SLU RESEARCH
Igniting Discovery, Transforming Lives

Science and Engineering
From Research Growth Plan to 2027 Vision

SAINT LOUIS UNIVERSITY
### Science & Engineering at SLU

<table>
<thead>
<tr>
<th>SCHOOL OF SCIENCE AND ENGINEERING</th>
<th>COLLEGE OF ARTS AND SCIENCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace &amp; Mechanical Engineering</td>
<td>Biology</td>
</tr>
<tr>
<td>Aviation</td>
<td>Bioinformatics &amp; Computational Biology</td>
</tr>
<tr>
<td>Biomedical Engineering</td>
<td>Data Science</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Forensic Science</td>
</tr>
<tr>
<td>Civil, Computer &amp; Electrical Engineering</td>
<td>Mathematics and Statistics</td>
</tr>
<tr>
<td>Computer Science</td>
<td>Neuroscience</td>
</tr>
<tr>
<td>Earth and Atmospheric Sciences</td>
<td>Psychology</td>
</tr>
<tr>
<td>Physics</td>
<td></td>
</tr>
</tbody>
</table>
Science & Engineering Research Council at SLU

- Jenna Gorlewicz, Ph.D, (Chair) Associate Dean for Research and Innovation (SSE), Associate Professor, Mechanical Engineering
- Stephen Belt, Ph.D., Associate Professor, Aviation Science
- Amanda Cox, Ph.D., Associate Professor, Civil Engineering
- Alexei Demchenko, Ph.D., Chair, Chemistry
- Maureen Donlin, Ph.D., Research Professor, Research Computing, Biochemistry and Molecular Biology
- Kasey Fowler-Finn, Ph.D., Associate Professor, Biology
- Haijun Gong, Ph.D., Associate Professor, Math
- Adriana Montano, Ph.D., Senior Associate Dean for Research, School of Medicine
- Zachary Phillips, Ph.D., Assistant Professor, Earth and Atmospheric Sciences
- Scott Sell, Ph.D., Associate Dean for Undergraduate Education (SSE), Biomedical Engineering
- Laurie Russell, Ph.D., Associate Dean for Student Success & Academic Innovation (CAS), Professor, Biology
- Abby Stylianou, Ph.D., Assistant Professor, Computer Science
- Jeremiah Weinstock, Ph.D., Chair, Psychology
- David Wisbey, Ph.D., Assistant Professor, Physics
Science & Engineering: 2016 – 2022 Milestones

- Reimagination of two new units: **COLLEGE OF ARTS AND SCIENCES** & **SCHOOL OF SCIENCE AND ENGINEERING**

- Formation of the Science and Engineering Research Council (**SERC**)  

- 17 Science and Engineering **RI FELLOWS** Named in 2022

- Numerous **INDIVIDUAL PI AWARDS** (e.g. NSF CAREER, Google Scholar Award, Jefferson Science Fellow, and more!)

- Amplifying our **JESUIT MISSION** through our research & innovation initiatives
“We’re harnessing the power of partnership with industry, government agencies, and research entities to not only grow talent but develop core geospatial science and adjacent fields that enable positive impacts on some of the world’s greatest challenges.”

**AREAS OF GEOSPATIAL IMPACT:**

- Core Geospatial Science
- Food Systems
- Geospatial Health
- National Security
### S&E Research Expenditures, 2016-2022

<table>
<thead>
<tr>
<th>Year</th>
<th>Water Institute</th>
<th>Chemistry</th>
<th>Biology</th>
<th>Earth and Atmospheric Science</th>
<th>Computer Science</th>
<th>Math and Statistics</th>
<th>Physics</th>
<th>Geospatial Institute</th>
<th>Engineering and Aviation</th>
<th>Earth and Atmospheric Science</th>
<th>Water Institute</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>3,962,365</td>
<td>101,432</td>
<td>941,696</td>
<td>258,702</td>
<td>1,414,067</td>
<td>1,594,006</td>
<td>1,465,273</td>
<td>55,990</td>
<td>121,976</td>
<td>126,660</td>
<td>9,017,043</td>
</tr>
<tr>
<td>2017</td>
<td>4,167,663</td>
<td>1,028,720</td>
<td>1,319,611</td>
<td>1,618,349</td>
<td>1,614,067</td>
<td>1,414,067</td>
<td>1,618,349</td>
<td>66,523</td>
<td>170,816</td>
<td>1,618,349</td>
<td>96,759,516</td>
</tr>
<tr>
<td>2018</td>
<td>4,720,778</td>
<td>1,028,720</td>
<td>1,319,611</td>
<td>1,618,349</td>
<td>1,614,067</td>
<td>1,414,067</td>
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<td>66,523</td>
<td>170,816</td>
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<tr>
<td>2019</td>
<td>6,183,142</td>
<td>1,075,287</td>
<td>1,893,333</td>
<td>2,574,682</td>
<td>2,574,682</td>
<td>2,184,940</td>
<td>3,038,649</td>
<td>162,430</td>
<td>263,320</td>
<td>1,570,475</td>
<td>7,037,196</td>
</tr>
<tr>
<td>2020</td>
<td>8,799,139</td>
<td>1,164,753</td>
<td>1,893,333</td>
<td>2,574,682</td>
<td>2,574,682</td>
<td>2,184,940</td>
<td>3,038,649</td>
<td>162,430</td>
<td>263,320</td>
<td>1,570,475</td>
<td>9,698,024</td>
</tr>
<tr>
<td>2021</td>
<td>7,839,616</td>
<td>905,823</td>
<td>1,893,333</td>
<td>2,574,682</td>
<td>2,574,682</td>
<td>2,184,940</td>
<td>3,038,649</td>
<td>162,430</td>
<td>263,320</td>
<td>1,570,475</td>
<td>7,839,616</td>
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<tr>
<td>2022</td>
<td>9,698,024</td>
<td>251,416</td>
<td>1,893,333</td>
<td>2,574,682</td>
<td>2,574,682</td>
<td>2,184,940</td>
<td>3,038,649</td>
<td>162,430</td>
<td>263,320</td>
<td>1,570,475</td>
<td>9,698,024</td>
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</table>

*FY22 Estimated
EXEMPLAR GROWTH AREAS: CHEMISTRY & BIOLOGY, 2016-2022

**Chemistry**

- 2016: 565,364
- 2017: 620,366
- 2018: 868,641
- 2019: 1,075,108
- 2020: 1,536,482
- 2021: 2,453,180

*FY22 Estimated: +28%

**Biology**

- 2016: 759,516
- 2017: 1,319,611
- 2018: 1,618,349
- 2019: 1,893,333
- 2020: 2,292,196
- 2021: 2,530,529

*FY22 Estimated: +22%
MOVING FROM PLAN TO VISION: CURRENT INITIATIVES

RESEARCH GROWTH

1. SERC – Infrastructure, Faculty Support, Research Growth, PRF
2. Research Computing – University Priority
3. Faculty Hiring: 8 TT Searches (SSE); 6 TT Searches (CAS-Sciences)
4. Undergraduate Research Programs – SURGE & FIRE
5. Graduate Education – Recruiting, Training, and Retaining

UNIT FOUNDATIONS

1. Permanent Dean Searches Underway
2. Administrative Structures and Policy Implementation - Space and Workload
INNOVATION AND PARTNERSHIPS

Industry & Institute Partnerships

• Shaping Future INTERDISCIPLINARY, Education & Research
• Cultivating a DIVERSE Workforce
• Recruiting and Retaining TOP TALENT
• Innovating through COLLABORATION

Academic Partnerships

• Building PATHWAYS through the Sciences and Engineering
• Creating IMPACTFUL K-12 Outreach
• Establishing EXPERIENTIAL Opportunities for Students & Faculty
• Collaborating in a Research SANDBOX environment
ADDITIONAL SCIENCE & ENGINEERING INITIATIVES

REGIONAL GEOSPATIAL INITIATIVES

- TAYLOR GEOSPATIAL INSTITUTE
- NCLS
- GEOFUTURES
- The Future of Geospatial is STL Made

ADVANCED MANUFACTURING INNOVATION CENTER

- AMICSTL
- R&D Co-Leads: SAINT LOUIS UNIVERSITY, UMSL

CYBERSECURITY & INTELLIGENCE

The Global Center for Cybersecurity @Cortex

NEW ROOTS FOR RESTORATION

CROSS-DISCIPLINARY CONVERSATIONS
MOVING FROM PLAN TO VISION: WE NEED YOU!

Ways to Engage:

- 5 Year Strategic Planning
- Follow-on Conversations
- Provide Feedback
- Communicate through SERC representatives
- Faculty and Dean Search Processes
Questions?
Thank you!