations, and various contracts with pharmaceutical companies.

The UMKC School of Pharmacy is known nationally and internationally not just for our outstanding and award-winning clinical doctor of pharmacy (PharmD) program, but also for the high quality research of our faculty and graduates of our PhD tracks. Joining the Natural Sciences program will only help the success of our tracks as they exist now. The reason for this is that getting credit for these STEM doctoral graduates will only help the prestige of our great university, particularly through enhancing funding opportunities, increasing grant allocations, and improving our Carnegie classification. Increasing the prestige of our university will no doubt increase the recognition of our already strong faculty and that in turn will assist them in their pursuit of fruitful research collaborations, grant applications, and continual recruitment of the best and brightest PhD students from around the world.

All of this comes only at the price of a simple change in name of the program and in US Department of Education assigned CIP code to ensure the university receives due credit for the hard work of our students, staff, and faculty. As you know, we will not need any additional resources to support our PhD students with this change. We will continue to support their work (research supplies, stipends, tuition

Health Sciences Building, Room 1219 | 2464 Charlotte Street | Kansas City, MO 64108
p 816-235-1613 | f 816-235-5562 | pharmacy.edu | pharmacy.umkc.edu

waivers, etc) as we always have, with significant extramural research support, a limited number of teaching assistantships, and philanthropic support through endowed scholarships.

Another important factor is that our school is the only School of Pharmacy in the University of Missouri System. As you know, we collaborate with MU in Columbia to offer our PharmD program where students can complete all six years of the program on the MU campus. As we plan for growth of our pharmacy program and hiring of future faculty, one of the areas we would like to expand is in pharmacogenomics and precision medicine. Toward that end, we will be looking to collaborate with MU with our PhD program as well, hopefully being able to capitalize on the collective strengths of UM System faculty with interests in precision health and medicine. Furthermore, my understanding is that deans of schools at MU, UMSL and MUST also support the development of the Natural Sciences PhD program at UMKC, and that should assist us all in growing new collaborations.

Dr. Jerry Wyckoff serves as Director of Research and Graduate Studies in the School of Pharmacy. He and I have had many conversations about how we take the next step in growing our research efforts and our graduate program is key to that success. Joining the new Natural Sciences PhD program will help our program grow as well, and it is a natural succession in our efforts. Please feel free to reach out to me or Jerry if you have any questions. I want to thank Drs. Parisi, Dilks, and Liu and Provost Lundgren and all who have led the development of the Natural Sciences PhD program. I am very enthusiastic about this program and if there is any additional information you need from me, please feel free to contact me anytime.

Sincerely,

A handwritten signature in blue ink, appearing to read "Russell B. Melchert".

Russell B. Melchert, PhD
Dean and Professor

9/25/2023

Members of the Board of Curators,

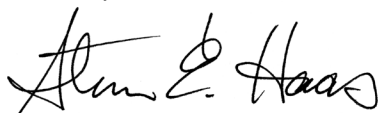
As the Dean of UMKC School of Dentistry, I strongly endorse and support the transition from the current Interdisciplinary PhD (IPhD) program to the proposed Natural Sciences PhD. The School of Dentistry's Oral and Craniofacial Sciences (OCS) department has been a participating discipline in UMKC's IPhD program since its inception in the 1990's.

Because the current classification of instruction (CIP) code for the UMKC IPhD program is not recognized by the Department of Education, a program title and CIP code transition is necessary. Fortunately, such a transition will not require additional resources from our school or UMKC. Although the transition in program title and CIP Code appear to be minor modifications, the benefits are significant. For example, the Natural Sciences PhD would increase research recognition in the STEM fields, plus the organized combination of science disciplines would be positively viewed for federal grant application opportunities, such as NIH T32 or T90 training grants to support students and the program.

Being part of a viable and recognized PhD program is valuable for the School of Dentistry and in particular for our OCS department and their research-focused faculty. Although the OCS department is not large (7 faculty), the faculty have been very successful and productive researchers across the years with continuous federal funding, currently more than \$3M in total grant funds, and numerous related publications. It is also important to note that the OCS department currently has two Curators Distinguished Professors with one of them just recently selected by the Board of Curators. The updated PhD program will positively impact our ability to retain and continue to recruit top-tier faculty as well as highly qualified PhD students. Collectively, the updated Natural Sciences PhD program will be beneficial to the SOD and UMKC, but I also want to note that across UM-system institutions, there is support for UMKC's modified program with no concern for duplication or competition.

In closing, I enthusiastically endorse the Natural Sciences PhD program and anticipate associated positive outcomes related to enhanced excellence in STEM research and graduate education for UMKC and UM system. Thank you for your consideration and support.

Sincerely,



Steven E. Haas, DMD, JD, MBA
Dean, School of Dentistry
816-235-2177
steven.haas@umkc.edu



Dear Members of the Board of Curators,

As representatives of the UMKC Interdisciplinary PhD (IPhD) Committee, we wish to convey our endorsement of the transition from our existing IPhD program to the Natural Sciences PhD program presented in our university's proposal. We wish to underscore several compelling reasons why this transition would benefit our programs:

1. Seamless CIP Code and Title Transition with No Additional Resource Demands:

Our current CIP code classification lacks recognition within The Department of Education's Classification of Instructional Program (CIP) taxonomy system. The proposed transition entails a straightforward alteration of the CIP code and program title. Importantly, this transition does not necessitate the allocation of added resources; instead, it maximizes the utilization of our existing expertise, faculty, and resources. By doing so, we optimize our academic programs without imposing any additional financial burdens on the university.

2. Enhanced Research Standing and Recognition in STEM:

The shift to a Natural Sciences PhD program holds immense potential for elevating our research standing, particularly in STEM fields. The Department of Homeland Security maintains a comprehensive list of fields falling under the regulatory definition of "STEM field," which qualifies certain degrees for specific extension requirements. Our current program and CIP code fall outside this regulatory definition. Therefore, we view this change as a pivotal step towards enhancing our research standing and gaining recognition in STEM fields.

3. Augmented Funding Opportunities and Acknowledgment for Research Excellence:

Alongside these changes in program requirements, several benefits accrue, including enhanced funding opportunities, increased grant allocations, and improved Carnegie classification. These adjustments will ensure that we receive due credit for the exceptional research conducted within these specialized areas, which is currently not adequately acknowledged under our existing CIP code and IPhD structure. Such recognition is vital for advancing our research reputation, as well as for attracting top-tier faculty and students.

The members of the Interdisciplinary Executive Committee wholeheartedly endorse the establishment of a Natural Sciences PhD program as part of the proposed PhD transition plan. We believe that this decision strategically enhances our STEM classification, research recognition, Carnegie classification, and overall standing within the University of Missouri System. We earnestly seek your support and approval for this initiative, confident that it will

propel the University of Missouri-Kansas City to new heights of academic excellence. Thank you for your commitment to our university's progress and success.

Endorsed by the members of the IPhD Executive Committee:

Dr. An-Lin Cheng Biomedical and Health Informatics

Dr. Karen Bame Cell Biology and Biophysics

Dr. Xiaobo Chen Chemistry

Dr. Yugyung Lee Computer Science

Dr. Candace Schlein Curriculum and Instruction

Dr. Eric Camburn Educational Leadership, Policy, and Foundations

Dr. Ahmed Hassan Electrical and Computer Engineering

Dr. Ceki Halmen Engineering

Dr. John Barton English

Dr. Fengpeng Sun Geosciences

Dr. Matthew Osborn History

Dr. Liana Segal Mathematics

Dr. Karen Bame Molecular Biology and Biochemistry

Dr. Joseph Parisi Music Education

Dr. Mary Walker Oral and Craniofacial Sciences

Dr. Kun Cheng Pharmaceutical Sciences

Dr. Hari Bhat Pharmacology Drs. Paul Rulis & Mark Brodwin Physics

Dr. Arif Ahmed Public Affairs and Administration

Dr. Marc Garcelon Social Science Consortium



College of Engineering and Computing

October 6, 2023

Dear University of Missouri Board of Curators,

I am writing to express my support for the proposed transition of UMKC's interdisciplinary PhD programs within their School of Science and Engineering to several individual Ph.D. programs with new CIP codes.

Our understanding is that this change will correct and improve how their degrees are being counted through the CIP code system. This change should benefit UMKC and the UM System and will have no foreseeable impact at Missouri S&T.

Sincerely,

A handwritten signature in black ink, appearing to read "David Borrok".

David Borrok
Vice-Provost and Dean
College of Engineering and Computing





Office of the Provost and Executive Vice Chancellor

October 5, 2023

Dear University of Missouri Board of Curators-

UMKC aims to achieve Carnegie RI classification in the next 5-7 years. A critical action step toward this goal is to appropriately classify our research-based doctoral program CIP codes so that they are recognized in the Carnegie classification system. With this goal in mind, I am in full support of the transition of the PhD program in interdisciplinary studies (*iPhD*; not currently recognized by Carnegie) into eight independent PhD programs that are recognized in the Carnegie classification system. In addition to the critical role these programs will play in our degree program conferral data, this transition aligns with our strategic plan goals of: exceptional student learning, success, and experience (pillar one), helping UMKC become a thriving discovery enterprise (pillar two), transforming our community and region with impactful engagement (pillar three), and preparing students for the global workforce (pillar four). The program transition has been fully considered and planned by the faculty and leadership of UMKC, and is supported by the appropriate curricula, staffing, and market demand.

The *curricula* for the eight PhD programs will remain largely unchanged and is reviewed in detail on a program-by-program basis in the proposal. No additional instructional, student support, library, or assistantship resources will be necessary for this transition to be successful. Students will continue to be supported by existing faculty, staff, and student support structures on campus, and we will transition as many students as possible into the new degree programs by Fall 2024 to maximize doctoral degree conferrals in the coming years. Notably, students who do not want to transition will have the opportunity to remain in the iPhD program through degree completion; if our doctoral program proposal is approved, no new students will be admitted to the iPhD in the future and the program will be closed.

The *market demand* for each of these programs is currently strong, and we anticipate the transition will only enhance it. The 8 programs included in our proposal have the highest rates of student interest, graduation, employment, and long-term research synergy potential at UMKC. While we anticipate demand for each program to remain stable in the short term, the renaming of these programs is likely to have an immediate impact on our national and regional reputation as a

UMKC Doctor of Philosophy Program Letter of Support

Page 2

October 5, 2023

research institution. Although we will keep our enrollments stable in the early years of this transition, faculty will be expected to increase assistantship funding through externally funded grants, thereby allowing us to increase student enrollment while also supporting our campus research goals.

I'm happy to answer any questions about this overall doctoral program transition or the individual programs included in it.

Best



Jennifer D. Lundgren, PhD

Provost and Executive Vice Chancellor



School of Graduate Studies

October 5, 2023

Dear Members of the Board of Curators,

The Graduate Council at UMKC has voted to express its full support for the proposed transition from our current Interdisciplinary Ph D program to PhD's in the areas of Computer Science, Economics, Education, Engineering, Humanities, and Natural Sciences.

We are convinced that this transition would elevate the university's research status by giving us credit for doctoral research in the areas of STEM, Humanities, and Social Sciences. While we would be using new CIP codes and titles, these doctoral degrees can be delivered with existing faculty, courses, and administrative staff. The required courses for the newly titled and coded doctorates are unchanged from those required in the current Interdisciplinary PhD program, except that the secondary disciplines now only require nine hours of courses (under the current system, the "co-discipline" sometimes requires as many as fifteen hours of coursework). This promises to improve completion rates.

This change of codes and titles will better reflect the specialized research and academic focus within these designated areas, which can significantly contribute to elevating the university's research profile. This has the potential to increase funding opportunities from federal agencies, private organizations, and philanthropic sources. With focused academic programs, we can tailor our research proposals to meet the specific needs and priorities of these funding agencies, ultimately increasing our chances of securing research grants and contracts.

We strongly believe that these more narrowly focused doctoral programs will elevate our research reputation, improving our university's standing as a discovery enterprise, attracting a higher caliber of faculty and students, enhancing our regional, national, and international appeal as a go-to institution for advanced research and education.

In sum, because the proposed transition aligns with our university's long-term goals and aspirations, potentially giving us greater research prominence, increased funding, and a more dynamic academic environment that will advance the mission and reputation of UMKC and the entire UM-System, we request the Board of Curators to approve this proposal.

Thanks for your consideration.

Stephen Dilks

Stephen John Dilks,
Associate Dean, School of Graduate Studies
Chair, UMKC Graduate Council.

EXECUTIVE SUMMARY

New Degree Program, Bachelor of Architecture University of Missouri-Kansas City

This proposal is for a new bachelor's degree program in Architecture (B.Arch.) at UMKC. The B.Arch. program would be housed in the School of Science and Engineering (SSE) under the Division of Natural and Built Environment (NBE). This program will build on the present Architectural Studies program at UMKC which already offers the first two years of coursework necessary for the B.Arch. program.

It is planned that the B.Arch. at UMKC will be a five-year program accredited through the National Architecture Accreditation Board (NAAB). This accreditation gives students the ability to become licensed architects in their future careers. The architecture licensure procedure requires that students must finish with a "professional degree" which is accredited by the NAAB with the designation of B.Arch., M.Arch., or D.Arch. A student cannot become a licensed architect with a B.A. or B.S. degree even if it is in "Architecture" or "Architectural Studies". Those degrees are not accreditable by the NAAB and are generally called "pre-professional degrees".

The state of Missouri does not currently have a public school that offers an NAAB-accredited "professional degree" in architecture for its residents. The proposed B.Arch. degree from UMKC will provide an opportunity to all Missouri residents, from both the rural communities and urban centers, to attend an in-state, affordable, public architecture school. This not only captures students who are currently leaving the state of Missouri to go to public architecture programs out of state – such as Arkansas, Illinois, Iowa, Kansas, Nebraska, Oklahoma, but also captures students who may have been unable to attend any of the current private options in the state of Missouri. UMKC's program will differentiate itself from these regional institutions by providing a lower-cost, community-centered architecture school experience located in the heart of a metropolitan area saturated with professional architecture opportunities and resources.

UMKC's architecture program will be a lower cost alternative for students as compared to the current regional public options – with fewer credit hours (150 for the B.Arch. versus 170-180 for the M.Arch.), all at undergraduate tuition rates at UMKC as compared to neighboring regional public programs which transition students to graduate rates in the fifth/sixth year. In addition, the strength of the architecture profession in Kansas City provides ample resources for this new program to supplement full-time faculty with adjunct, working professionals who have the necessary credentials for a successful accredited program. Another major goal of this program is to provide a community-centered experience by using the local architectural firms and resources. Students in this program will have the opportunity to directly engage with the local metropolitan industry through community-based projects and robust internship opportunities. These unique opportunities are only possible due to UMKC's proximity to the local architecture industry.

This five-year B.Arch. program will directly support the UMKC vision to promote interdisciplinary education, thereby bringing innovation, workforce professionals, and new economic developments to the metropolitan area. This UMKC B.Arch. will also directly contribute to the Architecture and Engineering cluster of firms as identified by KC Rising, a regional economic development initiative formed to help KC grow faster and more intentionally, and promoted by the regional KC Global Design partnership. Finally, the B.Arch. at UMKC will have the added benefit of enhancing community and neighborhood engagement through studio projects in the Kansas City and local Missouri communities.

No. 3

Recommended Action – Bachelor of Architecture – University of Missouri-Kansas City

It was recommended by the University of Missouri System Office of Academic Affairs, endorsed by President of the University of Missouri Mun Y. Choi, recommended by the Academic, Student Affairs and Research & Economic Development Committee, moved by Curator _____, seconded by Curator _____ that the following action be approved:

that the University of Missouri–Kansas City be authorized to submit the attached proposal for a Bachelor of Architecture to the Coordinating Board for Higher Education for approval.

Roll call vote of the Committee: YES NO

Curator Blitz

Curator Graves

Curator Sinquefield

Curator Williams

The motion _____.

Roll call vote of Board: YES NO

Curator Blitz

Curator Brncic

Curator Fry

Curator Graves

Curator Holloway

Curator Layman

Curator Sinquefield

Curator Wenneker

Curator Williams

The motion_____.

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NOTE: Additional appendices will be made available upon request.

Executive Summary

This proposal is for a new bachelor's degree program in Architecture (B.Arch.) at UMKC. The B.Arch. program would be housed in the School of Science and Engineering (SSE) under the Division of Natural and Built Environment (NBE). This program will build on the present Architectural Studies program at UMKC which already offers the first two years of coursework necessary for the B.Arch. program.

It is planned that the B.Arch. at UMKC will be a five-year program accredited through the National Architecture Accreditation Board (NAAB). This accreditation gives students the ability to become licensed architects in their future careers. The architecture licensure procedure requires that students must finish with a "professional degree" which is accredited by the NAAB with the designation of B.Arch., M.Arch., or D.Arch. A student cannot become a licensed architect with a B.A. or B.S. degree even if it is in "Architecture" or "Architectural Studies". Those degrees are not accreditable by the NAAB and are generally called "pre-professional degrees".

The state of Missouri does not currently have a public school that offers an NAAB-accredited "professional degree" in architecture for its residents. The proposed B.Arch. degree from UMKC will provide an opportunity to all Missouri residents, from both the rural communities and urban centers, to attend an in-state, affordable, public architecture school. This not only captures students who are currently leaving the state of Missouri to go to public architecture programs out of state – such as Arkansas, Illinois, Iowa, Kansas, Nebraska, Oklahoma, but also captures students who may have been unable to attend any of the current private options in the state of Missouri. UMKC's program will differentiate itself from these regional institutions by providing a lower-cost, community-centered architecture school experience located in the heart of a metropolitan area saturated with professional architecture opportunities and resources.

UMKC's architecture program will be a lower cost alternative for students as compared to the current regional public options – with fewer credit hours (150 for the B.Arch. versus 170-180 for the M.Arch.), all at undergraduate tuition rates at UMKC as compared to neighboring regional public programs which transition students to graduate rates in the fifth/sixth year. In addition, the strength of the architecture profession in Kansas City provides ample resources for this new program to supplement full-time faculty with adjunct, working professionals who have the necessary credentials for a successful accredited program. Another major goal of this program is to provide a community-centered experience by using the local architectural firms and resources. Students in this program will have the opportunity to directly engage with the local metropolitan industry through community-based projects and robust internship opportunities. These unique opportunities are only possible due to UMKC's proximity to the local architecture industry.

This five-year B.Arch. program will directly support the UMKC vision to promote interdisciplinary education, thereby bringing innovation, workforce professionals, and new economic developments to the metropolitan area. This UMKC B.Arch. will also directly contribute to the Architecture and Engineering cluster of firms as identified by KC Rising¹, a regional economic development initiative formed to help KC grow faster and more intentionally, and promoted by the regional KC Global Design partnership. Finally, the B.Arch. at UMKC will have the added benefit of enhancing community and neighborhood engagement through studio projects in the Kansas City and local Missouri communities.

1. Introduction

The Bachelor of Architecture (B.Arch.) degree is a five-year undergraduate degree consisting of 150 credit hours. UMKC already has a coordinated Architectural Studies program with Kansas State University (KSU). Current students in the coordinated Architecture program spend their first two years at UMKC and then finish their last three years at KSU, ultimately receiving their M.Arch. degree from KSU. UMKC plans to build upon the already existing two years of curriculum taught at UMKC and begin a brand-new B.Arch. program completed entirely at UMKC.

Defining Attributes

There are several defining aspects to the proposed B.Arch. program that differentiate it from regional institutions and other traditional architecture programs:

- With only 150 student credit hours and public in-state undergraduate tuition, this program provides an affordable and feasible architecture option for local Kansas City students and Missouri residents.
- Current NAAB-accredited B.Arch. or M.Arch. architecture programs in the region are located at less affordable institutions and require substantially more student credit hours, typically 170-180+, including graduate level tuition in year 5/6.
- Being located in the Kansas City metropolitan area, this program will open pathways to the architecture profession for students who may not have had this opportunity otherwise due to the inability to relocate, family and work obligations, and financial pressures.
- The architecture profession in Kansas City, and across the country, is in need of a more robust workforce. UMKC can directly impact the workforce needs of the architecture community in both Kansas City, as well as the entire state of Missouri.

Licensure

In order to become a licensed architect, there are several different pathways, but all of them must finish with a “professional degree” which is accredited by the National

¹ kcrising.com

Architecture Accreditation Board (NAAB) with the designation of B.Arch., M.Arch., or D.Arch. A student cannot become a licensed architect with a B.A. or B.S. degree even if it is in “Architecture” or “Architectural Studies.” Those degrees are not accreditable by the NAAB and are generally called “pre-professional degrees”. The proposed UMKC B.Arch. degree will be a five-year degree of Architecture at the bachelor’s level and can be NAAB-accredited (minimum of 150 credit hours).

The B.Arch. is the most stream-lined pathway for a student to become an architect. Students who graduate with the proposed B.Arch. degree from UMKC will be able to move directly into the architecture profession after graduation, on the path toward becoming a registered architect. Career path options for a student without an accredited “professional degree”, such as a B.Arch., include graphic design, interior design, residential design, landscape design, drafting, modeling, development, marketing, sales, management, planning, and consulting. To become an architect, a student with a “pre-professional degree” would have to also complete an accredited “professional degree” – generally the M.Arch. following their B.A. or B.S.

Kansas City Architectural Community Support

Focus group meetings with local architecture firms and associations, including Burns & McDonnell, Odimo, AIA, Populous, DRAW, Gould Evans, Helix, HOK, Gastinger Walker, Focal Design, and NOMA, have highlighted the need for a public architecture program in the state of Missouri, specifically the Kansas City metropolitan area. During these focus group meetings, all the firms showed great excitement over the possibility of having an architecture school at UMKC. The local architects highlighted a number of aspects that a UMKC program would have which would distinguish it from other regional architecture programs:

- Potential for engagement with the local metropolitan industry which could provide community-based projects and internship possibilities in the same city as the university.
- The new SSE structure, which houses the current Architectural Studies program in the Division of Natural and Built Environment (NBE), allows for cross-disciplinary experiences with civil engineering, urban planning, and environmental science providing a unique interdisciplinary approach that is currently lacking in architectural education.
- The Kansas City architecture firms expressed the desire to be involved with the program and were all willing to supplement the faculty as adjuncts and instructors, keeping the total number of new full-time hires manageable.
- The Kansas City architecture firms are desperate for talent. With an estimated steady-state total enrollment of 250 students and the current SSE retention rate and rate of graduates staying in the area, it is anticipated 160-200 of these graduates (in the five-year cohort) will remain within the metro, providing the local firms with approximately 32-40 graduates per year.

The person responsible for the B.Arch. program proposal and planning is Dr. Katherine Bloemker, Assistant Dean of Academic Affairs in the School of Science and Engineering. John Eck, Full Teaching Professor of Architecture has been instrumental in the curriculum development and accreditation planning. Professor Eck will remain responsible for architecture specific academic activities for the program until a program director is hired.

Contact Information: Phone: (816) 235-5639, E-mail: bloemkerk@umkc.edu.

2. University Mission & Program Analysis

2.A. Alignment with University Mission & Goals

The goals of the proposed B.Arch. program (which are shown in more detail in section 5.D.) are built from the main foundational values of architecture as spelled out by NAAB²: Design; Environmental Stewardship and Professional Responsibility; Equity, Diversity, and Inclusion; Knowledge and Innovation; Leadership, Collaboration, and Community Engagement; and Lifelong Learning. These themes mirror the UMKC Mission Statement in several ways, as can be seen in the following bolded text:

*“As an urban research university, our mission at the University of Missouri-Kansas City is to promote **learning** through the discovery, preservation and dissemination of **knowledge** of public value across a broad spectrum of disciplines and fields of study. UMKC celebrates the individual and embodies **diversity** and **inclusion** by intertwining these goals with **innovation** to enable transformational impact aimed at bringing cultural, social, health and economic prosperity to the metropolitan, regional and global communities we serve.”*

In addition, the students and graduates from the proposed B.Arch. program will directly support the University mission in two major ways (specifically note the underlined sections shown previously in the mission statement). Firstly, this program promotes the students to participate in interdisciplinary education which is highlighted in the third line of the mission statement. Secondly, the students and graduates of this program will bring innovation to the metropolitan area with specific objectives of bringing economic prosperity to the Kansas City community, which directly aligns with the final few lines of the University mission.

The current Strategic Plan at UMKC has five pillars, each containing a number of specific goals. The proposed B.Arch. program specifically addresses the pillars and goals of the strategic plan in the following areas:

- Pillar 1: *Provide exceptional student learning, success and experience*

² [National Architectural Accrediting Board \(naab.org\)](http://naab.org)

- The present Architectural Studies partnership deflates UMKC retention numbers since students start at UMKC and then leave for KSU. A full program at UMKC will increase retention numbers (Goal 1.1).
- The B.Arch. degree program will provide for regional workforce needs (Goals 1.2 and 1.5).
- This program will provide an affordable choice for KC regional students (Goal 1.3).
- Pillar 2: *Become a thriving discovery enterprise*
 - New faculty will support built environment research and innovation in KC smart city initiatives (Goal 2.3).
- Pillar 3: *Transform our community and region with impactful engagement*
 - The B.Arch. program would directly contribute to the Architecture and Engineering cluster of firms as identified by KC Rising and promoted by the regional KC Global Design partnership (Goal 3.1 and 3.6).
 - The B.Arch. program will enhance community and neighborhood engagement through studio projects in KC and Missouri communities building on past Architecture and Urban Planning success (Goal 3.2).
- Pillar 4: *Foster an environment of invigorating multiculturalism, globalism, diversity and inclusion*
 - Current architecture programs in the region are not located at affordable institutions in urban locations. This program will open up pathways to the architecture profession for people unable to leave the Kansas City metropolitan area (Goal 4.1).
 - The architecture profession in greater Kansas City needs a more robust workforce. With its high concentration of architecture firms, Kansas City is the right location to provide an architecture program that will increase talent in the profession (Goal 4.5).

The proposed B.Arch. program directly supports one of SSE's goals of increasing degree and discipline options in the STEM fields and is highly supported by both Dean Truman and Provost Lungren. See the attached Letters of Support.

2.B. Duplication & Collaboration within Campus, Across System

There are currently no NAAB-accredited degrees in Architecture (B.Arch., M.Arch., or D.Arch.) at a public university in the state of Missouri. Missouri is the largest state in the United States without a degree program in a public university system. In addition, Kansas City is one of the largest cities in the United States without an accredited architecture program within the core of the metropolitan area. There are two accredited programs in the state of Missouri, at Washington University and Drury University, both private institutions; and there are two accredited programs in the

state of Kansas, one at KU and one at KSU. The Washington University program offers a B.S. or B.A. in Architecture, which is considered a “pre-professional degree.” Students in those programs then have to enroll in the M.Arch. program which is accredited by NAAB. In total these students will end up taking a six- or seven-year program (4+2 or 4+3) depending on the undergraduate degree earned. KU and KSU only have the M.Arch., so students either go directly into the 170-180 credit hour program from the beginning (which they market can be done in five years), or students must go through a different undergraduate four-year program and then take an additional two to three more years to obtain the accredited M.Arch. degree.

UMKC presently has a cooperative relationship with the program at KSU that has been in place since 1987. In this cooperative program UMKC teaches the first two years of the professional degree. After two years, students go to KSU and graduate with the M.Arch. degree. With the implementation of this new B.Arch., it is planned that the current Architectural Studies program and agreement with KSU will no longer exist. However, in the future, a bachelor’s-to-master’s coordinated program with regional architecture programs, such as KSU and the University of Kansas (KU), who only offer M.Arch. degrees could be explored. The Dean of SSE, Kevin Truman, has already started conversations with administrators at both KU and KSU regarding these potential future collaborations.

UM-Columbia currently has a bachelor’s degree in Architectural Studies; however, this is not a professional architecture degree and students still need to complete another two years of studio in a professional program (such as KU or KSU) to get the NAAB-accredited degree which is licensable. Missouri S&T currently has a degree in Architectural Engineering, however, again, this not a professional architecture degree and graduates cannot be licensed architects without an NAAB-accredited degree.

Dean Truman, reached out to UM-Columbia regarding the proposed B.Arch. program at UMKC and to explore potential partnerships. He had conversations with both the Dean of the College of Arts and Sciences, Cooper Drury, and the Chair of the Architectural Studies program, Lyria Bartlett. If approved, the faculty and administration at UMKC look forward to continued conversation and exploration of future collaborations with the UM-Columbia Architectural Studies program and its faculty.

The following table shows a comparison of Public Architecture Programs in the United States:

Institution	State	Enrollment		
		Undergraduate	Graduate	Total
<i>University of Arkansas, Fayetteville</i>	AR	821	12	833
Colorado State University	CO	170		170
University of Colorado Boulder	CO	591		591
University of Colorado, Denver	CO	382	349	731
Iowa State University	IA	1,762	163	1,925
University of Illinois Urbana - Champaign	IL	399	158	557
University of Illinois- Chicago	IL	1,254	171	1,425
<i>Kansas State University</i>	KS	523	317	840
<i>University of Kansas</i>	KS	822	119	941
<i>Univ. of North Carolina, Charlotte (Peer School)</i>	NC	235	99	334
North Dakota State University	ND			0
University of Nebraska, Lincoln	NE	498	63	561
<i>University of Cincinnati (Peer School)</i>	OH	2,078	188	2,266
<i>Oklahoma State University</i>	OK	248		248
<i>University of Oklahoma</i>	OK	632	152	784
<i>Portland State University (Peer School)</i>	OR	258	36	294
South Dakota State University	SD			0
University of Memphis	TN	108	9	117
Texas A&M	TX	1,241	331	1,572
Texas Tech	TX	720	92	812
University of Texas Austin	TX			0
University of Texas, San Antonio	TX	676	140	816
University of Utah	UT	531	130	661

The schools highlighted in bold italics are peer schools to UMKC; some regional public institutions are indicated as such. As can be seen in the attached Pro Forma and Proposed Curriculum, UMKC estimates approximately 250 students by year 5. The undergraduate enrollments at the peer and regional public institutions fall in line with current projections for the new UMKC program (note: Portland State at 258, Oklahoma State at 248, and UNC-Charlotte at 235).

3. Business-Related Criteria & Justification

3.A. Market Analysis

3.A.1. Rationale & Workforce Demand for the Program

Starting a B.Arch. program at UMKC would be a step toward providing the necessary workforce for KC Global Design, a regional workforce initiative of the Kansas City Civic Council and the Chamber of Commerce. The Kansas City metropolitan area has a high concentration of architecture employment. In fact, Kansas City is one of the ten leading metros in the United States for employment demand in the architecture industry. According to the U.S. Bureau of Labor Statistics, the location quotient for Architects in the KC Metro is 1.72. In addition, according to a Labor Market Analysis in 2018, the architecture industry is growing twice as fast in Kansas City as compared to the rest of the nation³.

The Lightcast (formerly Burning Glass) reports from 2022 show job growth for graduates with a bachelor's or master's degree in architecture in both the Kansas City area, as well as across Kansas and Missouri, of almost 5% from 2020-2030. In a recent 21-month period, there were 540 and 210 job postings for architecture jobs requiring a bachelor's and master's degree, respectively. It should be noted that the job postings requiring a bachelor's degree highly outweigh the postings requiring a master's degree, emphasizing not only the need for a B.Arch. program in the region, but also the fact that graduates with a B.Arch. are still a highly sought commodity in the architecture profession.

The Lightcast reports from 2023 show a 21.8% increase in architecture jobs in the Kansas and Missouri region from 2012 to 2032. This increase exceeds the national average of 20.3%. The state of Missouri accounted for 68% of those regional jobs in 2012. In the two-state region from 2012 to 2032 there are over 70 monthly job postings and 90 estimated average monthly hires in the architecture profession. Job opportunities span a number of companies including the Kansas City-based Burns & McDonnell, HNTB, and Black & Veatch.

When looking exclusively at the occupation of architect, excluding other adjacent occupations, Lightcast reported over 2,000 jobs in Missouri in 2021. Of the 2,187 architect jobs in Missouri, 57% (1,257) were in the Kansas City area which is the highest demand of any metropolitan area in the state. Lightcast also reported an average annual compensation of \$79,123 for architects in Missouri which, although slightly below the national average, is high for the state.

³ MARC KC Global Design Talent to Industry Exchange – A Labor Market Analysis of the KC Global Design Industry, May 2018

Furthermore, gender diversity in the architecture profession lags nationally and regionally. In 2022 the American Institute of Architects (AIA) had 96,710 members with only 26% of those members being women. The Lightcast reports also show that the Kansas and Missouri region trends similarly in gender diversity in the architecture profession, with over 75% male. The current UMKC architecture and urban planning programs already partner with local Kansas City architecture organizations, including, the Kansas City Chapter of the National Organization of Minority Architects (NOMA)⁴ and the Kansas City Chapter of AIA. These local chapters are continually striving for equal opportunity in the architecture profession in the Kansas City metropolitan area. With the introduction of a B.Arch. program at UMKC, it is expected that these partnerships will continue to broaden the access of architecture education to students in the region.

Local architecture firms, including Burns & McDonnell, Odimo, Populous, DRAW, Multistudio, and Focal Design, are desperate for more architecture graduates and have clearly stated the need for a public architecture program in the state of Missouri, specifically the Kansas City metropolitan area. See the attached letters of support.

3.A.2. Student Demand for the Program

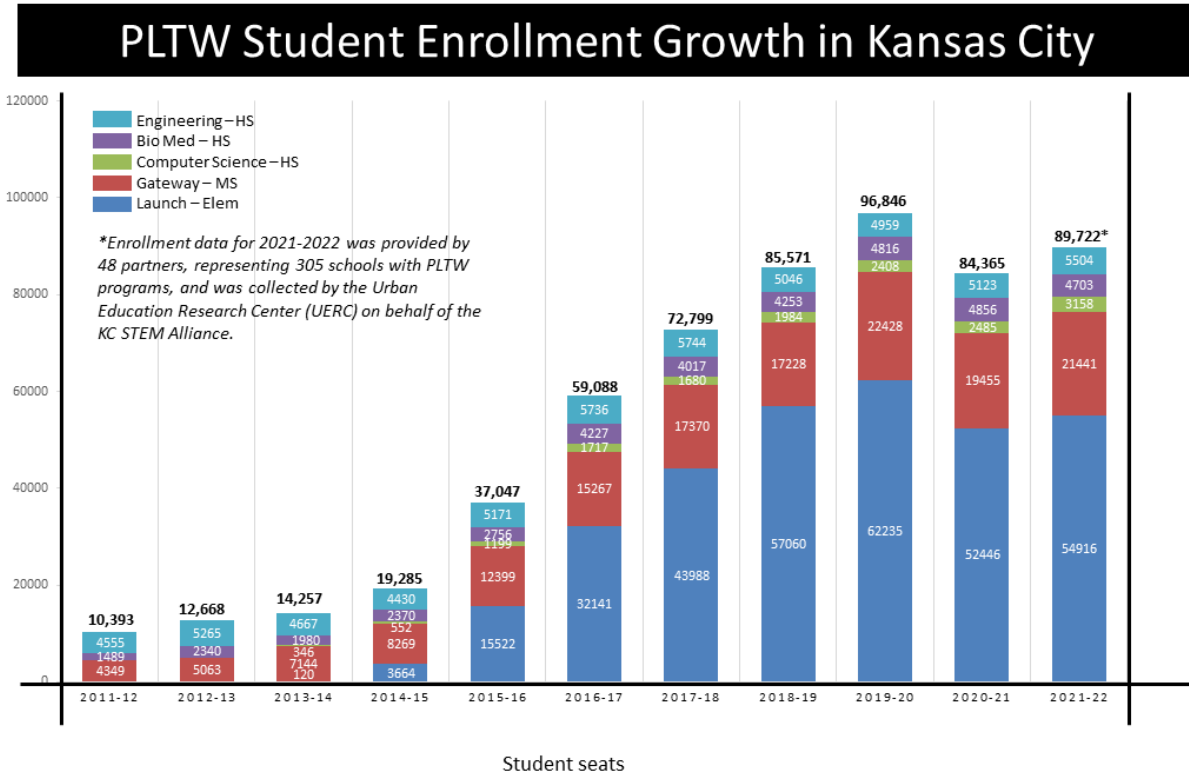
In the 2013 ACT report of students interested in architecture, there were 400 students in Missouri with ACTs over 23 who were interested in architecture. In the 2016 ACT lists, there were over 420 Missouri students interested in architecture. A more recent ACT report from 2023 showed 1,679 total students from Kansas and Missouri expressing interest in architecture, spanning the 2024, 2025, and 2026 graduation classes, with 57% (965) of those students from the state of Missouri. To meet the enrollment goals of 50-75 students per class, UMKC only needs to capture 12-18% of these Missouri students each year. This goal is very achievable in a well-marketed program in Kansas City, especially since these students are currently required to go out-of-state for a public, NAAB-accredited architecture program providing the opportunity for licensure, since there are currently none in the state of Missouri.

The KC Stem Alliance and Project Lead the Way (PLTW) programming provide additional evidence of student demand. The KC STEM Alliance is an independent agency managed through the School of Science and Engineering at UMKC and serves as SSE's primary K-12 outreach program. Funding to support the Alliance comes from a multi-year grant from the Ewing Marion Kauffman Foundation and from area STEM-related companies, grants, and other non-profit agencies and organizations.

The KC STEM Alliance is currently serving more than 90,000 students in the area with programming such as Project Lead the Way (STEM coursework and programming for area K-12 schools) and KC FIRST (competitive robotics programming), as well as several other programs aimed to engage young people in STEM learning.

⁴ [Home | NOMAKC](#)

The PLTW high school program consists of three separate curriculum tracks: Biomedical, Engineering, and Computer Science. The following figure shows the number of Kansas City area high school students participating in PLTW in the Biomedical Track, the General Engineering Track (which includes Architecture), and the Computer Science Track.⁵



As can be seen in the turquoise blue in the previous figure, over the past five years there have been an average of over 5,000 high school students in the Kansas City metropolitan area who participated in the General Engineering track in PLTW.

PLTW Engineering Courses cover a wide range of topics, including architecture. A popular course which is generally taught to high school juniors is called Civil Engineering and Architecture (CEA). This course specifically covers architecture and civil engineering topics such as building design, site design, and development. Students in the course also gain knowledge in the use of 3D architectural design software.

The following table shows enrollment numbers for the Civil Engineering and Architecture course in the Kansas City region for the past five academic years.

Year	Civil Engineering & Architecture (CEA) Course Enrollment
------	--

⁵ <https://www.kcstem.org/>

2017-2018	415 students
2018-2019	389 students
2019-2020	419 students
2020-2021	440 students
2021-2022	352 students

While the numbers of districts and schools that offer the curriculum varies slightly from year to year, in 2021-2022, twenty-two area high schools representing fourteen school districts in the Kansas City metro area provided the CEA course.

KC Stem Alliance also hosts a Civil Engineering & Design Career Day in the fall each year in partnership with the Kansas City Chapter of the AIA and the Center for Architecture & Design. Students at this career day visit architecture firms across the city.

The following table shows attendees at the Civil Engineering & Design Career Day from 2018 to the present.

Year	Civil Engineering & Design Career Day Attendance
2018-2019	202 students
2019-2020	165 students
2020-2021	No event due to pandemic
2021-2022	71 students
2022-2023	165 students

The sizable enrollments in these opportunities confirm that there are numerous high school students in the KC metro area who have shown real interest in the architecture field. These are the students that would benefit the most from a public architecture program in Missouri, specifically in Kansas City. Currently these students must leave the KC metro area, and often the state of Missouri, in order to pursue their architecture education. Even worse, some of these students might have to choose a different educational path due to no affordable, public option within their city or state.

Table 1a. Student Enrollment Projections (anticipated total number of students enrolled in the program during the first five fall semesters following implementation.)

Year:	1	2	3	4	5
Full-time	50	115	167	209	242
Part-time	0	0	0	0	0
Total	50	115	167	209	242

Table 1b. New Student Enrollment Projections (anticipated number of students enrolled in the program during the first five fall semesters following implementation that are new to the University.)

Fiscal Year:	1	2	3	4	5
Full-time	50	115	167	209	242
Part-time	0	0	0	0	0
Total	50	115	167	209	242

Table 1c. Projected Number of Degrees Awarded

Year:	1	2	3	4	5	6	7	8	9	10
# of Degrees Awarded	0	0	0	0	20	31	31	31	31	31

3.B. Financial Projections

See the attached Pro Forma document with a steady-state enrollment by year 6 of 252 student. In addition, a 50% enrollment Pro Forma is provided with a steady-state enrollment by year 6 of 124 students.

3.B.1. Additional Resources Needed

The B.Arch. program is planned to be housed in Katz Hall, which has enough space to hold the size of program predicted in the first five years. In addition to the space in Katz Hall, SSE currently occupies five buildings, with additional space in three more buildings. Some of this space could be utilized for the B.Arch. program if needed.

There will be the need for some minor renovations of the space in Katz to accommodate the new program – specifically some larger studio spaces. Presently, there is enough space in Katz Hall to expand to at least three years of architectural studio. Under-utilized classroom space on the second floor of Katz Hall could be converted to studio space as the program builds into year 4 and year 5.

The NAAB requires that most architecture courses in an accredited program are taught by licensed architects (with a B.Arch. or M.Arch. degree). It is important to note the current urban planning faculty are not qualified to teach architecture courses beyond areas such as site planning and urban design. The present Architectural Studies program needs a hire to direct new program development through the NAAB new program accreditation process. As an externally-accredited degree program, UMKC's B.Arch. program would need to hire one new professor of architecture at the associate level to coordinate architecture program candidacy, relations with the professional community in Kansas City, and multiple NAAB visits. With each new year in the B.Arch. program, it would be necessary to hire at least one new faculty member at the assistant tenure-track or non-tenure-track level until steady-state is reached in year 6, depending on the enrollments. Additional adjunct studio instructors and technical course instructors will be hired from professionals currently working in greater Kansas City. The strength of the architecture profession in Kansas City provides ample resources for this new program to supplement full-time faculty with adjunct, working professionals who have the necessary credentials for a successful accredited program.

3.B.2. Revenue

The sources of revenue include tuition and fees for new students. No financial support is being provided by the university. No external funds are being used.

3.B.3. Net Revenue

Annual revenue will exceed annual expenses and the program will break even in the first year, including in the 50% enrollment scenario.

Table 2. Financial Projections for Proposed Program for Years 1 Through 5.

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
1. Expenses per year						
A. One-time						
New/Renovated Space	0	0	0	0	0	0
Equipment	0	0	0	0	0	0
Library	0	0	0	0	0	0
Consultants	0	0	0	0	0	0
Others	0	0	30000	51500	62250	15000
Total one-time	0	0	30000	51500	62250	15000
B. Recurring						
Faculty	80000	167280	302756	508319	608327	620493
Staff	0	66300	67626	68979	70358	71765
Benefits	29240	84498	127071	196344	232694	237348
Equipment/Supplies	0	15300	26010	26530	27060	27602
Library	0	0	0	0	0	0
Other (Computing, Maintenance, Repair, Professional, Travel, Misc.)	63000	77010	88954	90733	92547	94399
Total recurring	172240	410388	612417	890905	1030988	1051608
Total expenses (A+B)	172240	410388	642417	942405	1093238	1066608
2. Revenue per year						
Tuition/Fees	0	513621	1204955	1784800	2273985	2689512
Institutional Resources	0	0	0	0	0	0
State Aid – CBHE	0	0	0	0	0	0
State Aid – Other	0	0	0	0	0	0
Total revenue	0	513621	1204955	1784800	2273985	2689512
3. Net revenue (loss) per year	(172240)	103233	562537	842395	1180747	1622904
4. Cumulative revenue (loss)	(172240)	(69007)	493531	1335926	2516673	4139577

3.B.4. Academic and Financial Viability

As can be seen in the 100% enrollment scenario Pro Forma, Year 7 expenditures equal approximately \$1.1M. A headcount of 105 students brings in revenues of approximately \$1.1M. This would be the break-even scenario for minimum financial viability even if hiring and expenditures continued assuming a 250-student head count.

Table 3. Enrollment for Academic and Financial Viability

Viability	Minimum Enrollment
Academic	105
Financial	105
Overall	105

The 50% enrollment scenario Pro Forma shows adjusted expenditures for lower enrollments. In that model, Year 7 expenditures equal approximately \$870,000 which would require a headcount of 82 students to break-even.

3.C. Business Plan: Marketing, Student Success, Transition & Exit Strategies

3.C.1. Marketing Plan

UMKC and SSE recruiting units across campus will support marketing of the B.Arch. program to area high school students. Due to the KC STEM Alliance and UMKC partnership, SSE can market directly to the students who attended the Design Career Day as well as the students who have enrolled in the PLTW CAE course. The B.Arch. program will also be included in future marketing (mass email, printed pieces, websites, social media). SSE has a dedicated MCOM staff person who works in conjunction with SSE to market current degree programs.

Once the program is formally launched, the Dean of SSE will appoint a Degree Program Director or Chair who will serve as the point person to work with MCOM regarding recruitment and marketing efforts. At the preliminary stage to ensure its successful start, the Dean (Kevin Truman) and the Assistant Dean (Katherine Bloemker) will coordinate with MCOM directly and serve as the point persons for the proposed B.Arch. program.

3.C.2. Student Success Plan

In order to ensure high retention and graduation rates for architecture students, there are a number of resources that will be available to all students including advising, career services, support services, faculty mentorship, research opportunities, and student organizations. Each of these resources is laid out in detail in the following:

- **Roo Advising and Career Services**
 - Architecture students will have access to all resources offered in Roo Advising and Career Services.
 - **Roo Advising** provides centralized, professional advisors ensuring that the students will remain on track for a five-year graduation. They will also advise the students on the architecture opportunities and the professional and career advantages of pursuing the B.Arch. degree.
 - **Career Services** professionals are available to help the students explore and prepare for applying and placement in internships and jobs. The Bloch School of Management and the School of Science and Engineering have partnered on Career Fairs for several years with over 140 companies attending the last career fair. This will only grow with the inclusion of architecture firms from the Kansas City region at the Career Fair.

- **SSE Support Services**
 - The B.Arch. students will have access to all current SSE support services.
 - The **SSE Student Affairs** team is dedicated and works in concert with the UMKC Centralized Services. The SSE Student Affairs Team has **direct, connected access to the students, faculty, companies and other UMKC schools** and can provide a personalized approach consisting of guidance, connecting, and preparing individual students, academically and professionally.
 - **Guiding** students through their five-year curriculum.
 - **Connecting** the students with architecture firms and internships.
 - See below for a description of SSE’s Career Connections Program.
 - **Preparing** each student with customized professional school preparation and career guidance.
 - Since the implementation of the SSE Student Affairs team, SSE has seen improved retention from **50% in 2008 to an average of 79%** from 2016-2021. SSE’s goal has been to be a “**pump and not a filter**”; so, every action is with that goal in mind. Every student admitted and entering SSE should be a future graduate.

 - **Faculty mentors**
 - Each B.Arch. student will be assigned a faculty mentor to help with career and/or internship guidance.

In order to help B.Arch. students with job placement, there are a number of resources that will be available to all students including career services, career connections,

career fairs, and internship opportunities. Each of these resources is laid out in detail in the following:

- **UMKC and SSE Career Services**
 - B.Arch. students will have access to all services currently offered in the UMKC Career Services.
 - Architecture Students will have access to all services provided by the SSE Student Affairs Team and their faculty mentors. With the help of the SSE Student Affairs Team over the last five years:
 - There has been a 79% average retention of SSE students.
 - 80% of all SSE Juniors and Seniors have interned or had research opportunities.
 - 90+% of all SSE Seniors have obtained jobs as of graduation.
 - **SSE's Career Connections Program**
 - All students in SSE (and UMKC) including those within the architecture program have the ability to participate in SSE's Career Connections program. The SSE Student Affairs team brings in professionals from companies to provide insights into their day-to-day jobs (work) as architects. These degree program related companies and their employees are used to help students explore as many career possibilities as possible. There will be a variety of regional, architecture firms included in the Career Connections Program.
 - **Career Fairs**
 - One of the best places for students to connect with potential employers is career fairs. SSE participates in a career fair each year with the Bloch School of Management.
 - The last career fair held on campus for just business and engineering had over 140 companies and has proven to be an exceptional resource for students to connect directly with the regional and national job market.
 - Once the B.Arch. program is in place, more architectural firms will be invited to this career fair.
 - **SSE's high employment placement rates**
 - It is expected that the architecture students will track with all other SSE professional disciplines (such as engineering), which historically have extremely high employment placement rates, averaging 90%+ over the last five years, with placements locally and nationwide.
 - This placement rate is due to all the prescribed, personal UMKC and SSE support services, possible internships, career

connections, industrial capstone design projects, advisory boards and more.

3.C.3. Transition Plan

The individual primarily responsible for the B.Arch. program proposal is Assistant Dean Katherine Bloemker. However, once the program is implemented a Degree Program Committee (DPC) will be formed comprised of current faculty, including Professor John Eck, with expertise in the architecture field. Having this standing committee will ensure a seamless transition in the event that any of the primary individuals can no longer fulfill the necessary duties for managing the program's day-to-day needs.

3.C.4. Exit Strategy

If the situation arises that the program is underperforming expectations and financial viability is compromised, the Degree Program Committee (DPC) will be charged with providing a plan of action to improve enrollments and/or decrease expenditures. A three-year window will be allowed following the implementation of the action plan. Following the three years, if the revenues from the program are still not exceeding the expenditures, the Dean will decide whether a hiatus or discontinuation of the program is needed.

4. Institutional Capacity

The B.Arch. program will require some initial resources see the attached Pro Forma to begin matriculating students, but these are minimized since UMKC already offers the first two years of curriculum. SSE and UMKC already have the necessary space the program needs for the first three to four years. The program will be revenue positive from year one and will only grow in net revenue each of the following three years at which time SSE will make the decision whether to go steady-state in size or continue growing.

SSE will need to add faculty expertise and staff for the B.Arch. program to be viable. However, this burden is manageable because, being in Kansas City, SSE can rely on community experts as adjunct faculty that have expertise in areas where SSE faculty may not. These adjuncts provide a real-world education that students can benefit from due to UMKC's proximity to so many Kansas City based architecture firms. Additionally, these adjuncts often provide internships and career guidance that is extremely beneficial for the students and ultimately SSE's recruitment efforts.

This degree is in large demand within Kansas City and the state of Missouri. SSE's (and therefore UMKC's) enrollment will increase with the offering of this new degree with manageable up-front investments.

5. Program Characteristics

5.A. Program Outcomes

The following six Student Learning Outcomes (SLOs) are required by NAAB⁶:

1. Health, Safety, and Welfare in the Built Environment
 - Students understand the impact of the built environment on human health, safety, and welfare at multiple scales, from buildings to cities
2. Professional Practice
 - Students understand professional ethics, the regulatory requirements, the fundamental business process relevant to architecture practice in the United States, and the forces influencing change in these subjects
3. Regulatory Context
 - Students understand the fundamental principles of life safety, land use, and current laws and regulations that apply to buildings and sites in the United States, and the evaluative process architects use to comply with those laws and regulations as part of a project
4. Technical Knowledge
 - Students understand the established and emerging systems, technologies, and assemblies of building construction, and the methods and criteria architects use to assess those technologies against the design, economics, and performance objectives of projects
5. Design Synthesis
 - Students develop the ability to make design decisions within architectural projects while demonstrating synthesis of user requirements, regulatory requirements, site conditions, and accessible design, and consideration of the measurable environmental impacts of their design decisions
6. Building Integration
 - Students develop the ability to make design decisions within architectural projects while demonstrating integration of building envelope systems and assemblies, structural systems, environmental control systems, life safety systems, and the measurable outcomes of building performance

⁶ [National Architectural Accrediting Board \(naab.org\)](http://naab.org)

5.B. Program Design & Content

The course sequence and mapping of courses to the program SLOs can be found in the attachment: Curriculum Map. Note that in the curriculum map, courses where the outcome is introduced are marked with an **I**, courses where the outcome is continuing to be developed are marked with a **D**, and courses where the outcome should be mastered and subsequently assessed are marked with an **M/A**.

5.C. Program Structure

The proposed UMKC B.Arch. degree would consist of a five-year (150 credit hour) program. The five-year curriculum including proposed teaching responsibilities can be found in the attachment: Proposed Curriculum.

5.C.1. Program Structure Form

1. **Total Credits Required for Graduation:** 150
2. **Residence requirements, if any:** None
3. **General education**
 - a. Total general education credits: 33*
 - i. *Additional 3 credit hours for the MO Constitution requirement.

Courses (specific course or distribution area and credit hours):

Course	Hrs	Course	Hrs	Course	Hrs
MATH 110 Pre-Calculus Algebra (<i>Math</i>)	3	Critical Thinking in Arts & Humanities	3	First Semester Experience	3
POL-SCI 210 OR HIST 101 OR HIST 102 - MO Const. Requirement	3*	Critical Thinking in Social & Behavioral Sciences	3	Written Communication I	3
Critical Thinking in Natural & Physical Sciences	3	Culture and Diversity	3	Oral Communication	3
		Civic Engagement	3	Written Communication II	3

4. Major Requirements

- a. Total credits specific to degree: 117*
 - i. *71 credit hours of new courses

Courses (specific course or distribution area and credit hours):

Course	Hrs	Course	Hrs	Course	Hrs
<i>Studio Seminar</i>	1*	ENV-DSN 250 Arch History 1	3	<i>Professional Support Elective</i>	3*
ENV-DSN 201 Design Studio 1	4	ENV-DSN 251 Arch History 2	3	<i>Professional Support Elective</i>	3*
ENV-DSN 202 Design Studio 2	4	ENV-DSN 252 Arch History 3	3	<i>Professional Support Elective</i>	3*
ENV-DSN 301 Design Studio 3	5	UPD 499C Digital Architecture 1	1	<i>Professional Support Elective</i>	3*
ENV-DSN 302 Design Studio 4	5	UPD 499E Digital Architecture 2	1	<i>Professional Practice</i>	3*
<i>Design Studio 5</i>	5*	<i>Digital Architecture 3</i>	1*	UPD 260 Planning Elective	3
<i>Design Studio 6</i>	5*	PHYS 210 General Physics	4	UPD 280 Planning Elective	3
<i>Design Studio 7 (or Study Abroad)</i>	5*	ENV-DSN 433 Building Construction Systems 1	3		
<i>Internship</i>	10*	<i>Building Construction Systems 2</i>	3*		
<i>Design Studio 9</i>	5*	ENV-DSN 347 Building Structures 1	4		
<i>Design Studio 10</i>	5*	<i>Building Structures 2</i>	4*		
<i>Project Programming Design</i>	3*	<i>Environmental Systems 1</i>	3*		
<i>Communications</i>	3*	<i>Environmental Systems 2</i>	3*		

5. Free elective credits

- a. Total free elective credits: 0*
 - i. *There are no free electives, however there are 12 credit hours of professional support electives and 6 credits of planning electives that the students can select from a number of options.

6. Requirement for thesis, internship or other capstone experience:

All students are required to complete an internship during the 4th year spring and summer that counts for 10 credit hours toward the degree.

7. **Any unique features such as interdepartmental cooperation:**
None.

5.D. Program Goals and Assessment

The goals of the program (shown in the following table) are built from the NAAB shared values of the discipline and profession. The program goals focus on the six main foundational values of architecture⁷: (1) Design, (2) Environmental Stewardship and Professional Responsibility, (3) Equity, Diversity, and Inclusion, (4) Knowledge and Innovation, (5) Leadership, Collaboration, and Community Engagement, and (6) Lifelong Learning.

Goal 1:	Students have the fundamental design knowledge and ability to design better, safer, more equitable, resilient, and sustainable built environments.
Goal 2:	Students understand the impact of their work on the world and on public, health, safety, and welfare and understand the importance of ethics in their profession.
Goal 3:	Students commit to equity and inclusion in all aspects of their work, continually seeking fair, diverse, and just solutions.
Goal 4:	Students create and disseminate knowledge in response to ever-changing conditions, striving for continuous improvement of the discipline.
Goal 5:	Students practice in collaborative, inclusive, creative, and empathetic enterprise in the community.
Goal 6:	Students value lifelong learning through understanding the architect's role in cultural, social, environmental, economic, and built contexts.

Achievement of the program goals is assessed by the SLOs shown in section 5.A. Each of the six outcomes has specific program goals mapped to it as follows:

1. Health, Safety, and Welfare in the Built Environment - Goals: 1, 2
2. Professional Practice - Goals: 2, 5
3. Regulatory Context - Goals: 3, 4
4. Technical Knowledge - Goals: 1, 6
5. Design Synthesis* - Goals: 1, 2, 3, 4, 5, 6

⁷ [National Architectural Accrediting Board \(naab.org\)](http://naab.org)

6. Building Integration*Goals: 1, 2, 3, 4, 5, 6

*Outcomes 5 and 6 need to be assessed at the ability level, not just the understanding level, which is why they map to all six goals.

The SLOs are assessed in the courses listed on the curriculum map with the letter **A** (see attachment: *Curriculum Map*). Assessment will be done each year in these courses. Data for assessment is collected from the instructor of each course. Depending on the course, this data could be performance on a project, an exam question, a presentation, or a homework assignment. This performance data is provided to the program coordinator (Professor John Eck) and the assessment coordinator (Assistant Dean Katherine Bloemker). Each student activity performance is broken into 3 categories (unacceptable, acceptable, and excellent). The target for achievement in all courses is that 80% of the students meet the acceptable or excellent level for the student activity relating to the particular outcome. The Degree Program Committee (DPC) will be responsible for program oversight.

In addition to regular campus assessment from HLC, the B.Arch. program will undergo routine accreditation through the NAAB. Assessment for the NAAB will be done in the same manner as was already described.

It is estimated that the B.Arch. program will mirror many of the other professional programs in SSE when it comes to retention, graduation, and job placement. Current SSE programs (specifically engineering and computer science) have retention rates of approximately 80%, six-year graduation rates of 80%, job placement rates of 90%+ at graduation, and job placements rates of 95-100% at six months post-graduation. These are the expected rates for the proposed architecture program.

Much like many of the engineering programs currently housed in SSE, the architecture profession requires licensure in order to practice in the field. It is expected that 95-100% of graduates in this program would achieve architecture licensure post-graduation.

5.E. Student Preparation

High school students planning to apply to the B.Arch. program are strongly encouraged to take a college preparatory program including:

- ½ unit of Trigonometry (may be incorporated in another course)
- Algebra
- Geometry
- 4 units of English
- History
- 3 to 4 units of science, including physics
- 3 to 4 units of social studies

- 2 to 4 units of foreign language
- Courses in both freehand drawing and technical drawing are highly encouraged
- Pre-calculus and/or calculus is highly encouraged

First-time college student applicants who do not meet the above criteria but do meet UMKC general admission requirements will have their applications reviewed by a committee for admission. Applicants who are not admitted to the B.Arch. program but do meet UMKC general admission requirements may be admitted to University College.

Students without the prerequisite preparation must take the needed coursework before enrolling in courses required for the bachelor's degree. Students seeking re-admission must have been in good academic standing when last enrolled. Otherwise, re-admission requires a formal review by the undergraduate program committee.

Transfer applicants must have at least 24 credits of transferable college credit, an overall 2.0 GPA on a 4.0 scale in all coursework, which includes repeated coursework, attempted at previous institutions. Transfer applicants without a 2.0 or higher college GPA must submit a petition for admission.

For International First-Time College (FTC): 3.0 GPA or higher from high school (and at least a 3.0 in any other post-high school academics, i.e. ESL programs); 5.5 IELTS (with at least a 5.0 in each section) or 61 TOEFL.

For International Transfer (TRN): same as TRN domestic in terms of GPA; if student has completed 24 academic credits or more at a US institution (not ESL) then they are exempt from the English proficiency requirement, otherwise it's the same as FTC.

5.F. Faculty and Administration

UMKC presently has two full-time faculty members in Architecture listed here:

- John Eck Full Teaching Professor
- Dominic Musso Instructor

If a start date of Fall 2024 is expected, it will be necessary to have at least one full-time licensed Architect hired by Summer 2024 to oversee the successful implementation of the program and coordinate directly with NAAB to ensure accreditation. The attached B.Arch. curriculum spells out exactly what professors will be required to cover the teaching responsibilities of the new architecture program. In the next five years, this will include a total of: at least two Senior tenured professor, four Junior tenure-track or NTT professors, and several adjunct professors. See Pro Forma and the Proposed Curriculum.

Assistant Dean Katherine Bloemker will be the primary point person for the program throughout the approval process. In addition to Dr. Bloemker, a degree program committee (DPC) will be formed which will include Professor John Eck to help keep tracks of activities, students, and advising for the proposed B.Arch. degree.

5.G. Alumni and Employer Survey

SSE plans to complete senior exit and alumni surveys for the B.Arch. program, just as is done in all other externally accredited programs in the school. Currently, graduating seniors in the SSE programs are required to fill out a senior exit survey through Qualtrics. The survey asks about student outcomes, student experience, whether they have a job or are planning to go to graduate school, whether they plan to or have taken the licensing exam, and whether they plan to become licensed after their required years of experience is achieved.

Once per accreditation cycle an alumni survey is sent out to all alumni from the SSE programs. The survey asks about student outcomes, whether they have a job in the field, whether they have a graduate degree, and whether they plan to or have become licensed. In addition to these surveys, the Dean of SSE routinely hosts lunches for alumni engagement for the school. At these lunches the Dean gives a state of the school. In addition, the alumni are informed about continuing education opportunities and upcoming alumni events.

SSE also plans to create an advisory board for the B.Arch. program, as is currently done in all other externally-accredited programs in the school. The advisory board members will represent employers of the program. The advisory board members are involved in maintaining a strong program. Since the advisory board members have a personal interest in SSE, their participation in developing objectives assures them that SSE is an association with which they can be proud. Following the procedures currently used in SSE, the advisory board will meet twice per semester to discuss the state of the program. These meetings generally include a school update from the division head, an accreditation update, board committee reports, board focus points for the year, and other announcements. Once per year the advisory board meets with undergraduate students in each of their respective programs. In addition, the faculty in the programs also meet with their respective advisory boards once per year.

5.H. Program Accreditation

It is planned to have the B.Arch. degree accredited through the National Architecture Accreditation Board (NAAB). The NAAB accredits B.Arch., M.Arch., and D.Arch. degrees for professional licensure in Architecture. Initial discussions with NAAB have already occurred. Candidacy from NAAB is expected in 2025 which sets the program up for an initial accreditation visit in 2030. The following table spells out the entire timeline for program implementation and the NAAB accreditation procedure.

Step	Description	Date	UMKC	NAAB
1	Initiate Contact with the NAAB, confirm minimum expectations for initiating Eligibility for Candidacy visit	Fall 2023		X
2	Initiate Search for TT Architecture Hire (Program Director)	Fall 2023	X	
3	Submit Plan for Achieving Initial Accreditation Eligibility Requirement for NAAB*	Fall 2023		X
4	NAAB Eligibility Visit (Best to have successful Program Director hired by Summer 2024)*	Spring 2024		X
5	Application for Initial NAAB Candidacy (APR-C*)	Summer 2024		X
6	Architecture TT- Hire	2024-2025	X	
7	Feb-Mar 2025 Candidacy Visit	Spring 2025		X
8	Granting of NAAB Candidacy	Spring 2025		X
9	Architecture TT/NTT Hire	2025-2026	X	
10	Architecture TT/NTT Hire	2026-2027	X	
11	Review of Candidacy	Spring 2027		X
12	Review of Candidacy	Spring 2029		X
13	Request for Initial Accreditation	Fall 2029		X
14	Accreditation Visit	2030		X

6. Appendices

Letters of Support

1. Provost Lundgren (page 29)
2. Dean Truman (page 31)
3. Architecture Firms (page 32)

Appendices

Letters of Support

1. [Provost Lundgren \(page 29\)](#)
2. [Dean Truman \(page 31\)](#)
3. [Architecture Firms \(page 32\)](#)

Letters of Support



Office of the Provost and Executive Vice Chancellor

October 4, 2023

Dear University of Missouri Board of Curators-

The University of Missouri-Kansas City, School Science and Engineering (SSE) program proposal for the Bachelor of Architecture (B. Arch) has my full support. The program aligns with the mission of UMKC to continue to provide educational opportunities *“across a broad spectrum of disciplines and fields of study... to enable transformational impact aimed at bringing cultural, social, health and economic prosperity to the metropolitan, regional and global communities we serve.”* The program has been fully considered and planned by the faculty and leadership of UMKC, and is supported by the appropriate curriculum, staffing, and market demand.

The **curriculum** for the B. Arch program will build on the existing Architectural Studies program at UMKC, which already offers the first two years of coursework necessary for the bachelor’s degree program. The proposed five-year (150 credit hour) program provides a more affordable and accessible option for Missouri (and surrounding area) students to pursue an accredited architecture program leading to professional licensure.

UMKC currently employs two full-time **faculty** members in Architecture and recognizes that at least one full-time licensed Architect will need to be hired by summer 2024 to oversee implementation of the program. Additional faculty lines will be necessary over the following five years, and these hires are supported by the UMKC academic leadership. Kansas City architecture firms have also expressed the desire and willingness to supplement the faculty as adjuncts and instructors, keeping the total number of new full-time hires manageable.

Additionally, because the state of Missouri does not currently have a public institution that offers a National Architecture Accreditation Board (NAAB) accredited professional degree in architecture for its residents, the **market demand** for the UMKC program is evidenced by both current employers and the future workforce. The Lightcast reports from 2023 show a 21.8% increase in Architecture jobs in the Kansas and Missouri region from 2012 to 2032, which exceeds the national average of 20.3%. Of the 2,187 architect jobs in Missouri, 57% were in the Kansas City area which is the highest demand of any metropolitan area in the state. Additional market analysis indicates healthy student demand for a professional public architecture program in Missouri. The 2023 ACT reports showed over 1,600 Missouri and Kansas students indicated an interest in architecture, 57% of whom are Missouri residents. To meet enrollment goals UMKC would need to capture 12-18% of those Missouri residents each year, very achievable through a well-marketed program especially given the new opportunity to pursue the program in-state through a more affordable, accessible, and community supported program.

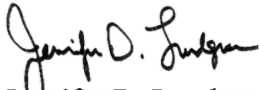
Letter of Support – B. Arch program proposal

Page 2

October 4, 2023

In addition to the support of multiple local architecture firms who express the need for many more architecture graduates and a public architecture program in the state of Missouri, and the faculty of UMKC, the proposal for the Bachelor of Architecture program at UMKC has my full support.

Sincerely,

A handwritten signature in black ink, appearing to read "Jennifer D. Lundgren". The signature is fluid and cursive, with the first name being the most prominent.

Jennifer D. Lundgren, PhD

Provost and Executive Vice Chancellor, University of Missouri Kansas City



School of Science and Engineering
Office of the Dean

October 6, 2023

Jennifer Lundgren, Ph.D., F.AED
Provost and Executive Vice Chancellor
University of Missouri – Kansas City
358 Administrative Center
5115 Oak Street
Kansas City, MO 64110

Dear Provost Lundgren,

I would like to state my support for the Bachelor of Architecture (B.Arch.) degree proposal by UMKC's School of Science and Engineering.

The proposed five-year B.Arch. degree provides an affordable undergraduate architecture option for local Kansas City students and Missouri residents. The state of Missouri does not currently have a public school that offers a licensable, professional architecture degree accredited by the National Architecture Accreditation Board (NAAB). This program will open pathways to the architecture profession for Missouri residents, from both the rural communities and urban centers, who may not have had this opportunity otherwise.

A program at UMKC will differentiate itself from the regional institutions currently offering NAAB-accredited architecture degrees by providing a community-centered architecture school experience located in the heart of a metropolitan area saturated with professional architecture opportunities and resources. The architecture profession in Kansas City, and across the country, is in need of a more robust workforce. With this proposal you will find numerous letters from members of the Kansas City architecture community reinforcing their desperate need to hire local talent as well as their willingness to provide adjunct instructors, community-based projects, and internship opportunities to our students.

If approved, the B.Arch. program will not only enhance the educational opportunities for our local and in-state high school students but will also allow us to serve the needs of our local architecture industry.

Sincerely,

A handwritten signature in blue ink, appearing to read "Kevin Truman", is written over a light blue circular stamp.

Kevin Truman, Ph.D., F.ASCE
Dean, School of Science and Engineering

UNIVERSITY OF MISSOURI-KANSAS CITY

Flarsheim Hall, Room 534 | 5110 Rockhill Road | Kansas City, MO 64110

o: 816-235-1285 | sse.umkc.edu

OPEN -- ASARED -- 3-31

February 8, 2024

October 05, 2023

Re: Architecture Program at UMKC

Dear UM Board of Curators,

I am writing you to affirm my support for an Architecture program within the UM system, specifically at the University of Missouri - Kansas City. I have been practicing Architecture in Kansas City for 11 years, graduated by way of UMKC school of Architecture Planning and Design, and serve on the college's advisory board where I have been acting President for the last two years.

Kansas City has a wealth of opportunity to offer students. They will be able to observe how cities develop, how spaces get used, and pull inspiration from buildings designed by world-renowned Architects. It also provides them direct access to practicing Architects, whether as adjunct professors or visiting jurors during project review. After graduating, I used the connections I made with AUPD visiting jurors to begin my job search - the quantity and diversity of these connections are much more limited at universities outside of urban centers. I am still a frequent visiting juror to AUPD and look forward to continuing that support. Being in an urban environment also allows professors to involve others from the community to speak to students or serve as hypothetical 'clients' on projects; teaching students that Architects need to be involved in their community.

The mission and values of UMKC as an urban University along with the local workforce demand makes Architecture an ideal program to add in Kansas City. Also, being situated within the School of Science and Engineering opens unique avenues to structure curriculum around multi-disciplines interactions with engineering students, making them potentially more appealing hires.

We founded Focal over a year ago. A classmate of mine at AUPD is now one of my business partners and our young office's first hire was also and alumni of AUPD. We look forward to staying engaged with the University and to hiring the talented students the UMKC program continually produces.

Sincerely,



Anthony Luca, AIA
Associate Principal



October 2, 2023

RE: UMKC Architecture Program Letter of Support

To the UM System Board of Curators:

It is an honor to share with you my support for a new accredited Bachelor in Architecture program at the University of Missouri-Kansas City. As a Kansas City Missouri resident and KU School of Architecture Alumnus, I see many reasons this program brings a unique approach to architectural education in this region.

AN URBAN CAMPUS.

While I graduated from KU, I spent my final year in Kansas City, working part time and participating in the urban design studio located in Kansas City, Kansas. The relationships I made through that final year of combined professional and university experience were the foundation that propelled my career forward and are still important to my business to this very day. The UMKC potential of five years' experience working and studying architecture in a world-class city is unmatched in this region.

REFLECTING THE COMMUNITY WE SERVE.

We need more people of color choosing to be architects. UMKC's proven dedication to international and first-generation student success sets this program apart from other architecture programs in this region. We also need more architects in Missouri. Architectural firms (our firm included) have experienced a staffing shortage for several years, and the recent NCARB Annual report notes:

"The number of architects licensed in the United States remained relatively steady in 2022, decreasing by around 1% to 119,906—about 1,600 fewer than the number seen in 2021... the historically low number of new architects seen since the pandemic's onset has not offset the number of existing architects retiring from the profession." (Retrieved 10/1/23 from <https://www.ncarb.org/nbtn2023/state-of-licensure>)

LEGACY.

I lecture annually at the KU School of Architecture and provide studio reviews several times a semester. We hire summer interns and employees from KU, K-State, and Drury. I'm excited for the opportunity to lecture, teach, and hire from the university that is just 10 minutes from our office. Kansas City is a global design center, and the abundance of firms in Kansas City provides a variety of untapped industry partnerships that will quickly build a legacy of excellence at UMKC.

I wholeheartedly support the creation of BARCH program at UMKC. Thank you for the opportunity to share my perspective and support for this program.

Sincerely,

A handwritten signature in black ink that reads "Amy J. Slattery". The signature is fluid and cursive, with a long, sweeping tail on the final letter.

Amy J. Slattery, AIA IIDA
Partner, Odimo Architects

Chancellor Mauli Agrawal, PhD
Office of the Chancellor, UMKC

It is my pleasure to write this letter in support of UMKC's proposal to start an accredited architecture program (Bachelors of Architecture).

I have been part of the advisory board for UMKC's Free Enterprise Center under Dean Truman and have seen first-hand the strength of his vision and leadership. Both are important qualities for an ambitious undertaking such as this.

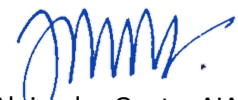
Architecture is a challenging profession and the barriers of entry work against the cause of diversity. Dean Truman's vision to serve Kansas City communities from traditionally disadvantaged backgrounds could greatly increase diversity and welcome more students into the architectural profession.

An accredited program in the city will also strengthen our robust architecture community which is substantial for a city of our size. In fact, Kansas City is known as the sports architecture capital of the world. Innumerable venues and events from around the globe from the Olympic Games to the Super Bowl and World Cup are designed by Kansas City architects and firms.

My firm, Populous, is the leading global design practice in that space. We work with many Universities to share our expertise through mentorship, research, and teaching. Having an accredited program just blocks away could open new doors for collaboration. We also have a strong internship program with representation from across the country and the world. Having an architecture program as a neighbor has the potential to enrich our intern experience.

In conclusion, I fully support the efforts of UMKC in creating a new accredited architecture program. The opportunities created by lowering barriers to the profession and creating strong ties between academia and practice could be beneficial to students, the university, and the Kansas City design community. We look forward to further developments.

Sincerely,



Alejandro Ogata, AIA
Studio Director | Principal
Populous

June 7, 2022

University of Missouri Board of Curators
316 University Hall
Columbia, MO 65211

Re: Letter of Support - UMKC Department of Architecture, Urban Planning and Design

Dear Board of Curators,

I am pleased to submit this letter of support for the UMKC Department of Architecture, Urban Planning and Design (AUPD) to establish a fully accredited Bachelor of Architecture degree program in Kansas City. My support on the value and importance of establishing this program stems from my position as an owner of a newly formed architecture firm in Kansas City and previous experiences as an educator in schools of architecture across the United States.

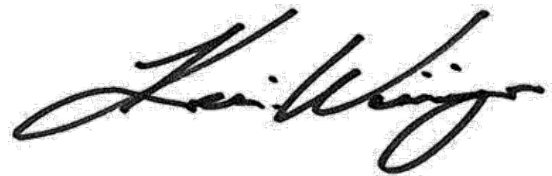
Throughout my 22 years of professional experience living, working and teaching across the country, I have interacted with a variety of Schools of Architecture and their graduates. A common thread that distinguishes the best schools who develop well-rounded future architects is their ability to access a deep bench of academic-minded, practicing architects as visiting faculty who compliment researched focused full-time faculty. This formula occurs at either heavily endowed private universities who can attract practicing architects from all over the world or, in schools of architecture situated in the middle of urban centers where many practicing architects, with a talent for teaching, reside within minutes of campus. Neither of these types of schools are fully present in our region however, the potential for the latter clearly has immense and real potential at the AUPD.

As a firm owner, an accredited Bachelor of Architecture program within a 15-minute commute will provide numerous benefits to our office and the AUPD. The most tangible benefit will be the ability for us to nurture and hire future interns and graduates from the AUPD. This benefit is not present at the AUPD's current program as most students are not ready to be effective in a professional office environment in the first or second years of their education. We typically do not see value in hiring interns until they have completed 3 years of educational training which, would be possible with a BArch program present. Another benefit, specific to our firm, will be the ability for us to successfully implement a primary goal of our newly formed office to unite research with practice. Our hope will be to develop a strong relationship with the AUPD through sponsorship and research-based studios focused on contemporary issues in architecture taken directly from our daily experiences in practice.

My prior experiences as an educator and critic, primarily occurred at schools of architecture located in major urban centers. These schools, because of their location and outreach,

naturally have a very diverse student body and a large portion of students who come directly from the city in which the school is located. This composition of students inherently produces a diverse culture of ideas and compassionate visions for the future of the cities in which they are located. This is the potential for AUPD and Kansas City. The diverse student body the AUPD can and will attract will go beyond statistics - through its graduates, the true potential of a BArch Program could create a new and refreshing culture of ideas within the architectural profession of Kansas City and in turn, have a recognizable impact on the future of our city.

Sincerely,

A handwritten signature in black ink, appearing to read "Kevin Wineinger". The signature is fluid and cursive, with a large, sweeping initial "K".

Kevin Wineinger, AIA
Principal

Dennis Strait
Multistudio
4200 Pennsylvania Avenue
Kansas City, MO 64111

October 2, 2023

Kevin Z. Truman, Ph.D, F. ASC
Dean, School of Science and Engineering
UMKC
5110 Rockhill Road
Kansas City, MO 64110

Subject: Proposed B. Arch at UMKC

Kevin,

Please consider this letter as our firm's support for an architecture program (B. Arch) at UMKC. That program would be valuable in many ways.

Kansas City is an exceptional employment center for Architects. Beyond the general practices serving a metropolitan population of 2.5 million people, there are several firms like Multistudio, based in Kansas City and practicing in studios located across the country. KC is also recognized as global leaders in sports architecture, with many firms specializing in sports and entertainment venues. In addition, KC is home to some of the largest Architecture and Engineering firms in the country. All of this creates exceptional opportunities and need for design talent. We are constantly competing with firms on both coasts for the best talent. We could use the additional pipeline that a program at UMKC would provide. Our own associate, Tavia Triplett is proof of the talent who might have never found the profession of architecture without the access UMKC provided here in her hometown.

We typically have 3 to 5 interns working with us each year, and a UMKC B. Arch would expand our access and potentially extend the typical summer programs to year-round work/study opportunities. For the past 5 years we have expanded internship opportunities to HBCU's, and many of those have become associates, helping us be a diverse design practice. UMKC's urban location could provide us with better access to the future talent who live here in our home city.

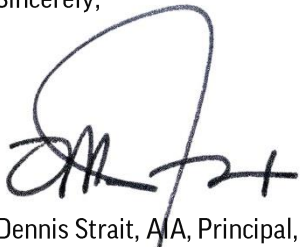
Other than Washington University's program in St. Louis, the universities offering architectural degrees in this area are based in smaller communities. Being prepared for the challenges future generations will face requires architects who are trained to understand urban environments and urban issues. UMKC bridges Kansas City's red line of Troost Avenue and serves a diverse and urban community. Challenges ranging from race relations, wealth disparity, public safety, and housing affordability are not theoretical discussions but lived experiences that simply can't be replicated in traditional college-town settings.

w Multi.studio

Lastly, many of our associates teach to continue their intellectual growth and to benefit from the enthusiasm and creativity students bring to each discussion. Multistudio's Alexandra Mesias is teaching a first-year design studio at UMKC this semester. Working and supporting a design studio in Lawrence or Manhattan is challenging. We would welcome more opportunities to teach and to serve as visiting professionals for a program only 10 minutes from our Kansas City office.

Thank you for seeking this program for UMKC and for Kansas City. Please keep us informed of your progress. We hope you will find support from the University.

Sincerely,

A handwritten signature in black ink, appearing to read 'Dennis Strait', with a large, stylized loop at the top.

Dennis Strait, AIA, Principal, Board Chair

Copy: Multistudio KC Principals and Associate Principals

June 8, 2022

University of Missouri Board of Curators
316 University Hall
Columbia, MO 65211

Re: B.Arch Program
Dear Board Members:

I was recently invited to be a part of a collaboration session to discuss and expand upon the idea of creating a 150-credit hour Bachelor of Architecture Program at UMKC. The more the round table of local architects discussed the idea, the more excited we all were with the thought of how this program would add a tremendous benefit to the local design community and the firms in our city, but even more beneficial is the unique opportunity to provide young creative minds a path into architecture without leaving the urban environment that is critical to one's understanding of community and collaboration.

Creating this program in the heart of Kansas City would provide instant access to talented professionals who are eager to be a part of the development of the program and the professional growth of the students; giving time and funding to encourage valuable learning focused on giving the students a real-world advantage once they enter the industry and start their career. I would personally offer both time and funding to support the education of top design talent in our city where students could easily supplement their education with internships and collaborative studios linked to likeminded design firms, allowing more students physical and financial access to the education of a highly rewarding career.

In closing, I would like to offer my full support of this proposed program both personally and as the leader of our Architecture Practice at Burns & McDonnell. In my opinion, it has the potential to be the leading design program in the region, attracting talented professors, a wonderful diversity of students, and the full support of one of the country's largest community of architects.

Please feel free to reach out with any questions or requests.

Sincerely,

A handwritten signature in black ink, appearing to read 'Trevor Hoiland', with a long horizontal stroke extending to the right.

Trevor Hoiland
Architecture Design Director
(816) 810-9847
thoiland@burnsmcd.com

June 7, 2022

University of Missouri Board of Curators
316 University Hall
Columbia, MO 65211

DRAW

214 W 21st St
Kansas City, MO 64108

816-531-8303

www.drawarch.com

Dear University of Missouri Board of Curators,

I am writing in support of establishing a fully accredited professional architecture program at UMKC. I believe establishing a B.Arch program at UMKC would benefit Kansas City and the entire Midwest region, including individual firms, like DRAW, that need interns, architectural designers, and field-related professionals. There is a strong need for a diverse and work-ready talent pool, which this program could provide.

Locating the program at UMKC would be an intrinsic asset to the entire UM system because of Kansas City's central location and unique historic architecture in the face of the city's current growth, particularly in urban-core design. As a former studio adjunct professor, I can also attest to the potential to draw new teaching talent to the staff, pulling from the local eco-system of nationally recognized design firms.

Best Regards,



Dominique Davison AIA NCARB LEED AP
Managing Principal, DRAW Architecture + Urban Design

EXECUTIVE SUMMARY

Test Optional Undergraduate Admissions Pilot 1-Year Extension

The University of Missouri – Columbia (MU), Missouri University of Science and Technology (S&T), and University of Missouri – St. Louis (UMSL) request that the existing test optional pilot be extended for an additional year to cover the Fall 2025 recruitment cycle. The test optional pilot was originally enacted in 2020 due to the COVID-19 pandemic and extended in May 2022 to cover the Fall 2023 recruitment cycle. The Board approved the University of Missouri-Kansas City’s (UMKC) test optional policy on a continuing basis in April 2020.

The purpose of the extension is to allow for continued assessment of the effects of test optional admissions on student outcomes and to remain competitive with other universities. Most UM System peers have decided to continue test optional admissions on a permanent basis or extended an existing pilot, including all Missouri public four-year universities and the majority of AAU and SEC institutions.

As of Fall 2023, most first-time college students continue to submit a test score with their applications at MU (66%), S&T (75%), and UMSL (71%). The minority of students who do not submit a test score are routed through a holistic review process. As an example, at MU the holistic review process includes consideration of:

- High school core GPA and class rank – an assessment by MU has found GPA to be a stronger predictor of first-year college GPA than standardized test scores
- Participation in accelerated programs such as Honors, Advanced Placement (AP), and/or International Baccalaureate (IB) courses
- Writing proficiency, based on responses to the essay questions
- Academic competitiveness of the high school
- Student involvement, activities and leadership positions

The proposed one-year extension has received the approval of each institution’s Chancellor and Provost. The measure was approved by the MU Faculty Council on December 7, the UMSL Faculty Senate on December 12 and the S&T Faculty Senate on January 25.

No. 4

Recommended Action – Test Optional Undergraduate Admissions Pilot 1-Year Extension

It was recommended and endorsed by President of the University of Missouri Mun Y. Choi, recommended by the Academic, Student Affairs and Research & Economic Development Committee, moved by Curator _____, seconded by Curator _____ that the following action be approved:

that the University of Missouri-Columbia, Missouri University of Science and Technology, and University of Missouri-St. Louis extend the test optional undergraduate admissions pilot by one year to encompass the Fall 2025 admissions cycle.

Roll call vote of the Committee:	YES	NO
Curator Blitz		
Curator Graves		
Curator Sinquefield		
Curator Williams		

The motion _____.

YES NO

Roll call vote of Board:

Curator Blitz

Curator Brncic

Curator Fry

Curator Graves

Curator Holloway

Curator Layman

Curator Sinquefield

Curator Wenneker

Curator Williams

The motion _____.

No. 5

Recommended Action – Resolution for Executive Session of the Board of Curators Academic, Student Affairs, Research and Economic Development Committee Meeting, February 8, 2024

It was moved by Curator _____ and seconded by Curator _____, that there shall be an executive session with a closed record and closed vote of the Board of Curators Academic, Student Affairs, Research and Economic Development Committee Meeting, February 8, 2024 for consideration of:

- **Section 610.021(1), RSMo**, relating to matters identified in that provision, which include legal actions, causes of action or litigation, and confidential or privileged communications with counsel; and
- **Section 610.021(3), RSMo**, relating to matters identified in that provision, which include hiring, firing, disciplining, or promoting of particular employees; and
- **Section 610.021 (13), RSMo**, relating to matters identified in that provision, which include individually identifiable personnel records, performance ratings, or records pertaining to employees or applicants for employment.

Roll call vote of the Committee: YES NO

Curator Blitz

Curator Graves

Curator Sinuefield

Curator Williams

The motion _____.

HEALTH AFFAIRS COMMITTEE

Michael A. Williams, Chair
Julia G. Brncic
Robert W. Fry
Keith A. Holloway
Jeff L. Layman
Ronald G. Ashworth (non-curator)
Phillip Burger (non-curator)
Dan Devers (non-curator)

The Health Affairs Committee (“Committee”) assists the Board of Curators in overseeing the clinical health care operations of the University and in coordinating those operations in furtherance of the University’s teaching, research, and clinical missions.

I. Scope

The Committee provides oversight for the University’s clinical health care operations in the areas of:

- Mission, vision, and strategy;
- Governance and operational oversight;
- Quality of care and patient safety;
- Regulatory compliance;
- Financial planning and performance; and
- Coordination of the clinical, teaching, and research missions.
- Specific projects that enable meaningful collaboration among UM universities.

II. Executive Liaison

The Executive Vice Chancellor for Health Affairs of the University of Missouri-Columbia or some other person(s) designated by the President of the University, with the concurrence of the Board Chair and the Committee Chair, shall be the executive liaison to the Committee and responsible for transmitting Committee recommendations.

III. Responsibilities

In addition to the overall responsibilities of the Committee described above and in carrying out its responsibilities regarding clinical health care operations, the charge of the Committee shall include:

- A. Reviewing and making recommendations to the Board regarding:
 1. actions that are appropriate or necessary to assist the Board in overseeing clinical health care operations or coordinating the teaching, research, and clinical missions;
 2. significant actions related to health care which should require advance notice or approval by the Committee or Board; and
 3. other matters referred to it by the Board and University officers.
- B. Requesting, receiving, and reviewing reports and other information from University officers and advisors regarding health care operations, coordination of the teaching, research, and clinical missions, and related matters, including meeting at least quarterly and receiving regular reports from appropriate

officers of University of Missouri Health Care, the MU School of Medicine, and the MU Health Chief Compliance Officer.

- C. Additional matters customarily addressed by the health affairs committee of a governing board for an institution of higher education.

IV. Committee Membership and Quorum Requirements

The Committee's membership may include non-Curator members in addition to Curator members. Subject to approval of the Board, the Board Chair shall determine the number of Curator and non-Curator members to appoint to the Committee and shall select individuals to serve as members of the Committee; provided that, the number of non-Curator members on the Committee shall not exceed the number of Curator members on the Committee, unless the Committee temporarily has more non-Curator members than Curator members because a Curator member of the Committee has resigned from the Board or the Committee. Non-Curator members may resign their Committee membership by providing written notice to the Board Chair. Non-Curator members of the Committee serve at the pleasure of the Board and may be removed by the Board Chair at any time, subject to approval of the Board.

A quorum for the transaction of any and all business of the Committee shall exist when:

1. Both a majority of all Curator members of the Committee and a majority of all members of the Committee are participating for Committee meetings which are held in conjunction with meetings of the Board; or
2. Both all Curator members of the Committee and a majority of all members of the Committee are participating for Committee meetings which are not held in conjunction with meetings of the Board; or
3. Both a majority of all Curator members of the Committee and a majority of all members of the Committee are participating for Committee meetings which are held solely for the purpose of reviewing and overseeing compliance matters.

EXECUTIVE VICE CHANCELLOR
AND DEAN REPORT

Materials for this information item will be
distributed prior to the meeting.

AUDIT, COMPLIANCE AND ETHICS COMMITTEE

Keith A. Holloway, Chair

Julia G. Brncic

Jeanne C. Siquefield

Michael A. Williams

The Audit, Compliance and Ethics Committee (“Committee”) will review and recommend policies to enhance the quality and effectiveness of the University’s financial reporting, internal control structure and compliance and ethics programs.

I. Scope

In carrying out its responsibilities, the Committee monitors and assesses the University’s financial reporting systems and controls, internal and external audit functions, and compliance and ethics programs.

II. Executive Liaison

The Chief Audit and Compliance Officer of the University or some other person(s) designated by the President of the University, with the concurrence of the Board Chair and the Committee Chair, shall be the executive liaison to the committee and responsible for transmitting committee recommendations.

III. Responsibilities

In addition to the overall responsibilities of the Committee described above and in carrying out its responsibilities, the charge of the Committee shall include:

- A. Reviewing and making recommendations to the Board in the following matters:
 - 1. the University risk assessment, audit plan and compliance plan;
 - 2. in conjunction with the Governance, Compensation and Human Resources Committee, the appointment, compensation, annual performance evaluation and termination of the University’s Chief Audit and Compliance Officer;
 - 3. the appointment, compensation, and termination of the university’s external auditors.
- B. Providing governance oversight regarding:
 - 1. development and monitoring a University code of conduct;
 - 2. effectiveness of the internal control framework;
 - 3. ensuring that the significant findings and recommendations are received, discussed and appropriately resolved;
 - 4. procedures for reporting misconduct without the fear of retaliation;
 - 5. university compliance with applicable laws, regulations, and policies that govern all aspects of University operations including but not limited to the following:
 - 1. Administrative compliance risks
 - 2. Healthcare compliance risks
 - 3. Research compliance risks
 - 4. Information security compliance risks
 - 5. Privacy compliance risks
 - 6. those additional matters customarily addressed by the audit, compliance and ethics committee of a governing board for an institution of higher education.

C. Reviewing periodic reports regarding:

1. the independence, performance, resources and structure of the internal audit, compliance and ethics functions;
2. audit reports and open audit issue status updates;
3. management's written responses to significant findings and recommendations by the auditors;
4. the adequacy of the University's information technology methodology with regards to security, internal controls and data integrity assurance;
5. annual external audit reports, including audited financial statements, single audit and required procedures; and
6. the effectiveness of the compliance and ethics program ensuring it has appropriate standing and visibility across the system.

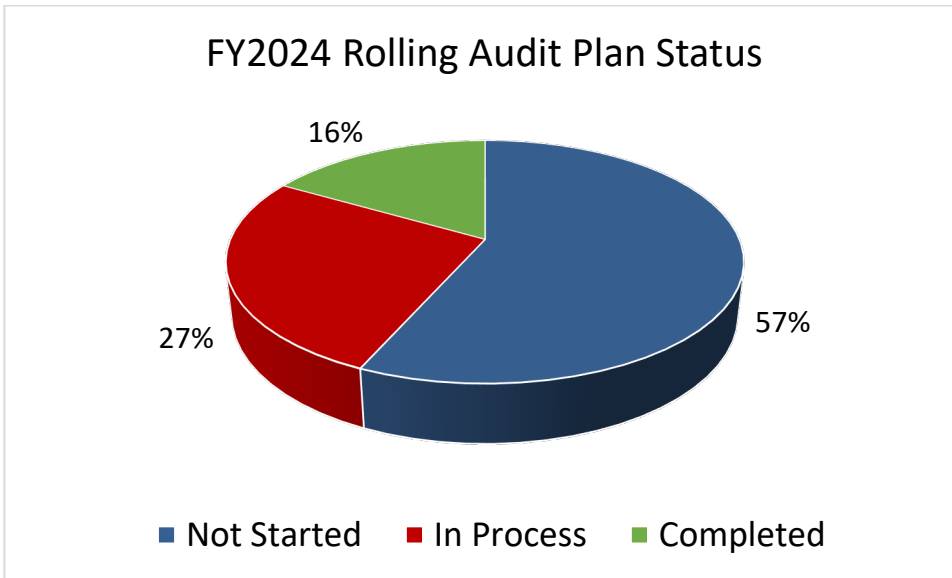
**Ethics, Compliance, and Audit Services (ECAS) Quarterly Report
UM System
February 8, 2024**

INTERNAL AUDIT

FY2024 Rolling Internal Audit Plan Status

Audit/Consulting:

Projects completed	5
In process	8
Not started	17



Internal Audits Completed Since September 2023

Audit	Risk Rating
MUHS Conflict of Interest	2
UMSL Conflict of Interest	2
MU Standard Financial Controls of Athletics	4
MUHC Network Segregation Phase II: Firewall Technical Controls	4

Investigations Completed: 10

Internal Audits Completed: Executive Summaries

Internal Audit Summary Report MUHS, Conflict of Interest August 2023

Report Risk Rating:				
1	2	3	4	5

Background

Academic universities benefit from participation in outside activities which can enhance research, teaching, and funding; however, these outside activities and/or financial interests can pose conflicts of interest if not properly identified or managed. Federal agencies including the National Institutes of Health (NIH) and the National Science Foundation (NSF) have implemented specific requirements regarding the disclosure of financial conflicts of interest (FCOI) to ensure research funded under the Public Health Service (PHS) and other applicable agencies will not be biased in the design, conduct, or reporting of the research. The University of Missouri System has adopted three Collected Rules and Regulations (CRR 330.015, CRR 420.030, and CRR 410.020) to comply with federal regulations and manage outside interests for all faculty and staff, regardless of position. The current conflict of interest (COI) disclosure process for the MU Health System (MUHS) was revised in October 2019 and includes the MU School of Medicine, School of Nursing, MU Healthcare (all University Hospital and clinic staff), Division of Health Affairs, and College of Health Sciences. The eCompliance system, incorporated on the MU campus in 2012, is utilized for collecting disclosures, documenting management plans, and tracking outside interests. The Conflict of Interest (COI) Office, COI Committee (COIC), and other stakeholders utilize eCompliance to view disclosures and documentation of all conflict management activities.

The COI Office is responsible for collecting disclosures, documenting management plans, and tracking outside interests, and works closely with the COIC to ensure conflicts are managed appropriately. Since 2020 the staff in the COI Office act as the COI Small Group. This group is responsible for reviewing all disclosures and setting conditions and developing resolution letters for standard activities or those that have been previously disclosed, then routing to supervisors for review and approval. The full COIC was put in place by MU in 2019; the Chancellor appointed the Provost to Chair the COIC, who appoints all voting and non-voting members. Complex or problematic disclosures and all conflicts with oversight management plans or project management plans (OMP or PMP) route through the COI Committee for discussion and decision. The COI Office notifies and seeks guidance from other key offices and functions (IRB, General Counsel, Compliance, etc.) to assist the COIC in determining whether the disclosed activity requires management, which can range from supervisor approval to a management plan.

Issues Summary

eCompliance is the central repository for COI documentation; however, we noted some documentation had not been uploaded to eCompliance until six months or more after the date it was created. There is no established timeframe or expectation, in COI procedures or COI Office practices, for timely uploading of OMP/PMP documents and annual review minutes to the system, or for obtaining annual review signatures in a timely manner.

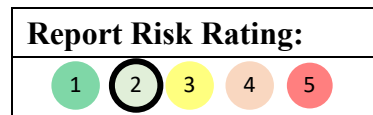
Management Action Plan Summary

COI Office will update policy/procedure/practices to include a timeframe for obtaining signatures on management plans, and for entering all documentation into eCompliance, as well as establishing a consistent documentation standard for annual management plan review. **Due Date:** February 1, 2024.

Risk Rating Rationale

eCompliance is the system of record for COI documentation. It is important that it contains the most up to date information and that documentation is consistently organized for all system users' ease of use, and to provide a consistent audit trail for COI activity. Collection of disclosures and processes to evaluate conflicts are working consistent with policy expectations.

Internal Audit Summary Report UMSL, Conflict of Interest November 2023



Background

The University encourages faculty and staff collaboration with outside entities in teaching, government agencies, and industry. External relationships establish valuable connections, enrich research, expand career opportunities for students, and provide a mechanism for the translation of university developed intellectual property into commercial ventures. However, this dual relationship can lead to inherent conflicts of interest. Federal agencies including the National Institutes of Health (NIH) and the National Science Foundation (NSF) have implemented specific policies regarding the disclosure of financial conflicts of interest (FCOI), which are intended to ensure research funded under the Public Health Service (PHS) and other applicable agencies will not be biased in the design, conduct, or reporting of the research. Current FCOI regulations include 42 CFR Part 50 Subpart F, 45 CFR Part 94. These regulations, in part, require institutions to maintain written policies on financial conflicts of interest, require investigators to be informed of the policy, receive training over the requirements, and disclose any significant financial interests. The University of Missouri System has adopted three Collected Rules and Regulations (CRRs) to comply with federal regulations and manage outside interests for all faculty and staff, regardless of position. This audit was conducted to review the process at the University of Missouri- St. Louis (UMSL) for disclosing, managing, and monitoring conflicts of interest according to the Conflict-of-Interest Policy established by the University of Missouri System (CRR 330.015, CRR 420.030, and CRR 410.020). The intent of the review was to determine if UMSL has established procedures for adhering to the UM System policy, if processes are adequate for identifying conflicts of interest, and are effective for managing any identified conflicts.

Issues Summary

Opportunities exist to improve the conflict-of-interest process by establishing firm deadlines for receiving and processing new hire disclosures, ensuring all departments involved in managing conditions are appropriately notified, and for implementing a periodic

reconciliation process to ensure all NIH and NSF projects in PeopleSoft are consistently entered in eCompliance.

Management Action Plan Summary

Utilizing additional functionality in eCompliance and establishing deadlines for new hire disclosures, implementing consistent condition notifications, and ensuring a process exists to confirm all NIH and NSF awards are consistently entered in eCompliance will improve the overall COI process at UMSL. **Due Date:** April 1, 2024.

Risk Rating Rationale

Conflicts that are not identified and managed in an effective and timely manner increase the risk of bias or inappropriate influence and non-compliance with university policy. UMSL has implemented solutions mitigating risk associated with most of the identified issues effective for the 2023 disclosure period.

Summary of COI Audits Across the UM System

MU and MU Health System had conflict-of-interest procedures in place prior to FY2019. The UM System president directed UMKC, Missouri S&T, and UMSL to implement procedures to identify potential conflicts and manage and monitor those conflicts in accordance with internal policy and federal regulations. The current procedures at MU were used as the baseline to comply with this directive.

Revisions were made to the current MU process, and implementation of conflict-of-interest procedures began in the fall of 2019 for the other three campuses. The current process at MUHS was revised in October 2019. Internal audits were conducted by UM System Internal Audit from fiscal year 2020 through 2024.

The audits conducted reviewed the process for disclosing, managing, and monitoring conflicts of interest according to the Conflict-of-Interest Policy established by the University of Missouri System (CRR 330.015, 420.030, and 410.020).

Location	Report Date	Current Leader	Governance	Technology
MU	August 14, 2020	MU Provost	COI Committee	eCompliance
Missouri S&T	December 6, 2021	VC Research	COI Committee	eCompliance
UMKC	March 1, 2023	VC Research	COI Committee	eCompliance
MUHS	August 11, 2023	MU Provost	COI Committee	eCompliance
UMSL	November 16, 2023	VC Research	COI Committee	eCompliance

Management Changes in Response to Internal Audit Findings

- The new hire disclosure process was fully implemented at MU to require new hires to disclose at the point of hire. This new hire process was adopted at the other UM

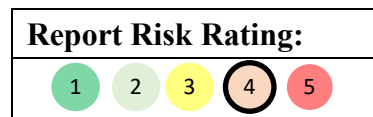
System entities and tested as part of the internal audits at those entities. This process mitigates the risk that conflicts are not identified and managed timely for new hires.

- A shift of responsibility from the conflict-of-interest office developing and monitoring oversight management plans to the supervisors and deans. The supervisors work with the faculty/staff with a conflict to develop and monitor the plan and report timely to the conflict-of-interest committee. The deans are responsible to ensure this is happening for all conflicts identified in their college/school. This shift allows the conflict-of-interest committees to hold the appropriate leaders responsible.
- Functionality in eCompliance added to track oversight management plans electronically allowing documentation and monitoring to be accessible to everyone involved, not just the conflict-of-interest office staff. This provides the ability for supervisors and deans to track how conflicts are addressed and the status.
- Feedback loop created to inform chairs/supervisors of employees within their department who did not disclose an outside interest timely. This information signals supervisors that a conversation to set expectations and educate would be beneficial.
- Establishment of deadlines by which to submit disclosures during the annual and new hire processes.
- When discovered, adjusting eCompliance to send out notifications to other areas needing to understand conflicts (sourcing and supply chain, contracting office, IT security, IRB, facilities operations, business services, and the treasurer’s office). This closes the feedback loop so conflicts can be appropriately managed.

Future Internal Audit Considerations

This round of audits was focused on whether the current processes supported disclosure of conflicts and development of oversight management plans. Future internal audits assessing the effectiveness of conflict management and the identification and management of institutional conflicts would benefit the UM System.

Internal Audit Summary Report MU, Athletics Standard Financial Controls October 2023



Background

MU intercollegiate athletics dates to 1890, when the football program was established as MU's first sport. Mizzou currently sponsors 20 NCAA Division I sport programs and is a member of the Southeastern Conference. MU athletics states its [mission](#) is to “graduate Mizzou Made leaders as we win championships and cultivate community.” [Mizzou Made](#) is defined as “contributing something bigger than yourself.” MU athletics defines its [core values](#) as “integrity, determination, innovation, bravery, and commitment to excellence.”

MU athletics is led by Desiree Reed-Francois, who has been athletic director since 2021. MU athletics business operations are led by William Wheeler, senior associate director of athletics; Kevin Hayward, associate director of athletics; and Susan Hamilton, business manager.

The Office of Ethics, Compliance, and Audit Services (ECAS) audit plan includes audits of key controls over financial performance as defined by University of Missouri – System and local campus policies and collected rules and regulations (CRRs) of various campuses, schools, and/or divisions (CSD). CSD audit work focuses on controls identified in policies and processes over the following areas: purchasing practices, budget management, scholarship management, gift management, and inventory practices.

Issues Summary

The use of prepaid cards for per diem replaced cash advances in 2015 and has expanded since implementation as a more efficient means of group travel funding. Internal policy should be expanded to sufficiently document current use parameters, controls, and enforcement of controls related to segregation of duties around custody, authorization, and reconciliation of disbursement of prepaid cards to student athletes and staff. Additionally, scholarship and gift account journal entry documentation should be enhanced to support the intent, amount, and purpose of the entries. Monitoring of scholarship accounts should include adjustment of award criteria that is too restrictive. One Card transactions and expense report monitoring should be expanded to ensure employees in termination status are resolved promptly.

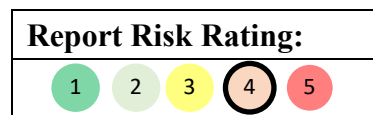
Management Action Plan Summary

Management will enhance the internal business policy related to use and administration of per diem (prepaid) cards, including documentation and enforcement of controls around custody, authorization, and reconciliation of per diem requests. Management has been and will continue to work with Central Advancement and General Counsel to make changes to scholarships that have not been awarded due to restrictive criteria. Additionally, management will work with Student Financial Aid to enhance documentation in entries posted to award scholarships. Management will work with Accounts Payable Shared Services to enhance reporting on outstanding one card transactions and expense reports. **Due Date:** August 30, 2024.

Risk Rating Rationale

Significant risk exists around use of per diem cards. Although no instances of misuse or fraud were identified, controls around custody, authorization, and reconciliation of the cards and improvement in segregation of duties needs to be implemented to mitigate risk. The findings related to enhancement of documentation of entries in scholarship and gift accounts and monitoring of One Card transactions and expense reports are moderate in risk and involve collaboration with centralized departments outside of MU Athletics.

Internal Audit Summary Report MUHS, Hospital Network Segregation Phase II: Firewall Technical Controls November 2023



Background

This is the Phase II audit assessing the firewall between the MU Campus (MU) and the University Hospital, encompassing the technical controls. The first audit, Hospital Network

Segregation Phase I: Firewall Administrative Controls, was performed by UM System Internal Audit and completed February 2023. That audit found that firewall change requests and rules are not documented consistently or completely. If changes to the firewall rules separating the MU network from the hospital network are not consistently documented, it is difficult to know if the firewall is adequately protecting both networks and in compliance with HIPAA regulations. Management committed to implementing stronger administrative controls. In July 2023, RubinBrown began assisting University of Missouri Internal Audit and Information Technology with a firewall rules migration project. This project involved reviewing the firewall rules in the University of Missouri Health Center Cisco ASA model 5585.x firewall to identify rules for migration to the MU Cisco Firepower firewall and rules to be removed. This project also entailed:

- Scanning the ASA firewall ruleset with the Titania Nipper tool to identify potential vulnerabilities.
- Scanning the ASA firewall with the Nessus scanning tool to determine its compliance with the Center for Internet Security (CIS) configuration guidance.
- Interviewing the network engineering staff about the ASA firewall.
- Reviewing all the current ASA firewall rules and recommending appropriate actions.
- Categorizing and prioritizing rules for further review and action.

Issues Summary

Several configuration issues were identified.

- The firewall software is out of date.
- Multi-Factor Authentication (MFA) is not used for administrative access to the ASA firewall.
- Several firewall rules were identified that are not considered best practices and could allow excessive access.
- Approximately 920 of the 1277 firewall rules had not been used in over 90 days and appeared to be unnecessary.
- 357 remaining rules have been categorized and prioritized for review and determination to delete or migrate to the Firepower firewall.

Management Action Plan Summary

As of the date of this report the following action have been taken:

- 923 firewall rules have been deleted on the legacy ASA firewall. (72% complete)
- 354 firewall rules are still being reviewed for deletion or migration to the Firepower firewall.
- ASA firewall configuration changes to increase security and comply with CIS guidance are under review.
- ASA Vulnerabilities have not been remediated because the CISCO ASA firewall is no longer supported by CISCO and no software updates/fixes are available.

The following recommendations have been made:

- Configure the ASA firewall settings accordance with the Center for Internet Security guidance. This will also remediate the configuration issues identified by the Nipper firewall audit tool.

- Implement MFA for all access to all firewalls.
- Finish deleting and migrating the remaining ASA firewall rules within 90 days to eliminate unnecessary access.
- Review and modify as necessary all migrated firewall rules to conform to generally accepted best practices unless required by a valid business reason or technology dependency.
- Retire the ASA firewall as soon as all rules have been reviewed because the ASA firewall cannot be updated.
- Scan the Firepower firewall with Nipper and Nessus to identify and remediate any vulnerabilities and configuration issues.

Due Date: September 30, 2024

Risk Rating Rationale

Fifty percent (50%) of the issues identified in the firewall security and vulnerability scans posed a high-risk to security. Compliance scanning against the Center for Internet Security benchmark identified 54 potential security configuration issues. A risk ranking of 4 was assigned due to the potential of harmful security access to the firewall. MUHC and MU security teams are implementing fixes. Fixing the security and firewall vulnerabilities will lower the risk for inappropriate access.

Audits and Consulting Engagements Currently in Process

Audit Area	Overall Objective	Status	Risk Area(s)
MU - Export Controls	Assessment of export control processes	Fieldwork	Compliance
S&T - Construction	Review performance and contract compliance	Fieldwork	Operations
MU - Scholarship Awards	Assessment of scholarship awards to donor restrictions and/or established criteria	Fieldwork	Operations & Compliance
UMKC – Information Security Assessment	Information security assessments, in collaboration with the information security officers, for critical systems, excluding Microsoft, Outlook, PeopleSoft, and Active Directory.	Fieldwork	Information Technology
MUHC – Operating Room Charge Capture	Charge capture audit to identify any missing revenue	Reporting	Operations

Audit Area	Overall Objective	Status	Risk Area(s)
MU – Medical Student Education Project	Validate causes for missing equipment charges	Reporting	Operations
UMSL – Information Security Assessment	Information security assessments, in collaboration with the information security officers, for critical systems, excluding Microsoft, Outlook, PeopleSoft, and Active Directory.	Planning	Information Technology

In addition, we are actively working two investigations.

ETHICS AND COMPLIANCE

FY24 Ethics and Compliance Plan Progress*

High-Level Oversight

Work collaboratively with the General Counsel to determine and implement:

- A compliance program policy as a CRR – **In process**
- Any additional oversight structures that would contribute to an effective compliance program. – **In process**

Policy and Procedure Integration

Identify responsible parties to draft and implement policies and procedures, assist with drafting and implementation as needed:

- Fraud Policy – **Not started**
- Non-retaliation – currently addressed in multiple policies - **Not started**
- Clery Policy – **In Process**
- Courtesy Policy – **In Process**
- Foreign Gift and Contract Reporting Policy – **In Process**
- Any other policy/procedure gaps or revisions required because of the gap analysis work and/or work with the general counsel in establishing a compliance policy framework. – **Ongoing**

Open Communication

- Continue developing the network of compliance professionals across the system to leverage knowledge, establish regulatory change management and continuously understand changes to risk. – **Ongoing**
- Updated the ECAS website – **Completed**

Training and Education

- Code of Conduct Annual training and attestation will be deployed through the learning management system at the beginning of each Fall semester – **ongoing**
- Search Committee Training – **In Process**
- Any other educational opportunities for increasing awareness identified through the gap analysis work – **ongoing**

Monitoring and Auditing

- Active monitoring of research grant management to identify any concerning trends for follow-up will be in place by summer 2022. – **Put on hold with departure of lead investigator; plans in place to resume March 1, 2024**
- Monitoring continues related to improvements to the Higher Education Information Security Program and the impact on maturing the program – **Ongoing**
- Internal audits of export control processes for each university will be completed in FY23 in collaboration with the Director of Research Security and Compliance. – **Two are in process**

Responses to Detected Errors

- As errors are detected, compliance will continue working collaboratively with other subject matter experts to investigate, address, conduct a root cause analysis, and determine how best to reduce the possibility of future occurrences.

Review and Refine

- As issues occur, new regulations are established, or current regulations change, System Compliance is committed to working with those involved to continuously adapt structures, processes and procedures and be able to demonstrate an effective compliance program.

**Note:* One new project in 2024 will be to evaluate this framework and update it as needed to comply with Federal Sentencing Guidelines, DOJ guidance, and other best practice frameworks to meet the unique needs of the UM System. New lens: Prevent, Find, and Fix.

UM System Compliance Plan Focus Areas

Compliance Area	FY2024	Status
Code of Conduct	Annual training with attestation (ongoing) Awareness campaign	Currently developing FY25 Code of Conduct training Developing content and marketing plan for Code of Conduct Awareness campaign (in concert with new hotline deployment), Spring 2024 Updated Code of Conduct training to better support Fraud Awareness
Information Security	Continuous oversight of task completion and maturity of Information Security Program IT Risk Management Program	Reporting on tasks completed by Information Security to Systemwide Information Security Council and Internal Audit IT Risk Management Program launched in Fall 2023
Research Compliance (Export Controls)	Research Security Program education Sanctions risk assessment Foreign influence visiting scholar's portal Cybersecurity Maturity Model Certification (CMMC)	Contributed to the development and distribution of educational materials for the UM System Research Security Program Sanctions risk assessment not yet started Monitoring development and launch of visiting scholar's portal, travel policy in review with leadership Regular meetings are convened at least twice a semester to facilitate progress monitoring, preliminary assessment of Arculus, the UM System branded CMMC space, in 2024 is a crucial step towards achieving certification in 2025 Internal audit has audited two export control programs; a third program audit is in the planning

		<p>stages</p> <p>System that was in place to monitor IP addresses hitting UM System has been discontinued; new, more efficient protocols are being reviewed</p>
Covered Component	<p>Draft and finalize covered component designation</p> <p>Assist in development of compliance lifecycle for covered component security and privacy program between MUHC and UM</p>	<p>Coordinating routine meetings between MUHC and UM/MU resulting in an issues paper to assist in finalizing covered component designation allowing groups to begin work on security and privacy programs for covered components</p>
Clery Act	<p>Identify and address gaps in identification, notification, and training of Campus Security Authorities</p> <p>Clery Act gap analysis</p>	<p>Collaborating with Clery Coordinators to address the identification, notification, and training of campus security authorities (CSA's) with a training launch date of February 1, 2024, and procedure and policy ongoing work</p> <p>Clery gap analysis on schedule to begin in early 2024 with anticipated completion prior to the end of the fiscal year</p>
Gramm Leach Bliley Act (GLBA)	Update training	Compliance facilitated updates to Data Security Training to support GLBA
Youth Protection Program (YPP)	Update and enhance the program	New monitoring system was established and became operational January 2024

PRIVACY


Privacy Regulations Compliance

The new Privacy officer came on board in March 2023. Initially, she identified the privacy regulations that apply to higher education and began assessing how System entities are programmatically addressing compliance with each.

To develop and maintain privacy compliance programs within the different units, two initial elements are required. First, each campus needs to assign an individual the responsibility for designing and implementing the processes related to privacy regulations (campus principal). Second, basic training needs to be provided to all individuals as required by the various regulations.

Privacy Summary

Privacy identified campus principals and assessed the training provided related to several privacy regulations. Work is in progress in other areas. Please see the table below.

 Regulation	Campus Principal Identified	Basic Training Provided
The Family Educational Rights & Privacy Act of 1974 (FERPA)	✓	✓
The Health Insurance and Portability and Accountability Act of 1996 (HIPAA)	✓	✓
The Gramm-Leach-Bliley Act (GLBA)	✓	✓
The Clery Act of 1990	✓	✓
General Data Protection Regulations of 2018 (GDPR)	In Queue	In Queue
The Fair and Accurate Credit Transaction Act of 2003 (FACTA or "Red Flags Rule")	In Queue	In Queue
The Privacy Act of 1974	✓	✓
E-Government Act of 2002	✓	✓
The Federal Information and Security Act of 2002 (FISMA)	In Queue	In Queue
Americans with Disabilities Act of 1990 (ADA)	✓	✓
Children's Online Privacy Protection Act of 1998 (COPPA)	In Queue	In Queue

In addition, a few new regulations have recently come into effect or existing regulations have made significant changes. These have been added to the overall list for future assessment:

- General Law of Personal Data Protection (LGPD)
- Personal Information Protection Law (PIPL)
- Higher Education Act, Section 117(HEA)
- EU Artificial Intelligence Act (EU AI Act)
- Executive Order of the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence (AI Executive Order)

Privacy Framework

This past year, work was done to identify a privacy program framework that could be applied systemwide. Several existing best-practice frameworks were reviewed and considered. Following this evaluation, it was determined that the best fit for the System and its strategic plan would be a hybrid of the NIST (National Institute of Standards and Technology) privacy framework and the GAPP (Generally Accepted Privacy Principles) framework.

The graphic below is a breakdown of the fundamental steps of the hybrid privacy framework that will be applied at UM System:



This past quarter the current profile was created. Steps 2 and 3 are concurrently in progress.