FY17 ANNUAL REPORT COVER PAGE

Campus or Unit: Missouri University of Science and Technology

Date of Submission: August 1, 2017

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STRATEGIC PLANNING: ANNUAL REPORT (FY17)

Campus or Unit: Missouri University of Science and Technology

Lever Number: 1.1

Lever Description: Require all undergraduate students to participate in some significant experiential learning activity before they graduate

Lever Metric: All undergraduate degree programs require an experiential learning activity (by year five)

Lever Summary:

The mission of the Undergraduate Research Program is to provide students with experiential learning, leadership development, collaborative problem solving and professional development experiences that serve to enhance their education, increase the quality of Missouri S&T’s educational offerings, and promote the university’s reputation of quality.

The Experiential Learning Program at Missouri S&T refers to learning stimulated by a variety of structured activities that differ significantly from the traditional lecture format. Experiential learning activities are designed to require students to go beyond mastering basic skills and knowledge in the application of that material to problem solving challenges. These activities involve collaboration and reflective learning and allow students to learn in environments that align with their aptitudes.

The Experiential Learning Advisory Committee meets once a month (September through April). The role of the advisory committee is to:

- Oversee the development & implementation of the campus-wide undergraduate significant experiential learning requirement
- Help to establish the long-term program objectives
- Determine the means and timeframe by which the program objectives will be implemented
- Establish methods for evaluating the program objectives
**Action 1.1.2: Incorporate experiential/service learning into the core curriculum in all degree programs at any level beginning in the freshman year**

- Most academic departments have selected study abroad to meet experiential/service learning requirements. The Office of International and Cultural Affairs (OICA) supports experiential learning through semester study abroad programs and short-term faculty-led study abroad programs. For academic year 2016-17 31 students studied abroad for a semester or year and 10 students participated in faculty-led short term study abroad programs. During academic years 2015-16 and 2016-17, $50K of grant funds have been awarded to faculty to support the development of faculty-led study abroad programs.

- OICA also supports experiential learning by:
  - Managing a UM required travel registry for international travel as required by CRR 210.070
    - The online travel registry is managed using Terra Dotta software
  - Overseeing health and safety insurance programs for students, faculty, and staff who travel internationally
  - Providing pre-departure orientations to international travelers to discuss health, safety, and risk management

- The degree requirements for experiential learning applied to all students entering under the auspices of catalog year fall 2015. This standard also applies to students who change their program of study as listed under this current catalog.

- The approved definition of experiential learning is as follows: “Experiential learning at Missouri S&T refers to learning stimulated by a variety of structured activities that differ significantly from the traditional lecture format. Experiential learning activities are designed to require students to go beyond mastering basic skills and knowledge in the application of that material to problem solving challenges. These activities involve collaboration and reflective learning and allow students to learn in environments that align with their aptitudes.”

- The approved core principles of experiential learning are: 1) student centered rather than teacher centered; 2) active learning rather than passive learning; 3) application of learned principles to form realistic solutions to problems, issues, and challenges; and 4) reflection upon the learning experience.

- Missouri S&T has established experiential learning implementation guidelines: 1) activity must be university-sponsored or affiliated and the student must receive written approval of the activity from a faculty member or academic advisor; 2) the faculty member or advisor will ensure the activity is of significant duration, intensity, and rigor to demonstrate successful application of learned principles; 3) the focus must be on ‘learning by doing’ in a creative and innovative activity that falls outside of the realm of traditional lecture; and 4) a significant experiential learning activity will include a written summary reflection piece that documents the experience from the student perspective. This piece should be of a quality suitable for inclusion as an attachment to a co-curricular transcript or in an e-portfolio.

- The College of Arts, Sciences, and Business (CASB) collaborated with International and Cultural Affairs to develop a Global Scholar Initiative Program to support the development of faculty-led programs abroad. CASB contributed $12,500, which helped to support four new study abroad programs anchored by CASB faculty (literature, psychology, communications, and history); two previously funded programs ran in summer 2017; up to four more may run in summer 2018.
• CASB continued its partnership with Boeing IT by hosting a Boeing presentation for CASB students called "Challenge Accepted: Problem Solving in the Real World" in February 2017.

**Action 1.1.3: Assign responsibilities associated with monitoring experiential learning activities and maintaining the reporting of those activities to the vice provost for academic support, who will regularly inform the executive director of strategy, institutional research and assessment on progress**

**Experiential Learning Requirement** - for students w/catalog year Fall 2015 or later

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• The vice provost for academic support worked with student affairs and the registrar’s office to ensure a proper monitoring system was in place. The vice provost and the executive director of strategy, institutional research and assessment are in regular communication to ensure activities are properly documented.

**Action 1.1.5: Career Opportunities and Employer Relations (COER) will continue to explore internship and externship opportunities in the summer and inter-sessions as well as during semesters**

• Career Opportunities and Employer Relations (COER) spring 2017 career fair results: 204 employers attended, including 17 first-time employers; and 121 employers were from Missouri. Employers represented 28 states and 21 were Fortune 500 employers. Additionally, 592 recruiters attended, 28 employers were hiring all majors, and 2,342 students attended the fair.
• COER engaged a new employer, General Mills to recruit students.

**Action 1.1.6: Establish experiential opportunities through peer advising and mentoring**

• COER: registered 214 students in the spring 2017 semester for co-ops with 204 employers; eight employers and 36 students participated in the externship program in the spring (a total of 455 internships for the academic year); utilized two student mentors to facilitate 50 resume reviews for freshmen and sophomores; and selected three students for the St Louis Regional Business Council mentoring program which connects students with St. Louis area executive mentors.
• COER collaborated with four new employers on internship and co-op programs.
• COER helped facilitate 3,734 interviews on-campus.
• COER administered a spring employer career fair survey with 504 students responding and conducted COER Advisory Council engaging 15 employers.
• A St Louis Miner Trek occurred in August 2017.
• Student Life engaged 5,051 students in in recognized student organizations (RSO). The breakdown on undergraduate student participation levels: 53 percent of the freshmen engage in an RSO, 68 percent of sophomores, 72 percent of juniors and 72 percent of seniors. Graduate students also participate with a 34 percent participation rate.
COER had two student mentors conduct 30 resume reviews for freshmen and sophomores and engaged six students in the St Louis Regional Business Council networking event.

**Action 1.1.7: Identify prospective donors to expand activities at the Kummer Student Design and Experiential Learning Center through increased giving and major gifts**

- The Kummer Student Design and Experiential Learning Center serves as the business incubator and support center for 14+ multi-disciplinary design teams which include: Advanced Aero Vehicle Group, Baja SAE, Chem E Car, Concrete Canoe, Drillbotics, Engineers Without Borders, Formula Electric, Formula SAE, HPER Rocket Team, Human Powered Vehicle, IGEM, Mars Rover, Multirotor Robot, Nuclear Science, Robotics, Solar Car, Solar House and Steel Bridge.
- The center provides leadership, networking, and technical learning for over 600 students. The center provides strong levels of engagement with faculty, staff, businesses, and the community.
- Advancement has identified donors and prospects and will continue to approach for gifts in support of the center’s expansion.
- Student Affairs recognized 18 new RSOs in the academic 2016-17 year including three new sport teams, three new professional groups, and one new design team.

**Action 1.1.8: Develop promotional materials to promote experiential learning to the community and to promote options for students**

- Office of International and Cultural Affairs has developed online marketing brochures for study abroad programs. Brochures and study abroad application is available online at globalminers.mst.edu.
- The Study Abroad website has been updated to provide easy access to TerraDotta, the UM-system mandated travel registry web based program, through which all students who are traveling internationally must register. This registry has the official name of globalminers.mst.edu.
- The marketing and communications department has written stories, developed news releases, posted articles on the main website, and produced video to highlight experiential learning.

**Action 1.1.9: Enhance the student employee training initiative through cross-campus collaboration supporting experiential learning**

- Office of International and Cultural Affairs supports experiential learning through study abroad, including semester abroad and short-term faculty led study abroad programs; managed travel registry as required by CRR 210.070 (globalminers.mst.edu); provided pre-departure orientation with health, safety, and risk management information to students traveling internationally; and managed health and safety insurance programs for students traveling internationally.
- A committee was created to develop a training initiative for student employees. Formalized training began in fall 2016.

**Action 1.1.10: Ensure diversity and inclusion themes are incorporated into experiential learning opportunities**

- The Office of International Affairs received $7,500 grant from IIE Generation Study Abroad program and secured matching funds of $15,000 for scholarships to promote diversity in study abroad. Awarded $22,500 of scholarships to six students’ academic year 2016-17; secured funding to promote
development of faculty led short-term study abroad programs; awarded five grants of $5k each for 2016-17 cycle, a total of $25,000 awarded; and five grants of $5K each for 2015-16 cycle, $25,000 total awarded.

- The dean of students met with the Corporate Development Council (CDC) to discuss cultural awareness and sensitivity in the workplace. Feedback was requested from corporate partners for best practices.
- All Miner Challenge participants participated in social justice training.

**Action 1.1.11: Identify funding sources to expand study abroad programs and maintain services related to these programs**

- Office of International and Cultural Affairs received $7,500 grant from IIE Generation Study Abroad program and secured matching funds of $15,000 for scholarships to promote diversity in study abroad.
- The College of Arts, Sciences, and Business collaborated with international and cultural affairs to develop a Global Scholar Initiative Program to support the development of faculty-led programs abroad. The college contributed $12,500 to support five new study abroad programs (literature, economics, Spanish and folklore) anchored by faculty; three of the programs launched in summer 2017.
One avenue Missouri S&T has identified for fostering innovation for faculty, staff and students is through the I-Corps program. Objectives of the I-Corps Site program are:

1. Enhance entrepreneurial activities and training opportunities for students (undergraduate, graduate and postdoctoral), faculty and staff at Missouri S&T and the State of Missouri.
2. Create a culture and awareness in innovation and entrepreneurship on Missouri S&T campus.
3. Increase the number of student and faculty engaged in innovation activities.
4. Transition more activities from research labs to technology and incubation.

Specific I-Corps Results:

1. Enhance entrepreneurial activities and training opportunities for students (undergraduate, graduate and postdoctoral), faculty, and staff at Missouri S&T and the state of Missouri.
   - Developed curriculum for four different I-Corps Site program deliveries at Missouri S&T (four-weeks, eight-weeks, sixteen-weeks and individualized programs). Missouri S&T trained 16 teams with one team accepted to the National NSF I-Corps program, and three started LLCs. One team acquired a large order from the #1 truck stop firm in the US for their product. Two teams went through the customized program, one team completed the eight-week program, four teams finished the four-week program and the remaining nine teams completed the sixteen-week program.
   - Missouri S&T rolled the four-week program out to the University of Missouri SBTDC; trained 21 teams at MU-Columbia with one team accepted to the National NSF I-Corps program and two more teams in process. Five teams have started LLCs. All 21 teams completed the four-week program.
   - The 16-week program is also a class for credit (three credit hours) co-located with Comp Sci 5001 (Experiential Entrepreneurship for Computer Scientists) and co-listed with Econ 5001 and Engineering Management 5001. This course is now taught each semester and is the first class in a series of five other courses that are a part of the proposed Applied Innovation Minor.
   - Missouri S&T received a grant from Missouri Technology Corporation ($100,000) to roll out Site program across the state of Missouri.
Missouri S&T I-Corps site affiliates have trained from the following institutions: University of Missouri-Columbia, University of Missouri Kansas City, University of Missouri St. Louis, Truman State University, and Missouri State University. New programs commenced in summer 2017 for UMSL. New programs will commence in fall 2017 for Truman State; spring 2018 for UMKC; and spring 2018 Missouri State.

Program affiliation currently under exploration with Southeast Missouri State University, Lincoln University, and Harris Stowe.

The first I-Corps Site Summit for Missouri was held in June 2017. Institutions in attendance included: Wichita State University, St. Louis University, Washington University, University of Missouri-Columbia, Kansas City, St. Louis, University of Iowa, and BIOSTL.

Discussions for an NSF I-Corps Node proposal started in January 2017. Institutions initially involved include Washington University, BIOSTL, University of Missouri-Columbia, Missouri S&T (organizer), Wichita State University, University of Nebraska-Lincoln, University of Iowa, and Iowa State University. The second meeting was held in St Louis in June. University of Nebraska and Iowa State dropped out while University of Colorado-Denver joined the group. The general timeline has been created with a proposal due date of March 2018.

(2) Create a culture and awareness in innovation and entrepreneurship on Missouri S&T campus.

- The customer discovery methodology, prevalent in the I-Corps curriculum, is now integrated into the Electrical Engineer/Computer Engineering senior design capstone and Computer Science curricula. The methodology has also been added to the fall 2017 offering for Molecular Genetics.
- Three faculty workshops occurred in the spring and were organized and sponsored by the I-Corps Site Director. Outside experts were brought in to expose faculty to current team dynamics methods, stimulating creativity, and assessing team behavior.
- A new faculty development grant was started and funded through the Miner Tank. Six awards have been made over the past year totaling almost $25,000. The faculty grants focus on design thinking, leadership, innovation, creativity, and entrepreneurship.
- The Pathways to Innovation team co-leaders have completed 12 innovation goals for the campus, including defining the campus innovation ecosystem. Other goals include: collision/makerspace creation, faculty development grants, and experiential entrepreneurship study abroad for students.

(3) Increase the number of student and faculty engaged in innovation activities.

- A Miner Tank grant was awarded for the creation of a makerspace on campus. A faculty member ordered equipment and managed a team of students to begin development. The makerspace is now student governed and the students are creating a charter and bylaws for this new student organization. The students participated in the Kansas City Maker Faire in June 2017 and will now coordinate new activities not just designed to increase innovation for the campus, but for the community, as well. A ribbon cutting ceremony for the I-Corps space will be held fall 2017.
- Missouri S&T’s first pop-up classes have been delivered during the spring 2017 semester with the first one focusing on microcontroller fundamentals. Additional classes are scheduled for fall 2017. The student leader for the makerspaces is working to set up a schedule of pop-up classes and working with several departments to create a menu of multidisciplinary classes.
- The first collision space with a weekly Venture Café-like feel has been created and is well attended by students and faculty. Furniture, décor, and supplies for low fidelity prototyping are underway and are supported by a VentureWell grant.
- Through the University Innovation Fellows (UIF), a week long freshman orientation program, (Ignite Innovation), has been developed and will be offered for the second time in fall 2017. UIF’s also
created a ½ day workshop for the Missouri S&T Leadership Program held in spring 2017. In 2016, the program had 19 students and 24 students are signed up for fall 2017.

- Innovation Information meetings drew more students in 2017 (25) compared to 15 in 2016.
- Students taking I&E classes more than doubled from 2016 (22) to 2017 (50).

(4) **Transition more activities from research labs to technology and incubation.**

- Two site teams have qualified for the National I-Corps program and two more are in process.
- Other I-Corps activities: a full time program coordinator has created repositories for data collection; tracked financial guidelines for reimbursement of grant funds; created a web site; assisted with curriculum; developed marketing strategies, including communications with potential site affiliates; and supported two conferences.

**Action 1.2.1: Create and promote an innovation team that solicits and considers creative suggestions from Missouri S&T family; empower owners for implementation. Create a small fund to implement several each year**

- In order to solicit suggestions from the entire campus, an innovation proposal form has been developed and launched on the innovation website, innovate.mst.edu. This proposal form remains on the website to allow for ongoing suggestions from the Missouri S&T family. Proposals focus on a description of the innovative idea, the owners for implementation, expected outcomes, estimated budget, and the proposal’s connection to the Missouri S&T strategic plan.
- A communication plan was implemented for the Innovation Team. This plan included development of social media outreach via Facebook and Twitter. Information posters have been placed in each building on campus for increased awareness.
- The Miner Tank was developed and implemented in fall 2015. The Miner Tank followed the format of the “shark tank” television program. Faculty, staff, and students submitted proposals, presented their ideas to the Miner Tank, and answered questions from the Innovation Team. The tank was an open forum and the campus community was invited to attend.
- In spring 2017, nine innovation proposals were submitted and three were awarded. The submitted proposals were: Solar Car Motors, Drug Substitute for Addiction Recovery, Miner Multi-Media Virtual Reality, Waste Management and Livestock Farms, Miniature Greenhouse Platform, Improved Smart Chair and Smart Multi-Modal Sensing Wearable Device, Multifunctional Catalyst Ink and 3D Printed Porous Scaffolds, Bioactive Glass Scaffolds, and Liquid Propellant Rocket. The approved proposals were Solar Car Motors, Drug Substitute for Addiction Recovery, and Liquid Propellant Rocket. All of the spring awarded proposals were submitted by students.
- One of the funded innovation proposals from a prior year has experienced incredible success. The proposal funded an online interviewing room for students located in COER. Since implementation, COER has experienced a 200 percent increase in online interviewing.

**Action 1.2.2: Implement a Learning Commons with state-of-the-art collaborative technology, practice presentation rooms, experimental technology lab with video editing and 3D printing capability for teaching, learning and research**
Action Item 1.2.2: Implement a Learning Commons

The library is a space for lively collaboration, interactive learning, research, and study. Technologically enabled spaces flourish: screencasting technology, availability of tools and electronics kits, iPads and laptops, Nonavitra visualization wall. A sampling of statistics demonstrate strong utilization of library space and resources.
Our Successes

Supporting RESEARCH
- 47% increase in meta-data pages viewed by users
- 58% increase in documents downloaded by users
- 48% of downloads originate from other educational institutions engaged in teaching and research
- 42% of downloads originate from commercial institutions engaged in research and product development

Inspiring creative THINKERS
- Providing global access to the research product of our faculty and students
- Publishing S&T’s Peer to Peer as a cross-disciplinary peer-reviewed and open access undergraduate student research journal, produced by students in S&T’s Research and Writing program.
- Encouraging the artistic expression of our students through the Student Art in the Library Digital Exhibitions.
- Supporting creative educational assignments such as the podcast created by Exposition and Argumentation students.

Raising VISIBILITY
- 36% increase in global readership
- 42% increase in regional readership
- 45% increase in works posted to Scholars’ Mine

Encouraging INTERACTIONS
- Building on-line faculty author profiles for our tenured and tenure-track faculty to enable other researchers to locate them by research interests and increase conversation between researchers and our faculty
- Providing social networking features in Scholars’ Mine to encourage the sharing of research produced on our campus.

Metadata Page Hits

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Total Page Hits: 2016 - 104,115
Total Page Hits: 2017 - 120,344
4% Increase
Our Digital Showcase
SCHOLARS’ MINE
Annual Report from July 2016 - June 2017

Providing global access to the digital, scholarly and cultural resources created by our campus community

supporting
RESEARCH
inspiring creative
THINKERS
raising
VISIBILITY
encouraging
INTERACTIONS

scholarsmine.mst.edu
Regional Readership Distribution FYE 2017

Works Posted by Type for FYE 2017
Total Posted 6,218 (45% increase from 2016)

- Books: 2,396 (28.8%)
- TTJs: 158 (4.9%)
- Events: 157 (4.9%)
- Images: 254 (8.1%)
- Journals: 333 (10.7%)
- Selected Works: 13 (0.4%)
- Series: 3,224 (102.0%)

Missouri University of Science and Technology
Curtis Lewis Wilson Library
Attn: Scholarly Communications Librarian
400 W. 14th. Street
Rolla, MO 65409-4233
(573) 341-4221
scholarsmine@mst.edu

Missouri S&T
Library and Learning Resources
Learning Commons has undergone physical transformations in the multi-media center with four high performance CAD 3D graphic work stations, a 3D scanner, a Nonavitra visualization wall, additional quick print stations, co-lab spaces, enhanced presentation rooms, and a dining option.

**Action 1.2.3: Devise a plan for TedX-like series for students, faculty and staff (e.g., experiential learning activities, professional development)**

- Many departments on campus utilize TedX video series installations for professional development.
- Human resources developed a TedX professional series which launched in spring 2017.

**Action 1.2.3 a: Council of Graduate Students will host Ted Talk-style inspirational lectures to showcase ideas and “ignite” the campus and Rolla community**

- The Council of Graduate Students hosted its annual seminar series displaying 6-12 minute talks from faculty, staff, students, and community members designed to inspire and ignite the community. In fall 2016, a total of 11 presentations were delivered with 60 attendees.

**Action 1.2.4: Encourage entrepreneurship in the campus community through entrepreneurship courses to feed the campus business “incubator” including interdisciplinary coursework that attracts creative students who want to make a difference**

- Created Undergraduate and Graduate Student Leadership Councils for the College of Arts, Sciences, and Business to provide opportunities for members to assume leadership roles among the student body.
- The Technology Development Center (TDC), located at Innovation Park, houses 27 tenants ranging from the Boeing Company and Garmin Corporation to community, faculty and student start-ups. Smart Health Beacons, LLC, a university start-up is also housed in the park and is focused on commercializing technology related to smart health chairs and health monitoring sensors for patients suffering from dementia.
- I-Corps entrepreneurial education program is based on the I-Corps curriculum with experiential, collaborative learning and uses Canvas with the Lean LaunchPad methodology. I-Corps objectives are to: enhance entrepreneurial activities and training experiences for undergraduate and graduate students; expand training opportunities available to post docs, faculty, and underrepresented groups; increase the number of teams entering the NSF I-Corps program and other programs; and transition more activities to commercialization. Teams are recruited from existing and new entrepreneurial student and faculty activities, course projects, research, and participants in local and regional venture competitions and entrepreneurship events.

**Action 1.2.5: Identify a series of co-curricular opportunities (e.g. intersession or alternative spring break events) for interdisciplinary groups of students, faculty and/or staff focused on providing solutions for problem-solving, innovation or leadership and link to career readiness**

- Graduate studies utilizes the Graduate Leadership Development Program to enhance leadership among participants. This program works with eight students per year.
• Miner Challenge will host its first summer break to Alaska through collaboration with university advancement and Missouri S&T alumni.
• 80 participants registered for six Miner Challenge trips over winter break to Nicaragua. Spring break trips to Illinois, Texas and Mississippi occurred.
• Student affairs collaborated with the National Society of Leadership and Success to extend invitations to 1,860 sophomores and juniors to engage in an ongoing leadership development program.
• Leadership and cultural programs provided 397 students with cultural competency programming as part of a co-curricular event.

Action 1.2.6: Continue developing minor and certificate programs (e.g. leadership, entrepreneurship, humanitarian engineering, and science and creativity)

• New certificates initiated this year include: Applied Workplace Psychology, Cybersecurity Management and Information Assurance, Cyber Security, and Advanced Control Systems.
• Automated Engineering certificate is under review.
• The new entrepreneurship minor began enrollment in fall 2014.
• The humanitarian engineering and science minor was completed in fall 2014.
• The new technical innovation and entrepreneurship minor was completed.
• The creativity minor is still under development.

Action 1.2.7: Encourage participation in cross-disciplinary or global experiences (e.g., arts and humanities experiences for engineering, science and business students, study abroad)

• The Office of International Affairs: increased the number of students participating in study abroad, faculty-led short-term programs in 2017
  ▪ Received $7,500 grant from IIE Generation Study Abroad program and secured matching funds of $15,000 for scholarships to promote diversity in study abroad.
  ▪ Awarded $22,500 of scholarships to six students’ academic year 2016-17.
  ▪ Secured funding to promote development of faculty led short-term study abroad programs
    • Awarded 5 grants of $5k each for 2016—17 cycle, $25,000 total.
      o Cross-Cultural Psychology and Introduction to Engineering Design, Italy (Cross-Disciplinary)
        Dr. Jessica Cundiff, Psychology and Dr. Jill Schmidt, Mechanical and Aerospace Engineering
      o Environment of the Lord of the Rings, New Zealand (Global Experience)
        Dr. Kathryn Dolan, English and Technical Communications
      o Intercultural Communication: A Study of Cultures in Panama (Global Experience)
        Dr. Terry Robertson, Arts, Languages, and Philosophy
      o History of Science, England and Scotland (Global Experience)
        Dr. Kathleen Sheppard, History
      o Construction Means & Methods: Ancient & Modern, Estonia (Global Experience)
        Dr. William Eric Showalter, Civil, Architectural and Environmental Engineering
    • Awarded 5 grants of $5K each for 2015-16 cycle, $25,000 total.
Heroes of Fire and Ice: Nature and Imagination in Iceland, June \textit{(Global Experience)}
Dr. Anne Cotterill, English and Dr Eric Bryan, English

Intercultural Communication and Renewable Energy in Nicaragua, July \textit{(Cross-Disciplinary)}
Dr. Audra Merfeld-Langston, Philosophy, Liberal Arts and Languages and Dr. Kathleen Sheppard, History

Music and Musicians of Germany and Austria During War (delayed to summer 2018) \textit{(Global Experience)}
Ms. Lorie Francis, Philosophy, Liberal Arts & Languages

3 short courses: “Economics and Entrepreneurship,” “Introduction to Global Social- and Eco-preneuring,” and “Innovation and Energy Economics” Oman \textit{(Cross-Disciplinary)}
Dr. Bonnie Bachman, Economics and Dr. Joseph Smith, Chemical & Biochemical Engineering

Science Fiction and Fantasy Literature, London, Oxford, Wales and Edinburgh, UK \textit{(Global Experience)}
Dr. Dan Reardon, English & Technical Communications

- The College of Arts, Sciences, and Business partnered with student affairs to help develop new theme-based living and learning communities on campus, one is based on entrepreneurship and one is based on international/global culture.

\textit{Action 1.2.8: Identify ways in which graduate students’ research can be transformed into entrepreneurial application}

- Graduate studies hosts the Three Minute Theses (3MT) competition to enhance recognition of graduate research. There were 27 students who participated. The winner competed against students from other universities in April 2017 at the Midwest Association for Graduate Schools annual conference.
- There are currently 11 teams and companies operating in the student business incubator program.
- The Office of Technology Transfer and Economic Development continues to provide training and counseling to graduate students interested in launching their own venture. The services provided are: business plan development utilizing tools such as Lean Start-up and the Business Model Canvas, venture financing and technology commercialization.
- The Entrepreneurs Workshop offered guidance to faculty, post-doctoral students, and graduate students on how to turn their ideas into successful businesses. The Entrepreneurs Workshop, an eight-week session workshop, maximizes student research and increases the success rate of startup ventures.

\textit{Action 1.2.9: Encourage an environment that promotes student-staff interaction through research and/or entrepreneurship}

- Student life staff participated in the Undergraduate Innovation Fellows forum.
- The dean of students engaged the College of Arts, Sciences, and Business to aid in development of a student affairs internship curriculum for the division.
- Graduate Studies funded five female graduate students to attend the Women in Leadership conference in Columbia.
**Action 1.2.12: Develop student, faculty and staff affinity groups**

- Student life has been working to identify existing Registered Student Organizations (RSOs) which may become natural affinity groups for all campus constituents.
- An African and African American women’s affinity group was established.

**Action 1.2.13: Infuse curriculum to enhance campus diversity and inclusion competencies**

- Eight newly revised Chancellor’s Distinguished Fellowship awards are available annually. Of the eight awards, up to four will be dedicated for underrepresented minorities and female students to enhance diversity in the classroom and ultimately benefit education.
- Academic departments are collaborating with the diversity committee to analyze current courses to enhance cultural competencies.
Lever Summary:

Corporate Development Council (CDC) is a group of industry professionals from Missouri S&T’s corporate partners that are interested in engaging and partnering with Missouri S&T. CDC members are invited to send one or two representatives to participate in bi-annual campus meetings. CDC members have the opportunity to engage directly with students while providing Missouri S&T valuable feedback on initiatives aimed at developing career-ready graduates. In conjunction with meetings, CDC sponsors student development events such as the Student Leadership Conference, Etiquette Dinner, Suit Closet, and Miner Trek. CDC members serve as a point of contact for their company and help facilitate linkages between their company and the university. The Corporate Development Council spring meeting engaged 19 companies with 23 representatives, 27 students and 25 faculty and staff. Student life coordinated the CDC panel of five members on entrepreneurship while leadership and cultural programs coordinated an ethics workshop. Fifteen CDC employers also attended the spring career fair.

The College of Arts, Sciences, and Business (CASB) nominated faculty to the University of Missouri Leadership Development Program and those were: David Duvernell, Fiona Fui-Hoon Nah, Audra Merfeld-Langston, and Jeff Schramm. All of the nominated faculty were accepted into the 2017 class.

CASB developed Undergraduate and Graduate Student Leadership Councils which provided opportunities for members to assume leadership roles within the student body.

Other forms of professional development implemented by CASB:

- Faculty: funds for tenure/tenure track and NTT faculty are available to help defray the costs of travel to conferences, page charges, and other professional activities; in the first half of 2017, CASB awarded $11,600 to faculty.
- Students: funds for student travel to conferences are available; in the first half of 2017, CASB awarded $8,679 to students.
- Staff: CASB created a scholarship program for CASB staff enrolled in CASB courses, to help defray the costs of these courses above that covered by the 75% tuition reduction.
Action 1.4.1: Identify, develop and implement professional development plans to enhance leadership, creativity, and innovation for the staff in each department or unit

- The Office of International and Cultural Affairs participates in nationally recognized training and professional development conferences and meetings to ensure ICA staff are up to date regarding best practices in internationalization; share information learned with colleagues across the campus; and implement new initiatives that support internationally related activities at S&T.
  - Each staff member has participated in either national, regional or online trainings to obtain information about best practices in internationalization.
  - Informational workshops have been provided to the campus and community that will help enhance skills and understanding of the needs of our international community. Examples include a public program regarding the Executive Order: Travel Ban, and a symposium for teaching English to non-native speakers.
- Student affairs initiated a safety incentive program with service staff.
- Student affairs had two staff serve on the International Education Week panel focusing on the support and safety of international students with 34 student participants from 12 countries, and five faculty also participated.
- CDSW began UM system-wide planning for student focus groups for greater consistency and efficiencies across the system.
- The College of Arts, Sciences, and Business created opportunities for administrative assistants to identify professional strengths and develop strategies to maximize individual skills.
- Leadership and cultural programs hosted "The Leader in You" luncheon with 48 participants.
- GAMMA participated in Greek Leadership Summit with 29 students attending.
- COER presented Professional Development Plans to 15 staff.
- Two Peer Wellness Educators attended the NASPA General Assembly.
- Counseling: had seven staff participate in 14 different webinars; three staff attended Motivational Interviewing workshop; and the case manager attended the HECMA conference.
- Residential life had two staff members chosen to attend the National Housing Training Institute for mid-level professionals.
- Student affairs: provided four professional development sessions with 44 staff; hosted 16 summer staff development sessions engaging 75 staff; hosted three Support and Task Expert Workshops engaging 25 staff; assistant vice chancellor attended the NASPA Assessment and Persistence national conference.
- Student Health staff attended the Central College Health meeting and the American College Health Association conference, and hosted second governing body meeting to discuss improvements in practices and infection control.

Action 1.4.2: Streamline and integrate professional development and leadership plans for students to enhance creativity and innovation

- The Office of International Affairs facilitated the Sponsored Student Advisory Council (SSAC), a 10 student committee that represents sponsored student groups. The council members are elected by their peers and participate for one academic year. Participation in SSAC provides students an
opportunity for leadership growth and to develop skills for working in a team with others of different cultures.

- The International Student Advisory Council (ISAC), established in 2001, is a group that meets monthly to ensure that concerns of the Missouri S&T international student population are addressed in a respectful and welcoming environment which values positive communication. Leaders from international student organizations and leadership of the office of International and Cultural Affairs work together to address student concerns, while communicating a clear understanding of the rules and regulations that apply in our environment. This program provides students with an opportunity for leadership growth and allows them to develop skills for working as a team.

- Leadership and cultural programs hosted a Nucor representative who presented on the use of College Career Assessments to 42 students.

- COER: conducted 414 resume reviews; facilitated 79 practice interviews; presented seminars to 1,656 students on how to articulate skills for the professional work environment; and distributed 357 Professional Development Plans to graduate students and 1,129 to undergraduate students.

- Students in the chancellor's Leadership Academy are successful with 61 percent having firming plans at graduation.

- COER collaborated with the Office of Undergraduate Studies on professional development plans for Fulbright scholars; collaborated with St Louis Mosaic Project to better serve international students; presented 86 professional development seminars to 1,676 students in the spring; collaborated with the humanities departments for a Career Fair Bootcamps with 17 students attending; collaborated with IEEE students for a career Fair Bootcamps with 10 students attending; conducted an etiquette dinner for the Chancellor’s Leadership Academy with 40 students attending; and a record number of students engaged with COER (5,924) which represents 70 percent of the student population.

- Leadership and cultural programs engaged 36 Chancellors Leadership Academy members and conducted 17 hours of leadership development; hosted the Student Leadership Conference with 20 workshops for 163 students.

- Student Life engaged over 100 students in Greek Academy Officer Skill development; engaged 27 students during the Greek Retreat; and coordinated three Nuts and Bolts sessions with 15 students.

- The Greek Academy: had 68 participants representing 13 chapters attend Greek Week; and seven Greek Captains developed the new Education Member Education program. A post meeting survey concluded: 86 percent indicated an increase in their understanding on how they could impact change in their chapter, 86 percent indicated an increase in their confidence as a leader, and 79 percent indicated an increase in their ability to assess their role.

- Residential life: had six students attend the 27th annual University of Northern Iowa RA Conference.

- Miner Challenge had 76 students, four staff and two faculty participate in trips to Nicaragua, Texas, Mississippi, Illinois, and Alaska. Miner Challenge utilized fundraising and crowdfunding to cover 50 percent of the trip costs.

- Student wellness facilitated Certified Peer Educator training for 13 students; provided an internship for a psychology student; facilitated Meeting of the Minds for seven students.

- Implementation of the Residential Curriculum model has redefined how program education is conducted in the living communities. This included a migration of RA's doing program to hosting intentional conversations “Check-in-Chats” that resulted in RAs connecting more directly with their residents and being able to identify concerns at an early stage. The RAs conducted over 5,000 check-in-chats this fall that included topics on transitions, goal setting, roommate relations, career planning,
privilege and identity, and the sophomore slump. All passive programming was aligned with the curriculum model and a rubric was designed for assessment of learning outcomes. The curriculum focuses on enhancing self-awareness, communicating across differences, and engagement in the living community.

- COER engaged bi-weekly with graduate studies to create an ongoing collaborative program to introduce graduate students to a specialized career plan; and hosted a graduate student focus group to learn more about the needs of graduate students.
- COER: hosted mini career fair during opening week; engaged 1,500 freshmen; presented and reviewed resumes for students in Hit the Ground Running; presented professional development seminars to 1,691 students; and facilitated an etiquette dinner to 90 participants.
- Leadership and cultural programs: provided 58 educational programming events for 762 students; engaged 68 students in nine educational hours on developing leadership skills and professionalism; redesigned the student program assistant position to ensure a higher-quality learning experience with professional development; provided a three-hour leadership workshop to 28 students; facilitated a two-hour workshop to 12 students; and utilized student feedback to redefine the emerging leaders certificate requirements requiring students to develop personal participation goals and a leadership development plan.
- Student life: hosted the Miner Challenge student leader day-long leadership retreat; and implemented a social justice training curriculum for trip leaders and participants.
- An AT&T representative provided a workshop on interviewing tips to 63 students.
- The College of Arts, Sciences, and Business created Undergraduate and Graduate Student Leadership councils. These councils provide opportunities for members to assume leadership roles within the student body.

**Action 1.4.3: Integrate meaningful developmental experience designed to enhance students’ interpersonal, communication and leadership skills**

- The Office of International and Cultural Affairs provides opportunities for students to develop their interpersonal, communication, and leadership skills through Study Abroad. The departmental goal is to double the number of students studying abroad for credit from 39 (baseline academic year 2012-13) to a minimum of 78 by 2020.
  - Academic year 2016-17 Students Abroad
    - 41 Students studied abroad for credit
      - 31 S&T semester long for credit
      - Ten S&T students participated in faculty-led-short-term programs for credit
    - 77 S&T students participated in non-credit/experiential learning
    - Received $7,500 grant from IIE Generation Study Abroad program and secured matching funds of $15,000 for scholarships to promote diversity in study abroad. Awarded $22,500 of scholarships to 6 students academic year 2016-17
    - Secured funding to promote development of faculty led short-term study abroad programs
      - Awarded 5 grants of $5k each for 2016-17 cycle, $25,000 total
      - Awarded 5 grants of $5K each for 2015-16 cycle, $25,000 total
  - Residential life integrated a Residential Curriculum survey for residents with 391 respondents. Results: 86 percent indicated the RA check-in chats were valuable; 72 percent agreed they enjoyed living in a
residential hall; and the primary outcome resulting from living on campus resulted in promoting friendships and interactions.

- COER engaged eight students in St. Louis at a regional networking event, and facilitated Skype practice interviews.
- COER had a 70 percent knowledge rate and a 75.82 percent career outcomes rate for December 2016 graduates and a 85 percent knowledge rate and 75.9 percent career outcomes rate for May 2017 students at graduation.
- Leadership and cultural programs distributed 1,708 leadership plans and performed eight Foundations of Leadership workshops to 21 students.
- Student life hosted Greek Presidents Kick-off engaging leaders from 28 Greek chapters with 18 staff.
- Residential life collaborated with the dean of students and counseling in revised protocols for responding to students of concern in residence halls.
- Employee assistance program provided services for 15 employees and engaged 141 employees on tobacco cessation at the Missouri S&T Wellness Fair.
- Disability support services: provided 2,412 accommodation letters for 343 students; facilitated the provision of 126 books in alternate format; facilitated 18 housing accommodations; facilitated one equity based university dining accommodation; completed 46 priority registrations; provided consultations to 1,897 students, 634 staff, 175 faculty, 101 parents and 132 constituents.

**Action 1.4.5: Increase the percentage of on-campus graduate students who participate in one or more professional development activities**

- Graduate studies facilitated five Thesis/Dissertation Boot Campus with over 60 students in attendance. Technical editing for graduate students performed by graduate studies increased by 27 percent over the prior year.
- Graduate studies implemented walk-in writing sessions in academic departments and facilitated ten of those sessions. Students can walk-up and have a quick one-on-one assistance from the technical editor on short documents.
- COER hosted an etiquette dinner for graduate students.
- Graduate studies hosted seven workshops in spring 2017 with 112 students in attendance. Examples of the workshops: Ask a Librarian, Learning about LaTeX, Formatting and submitting Thesis/Dissertation, Learning about Ithenticate, and Copyright.
- Graduate studies began utilizing Starfish/S&T Connect in fall 2016. This software tracks student engagement with the office, advisors, and events related to professional development.

**Action 1.4.6: Create an interdisciplinary student leader certificate program**

- Emerging Leaders Institute certificate program provided 16 workshops and engaged 601 students.
- Eight students enrolled in the Foundations of Leadership course.
- Emerging Leaders Institute certificate program provided 23 workshops for 190 students; and the Emerging Leaders Institute certificate ceremony had 21 participants earn certificates.
Campus or Unit: Missouri University of Science and Technology

Lever Number: 2.1

Lever Description: Employ transformative and focused faculty hiring and retention, including cluster hires in select areas of expertise to support best-in-class (BIC) achievements

Lever Metric: Hire 12 faculty to support best-in-class signature areas
Identify BIC signature areas

Lever Summary:

<table>
<thead>
<tr>
<th>Advanced Manufacturing</th>
<th>T/TT</th>
<th>Mechanical Engineering</th>
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<tbody>
<tr>
<td>Advanced Manufacturing</td>
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<td>Electrical Engineering</td>
</tr>
<tr>
<td>Advanced Manufacturing</td>
<td>T/TT</td>
<td>Mechanical Engineering</td>
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<tr>
<td>Advanced Manufacturing</td>
<td>T/TT</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>Advanced Manufacturing</td>
<td>T/TT</td>
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</tr>
<tr>
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<tr>
<td>Smart Living</td>
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<td>Search in progress</td>
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</tr>
<tr>
<td>Enabling Materials for Extreme Environments</td>
<td>T/TT</td>
<td>Search in progress</td>
</tr>
</tbody>
</table>
Action 2.1.2: Develop and implement a process to transparently allocate all faculty positions to impact strategic plan and progress on unit performance measures

- The hiring table and hiring criteria have been updated to reflect alignment with the strategic plan.
- All positions were evaluated in conjunction with unit performance measures to strategically allocate faculty lines. The vacant lines and strategic allocations responsibility transferred from the provost to the vice provost and deans in fall 2016.
- A base plus benchmarking model was utilized for transparently allocating faculty positions.

Action 2.1.3: Develop and implement a process to allocate faculty raises aligned with the strategic plan to address retention and reward high productivity

- In FY14, a new process for increasing bumps in pay from assistant to associate professor and associate to full professor was implemented. The increases for promotion to full professor were phased-in over three fiscal years, beginning at $4,000 in FY14 and ending at $10,000 in FY17. The increase for promotion to associate professor and the granting of tenure was phased-in over two fiscal years, beginning at $3,000 in FY14 and ended at $5,000 in FY16.
- The faculty hiring process has been redesigned to incorporate a new process to ensure the following: 1) all open positions are analyzed strategically and allocated appropriately; 2) the active recruiting process follows new guidelines for advertising and responsibilities for the hiring authority; 3) the selection process for both the candidate and the committee have been changed; and 4) the on-boarding process has changed the roles and responsibilities for both human resources and the hiring authority.

Action 2.1.4: Identify and pursue companies, foundations and individual donors for charitable gifts to hire two national academy stature faculty in endowed chair positions in strategic areas #1 and #2

- Companies and prospective donors have been identified and prioritized for solicitation.

Action 2.1.5: Hire four faculty to complement each endowed chair hired under Action 2.1.4

- This action depends upon completion of Action 2.1.4.

Action 2.1.6: Identify and pursue companies, foundations and individual donors to fund start-up packages

- Companies and prospective donors have been identified and prioritized for solicitation.
- A new process was outlined by the provost and the vice chancellor for finance and administration on funding start-up packages.

Action 2.1.8: Identify and pursue companies, foundations, and individual donors for charitable gifts to hire two national academy stature faculty in endowed chair positions in strategic areas #3 and #4

- Companies and prospective donors have been identified and prioritized for solicitation.

Action 2.1.9: Hire four faculty to complement each endowed chair hired under action 2.1.8

- This action depends upon completion of Action 2.1.8.
Faculty research is an integral part of the university mission. The information below is not all of the research occurring on-campus, merely highlights certain areas to demonstrate the vast array of research areas on the campus.

Faculty research highlights:

- Daniel Shank (Psychological Science) has been awarded $24,255 for his project entitled “Affective Impressions of Groups versus Individuals.”
- Nan Jiang (Mathematics and Statistics) has been awarded $5,000 for her project entitled “Efficient Ensemble Methods for Predictive Simulations of the Boussinesq Systems Subject to Uncertainty.”
- Wenqing Hu (Mathematics and Statistics) has been awarded $5,000 for his project entitled “Multiscale Stochastic Differential Equations.”
- Ana-Maria Ichim (Economics) has been awarded $25,667 for her project entitled “Cost Efficiency of European Banks: Crisis Aftermath.”
- Eric Bryan (English and Technical Communication) has been awarded $5,200 for his project entitled “Pragmatic Meaning in the Medieval North.”
- Nicholas Leventis (Chemistry) has been awarded an additional $35,268 by the Army Research Office for his project entitled, “Fractal Assembly of Polymeric Nanoparticles into Fibers versus Globules: an Experimental and Computational Study” to bring the total award to $331,268.
- Audra Merfeld-Langston (Arts, Languages, and Philosophy) has been awarded $93,229 by the U.S. Dept. of Education for her project entitled, “Developing a Minor in Latin American Studies for Technical Application.”
- Denise Baker (Psychological Science) and co-PI Simone Silvestri have been awarded $802,981 by the National Institute of Food and Agriculture for their project entitled, “Integration of Social Behavioral Modeling for Smart Environments to Improve Energy Efficiency of Smart Cities.”
- Bonnie Bachman (Economics) has been awarded $100,000 by Missouri Technology Corporation for her project entitled, “Building a Statewide I-Corps Site Program.”
- Thomas Vojta (Physics) has been awarded an additional $110,000 by NSF for his project entitled, “Unconventional Quantum Phase” to bring the total award to $339,000.
Dev Niyogi (Biological Sciences) has been awarded an additional $6,673 by USDA, Forest Service, Mark Twain National Forest for his project entitled, “Mill Creek Watershed Assessment” to bring the total award to $127,114.

Yew San Hor (Physics) has received an additional $100,000 from NSF for his project entitled, “CAREER: Surface State Studies of Topological Insulators/superconductors” bringing the total award amount to $538,000.

The $100,000 NEH Humanities Connection grant will allow faculty to create four courses related to Latin American studies:

- History of Science in Latin America, to be taught by Dr. Kathleen Sheppard (History)
- Sustainable Foods in Latin American Literature, to be taught by Dr. Kathryn Dolan (English and Technical Communication)
- Sustainability as Trope and Theme in Latin America, to be taught by Dr. Kathryn Northcut (English and Technical Communication)
- Contemporary Latin America, to be taught by Dr. Jorge Porcel (Arts, Languages, and Philosophy)

Best-in-Class Pilot Study Program

- Chen Hou (Biological Sciences) and Gayla Olbracht (Mathematics and Statistics) received $14,900 for their proposal, “Unravelling the Effects of Growth and Metabolism on Health Maintenance.”
- Risheng Wang (Chemistry) received $14,800 for her proposal “Nanomanufacturing: Bottom-up Self Assembly with Biomolecules.”
- Devin Burns (Psychological Sciences) received $12,300 for his proposal “Developing Validation Procedures for Postural Control Augmentation.”
- David Wright (English and Tech Comm) and Daniel Shank (Psychological Sciences) received $13,200 for their proposal “Technology Diffusion Patterns in Smart Living.”
- Manashi Nath (Chemistry) and Amitava Choudhury (Chemistry) received $16,500 for their proposal “Multifunctional Catalyst Scaffold for Sustainable Energy Generation and Storage.”
- Matt Thimgan (Biological Sciences), Susan Murray (Engineering Management/Psychological Sciences), Amber Henslee (Psychological Sciences), Jennifer Leopold (Computer Science), Ivan Guardiola (Engineering Management), and Fiona Nah (Business and Information Technology) received $16,500 for their proposal “Identifying Sleepiness from Physiologic Measures.”
- Yue-Wern Huang (Biological Sciences) and Jie Huang (Electrical and Computer Engineering) received $15,300 for their proposal “A Novel High-Resolution, High-Content Whole Animal Spectrally-Continuous Fiber Optic Fluorescence Imaging System for Cancer Detection.”
- Keng Siau (Business and Information Technology), Fiona Fui-Hoon Nah (Business and Information Technology), Jeff Schramm (History and Political Science), and Nancy Stone (Psychological Sciences) received $16,500 for their proposal “Smart Living in the Artificial Intelligence (AI) Age.”

Smart Living Seed Funding

- Denise Baker (Psychological Science) and Chenglin Wu (Civil, Architectural and Environmental Engineering) received $33,000 in seed funding for a proposal titled “Human-Centered Origami and Kirigami Structures for Environmental Lighting.”
• Devin Burns (Psychological Science) and S.N. Balakrishnan (Mechanical and Aerospace Engineering) received $35,000 in seed funding for a proposal titled “Quantum Modeling of Decision Making in Smart Living.”

US Patents

• Nick Leventis, Chariklia Sotiriou-Leventis and Malik Adnan Saeed (Chemistry) have been issued US Patent Number 9,593,225 entitled “Multifunctional Porous Aramids (Aerogels) and Fabrication Thereof.”
• Nicholas Leventis and Chariklia Sotiriou-Leventis (Chemistry) have been issued US Patent Number 9,550,846 entitled, “Flexible to Rigid Nanoporous Polyurethane-Acrylate (PUAC) Type Materials for Structural and Thermal Insulation Applications.”

**Action 2.2.1: Increase Missouri S&T’s undergraduate enrollment by 500 by 2020**

<table>
<thead>
<tr>
<th></th>
<th>Fall 2012</th>
<th>Fall 2013</th>
<th>Fall 2014</th>
<th>Fall 2015</th>
<th>Fall 2016</th>
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<tr>
<td>Enrolled</td>
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<td>6,126</td>
<td>6,522</td>
<td>6,841</td>
<td>6,909</td>
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<td>undergraduate</td>
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<td>Increase over</td>
<td>+303</td>
<td>+376</td>
<td>+319</td>
<td>+68</td>
<td></td>
</tr>
<tr>
<td>last year</td>
<td></td>
<td></td>
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<tr>
<td>Increase over</td>
<td>+303</td>
<td>+679</td>
<td>+998</td>
<td>+1,066</td>
<td></td>
</tr>
<tr>
<td>2012 baseline</td>
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</tbody>
</table>

• Fourth week census period the undergraduate enrollment fall 2016 had increased by 1 percent over fall 2015 but represents an 18 percent increase over fall 2012.
• Early indicators show that undergraduate enrollment will be up 1-2 percent in fall 2017.
• The office of International and Cultural Affairs supports campus goals to increase undergraduate enrollment.
  o Undergraduate international student growth: FS2012: 262; FS2016: 300; 14.5 percent growth
• Increase international agreements (MOU, MOAC)
  o Current status: 3 renewed, 7 new, 4 expanded
  o China (renewals)
    ▪ China University of Geosciences – Beijing, Oct 2016
    ▪ Northeastern Petroleum University - Daqing, Oct 2016
    ▪ Tianfu College of SWUFE- Chengdu, Oct 2016
  o China (New):
    ▪ The Institute of Modern Physics, Chinese Academy of Sciences, Sept 28, 2016
    ▪ Yunnan University of Finance and Economics, Dec 20, 2016
    ▪ Shantou University, China, Jan 4, 2017
  o Other countries (New MOU/MOAC agreements)
    ▪ Dominican Republic: The Pontifica Universidad Catolica Madre y Maestra, April 3, 2017
    ▪ Ecuador: Universidad San Francisco de Quito, March 10, 2017
    ▪ Iraq: Koya University, Feb 28, 2017
    ▪ Turkey: Abdullah Gul University, May 2, 2017
  o Establish at least two programs to encourage the transfer of students to S&T (AA/CAP)
    ▪ Hohai University, China
• Development of 2+2 transfer guide for business program
  ▪ China University of Geosciences- Beijing
  • Business Systems Management, and Information Science & Technology, 2+2 transfer guide
  ▪ China University of Petroleum-East China
  • CSC Study Abroad agreement, Dec 2016
  ▪ China University of Geosciences
  • CSC Study Abroad agreement

• Fall 2016, overall enrollment dropped from 8,889 to 8,838, a decline of 0.6 percent.
• Fall 2016, undergraduate enrollment grew from 6,841 to 6,909, an increase of 1 percent.
• Fall 2016, graduate enrollment declined from 2,048 to 1,929 a 5.8 percent decrease.
• Fall 2016, total female enrollment dropped from 2,043 to 2,009, a decline of 1.6 percent.
• Undergraduate female enrollment grew from 1,599 to 1,613, 0.9 percent increase.
• Graduate female enrollment declined from 444 to 396, a 10.8 percent decline. One reason for this decline is largely due to the Sri Lanka psychology program which was discontinued and this program represented 53 female students.
• Minority student enrollment grew from 1,061 to 1,112, a 4.8 percent increase.
• Underrepresented minority enrollment grew from 724 to 740, a 2.2 percent increase.
• Undergraduate enrollment has risen for 17 consecutive years with record enrollments in underrepresented minority and minority students.
• The freshmen class continues to have the same excellent ACT average as the prior year, 28.1.

<table>
<thead>
<tr>
<th></th>
<th>Fall 2015</th>
<th>Fall 2016</th>
<th>Difference</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>On-campus</td>
<td>7,880</td>
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<tr>
<td>Distance</td>
<td>1,009</td>
<td>897</td>
<td>-112</td>
<td>-11.1%</td>
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</tbody>
</table>

<table>
<thead>
<tr>
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<th>Fall 2016</th>
<th>Difference</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>On-campus</td>
<td>6,841</td>
<td>6,909</td>
<td>+68</td>
<td>+1.0%</td>
</tr>
<tr>
<td>Distance</td>
<td>2,048</td>
<td>1,929</td>
<td>-119</td>
<td>-5.8%</td>
</tr>
</tbody>
</table>

**Action 2.2.2: Increase Missouri S&T’s Ph.D. enrollment by 200-400 by 2020**

• Spring 2017 doctoral enrollment was 647, a 25 percent increase over baseline.
• Seven students were awarded the Chancellor’s Distinguished Fellowship; 22 students are on previous iteration.
• Experience S&T was adjusted to be a 1:1 match with academic departments.
• Effective for fall 2016 semester: any PhD student on a 37.5 percent FTE or higher from department will receive full coverage of tuition and supplemental fees and any MS student in a non-PhD granting department (English & Technical Communication, Biological Sciences, Psychological Science, Business and Information Technology) on a 37.5 percent FTE or higher appointment will receive coverage of tuition and supplemental fees. In fall semester 2016: 337 doctoral and 8 master’s students received this new funding. In spring semester 2017: 373 doctoral and 13 master’s students received this funding.
• Rolled out doctoral student recruitment grants in December 2016. Departments can write for recruitment grants for two tracks: Track I: recruitment of highly competitive underrepresented minority doctoral students (African American, Hispanic, Native American, and Pacific Islanders) and/or female doctoral students. Track II: general recruitment of highly competitive doctoral students. Five departments were awarded funding.

• YouVisit Virtual tour of campus created with a specific Graduate Experience tour which rolled out in June 2017.

• Partnering with COER to deliver "What about Grad School" event in fall 2017 to encourage S&T undergrads to consider grad school.

• Brought eight students from S&T to the GEM GRADLab hosted at Mizzou in 10/2016 (40 students from other universities in attendance). S&T will be hosting GEM GRADLab in September 2017. GEM GRADLab is to encourage underrepresented students to apply to graduate school.

• Attended graduate fairs at over 30 schools/organizations (identified by feeder school reports) in academic year 2016-17.

Action 2.2.3: Increase the number of T/TT (and NTT) faculty members by 67 (33) (12 T/TT in conjunction with Lever 2.1 focused areas phase 1 hiring)

• Fall 2016, tenured tenure-track faculty numbers were 306, up from 277 in 2012. This number does not include those who started in the spring 2017 semester.

• Fall 2016, non-tenure track faculty were 58, up from 32 in 2012.

• There have been 42 additional faculty hires. These hires do not include any vacancy filled positions but are new additional lines toward the goal of 100 additional faculty hires. An additional 12 hires are expected for fall 2017.

Action 2.2.4: Transparently allocate as defined in Action 2.1.2 all open and new faculty positions to impact strategic plan and progress on unit performance measures

• The new hiring process includes transparently allocating all new and vacant faculty positions based on their impact to the strategic plan and department-determined performance metrics.

Action 2.2.6: Missouri S&T will develop specific agreements with UM campuses and possibly other academic institutions to collaborate in delivering courses and degrees that enhance current portfolios

• MOU with MasterCard, the Ravens Group, and Defense Acquisition University.

• Request for proposal with general motors to offer a systems engineering course to General Motors in spring 2018.

• Grant award from ATF with a new fall 2017 explosives engineering cohort.

• The Office of International and Cultural Affairs provides support for developing specialized agreements with campus faculty and our international academic partners.
  o OICA is working with partners at Abdullah Gul University, Kayseri, Turkey and Dr. Fatih Dogan, professor of Materials Science and Engineering, to develop a collaborative online course in Materials Science.
  o Business management systems 2+2 transfer guide with Chine University of Geoscience
  o Information science and technology 2+2 transfer guide with China University of Geosciences
- China Scholarship Council Agreement with China University of Petroleum
- An agreement with UMKC Business School has been developed for a certificate in entrepreneurship.
- Several course-sharing initiatives with System including: 1) University of Missouri-Columbia for introduction to construction management and environmental engineering, mathematics; 2) University of Missouri-St. Louis for classical optics, philosophy, ethics, sociology, nanotechnology, technical communication, English, technical writing, usability studies, proposal writing, technical editing, web-based communication, and history of technology; and 3) University of Missouri-Kansas City for electrical engineering in signal integrity, and interference control in electronic systems.
**Campus or Unit:** Missouri University of Science and Technology

**Lever Number:** 2.3

**Lever Description:** Develop a culture of excellence in research, scholarship and creative activity among faculty, staff and students

**Lever Metric:**
- Increase research expenditures to $40 million
- Increase citations per T/T faculty to 20

**Lever Summary:**

**Highlights:**

<table>
<thead>
<tr>
<th>Fiscal Year 2016 Summary of Sponsored Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposals Submitted</td>
</tr>
<tr>
<td>Dollars Requested</td>
</tr>
<tr>
<td>Proposals Awarded</td>
</tr>
<tr>
<td>Dollars Awarded</td>
</tr>
<tr>
<td>Total Expenditures</td>
</tr>
<tr>
<td>Faculty and Staff serving as Principal Investigators</td>
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<tr>
<td>Invention Disclosures</td>
</tr>
<tr>
<td>Patent Applications Filed</td>
</tr>
<tr>
<td>Patents Issued</td>
</tr>
<tr>
<td>License/Options Signed</td>
</tr>
<tr>
<td>License Income</td>
</tr>
</tbody>
</table>

A lead proposal developer was hired in May to assist with grant writing.
The number of citations is a Lever metric. Demonstrated in the chart below are the number of citations by department since the baseline in 2012.

<table>
<thead>
<tr>
<th>Department</th>
<th>2012 Citations</th>
<th>2013 Citations</th>
<th>2014 Citations</th>
<th>2015 Citations</th>
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<tr>
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<td>144.4</td>
<td>157.8</td>
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<tr>
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<tr>
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<td>0.4</td>
<td>0.3</td>
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<tr>
<td>Mathematics and Statistics</td>
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<td>22.9</td>
<td>26.2</td>
<td>18.6</td>
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<tr>
<td>Physics</td>
<td>384.8</td>
<td>405.4</td>
<td>231.1</td>
<td>194.7</td>
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<tr>
<td>Psychological Science</td>
<td>5.0</td>
<td>5.9</td>
<td>5.5</td>
<td>7.5</td>
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<tr>
<td>Chemical and Biochemical Engineering</td>
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<td>55.9</td>
<td>89.9</td>
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<tr>
<td>Civil, Architectural and Environmental Engineering</td>
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<td>Engineering Management and Systems Engineering</td>
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<td>116.0</td>
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<tr>
<td>Mechanical and Aerospace Engineering</td>
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<tr>
<td>Mining and Nuclear Engineering</td>
<td>28.5</td>
<td>41.6</td>
<td>40.0</td>
<td>23.7</td>
</tr>
</tbody>
</table>

Action 2.3.1: Develop and implement performance-based resource allocation models commensurate with degree offerings, including productivity in research, scholarship and creative works

- Each department has completed performance and productivity measures. These measures are in place and being tracked.
- The Delaware Study is being used for data analysis and provides a framework for base budget benchmarking.

Action 2.3.2: Identify and take actions to improve the metrics that contribute to increasing the national ranking of five graduate programs

- There are several third parties that publish annual graduate school rankings. For example, the graduate schools ranking by the US News and World Report (https://www.usnews.com/education/best-graduate-schools/articles/engineering-schools-methodology) places a 40 percent weightage on quality assessment composed of: (a) Peer assessment score (25 percent) and (b) recruiter assessment score (15 percent). The peer assessment score is gathered from engineering school deans and deans of graduate studies of peer schools. In 2016-17, the vice provost for graduate studies served as the Chair of the Midwest Association of Graduate Schools (MAGS) – an organization of approximately 100
graduate schools in the mid-west from 14 states. It is critical for S&T to actively engage in such professional societies that provide peer assessment input so that other people know about the wonderful S&T student success stories and facts.

- Graduate studies engaged department chairs and the vice provost and deans of the two colleges to select five programs for metric improvement. During the fall 2016 Strategic Plan Mid-Cycle Review, discussions around what approach for determining those programs occurred

**Action 2.3.3: Be selected to lead a National Science Foundation Engineering Research Center-type center**

- Missouri S&T has approached the other three campuses to initiate discussions regarding a UM system-wide research center focused on living with technology. Smart Living is the integration of ubiquitous sensing and data management to provide autonomous decision making. This center would bring expertise from a number of areas including smart building, smart cities, smart health and home care, smart grid (energy), and smart policies. Engineering Research Centers have a heavy focus on STEM-related programs which aligns with the state’s job growth needs. With Missouri S&T as the state lead for Project Lead the Way, the university is poised to develop innovative ways to develop the state’s STEM pipeline.

- Missouri S&T has been successful with a Tier-1 University Transportation Center with a center awarded in 2016 which partnered with the National University Transportation Center headed by University of Lincoln Nebraska.

**Action 2.3.4: Establish new sustainable industry-funded research consortia**

- In fall 2016, a task force was formed to assemble a report on research consortia best practices that will foster the development of additional industry-based consortia. The task force report was completed in March 2017.
- The Microgrid Industrial Consortium was established.
- The Particle Gel Conformance Control Industrial Consortium was established.
- The Kent D. Peaslee Steel Manufacturing Research Center is a consortium of steel companies, foundries, suppliers, and university researchers working together to address fundamental steel casting issues.
- The Small Modular Reactor Research and Education Consortium (SmrREC) led by Missouri S&T provides its members with research results to advance the design, construction, and operation of small modular reactors by collaborating in the development of precompetitive technologies.

**Action 2.3.5: Establish programs and facilities to host visiting world-class faculty**

- The Office of International Affairs - J-1 process was updated to ensure university is in compliance with updated State Department regulations regarding language proficiency and purchase of appropriate insurance.
  - The Intensive English Program (IEP) developed an appropriate language proficiency testing option that is convenient and affordable for prospective visiting scholars. Scholars who need additional language training are able to attend classes in the IEP upon arrival.
  - J-1 procedures are available on the international.mst.edu website and have been simplified to ease completion.
The Missouri S&T campus hosts an average of 45 scholars at any time throughout the year.

- The Office of International and Cultural Affairs assists the campus with hosting international delegations. In 2016-17, OICA assisted in hosting eight delegations from seven countries: China, Ecuador, India, Russia, Saudi Arabia, South Africa and Turkey.
- With the development of the two colleges, processes are now in place to host world-class faculty.

**Action 2.3.8: Expand research and entrepreneurial opportunities for undergraduate students, including the Opportunities for Undergraduate Research Experiences program**

- The UM System Entrepreneurial Scholars and Interns program was introduced to develop entrepreneurial principles and practices for undergraduates. Students took approved entrepreneurial-related courses followed by a 10-week paid summer internship.
- The university developed a Maker Space in the Interdisciplinary Engineering building. Currently under development are a hacker space and a collision space. These spaces are designed for student innovation and expansion of entrepreneurial opportunities.

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<td><strong>461</strong></td>
<td><strong>425</strong></td>
<td><strong>377</strong></td>
</tr>
</tbody>
</table>

**Action 2.3.9: Balance teaching and research relative to comparator institutions by enforcing workload policy**

- The College of Engineering and Computing developed a faculty task force working in collaboration with department chairs to develop a framework for departments to identify their own workload models.
- Intercampus Faculty Council (IFC) endorsed a flexible workload policy that the campuses are encouraged to implement.
- The College of Arts, Sciences, and Business developed a workload policy in accordance with campus policies and tailored the policy to specific departmental needs.

**Action 2.3.10: Develop and implement a new program to instill a culture of excellence in research, scholarship and creative works in early career faculty**

- A dual-career hires program is in effect to build a culture of excellence and retention of early-career faculty. This program was utilized in fall 2016.
• New faculty orientation and the freshmen faculty forum have been enhanced to instill excellence. These programs have established more contact hours with mentors designed to increase creative works.
• All new faculty are involved in two one-day orientation sessions. These sessions include: 1) library resources for teaching and research; 2) teaching expectations and assessment; 3) developing approaches and viewpoints to achieve career success; 4) preparing for your first class at Missouri S&T; 5) diversity of scholarship; 6) sponsored research; 7) data management; 8) scholarly tools; and 9) tenure and promotion process.
• The freshmen faculty forum meets twice monthly and covers: proposal writing, technology transfer, ethics, social media, proposal budgeting, course design, and learning styles.

**Action 2.3.11: Develop and implement a new program to instill a culture of excellence in research, scholarship and creative works in doctoral students**

• Graduate studies expanded the graduate research poster event.
• The second annual Three Minute Theses (3MT) competition took place this year with 27 students participating.
• Created new defense rubric to be used across all units. Graduate studies met with every department to discuss Graduate Learning Outcomes (GLO) and shared information regarding annual GLO reports. Graduate studies held Staff Storm training sessions for academic department staff to discuss the standard rubric and end of semester reporting. All departments have complied with the new rubric. Annual GLO reports by academic department were submitted in April. Graduate studies is continuing to work with campus HLC assessment committee and college associate deans on GLO.

**Action 2.3.12: Develop and implement a cost share program which supports students who attend national conferences to present their research results**

• College of Arts, Sciences and Business maintains a program to support undergraduate and graduate student travel so they can present their research at professional conferences. In the past academic year, the college responded to 26 requests (eight were bundled together to attend the AMSA meeting) from students and distributed a total of $10,226.
Campus or Unit: Missouri University of Science and Technology

Lever Number: 2.4

Lever Description: Create and implement a communication and marketing plan to raise the visibility of the campus and convey our return on investment

Lever Metric: Percentage of General Operating Revenue dedicated to institutional marketing and visibility efforts comparable to best-in-class universities (2020 target, 1 percent)

Lever Summary:

MEDIA COVERAGE

<table>
<thead>
<tr>
<th>Month</th>
<th>July</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
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- Continued rollout of “Miners Dig Deeper” visual identity, including the following high-impact, high-visibility areas:
  - Expanded templates for use by campus on the brand.mst.edu website
  - Incorporated visual identity in high-visibility environmental signage related to three major milestone anniversaries at Missouri S&T: 1) the mechanical and aerospace engineering centennial; 2) the 50th anniversary of engineering management and systems engineering; and 3) the 25th anniversary of Leach Theatre.
  - Expanded campus banner program to include Gale Bullman Building.
  - Developed “Miner Pride” wall in Gale Bullman Building (across from Hall of Fame Room)
  - Incorporated new banners inside Student Recreation Center
  - Incorporated visual identity and brand voice in several academic newsletters, including:
    - Computer science
    - Materials science and engineering
    - Mining engineering
    - Psychological science
- Held first-ever Brand Symposium for campus, with over 120 participants (staff, faculty and students) signed up and over 100 participating for one or more of the sessions offered.
- Further refined mst.edu website to better articulate brand identity in online format.
Deployed new positions to coordinate college-level marketing, communications and visibility, and internal communications.

Updated College of Arts, Sciences, and Business and College of Engineering and Computing websites to further integrate those sites into the university’s visual identity and to develop them as resources for visitors interested in research, partnerships, etc.

Created social media outreach for both the College of Arts, Sciences, and Business (Facebook, Instagram and Twitter) and College of Engineering and Computing (Facebook and Instagram)

Developed e-newsletter for College of Engineering and Computing to reach potential influencers (those college and university presidents, chancellors, provosts, deans, etc.) who vote on U.S. News & World Report rankings.

Completed and distributed over 30 research-focused news releases during the fiscal year to promote Missouri S&T research to media

Redesigned re:Search annual research magazine to align with new brand identity standards

Obtained more than 12,000 media mentions about Missouri S&T for a potential reach of nearly 26.4 million readers and viewers in the U.S. and more than 32 million internationally (more than 58 million total).

Recognized by the Council for the Advancement and Support of Education (CASE) District VI with 12 awards for marketing and communications efforts, including two gold specific to our branding effort: One for “institution-wide branding programs” and one for “visual identity systems.”

In support of promoting experiential learning, alumni were featured participating in S&T’s experiential learning in the summer issue of Missouri S&T Magazine, audience of nearly 60,000 alumni.

**Action 2.4.8: Require all communications and marketing materials (print, web, video, etc.) to be reviewed by a central marketing team to ensure consistency of messaging appearance and tone**

- Marketing and communications deployed the brand.mst.edu website to provide templates to staff responsible for developing marketing materials to ensure consistency of visual identity.
- Marketing and communications developed marketing materials for the colleges with a unified look to create consistent messaging.
- Marketing and communications initiated an environmental signage program on campus to raise visibility of the brand identity, voice, messaging and visuals.

**Action 2.4.11: Centralize all communications and marketing operations**

- Marketing and communications developed the corporate relations website as well as marketing materials for the new office; provided design, email and editorial services for the corporate relations e-newsletter; and promoted and provided visual identity, web support and email support for the Research Day event held in the fall of 2016.
- The university established a new branding strategy which included: a refreshed web design, an email signature generator, poster templates, and multiple business card designs as part of the centralized approach.

**Action 2.4.13: Explore development of Scholars’ Mine designed for increasing internal and external communication and globally promoting the intellectual work of the campus**
• Scholars’ Mine currently contains 29,347 works created by our faculty, students, and staff.
• Global readership has increased 6.5 percent over the same period of time the previous year.
• Global downloads of full text content has increased by 5 percent.

**Action 2.4.14: Execute an integrated visual identity and consistent outreach for Student Affairs to convey return on investment**

• Marketing and communications assisted student affairs in the recruitment and hiring of a new staff member to provide greater consistency of visual identity and messaging; provided visual templates to assist with graphic design; and provided web assistance.
• Upgraded visuals for Student eConnection (managed by Student Life) to bring it into consistency with the university's brand and visual identity.
• Marketing and communications encouraged the student affairs marketing coordinator to attend weekly meeting with marketing and communications creative services team.

**Action 2.4.15: Develop a communication plan to increase awareness of campus internationalization efforts and international collaboration activities identified during the ACE Internationalization Lab**

• Performed evaluation of ACE/CIGE model for comprehensive internationalization.
• Performed SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis of internationalization efforts (completed)
• Joined the ACE Internationalization Laboratory advisory support opportunity.
• In November, an ACE representative visited the S&T campus to begin the Internationalization Lab review process.
• International and Cultural Affairs: sponsored a student and faculty/staff award to recognize contributions towards campus internationalization; developed a campus Internationalization symposium for fall 2017; and developed a plan to implement a campus survey.
• International enrollment increased from the 954 baseline in 2012 to 1,126 in fall 2016.
• The yield rate for fall 2016 was 345.7 percent. Internal affairs is investigating best practices to increase enrollment and ensuring document processing meets benchmark standards.
• A contract with a recruiter in India was signed to focus on international enrollment. Research is underway in 2017 to confirm 20 additional contract recruiters.
Lever Summary:

Using best pedagogical practices, Missouri S&T is evaluating courses and discovering new pathways for accomplishing the course goals in all redesigned courses, not just the lectures. The processes used to create DELTA labs have been documented in order to create a collection of redesign guide sheets. This collection is being piloted at Missouri S&T and will eventually serve as a course redesign handbook for use by any instructor or instructional designer interested in laboratory course redesign.
**Action 2.5.2: Enhance resources for distance and blended learning, particularly with respect to the management and distribution of multimedia objects (aid professors’ use in the classroom)**

- Educational Technology provided walk-in hours at the library for instructional support and technology assistance:
  - Fall Semester
    - 336 total visitors; 252 unique; 112 unique faculty; 7 unique staff; 134 unique students
  - Spring Semester
    - 146 total visitors; 95 unique visitors; 62 unique faculty; 19 unique GTAs; 2 unique staff; 12 unique students
- Provide Faculty Learning Communities to foster innovation, creativity and scholarship for faculty across campus:
  - Fall Semester
    - 2 Curators’ Teaching Professors Summit – 87 attendees
    - Building Blocks for Course Development – 1 campus session with 10 attendees; 2 sessions dedicated to Chemical Engineering with 13 and 16 attendees
    - ALP Department Workshop on Syllabi – 13 attendees
    - Scholarship of Teaching and Learning Session – 31 attendees
  - Spring Semester
    - Departmental Building Blocks for Course Development – English-10 attendees; BioSci-13 attendees
    - Building Blocks for Course Development – 1 campus session with 13 attendees
    - CERTI Teaching with Technology Event – 33 attendees
- Educational Technology provided targeted sessions for developing courses for blended/online learning in the form of eLearning Community of Practice Sessions
  - Fall Semester – 2 sessions with 34 attendees; 24 unique
  - Spring Semester – 2 sessions with 25 attendees; 18 unique
- Educational Technology helped instructors record content for courses utilizing the eStudio.
  - Fall Semester – 63 sessions for 103.5 hours of recording
  - Spring Semester – 73 sessions for 96.5 hours of recording
- Educational Technology provided training and resources surrounding Delivering Experiential Labs To All (DELTA).
  - Completed 2 external workshops – 2 OLC Webinars with 20 attendees
  - Provided a pre-conference workshop as part of Teaching and Learning Technology Conference with 4 attendees
- Educational Technology provided instructional design consultations to help instructors develop courses using a systematic process and best practices.
  - Fall Semester – 709 consultations for 245.5 hours
  - Spring Semester – 1006 consultations for 1571 hours
- Educational Technology provided support for lecture capture which instructors can use to record a variety of content for their courses.
  - Fall Semester – 31 unique instructors; 3672 viewers for a total of 18, 205 total views
  - Spring Semester – 82 unique courses; 12,692 views for 265,084 minutes of recording
• Educational Technology supported instructors and students in the use of clickers (personal response devices):
  o Clicker Loaner Kits
    ▪ Fall Semester – Systems were checked out 47 times
    ▪ Spring Semester – Systems were checked out 18 times
  o Instructors using clickers in courses
    ▪ Fall Semester – 32 instructors
    ▪ Spring Semester – 65 instructors
  o Students using clickers in courses
    ▪ Fall Semester – Total students = 3,134; 42 percent freshmen, 25 percent sophomores, 14 percent juniors, 18 percent seniors, and 1 percent graduate
    ▪ Spring Semester – Total students = 3,676; 27 percent freshmen, 24 percent sophomores, 21 percent juniors, 25 percent seniors, and 3 percent graduate

• Educational Technology supported the learning technology portfolio, which consists of the Learning Management System and other technologies that support the teaching and learning mission:
  o Learning Management System
    ▪ Fall Semester – 550 courses; 496 teachers; 7,352 students; 21,212 files uploaded; 7,874 assignments
    ▪ Spring Semester – 992 courses; 695 teachers; 7,510 students; 59,469 files uploaded; 15,425 assignments
  o Lecture Capture Pilot – Panopto was piloted
  o Proctoring Services Pilot – Menu of Services was established in connection with the Testing Center. ProctorU was chosen as the online proctoring tool.

• Educational Technology provides a Teaching and Learning Technology Conference each year that brings pedagogy and effective integrations of technology together in a format that allows instructors to learn from each other and other experts in the field.
  o Attendance for 2017 – 262 attendees; 35 presenters

• Created the Distance Advisory Group consisting of faculty, academic department heads and deans to advise Global Learning on the management and distribution of multimedia objects.

**Action 2.5.6: Create and implement a stipend program to reward faculty who incorporate Blended Learning techniques into their courses**

• Educational Technology worked with six faculty that were awarded the Provost’s eFellows Grant for the 2017 school year. These faculty redesigned their courses for online/blended delivery.
• Educational Technology worked with three faculty that were awarded the CASB eFellows Grant to provide courses over the summer in an online format.
  o Two more instructors were awarded the grant for 2018.
• The Provost eFellow Program is currently in place to reward faculty. This program provides a three-tiered reward approach. Tier One, based on a complete full course redesign, provides a stipend of $5,000. Tier Two, smaller in scope with just one or more aspects of the course being redesigned, provides a stipend of $2,000. Tier Three, which involves minor changes and not a complete redesign, provides a stipend of $1,000.
• Mid-Semester Evaluations – fall 2016: 10 instructors participated; and 26 unique classes.
• Education Technology assisted with end of semester evaluations (improving response rates) – worked in collaboration with CERTI – completed website FAQs; and encouraged students to complete the end of semester evaluations at several student events throughout the semester.
• Provost’s eFellow Program – 6 grants awarded
  o Stuart Baur – ArchE 3805: Building Lighting Systems
  o Daniel Forciniti – ChE 5241: Chemical and Biochemical Process Safety
  o Zeshan Hyder – MinEng 4113: Mine Atmosphere Control (DELTA participant)
  o Nick Libre – CE 2211: Mechanics of Materials
  o Doug Ludlow – FE1100: Freshmen Engineering
  o Scott Miller – CerEng 3410: Characterizations of Inorganic Solids

**Action 2.5.8: Redesign high-volume courses through integration of new technology and modified teaching methods to enhance student learning**

• Provide Faculty Learning Communities to foster innovation, creativity and scholarship for faculty across campus:
  o Fall Semester
    ▪ 2 Curators’ Teaching Professors Summit – 87 attendees
    ▪ Building Blocks for Course Development – 1 campus session with 10 attendees; 2 sessions dedicated to Chemical Engineering with 13 and 16 attendees
    ▪ ALP Department Workshop on Syllbi – 13 attendees
    ▪ Scholarship of Teaching and Learning Session – 31 attendees
  o Spring Semester
    ▪ Departmental Building Blocks for Course Development – English-10 attendees; BioSci-13 attendees
    ▪ Building Blocks for Course Development – 1 campus session with 13 attendees
    ▪ CERTI Teaching with Technology Event – 33 attendees
• Educational Technology provides an easy to access online library of resources for teaching and learning.
• Educational Technology provides targeted sessions for developing courses for blended/online learning in the form of eLearning Community of Practice Sessions
  o Fall Semester – 2 sessions with 34 attendees; 24 unique
  o Spring Semester – 2 sessions with 25 attendees; 18 unique
• Educational Technology helps instructors record content for courses utilizing the eStudio.
  o Fall Semester – 63 sessions for 103.5 hours of recording
  o Spring Semester – 73 sessions for 96.5 hours of recording
• Freshmen Engineering (FE1100) is under redesign and part of the Provost’s eFellows Program.
• Education Technology worked closely with GTAs in Chemistry on their processes.
• A series of high-volume courses being redesigned are Calculus I, II and III.
• In fall 2014, Calculus I piloted an interactive lab. The new interactive lab met one day per week for 75 minutes. The lab was open to any student enrolled in a Calculus I lecture was standardized and interactive, and had limited class size of 30 students. Two faculty taught the pilot labs and worked closely together to develop interactive activities.
• In fall 2015, four sections of the new Success for Calculus were taught to 140 students, three sections were taught in spring 2016.
• In fall 2015, new Calculus II labs were piloted.
• Calculus III labs were piloted in spring 2016.
• Student success activities for calculus students were also created and implemented. The following activities occurred: 1) diet and exercise training; 2) goal-setting presented by the Student Success Center; and 3) guidance for test anxiety was conducted by the office of Counseling, Disability Support, and Student Wellness. Student feedback from the test anxiety workshop was extremely positive with students stated: “I learned to face my anxiety and address the problem,” and “I learned three things that contribute to my test anxiety: expectations, negativity and lack of preparation.”
• As with any pilot, lessons were learned so future improvements could be made. The pilot demonstrated a need for more than one day per week of face-to-face contact; this change was in fall 2016.
• Restructuring the Success for Calculus course around calculus topics and not algebra and trigonometry topics was implemented in fall 2016.
**Campus or Unit:** Missouri University of Science and Technology  

**Lever Number:** 2.7  

**Lever Description:** Address administrative structural changes to facilitate strategy and enhance national visibility  

**Lever Metric:** Implement administrative structural changes to facilitate strategy and enhance national visibility  

**Lever Summary:**

The university underwent structural changes to facilitate the campus strategy, raise national visibility and ensure process optimization.

- A Chief Diversity Officer position replaced the vice chancellor for human resources, equity and inclusion position. The position now oversees student, diversity, outreach and women’s programs, multi-cultural center, and cultural programs.
- The vice chancellor for finance and administration position was changed to vice chancellor for finance and operations and now oversees human resources, information technology, all auxiliaries, all facility services, and institutional research.
- The executive director for marketing and communications now directly reports to the chancellor (formerly reporting to university advancement).
- The office of global and strategic partnerships was eliminated.
- Corporate relations now reports to university advancement (formerly reporting to global and strategic partnerships)
- Global Learning now reports to the provost (formerly reporting to global and strategic partnerships)
- International affairs now reports to global learning (formerly reporting to global and strategic partnerships)
- KMST was eliminated.
- The vice provost for undergraduate studies title was changed to the vice provost for academic support and now oversees the Veterans Center, Student Success Programs and the Library.
- The Center for Sustainability now reports to the vice provost for research (formerly reporting to global and strategic partnerships)
Action 2.7.1: Implement the organizational structure appropriate to strategic plan
Lever Summary:

All academic affairs departments have established productivity measures divided into two primary areas; external measures designed for benchmarking comparisons to other institutions and internal measures designed for departmental comparisons at Missouri S&T. The departmental measures are demonstrated in Action 3.1.1. Academic Analytics released the 2015-2016 results in December 2016.

The Applied Innovation Minor (AIM), is part of a comprehensive set of programs to develop people, processes and tools to accelerate the application of technical innovations for social and economic benefit. This effort directly addresses the application aspect of our University’s 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.” To fully address this mission requires multiple elements, each with its own focus, but overall contributing to the complete capability. In a technical context this minor is focused on highly experiential methods to develop the capability in our students to bridge the deep gulf between researchers, engineers and scientists creating new technical capabilities and users with the context and understanding of application and use (connecting what’s possible with what’s needed).
**Action 3.1.1: Continue performing comparisons of academic department productivity to peer institutions**

### Department Productivity Measures

#### Materials Science and Engineering

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<tr>
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#### Engineering Management and Systems Engineering

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#### Geosciences and Geological and Petroleum Engineering

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#### Chemical and Biochemical Engineering

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#### Civil, Architectural, and Environmental Engineering

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<td>Publications per T/TT</td>
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<td>1,065</td>
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### Arts, Languages, and Philosophy

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### Chemistry

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<td>Degrees awarded per T/TT</td>
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### Mathematics and Statistics

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<td>1.4</td>
<td>1.5</td>
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<tr>
<td>Research expenditures per T/TT(OSP)</td>
<td>4,526</td>
<td>736</td>
<td>65,374</td>
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**Action 3.1.2: Identify and take actions to improve the metrics that contribute to increasing the national ranking of all graduate programs**

- Graduate studies recruiting staff attended Oak Ridge National Lab's ORAU Graduate Fair in August 2017 with an S&T booth to increase name recognition and recruit top doctoral students.
- The vice provost for graduate studies holds Past-Chair position in Midwest Association of Graduate Schools organization. Office of Graduate Studies staff members served on committees within the organization as well.
• The development of departmental productivity measures which align with strategic plan strategy metrics aid in the development of internal processes that improve efficiencies and increase outcomes for graduate programs. Graduate studies is focusing on further developing those metrics and creating a dashboard in 2017 with the assistance of the executive director for strategy, institutional research and assessment.

**Action 3.1.3: Evaluate the need for new or elimination of existing degree programs**

• This action is currently in progress and remains ongoing.
• A new Ph.D. in Integrative Biosciences and Biotechnology is under development.
• A PhD is under development.
• A masters in science management is under development.
### Campus or Unit:
Missouri University of Science and Technology

### Lever Number:
3.2

### Lever Description:
Centralize corporate relations to improve service to existing partners and to identify and establish new partnerships for the purpose of increasing/enhancing research, economic development, credit and non-credit education, philanthropy and the hiring of our graduates

### Lever Metric:
Number of corporate partnerships

### Lever Summary:
The Corporate Advisory Board is a six member board consisting of alumni and non-alumni members which provides input and guidance on improving the effectiveness of our corporate relations strategies and tactics. There have been three meetings since the inception in the spring of 2016.

The corporate relations office is a member of the Network of Academic Corporate Relations Officers (NACRO). Many of the initial corporate relations tools and processes were adopted from NACRO best practices identified by subject matter experts from universities across the country.

Corporate relations research partnership collaborations outcomes include:
- Boeing (Electro Magnetic Consortium membership)
- LMI (Center for Aerospace Manufacturing Technologies membership)
- Honeywell Master Research Agreement
- GE Aviation Master Research Agreement (pending)
- Halliburton/S&T research discussions (ongoing)
- Monsanto/S&T research discussions (ongoing)
- National Geospatial Agency/S&T research discussions (ongoing)
- Sondare/S&T research discussions (ongoing)
- Bleeding Edge/S&T research collaboration (ongoing)
- Emerson Student Design Project
- Monthly Meetings with Key Corporate Partners
- Monthly meetings have been established with key corporate partners to ensure follow up on identified actions and discussion of future opportunities. Current companies with regular meetings include:
  - Boeing (both St. Louis and Rolla locations)
  - MasterCard
  - Doe Run
  - Cerner
**Action 3.2.6: Broadly identify needs of external constituents that could be met by Missouri S&T**

- A process for engaging with companies has been created and includes: building awareness of university programs, identifying needs and engagement opportunities (research, student recruitment, distance learning), implementing a comprehensive engagement plan, and stewarding and growing relationship.
- A Corporate Engagement Audit spreadsheet to assess the current engagement levels of all corporate partners has been developed.
- To ensure that we are maintaining appropriate contact frequency with existing and new corporate partners, we have established a tracking spreadsheet. As of June, 232 total contacts have been made in the fiscal year, exceeding our annual goal of 150 contacts.
- The corporate relations office has tailored the approach for managing and increasing company engagement based on company needs and current status with the university. Maintaining contact with the Top 60 corporate partners and existing alumni includes: determining interest in increasing engagement; establishing regular meetings with follow up; engaging companies with interest; focus on potential return on investment; focus on the 2500+ Tier 5 companies and beyond; alumni or business connections; campus involvement beyond recruiting – CDC, Advisory Boards, etc.; and Industry Day contacts; and other contact sources (faculty recommendations/leads, networking event contacts, partnering with development, LinkedIn searches, company inquiries, websites, and newsletters).

- The corporate relations office developed a rubric and evaluated the existing relationships with external partners. Understanding the needs of the external partners first began with understanding “why” they have a relationship with Missouri S&T and then understanding “what” the relationship focus has been. Relationships can focus on research, co-ops, internships, post-graduation hires, charitable contributions, or other factors.
• Based on assessing the needs of partners, an engagement model was created as demonstrated in Action 3.2.6.

**Action 3.2.8: Develop a method for evaluating the relative strength and breadth of the partnerships with external constituents (research, student hiring, giving, distance courses, board memberships, etc.)**

• A Corporate Partner Tier Ranking process has been established and reflects the outcome of the annual Corporate Engagement Audit. The 2017 audit reflected corporate engagement progress in several areas:
  
  o Total number of companies engaged with S&T increased by 408 (16 percent increase)
  o Nineteen companies increased their engagement
  o Number of strategic companies (tier 1-4) increased from 53 to 60 (12 percent increase)

• 2,600 companies were identified as having contact with Missouri S&T, 72 have multiple touchpoints and 50 are strategic relationships.

**Action 3.2.9: Develop a matrix that reflects the multiple results of Action 3.2.1 above and provides an overall indication of the strength of the relationship and helps identify paths to maintain, strengthen or expand the partnership**

• The Corporate Partner Tier Ranking is in place to rank relationship strengths and opportunities. An annual assessment will be conducted to determine changes in company engagement levels and identification of new company relationships.

• A Corporate Audit was conducted to assess current corporate engagements across all of our touchpoints, which include Global Learning, university advancement, alumni services, sponsored research, technology transfer, athletics, student affairs, academics and student design. Each area rated their engagement with the companies they interact with by using a high, medium or low rating. A weighted points system with assigned to each level. Results were then tallied and corporate tier levels were determined according to score. This audit has helped the corporate relations office identify which companies are most engaged with the university and which companies the office should focus on increasing engagement with to advance to the next tier. The plan is to conduct this audit on an annual basis to re-evaluate and track companies, monitor their current involvement and their progression or digression within tiers.
The executive director has developed the above matrix and rated relationships.

**Action 3.2.10: Create a concierge approach to corporate relations including a web presence that supports the mission of the office**

- The corporate relations webpage is linked directly to the university home page and has been updated to reflect the mission of the corporate relations office:
  - Integrate university functions to fundamentally improve industry partnerships.
  - Connect industry needs with university assets.
  - Serve as a single interface to assist companies with university engagements.
  - **Average 460 corporate relations website page views per month year-to-date**

- The executive director disseminated the one-stop approach throughout the campus and provided a concierge contact approach allowing external companies, organizations, and agencies to make efficient contacts with Missouri S&T.

**Action 3.2.11: Develop a marketing plan to communicate the benefits of the office to key customers**

- The corporate relations office established an initial marketing plan with several key elements to communicate to both internal and external customers:
  - Updated web presence linked to university main web page
  - One page summary of Corporate Relations mission and benefits
  - Quarterly newsletters distributed to external and internal constituents
  - Faculty/staff round table meetings to communicate corporate relations mission and role
• Corporate Relations gift items – pens, cups, note pads, etc.
• Annual Industry Day to showcase research opportunities
• Partnering with Global Learning to market Global Learning programs
• Partnering with Alumni Association staff to strengthen alumni relationships
  - Alumni gatherings held with MasterCard, Mallinckrodt, Ameren, Spirit Aerosystems, Control Devices, and Houston area companies.

Sample of the marketing materials are below:

• Communications and marketing developed the corporate relations website as well as marketing materials for the new office; provided design, email and editorial services for the corporate relations e-newsletter; and promoted and provided visual identity, web support and email support for the Research Day event held in fall 2016.
Action 3.2.12: Work with Information Technology to create a “customer relations” management database that provides easy access to usable and actionable information

- Corporate relations searched for a Customer Relationship Management (CRM) software and implementation specialist. The system should have a holistic view of corporate entities and see every interaction a company has with our university. The first phase of this process was to purchase the software and contract with an implementation partner to get this system up and running in the Corporate Relations Office.
- Corporate relations is currently working to put in place an updated, relevant, and easy to navigate web page for corporate relations. The marketing and communications office has been assisting with this process. The website will convey a storyline to showcase the university relationships with current corporate partners and make it easy for companies to learn how to engage with the university through contacting the corporate relations office.
- Corporate relations along with the assistance of sponsored programs hosted the first ever Industry Day this fall at Missouri S&T. The purpose of this event was to showcase our research areas to companies and industry. It was also to demonstrate how companies can benefit from engagement with our research centers. Research centers will participate and a limited amount of companies will be invited to attend. There was a panel discussion, poster reviews, and lab tours included in this event.
Lever Summary:

- The Campus Master Plan began the process of its three-year update.
- Strategically purchased properties: TKE Fraternity on State Street, 605 11th Street, and several residencies on 13th street. Additional properties in the Rolla community are being explored.
- Executed a long-term lease with Phelps County Regional Medical Center to occupy half of the former Mercy Clinic building. This lease freed up space in the central part of campus allowing for additional faculty areas.
- A lease for the basement of the alumni house was completed. This lease allows for office space to open up in Leach Theatre making room for additional faculty offices.
- Schrenk Hall phase two renovations are underway.
- First phase of the Learning Commons has been completed.
- Planning for expanding the student fitness center has been completed.
- Renegotiated leases for Buehler and Sally downtown housing
- In the summer, renovations to enhance study areas and computer labs in Thomas Jefferson Hall began.
- Student affairs carpeted Farrar Hall and Residential Commons II, and added new lounge furniture for Residential Commons I and II.
- Athletics completed construction of hitting cages for baseball, softball, men’s and women’s golf.
- The men’s and women’s general locker rooms renovations began.
- A plan has been developed to expand the student fitness center.
- The Havener Center food court renovation is underway with the addition of a Chick Fil A and revised dining and register areas to accommodate flow.
- Thomas Jefferson Hall dining room was renovated and revised seating and installation of a hydroponics display was added.
- Converted the Miner Village C-Store to a 24/7 self-checkout operation.
Action 3.3.1: Leverage strategic funds for instructional laboratories with matching funding from non-appropriated sources

- Educational Technology provides training and resources surrounding Delivering Experiential Labs To All (DELTA).
  - Completed 2 external workshops – 2 OLC Webinars with 20 attendees
  - Provided a pre-conference workshop as part of Teaching and Learning Technology Conference with 4 attendees
  - Educational Technology continues to work with Chemistry to deliver Chem 1 lab to all students who are enrolled in Chem 1. This lab is delivered in a blended format in order to best utilize the facilities to meet the teaching and learning needs.

- The university dedicated $500,000 is general revenue to be allocated for lab upgrades.

Action 3.3.2: Continue exploring plans and processes for acquiring matching funding for research equipment in areas that have high return on investment to be matched with non-appropriated funds

- As the campus identifies potential donors for future equipment needs, strategies for leveraging those potential investments through a matching program is being explored.
- Departments are working closely with their respective Academies.

Action 3.3.4: Continue evaluating all campus facilities for their readiness for sustainable growth and return on investment

- The Campus Master Plan was completed and approved by the Board of Curators. The plan evaluated all campus facilities for effective space utilization and sustainable growth.
- The university received state funds for the experimental mine building and renovations for Schrenk Hall.

Action 3.3.6: Investigate the feasibility of establishing a $20 million endowment for the maintenance of (teaching, research, and co-curricular) equipment

- This action has been assessed as not a feasible option. However, $500,000 in recurring funds is being allocated beginning FY17 to the colleges to establish a permanent matching fund program for instructional and research laboratory equipment and innovation.

Action 3.3.10: Implement Learning Space Design Guidelines based on standard practices to guide the design of all learning spaces on campus

- Educational Technology completes a life-cycle planning and replacement of all technology in classrooms and computer learning centers.
  - Fall Semester completed technology upgrade in the southeast quadrant
  - Spring Semester began planning technology upgrade for the northeast quadrant
- Educational Technology coordinates preventive maintenance in cooperation with Information Technology on all technology in classrooms and computer learning centers.
- Educational Technology works with Disability Support Services to provide resources as needed for students with disabilities.
• Education Technology made contributions to the advancements and improvements in the Library Commons area.
• Education Technology worked with the DSS office on campus to accommodate student need.
• Technology Refresh – Lifecycle Maintenance of Classrooms & Computer Learning Centers (CLCs) – discussions have been ongoing to add four new CLCs to campus.
• Hybrid Distance Classrooms – a pilot has started to develop a hybrid design for technology in classrooms to increase distance education functionality and availability.
• Learning space guidelines were created and provided a framework for classroom spaces containing presentation technology. The guidelines highlighted the most common points of convergence at which architecture and audio-visual technology intersect, an integral part of the learning environment
• Space utilization guidelines were approved by the Space Committee.

**Action 3.3.11: Assess effectiveness of collaborative learning spaces (e.g. learning commons) that can be used for experiential learning opportunities and undergraduate research**

• Educational Technology completes a life-cycle planning and replacement of all technology in classrooms and computer learning centers.
• Educational Technology coordinates preventive maintenance in cooperation with Information Technology on all technology in classrooms and computer learning centers.
• Results of the Education Technology DELTA (redesigned instructional laboratory courses) program indicate students are using collaborative commons areas to perform laboratory experiments, freeing up traditional laboratory space/time to address increased enrollment.
• The library director partnered with the vice provost for undergraduate studies to develop a plan for a collaborative learning space.

**Action 3.3.12: Provide innovative student support facilities to meet customer needs**

• Established Rolla Suites office to serve the downtown housing locations; opened Rolla Suites residence hall has 44 students.
• Expanded dining services with two new food services locations: a south campus facility, Au Bon Pain, and a Residential Commons self-service vending market, Avenue C.
• In the fall, University Commons was opened for 450 students.
• Opened the renovated Residential Commons computer lab with areas for work groups, white boards, and a media-scape unit.
• Completed construction of new upper bleachers for the Bullman Building gymnasium.
• Renovated the west hallway of the Bullman Building with Miner Pride – Miner Tough murals to promote institutional pride.
• Completed phase one of a three-phase sound system improvement project; the first phase has shown marked improvements in the quality of sound production; phase two completion expected by fall 2017.
• Completed Testing Center renovation centralizing testing services in one location that included expanded seating capacity to address demand and doubling the number of reduced distraction rooms for students with documented ADA/504 accommodations. The testing Center administered 3,195 tests to 1,890 candidates.
Action 3.3.13: Develop a plan to increase gender neutral/family restrooms

- All new facilities incorporate gender neutral and family restrooms.

Action 3.3.14: Develop a plan to increase lactation rooms

- A plan is under development with the vice chancellor for finance and administration, physical facilities, and institutional equity, diversity and inclusion.
Leadership and Cultural Programs formed the university’s first Cultural Programming Board consisting of faculty, staff, and students. The board provided seven programs engaging 309 students in the spring. It also provided Chancellor’s Leadership Academy members with three hours of education on cultural competence.

Leadership and Cultural Programs: co-hosted Poetry is Power: Race and Patriotism in American Poetry with 50 participants; hosted three Black History Month events with 230 participants; and co-hosted Women’s Chocolate Lounge and Inspirational Women Awards.

Martin Luther King Day of Services engaged 177 students and Gonzo Giveback engaged 168 students, faculty and staff in service opportunities.

The assistant director for leadership and cultural program presented two programs at the National Association for Campus Activities (NACA) conference and was awarded the NACA Diversity and Inclusion Professional Development Grant.

Human resources, equity and inclusion created a series of trainings to develop new managers, academic administrators, staff and students. These trainings include:

- **Supervisory Series** - Each session has a facilitator that leads the conversation and lends expertise in the topic to be discussed. Much of the benefit of this program comes from the conversations between participants. This group lends itself to both those who want to advance their professional knowledge as well as those who need to bounce ideas and scenarios off of like-minded colleagues. There are 22 participants for the 2016-2017 series.

- **Academic Administrators Professional Development** - an invitation-only series. All seminars examine current trends, challenges, best practices, focus on advancing teaching, scholarship, and service of academic administrator’s. Topics include faculty recruitment, procedures, leadership skills, strategic planning, and how to handle legal and personnel issues.
**Action 3.4.1: To increase diversity of faculty and staff, provide incentives to the hiring departments that select qualified underrepresented minorities**

- To demonstrate the dedication to departments that attract underrepresented minority or female faculty members, each department receives a $10,000 incentive to their E&E budget for every such faculty member hired. The department retains the $10,000 recurring funds as long as that faculty member remains with the department. Each year the executive director for strategy planning and assessment and the budget director analyze each position to ensure where funds need to be allocated or in some instances removed from departmental budgets.
- Equity and inclusion received one-time funds to assist with diversity efforts.

**Action 3.4.2: To increase diversity of students, explore scholarship funding to be more competitive with underrepresented minorities/female/student recruitment**

- University Advancement is working with donors who have committed to invest $1 million to be paid over time for underrepresented minorities.
- Rolla Rising Scholarship Endowments are being discussed with all donors during a visit.
- The Chancellor’s Scholarship was revised and includes one $1,500 runner-up scholarship and five $1,000 honorable mention scholarships.
- Scholarship funding sources for women include: Boeing, Ford, AT&T, Halliburton, and UTC.
- Scholarship funding sources dedicated for student diversity include: Ameren, Ballard, Carter, Caterpillar, Chevron, Emerson, Finley, GM, John Deere, NACME, NIDEC Motor Corporation Endowed Scholarship, and the Dr. Harvest and Shirley Collier Endowed Scholarship.

**Action 3.4.3: Set up transfer articulation agreements with two-year institutions with large underrepresented minority populations**

- In fall 2016, several articulation agreements with two year institutions and large underrepresented minority populations began in the development phase. The focused institutions are St. Louis Community College, the Metropolitan Community Colleges in Kansas City, Ozarks Technical College in Southwestern Missouri and Mission College, a predominantly Hispanic-serving community college located in the Silicon Valley area.

**Action 3.4.5: Develop and provide professional development and training for staff, faculty and students that provides awareness of diversity and inclusion issues and encourages them to develop skills that will make our campus a warm and welcoming environment**

- An eight-week online course using the Canvas shell was created for faculty, staff, and students.
- Search committees are trained on diversity and inclusion.
- Fully-integrated a face-to-face Diversity 101 workshop into the monthly new employee orientation.
- Staff and students attended workshops on sexual discrimination – how to recognize it, how to prevent it, and what on-campus resources are available.
- An in-depth, interactive, diversity and inclusion course hosted in the online learning management system has been developed.
**Action 3.4.7: Bring to campus underrepresented faculty as visiting scholars**

- Human resources, equity and inclusion collaborated with the College of Arts, Sciences, and Business to prepare a proposal for a visiting scholar program focusing on diversity scholarship.
- College of Engineering and Computing is exploring new processes for visiting faculty.

**Action 3.4.9: Review, revise and create policies that support work-life balance**

- A Work Life Design portfolio of policies was created and includes: Total Rewards, Campus Perks, Dual Career Couples Policy, S&T Helpers, Take Our Youth to Work Day, Community Volunteer Leave, Flexible Work Arrangements, Professional Development, Affinity Groups, Tuition Assistance, Wellness and Fitness Programs, Childcare Resources, Eldercare, Financial Literacy Programs and the Employee Assistance Program.
- The Flexible Workplace policy was implemented in fall 2015.
- Workshops have been provided on work-life balance.

**Action 3.4.10: Evaluate and enhance faculty recruitment process and practice**

- The recruitment process has been revised. Revisions include: a review of the search committee composition, mandating wider outreach, and a requirement for nontraditional outreach and advertisements.
- The increased number of female faculty hires demonstrates initial recruitment success.
- The faculty recruitment and retention committee is analyzing data to see who is leaving and the reasons why in order to develop a strategy for faculty retention.
- Targeted advertising will continue to ensure that underrepresented minority and female faculty are appropriately represented and considered in the hiring process.

**Action 3.4.11: Explore collaborative partnerships for early childhood education, child development programs and facilities to enhance faculty recruitment and retention. Evaluate opportunities through campus master planning process**

- The Rolla school system is leading a community taskforce to study facility and funding options for early childhood education. Missouri S&T will continue to be an active participant in these conversations.

**Action 3.4.12: Develop and deliver regular workshop training sessions for faculty and staff on compliance, Equal Employment Opportunity and recruitment practices**

- A stand-alone seminar on ADA and FMLA is under development and was launched in spring 2017.
- Monthly communication occurred to department representatives on any compliance issues.
- Workshops conducted by the employee assistance practitioner covered diversity and inclusion and recruitment practices.
- All search committee members are required to be trained on reducing implicit bias.

**Action 3.4.13: Design, launch and maintain a Diversity and Inclusion website to promote inclusion and diversity**
The diversity and inclusion website was launched in spring 2016. The website consolidated all diversity and inclusion efforts across campus and includes a monthly newsletter, workshop schedule, and helpful tips.

**Action 3.4.14: Enrich campus commitment to diversity and inclusion through recruitment of student-athletes**

- Athletics recruited 90 freshmen men and 30 freshmen women and 15 transfer men and two transfer women from 20 different states, and four foreign countries.
- Miner teams signed 19 prospective student-athletes to National Letter of Intents during the early signing period from Missouri, Iowa, Nebraska, Virginia, Colorado, Texas, Illinois, California, Kansas and Oregon.
- Athletics increased collaboration with Student Diversity, Outreach and Women’s Programs to facilitate connections with employers and diversity groups.

**Action 3.4.15: Enhance collaborations and opportunities to promote an inclusive campus community and develop cultural competence**

- The office of International and Cultural Affairs recognizes the importance of an inclusive and welcoming campus community that promotes development of global competencies.
  - Progress towards goals:
    - **Increase involvement of campus and community:**
      - Recipient of Rolla Chamber of Commerce “Annual Achievement Award” for Celebration of Nations
      - Vendor participation at Celebration of Nations increased by 32 percent
      - 78 Country Flag bearers in the Celebration of Nations parade
      - Crowd was estimated at 3000
      - School outreach increase over 2015-16
      - Inaugural 5K Color Run held August 2016
    - Provided support for student organizations hosting seven public programs in 2016-17
    - Support eight other departments with collaborative programming
    - Satisfaction rate: Cultural programs, for example: Celebration of Nations, Building Bridges, Executive Forum, Study Missouri Scholar Program, and Conversation Partners have satisfaction ratings between 95-100 percent.
    - COER: facilitated a Boeing employee panel on diversity in the workplace as part of Boeing Week; coordinated and promoted Diversity in the Workplace discussion with AT&T and the psychology department; integrated diversity and inclusion elements within COER programming curriculum; and attended a conference on best practices for introducing diversity and inclusion themes in career-focused experiential learning.
    - Counseling, disability support, and student wellness: had two counselors attend the Missouri Institute of Mental Health Suicide Prevention Conference which included sessions on diverse populations; clinical staff engaged in in-service training on counseling male students; and the Case Manager attended a focus group with IBIS Consulting.
    - Leadership and cultural programs: co-hosted Stand Up Stand Out: Empowering Healthy Women, with Panhellenic Council, and the event featured a keynote alumni speaker with 80 participants.
• Leadership and cultural programs: coordinated a faculty and staff workshop on Managing Across Cultures with 11 participants; facilitated a Communicating Across Cultures workshop with 105 participants; provided $500 in sponsorship of Celebration of Nations; established the Cultural Programming Board consisting of a chairperson and seven diverse members from across campus collaborating to increase the scope and depth of cultural programming; hosted International Day of Peace and candle light vigil with 115 decorated luminaries and personal pledges to promote peace; facilitated the LGBTQIA Advisory Board meeting and fall Lavender Graduation with 12 participants; and partnered with the one book program to bring Coach Luma Mufleh to campus to increase awareness regarding refugees, 303 participants.

• Results from the LGBTQIA Advisory Board meeting included the Board committing to develop and present two programs this semester. One workshop will focus on how identity and perceptions of identity impact leadership, the other will center on being an ally, not only for members of the LGBTQIA Community but for anyone. Both workshops will be open to the campus community and more broadly focused than solely on gender identity or sexual orientation.

• Athletics: integrated STEP UP! training completion requirement for all intercollegiate teams; completed filming of RESPECT video featuring 11 student-athletes on the value of respect on campus and within society; and provided 11 educational opportunities promoting cultural appreciation with 826 students.

• Student wellness: facilitated 15 STEP UP! trainings for 452 students, faculty and staff; hosted STEP UP! Night at a football game which included throwing 100 STEP UP! T-shirts; facilitated Sexual Assault Awareness Week collaboration between STEP UP! and Sigma Pi Epsilon which raised $1,200 to bring additional trainings on campus with 107 students; engaged 227 individuals during Take Back the Night which included a panel discussion with university police, institutional equity, diversity and inclusion, and a sexual assault nurse; health educator partnership with Education Technology to develop a video.

• Residential life hosted Rolla-Con social justice workshop, a comic-con themed event with presenters from institutional equity, diversity, and inclusion, 20 student participants.

**Action 3.4.16: Develop a diversity training workshop for recognized student organizations as part of a leadership training program**

- The director of student life is working with the diversity, equity and inclusion office to develop a leadership training program.
- Greek Academy integrated institutional equity, diversity and inclusion trainings for its members.

**Action 3.4.17: Develop ongoing Diversity Speaker Series to highlight specific issues/topics and to bring exceptional talent and diversity to Missouri S&T**

- In fall 2016, in conjunction with Boeing Week, a diversity panel was facilitated.
Lever Summary:

Residential life established a partnership with the Writing Center that assisted in addressing challenges surrounding space in the center by providing a venue for writing services within the Residential Commons (RC). The partnership engaged 351 students during the 12 hours per week the center has staffing at the Residential Commons. This simple and creative solution helped students stay in school and these students ultimately become valued alumni.

Student organizations are very popular on campus with 255 Recognized Student Organizations (a 15 percent increase since 2012). A majority of current students participate in one or more intramural activities, with 7,417 participants. As the student body is so heavily engaged, COER identified a need for increasing engagement between employers and Recognized Student Organizations. A result of those has increased engagement by 88 percent for this fall. Creating lasting relationships with students is an integral piece for an engaged alumni base.

Emerging Leaders Institute (ELI) outcomes were very positive with 20 students earning certificates, 14 of those included honors. Twenty-one students created leadership development plans and reviewed them with their mentor. ELI individual workshops were evaluated and will be comprised as a comprehensive report. A post survey was sent to the spring and fall cohorts after the 2017 spring term to assess longer term impact on their leadership ability. ELI mentors conducted focus groups with participants and based on feedback, ELI goal setting will be revised at the beginning of the program and creation of a leadership development plan will occur at the end of the program.
**Action 3.5.3: Create a multifaceted engagement program that brings students through graduation and to the Academy levels**

- COER hosted a networking event prior to the career fair that engaged 15 employers with students as part of a collaboration with Alumni Relations.
- MinerRama registered a record number of 205 organizations.
- Alumni Association hosted Laughfest during homecoming and engaged 800 students.
- Minerfest Homecoming engaged 27 recognized student organizations with 950 participants.

**Action 3.5.7: Improve tracking measures of employment data and related feedback to enhance lifelong career development**

- COER continues to utilize and enhance standards for data collection.
- COER is collaborating with the registrar’s office on potential process of holding diplomas until the outcomes survey is completed in order to collect career outcomes.
- COER has a 37 percent knowledge rate, a 76 percent career outcomes rate for December 2016 graduate candidates. For August 2016 graduates: a 87.35 percent knowledge rate and a 82.18 percent career outcomes rate. For May 2016 graduates: a 88.87 percent knowledge rate and a 80.49 percent career outcome rate.
- COER issued fall semester career fair surveys to both students and employers. The results of the surveys led to modifications which have been implemented including changes to nametags, seeking lanyard donations from the Navy, and integrating parking lot attendants during career fairs.
- Integration of a data analyst has streamlined data collection through refined methods of gathering information for internal and external constituents; separation of data for reporting allows for more detailed reports of outcome data; developed a scorecard for employers based on recruitment majors to provide a customized recruitment plan; and developed reports to enhance data analysis for career development.

**Action 3.5.8: Promote “Miner for Life” strategies with student-athletes and extend this concept to encourage lifetime engagement**

- Dean of students revised outreach publications integrating Miner for Life into the brand concepts.

**Action 3.5.9: Strengthen residential living communities to develop lifelong leaders**

- Residential life: experienced a 3 percent increase in students residing in campus-approved housing (3,378 students); had 2,297 students in residence, representing a 2.5 percent increase; had 997 in Greek housing, representing a 4.6 percent increase; and 84 students in Christian Campus House, representing a 2.4 percent increase.
- Residential life integrated three new Learning Communities: 1) Entrepreneurship and Innovation – 24 students engaged with this community and visited local entrepreneurs, participated in a wellness program, and provided input on maker’s space for University Commons; 2) Global Awareness Community – had 24 students who engaged in monthly dinners with faculty, participated in an interactive activity during Celebration of Nations, participated in International Affairs Conversation Partners program; and 3) Honors Housing Community had 50 students who are a part of the Honors Academy and engaged monthly in programs focused on peer mentoring and advising.
- Residential life collaborated with Dr. Audra Merfeld-Langston to develop a three-credit course targeted to Global Awareness and Entrepreneurial and Innovative Learning Communities to be ready in fall 2017. The course will feature a study abroad component to the Caribbean island of Martinique during spring 2018. This course counts toward the Global Studies minor.

- Entrepreneurship and Innovation Learning Community attended the St. Louis Startup Connection at Washington University, a showcase and resource fair for entrepreneurs, investors, and other members of the innovation community.

**Action 3.5.10: Promote early intervention engagement strategies for at-risk students**

- Student affairs developed an active engagement strategy: 1) performed Brief Alcohol Screening and Intervention for College Students (BASICS) training for residence hall advisors, counselors, and students in the training program; 2) completed a Victim Assistance Training for residence advisors; 3) participated in the Campus Save Committee meeting; 4) provided wellness information to transfer students; 5) participated in and promoted suicide prevention training; 6) enhanced the STEP UP! bystander intervention with additional implementation efforts, training, and promotion; 7) enhanced Walk a Mile/It’s on Us programs; 8) implemented a tobacco and depression screening process; and 9) promoted ethical and healthy decision-making skills.

- Starfish S&T Connect retention solutions and early warning system for at-risk students was implemented. This system raises a red flag to faculty for any potential at-risk student, and students receive an email notification when they have been flagged. The program was promoted in emails, on Blackboard, and on the website. Starfish S&T Connect allows students to request appointments with instructors and identify tools and resources for success.

- COER: implemented the department ambassador program connecting career advisors with academic departments to provide services and programming designed to meet specific departmental needs and tailored for the student; integrated marketing outreach to alumni on services and engagement opportunities; and engaged 700 alumni recruiters during the career fair.
Lever Summary:

An Autonomous Electric Bus Pilot Project at Fort Leonard Wood will serve as the launching point for new and innovative collaborations between the installation and Missouri S&T. The unique training infrastructure at Fort Leonard Wood provides the opportunity for advanced technology research and demonstration in the areas of intelligent transportation; smart, sustainable and resilient cities/installations; and the associated electronic security that will be needed to support this rapidly evolving technology. Missouri S&T and Fort Leonard Wood Garrison Command are working collaboratively to create this advanced technology demonstration capability at Fort Leonard Wood.

Fort Leonard Wood has been selected as the host installation for a unique autonomous electric bus pilot project in support of the U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC). Robotic Research, LLC has been awarded the autonomous electric bus contract and Missouri S&T is their local supporting subcontract team. This project will bring a great deal of visibility to Fort Leonard Wood and Missouri S&T, and has already generated interest from leaders in the area of intelligent transportation.

Recent legislation (Sec 331 of 2013 and Sec 335 of 2015 National Defense Authorization Act) has made it easier for military installations to enter into agreements with local, state, and other federal government organizations for mutual benefit. New Air Force Innovation Centers can provide a model for collaborative research and technology demonstration to support strategic military and homeland security missions.

The first phase of the project will create an Autonomous Transport Innovation Center through a consortium of industry, academic and government agency partners. Offices will be located in the University of Missouri Technology Park at Fort Leonard Wood and demonstration, research, and testing of autonomous vehicles will take place within the secure training environment of the 62,000 acre Army installation.

Vehicle programs and infrastructure currently at Fort Leonard Wood: All truck driver training for Army, Air Force, Navy, Marine Corps/ Driving Courses/ Driving Training Areas (back-up, turn radius, safety, etc.); Truck Driver Simulators; Evasive Driving Course – Military Police School; Autonomous Electric Bus Pilot Project; and TARDEC partnership.
Missouri S&T expertise to support intelligent/autonomous transportation: University Transportation Center; Electric Vehicle Technologies; Robotics Engineering; Smart Living Signature Research Area

- Center for Sustainability outcomes:
  - TARDEC Autonomous Electric Bus Pilot Project contract awarded to Robotic Research, LLC with Missouri S&T is subcontract partner.
  - Create advanced technology research and demonstration capability at Fort Leonard Wood – allow use of Fort Leonard Wood roads and infrastructure with an Memorandum of Understanding (MOU) between Fort Leonard Wood Garrison Command and Missouri S&T was signed.
  - Cooperative Research and Development Agreement between Missouri S&T and US Army Corps of Engineers Engineer Research and Development Center (ERDC-CERL) was signed.
  - Fort Leonard Wood identified as site for new technology demonstrations to support Smart and Resilient Installations (SaRI) research.

Action 3.8.2: Create a culture of sustainability on the Missouri S&T campus and within the community by delivering programs that increase sustainability awareness

- Fostered the EcoMiner student organization in collaborations on campus and in the community to increase sustainability awareness through recycling efforts and zero waste events.
- S&T 2016’s Celebration of Nations in collaboration with Rolla community and local business Brewer Science was a No Waste Event for the first time.
- RecycleMania 2017 competition was conducted by the Eco Miners and supported and advised by Center for Sustainability.
- Center for Sustainability hosted the annual Earth Day Celebration on the S&T campus. Over 900 area school children and 40 vendors attended the event.
- The Electric Bus was used as a sustainable mode of transportation for students from 2014 to Spring 2017. The bus has an estimated ridership of 150 a day which created demand for a comprehensive transportation plan for the campus and the City of Rolla. A survey was conducted and published and confirmed the interest for a comprehensive transportation plan.
- The campus is using work study students to help with data collection, recycling, outreach, and sustainability reporting.
- More than 500 people from campus and community attended educational tours of the Solar and Eco Villages. Tours of the Village are now part of the recruiting strategy.
- Hosted eight Strategic Sustainable Committee meetings in the fall 2016 and spring 2017; an extensive list of topics and actions items were covered.
- In order to raise visibility of the Solar and Eco Villages with faculty, industry partners, and alumni, the 2017 house will become a VIP guest house when it comes back from the competition.
- Coordinate with Smart Living faculty to offer research opportunities at Solar and Eco Villages
- Published a map of all water bottle refilling stations, a poster for recycling resources across campus, and a green campus map.
• Created a new program for offices and departments to be recognized for their sustainability efforts: a Green Certificate.
• Cataloged sustainability research projects in order to track the breadth of sustainability-focused research at S&T
• Center for Sustainability programs delivered: Earth Day, RecycleMania, Solar/Eco Villages Management and Tours, EcoMiner Recycling at sports events, and Sustainable Energy Conference in collaboration with sustainability offices at Ameren, Saint Louis University and Washington University.
• The Student Council President is a member of the Strategic Sustainability Planning Committee.

**Action 3.8.5: Create and promote an alternative transportation culture, focused around simple transportation methods including pedestrian, cycling, and energy efficient busing to improve alternative transportation infrastructure over the next five years**

• The center for sustainability is collaborating with the city of Rolla for a bicycle-friendly campus, an application was submitted by engineering management.
• Public transportation remains a viable mode of transportation for Missouri S&T students. To promote energy independence and help protect the environment, an electric bus (the eBus) began routing students in FY14 and completes a loop around the Missouri S&T campus twice an hour from 7:30 a.m. to 4 p.m. Monday through Friday.
• The EBus was used as a sustainable mode of transportation for students from 2014 to spring of 2017. We had an estimated ridership of 150 a day that created demand for development of a comprehensive transportation plan for the campus and the City of Rolla.

**Action 3.8.6: Investigate existing and new courses for sustainability awareness for faculty, staff and students (targeting freshmen engineering, new faculty orientation and employee orientation)**

• Completed a thorough assessment of academics courses and training programs about sustainability and allows for a strengths and weaknesses analysis.
• Distilled new policy goal: provide educational themes, materials and opportunities for students, faculty, industry regional communities on environmentally, socially, and economically responsible citizenship.
• Missouri S&T currently offers minors in sustainability, global studies, and global sustainable economics.

**Action 3.8.7: Identify additional sources of funding to enhance sustainability programs**

• Partnership with Missouri Forest Products Association and Burns & McDonnell – grant awarded for statewide wood waste to energy analysis.
• Strategic collaboration with the International Lead Agency and the Advanced Lead Acid Battery Consortium to build a new microgrid in the S&T EcoVillage – project brings new lead acid battery industry partners and expanded visibility of the consortium.
• Collaboration with the Center for Sustainable Solutions, the Sustainable Ozarks Partnership, and Fort Leonard Wood in creating an Autonomous Electric Bus pilot project at Fort Leonard Wood – subcontract award for project coordination at Fort Leonard Wood from Robotics Research, LLC.
• Delivered comprehensive report titled: *Recommended Microgrid Interconnection Standards for Missouri* to the Missouri Department of Economic Development, Division of Energy – subcontract award from MO DED.

• Expanded our relationship with Fort Leonard Wood for innovative technology research and demonstration opportunities – executed Memorandum of Understanding.

• A sustainability fund is in place to support future projects. The center for sustainability has received several grants and contracts including City Utilities of Springfield. This action will continue to develop as new projects and initiatives are identified.

**Action 3.8.8: Track energy, environmental and sustainable research on campus**

• Published a methodology for researchers to coordinate their use of Solar and Eco Villages and the Microgrid.

• Developed close coordination with the Smart Living signature area, and the associate deans of research.

• Cataloged the sustainability projects from the research administrators.

• The Office of Sponsored Programs tracks grants and contracts including those involving energy, environmental, and sustainability.

• The Office of Undergraduate Studies has modified its application process to include a checkbox for undergraduate research projects related to sustainability.

• The geothermal project tracks usage and energy savings and provides internships for students involved in outreach and project result dissemination.

**Action 3.8.13: Analyze new construction with U.S. Green Building Council LEED (Leadership in Energy and Environmental Design) principles, and pursue LEED certification when appropriate**

• The University Commons was considered for LEED investment, but not pursued.

• University Missouri System has a published policy for sustainable construction.

• Physical Facilities plans to install monitoring and metering at building levels.

• All new construction can be evaluated with LEED standards and principles. Physical facilities and construction management will continue to evaluate when appropriate.

• LEED principles were applied to the new James E. Bertelsmeyer Hall for Chemical and Biochemical Engineering; the Technology Development Center; and the Kummer Student Design and Experiential Learning Center.

• LEED principles have aided the campus in achieving a Silver STARS (Sustainability Tracking Assessment and Rating System) rating. This rating, performed by the Association for Advancement of Sustainability in Higher Education, evaluated the areas of education and research; operations and planning; and administration.

**Action 3.8.15: Model sustainable practices to promote environmentally responsive residential living communities**

• Residential life finalized the recycling plan for the downtown housing community and began the process of adding bottle fillers to water fountains throughout residence halls.

• Missouri S&T won the Midwest Affiliate of College and University Residence Halls Commitment to Sustainability Award. This award recognized the campus for its commitment to sustainability awareness.
through student-directed, year-long campus wide sustainability activities for environmentally sustainable living measures.

- Missouri S&T has kept its pledge through the Second Nature organization on carbon neutrality efforts and already met its 2040 emission goal.
- A Resilience Plan has been drafted and identifies campus/community committee on resilience.
- The university restored the first generation Microgrid power generation and sold solar and fuel cell derived energy back to the grid.
- Student affairs installed a trash compactor and recycling bins in all apartments within University Commons to serve the residents.
- Student affairs reconfigured the trash area at Rolla Suites to expand recycling of food waste and other recyclables.

**Action 3.8.16: Apply sustainability measures to ensure effective recycling and waste management initiatives**

- Student services recycled 1,100 large bags of recycling materials.
- A draft of assessment and management plan for recycling across campus is focused on cost savings. A study of compactors at locations across campus is being explored.
- Student affairs expanded pre/post-consumer food waste collection to include coffee grounds at all locations; and integrated ToGo recycling container program at the Havener Center. For the academic year, Trim Tax initiative collected 18,522 quarts of food water totaling $56,100 in estimated value for local farmers.

**Action 3.8.17: Increase the visibility of Missouri S&T in the areas of energy, environment and sustainability**

- Center for Sustainability hosts the semi-annual meeting of the Microgrid Industrial Consortium; representatives from the Advanced Lead Acid Battery Consortium (ALABC) attend with 3 potential battery company members.
- Member of National Association of Climate Change Officers (ACCO) Climate Champions Council.
- Member of National Society of American Military Engineers (SAME) Energy and Environment Advisory Committee.
- Serve as member of Board of Directors of the Leonard Wood Institute.
- Serve on the Executive Committee of the Missouri Energy Initiative.
- Serve as member of the Advisory Board of the Sustainable Ozarks Partnership (SOP).
- Founding member and board of directors of the Friendship School Foundation – regional sustainability non-profit.
- Completed the Second Nature Green House Gas Report and met our 2040 emission goals.
- Completed the AASHE STARS report and achieved the provisionary goal of Gold rating.
- Center for Sustainability director is on several boards to increase visibility and those boards are: Sustainable Ozarks Partnership, Fort Leonard Wood Institute, Missouri Center for Advanced Power (MOCAP) and Kaleidoscope Discovery Center.
- Microgrid Industrial Consortium launched with six founding members.
Action 3.8.18: Increase the Association for the Advancement of Sustainability in Higher Education (AASHE) rating for the campus self-assessment program in Sustainability Tracking, Assessment and Rating System (STARS)

- Completed the 2017 AASHE STARS Reporting and achieved the provisionary Gold rating
- Develop an action item report based on Strengths and weaknesses. Report will be shared with the Strategic Sustainability Committee

EcoVillage aerial view during construction of 2017 House. Site of future microgrid.

Earth Day 2017
Selling power to the grid from the Solar Village
Missouri University of Science and Technology received $14.7 million in charitable gifts and pledges during the fiscal year that ended June 30. This total for the 2017 fiscal year is a 37 percent increase over the previous fiscal year, during which Missouri S&T received $10.6 million in gifts and pledges. It also represents a 45 percent increase over the $10.1 million received in the 2012-2013 fiscal year, which serves as a baseline for the university's strategic goals.

The contributions from alumni and friends, corporations, foundations and other sources provide funding for student scholarships, labs and classrooms, faculty support, academic and extracurricular programs, athletics, and other priorities.

Highlights of the past fiscal year's fundraising efforts include the largest gift ever received for S&T's Engineers Without Borders (EWB) program, a $1 million gift for scholarships, and the addition of four new Rolla Rising Scholarships, a priority funding initiative focused on strengthening S&T’s recruiting flexibility.

The gift to EWB came in the form of a $500,000 challenge grant from the Houston-based Montana Cahill Foundation.

A $1 million gift from Missouri S&T graduate and trustee and his wife. The Rolla Rising Scholarship initiative spotlights the recruiting advantage made possible by flexible scholarship funding, which can be awarded regardless of major, class year or hometown. Matching funding available to Rolla Rising Scholarship donors doubles the impact of every gift.

Contributions from corporate partners continued to be strong in the 2017 fiscal year. They include a $100,000 donation from the Sunderland Foundation, the charitable arm of Ash Grove Cement Co., which will support construction of the Advanced Construction and Materials Laboratory at Missouri S&T. The lab will provide expanded space for research on infrastructure development and materials.
Action 3.9.15: Develop campaign proposal templates

- The campaign proposal has been completed.

Action 3.9.16: Solicit leadership, major, and participatory gifts

- This process has launched and is currently underway.

Action 3.9.23: Explore the feasibility and resources required to create an online repository of personal giving records for donors

- The development process is underway.

Action 3.9.24: Plan and host recognition events for lab upgrade donors

- Upgraded labs were dedicated in 2015. Recognition events will continue in the future when additional labs are upgraded.

Action 3.9.25: Ensure major prospects are visited face to face annually

- Visits are being measured - 500 individual donors have been visited.

Action 3.9.32: Launch an Advanced Construction and Materials Lab campaign and track results

- The campaign has been launched, marketing materials have been created and events have been held.

Action 3.9.33: Launch a Student Design Experiential Learning Center campaign and track results

- The campaign has been launched.
- The building plans have been finalized.

Action 3.9.35: Pilot a staff sustainability program and assess effectiveness

- The program has been piloted and results are being evaluated.
U.S. News received and analyzed data from more than 1,200 online degree programs. The rankings include programs that are completely online, though a program still meets the criteria if it has in-person requirements for orientations, testing, and support services. The rankings do not include blended learning programs, nor do they distinguish between the for-profit and not-for-profit sectors. Rankings are determined by factors including student engagement, faculty credentials and training, peer reputation, and student services and technology. Each ranking category weighs the factors differently, and all, except for online bachelor’s degree programs, weigh admissions selectivity.

U.S. News and World Report’s 2017 Best Online Programs rankings:

Fifteen online graduate degree programs at Missouri S&T are among the best in the country.

Missouri S&T’s online graduate programs in the computer information technology category tied for sixth overall and ranked third among public universities. Missouri S&T offers online graduate degrees in computer science and information science and technology.

The online graduate engineering programs ranked 16th overall and 12th among public universities. Missouri S&T offers online graduate degree programs in 12 engineering disciplines: aerospace engineering, civil engineering, computer engineering, electrical engineering, engineering management, environmental engineering, explosives engineering, geotechnics, manufacturing engineering, mechanical engineering, mining engineering, and systems engineering.

Missouri S&T’s online graduate business program in information science and technology tied for 16th overall and ranked 13th among public universities.

The online MBA program tied for 91st overall and 71st among public universities.
**Action 4.1.3: Create a uniform marketing strategy to raise visibility of distance and online programs**

- Working document has been created. Global Learning has identified the following key marketing objectives to reach 2020 goals:
  - Expand market reach in key areas through multiple touchpoints.
  - Develop and maintain corporate partnerships with target companies.
  - Working with academic departments that teach distance courses to create department program profiles, identify goals and create individual marketing/recruitment plans for each program.
- Review, update and/or create communications and recruitment plans for our key customer groups:
  - S&T Alumni
  - Corporations/Businesses
  - Undergraduates
  - Military
  - Former Students
  - Employees at S&T

**Action 4.1.4: Increase our focus on the professional non-credit distance education portfolio**

- Educational Technology provides instructional design consultations to help instructors develop courses using a systematic process and best practices.
  - Fall Semester – 709 consultations for 245.5 hours
  - Spring Semester – 1006 consultations for 1571 hours
- Educational Technology Media Services team provided 626.6 hours of support for producing conferences and webinars for the campus.
- Educational Technology Media Services team provided 234.4 hours of support for the editing and production of instructional content.
- Educational Technology developed six pop-up courses on engineering topics.
- Educational Technology provided: professional and continuing education delivered 26 online trainings/webinars with 334 participants; 1,383 professional development hours; delivered 20 summer camps, 1,115 attendees; delivered 11 off-campus experiential learning courses, 149 participants, 447 credit hours awarded; and coordinated 11 conferences and other events, 1,133 participants, 5062 professional development hours.

**Action 4.1.6: Create an incentive program to encourage departments and faculty to offer more online, blended and distance courses**

- Educational Technology worked with six faculty that were awarded the Provost’s eFellows Grant for the 2017 school year. These faculty redesigned their courses for online/blended delivery.
  - The Provost’s eFellows Program was discontinued for the upcoming year.
- Educational Technology worked with three faculty that were awarded the CASB eFellows Grant to provide courses over the summer in an online format.
  - Two more instructors were awarded the grant for 2018.
- Educational Technology provides instructional design consultations to help instructors develop courses using a systematic process and best practices.
  - Fall Semester – 709 consultations for 245.5 hours
Spring Semester – 1006 consultations for 1571 hours
- Educational Technology Media Services team provided 234.4 hours of support for the editing and production of instructional content.
- Educational Technology Media Services team provided 691 hours of production assistance for “on-location” recording.

Action 4.1.7: Leverage existing success and resources from distance education program to expand into more online or asynchronous course offering

- Educational Technology Media Services team provide 626.6 hours of support for producing conferences and webinars for the campus.
- Educational Technology Media Services team provided 234.4 hours of support for the editing and production of instructional content.

Action 4.1.9: Create more online capability in classrooms

- Educational Technology completes a life-cycle planning and replacement of all technology in classrooms and computer learning centers.
  - Fall semester completed technology upgrade in the southeast quadrant
  - Spring semester began planning technology upgrade for the northeast quadrant
- Educational Technology completed a project to equip three rooms with hybrid distance technology. These rooms are Engineering Management 103, Electrical Engineering 103 and H-SS 105.
  - The technology included PTZ cameras that are controlled from a central control room in the Media Services area
  - Ceiling mounted room microphones for student audio
  - Instructor microphones

Action 4.1.10: Explore strategies to engage online learners in campus life

- Global Learning hosted graduate celebration during graduation ceremony, 88 participants and engaged online learners to participate in St. Patrick’s Day celebration and Homecoming, 61 participants.
Summary:
Missouri S&T strives to be a leader in how instructional labs for science and engineering courses are designed and delivered. This overall effort is known as DELTA, or Delivering Experiential Labs To All. The DELTA project began with the development of a set of eLearning models, processes, and strategies for the redesign of traditional laboratory courses for blended and online delivery. DELTA labs provide the relevant information and research to build and share a handbook which includes a comprehensive set of models for redesigning instructional laboratories in any engineering and science discipline. Several courses have been redesigned and piloted in both blended and online formats.

<table>
<thead>
<tr>
<th>Campus or Unit:</th>
<th>Missouri University of Science and Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lever Number:</td>
<td>4.2</td>
</tr>
<tr>
<td>Lever Description:</td>
<td>Enhance instructional labs and methods of developing lab experiences</td>
</tr>
<tr>
<td>Lever Metric:</td>
<td>Increase the number of redesigned instructional lab courses by 5 (year five)</td>
</tr>
</tbody>
</table>

Lever Summary:
Missouri S&T strives to be a leader in how instructional labs for science and engineering courses are designed and delivered. This overall effort is known as DELTA, or Delivering Experiential Labs To All. The DELTA project began with the development of a set of eLearning models, processes, and strategies for the redesign of traditional laboratory courses for blended and online delivery. DELTA labs provide the relevant information and research to build and share a handbook which includes a comprehensive set of models for redesigning instructional laboratories in any engineering and science discipline. Several courses have been redesigned and piloted in both blended and online formats.
Action 4.2.1: Explore how to partner with other universities, community colleges, high schools or extensions to deliver lab experiences

- Educational Technology provided training and resources surrounding Delivering Experiential Labs To All (DELTA).
  - Completed 2 external workshops – 2 OLC Webinars with 20 attendees
  - Provided a pre-conference workshop as part of Teaching and Learning Technology Conference with 4 attendees
- Educational Technology provided instructional design consultations to help instructors develop courses using a systematic process and best practices.
  - Fall Semester – 709 consultations for 245.5 hours
  - Spring Semester – 1006 consultations for 1571 hours
- Educational Technology worked with six faculty that were awarded the Provost’s eFellows Grant for the 2017 school year. These faculty redesigned their courses for online/blended delivery.
  - The Provost’s eFellows Program was discontinued for the upcoming year.
- Educational Technology worked with three faculty that were awarded the CASB eFellows Grant to provide courses over the summer in an online format.
  - Two more instructors were awarded the grant for 2018.

Action 4.2.2: Develop model frameworks and strategies for evaluating and redesigning instructional lab courses for blended/online delivery

- Educational Technology provides training and resources surrounding Delivering Experiential Labs To All (DELTA).
  - Completed 2 external workshops – 2 OLC Webinars with 20 attendees
  - Provided a pre-conference workshop as part of Teaching and Learning Technology Conference with 4 attendees
- Educational Technology provides instructional design consultations to help instructors develop courses using a systematic process and best practices.
  - Fall semester – 709 consultations for 245.5 hours
  - Spring semester – 1006 consultations for 1571 hours
- Educational Technology worked with six faculty that were awarded the Provost’s eFellows Grant for the 2017 school year. These faculty redesigned their courses for online/blended delivery.
Lever Summary:

Doctoral enrollment for fall 2016 was 624, representing a 21 percent increase since 2012. Enrollment in master's programs increased seven percent over while total graduate enrollment increased seven percent since 2012 baseline.

Missouri S&T significantly increased funding for qualified Ph.D. and graduate students as part of a strategy to attract more students and strengthen its research programs. The initiative became effective in fall 2016. Any Ph.D. student on a 37.5 percent or greater full-time equivalent appointment received full coverage of tuition and supplemental fees. The same coverage extended to similarly qualified students pursuing master's degrees in departments (English and technical communication, biological sciences, psychological science, business and information technology) where a Ph.D. is not offered. Missouri S&T is investing more than $3 million in new funds annually for the program. In fall 2016, 336 doctoral students and nine master's students received the new funding.

As part of this initiative, Missouri S&T also revamped its Chancellor’s Distinguished Fellowship program for Ph.D. students. This nationally competitive program provides funding for U.S. citizens, U.S. nationals or permanent residents who qualify. In addition to full coverage of tuition and fees, students eligible for the Chancellor’s Distinguished Fellowship will receive a $10,000 annual fellowship added to their appointment stipend.
Action 4.5.3: (Recruit) Develop memoranda of understanding and articulation agreements with reputed national and international schools to recruit high quality doctoral students

- The Office of International Affairs develops and maintains long-last relationships with international partners to assist with recruitment efforts.
- Office of International Affairs recruitment efforts include:
  - Current MOU status: 3 renewed, 7 new, 4 expanded
  - China (renewals)
    - China University of Geosciences – Beijing, Oct 2016
    - Northeastern Petroleum University - Daqing, Oct 2016
    - Tianfu College of SWUFE- Chengdu, Oct 2016
  - China (New):
    - The Institute of Modern Physics, Chinese Academy of Sciences, Sept 28, 2016
    - Yunnan University of Finance and Economics, Dec 20, 2016
    - Shantou University, China, Jan 4, 2017
  - Other countries (New MOU/MOAC agreements)
    - Dominican Republic: The Pontifica Universidad Catolica Madre y Maestra, April 3, 2017
    - Ecuador: Universidad San Francisco de Quito, March 10, 2017
    - Iraq: Koya University, Feb 28, 2017
    - Turkey: Abdullah Gul University, May 2, 2017
  - Establish at least two programs to encourage the transfer of students to S&T (AA/CAP)
    - Hohai University, China
      - Development of 2+2 transfer guide for business program
    - China University of Geosciences- Beijing
      - Business Systems Management, and Information Science & Technology, 2+2 transfer guide
    - China University of Petroleum-East China
      - CSC Study Abroad agreement, Dec 2016
    - China University of Geosciences
      - CSC Study Abroad agreement

- Graduate studies staff visited seven cities in India during the fall 2016 semester aimed at recruiting students.
- The vice provost and dean for graduate studies represented Missouri S&T and participated in the American Council on Education (ACE) Internationalization Lab in fall 2016. Processes began to weave internationalization into strategic mission and goals by adding actions throughout the strategic plan.

Action 4.5.4: (Recruit) Develop a marketing plan to promote comprehensive Missouri S&T graduate leadership and excellence

- The Graduate Leadership Development Program (GLDP) is continuing its fourth year. The member cohort has increased to eight students per calendar year.
- Experience S&T program was adjusted to become a one-to-one match with academic departments. The new VIP Experience S&T program was rolled out in December 2016.
• Missouri S&T is actively engaged with the National Graduate Engineering Degrees for Minorities (GEM) Consortium to increase participation of underrepresented minorities at the master’s and doctoral levels in engineering and science. Demonstrating active engagement with this consortium occurred this fall with graduate studies co-sponsoring the National GEM Consortium GRADLab in Columbia, Missouri. Eight minority students from Missouri S&T attended and 40 prospective minority students from other universities also attended.

• The university committee researched and developed a new distinguished fellowship aimed at promoting the values of diversity and inclusion. Several universities have fellowships dedicated to socio-economic status, first-generation U.S. citizens, first-generation college students, disabled, individuals who can demonstrate historical commitment to diversity and inclusion, or students who are underrepresented in their field of study. Eight revised Chancellor’s Distinguished Fellowship awards will be given annually. Of the eight awards, four will be dedicated for underrepresented minorities and female students to enhance student diversity.

• Chancellor Distinguished Fellowship has 22 awardees.

• Graduate recruitment staff attended: the Society of Women Engineers (SWE) fair, the National Society for Black Engineers (NSBE) fair, Tau Beta Pi engineering honor society fair, and several regional fairs in the fall semester. Recruiting staff also visited three historically black colleges and universities.

• Recruiting staff attended Oak Ridge National Lab’s ORAU Graduate Fair and sponsored a booth to increase name recognition to recruit top doctoral students.

**Action 4.5.7: (Retain) Conduct a feasibility study and develop a plan for a Graduate Resource/Success Center/Graduate Learning Commons to help students in the timely completion of their degrees, and to facilitate greater student/faculty/staff interaction**

• A Student Success Committee subcommittee on graduate student success is continuing for another year. The committee is exploring solutions to issues raised and is currently working with graduate students on the resolutions.

• The Library’s Master Plan includes space for a Graduate Resource Center and this is a phase five development.

**Action 4.5.10: (Placement) Provide mentorship and networking opportunities for students by connecting them to experts in academia/industry/research labs; provide resources to present their research work at national/international conferences**

• Graduate studies is collaborating with COER to create networking opportunities with employers before the fall 2017 career fair.

• Chancellor’s Distinguished Fellowship and Graduate Leadership Development students are given the opportunity to interact with university and community leaders regularly.

• The Council of Graduate Students (CGS) and graduate studies provide travel grants for up to 20 students to travel to conferences. In February 2017, ten grants were awarded.

**Action 4.5.11: (Recruit) Provide funds to encourage prospective domestic doctoral students to visit the campus for one day and/or a few weeks to work closely with a professor**
In December 2016, a Doctoral Student Recruitment Grant program was rolled out. Academic departments could write for recruitment grants under two different tracks. Track one is recruitment of highly competitive underrepresented minority doctoral students (African American, Hispanic, Native American and Pacific Islanders) and/or female doctoral students. Track two is general recruitment of highly-competitive doctoral students.

**Action 4.5.13 (Recruit) Enhance implementation efforts for high quality international doctoral students**

- International enrollment increased from 954 in Fall 2012 to 1,125 in Fall 2016
  - International affairs signed agreements with 13 additional contract recruiters from July 2016 - June 2017, for a total of 15.
- Researched options for processing international student documents in order to increase enrollment yield rates including:
  - Developed mechanisms for instituting more efficient practices
  - Established account with E-Ship global to expedite shipping of immigration documents
  - Based on benchmarking, admissions updated process to admit undergraduate students conditionally with scanned transcripts
  - Implemented online training for Optional Practical Training and Curricular Practical Training applications
  - Updated and simplified J-1 scholar process
- Graduate studies and international and cultural affairs meet monthly to discuss recruitment and work to identify ways to enhance the process.

**Action 4.5.15: (Retain) Examine graduate programs and reduce time-to-degree, where appropriate**

- An initial analysis on graduate time-to-degree has been performed.

**Action 4.5.17: (Retain) Promote workshops/seminars/social events to encourage more camaraderie and exchange of research ideas among doctoral students from various disciplines**

- The second annual Three Minute Thesis (3MT) competition took place in October 2016. The 3MT, an academic competition, challenges graduate students to describe their research within three minutes to a general audience. It was designed to celebrate the discoveries made by students and encourages communication. This event had 27 student participants and 15 judges from the campus and Rolla community. The winner competed against students from other universities in April 2017 at the Midwest Association of Graduate Schools conference in Indianapolis.
- A technical editor was hired in August 2016 and held a thesis/dissertation workshop to 15 students. Two additional boot camps were offered in the spring semester. The editor also offers walk-in writing sessions in academic departments, 10 have been implemented. The editor also has an open-door practice for providing immediate and quick one-on-one assistance for short documents.
- Graduate studies hosted seven workshops in fall 2016 including learning from LaTex, formatting your thesis/dissertation and learning about Endnote.

**Action 4.5.22: (Recruit/retain/placement) implement comprehensive graduate student/program data collection mechanism, tracking mechanisms, (student inquiry thru placement), graduate learning**
outcomes rubrics, etc. to benchmark time-to-degree, doctoral retention, program improvement, timely response to student application/graduation status, and improve graduate student services

- The Office of International and Cultural Affairs (OICA) tracks graduate recruitment data from student inquiry through placement/enrollment using SLATE, Peoplesoft and a local database. Also, specific types of communication with the prospective student is continued by several units of our office:
  - Manager, Recruitment: responding to admission queries, providing welcoming and arrival information, etc.
  - International Student Services: welcome and information on receiving immigration documents.
  - Sponsored Student Services: supplemental information to that named above. However, it is tailored to the specialized needs of sponsored students.

OICA tracks student inquiries which have been identified through various means:
  - Recruitment fairs,
  - Student contacts from partner universities for undergraduate transfer programs and Cooperative Academic Programs (CAP),
  - International students who have graduated from S&T with undergrad degrees,
  - Sponsored students,
  - Referrals from recruitment agencies

- Starfish S&T Connect was launched in fall 2016. Graduate studies staff utilized Starfish to keep track of student questions and issues. Students could check-in through the Starfish kiosk when they arrived in the office.

- Graduate studies completed a thesis and dissertation defense rubric implemented across all units. The rubric included ratings for: an ability to apply disciplinary knowledge with critical problem solving skills, an ability to function in diverse learning and working environments, an understanding of professional and ethical responsibilities, an awareness of national and global issues, and recognition to engage in lifelong learning. The core areas are knowledge, communication, critical thinking and professional development. All departments have complied with the new rubric and are submitting graduate learning outcomes to the graduate studies office.
Lever Summary:

The College of Arts, Sciences and Business (CASB) engages in various activities and programs to enhance mentoring for students, faculty, and staff. CASB launched a First Year Research Experience (FYRE) program for students to work directly with faculty in a pre-OUR, researcher-apprentice relationship. During the 2017 pilot cycle, nine two-person teams across seven disciplines participated in the FYRE program. The students received $500 stipends; and the research mentors received $500 in professional development funds.

Additional activities include:

- The colleges hosts regular meetings with subgroups of faculty (teaching professors, junior professors, female professors) to offer informal and formal mentoring and advising
- Provides feedback to department chairs through an annual leadership survey
- Supports the Undergraduate and Graduate Student Leadership Councils to provide opportunities for members to assume leadership roles within the student body
- Continues to host meetings of the Dean’s Advisory Council every semester
- Collaborated with International and Cultural Affairs to develop a Global Scholar Initiative Program to support the development of faculty-led programs abroad.
- Launched Undergraduate and Graduate Student Leadership Councils to provide opportunities for members to assume leadership roles among the student body
- Implemented a program to support undergraduate and graduate student travel so students can present their research at professional conferences

The Graduate Student Leadership Council and the Undergraduate Student Leadership Council in the College of Arts, Sciences, and Business operates as an active advising body serving the collective interests of both graduates and undergraduates in the college, providing a communication link between students and administration, and working to enhance the goals of the college and the greater university community.
Students were nominated or were encouraged to apply to serve on the college leadership councils by department chairs and other campus administrators. Applications were vetted by the college senior leadership.

Core Objectives of the councils:

- To represent the College’s undergraduate student body
- To serve in an advisory capacity to the Vice Provost and dean
- To raise the visibility of the colleges and its undergraduate programs
- To recognize undergraduate student achievements in the college

**Action 4.6.1: Explore development of an online math assessment for incoming students**

- The committee dedicated to reviewing the math assessment made the following recommendations: 1) create an equivalency table with ACT math score and corresponding math class. Data from the past three years of PRO sessions will be reviewed to create a grid of the ACT math score and which math class the student was assigned after the math placement test. This data will be used to create an equivalency table which will be used as part of the process of math placement for freshmen entering in 2017; 2) compare per-assigned math class to in-person testing at PRO. Prior to the PRO session students are assigned a block of courses, including a math course, based on their ACT math score. During 2017, the students will continue to take the in-person placement test to confirm the class assigned based on the ACT math score. Adjustments will be made during an advising session; 3) analyze the results. After the PRO sessions in 2017, data would again be analyzed to compare how many students needed a change of placement after the in-person testing. It would be deemed successful if less than 10 percent had to be changed from their prior assignment; and 4) decision moving forward, if the pilot is deemed successful, the equivalency table may be considered for use in 2018 to pre-assign the student’s math class.

**Action 4.6.2: Develop and implement a campus structure of staff advisors for undergraduate students**

- A plan is under development to hire non-tenure track faculty who would split appointments to serve as “super advisors” as well as teach within programmatic areas. This could provide instant relief for departments that need assistance in both advising and teaching loads.
- COER revised Mentor a Miner program in partnership with the Civil Engineering Academy. There were 27 mentors registered. A plan is in development for including all academies in a similar program.

**Action 4.6.4: Explore the feasibility of a Center for Advancing Faculty Excellence**

- Director was named for the CAFÉ starting in July 2017.
- A steering committee has been created to guide this initiative forward. The center will provide resources that support faculty excellence in teaching, research and creative activities. It will be a faculty-centric center involving high levels of faculty involvement.

**Action 4.6.5: Implement best practices and promote widespread use by the faculty, students and advising staff of the Missouri S&T Early Alert and Connect advising tools**
• Campus staff members participate in regular meetings and share best practices with other System campuses.

Action 4.6.6: Create a “10 Before Tenure” program where untenured faculty can participate in 10 career development programs

• Education Technology provides services to Faculty Learning Communities to foster innovation, creativity, and scholarship for faculty across campus:
  o Fall Semester
    ▪ 2 Curators’ Teaching Professors Summit – 87 attendees
    ▪ Building Blocks for Course Development – 1 campus session with 10 attendees; 2 sessions dedicated to Chemical Engineering with 13 and 16 attendees
    ▪ ALP Department Workshop on Syllabi – 13 attendees
    ▪ Scholarship of Teaching and Learning Session – 31 attendees
  o Spring Semester
    ▪ Departmental Building Blocks for Course Development – English-10 attendees; BioSci-13 attendees
    ▪ Building Blocks for Course Development – 1 campus session with 13 attendees
    ▪ CERTI Teaching with Technology Event – 33 attendees

• Educational Technology provides targeted sessions for developing courses for blended/online learning in the form of eLearning Community of Practice Sessions
  o Fall Semester – 2 sessions with 34 attendees; 24 unique
  o Spring Semester – 2 sessions with 25 attendees; 18 unique

• Educational Technology provides a Teaching and Learning Technology Conference each year that brings pedagogy and effective integrations of technology together in a format that allows instructors to learn from each other and other experts in the field.
  o Attendance for 2017 – 262 attendees; 35 presenters

Action 4.6.7: Enhance the new faculty orientation program

• The Office of International Affairs Accent Modification Program, offered through the Applied Language Institute, is a voluntary program designed to provide professional development opportunities to non-native English speakers. Participants choose to register for this training program and it is advertised through the new faculty orientation program.
  ▪ 2016-17 participant titles: assistant teaching professor, assistant professor, professor
    o Total 20 Registrations (8 in Fall 2016, 12 in Spring 2017)
    o Departments: Business and Information Technology; Civil, Architectural and Environmental Engineering; Computer Science; Electrical and Computer Engineering; Geosciences, Geological and Petroleum Engineering; Mathematics and Statistics; Mechanical and Aerospace Engineering, Mining Engineering
    o Countries: China, Iran, Pakistan, Republic of South Korea
    o Participant evaluation measures: measurement of error production is calculated pre-program participation and post-program participation. Intonation production includes observation of syllable stress, word stress, pitch and sentence contour
Participants report that they appreciate the well-organized schedule and materials. Sessions are individualized and client privacy is maintained.

AMP has served 115 participants from 26 countries since 2006.

- Educational Technology, in connection with CERTI, provides professional development sessions to foster culture of excellence in research, scholarship and teaching.
  - 5 sessions with 37 attendees

**Action 4.6.8: Develop guidelines for faculty mentoring focusing on three core areas: teaching, research and service**

- Education Technology provided a program to help instructors enhance teaching through peer observation and feedback:
  - Fall Semester – 1 faculty participant
  - Spring Semester – 1 faculty participant
- The College of Arts Sciences, and Business hosts regular meetings with subgroups of faculty (teaching professors, junior professors, female professors) to offer informal and formal mentoring and advising.
- The College of Engineering and Computing enhanced faculty mentoring by creating Mentoring Mondays and Feedback Fridays.

**Action 4.6.9: Explore the feasibility of a comprehensive staff mentoring program**

- Pilot programs are being explored.

**Action 4.6.10: Explore and create additional programs to assist in professional development, leadership and mentoring of graduate students**

- Education Technology provided seminar sessions for Graduate Teaching Assistants (GTA) to help them in writing thesis and dissertation:
  - Fall Semester – 3 sessions
  - Spring Semester – 1 session
- The Graduate Leadership Development Program (GLDP) provided Missouri S&T students from various disciplines to network and collaborate with graduate students from system campuses. GLDP increased to eight students per campus, previously five. The students assisted with the 3MT competition, logistics, set-up, and time-keeping.

**Action 4.6.11: Create and enhance resources for campus graduate staff and coordinators (e.g. Guidebooks, Staff Storm, Graduate Council meetings, etc.)**

- An Office of Graduate Studies “Policy and Procedure Manual” was completed.
- Graduate staff storming sessions occur monthly to discuss common questions, troubleshooting, and additional information missing in the procedures manual.
Lever Summary:

The Burns & McDonnell Student Success Center (BMSSC) had a soft launch in fall 2012. By the spring of 2013, one advisor had been hired and several student workers (Success Coaches) were staffing operations. Each year the BMSSC’s advisory committee and Student Success Programs (SSP) evaluates, analyzes and makes recommendations on enhancing and developing programs/events, additional support, tutoring, and mentoring. BMSSC is committed to ensuring that students have many opportunities for positive experiences and academic success.

The Student Success Mentor program consists of formalized assistance made available in the Student Success Center for students who may need early intervention to help them persist. These students are identified at admission. During their PRO day they visit with a Success Coach (trained student employee). During their first and second semester, the Success Coach informs students about available programs and resources.

The Student Veteran Resource Center (SVRC) had a soft launch in fall 2015. A Student Service Specialist II (advisor) was hired. This advisor coordinates programs in which veterans and service members have the opportunity to participate (guest speakers, transition programs, panelist, luncheon series, sophomore programs, Majors and Minors, first-generation, etc.). Responsibilities for this role also include basic academic advising, coaching, mentoring, tutoring, scholarship advising, department chair trainings, PRO activities, and Opening Week activities. The SVRC is collaborating with COER for a regular Corporate Reception Night for student veterans to network with employers before the career fair.
**Action 4.7.1: Explore the feasibility of a first-year success course**

- Elements of a first-year success course were implemented in freshmen engineering.
- Advisors were added to assist students with their academic needs.

**Action 4.7.2: Identify the feasibility for restructuring freshman engineering**

- Educational Technology provides instructional design consultations to help instructors develop courses using a systematic process and best practices.
  - Fall Semester – 709 consultations for 245.5 hours
  - Spring Semester – 1006 consultations for 1571 hours
- Freshmen Engineering received a Provost’s eFellows Grant for 2017 and completed redesign activities to transform this course to best utilize face-to-face interactions as well as online/blended activities.
- The College of Engineering and Computing is working with faculty on transforming freshmen engineering to encourage innovative thinking among students within the program.

**Action 4.7.3: Enhance student mentoring program**

- Faculty presence in the Student Success Center includes: Faculty Corner Brown Bag Lunches where students can eat with faculty; faculty office hours in the SSC; and outreach programs generated by faculty to bring in students which includes “How to Approach Faculty” and “Importance of Talking with Your Professor.”
- Student success director presented at the American College Personnel Association on the Effect of the Success Mentor Program on Academic Performance and Retention and was Awarded Most Innovative Program in fall 2015. The director also presented at Missouri Association for Collegiate Registrars and Admission Officers (MACRAO) on the Effect of the Success Mentor Program on Academic Performance and Retention.

**Action 4.7.4: Generate a time-to-degree template and analyze baseline demographic data of graduate student cohorts for Ph.D. completion**

- Graduate studies is working on developing a dashboard. The executive director for strategy, institutional research and assessment will work with the department to create the dashboard in spring 2017.

**Action 4.7.5: Explore and identify graduate policies and procedures that impact the doctoral plan of study and students’ multiple career pathways (e.g. time limits, residency requirements, etc.)**

- Graduate studies collaborated with the Graduate Council and evaluated graduate stipends at comparator universities.

**Action 4.7.6: Implement a pilot program to assist graduate students with theses/dissertation completion**

- Graduate studies offered boot camps which assisted with thesis/dissertation completion.

**Action 4.7.7: Explore additional work study opportunities and other student engagement programs**
The UM System approved the proposal “Coordinated Retention and Student Success Program for Freshmen Underrepresented Students at Missouri S&T – Summer Bridge Program Scholarships and Continuing Institutional Work-Study Financial Support” as part of the Comprehensive Retention Initiative. The $100,000 grant will be divided with $50,000 for the summer program and $50,000 for the work-study program.

**Action 4.7.8: Explore the feasibility of spring, summer and winter intersession courses**

- The Office of the Provost is reviewing the feasibility of intersession courses.

**Action 4.7.9: Identify measures to enhance course enrollment projections and implement adaptive instruction funding model**

- The registrar’s office has restructured the first-year course projection report to improve the consistency of formulas, expanded the courses included, and the affected department.

**Action 4.7.10: Investigate offering courses in an innovative modular format**

- The Office of the Provost is examining a modular format for classes.

**Action 4.7.11: Identify strategies and technologies promoting awareness of Disability Support Services to meet the needs of a diverse student population**

- Student affairs collaborated with The Thompson Center for “Through My Eyes” autism workshops, 101 faculty, staff and students attended.
- Educational Technology works with Disability Support Services (DSS) to provide resources as needed for students with disabilities.
- 863 students registered with DSS, a 12 percent increase, and provided 1,589 letters of accommodation for 520 students.
- DSS provided 2,329 consultations; coordinated 50 disability accommodation requests; and provided 340 alternative format books.
- Counseling, disability support services and wellness: integrated Dragon Naturally Software to be accessible from any campus computer; facilitated six sessions on Autism Spectrum Disorder; created a study area for students registered with DSS; collaborated with UMSL, MU and UMKC on revisions of the UM Collected Rules and Regulations to better reflect the operational needs of disability support; and collaborated with Education Technology to provide virtual software to students needing dictation software.

**Action 4.7.12: Provide early intervention strategies that promote self-management and enhance resiliency for a diversified student body**

- Athletics co-sponsored speaker, Jake Byczkowski, Solo Cup Culture: Minimizing the Risks of an Alcohol-Soaked Campus Climate, 1,000 students attended.
- Counseling, Disability Support, and Student Wellness: facilitated 19 student confidentiality meetings; trained the counseling staff in trauma and impact; attended Young, Gifted, and at-Risk conference; and attended the Association for University and College Counseling Center Directors.
• The dean of students performed 194 UCARE referrals, engaged the UCARE team in review of 51 in-depth cases.
• Student Wellness: provided risk management training for Alpha Chi Sigma and Sigma Phi Epsilon with 36 students attending; facilitated 10 Alcohol BASICS sessions with 7 students; facilitated 21 Marijuana BASICS sessions with 10 students; engaged 23 constituents in six ATEAM meetings; and engaged the residential life staff on BASICS referral process and wellness initiatives.

**Action 4.7.13: Explore creating a multicultural center on campus with designated spaced for affinity groups**

• Institutional equity, diversity and inclusion along with student affairs are collaborating to determine the feasibility of a multicultural center.

**Action 4.7.14: Promote a multi-dimensional model of wellness that incorporates a whole-person concept and encourages lifelong health**

• Student Health Services served 5,967 students representing 11,059 visits; performed 9,928 athletic visits; administered 700 flu shots; engaged 7,292 unique users in Student Health 101.
• Student Health Services had a 93 percent overall student satisfaction rate
• Counseling services provided: 1,433 sessions (27 percent increase over prior year) with 289 clients (a 20 percent increase over prior year); performed 91 crisis sessions, an 18 percent increase; facilitated 92 mental health screenings, 69 alcohol screenings, and 33 Body U screenings (a 34 percent increase); 146 students utilized the StressLess room; engaged 167 students in three test anxiety sessions; hosted three Asperger’s group sessions; presented on available services to the Student Veterans Association; and presented on services available to 42 students at Graduate Student orientation.
• Students reported a 94 percent satisfaction rate with their counselor.
• Student Wellness: completed four STEP UP! Trainings for 182 students, faculty, and staff; implemented STEP UP! Student Ambassador program with eight students; provided nutrition consultations for seven students; hosted eight Joe’s PEERS events engaging 431 students; facilitated the first annual 5K Glow Run with 45 students participating; hosted six Miner Well programs on sexual and mental health, alcohol use, and stress management engaging 261 students; conducted eight group and 27 individual Alcohol BASICS; conducted 11 Marijuana BASICS sessions; hosted an annual retreat engaging 15 faculty, staff and community members; and GAMMA provided 656 water bottles while hosting five presentations engaging 220 students.
• Dean of Students engaged the UCARE team in 39 case reviews, 99 total UCARE referrals.
• Student Health completed bi-annual satisfaction survey and obtained 260 responses, results demonstrated that: 93 percent were overall satisfied (an increase from 85.6 percent in 2014); 91 percent reported student health services helped them get back to their studies faster; and 99 percent agreed that student health services understood their cultural needs and treated them accordingly.