# ELEVATING MISSOURI

## THROUGH EDUCATION AND RESEARCH

MISSOURI S&T STRATEGIC PLAN | SEPTEMBER 2018

MISSOURI
S&T

# MISSOURI S&T MISSION

Missouri S&T integrates education, research and application to create and convey knowledge that serves our state and helps solve the world's great challenges.

## MISSOURI S&T VISION

Missouri S&T will be the leading public technological research university for discovery, creativity and innovation. We will cultivate curiosity, creativity and confidence in our graduates. We will be the institution of choice for partners around the world seeking a highly qualified, talented and entrepreneurial workforce; innovative research; relevant educational programs, products and services; and technology and ideas to solve the great challenges of our time.

# MISSOURI S&T VALUES

### LIFELONG SUCCESS

We add exceptional value. The rewards of the Missouri S&T experience extend far beyond a college education, valued degree or gratifying career. The S&T experience prepares you for a fulfilling life defined by the confidence to succeed, a desire to excel and a love of learning that never stops.

### CREATIVITY

We are innovators. Building a better world demands a creative spark, innovative and entrepreneurial approaches, and curiosity to discover and explore new solutions to the world's great challenges.

### INTEGRITY

We hold ourselves accountable for our actions. We strive to uphold the highest ethical standards, to conduct ourselves with trustworthiness and respect for all of humanity, and to instill in our campus community these same principles.

### SUSTAINABILITY

We live by example. As stewards of the public goodwill, the financial resources entrusted to us, and the environment, we emphasize resilient and sustainable practices in all our endeavors.

### PARTNERSHIPS

We are great partners. We focus on adding value and creating mutually beneficial partnerships. The solutions to today's great challenges require agile collaboration, teamwork and engagement with our stakeholders, both on campus and in the greater business, civic, national and international communities.

### INCLUSION

We are an inclusive, welcoming community. We seek to build a creative learning environment marked by openness, understanding and valuing all people and perspectives.

# INTRODUCTION AND OVERVIEW

## Missouri University of Science and Technology (Missouri S&T) attracts talented and forward-thinking faculty, staff, and students, and plays a crucial role in solving some of Missouri's, and the nation's, most complex and urgent problems.

Established in 1870 as a part of Missouri's first land-grant universities, Missouri S&T has a long history of achievement and success, providing students with high-quality, hands-on educational experiences and society with high-impact, relevant research. We take seriously our charge to serve the people of Missouri by educating the state's workforce and by providing valuable economic opportunities. Missouri S&T's strategic plan will guide our efforts to maintain excellence in many areas and to strengthen our position as Missouri's leading public university for STEM education and research.

This document was developed by Missouri S&T's Strategic Planning Committee (SPC). This group of faculty, students, staff, and administrators represents a wide variety of units and interests across the campus. Drawing on committee members' collective experience at S&T, as well as input from diverse stakeholders across our campus and beyond, the SPC has developed a plan that foregrounds some important aspirational goals for our university. This plan also emphasizes our efforts to be a distinctive, vibrant, and innovative community that embraces continual improvement, prepares students for success in a global economy, and instills in them an appreciation of differences and a culture of inclusion.

Through the five specific Compacts, Missouri S&T articulates its commitment to the many dimensions of student success, high-impact research and scholarship, far-ranging engagement and outreach, welcoming inclusivity, and effective, thoughtful, and transparent stewardship of our resources. In the broadest sense, this strategic plan emphasizes the value Missouri S&T delivers to the state (and beyond) and the opportunities we provide for our students, faculty, staff, alumni, employers, industry partners, donors, and other stakeholders both within and beyond Missouri. Thus, the SPC refers to this plan as "Elevating Missouri Through Education and Research."

## THE UNIVERSITY OF MISSOURI SYSTEM

The University of Missouri System was formed in 1963 and consists of system administration and four universities: the University of Missouri-Columbia, the University of Missouri-Kansas City, Missouri University of Science and Technology, the University of Missouri-St. Louis, and all of their component parts, including, but not limited to, MU Health, MU Extension and UM Engagement ("University" or "UM System").

The UM System is organized as a system to achieve more collectively than its component parts could achieve individually and this principle will guide decision makers in managing the affairs of the UM System, whether they be in academic, research or in business operations. Moreover, the UM System exists to deliver excellence in teaching, research & creative works, economic development, engagement and inclusion.

It is the fundamental responsibility of UM System universities and leaders to effectively manage resources to achieve the vision and mission of the UM System. This fundamental responsibility compels all to look beyond individual universities and interests to enable the UM System to meet the needs of the people of Missouri, the nation and the world.

The mission of the UM System, as a land-grant university and Missouri's only public research and doctoral-level institution, is to discover, disseminate, preserve and apply knowledge. The university promotes learning by its students and lifelong learning by Missouri's citizens, fosters innovation to support economic development, and advances the health, cultural, and social interests of the people of Missouri, the nation, and the world.

# STRENGTHS, WEAKNESSES, OPPORTUNITIES, AND THREATS

As one of the original land-grant universities in the state, Missouri S&T is uniquely poised to capitalize on its strengths in the years to come. These strengths, outlined below, have been drawn from informal conversations with faculty, staff, students, alumni, and community members. In addition, because a university the size of S&T cannot be all things to all people, these conversations identified weaknesses, opportunities, and threats. Major SWOT items below are each separated into short-term and long-term categories.

## Strengths

### LAND-GRANT HISTORY AND RELEVANCE

Missouri S&T was formed in 1870 as the mechanical arts branch of the University of Missouri, which makes us one of the original land-grant universities in the state. That commitment to relevance and the state's economy, through our history in mining, metallurgy, and technology, is part of the university's DNA. We will build on that history and relevance to provide meaningful, economically viable education and research for Missouri, the nation, and the world.

### THE UNIVERSITY OF MISSOURI SYSTEM

As the UM System's highly selective university, Missouri S&T has the high-quality faculty, top-notch students, and first-rate staff to continue cutting-edge research in science, technology, engineering, and mathematics (STEM) fields. Our connections to Mizzou, UMKC, and UMSL facilitate a research university system in which the whole is greater than the sum of its parts. Moreover, the UM System administration and governance structure provides a framework for shared services, while embracing and promoting the distinctiveness of each of the individual universities within the system.

### BROAD ENGINEERING OFFERINGS BOLSTERED BY SCIENCES, MATH AND HUMANITIES

Missouri S&T has among the broadest range of engineering offerings in the world. This is remarkable given our comparatively small size (fewer than 10,000 students). Consequently, we are among the world's leaders in engineering choices for undergraduate students, and among the few universities in the world with numerous core engineering graduate programs that also are supplemented with specialty fields of engineering (including explosives, mining, nuclear, petroleum, and systems engineering). The College of Arts, Sciences, and Business houses excellent, high-quality undergraduate and graduate programs in their own right, as well as first-rate research and scholarly activity that provide the underpinnings necessary for engineering success.

### NIMBLENESS

Our smaller size allows us to assume the role of the UM System's "skunk works" operation. We are nimble, experimental, and willing to try new and different approaches to teaching, research, and operations. Engineers and other STEM-focused faculty expect failures — they are indications of trying, learning, and improving.

### HANDS-ON LEARNING

Internships and co-ops are hallmarks of the Missouri S&T teaching and learning culture. Industries seek our graduates because they have learned to work in groups, often through one of our numerous student-design group projects, hit deadlines, and provided the results requested. There is no better way to learn critical thinking than by working in groups under deadlines, whether it is building a Mars Rover, putting on a play, or competing in intramural/intercollegiate athletics as part of the university experience.

### ALUMNI

Missouri S&T's alumni are extremely successful and extremely loyal. They have fond memories of their favorite faculty during their time as students and entertaining stories about their activities during long-standing S&T traditions (St. Patrick's Day). As is the case with leadership in Missouri, alumni want to be engaged and involved with their university, their department, their program, and our students. Many alumni have strong ties to the Greek system on campus, which is noted for its contribution to many of the so-called soft skills that graduates need in order to occupy corner offices. This strong alumni network increasingly is connected with students and faculty on campus, and alumni form the heart of the various departmental academies and advisory groups throughout the university.

### FACULTY AND STAFF

Missouri S&T's strong reputation for academic excellence attracts a high-quality faculty who contribute meaningfully to the student experience and conduct relevant research, much of which translates into economic and social enrichment for Missourians, the nation, and our global community. S&T also attracts outstanding staff members who possess a strong work ethic, are skillful and talented, and create a welcoming, hospitable atmosphere for our students, alumni, and other visitors.

## ■ Weaknesses

### LACK OF ACADEMIC OPTIONS AND TIME TO DEGREE

Missouri S&T's academic focus may reinforce the perception that our highly specialized offerings limit the choices that students have if they attend the university and want to change majors. Students with a focus on what their major will be tend to do better here because the demand on their time in many engineering fields limits their ability to take many electives. Consequently, coupled with our relatively small size and culture of internships and co-ops, Missouri S&T students have lower graduation rates (not lower ultimate graduation) than would be ideal. We have curricula that prepare our students for the future, but truly challenge our students on their journey to becoming alumni.

### RECRUITING AND RETAINING FACULTY AND STAFF

Rolla is a great community for raising a family and is known for its quality public and private educational systems and the warm, embracing friendliness that typifies communities of the Midwest. It's even on an interstate highway and less than two hours from a major airport and metropolitan area. Yet some young faculty families have dual-career contributors, and living in a community the size of Rolla presents employment challenges for dual-career couples. For people from smaller towns and schools, however, Rolla and S&T are ideal options.

## ■ Opportunities

### INTERNATIONAL AND NON-MISSOURI STUDENTS

The distinctive nature of our degrees means that the niche occupied by Missouri S&T in the higher-education landscape is equally distinctive. Our mission and vision are well known, well established, and provide a clear North Star for us to follow. Because we stand out in the broader landscape of national and international universities, we have an opportunity to attract international and non-Missouri students who want to further their education at a high-quality university with a growing reputation. Coupled with our excellent return on investment (ROI), which is among the top 1% in the nation, we are poised to build long term on our quality and results.

### DISTANCE AND ONLINE EDUCATION

Tomorrow's college students will demand increasing flexibility for their education. By offering numerous graduate programs online — from certificates to master's degrees — Missouri S&T is poised to meet these demands by delivering just-in-time education, wherever and whenever needed.

### IP AND PATENTS

Traditional academic papers long have been the coin of the realm for faculty. And while S&T has more than its expected share of scientific publications, we have enormous opportunity for development of intellectual property (IP) and patents. Our faculty and students create real solutions for real problems, and many of these have potential to add support for the individuals involved as well as the university as a whole.

### PUBLIC-PRIVATE PARTNERSHIPS

S&T's longstanding history as a land-grant industrial connection in Missouri has resulted in an equally longstanding relationship with the private sector here and elsewhere in the nation and world. These partnerships provide excellent opportunities for mutual support, collaborations, and successes that have relevance and market value. In addition, our longstanding partnership with Missouri State University, through which we offer Missouri S&T degrees in three engineering disciplines, serves as a model for future collaborative approaches to providing a quality S&T education beyond the confines of our physical campus.

### GROWING RESEARCH

S&T possesses strong research programs in some highly specialized areas and is among the world's leaders in some of these fields. Moreover, our emphasis on applied research— that is, research that translates into economic and societal benefit— serves to build on our strong connection with partners in industry and government. We are well-positioned to build on these research strengths, to grow in other areas, and to increase collaboration with our partner institutions within the University of Missouri System— in particular with the Precision Medicine Initiative being led by the University of Missouri-Columbia— and with other academic institutions. For example, S&T is working with universities within the UM System and elsewhere, the military, and medical partners to conduct research on reducing traumatic brain injury, and a similar consortium to address cybersecurity issues is also under development.

### PHILANTHROPY

S&T's connection to the private sector and strong alumni base provide tremendous opportunities for enhanced philanthropy over time. In order to take advantage of this opportunity, we have to be different in how we solicit support. The majority of our graduates are engineers. Engineers are logical. Philanthropy is emotional. Philanthropy will come to S&T in those areas where logic and emotion merge. The same is true for private-sector support. Businesses want a mutually beneficial relationship with us, and we have the opportunity to deliver those mutually beneficial items (highly skilled workforce, test-beds for new concepts, advances in research) that industry needs. Industry philanthropy, therefore, can come from donations, marketing investment, and research investment, all of which present excellent opportunities for increasingly stable financial assistance.

## ■ Threats

### UNCERTAIN REVENUE SOURCES

Given the State of Missouri's obligations to fund myriad services for Missourians, including social services, pre-college public education, infrastructure needs, its ability to provide a sustained level of support for public universities is uncertain. In addition, well-meaning revenue controls such as tuition caps can result in spotty course offerings, fewer scholarship opportunities for lower-income students, deteriorating facilities, loss of stellar faculty and staff, and longer times to degrees. Finishing a high-quality, relevant degree in a timely manner is the best form of cost control, in addition to providing additional tax revenues to the state through longer employment careers.

### GEOPOLITICAL UNCERTAINTY

In the short term, we live in an increasingly unstable global setting. The success of our high-tech specialties depend on international faculty and students to add to the richness and strength of the S&T experience for Missourians.

While additional international students and faculty are opportunities for our university and our community, over-reliance on one or a few countries or research specialties lends itself to instability (much like a limited investment portfolio). S&T will need to guard against overindulging in some of these successes and becoming over-reliant on the revenues and opportunities they provide.

### DECREASING TRADITIONAL STUDENT POPULATION

**Updated April 23, 2021**

The traditional student population of college-bound high school graduates is projected to decline well into the 2020s. Moreover, demographic trends indicate that the student body of the future will be more diverse in practically every way. S&T must embrace and follow these trends by consistently and successfully recruiting, enrolling, and retaining a more diverse student body than it has hosted historically. Without such diversification, the university will surely experience an enrollment challenge.

# WHY NOW?

# Time is of the essence for transformative changes in higher education in Missouri and across the nation.

Student demographics are changing, with level or fewer high-school graduates nationwide and changing diversity percentages within those graduating classes. In public universities, decreases in state support have been passed along to students in the form of tuition and fees that, from the perspective of the paying students and families, have been increasing at a rate higher than overall cost of living. As a result, even in-state students are responsible for the largest percentage of the cost of education. Students increasingly are arriving at universities with college credits. Once in a chosen university, more and more students are taking classes in various distance-education formats or remotely delivered closer to where they live and/or work. And there is an increasing call for relevancy and accountability from every entity supporting higher education — from taxpayers to public corporations to the students and families themselves.

On the education-delivery side, inflationary costs, especially those that have increased at rates higher than cost of living (insurance is one example) have mandated diversion of direct-education dollars to ancillary expenses. The costs associated with recruiting and retaining high-quality faculty and staff, including facilities and equipment costs, have increased dramatically over the past decade as competition has intensified, especially for STEM-focused programs, such as those at Missouri S&T. The requirement to compete effectively in the technology-education sector also demands that upgrades and the introduction of new equipment and facilities occur far more often than in most other areas of education.

For these reasons and others, the timing is excellent for Missouri S&T to assess new pathways, forge new collaborations, and strategically invest to achieve our goals. As the highly selective, STEM-focused university in the University of Missouri System, Missouri S&T occupies a distinctive niche among our colleague universities. For nearly 150 years, Missouri S&T has focused on relevant, hands-on, STEM-related education and research. That tradition and dedication to learning outcomes for more than a century have served us well and will continue to be at the heart of what we will become.

Now, as part of collaborative UM System-level and individual university-level transformations, we have the opportunity to work together, as a true system, to enhance the value of a degree from S&T and each of the other university partners. Our task is both clear and daunting—continued relevance, high-quality education and research, investment in our strengths, development of new interdisciplinary strengths, enhanced collaborations, enhanced funding, and maintaining the tremendous value of an S&T degree. All of this while student demographics are changing, competition in STEM areas is increasing, and other states provide more support for higher education than does Missouri.

We cannot and will not do this alone. Our own trajectory and laser focus on our vision and mission will serve as a distinctive beacon for us and provide distinctive diversity within our university system. Working closely with MU, UMKC, and UMSL, we can achieve more than any one of us can do alone. And given the transformative changes occurring within the UM System, now is the time for Missouri S&T to shine and be a truly transformative partner in a truly transformative time of change. We are nimble, creative, and have risen to challenges and opportunities time and time again throughout our 150-year history. It's who we are and what we do. It's the Miner way.

# THE FIVE MISSOURI COMPACTS

## 1 Missouri S&T Compact for Excellence in Student Success

Fostering student success is the most fundamental goal of any university. Missouri S&T will improve the quality of our students' experiences through a holistic approach to teaching and by providing an enriching learning environment. We will enhance our students' access to the curricular, professional developmental, and professional advising so crucial to their success both during and after their time at S&T. We will increase the quality of and accessibility to wellness services, including those focused on mental, physical, and financial health. And we will enhance our students' diverse, creative, innovative, experiential, and entrepreneurial opportunities to maximize their future career success and allow them to make significant contributions to our state, the nation, and the world.

Because student success and teaching excellence are inextricably linked, Missouri S&T pledges to continue to support the innovation and excellence of our faculty members by establishing and maintaining beneficial programs that focus on mentorship, effective teaching strategies, and creative approaches to developing course material. Furthermore, Missouri S&T will guide developing instructors toward such programs while recognizing and celebrating accomplished educators in order to raise the visibility and appreciation of those faculty members making such important contributions to students' educational experiences. Missouri S&T also will ensure that faculty are held to the highest standards of excellence.

Positive student programs and excellent instructors can only have an impact on students if those students have access to our university. Thus, S&T, the University of Missouri System's highly selective university, will increase efforts to recruit talented students from all backgrounds, including students from under-served areas of the state and students who are members of underrepresented minority groups. We will implement programs encouraging the use of open-source textbooks and will develop other strategies that reduce the cost of higher education for students. We will increase our retention rates and graduation rates by focusing on programs that improve students' first-year experiences, decrease their debt at graduation, and shorten their times to degrees, and we will reach out to our UM partner campuses to provide additional access to collaborative programs that leverage opportunities across the system. In short, we will work on many fronts to make Missouri S&T affordable, accessible, relevant, and valuable to students who will benefit from, and succeed in, our degree programs.

## 2 Missouri S&T Compact for Excellence in Research and Creative Works

Missouri S&T is a research university, and the knowledge created by members of our community serves as a beacon for the state of Missouri and beyond. As the premier public science- and engineering-focused university in the state of Missouri, we strive to secure our place among the nation's leading academic research institutions. Research and scholarship are vital to S&T's mission, because they constitute the innovation engine that creates new knowledge and produces the next generation of scientists and scholars equipped to solve society's grand challenges and fuel economic growth. In addition to inspired teaching, research and scholarly activities are at the heart of our campus; as a result, our culture of research and scholarship is strong. Missouri S&T will emphasize this culture of research and scholarship even further through highly focused and goal-driven recruitment and retention strategies for research-active faculty, improved processes to increase faculty engagement, and increased quality and impact of published scholarship in a wide range of disciplines.

Of primary importance to this strategic plan is Missouri S&T's commitment to achieve the highest classification in the Carnegie Classification of Institutions of Higher Education. Currently, Missouri S&T is included in the list of R2: Higher Research Activity universities; we aspire to be among the list of R1: Highest Research Activity universities. Doubling our annual research expenditures by 2025 is an audacious but achievable goal that will contribute to this higher classification and raise our stature on the national and international stage. To reach this goal, we intend to increase Ph.D. student enrollment and annual number of doctoral degrees granted, increase research-faculty and postdoctoral positions, and improve the effectiveness of faculty obtaining extramural funds to support graduate students, postdocs, and visiting scientists and scholars.

## 3 Missouri S&T Compact for Excellence in Engagement and Outreach

Increasing the value and opportunity that Missouri S&T provides our stakeholders depends on how well we engage with and reach out to individuals and groups across Missouri and beyond. Our state faces numerous daunting challenges in education, technological innovation, health and wellness, business and economics, infrastructure, workforce development, and many more areas. At Missouri S&T, we understand our responsibility to help solve these challenges, and recognize that the work done on our campus benefits not only current students, but also public- and private-sector partners, national laboratories, national security interests, K-12 educators and their students, and Missourians from all walks of life. Missouri S&T already has robust relationships with many such partners, and we will do more to increase opportunities for engagement with members of all these groups. By focusing our efforts to extend the power and reach of our campus, we will increase the numbers of industry and government partners, alumni engaged in advocacy, scientific and intellectual communities, and Missourians affected by the important work we do.

## 4 Missouri S&T Compact for Inclusive Excellence

At Missouri S&T, we embrace diversity in its many forms, and create a welcoming, inclusive, and supportive environment in which to learn, to teach, and to work. Our university's strength flows from our wide range of experiences, backgrounds, disciplinary specialties, and perspectives, and we believe in treating all members of our campus community with respect. Because we know that increased diversity leads to increased opportunities for all, Missouri S&T is committed to fostering an inclusive environment that celebrates diversity. We understand that diversity and inclusion promote collaboration and increase the impact of our work. Thus, we will develop and implement strategies to actively recruit and retain faculty, staff, and students from diverse backgrounds and experiences, and will provide additional professional development opportunities related to diversity and inclusion. Missouri S&T pledges to make every effort to provide a safe and respectful atmosphere for all, to promote these values and practices that celebrate diversity and inclusion within communities beyond our campus, and to uphold the importance of intellectual discourse, including challenging but informative dialogue, as

a hallmark of academic excellence.

## 5 Missouri S&T Compact for Excellence in Planning, Operations, and Stewardship

As a public research university, Missouri S&T understands its obligations to the people of Missouri who provide many of the resources required for us to achieve our goals. Responsible and transparent stewardship of these resources is at the heart of our mission to serve this state and its people. We will continue to streamline our business processes to yield efficiencies, and enhance our budget processes to more effectively support the strategic objectives identified in this plan. We will partner with our fellow UM System universities to further identify ways to share services and develop more efficient ways of doing business, including in our human resources, information technology and finance operations. Furthermore, Missouri S&T commits to offering salaries commensurate with recruiting and retaining the most talented faculty and staff, to achieve the ambitious objectives outlined in these Compacts. Finally, we pledge to leverage the strengths and collaborative possibilities that exist within the four-campus University of Missouri System model to optimize the research, teaching, and engagement conducted on our campus and beyond.

## ■ Conclusion

Achieving the many outcomes described in the Missouri Compacts will neither be easy nor quick. We believe, though, that thoughtful, transparent, and goal-driven decisions about how best to reallocate resources to reach the objectives outlined in this plan will yield outstanding results.

Resources are undeniably important for implementing a strategic plan, but Missouri S&T recognizes that they are not the only catalyst. The passions and aspirations of talented faculty, staff, and students are what make a university truly successful. The process of developing these five Missouri Compacts has given us the opportunity to reflect on the many things that we already do well, and to heighten our excitement about tackling the challenges that lie ahead. We at Missouri S&T are confident that our efforts in the service of our "Elevating Missouri Through Education and Research" plan will make our university an even greater place to work, to learn, to teach, and to conduct research that will continue to transform our state and change the world.

# EXCELLENCE IN STUDENT
# SUCCESS

Striving for excellence in academic quality and diversity, learning experiences, flexible paths to learning and degree completion, professional development, retention and graduation rates, career outcomes, and affordability.

# Objective 1: Increase quality of the student experience

<span style="background:green">Strategy A</span>

## Provide student services and experiences to maximize career success

### INITIAL TACTICS

- Continue to expand student exposure to potential employers by hosting high-impact engagement opportunities
- Develop strategies to help students connect the value of co-curricular experiences to career success
- Increase the number of students engaged in externship, internship, and co-op programs to improve career outcomes.
- Build bridges with peer graduate programs, and increase awareness of opportunities in graduate school
- Facilitate strong applications to graduate schools and prestigious fellowships
- Continue to develop and maintain relationships with key employers, including those who don't currently hire S&T students
- Improve career outcomes rate

*Unit Owner: Vice Chancellor of Student Affairs*

*Administrative Manager: Vice Chancellor of Student Affairs*

### METRICS

- Increase career outcomes rate, including graduate school placement
- Achieve 100% participation of undergraduate students in experiential learning by 2023
- Increase the number of programs and services designed to enhance student professional development
- Increase the number of high-impact employer events
- Increase the number of students engaged in externship opportunities
- Increase the number of students engaged in internship opportunities
- Increase the five-year average of students engaged in co-op opportunities
- Increase the number of unique employers.
- Maintain 100% employer satisfaction with S&T hires
- Increase the number of on-campus, first year students completing an engagement path

### ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Internal reallocation and new revenue for specific high-demand, high-cost services; student, employer, and user fees
  - » Collaborative initiatives and partnerships
  - » Corporate partner donations and/or sponsorships
- Implementation
  - » Continue to adjust and enhance programs and services to reflect changing workplace demands
  - » Revise COER liaison roles to cultivate new relationships and enhance existing relations with corporate and academic departments

## METRICS

- Increase counselor five-year average satisfaction level
- Increase percent of eligible students reporting that access to health and wellness services meet their needs
- Increase intramural participation by 10%
- Increase average annual number of participants engaged in STEP UP! bystander intervention from 634 in 2017
- Expand the number of initiatives supporting mental well-being
- Increase the number of consultations and care coordination through UCARE
- Increase overall satisfaction with Student Health Services
- Increase average daily usage of the S&T Fitness Center

## ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  » Reallocation through restructuring, resulting in increased efficiency and effectiveness and improved business practices
  » Student fees, user fees, and GRA funds
  » Counseling budget
  » Student Health Services budget
  » Miner Wellness budget
  » Partners In Prevention (PIP) funds
  » Title IX support funding
- Implementation
  » Develop a Culture of Care Committee
  » Complete staffing reallocation and restructuring; FY19
  » Complete Fitness Center expansion by April 2019; funding of project dispersed over years

### Strategy B

## Enhance access to and quality of health and wellness programs and services

### INITIAL TACTICS

- Establish and enhance culture of care to support mental health well-being
- Continue to provide consultation and care coordination for UCARE referrals regarding students of concern
- Continue to engage the Student Health Advisory Committee to ensure the range of health services are meeting student needs
- Continue to enhance bystander intervention programming
- Achieve and maintain student health services accreditation through the Accreditation Association for Ambulatory Health Care
- Complete the S&T Student Fitness Center expansion project

*Unit Owner:* Associated Center Directors

*Administrative Manager:* Vice Chancellor of Student Affairs

## Strategy C

## Improve the quality of first-year experience

### INITIAL TACTICS

- Restructure Freshman Engineering Program and other first-year programs; implement an "all-majors" first-year experience

- Increase the number of first-year advisers by 50%

- Increase student usage of Student Success Center and peer mentors

- Implement award program for faculty champions of first-year student success

- Reinvent Honors Program for an enhanced S&T experience

*Unit Owner: Provost, Vice Provosts, Center for Advancing Faculty Excellence (CAFE)*

*Administrative Manager: Provost*

### METRICS

- Increase first year retention rate to 85% by 2023 from 81% in 2017

- Reduce the first-year retention gap between general student body and Pell recipients

- Improve National Survey of Student Engagement (NSSE) first-year engagement indicator(s)

- Increase enrollment of students participating in Freshman Honors Program

- Reduce the first-year retention gap between general student body and underrepresented and minority students

### ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Reallocation
  - » Charitable gifts
- Implementation
  - » FYE — First Year Experience Program initiation
  - » Re-establish Honors Program — using as recurring tool

# Objective 2: Enhance student learning by supporting teaching excellence

## Strategy A

### Promote teaching excellence through mentorship and programs that enrich the quality and effectiveness of teaching

#### INITIAL TACTICS

- Expand CAFE mentorship and teaching improvement programs
- Disseminate and implement results from IFC committee report for evaluating teaching effectiveness
- Increase participation in CAFE and Instructional Design and Development (IDD) team events
- Identify and pursue external teaching honors and awards through the faculty external rewards and recognition committee

*Unit Owner:* Provost, CAFE, University Advancement, Provost Office

*Administrative Manager:* Provost, University Advancement

#### METRICS

- Increase number of teaching programs developed and implemented by CAFE by 2023
- Increase number of unique awardees for internal teaching excellence (Committee on Effective Teaching Outstanding Teaching Awards, Campus Teaching Awards, Curators' Distinguished Teaching Professors, System Awards)
- Increase number of external teaching awards

#### ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » CAFE budget
  - » Charitable gifts
- Implementation
  - » Execute CAFE programs for teaching improvement
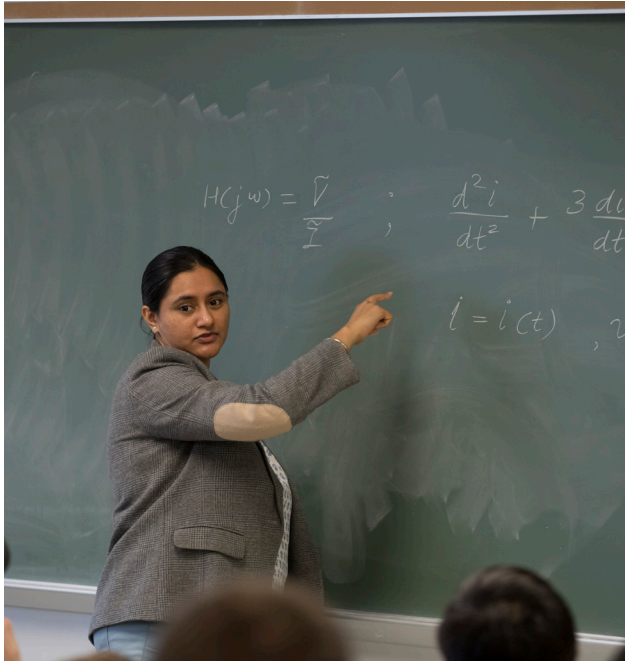
## Strategy B

### Support the development of innovative teaching methods and strategies

#### INITIAL TACTICS

- Create or expand peer-tutoring program for high-failure-rate classes that employs students who have successfully completed the classes
- Collaboration between CASB and CEC faculty to hone advanced math curricula to needs of engineering majors
- Establish Ten Steps to Teaching Success program through CAFE
- Increase investment in classroom expansions and renovations
- Enhance access to flexible classroom configurations
- Promote teaching innovation through CAFE and IDD team initiatives

*Unit Owner:* Provost, CAFE, IDD team, Advancement, Facilities Services

*Administrative Manager:* Provost

## Strategy C

## Respond to student evaluations of teaching each semester

### INITIAL TACTICS

- Reward high teaching performance with accolades and recognition
- Address instances of poor performance (department chairs of faculty with teaching scores below 2.0 for two consecutive semesters will encourage faculty members to engage in CAFE mentoring activities, department chair mentoring)

*Unit Owner: Vice Provosts and Deans, Department Chairs*

*Administrative Manager: Provost*

### METRICS

- Decrease the percentage of sections in which faculty receive teaching scores below 2.0 during the academic year

### ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  » Reallocate as needed
- Implementation
  » Tie need to increase teaching evaluations with CAFE resources
  » Tie teaching excellence with merit raises

### METRICS

- Increase the percent of courses enhanced through equipment acquisition and facility improvement
- Number of classrooms added or enhanced
- Number of faculty supported in CAFE eFellows program
- Increase number of faculty served in CAFE Mini-Grant program
- Raise funds for the Classroom Learning Center

### ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  » CAFE budget
  » IDD team resource
  » Investment of campus reserves and gifts
- Implementation
  » Execute CAFE programs for teaching innovation
  » Classroom renovation

## Strategy D

### Increase and improve educational resources commensurate with enrollment growth

#### INITIAL TACTICS

- Increase availability of large, flexible classroom space
- Use Information Technology (IT) innovations to improve efficiency of classroom use
- Increase faculty commensurate with enrollment growth

*Unit Owner: Department Chairs, Facilities Services, Provost*

*Administrative Manager: Provost*

#### METRICS

- Increase classroom utilization efficiency

#### ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Reallocation
  - » Fees
  - » Charitable gifts
- Implementation
  - » Plan for new classroom facility
  - » Execute improved use of existing classrooms

# Objective 3: Maintain affordability

### Strategy A

## Increase opportunities and recruitment from underserved parts of the state, focusing underrepresented students

### INITIAL TACTICS

- Increase scholarship support for high-quality first-time students

*Unit Owner: Enrollment Management, University Advancement*

*Administrative Manager: Provost*

### METRICS

- Increase the number of underrepresented students to 1,000 by 2023 from 796 in 2017
- Increase on-campus undergraduate enrollment to 7,250 by 2023 from 6,801 in 2017
- Increase the number of scholarship dollars awarded to first-generation and underrepresented students

### ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Reallocation
  - » Charitable gifts
- Implementation
  - » Develop strategic enrollment marketing plan to inform strategy to raise charitable gifts for scholarships
  - » Conduct fundraising feasibility study

### Strategy B

## Minimize student expenses for textbooks and course materials

### INITIAL TACTICS

- Encourage faculty to use and produce free or low-cost open-source materials
- Encourage faculty participation in Open Education Resources (OER) program
- Increase faculty commensurate with enrollment growth

*Unit Owner: Department Chairs, Global Learning*

*Administrative Manager: Provost*

### METRICS

- Increase the number of courses using open-source textbooks
- Increase the number of course sections with a weighted average educational resource cost of less than $100
- Increase the number of AOER grants awarded to faculty

### ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Incidental
- Implementation
  - » Notify and monitor

## Strategy C

# Increase number of affordable master's degree opportunities

### INITIAL TACTICS

- Increase number of 4+1 programs
- Increase number of students in 4+1 programs
- Increase the enrollment of highly qualified non-thesis master's students
- Increase number of online and non-thesis master's degree programs
- Establish one fully online/distance undergraduate certificate or degree program

*Unit Owner:* *Graduate Studies, Deans, Department Chairs, Global Learning*

*Administrative Manager:* *Provost*

### METRICS

- Increase on-campus master's enrollment to 600 by 2023 from 500 in 2017
- Increase distance master's enrollment from 400 in 2017 to 500 in 2023
- Increase from 0 to 1 fully online/distance undergraduate certificate or degree program by 2023

### ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  » Tuition growth
- Implementation
  » Balance non-research master's programs with research-focused for economic leverage
  » Better use graduate class capacity

## Strategy D

# Increase flexible pathways to degree completion

### INITIAL TACTICS

- Convert all minors to optional certificates and tailor for industry needs
- Create three-year schedule of future course offerings for each department to allow students and advisors to more effectively plan degree completion strategies
- Work with registrar to identify course bottlenecks and eliminate or minimize them
- Encourage departments to develop distance degree programs
- Develop new collaborative programs with other UM System campuses to increase the pipeline of transfer students
- Ensure seamless transition of transfer students

*Unit Owner:* *Department Chairs, Deans, Global Learning, Enrollment Management, Graduate Studies, Vice Provost for Academic Support*

*Administrative Manager:* *Provost*

### METRICS

- Increase percentage of distance learning and online courses as measured by student credit hour to 15% of total in 2023 from 6% in 2017
- Increase number of distance degree programs to 20 in 2023 from 18 programs in 2017
- Maintain or exceed the number of current certificate programs (Graduate Certificates)
- Maintain or exceed the number of current certificate programs (Undergraduate certificates)
- Increase the number of undergraduate certificates obtained

## ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Reallocation
  - » Fees
- Implementation
  - » Gather input from corporate partners on relevant certificate programs
  - » Revise certificate offerings accordingly

## Strategy E

### Increase opportunities to shorten time-to-degree completion for both undergraduate and graduate students

## INITIAL TACTICS

- Reduce bottleneck courses by increasing classroom capacity and adding online options
- Improve advising to ensure efficient course selection and progress toward degree
- Develop strategies for capping tuition costs to encourage greater number of credits completed per semester
- Promote curricular activities such as advanced placement testing and transfer credits
- Enhance student professional and developmental advising and mentoring
- Review degree programs to increase flexibility and reduce requirements
- Review schedule frequency of required courses

*Unit Owner:* Department Chairs, Deans, Provost, Enrollment Management

*Administrative Manager:* Provost

## METRICS

- Increase six-year graduation rate to 70% by 2023 from 64% in 2017
- Increase six-year graduation rate of Pell recipients by 16% to 65% by 2023
- Increase six-year graduation rate of underrepresented minority students by 22% to 60% by 2023

## ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Reallocations
  - » New growth
- Implementation
  - » Initiate conversations with Department Curriculum Committees — Academic Retreats
  - » Establish optional professional advisor program for all undergraduate students

# Objective 4: Increase access for capable students

### Strategy A

## Increase the enrollment of highly qualified undergraduate students

### INITIAL TACTICS

- Implement College of Arts, Sciences, and Business (CASB) Dean's scholarship ($3K/year for 4 years; one new one awarded each year; CASB has set aside $100K already)
- Offer free Project Lead The Way training by CASB for every elementary and secondary education student
- Evaluate and revise admission requirements
- Work with UM System President to revise recruitment practices
- Raise Missouri S&T admission status from "selective" to "highly selective
- Increase scholarship support for highly qualified students

**Unit Owner:** *Enrollment Management, Provost, Chancellor*

**Administrative Manager:** *Chancellor*

### METRICS

- Increase the mean ACT score to 29.5 by 2023 from 28 in 2017
- DHE approval of selectivity status (completed in June 2018)

### ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Reallocation
  - » Charitable gifts
- Implementation
  - » Focused recruitment
  - » Formal application request for selectivity status — UM System and Missouri Department of Higher Education

# EXCELLENCE IN RESEARCH AND CREATIVE WORKS

Striving for excellence in intellectual merit and broader impact, extramural research, high-quality publications and citations, faculty awards and recognition, curated exhibits, and juried performances.

# Objective 1: Build a culture with increased emphasis on high-impact research and scholarship

## Strategy A

### Build a culture with increased emphasis on high-impact research and scholarship

#### INITIAL TACTICS

- Develop policies that support a culture of research
- Streamline administrative and research-support functions
- Implement best practices used at highly successful peer and aspirational-peer universities
- Manage workload policy to appropriately distribute faculty time for scholarly activity
- Develop proactive departmental recruitment and retention plans for top researchers
- Develop programs to enable tenured researchers to reengage in significant research

*Unit Owner: Provost, Vice Provosts, Vice Chancellors, CAFE, Department Chairs*

*Administrative Manager: Chancellor*

#### METRICS

- Increase dollar amount of research proposals
- Increase percent of approved departmental workload policies

#### ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  » Reallocation and additional revenue from new research
- Implementation
  » Initiate reviews of workload policies and implement changes as needed
  » Promote CAFE resources for transitioning faculty
  » Initiate recruitment/ retention plans

## Strategy B

### Pursue the establishment of nationally recognized, externally funded research centers

#### INITIAL TACTICS

- Leverage external partnerships and inter-institutional collaborations within the UM System and beyond
- Provide resources and support for the development of proposals pursuing federally funded centers

*Unit Owner: Faculty, Office of Sponsored Programs, Department Chairs*

*Administrative Manager: Vice Chancellor for Research and Dean of Graduate Studies*

#### METRICS

- Increase number of nationally recognized, externally funded research centers or consortia established — 2 new centers or consortia by 2023
- Increase number of center-level proposals submitted

## ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Reallocation
  - » One-time funds for matching
- Implementation
  - » Initiate internal competitions for new center concepts
  - » Promote CAFE resources for transitioning faculty

**Strategy C**

## Increase number of faculty recipients of national awards and recognition

### INITIAL TACTICS

- Recruit and hire highest quality junior-level faculty and provide support to jump start their careers
- Department chairs analyze which faculty should be nominated for specific awards/honors
- The Faculty External Rewards and Recognition Committee coordinates and monitors the pursuit of these awards at the departmental level, and is in charge of nominations for the National Academy

*Unit Owner:* Chairs, Provost

*Administrative Manager:* Deans and Provost

## METRICS

- Increase number of new faculty hires who earn CAREER, NEH, and other awards pre-tenure at S&T.

- Increase the number of faculty recipients of nationally recognized awards (e.g. National Academies) by 2023

- Increase the number of successful nomination of at least two faculty for the National Academy of Science or Engineering by 2023

- Increase the number of faculty who made Fellow in a professional society.

- Increase the number of faculty who receive professional society awards

## ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Provost fund for major faculty awards — make permanent and work with Advancement to enhance charitable giving and private-sector investment

- Implementation
  - » Change nominating committee to focus on national and international awards

# Objective 2: Achieve highest classification in Carnegie rankings

## Strategy A

### Increase annual research expenditures by 100%

### INITIAL TACTICS

- Build on computational and analytical strengths of S&T to bridge computer science with computational biology and participate more fully in UM System Translational Precision Medicine Initiative

- Hire faculty and research scientists to bridge S&T with National Geospatial-Intelligence Agency development and expansion in St. Louis

- Adjust faculty workload policies to support increased research focus

- Provide resources to faculty to support research

- Increased quality and quantity of graduate research assistants

- Join multi-institutional consortia

*Unit Owner:* Vice Chancellor for Research and Dean of Graduate Studies, Deans, Department Chairs

*Administrative Manager:* Vice Chancellor for Research and Dean of Graduate Studies

### METRICS

- Increase annual research expenditures to $70M by 2025 from $35M in 2017

- Increase on-campus Ph.D. enrollment to 750 by 2023 from 654 in 2017

### ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Reallocation
  - » Philanthropy
  - » Private-sector and governmental support
  - » Additional research overhead
- Implementation
  - » Continue facilities expansion and major laboratory/ equipment acquisition
  - » Join and/or lead major research consortia

## Strategy B

### Increase number and quality of scholarly works

### INITIAL TACTICS

- Recruit and hire faculty who bring new ideas and interdisciplinary approaches to teaching and research (e.g. bridge humanities and computer sciences)

- Establish baseline scholarly works productivity numbers at the university and departmental levels

- Develop measures of scholarship quality by department

*Unit Owner:* Vice Chancellor for Research and Dean of Graduate Studies, Chairs

*Administrative Manager:* Chairs and Deans

### METRICS

- Increase number of faculty and research scholars bridging departments and colleges through new centers (Rural Vitality and Community Engagement) and joint appointments

- Increase the number of citations by 15% by 2023

- Increase overall number of publications by 10% by 2023

## ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Reallocation
  - » Philanthropy/grants
  - » Additional research overhead
- Implementation
  - » Establish individual faculty goals for 5-year period (consistent with colleges' workload expectations)

### Strategy C

## Increase doctoral degree productivity

### INITIAL TACTICS

- Develop joint Ph.D. programs within the UM System
- Develop comprehensive enrollment-management strategy that includes recruitment of Ph.D. students
- Develop programs that facilitate recruitment of Ph.D. students
- Develop programs and policies that support Ph.D. students (e.g. Writing Bootcamp, future faculty programs, bridge funding)

**Unit Owner:** *Faculty, Department Chairs, Office of Graduate Studies, Vice Chancellor of Research and Dean of Graduate Studies*

**Administrative Manager:** *Vice Chancellor of Research and Dean of Graduate Studies*

## METRICS

- Achieve 0.5 Ph.D. graduates per faculty per year by 2023
- Increase number of students participating in activities sponsored by Graduate Studies

## ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Reallocation
  - » Philanthropy/grants
  - » Additional research overhead
- Implementation
  - » Explore joint Ph.D. program with other UM System universities
  - » Integrate Ph.D. student recruitment into enrollment management strategies

# EXCELLENCE IN ENGAGEMENT AND OUTREACH

Striving for excellence by building a climate that values the diverse background, experiences, and perspectives of each individual; effective programs for educational, health, cultural, economic, and social outreach with local, state, and global communities; and innovative partnerships with industry for economic and workforce development.

# Objective 1: Inspire students to pursue careers in STEM (science, technology, engineering, mathematics) disciplines

## Strategy A

### Inspire Missouri S&T students to become certified K-12 teachers particularly in underserved areas and in STEM disciplines

#### INITIAL TACTICS

- Introduce and implement interdisciplinary business and education program
- Market new Teacher Education and Certification Department

*Unit Owner:* Provost

*Administrative Manager:* Chair of Teacher Education and Certification Department. Enrollment Management, Marketing and Communications

#### METRICS

- Grow enrollment in the Teacher Education and Certification Department commensurate with Missouri's need by 2023

#### ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Reallocation of scholarship funds
- Implementation
  - » Develop strategic enrollment marketing plan

## Strategy B

### Sustain and enhance engagement with K-12 educators and students

#### INITIAL TACTICS

- Develop and implement programs for K-12 teachers in STEM discipline
- Recruit K-12 students into S&T summer programs
- Recruit funding source to sustain S&T summer programs and scholarships for students
- Develop partnerships with select STEM-focused nonprofits such as Kaleidoscope Discovery Center (KDC)

*Unit Owner:* Provost

*Administrative Manager:* Provost

#### METRICS

- Increase the number of Missouri counties participating in Project Lead The Way to 64 by 2023 from 58 in 2017
- Increase the number of educators participating in the South-Central Regional Professional Development Center by 3% by 2023
- Increase the number of students attending summer camps to 600 by 2023 from 470 in 2017

#### ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Corporate matching funding
- Implementation:
  - » PLTW outreach
  - » Establish memoranda of understanding with KDC and other STEM-focused nonprofits

# Objective 2: Serving industry and community needs

## Strategy A

### Increase economic impact of S&T-developed technologies

#### INITIAL TACTICS

- Market to faculty the process and benefits of patenting ideas
- Market university IP to potential licensees

*Unit Owner:* Vice Provosts and Deans

*Administrative Manager:* Provost

#### METRICS

- Increase the annual number of patents and intellectual property licenses issued by 25% by 2023

#### ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Existing funding
- Implementation
  - » Assign to appropriate internal committees, departments, and/or programs
  - » Address in college and unit strategic plans

# Objective 3: Community and state engagement

## Strategy A

### Expand service-learning opportunities and senior design capstone projects

#### INITIAL TACTICS

- Obtain Community Engagement Classification by the Carnegie Foundation for the Advancement of Teaching
- Benchmark and promote development of service learning activities
- Benchmark the senior design capstone projects that serve Missouri industry
- Promote participation in senior design by developing a master template for funding projects. Market this opportunity to Missouri industry

*Unit Owner:* Department Chairs

*Administrative Manager:* Provost

#### METRICS

- Increase the number of students participating in service learning projects and capstone projects
- Increase the number of uniquely sponsored service learning and capstone projects
- Increase the number of Missouri companies sponsoring a senior design capstone project by 5% year

## ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Reallocation
  - » Philanthropy
  - » Corporate support
- Implementation
  - » Apply for Community Engagement Classification from the Carnegie Foundation
  - » Develop appropriate service-learning benchmarks
  - » Develop master template to market to Missouri industry

## Strategy B

### Increase awareness of, and improve access to, university expertise

## INITIAL TACTICS

- Develop "Math and Science Night" activities at key high school and community college partners
- Promote students, faculty, and staff to serve as advisors to local FIRST robotics groups at regional high schools
- Develop programs and policies that encourage and reward faculty and staff to participate in community and state service-related activities

*Unit Owner: Provost*

*Administrative Manager: Deans*

## METRICS

- Participate in "Math and Science Night" at key high schools five times per year by 2023
- Host ≥2 STEAM-related competitions (e.g. science fairs, history day etc.) per year by 2023
- Increase faculty involvement in regional, community and state service engagement via My VITA

## ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Reallocation of existing funding
- Implementation
  - » Create "Math and Science Night"
  - » Implement policies that encourage faculty and staff engagement in service activities

# Objective 4: National and international engagement

**Strategy A**

Encourage partnerships and collaborations that promote Missouri S&T's values, enhance our regional, national, and global reputation, and increase our visibility and ranking

## INITIAL TACTICS

- Increase S&T name recognition by increasing number of international partnerships
- Monitor S&T-relevant metrics to improve ranking on Quacquarelli Symonds (QS), U.S. News & World Report, Academic Ranking of World Universities (formerly Shanghai Rankings) in conjunction with compact two

*Unit Owner: International Affairs, Vice Chancellor for Research and Dean of Graduate Studies, Executive Director of Marketing and Communications*

*Administrative Manager: Deans, International Affairs*

## METRICS

- Increase number of international contracts and collaborative relationships secured by 15% by 2023
- By 2023 increase standings in QS rankings by 100 points
- Increase the number of international students enrolling at S&T from visiting scholar's institutions

## ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  » Reallocation
  » Federal and non-governmental organization funding
- Implementation
  » Increase formal international partnerships and agreements

# INCLUSIVE EXCELLENCE

Striving for excellence by building a climate that values the diverse background, experiences, and perspectives of each individual; effective programs for educational, health, cultural, economic, and social outreach with local, state, and global communities; and innovative partnerships with industry for economic and workforce development.

# Objective 1: Foster an inclusive environment



### Strategy A

**Implement the Inclusive Excellence Framework to create a campus environment where individuals of diverse backgrounds are able to engage in teaching, learning, research and engagement activities and to promote the same values in the community that we serve**

## INITIAL TACTICS

- Collaborate with local retailers, service providers, and government entities to provide educational opportunities in diversity and inclusion for front-line staff and hiring managers

- Promote cultural education events both on and off campus by working with local and regional resources in the arts and sciences

- Engage with county and municipal leaders through "Let's Talk" series to address barriers in the community for underrepresented and minority (URM) students, faculty and staff

- Partner with non-partisan groups such as American Public Square to bring together non-like-minded people for fact-based, civil conversations about national, regional, and local issues.

- Increase number of students studying abroad by increasing amount/number of scholarships for Study Abroad program

**Unit Owner:** *Provost, Vice Chancellors*

**Administrative Manager:** *Chief Diversity Officer*

## METRICS

- Increase satisfaction levels of underrepresented and minority faculty, staff and students from 70% in 2017

- Increase satisfaction levels of female faculty, staff and students to 86% by 2023 from 76% in 2017

- Increase satisfaction levels of international students to 70% by 2023 from 60% in 2017

- Increase satisfaction levels of individuals with disabilities to 77% by 2023 from 67% in 2017

- Increase satisfaction levels of Veterans to 80% by 2023 from 70% in 2017

- Increase satisfaction levels of multiple race individuals to 72% by 2023 from 62% in 2017

## ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Internal reallocation
  - » Student support through grants and contracts
  - » Philanthropy
- Implementation
  - » Implement Orientation Week Missouri S&T Values training for all first-year students
  - » Implement media campaign — Diversity is a Shared Value at S&T

## Strategy B

## Provide additional professional development opportunities related to competency development in diversity and inclusion

### INITIAL TACTICS

- Ensure personnel staffing is adequate to allow growth in campus-wide training and competency development operations
- Encourage faculty to pursue international and URM educational opportunities

*Unit Owner: Provost, Vice Chancellors*

*Administrative Manager: Chief Diversity Officer*

### METRICS

- Double the variety of professional development sessions related to diversity and inclusion competencies (from 3 to 6) by 2023
- Double the number of participants in professional development opportunities by 2023
- Increase diversity competency scores in systemwide appraisal tool

- Increase number of faculty applying for the international partnerships with the University of South African Education Program

### ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Internal reallocation
  - » External support from grants, contracts, and international entities
- Implementation:
  - » Implement national speaker series on diversity and inclusion
  - » Develop and communicate comprehensive guide for supervisors to evaluate in appraisal tool the success indicators in diversity

## Strategy C

Encourage the development of new and existing curricular and co-curricular programs that promote academic and personal growth of traditionally underserved students and the continued edification of majority student populations

### INITIAL TACTICS

- Secure dedicated funding for URM (underrepresented and minority) Peer Mentor Program

- Ensure funding for curriculum redesign mini grants is available fall 2019 and promoted thoroughly to faculty

- Launch student-focused Diversity Leadership Council to encourage greater participation in and leadership of cultural events and programs

- Work with faculty to integrate diversity and inclusion competencies seamlessly into First Year Experience (FYE) curriculum

- Work to increase charitable giving in support of scholarships for study abroad

- Develop formal Visiting Scholar Program with URM and international theme

- Encourage and fund mini proposals to serve as development/seed funds for faculty to obtain URM and international educational experiences

**Unit Owner:** *Provost, Vice Chancellors*

**Administrative Manager:** *Chief Diversity Officer*

### METRICS

- Increase the number of URM students who enroll in the Peer Mentor Program

- Triple the number of awarded mini grants for curriculum redesign from 5 to 15 by 2023

- Increase frequency of campus-wide cultural events and programs (TBD)

- Increase the number of diversity and inclusion competencies embedded in First Year Experience course

- By 2023 double number of students having international experiences

### ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Internal reallocation
  - » Student support through grants and contracts
  - » Philanthropy
- Implementation
  - » Implement and assess URM Peer Mentor Program
  - » Implement formal Visiting Scholar Program
  - » Implement new FYE and assess satisfaction/ knowledge competencies

# Objective 2: Diversify community through increased recruitment focus

## Strategy A

**Develop and implement a recruitment and retention plan with the goal of achieving a diverse faculty and staff community that represents differences in perspective, experience, and background.**

### INITIAL TACTICS

- Assess best practices at successful universities in these areas
- Establish department-level plans for recruitment and retention of a diverse faculty and staff community that represents differences in perspective, experience, and background.
- Make funding for Americans with Disabilities Act accommodations more available for departments

*Unit Owner: Provost, Vice Chancellors*

*Administrative Manager: Chief Diversity Officer*

### METRICS

- Monitor applicant pools for faculty and staff positions to ensure the presence of qualified and diverse candidates that represent differences in perspective, experience, and background.
- Recruiting and retention plan implemented by 2019

### ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  » Reallocation
- Implementation
  » Implement S&T-relevant best practices gleaned from aspirational universities in areas of URM faculty and staff recruitment and retention

## Strategy B

**Enhance campus undergraduate and graduate student recruitment plans**

### INITIAL TACTICS

- Increase URM scholarship funding and awards
- Increase the Chancellor's Distinguished Fellowship award for URM Ph.D. candidates
- Expand international recruitment portfolio
- Engage international alumni in recruitment efforts
- Increase number of international alumni events; number of alumni assisting with recruitment fairs abroad

*Unit Owner: Provost*

*Administrative Manager: Deans*

### METRICS

- Increase percent of underrepresented and minority undergraduate students to 15% by 2023
- Double underrepresented master's and Ph.D. students to 15% by 2023
- Increase number of dedicated scholarship funds for URM recruitment
- Increase total number of unique yearly activities involving visiting scholars

## ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Reallocation
  - » Revenue generating programs (growth)
  - » External philanthropy/grants

- Implementation
  - » Develop strategic enrollment marketing and financial aid plans
  - » Hire a diversity-focused undergraduate recruiter

# Objective 3: Communicate the value and importance of diversity and inclusion

## Strategy A

### Continue to review current marketing and communications plan to emphasize culture of inclusion and enhanced internationalization

## INITIAL TACTICS

- Conduct market research specific to underrepresented and minority populations
- Develop and market workshops accessible to local community members
- Use existing partnerships and events (e.g. Celebration of Nations) to market other cultural programs to the surrounding community

**Unit Owner:** *Provost, Vice Chancellors, Executive Director of Marketing and Communications*

**Administrative Manager:** *Chief Diversity Officer*

## METRICS

- Develop a communication strategy that markets S&T to a more diverse population
- Increase the number of workshops accessible to local community members focused on Diversity & Inclusion competencies; 5 developed and available by 2023
- Increase number of events that highlight S&T's inclusive environment and are open to the community

## ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Reallocation
  - » Philanthropy/grants
  - » Additional research overhead

- Implementation:
  - » Expand on and refine marketing and communications initiatives that have proven successful (such as "Respect" video, website features about areas of concern related to marginalized or underrepresented groups, diversity representation in marketing materials, and inclusive, welcoming language in marketing materials as directed by brand strategy)
  - » Recurring market research

# EXCELLENCE IN PLANNING, OPERATIONS, AND STEWARDSHIP

Striving for excellence in long-term planning processes for operating and capital needs, measures of accountability visible to all stakeholders, processes, practices, and policies that encourage collaborations and progress across the four institutions of the UM System, and a change in organizational structures to achieve the objectives of the research, teaching, and engagement mission.

# Objective 1: Increase transparency and efficiency of business services and fiscal operations



## METRICS

- Develop communication plans for campus support services to internal customers

## ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Reallocation
  - » Efficiency from improved processes
- Implementation:
  - » Identify units for review and prioritize
  - » Document service deliverables and communicate to campus community
  - » Develop and communicate performance metrics to campus community

## Strategy A

### Evaluate and redesign campus units' funding model and service providers to increase service, efficiency and transparency

## INITIAL TACTICS

- Identify and review all campus services that are funded by fees and redesign as needed
- Communicate services provided from general allocations versus extra/premium services provided on fee basis clearly to campus community
- Review all recharge service operations every five years and communicate results to campus community

**Unit Owner:** *Respective Vice Chancellors, Directors, and Managers of Service Units*

**Administrative Manager:** *Vice Chancellor for Finance and Operations*

**Strategy B**

## Redesign the budget revenue distribution and budgetary process to more effectively support campus-wide strategic objectives

### INITIAL TACTICS

- Evaluate and refine the budget revenue distribution process(es)

- Develop five-year operations financial plan

- Develop five-year plan for capital maintenance and renovation funding

- Develop five-year plan for parking operations and capital needs

- Review and improve indirect cost recovery distribution models to support research using best practices

- Develop five-year information technology capital plan

- Develop five-year plan for housing, dining, and student life reinvestments

*Unit Owner: Vice Provosts, Vice Chancellors*

*Administrative Manager: Vice Chancellor for Finance and Operations*

### METRICS

- Document and evaluate revenue distribution models

- Establish a 5-year rolling budget process

- Exceed Facilities Condition Needs Index (FCNI) target of .3

### ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources

  » Reallocation

  » Campus reserves

  » Gifts

  » New revenue

- Implementation:

  » Analyze the different revenue distribution processes that currently exist to determine where improvements can be made to increase efficiency, drive more strategic outcomes, and ensure incentives drive university optimization of strategic outcomes versus local optimizations

  » Develop five-year plans for operations and capital investment using an all-funds approach

  » Develop strategies to communicate financial and planning issues and strategies transparently to campus community

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### Strategy C

## Improve transparency and satisfaction of compensation decisions

### INITIAL TACTICS

- Generate a staff salary equity pool for each of the next five years to address salary inequities
- Invest 2% annually in faculty merit pool to reward meritorious faculty performance
- Invest 1% annually to address specific faculty equity, market, and retention issues
- Invest 2% annually in staff merit increases to reward meritorious staff performance
- Complete a staff analysis to identify and address appropriate placement of staff in titles and in grade range
- Invest 1% annually to address specific staff equity, market, and retention issues
- Improve data metrics and transparency of compensation adjustments

*Unit Owner: Vice Provosts, Vice Chancellors*

*Administrative Manager: Provost, Chancellor*

### METRICS

- Achieve faculty salaries to be competitive with peer universities by discipline by 2023
- Increase the proportion of staff paid greater than first quartile of their appropriate GGS grade
- Annually report results of merit pay distributions to the campus community

### ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Reallocation
  - » New revenue
- Implementation:
  - » Build merit and equity pools into annual budget process
  - » Deans work with faculty leadership to determine and communicate how faculty salaries will be evaluated against peers
  - » Invest in staff resources to complete the required staff analysis and improved data processes. This will be done using a phased approach.
  - » Required supervisor training with regard to setting and communicating expectations, performance evaluation, and management of staff

### Strategy D

## Improve effective use of all campus financial resources

### INITIAL TACTICS

- Conduct review of campus financial resource utilization
- Determine financial performance targets by unit
- Evaluate current reserve use practices to ensure campus optimization of financial reserves
- Departments should maintain a reserve level between 5% and 10% of their approved budgets. Reserves in excess of 15% require an asset utilization plan approved by the respective Dean or Vice Chancellor/Provost

*Unit Owner: Vice Provosts, Deans, Chairs*

*Administrative Manager: Vice Chancellor for Finance and Operations*

## METRICS

- Develop plans for utilization of restricted expendable funds
- Meet or exceed system-mandated investment for maintenance and repair
- Achieve or exceed financial performance targets by unit and campus

## ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Reallocation
  - » Improved efficiency of reserve utilization for campus priority investment
- Implementation
  - » Leadership team will work to develop appropriate unit financial and other performance targets and metrics for monitoring progress against those targets
  - » Finance team will conduct an analysis of campus financial resource utilization and reserve use practices for campus leadership review and planning
  - » Reserve asset utilization plans will be developed and monitored

## METRICS

- Implementation of process changes that provide same service levels at reduced cost or improved service levels at the same cost

## ANTICIPATED FUNDING SOURCES AND IMPLEMENTATION

- Potential Sources
  - » Reallocation
- Implementation:
  - » Collaborate on system-wide committees to determine how to best drive administrative efficiencies and process changes
  - » Collaborate across campus to identify areas, processes, services, and structures where opportunities for new or modified processes or ways of providing services could result in better outcomes, enhanced satisfaction, and/or lower costs
  - » Collaborate across campus to identify and eliminate services that are onerous, duplicative, no longer essential or cost effective

## Strategy E

## Streamline and improve efficiencies and service by increasing collaboration among the four campuses

## INITIAL TACTICS

- Implement satisfaction surveys
- Support (and lead in areas of S&T expertise) UM System initiatives in this area
- Review staff structure to improve service, satisfaction, and efficiency
- Review administrative and support processes for improved efficiency, satisfaction, and outcomes

*Unit Owner: Vice Provosts, Vice Chancellors*

*Administrative Manager: Vice Chancellor for Finance and Operations*

WE REMAIN COMMITTED TO USING OUR RESOURCES EFFICIENTLY AND EFFECTIVELY. WE WILL EXECUTE OUR MISSION WITH A COMBINATION OF COMMITMENT, EFFICIENCY, AND WISE RESOURCE ALLOCATION. WE WILL BE AGILE IN OUR RESPONSE TO EVOLVING NEEDS, AND WE WILL CONTINUE TO BE CREATIVE AS WE DEPLOY VALUABLE RESOURCES.

# CRITICAL ENABLERS

## The success of Missouri S&T's strategic plan depends on these five strategic enablers:

**1** World-class faculty form the essence of who we are. We are committed to recruit the very best faculty, train and mentor them to achieve their full potential, reward them appropriately to inspire them to succeed, and do our very best to retain their talents for a long and successful career. They provide the drive to discover through their research, the drive to excel through student mentorship, and the foundation of solid careers through academic excellence.

**2** High-quality staff are the backbone upon which we build the university structure. Without them, the institution would not be able to carry out its mission. We commit to recruiting and hiring the very best staff, training them to be successful members of our community, empowering them to reach greater heights, and rewarding them in ways that are commensurate with what they achieve.

**3** Infrastructure and academic support services are fundamental to progress as well. Top-quality facilities, technology, and library resources make top-quality teaching, research, and scholarship possible. We are determined to create a physical and intellectual environment that inspires and supports excellence.

**4** Sustained state resources are crucial to our success as Missouri's STEM-focused public university. While state resources become harder to find, we remain committed to providing the state with a substantial value for its investment. We are committed to a growing return on investment to encourage decisions that further extend this valuable resource.

**5** Funds from philanthropic sources are increasingly important to the vitality of our university. Our ability to engage and communicate with prospective donors demonstrates our true value to the community of our philanthropic friends. Missouri S&T has a long history of attracting philanthropic support, and proud alumni and corporate partners form the bedrock of private investment in the university. We commit to continued engagement, and we also will demonstrate a growing ROI on this most-valued investment.

# STRATEGIC PLAN COMMITTEE

**Robert Marley**
Provost and Committee Chair

**Braden Lusk**
Former Professor and Chair, Mining and Nuclear Engineering, and Committee Co-Chair

**Susan Murray**
Professor and Chair, Psychological Science, and Committee Co-Chair

**Stuart Baur**
Associate Professor, Civil, Architectural and Environmental Engineering

**Palash K. Bhowmik**
Ph.D. Student,
Nuclear Engineering
Council of Graduate Students President, 2017-18

**Doug Bristow**
Associate Professor, Mechanical and Aerospace Engineering

**Mariesa Crow**
Finley Professor of Electrical and Computer Engineering
Former Vice Provost, Research and Sponsored Programs

**Richard Dawes**
Associate Professor of Chemistry, representing Faculty Senate

**Kate Drowne**
Associate Dean, College of Arts, Sciences, and Business
Professor of English

**Lucretia Eaton**
Business Manager, Fiscal Services

**Edna Grover-Bisker**
Assistant Vice Chancellor, Student Affairs

**Anas Massri**
Assistant Vice Chancellor, Finance

**Cheryl McKay**
Director, Web and Interactive, Marketing and Communications

**Bruce McMillin**
Former Associate Dean, College of Engineering and Computing
Professor of Computer Science

**Madison Moore**
B.S. Student, Architectural Engineering, Student Council President,
2018-19

**Franca Oboh-Ikuenobe**
Professor, Geosciences and Geological and Petroleum Engineering

**Anthony Petroy**
Former Vice Provost, Global Learning

**Barb Prewett**
Assistant Dean of Students, Student Affairs

**Darlene Ramsay**
Assistant Vice Chancellor, Alumni Affairs and Advancement Services

**Chris Ramsay**
Assistant Vice Provost, Student Design and Experiential Learning

**V.A. Samaranayake**
Curators' Distinguished Teaching Professor, Mathematics and Statistics

**Sahra Sedigh Sarvestani**
Associate Professor, Electrical and Computer Engineering and Computer Science
Former President, Faculty Senate

**Elizabeth Smith**
Former Chief of Staff, Community and Governmental Relations

**Matt Thimgan**
Assistant Professor,
Biological Sciences

**Scottie Thomas**
B.S. Chemical Engineering, 2018
Student Council President,
2017-18

**Ben White**
Senior Assistant Director, Student Diversity Initiatives

## EX-OFFICIO MEMBERS

**Rose Horton**
Former Executive Director, Strategy, Institutional Research and Assessment, Planning

**Lisa Cerney**
Director of Budget Planning

**Krista Chambers**
Project Coordinator,
Provost's Office