Missouri University of Science and Technology

Board of Curators Meeting | April 21, 2022
Dr. Mo Dehghani, Chancellor
Overview

- Vision, Direction, and North Star Goals
- Accolades and Recognition
  - Student Highlights
  - Faculty Accomplishments
- Research Update
- Kummer Institute Update
- Building and Construction Projects
- Manufacture Missouri Ecosystem
- Fundraising Success
Vision, Direction, and North Star Goals
Student Highlights
Enrollment Trends and Goals

... Year-to-date comparisons of applications, admits and deposits

Year-to-date through April 18

<table>
<thead>
<tr>
<th>Year</th>
<th>Applications</th>
<th>Admits</th>
<th>Deposits</th>
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<tbody>
<tr>
<td>2019</td>
<td>4937</td>
<td>3899</td>
<td>1052</td>
</tr>
<tr>
<td>2020</td>
<td>5489</td>
<td>4442</td>
<td>1023</td>
</tr>
<tr>
<td>2021</td>
<td>5349</td>
<td>4567</td>
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<tr>
<td>2022</td>
<td>6076</td>
<td>4881</td>
<td>1131</td>
</tr>
</tbody>
</table>
Exceptional Graduate Outcomes
... Our grads earn high starting salaries and graduate with a low debt load

$65,301 Average starting salary, undergraduates (2020-21)

$79,464 Average starting salary, master’s degree

$98,780 Average starting salary, Ph.D.

100% Employer satisfaction

$29,005 Average student debt (2021) – less than half the average starting salary

$8,864 Tuition (in-state, 28 credit hours/year)

$27,580 Tuition (out-of-state)
Air Force ROTC All-American
... Ean Buffington, aerospace engineering, Jackson, Missouri

- Over 300 cadets nominated
- $6,500 scholarship and S&T detachment receives $5,000

“I’ve been challenged academically beyond what you could have convinced ‘high school me’ was possible.”
S&T shines in new competition ... winning the RAPID Award

American Institute of Chemical Engineers’ ChemE Cube competition where students competed with designs of modular on-demand water purification systems

RAPID Award for design, professionalism, and ability to compete under pressure

Anna Baldus, ChemE Cube team leader and chemical engineering sophomore from Belleville, Illinois
S&T Ranger Challenge Team heads to West Point
... the national military skills competition

S&T’s ARMY ROTC team took first place in the task force competition at regionals, advancing to the national competition April 29-30 at the United States Military Academy at West Point, New York.
S&T forges a win at bladesmithing competition
... overcoming hurdles, bringing home the national grand prize

S&T won The Minerals, Metals and Materials Society 2022 Bladesmithing Competition Grand Prize in Anaheim, California

Design: Pattern welded hunting sword
Celebrating Faculty Success
NASA selects S&T for lunar-living project
... sustainable living and working in space

NASA will provide $2 million for mineral extraction project to make living and working on the moon possible

Drs. Leslie Gertsch, Daoru (Frank) Han and Fateme Rezaei are part of the NASA project.
Our faculty continue to receive national recognition
... creating efficiency in mobility in space

Dr. Daoru (Frank) Han, assistant professor of mechanical and aerospace engineering, received the Young Investigator Award from the U.S. Air Force Office of Scientific Research for his research on electrospray propulsion systems
Our faculty continue to receive national recognition
... advancing technologies for pharmaceuticals

Dr. Anthony Convertine, Crouch Assistant Professor of Materials Science and Engineering, elected to National Academy of Inventors for advances in biomaterials for drug delivery
S&T toxicologist aims to save butterflies
... USDA funds research of insecticides on pupation in butterflies and moths

Dr. Niranjana Krishnan, assistant research professor of biological sciences, received a new investigator seed grant of $300,000 from the U.S. Department of Agriculture

Best Paper Award in Environmental Toxicology and Chemistry
Congratulations to our recent NSF CAREER Awardees
... civil engineering, geology and geophysics, and mechanical and aerospace engineering
Research Update
Research Proposals Submitted

... dollar amounts by fiscal year

Year-to-date on 3-31-2022

Data Source: FSContableau Research Proposal Table
Report Date: 4/20/2022, count as distinct Proposal IDs

Data Source: The President Dashboard
Report Date: 4/20/2022
Research Expenditures by Fiscal Year
... in millions

Data Source: The President’s Dashboard
Report Date: 4/18/2022

YTD for FY2022
$25.7
Research Expenditures by Fiscal Year
... in millions

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<tr>
<th>Year</th>
<th>Expenditures</th>
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<tr>
<td>FY 2018</td>
<td>$20.5</td>
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<tr>
<td>FY 2019</td>
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<td>FY 2020</td>
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<td>FY 2021</td>
<td>$22.8</td>
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<td>FY 2022</td>
<td>$24.5</td>
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Year-to-date as of March 31
Industry Partnerships

... S&T receives a larger portion of research from industry partners than our peers

Source: American Society for Engineering Education (ASEE) data, 2016-2020
Scholarly Performance
... very strong performance in publications and citations among peer institutions

Data Source: Academic Analytics (2020 database edition)
“Elevating STEM education to ensure economic development.”
– Fred Kummer
The Kummer Vision
... a threefold “mandate” from Fred and June Kummer

- Elevate S&T
- Economic impact
- Broad STEM outreach
Academic and Research Initiatives
... elevating S&T’s reputation for excellence and innovation

- 4 new centers of excellence
  - Advanced and Resilient Infrastructure
  - Resource Sustainability
  - Advanced Manufacturing
  - Artificial Intelligence and Autonomous Systems
- New Kummer College
- 500 undergraduate scholarships
- 100 Kummer doctoral fellows
- 20 endowed faculty and chair positions
- 12 Kummer Ignition Grants
The Kummer Center for STEM Education
... the state’s leading resource for K-12 STEM education and engagement

- Summer Camps
- Mobile STEM lab
- Field trips
- After-school programs
- Teacher conferences and workshops
- Research experiences for teachers and students
- Community outreach events
S&T: The Summer Destination
Missouri S&T Summer Camps

...Explore. Discover. Inspire.

- Aerospace Camp
- Art of Science Camp
- Camp Invention
- CyberMiner Camp
- ASM Exploring Materials in Your World Camp
- Explosives Camp
- Formula SAE Electric Car Camp
- Jackling Introduction to Engineering Camp
- Nuclear Engineering Camp
- Robotics Camp
- Space – The Final Frontier Camp
- Subsurface Engineering
- Sports Camps
Building and Construction Projects
The S&T Arrival District
... Our future front door
The Manufacture Missouri Ecosystem (MME)
Advancing manufacturing innovation in Missouri
The MME is a statewide network...
... companies, educational partners and government partners

- TIER 1: The Manufacture Missouri Ecosystem
- TIER 2: The Innovation Campus
- TIER 3: The Missouri Protoplex®

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2018
The Destination of Choice for MME Members
... The Manufacturing Technology and Innovation Campus

- TIER 1: The Manufacture Missouri Ecosystem
- TIER 2: The Innovation Campus
  - Space for R&D labs, prototyping
  - Research Asset Database (RAD)
  - Networking with academic and industry experts
- TIER 3: The Missouri Protoplex®

The Missouri Protoplex (rendering above, view from pedestrian bridge) will be the first of six buildings on the Innovation Campus.
The Missouri Protoplex®
... first building of a proposed six-building campus

- TIER 1: The Manufacture Missouri Ecosystem
- TIER 2: The Innovation Campus
- TIER 3: The Missouri Protoplex®

**Total investment: $105M**
- Kummer Institute Foundation match: $50M
- State of Missouri match (to date): $5M
- Needed match: $50M
- Governor Parson’s budget includes a $41.2M match
The MME will have an even greater economic impact... when paired with the Kummer Institute...
... Reference: Joseph Haslag, MU professor of economics
Rolla Rising Campaign
Thank you!
Questions?