II. MEMORIAL RESOLUTIONS

II. Memorial Resolutions
   - Nord Gale..............................Roger Brown
III. APPROVAL OF MINUTES

> December 4, 2018 General Faculty Meeting
  - http://registrar.mst.edu/faculty/genfacmeetings
  - Minutes distributed December 10, 2018
IV. and V.

IV. Unfinished Business
   - None

V. Reports of Standing or Special Committees
   - Elections for Committees .................Michael Bruening
VI. NEW BUSINESS

> Approval of Candidates ......................Deanne Jackson
> Recognition of Patent Awards ..............Costas Tsatsoulis
> Faculty Excellence Awards ..................Daniel Forciniti
> UM System President’s Report ..............Mun Choi
> Faculty Senate President’s Report .......Michael Bruening
VI. NEW BUSINESS

> Approval of Candidates for Degrees to be Awarded at the May 17-18, 2019, ceremonies
VI. New Business

Recognition of Patent Awards

> Inventors: Sutapa Barua
  Patent No.: 9,918,943
  Issue Date: March 27, 2018
  Title of Patent: SYSTEMS AND METHODS FOR ENDOTOXIN REMOVAL FROM FLUIDS

> Inventor: Nicholas Leventis, Chariklia Sotiriou-Leventis, Abhishek N. Bang
  Patent No.: 9,994,516
  Issue Date: 06/21/2018
  Title of Patent: FLEXIBLE TO RIGID NANOPOROUS POLYURETHANE-ACRYLATE (PUAC) TYPE MATERIALS FOR STRUCTURAL AND THERMAL INSULATION APPLICATIONS
VI. New Business

Recognition of Patent Awards

> Inventors: Klaus Woelk, Rex Gerald, Ming Huang, Lingyu Chi
  Patent No.: 10,067,079
  Issue Date: 09/04/2018
  Title of Patent: SOLID STATE NMR SPECTROSCOPY/IMAGING IN SITU MEASURING DEVICES AND METHODS FOR CALIBRATION AND DETERMINING ONE OR MORE QUANTITATIVE PROPERTIES OF A TARGET SAMPLE

> Inventor: Joshua Rovey, Steven Berg (no longer at S&T)
  Patent No.: 10,180118
  Issue Date: 01/15/2019
  Title of Patent: ELECTRICAL/CHEMICAL THRUSTER USING THE SAME MONOPROPELLANT AND METHOD
VI. New Business

Recognition of Patent Awards

> Inventors: Jagannathan Sarangapani, Eyad Taqiedden (note joint invention with The Boeing Company)
Patent No.: 10,198,605
Issue Date: 02/05/2019
Title of Patent: ULTRA-LIGHTWEIGHT MUTUAL AUTHENTICATION PROTOCOL WITH SUBSTITUTION OPERATION

> Inventors: Pourya Shamsi, Mehdi Ferdowski
Patent No.: 10,224,819
Issue Date: 03/05/2019
Title of Patent: RIPPLE CANCELING IN POWER CONVERSION CIRCUITS
VI. New Business

Recognition of Patent Awards

> Inventor: Delbert Day, Ali Mohammadkhah
  Patent No.: 10,238,772
  Issue Date: 03/26/2019
  Title of Patent: BIODEGRADABLE COMPOSITE SCAFFOLD FOR REPAIRING DEFECTS IN LOAD BEARING BONES

> Inventor: Ming Leu, Greg Hilmas, Robert Landers, Amir Ghazanfari, Wenbin Li
  Patent No.: 10,250,158
  Issue Date: 04/16/2019
  Title of Patent: METHOD AND APPARATUS FOR FABRICATING CERAMIC AND METAL COMPONENTS VIA ADDITIVE MANUFACTURING WITH UNIFORM LAYERED RADIATION DRYING
VI. New Business

Recognition of U.S. Software Related Copyright

Authors: Hongya Qu, Genda Chen, Tiantian Li
Copyright Registration: TXu 2-122-245
Registration Date: 02/06/2019
Title: Adaptive Wavelet Transform
VI. New Business

Recognition of Foreign Patents

Inventors: Reza Zoughi, Tayeb Ghasr, Matthew Kempin
Title of Patent: MICROWAVE AND MILLIMETER WAVE PROBE FOR NON-DESTRUCTIVE MATERIAL CHARACTERIZATION
Countries Issues: Germany, Italy, Great Britain
VI. New Business

2018 Excellence Award Recipients

> Doug Bristow  
  - Mechanical and Aerospace Engineering

> Richard Dawes  
  - Chemistry

> Xinhua Liang  
  - Chemical and Biochemical Engineering

> Zhaozheng Yin  
  - Computer Science
VI. New Business

2018 Achievement Award Recipients
>
- Darin Finke
  - Arts, Languages, Philosophy
>
- Sheryl Hodges
  - Engineering Management
>
- Amardeep Kaur
  - Electrical and Computer Engineering
>
- Merilee Krueger
  - Psychological Sciences
VI. New Business

2018 Achievement Award Recipients

> Jossalyn Larson  
  - English and Technical Communication

> Nicolas Libre  
  - Civil, Architectural and Environmental Engineering
VI. New Business

2018 Research Award Recipients

> Mohamed El-Gawady
   – Civil, Architectural and Environmental Engineering

> Jonathan Kimball
   – Electrical and Computer Engineering

> John Myers
   – Civil, Architectural and Environmental Engineering

> Jonghyun Park
   – Mechanical and Aerospace Engineering
VI. New Business

2018 Research Award Recipients

> Ulrich Jentschura  
  - Physics

> Julia Medvedeva  
  - Physics

> Fiona Fui-Hoon Nah  
  - Business and Information Technology

> Fatemeh Rezaei  
  - Chemical and Biochemical Engineering
VI. New Business

2018 Service Award Recipients

> Mark Fitch
  - Civil, Architectural and Environmental Engineering

> Irina Ivliyeva
  - Arts, Language and Philosophy

> Sahra Sedigh Sarvestani
  - Electrical and Computer Engineering
VI. New Business

2018 Teaching Award Recipients

> Amber Henslee
  - Psychological Science

> Sarah Hercul
  - English and Technical Communications

> Gary Mueller
  - Mining Engineering

> Julie Semon
  - Biological Sciences
VI. New Business

2018 Teaching Award Recipients

> Jeffrey Smith
  - Materials Science and Engineering

> John Greg Story
  - Physics

> David Westenberg
  - Biological Sciences
VI. New Business

- University of Missouri System President’s Report
  - Mun Choi
President’s Award for Service

Mark Fitch, Missouri S&T

“Most will never know the effort Mark put forth, nor will they realize the great campus benefit of his even-tempered, honest, and unwavering leadership.”

—Dr. Joel G. Burken
Chair and Curators’ Professor of Civil, Architectural and Environmental Engineering, Missouri S&T

Congratulations, Dr. Fitch!
Research & Creative Works
<table>
<thead>
<tr>
<th></th>
<th>July 2017 – March 2018</th>
<th>July 2018 – March 2019</th>
<th>Increase/Decrease</th>
<th>2023 Target %</th>
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<tr>
<td>MU</td>
<td>$710.9M</td>
<td>$899.9M</td>
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<tr>
<td>UMKC</td>
<td>$179.6M</td>
<td>$136.4M</td>
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<td>50%</td>
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<tr>
<td>S&amp;T</td>
<td>$140.0M</td>
<td>$139.1M</td>
<td>-0.7%</td>
<td>50%</td>
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<tr>
<td>UMSL</td>
<td>$61.5M</td>
<td>$52.4M</td>
<td>-14.8%</td>
<td>50%</td>
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<td>4/1/19</td>
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<td>MU</td>
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<td>$30.4M</td>
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<td>S&amp;T</td>
<td>$27.6M</td>
<td>$32.1M</td>
<td>+16.3%</td>
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<tr>
<td>UMSL</td>
<td>$27.1M</td>
<td>$25.5M</td>
<td>-5.8%</td>
<td>50%</td>
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## Research Expenditures (Total Value)

<table>
<thead>
<tr>
<th></th>
<th>July 2017 – March 2018</th>
<th>July 2018 – March 2019</th>
<th>Increase/Decrease</th>
<th>2023 Target %</th>
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</thead>
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<tr>
<td>MU</td>
<td>$147.7M</td>
<td>$149.1M</td>
<td>+0.9%</td>
<td>100%</td>
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<tr>
<td>UMKC</td>
<td>$20.0M</td>
<td>$25.0M</td>
<td>+25.1%</td>
<td>50%</td>
</tr>
<tr>
<td>S&amp;T</td>
<td>$23.2M</td>
<td>$22.7M</td>
<td>-2.1%</td>
<td>50%</td>
</tr>
<tr>
<td>UMSL</td>
<td>$16.1M</td>
<td>$17.8M</td>
<td>+10.3%</td>
<td>50%</td>
</tr>
</tbody>
</table>
Student Success
Enrollment Management Update: Freshmen Applicants

<table>
<thead>
<tr>
<th></th>
<th>Total 2019</th>
<th>Total 2018</th>
<th>Increase/Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>MU</td>
<td>19,896</td>
<td>18,993</td>
<td>+4.8%</td>
</tr>
<tr>
<td>UMKC</td>
<td>5,469</td>
<td>5,946</td>
<td>-8.0%</td>
</tr>
<tr>
<td>S&amp;T</td>
<td>5,002</td>
<td>4,284</td>
<td>+16.8%</td>
</tr>
<tr>
<td>UMSL</td>
<td>3,396</td>
<td>3,340</td>
<td>+1.7%</td>
</tr>
</tbody>
</table>
# Enrollment Management Update: Freshmen Admits

<table>
<thead>
<tr>
<th></th>
<th>Fall 2019 Admits</th>
<th>Fall 2018 Admits</th>
<th>Increase/Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5/6/19</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MU</td>
<td>16,038</td>
<td>14,626</td>
<td>+9.7%</td>
</tr>
<tr>
<td>UMKC</td>
<td>3,389</td>
<td>3,381</td>
<td>+0.2%</td>
</tr>
<tr>
<td>S&amp;T</td>
<td>3,948</td>
<td>3,572</td>
<td>+10.5%</td>
</tr>
<tr>
<td>UMSL</td>
<td>1,759</td>
<td>1,734</td>
<td>+0.9%</td>
</tr>
</tbody>
</table>
## Enrollment Management Update: Freshmen Accepted (with Deposits)

<table>
<thead>
<tr>
<th></th>
<th>Fall 2019 Accepted</th>
<th>Fall 2018 Accepted</th>
<th>Increase/Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>MU</td>
<td>5,494</td>
<td>4,661</td>
<td>+17.9%</td>
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<tr>
<td>UMKC</td>
<td>1,088</td>
<td>1,197</td>
<td>N/A</td>
</tr>
<tr>
<td>S&amp;T</td>
<td>1,134</td>
<td>1,334</td>
<td>N/A</td>
</tr>
<tr>
<td>UMSL</td>
<td>347</td>
<td>351</td>
<td>-1.1%</td>
</tr>
</tbody>
</table>
6-Year Graduation Rates
(59% Nat’l Average) – Ga Tech at 84%, Temple at 71%

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2023 Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>MU</td>
<td>68%</td>
<td>68%</td>
<td>69%</td>
<td>74%</td>
</tr>
<tr>
<td>UMKC</td>
<td>49%</td>
<td>48%</td>
<td>49%</td>
<td>60%</td>
</tr>
<tr>
<td>S&amp;T</td>
<td>64%</td>
<td>64%</td>
<td>63%</td>
<td>70%</td>
</tr>
<tr>
<td>UMSL</td>
<td>53%</td>
<td>56%</td>
<td>52%</td>
<td>65%</td>
</tr>
</tbody>
</table>
# 4-Year Graduation Rates

(36% National Average) – CSOM at 46%, Temple at 41%

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MU</strong></td>
<td>46%</td>
<td>48%</td>
<td>50%</td>
</tr>
<tr>
<td><strong>UMKC</strong></td>
<td>23%</td>
<td>23%</td>
<td>27%</td>
</tr>
<tr>
<td><strong>S&amp;T</strong></td>
<td>23%</td>
<td>23%</td>
<td>24%</td>
</tr>
<tr>
<td><strong>UMSL</strong></td>
<td>32%</td>
<td>32%</td>
<td>34%</td>
</tr>
<tr>
<td></td>
<td>April 1, 2019 – March 2018</td>
<td>July 2018 – March 2019</td>
<td>Increase/Decrease</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------</td>
<td>-----------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>MU</td>
<td>$114.6M</td>
<td>$136.0M</td>
<td>+18.7%</td>
</tr>
<tr>
<td>UMKC</td>
<td>$27.1M</td>
<td>$33.2M</td>
<td>+22.5%</td>
</tr>
<tr>
<td>S&amp;T</td>
<td>$27.9M</td>
<td>$30.2M</td>
<td>+8.1%</td>
</tr>
<tr>
<td>UMSL</td>
<td>$18.4M</td>
<td>$21.3M</td>
<td>+15.9%</td>
</tr>
</tbody>
</table>
FY 20 Appropriations

- Priorities:
  - Continuance of Core at $404.6 million
  - Precision Medicine Initiative - $3 million recommended by House; $10 million recommended by Senate

- Risks:
  - State revenues are under pressure
UM System Core & Line Item Appropriations Received

- **FY 16**: $434 Million
- **FY 17**: $413 Million
- **FY 18**: $396 Million
- **FY 19 Est**: $405 Million
- **FY 20 Est**: $405 Million

- Extraordinary Withhold
- Core Appropriation & Line Items Received
Missouri S&T Core & Line Item Appropriations Received

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Appropriations Received (in Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 16</td>
<td>$52</td>
</tr>
<tr>
<td>FY 17</td>
<td>$51</td>
</tr>
<tr>
<td>FY 18</td>
<td>$49</td>
</tr>
<tr>
<td>FY 19 Est</td>
<td>$50</td>
</tr>
<tr>
<td>FY 20 Est</td>
<td>$50</td>
</tr>
<tr>
<td>University</td>
<td>Full Professor</td>
</tr>
<tr>
<td>------------</td>
<td>----------------</td>
</tr>
<tr>
<td>S&amp;T</td>
<td>$125,465 (34 out of 105)</td>
</tr>
<tr>
<td>UMKC</td>
<td>$108,020 (69 out of 105)</td>
</tr>
<tr>
<td>UMSL</td>
<td>$100,186 (87 out of 105)</td>
</tr>
<tr>
<td>MU</td>
<td>$120,414 (106 out of 115)</td>
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<tr>
<td></td>
<td>Management</td>
</tr>
<tr>
<td>----------</td>
<td>------------------</td>
</tr>
<tr>
<td>S&amp;T</td>
<td>$83,597 (97 out of 104)</td>
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<tr>
<td>UMKC</td>
<td>$93,431 (86 out of 104)</td>
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<tr>
<td>UMSL</td>
<td>$88,361 (92 out of 104)</td>
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<tr>
<td>MU</td>
<td>$89,490 (110 out of 115)</td>
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<tr>
<td>Characteristic</td>
<td>Initial Perspectives</td>
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<tr>
<td>-------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Scope, Scale and Timing</strong></td>
<td>UM target: 25k incremental enrollments in 5 years from its eLearning program</td>
</tr>
<tr>
<td><strong>Geographic Focus</strong></td>
<td>1st focus: students in Missouri and surrounding states, but national recognition as a quality eLearning provider</td>
</tr>
<tr>
<td><strong>Population Focus</strong></td>
<td>To achieve incremental enrollments, target adult eLearners wanting degrees and certificates</td>
</tr>
<tr>
<td><strong>Degrees Offered</strong></td>
<td>Expand undergraduate degrees and certificate offerings; pursue “low-hanging fruit” like graduate programs in high-demand fields</td>
</tr>
</tbody>
</table>
UM System campuses need to convert ~4% of prospective students with an interest in their eLearning programs to achieve 25k enrollments.

Realistically Convertible Population (Missouri and Surrounding States) ~920k

~290k Currently interested in University of Missouri eLearning program

~310k Would have interest in eLearning program from University of Missouri

~600k
President’s Report
Missouri S&T General Faculty Meeting | May 7, 2019
VI. New Business

- Faculty Senate President’s Report
  - Michael Bruening
Faculty Senate President’s Report
Dr. Michael Bruening, Faculty Senate President
Faculty Senate Referrals/Committee Action

- Revised procedure for NTT promotions (Personnel Committee)
- Addition of a fall break, starting 2020 (Public Occasions)
- Faculty reviews of Provost and Deans (Administrative Review): Results to be presented at June 13 senate meeting
- Vigorous debate on plus/minus grading (Academic Freedom and Standards)
- Feedback memo on revised Department Chairs CRR
Faculty Senate Referrals/Committee Action

> Actions accomplished this year:
  - Department Creation/Realignment Policy Proposal (ad hoc committee)
  - Creation of Certificates policy (Campus Curricula)
  - Resolution on the Invention Assignment Agreement (Intellectual Property and Tech Transfer)
  - Continuous updates and work of CCC, Budgetary Affairs, and other committees
Continuing Discussions

> Bylaws Revision, to be continued in fall semester
> Department Chair search process, to be discussed at June senate meeting
> Graduate Student Tuition Waivers and Policy II-26 Committee
Faculty Senate Officers for 2019-2020:
- Steven Corns, President
- Michael Bruening, Past-President
- Richard Dawes, President-Elect
- Stephen Raper, Parliamentarian
- Kelly Homan, Secretary

Full committee lists for next year to be distributed before the end of May
Upcoming Policy Discussions

Policy Revision Proposals, when announced, please provide feedback via open forums or https://policy.mst.edu/:
- III-27, Distribution of Sponsored Research Indirect Recovery
- III-25, Fixed Price Residuals
- Department Creation/Realignment
- And possibly II-26, Externally Funded Graduate Assistantships
VII. Announcements

VIII. Adjournment