FY16 SEMI-ANNUAL REPORT
COVER PAGE

Campus or Unit: Missouri University of Science and Technology

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**Lever Summary:**

A significant experiential learning activity is now required for undergraduate students who entered in fall 2015. The catalog has been updated to include the definition of experiential learning: “All students at Missouri S&T are required to participate in appropriate experiential learning activities. Experiential learning 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 aptitude.”

To help the campus frame the criteria for understanding what constitutes significant experiential learning, a rating rubric has been created.

A standardized experiential learning tracking form is being implemented. This form will save time for both the faculty supervisor and the academic advisor. Once the form is completed, the office of undergraduate studies and the registrar will be notified. The registrar has already scheduled all students starting in fall 2015 in experiential learning. The completed experiential learning opportunity will appear on the student’s academic record and the Missouri S&T degree audit.

Experiential learning is a priority for the campus and the students. Two of the approved experiential activities are cooperative learning (co-ops) and internships. Undergraduate students gain valuable work experience on co-ops and earn on average $3,252 per month; graduate students earn $3,769 per month. This past academic year, the number of students participating in a co-op increased to 485, up from 382 the prior year, with 182 different employers. During the past academic year, 539 participated in an internship with in 41 different states and 2 international locations.

Another approved experiential activity is study abroad. The College of Arts, Sciences, and Business collaborated with International and Cultural Affairs to assist in developing faculty-led programs abroad. Five new study abroad programs were created: literature, music, economics, Spanish and folklore.
Action 1.1.2: Incorporate experiential/service learning into the core curriculum in all degree programs at any level beginning in the freshman year

- The degree requirements for experiential learning is applicable to 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: “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 these 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 will document the experience from the student perspective and this piece should be of a quality suitable for inclusion as an attachment to a co-curricular transcript or in an e-portfolio.

Action 1.1.2 b: Draft a statement describing degree requirements

- Each department has jurisdiction over its curricula and authority over what activities will meet the significant experiential learning standard. The department chairs have been working with faculty and curriculum committees to determine the core degree requirements.
- After a department has determined an undergraduate student has satisfied the departmental requirement, the department notifies the Office of Undergraduate Studies, which maintains the records. The undergraduate office will notify the registrar’s office which will update the student’s degree audit status.

Action 1.1.2 d: Approval by degree-specific curriculum committees

- Several academic departments have developed a draft proposal, which has been approved by their curriculum committees describing what qualifies as experiential learning based on the guidelines established in Action 1.1.2. The departments that have approved draft proposals by their curriculum committees are: 1) computer science; 2) civil, architectural, and environmental engineering; 3) history and political science; 4) physics; 5) engineering management and systems engineering; 6) arts, languages, and philosophy; 7) chemical and biochemical engineering; 8) English and technical communication; 9) geosciences and geological and petroleum engineering; 10) mathematics and statistics; 11) mechanical and aerospace engineering; and 12) psychological science.
To demonstrate alignment with Action 1.1.2, achieving the agreed-upon definition in Action 1.1.1 and establishing a core curriculum requirement, experiential learning can include: 1) undergraduate research; 2) co-op or summer internship; 3) significant involvement in national or international competitions for a minimum of one year; 4) sponsored service learning such as Miner Challenge for one year; 5) study abroad for one semester; 6) significant participation on a student design team; 7) paraprofessional positions (tutors, mentors, residence assistants, admission ambassadors); and 8) year-long leadership positions in student government (Student Leadership Conference Chair, Intercollegiate Athletics team). The activity must first be approved by the faculty advisor and the department chair. Upon completion of the activity, a written reflection must be submitted to the academic advisor within 30 days from the end of the activity.

Study abroad is an approved experiential learning opportunity. Missouri S&T has joined the Institute of International Education’s “Generation Study Abroad” initiative to double the number of students participating in a study abroad experience by 2020. Several programs have been developed to support this initiative: a Global Scholar Initiative Program to support faculty-led programs abroad; new scholarship opportunities to assist qualified students; and enhanced undergraduate advising services to incorporate study abroad into student academic plans.

A Missouri S&T field station is under development and will become an exemplary educational resource for a variety of disciplines.

Action 1.1.3: Assign responsibilities associated with monitoring experiential learning activities and maintaining the reporting of those activities to the Vice Provost for Undergraduate Studies, who will regularly inform the Executive Director of Strategy, Planning and Assessment on progress

- The vice provost for undergraduate studies has been working with the Student Affairs division and the registrar’s office to ensure a proper monitoring system is in place. The vice provost and the executive director of strategy, planning and assessment are in regular communication to ensure activities are properly documented.
- Undergraduate studies, Student Affairs and enrollment management have piloted an effort to catalog and evaluate all potential experiential learning opportunities in those divisions and are expanding their efforts to other divisions. This comprehensive cataloging is designed to promote experiential learning in general and can be utilized by faculty, staff and students.
- The Office of Undergraduate Studies will prompt all academic departments each semester to submit a list in spreadsheet format of students in their major who have completed the experiential learning activity for graduation since the previous semester’s report.

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

- COER completed the following this fiscal year: 1) Internships: 30 in July, 134 in August, 201 in September, 148 in October, 156 in November and 111 in December; 2) fall 2015 career fair: 318 employers (record number and five percent increase), 40 new employers, 1,421 students seeking co-op, 2,923 students were seeking summer jobs, and 4,000 students attending; and 3) coordinated 20 employer events in September and five in October.
- COER hosted 17 employer visits to discuss experiential learning.
The Princeton Review ranked Missouri S&T career opportunities and employer relations 15th in the nation for career services.

25 students attended the St. Louis Miner Trek and visited 12 companies over two days. A winter externship was added in fall 2015; 17 students participated with 10 different employers.

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

- Leadership and Cultural Programs established four peer positions for the leadership certificate; two Emerging Leadership Institute Mentors began in the fall, six Chancellor’s Leadership Academy Advisors were selected and trained; 12 students were invited to join the Student Advisory Committee.
- Student Life had Peer Involvement Advisors (PIA) engage in “Game of Student Life” program with 40 students; PIAs engaged 16 students and had over 30 appointments; PIAs are working with 12 students abroad for group mentoring; seven fraternity and sorority captains are meeting weekly to develop a new education program.
- Student Affairs engaged Joe’s PEERS with psychology students on Fight the New Drug Program as an experiential learning project.
- In 2016, the alternative spring break service-learning program Miner Challenge will be expanded to six trips, including one international trip during winter break.

**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 and provides leadership, networking and technical learning for over 600 students. The center provides strong levels of engagement with faculty, staff, business, and the community.
- The campus allocated 5,800 square feet to the Kummer Student Design and Experiential Learning Center and the build-out of this addition will nearly double the space to allow for expansion of design teams.
- Advancement has identified donors and prospects who will be approached in 2016 for gifts in support of the center’s expansion.

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

- The vice provost for undergraduate studies and the vice provost and dean for enrollment management plan on-campus forums to promote the understanding of the experiential requirement to currently enrolled students.
- The new degree requirement for experiential learning has been heavily promoted to prospective students: 1) incorporated into the Open House and Miner Days power point presentations; 2) incorporated into recruitment emails to prospective students including messaging about experiential learning; and 3) promotional videos are included on the web.
- The marketing and communications department has written stories, developed news releases, posted stories on the main website, and produced video. Additional materials will be developed once all of the academic departments have established the acceptable activities for the degree requirement.
Lever Summary:

Innovation, entrepreneurship, and creative thinking are at the heart of the broader education and training mission at Missouri S&T. The mission is to integrate high-quality education and research with cutting-edge applications to create and convey knowledge that serves the State of Missouri and the nation, and helps solve societal challenges on a global scale. The university strategic plan requires experiential learning as an integral component of undergraduate curricula to foster innovation and creativity. The NSF I-Corps model was first used in 2014 for mentoring students and faculty to build experiential innovation and entrepreneurship (I&E) strengths. Missouri S&T has seen the positive impact of teaching experiential entrepreneurship by participating in four I-Corps team projects, joining the Epicenter Pathways to Innovation (PTI) and supporting University Innovation Fellows (UIF) programs. The university is committed to scaling up I&E efforts and moving to the next stage of excellence serving a broader community.

The university was awarded NSF funding for becoming the state’s premier I-Corps Site. The entrepreneurial education program is based on the I-Corps curriculum with experiential, collaborative learning and uses the Lean LaunchPad methodology. The objectives are to: 1) enhance entrepreneurial activities and training experiences for undergraduate and graduate students; 2) expand training opportunities available to post-doctoral students, faculty, and underrepresented groups using the LLP model; 3) increase the number of teams entering the I-Corps program, entrepreneur fellows with the University of Missouri System and Missouri S&T, and VentureWell E-Teams; and 4) transition more activities to commercialization.

The novelty of the Missouri S&T I-Corps Site program lies in leveraging the experiential learning emphasis and top quality academic programs in science and engineering. The I-Corps Site will have tremendous impact on the Midwest region and Central Missouri. Rolla and its surrounding rural areas are remote and in need of economic resurgence. The I-Corps Site will be a catalyst and morale booster to create a critical mass of innovators and entrepreneurs to establish a local technology hub and economic base, and engage civic leaders and other stakeholders. It will be a bridge for collaboration with more mature startup communities and developed economic bases in St. Louis and Kansas City. The I-Corps Site will be a fertile ground for experiential training of students from nearby community colleges, middle schools, and high schools through entrepreneurship courses, seminars, workshops, innovation camps and competitions, and other outreach activities.
activities. Special attention will be paid to recruit and involve female and underrepresented minority students in this program, the activities of which will be widely disseminated through various mechanisms including a dedicated website, newsletters and other social media.

**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. 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 tie to the Missouri S&T strategic plan.
- A communications plan was implemented for the Innovation Team. A new website was launched, and a Facebook page and Twitter account were created. Information posters have been placed in each building on campus.
- The Miner Tank was developed and implemented in fall 2015. The Miner Tank follows the format of the “shark tank” television program. Campus community members submit their proposals then present their proposals to the Miner Tank, followed by questions from the tank. The tank is an open forum and all of the campus community is invited to attend.
- The Innovation Team reviews the proposals and determines the status in one of three areas: 1) ready for “immediate implementation;” 2) “future implementation” for proposals that are innovative in nature but may need further discussion or are contingent upon other variables; and 3) “not for implementation” for those proposals not meeting the strategic criteria. This action has a seven-year duration timeframe and will continue throughout the life of the plan.
- The proposal submission process began in July 2014 where 13 proposals were submitted in the fall semester and nine proposals were submitted in the spring. In fall 2015, 31 proposals were submitted and 13 were approved. The approved proposals: Heartland Synthetic Biology Consortium, Solar Village living lab, acupuncture magnetic resonance imaging for skin cancer detection, safe drug delivery system, campus beautification, portable sampling kits for trace metals associated with breast cancer, technical innovators and entrepreneurs grants, Mars Rover sample bay, opening week igniting innovation workshop, University Innovation Fellows Stanford meeting, designing fuel cell flow fields using bio-inspired designs, innovation in education grants, and electric tractive system for multi-motor applications.

**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; training on how to effectively use the commons would be included**

- The interior of the library has been examined strategically to focus on usable space designed to promote student collaboration. To assess user engagement, a new survey instrument was created to assess the environmental changes in the library. The survey gathered data on satisfaction with the library space, face-to-face services, physical materials, and online materials. All users were asked to rate their awareness of a variety of services and materials in each of the areas where they had indicated familiarity. Results of the survey indicated: 1) a very positive opinion on the interior updates;
2) 100 percent of undergraduate students surveyed say they are “extremely satisfied” by the face-to-face services offered at the library; and 3) students are pleased with the mobile whiteboards and the iPad/laptop lending program. The surprising result of the survey is that undergraduates see the library’s top priority as acquiring more textbooks and graduate students and faculty both see the priority as acquiring more journals. These answers indicate that users still have a traditional view of the library as a provider of textual information. Collections remain at the traditional heart of the library. In fall 2015 the following collections were added: Early American Newspaper Series 1, Early English Books, Dictionary of National Biography, Nineteenth Century Newspapers and American Periodicals from the Center for Research Libraries.

- A list of prospective donors for enhancing the Learning Commons has been identified.
- Inter-library loan is a key service allowing the Missouri S&T community to interact with materials which are not a part of the Curtis Laws Wilson Library. In fall 2015, new partnerships and technology were implemented to increase the capacity to lend and borrow at a faster rate. In September 2014, lending articles were 331 and in 2015 were 1,066. The lending articles fill rate increased from 63 percent in 2014 to 80 percent in 2015. Borrowing articles requested was 379 in 2014 and 525 in 2015. The borrowing articles fill rate increased from 81 percent in 2014 to 94 percent in 2015.
- Sponsored by the College of Arts, Sciences, and Business, the College of Engineering and Computing, and the Curtis Wilson Laws Library, work by French artist Marie-Helene Le Ny was exhibited in the library.
- During the fall 2015 semester: a new café was created; new furniture was chosen for collaborative work and flexible seating; reference librarians were relocated to professional space that includes capacity for research consultations; and the east and west sides of the first floor enjoyed a facelift with new carpeting.
- The Learning Commons has undergone a physical transformation with a new multi-media center with four new high performance CAD 3D graphic work stations, a 3D scanner, a Nonavitra visualization wall, additional quick print stations, co-lab spaces, and enhanced presentation rooms.

**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 have begun utilizing TedX video series installations for professional development. For example, the marketing and communications department holds “TED Thursdays” viewings at least once per month.
- In fall 2015, a First Generation was held. This event brought together first-generation students for TedX-like sessions presented by faculty, staff, alumni, and students.

**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 a seminar series displaying 6-12 minute talks from faculty, staff, students, and community members designed to inspire and ignite the community. In fall 2015, a total of 11 presentations were delivered with 60 attendees.
Action 1.2.5: Identify a series of co-curricular events (e.g. intersession or alternative spring break) for interdisciplinary groups of students, faculty and/or staff focused on providing solutions for problem-solving, innovation or leadership

- Student Affairs has developed plans to expand the Global Leaders Institute to a weekly, semester-long program.
- Student Affairs is collaborating 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.
- The Leadership and Cultural Programs department provided 397 students with cultural competency programming as a part of a co-curricular event.
- Five new students took part in the Graduate Leadership Development Program (GLDP). Funding of $10,000 per campus, per year, for three years has been confirmed from System for GLDP beginning spring 2017.

Action 1.2.6: Develop minor and certificate programs in leadership, entrepreneurship, humanitarian engineering, and science and creativity

- 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. Unlike traditional entrepreneurship programs, this minor is based on a different perspective regarding entrepreneurship (evidence-based entrepreneurship) and offers a different pedagogy (high-content experiential learning and experiential method learning focused on technical-based solutions). This minor leverages the student’s traditional technical strengths with a learning process where students have the freedom to develop knowledge and skills from experiences outside the academic framework while working on collaborative interdisciplinary teams. The minor is a special program (any major can take the minor) and must still be approved by Faculty Senate.
- A new adaptive leadership minor for Military Science was approved by the department curriculum committee.
- The creativity minor is still under development.
- The psychology of leadership graduate certificate was revised.
- The leadership in engineering organizations graduate certificate was revised.

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

- According to Missouri Economic Research and Information Center (MERIC) data, Missouri had 17,509 new businesses in 2014, a 2.3 percent increase from 2013. A study commissioned by the Missouri Department of Economic Development entitled “Chasing Cheetahs” gave further interesting statistics about Missouri’s small business environment. The study found that less than 4 percent of all businesses (6,252) in the state doubled employment in the past five years, creating approximately 130,000 new jobs in Missouri. According to this study, these firms were all under 100 employees before doubling their employment. The need for entrepreneurship in Missouri is great.
- The new I-Corps Site program will create a replicable process to develop mindset and skills in students, post-doctoral students, and faculty that will build the capacity and resources needed to take increased
numbers of ideas, projects, and research concepts to commercialization. This will be accomplished through resources and infrastructure in Technology Transfer and Economic Development (TTED); the College of Engineering and Computing; the College of Arts, Sciences, and Business; regional entrepreneurship resources; and key researchers, mentors, and instructors. Leveraging support from the NSF, VentureWell, UM System, and our alumni, Missouri S&T has moved aggressively in the last few years to lay the foundation for greater emphasis on entrepreneurship. The I-Corps Site program is a key initiative to enhance existing programs and launch new initiatives to support experiential learning, innovation, and entrepreneurship. The NSF just approved the I-Corps grant. The university will receive $100,000 per year for three years.

- Plans are underway to develop a makerspace for students to make prototypes of their entrepreneurial ideas and products.
- The university is exploring a special assistant to the provost for innovation and entrepreneurship to support initiatives such as those proposed in the I-Corps Site program.
- Faculty and students visited the Stanford/NSF Epicenter. This center connects students and industry with 200 fellows from 50 different universities in the program.
- University representatives attend the Midwest Engineering Entrepreneurship Network meetings.
- The Entrepreneurs Workshop offers guidance to faculty, post-doctoral students, and graduate students on how to turn their ideas into successful businesses. The Entrepreneurs Workshop is an eight-session workshop which maximizes student research and increases the success rate of startup ventures. These workshops are free of charge and utilize the Business Model Canvas, Lean LaunchPad and Kauffman TechVenture methodologies.
The campus is focused on attracting and retaining the best and brightest. One example of this commitment is demonstrated through University Advancement’s on-boarding and performance evaluation practices, which the Education Advisory Board (EAB) highlighted as a best practice in one of its conference presentations. The EAB shared Missouri S&T’s practice of having junior-level gift officers making joint visits with senior development officers in its presentation titled “Building Skills on the Road at Missouri University of Science and Technology.” This is a shared leadership process and helps expedite employee performance while developing collaborative relationships with multiple stakeholders. The EAB also highlighted University Advancement’s use of myPerformance as a great on-boarding and assessment tool.

The campus is fully committed to this lever as demonstrated through development of the new college structure. The new college structure creates leadership pathways by placing two associate deans in each college, thereby creating professional developmental opportunities for future academic leaders.

The university supports the development of the faculty as demonstrated in the College of Arts, Sciences, and Business external faculty awards. Patrick Huber (history and political science) received the State Historical Society of Missouri Center for Missouri Studies Fellows; Kathy Northcut (English and technical communication) received the 2015 CCC Technical and Scientific Communications Award; Gerald Cohen (arts, languages and philosophy) was the first recipient of the Frederic G. Cassidy Award for Distinguished Achievement in Lexicography or Lexicology; Jeanne Stanley (arts, languages and philosophy) received an award for directing from the Kennedy Center American College Theater Festival. The college also had three faculty services award winners, 25 teaching awards, one research award and two global learning teaching awards.

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<th>Campus or Unit:</th>
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<td>Lever Number:</td>
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<tr>
<td>Lever Description:</td>
<td>Create professional and leadership development opportunities for faculty, staff, alumni and students</td>
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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 myPerformance tool remains a priority for the campus. The human resource team focused on myPerformance trainings and facilitated new deadlines for this upcoming 2016 performance appraisal year allowing for timely supervisor discussions.
- Counseling: 1) staff members attended a Couples Counseling Workshop; 2) staff attended a webinar on health and safety abroad; 3) staff attended a regional suicide prevention conference; and 4) hosted a seminar by Jeff Bucholtz to help raise awareness and end violence with 183 participants.
- Athletics planned and executed three days of department training including the following areas: mission, vision, goals, strategic planning, institutional equity, leadership, NCAA policies, GLVC policies and procedures, new legislation, and campus policies.
- Residential Life implemented Title IX First Responder training.
- Student Affairs: 1) staff participated in a webinar on A New Perspective in Social Media, Digital, Identity and Student Learning Outcomes; 2) hosted training for 15 staff and facilitated training initiative for UM System conduct coordinator; 3) hosted non-mandated reporter training with 21 participants; and 4) held a retreat for the leadership with facilitation of the Herman Brain Dominance Indicator Assessment.
- Department chairs continue to focus on faculty development.
- Human Resources provided nine sessions of professional development for union employees; one training session over “Who Moved My Cheese”; three training sessions for HR certification. HR also completed a first draft of professional development training for academic administrators.
- College of Arts, Sciences, and Business created opportunities for administrative assistants to identify their professional strengths and develop strategies to maximize them.

Action 1.4.2: Develop and implement professional development and leadership plans for students to enhance creativity and innovation

- In August 2015, COER launched its inaugural Miner Trek to St. Louis. The two-day trip had 25 students visiting the headquarters for Ameren, AT&T, Nestle Purina, and Swank Motion Pictures. Students met with employers; experienced the company culture; and networked to obtain internships, externships, co-ops and ultimately full-time employment. The next Miner Trek is occurring during the winter break in January 2016 and visits employers in the Kansas City area.
- Leadership and Cultural Programs staff engaged 1,717 students during fall 2015 opening week and 1,112 interactions during the freshmen ice cream social; hosted an international student fair with 910 students attending; hosted the Amazing Race for transfer students with 695 students attending; and distributed 467 leadership development plans.
- 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.
- COER: 1) hosted team retreats; 2) engaged eight students in St. Louis Business Council Mentoring program; 3) facilitated StrengthsQuest testing for graduate students; 4) conducted an etiquette dinner for 85 students; 5) held two employer seminar series with 84 students; 6) participated in the Springfield Manufacturers Outlook conference.
Action 1.4.3: Identify, develop and implement developmental experiences designed to enhance students’ interpersonal, communication and leadership skills

- Leadership and Cultural Programs provided two leadership workshops to 25 participants; developed a plan for Miner Mentors professional development opportunities; and provided four programs focused on leadership and professionalism to 964 students.
- COER presented 28 professional development programs to 2,162 students.
- Student Life posted information in the Student eConnection. A total of 6,938 students opened the eConnection and 677 freshmen students have joined OrgSync and are involved in one or more student organizations.

Action 1.4.4: Promote a multi-dimensional model of wellness that incorporates a whole-person concept and encourages lifelong health

- In fall 2015, Student Health engaged in the following: 1) health educators and staff participated in monthly meetings to continually review the on-campus activities; 2) presented a workshop on Healthy Body Image to 31 students; 3) launched a mobile health hut to take to events; 4) participated in the Health Department’s Influenza-like illness surveillance network and partnered with the bone marrow donation program “Be the Match;” 5) participated in communicable disease work group with the Phelps County Health Department; 6) performed 18 hours of tuberculosis screenings; 7) recertified one health educator as a CPR instructor; 8) engaged 4,456 discrete patients; 9) administered 600 flu shots; 10) facilitated 4,771 sports medicine encounters; and 11) screened all new incoming students for tuberculosis, including full testing for 126 incoming students.
- Counseling provided the following services in fall 2015: 1) 921 counseling sessions to 616 clients; 2) test anxiety programs were provided to 85 calculus students; 3) Joe’s PEERS engaged with Phi Beta Sigma to support healthy choices and well-being for 33 students; 4) attention deficit workshops to three support groups; 5) 15 test anxiety sessions; 6) participation in Mental Health, Healthcare, the Law and Ethics workshops.
- In fall 2015, the theatre department produced, Good Kids, aimed at increasing awareness of date rape and its connection to alcohol. The production received regional awards for The Kennedy Center American College Theatre Festival (KCACTF) including: Excellence in Stage Management, Excellence in Directing, and Excellence in Ensemble Acting. The department has been invited to present a scene, a student will direct a scene, and three Irene Ryan Scholarship nominees will be competing at the regional KCACTF event to be held on February 20, 2016 in San Angelo, Texas.
- Future plans are in place for black box theatre productions which are 100 percent developed by students for students. These events are free of charge for students and will cover topics such as alcohol abuse, drug use, mental health, and sexual assault.
- In July, disability services facilitated 124 appointments, eight new students, and 24 accommodation letters. In August, the number of newly registered disabled students were 96, bringing fall 2015 totals to 433 registered students, and 1,800 accommodation letters.
Action 1.4.5: Increase the percentage of on-campus graduate students who participate in one or more professional development activities

- Full “boot camps” were offered in September and November 2015. This is a jump-start to enhance thesis or dissertation skills. The workshops included: Writing Your Thesis, Using EndNote, Stress Management, and Formatting Your Thesis.
- In summer 2015, 20 students signed up for workshops. The minimum requirement for a Boot Camp Certificate was attendance at two workshops and three writing sessions. In July 2015, 18 Boot Camp Certificates were awarded.
- Collaboration between Graduate Studies and COER has begun to further enhance the professional skillset of graduate students. A career opportunities specialist was hired in fall 2015 to focus on graduate students.
- Technical editing performed by Graduate Studies for graduate students increased by 27 percent over the previous year.
- COER hosted an etiquette dinner for graduate students.
- Educational Technology and the library helped students with documenting and citing in theses, dissertations, and articles. In fall 2015, the library facilitated 89 research workshops with 1,887 participants.
- Graduate Studies will begin utilizing Starfish/S&T Connect in fall 2016. This software will help track student engagement with the office, advisors, and events related to professional development.
- Graduate Studies conducted a workshop series with the Chancellor’s Fellows. This series included: 1) an “On the Fly” seminar to learn how to create power introductions; 2) editing week to have the power introduction critiqued; 3) “Pitch Perfect” event for students to give their power introductions to undergraduate students; and 4) headshots and video recordings of the power introduction to create a video.

Action 1.4.6: Create an interdisciplinary student leader certificate program

- The campus identified 20 comparator benchmarking institutions and utilized three professional listservs to gather information on student leader certificate programs.
- A committee was established and members visited the University of Missouri-Columbia Leadership Center as another benchmarking effort. The learning competencies and outcomes for a student leader program have been identified. The course will include three hours of interactive lab, traditional classroom instruction, and online assignments. Names of the certificate programs are: The Emerging Leadership Institute, Organizational Leadership Institute, and Professional Leadership Institute. An online registration process was developed and 106 students registered in fall 2015.
- The certificate program has integrated the following Kouzes and Posner’s Leadership Challenge Theory core components: 1) participant learning outcomes and benefits; 2) track participation; 3) develop a mentor job description, structure, outcomes, and stipend; 4) implementation plan should recruit and train certificate mentors prior to mid-term of fall semester; and 5) recruiting should begin as a pilot program.
Lever Summary:

This lever is tied to three strategic initiatives, one FY14 initiative, one FY15 initiative and one FY16 initiative. The FY14 strategic initiative dedicated three faculty lines to complement each of the four strategic areas. The FY15 strategic initiative dedicated funds for hiring national academy stature faculty for the first two signature areas. The FY16 initiative dedicates funds for the national academy stature hire for a third signature area.

Through FY15 strategic initiative funding, Missouri S&T has begun the process of hiring grant writers and has hired a technical illustrator.

The FY16 initiative is dedicated to hiring national academy stature faculty for the third signature area.

A plan for hiring national academy stature faculty in all signature areas is under development. The proposed plan includes a Provost Speaker Series that invites national academy stature faculty on campus for seminars. The intent is to develop a network and possibly recruit potential faculty. Another phase of the plan involves selecting national academy stature faculty as visiting professors to teach for a semester or year. The intent is to increase networking and or enhance recruiting efforts.
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 are being evaluated in conjunction with unit performance measures to strategically allocate faculty lines.

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 will phase-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 will phase-in over two fiscal years, beginning at $3,000 in FY14 and ending at $5,000 in FY16.
- The faculty hiring process has been redesigned and has adopted a new process flow including: 1) all open positions are analyzed strategically and allocated appropriately; 2) the active recruiting process has 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.
- Faculty merit increases for FY16 are based on a formula which directly distributes the raises based on individual merit. Additionally, the provost is utilizing a hybrid approach where the highest performing departments receive additional funds for rewarding particularly productive faculty.
- A new promotion process for non-tenure track faculty was implemented in FY16. When non-tenure track faculty are promoted from assistant to associate and from associate to full, they will receive promotional increases. Three faculty received promotional increases this year.
- Post-tenure raises have been implemented in FY16. At post-tenure review, an additional raise might be warranted to recognize excellence. $100,000 in funds has been set aside for FY16.
- An award-based system has been implemented. This is a meritorious achievement raise based on national awards and an individual faculty award. $25,000 in funds has been set aside for FY16.
- A task force to revise the salary incentive program was established; a proposal was developed and is under review with System officials.
- In FY15, we developed an award for faculty and staff in high-achieving units. For fall 2015, in the College of Arts, Sciences, and Business, the history and political science department, including the teaching department, were awarded as the highest performing unit. In the College of Engineering and Computing, mechanical and aerospace engineering received the high-performing unit award. Faculty and staff received additional merit awards for their achievements.

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 & #2

- Companies and prospective donors have been identified and will be 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 will be 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 will be 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.
Lever Summary:

Faculty hires continue to remain a top campus priority, as evidenced by the campus commitment to reallocate $1 million for faculty hires in FY16. Since the beginning of the strategic plan there has been an 8 percent increase in faculty and a 30 percent increase in female faculty.

This past academic year has focused on hiring in the signature areas as demonstrated below.

### FACULTY HIRES SIGNATURE AREAS

<table>
<thead>
<tr>
<th>Tenured, Tenure-Track</th>
<th>Signature Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Engineering</td>
<td>Advanced Manufacturing</td>
</tr>
<tr>
<td>Electrical Engineering</td>
<td>Advanced Manufacturing</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>Advanced Materials for Sustainable Infrastructure</td>
</tr>
<tr>
<td>Materials Science and Engineering</td>
<td>Advanced Materials for Sustainable Infrastructure</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Enabling Materials for Extreme Environments</td>
</tr>
<tr>
<td>Physics</td>
<td>Enabling Materials for Extreme Environments</td>
</tr>
<tr>
<td>Nuclear</td>
<td>Enabling Materials for Extreme Environments</td>
</tr>
</tbody>
</table>

Academic year 2015-2016 is focused on filling the other additional faculty searches (new lines, not vacancies). The following tenured or tenure-track faculty lines are currently in the interviewing process: civil engineering, psychological science, mathematics and statistics, electrical engineering, English and technical communication, joint hire with computer science and electrical, joint hire with geological and mining, three faculty lines in Smart Living, one faculty line in Advanced Manufacturing, and one faculty line in Advanced Materials for Sustainable Infrastructure.

Additional new lines, not vacancies, tenured, tenure-track searches include at a minimum two joint faculty hires with University of Missouri-Columbia. The two campuses have been in communication to develop a hiring strategy. Searches are also in process for three national academy stature faculty in Advanced Manufacturing, Advanced Materials for Sustainable Infrastructure and Enabling Materials for Extreme Environments.

Non-tenure track searches are underway in chemical and biochemical engineering and mathematics and statistics.
Action 2.2.1: Increase Missouri S&T’s undergraduate enrollment by 500 by 2020

- The university’s strategic enrollment goal involves enhancing the mix of students and the mix of programs. To help facilitate this strategy, the university signed a contract with Royall and Associates to focus recruiting on non-engineering, non-resident students.
- Undergraduate enrollment for fall 2015 was 6,841, an increase of 4.9 percent. Undergraduate enrollment is currently 998 over baseline, or a 17 percent increase.
- Fall 2015 underrepresented enrollment was 724, an increase of 2 percent.
- Fall 2015 female enrollment was 2,043, an increase of 4.5 percent.
- Fall 2015 first-time college students increased 1.4 percent over fall 2014.
- Fall 2015 minority enrollment was 1,061, which represents a 32 percent increase from fall 2012.
- Fall 2015 non-resident alien headcount was 16.1 percent, demonstrating the strength of international partnerships and world-wide reputation.

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

- Ten awards were extended for the Chancellor’s Distinguished Fellowship and eight accepted. The awardees have an average GPA of 3.76/4.0; five are males and three females; seven students are in the College of Engineering and Computing; one student is in the College of Arts, Sciences, and Business; seven students are direct to Ph.D. and one student has completed a master’s.
- Fall 2015 Ph.D. enrollment of 593 represents a 15 percent increase over the baseline of 517.
- Total graduate enrollment declined by 3.4 percent, primarily due to teaching out the Sri Lanka program and enrollment declines from petroleum-dependent countries.
- Seven Indian universities and seven Chinese universities were visited to recruit students and discuss various forms of academic and research collaborations.
- Graduate Studies added a graduate recruitment position to increase Ph.D. enrollment. Analyzing the graduate enrollment data, Ph.D. growth continues a slight positive trend but the data also indicates the need for placing more emphasis on recruiting Ph.D. students.
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)

- Faculty positions were approved in the following job classifications/departments:
  - Assistant Professors (tenured, tenure-track): engineering management and systems engineering (filled), physics (filled), biological sciences (filled), electrical and computer engineering (filled), mining engineering (filled), chemistry (filled), civil engineering (filled), geological science (filled), and two mechanical and aerospace engineering (filled), psychological science (in search process).
  - Associate Professors (tenured, tenure-track): two computer science (filled) and civil engineering (interviewing).
  - Associate Teaching Professors (non-tenure track): computer science (filled), electrical and computer engineering (filled), chemical engineering (filled) and education (filled).
  - Assistant Research Professors (non-tenure track): two materials science and engineering (filled), and one mechanical and aerospace engineering (filled).
- Associate Professors (tenured, tenure-track) for Signature Area hires:
  - Advanced Manufacturing: mechanical and aerospace engineering (filled); electrical engineering (filled); and third faculty line in search process.
  - Advanced Materials for Sustainable Infrastructure: civil, architectural, and environmental engineering (filled); materials science and engineering (filled); and third faculty line in search process.
  - Enabling Materials for Extreme Environments: chemistry (filled); physics (filled); and nuclear (filled).
  - Smart Living: searches for three faculty are in process.
- FY14 strategic initiative funds funded 19 tenured, tenure-track faculty; and 6 non-tenure track faculty.
- FY15 strategic funds will hire 2 national academy stature hires.
- FY16 funds will hire 1 national academy stature hire and at least 2 faculty joint hires with MU.
- The university allocated $1 million in FY16 for new faculty lines, not vacancies: 1) Mathematics and statistics, two lines; 2) English and technical communication, one line; 3) chemical and biochemical engineering, one line; 4) joint line with mining and nuclear engineering, and geosciences and geological and petroleum engineering; 5) joint line with computer science, electrical and computer engineering, and engineering management and systems engineering; 6) and electrical and computer engineering, one line.
- All of the faculty hires aligned with the strategic plan Lever 3.4 related to promoting inclusion and diversity.

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 2.2.5: Increase the number of technical/specialized staff members to support strategic program activities

- The 2012 baseline for this action: 96 technical staff and 187 professional staff. The campus increased technical staff to 106. Professional staff increased by 63 for a total of 250. Staff minorities increased from 59 to 84, a 42 percent increase over baseline. Underrepresented staff minorities increased from 42 to 55, a 31 percent increase over baseline.
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 on each campus

- An agreement with UMKC Business School has been developed for a certificate in entrepreneurship.
- Several course-sharing initiatives with the University of Missouri System including: 1) University of Missouri-Columbia for introduction to construction management and environmental engineering; 2) University of Missouri-St. Louis for classical optics, philosophy, ethics, sociology, nanotechnology, technical communication, English, and history; and 3) University of Missouri-Kansas City for electrical engineering and mathematics.
### Lever Summary:

The campus is focused on increasing its research expenditures for improving financial viability. Net grant and contract expenditures were $27,072,611 for FY14 and FY15 is $24,353,915 representing a decline of almost $3 million over the prior year. The decline is not representative of the university as a whole, but is due in part to cancelling a $25 million agreement with Saudi Mining Polytechnic due to employee safety concerns.

- NSF Grant expenditures per tenured, tenure-track faculty for FY15 are $19,184 representing a 30 percent increase over baseline.
- Research expenditures per tenured, tenure-track faculty were $94,659 in FY14 and are projected at $82,277 for FY15.
- Number of invention disclosures per $10 million research and development expenditures were 11.2 for FY14 and 11 in FY15.
- Patent and copyright royalty income for FY15 reached $483,197, a 31 percent increase from FY14 and a record for the university.
- The number of license and option agreements increased to 49 from 22 the prior year.

Research expenditures are just one part to the overarching importance of research growth. Undergraduate research is also a priority. With the new undergraduate requirement for experiential learning, undergraduate research should increase. The Opportunities for Undergraduate Research Experiences (OURE) program had 110 students complete both in 2012-2013 and in 2013-2014. The number has increased to 140 in 2014-2015, an increase of 27 percent over baseline. The expectation is for almost 170 to complete in 2016.

In 2012, 3,000 students received merit-based scholarships, accounting for $12,338,594 in funding. In 2015, 3,494 students received merit-based scholarships, representing $16,076,324 in funding, an increase of 30 percent over 2012. Additional scholarship funding affords more students the opportunity to participate in university research.

The College of Arts, Sciences, and Business implemented: 1) a program to provide financial support for teaching professors to attend and participate in national conferences on pedagogy or other forms of...
professional development; 2) a program to support undergraduate and graduate student travel to professional conferences; and 3) an incentive program for faculty to design new online summer course offerings to better accommodate students’ educational needs and allow research faculty to remain productive through the summer months. This program is currently being piloted.

**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 are being tracked.
- The Delaware Study is being used for data analysis and provides a framework for performance-based allocation modeling. The base-plus budget model is nearly complete and discussions will soon begin with each department and the provost.

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

- A new data analyst position focuses on creating a graduate dashboard, analyzing metrics for national rankings and assessing graduate learning outcomes.
- MinerAnalytics dashboard developed in Institutional Research and Assessment will assist in data collection and tracking.
- Graduate Studies will engage department chairs and the vice provost and deans of the two colleges to select five programs for metric improvement by spring 2016.

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

- Sriram Chellappan and Sajal Das received a NSF grant to accelerate the translation of knowledge derived from fundamental research on emerging products and services that can attract third-party funding.
- The campus is soliciting for an NSF engineering research center.

**Action 2.3.4: Continue establishing new sustainable industry-funded research consortia**

- A new industry-funded research consortia was created, Microgrid Industrial Consortium.
- Particle Gel Conformance Control Industrial Consortium was established.
- Missouri S&T explored collaborations with the Missouri Institute of Mental Health for a research consortium on traumatic brain injury.
- Missouri S&T joined the Kansas City Regional Consortium for musculoskeletal disorders and diseases.
- The Kent D. Peaslee Steeel 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 SMRs by collaborating in the development of precompetitive technologies.
Action 2.3.5: Establish programs and facilities to host visiting world-class faculty

- With the development of the two colleges, the 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 Opportunities for Undergraduate Research Experiences (OURE) program had 110 students complete in 2012-2013. The number has increased to 140 in 2014-2015, an increase of 27 percent over baseline. The expectation is for almost 170 to complete in 2016, an increase of 55 percent.
- The university is developing a MakerSpace, hacker space, and collision space for student innovation.

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

- Inter Faculty Council endorsed a flexible workload policy which the campuses are encouraged to implement.
- The colleges are in process of implementing this policy. The College of Arts, Sciences, and Business is developing workload policy in accordance with campus policies and tailoring 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

- New faculty orientation and the freshman faculty forum have been enhanced to instill excellence. These programs have established more contact hours with mentors designed to increase creative works.
- New faculty orientation involves all new faculty for two one-day 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) getting ready 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 freshman 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

- The strategic initiative funding awarded in FY15 provided funding for Graduate Student Research and Teaching Excellence Awards. Graduate studies has developed a plan that will be piloted in spring 2016.
Raising the visibility of the campus remains a strategic priority. This lever identifies actions that are designed to enhance the campus reputation. The campus can demonstrate its commitment to this priority through an FY15 resource allocation of $200,000 and an FY16 allocation of $100,000 in recurring funds for marketing and communications. A plan is currently in place to increase the marketing and communications budget by an additional $100,000 in recurring funds per year for each of the next two years. This will allow the university to meet the 2020 target metric by FY18.
• All research stories were highlighted on news.mst.edu website and on Discover.mst.edu. The visibility of Missouri S&T research efforts have been enhanced by linking to the annual re:Search magazine.
• Driving special web presence traffic to research.mst.edu has also aided visibility. Marketing and communications redeveloped the new research website as part of a website revision to make the Missouri S&T web responsive (mobile and tablet friendly).
• Marketing and communications created websites for each of the colleges with an emphasis on research. Searches are currently underway for copy writers and web designers to be located in each college.
• A video series was created for three of the four signature areas (Advanced Materials for Extreme Environments, Advanced Manufacturing and Smart Living) and shared on Discover.mst.edu and the Missouri S&T YouTube channel. Development of a fourth video is underway.
• Videos were made on the geothermal project to raise visibility.
• Marketing and communications completed a video project for global learning. The video promotes educational programs to corporate partners and includes commercial spots that have been aired by Distance and Continuing Education.
• The Innovation Team is creating videos about the Miner Tank to increase visibility.
• Increasing visibility with legislators remains a priority. The following depict a sample of the attended events aimed at increasing university visibility: Governor’s Ham Breakfast; Hawthorn luncheon; Missouri Governor’s Conference; Legislative Tailgate; Eggs and Issues; Southern Governor’s Association meeting; Governor’s Prayer Breakfast; and Rolla Regional Economic Commission.

**Action 2.4.1: Marketing Leadership Team guides the development of an integrated, campus wide communications and marketing plan**

• The Marketing Leadership Team was established in July 2013. The team consists of campus leaders who advise the Marketing and Communications staff.
• The team has been a part of the presentations from SimpsonScarborough and Oologie.

**Action 2.4.2: Core Marketing Network provides consultation to the Marketing Leadership Team to establish an integrated, campus-wide communications and marketing plan**

• The Core Marketing Network was established in July 2013. This team continues to meet and discuss the development of an integrated communications and marketing plan.
• Following a comprehensive request for proposal process involving the Marketing Leadership Team and Core Marketing Network, Missouri S&T has retained two firms: SimpsonScarborough and Oogie.
• Marketing the campus and raising its visibility comes from a multitude of venues. The campus has expanded the Miner Sports Network as a part of the GLVC Sports Network and began live streaming sporting events.
• Marketing research was completed in spring 2015 by SimpsonScarborough and the results were presented to the Core Marketing Network, Marketing Leadership Team, executive director of marketing and communications, and university leadership. The executive director facilitated a series of open forums in 2015.
• The Miners Dig Deeper brand strategy was developed in July 2015 and the marketing plan based on the brand strategy began in July. This strategy was presented to: Athletics, Student Council, Residence Hall Association, Staff Council, Office of Graduate Studies, Miner Alumni Association, University Advancement, Department of Computer Science, the colleges, and at the Strategic Summit.
Brand and collateral material began development in September 2015.
A brand toolkit was created for the campus.

**Action 2.4.4: The Marketing Leadership Team, in consultation with the Core Marketing Network, shall identify marketing staff who will be responsible for implementing the plan and shall create a professional development plan to help ensure those staff are trained to carry out their responsibilities**

- Professional development plans are in place for current staff.
- Marketing and communications staff developed training modules to launch in spring 2016. These modules include: Branding 101, writing for the brand, developing presentations using the new PowerPoint templates, graphic design, web design, social media, photo, and video.

**Action 2.4.5: Fully commit to the Missouri S&T brand by removing references to “formerly the University of Missouri-Rolla” in all marketing materials targeting the key customer groups**

- The university has removed “formerly the” language from marketing materials targeting prospective undergraduate students.

**Action 2.4.7: Seek matching commitments to fund a portion of campus wide communications and marketing efforts**

- The campus has committed to fund campus-wide communication in a phased-in approach for a total of $500,000 annually by FY18.

**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**

- The marketing and communications department has developed materials for the colleges. These marketing materials have a unified look to create consistent messaging.
- The campus utilized a central marketing approach for recruiting hires in the signature areas. The advertisements for the faculty hires that would complement each of the strategic areas were created and approved by a central marketing team to ensure consistency of messaging. The website that candidates utilized to apply for faculty positions was also created by the central marketing team to remain consistent in appearance and tone.

**Action 2.4.9: Obtain commitment from campus leadership to create a recurring budget for campus wide marketing**

- A plan is in place to increase the marketing and communication budget by $100,000 in recurring funds in FY16. An additional $100,000 in recurring funds will be budgeted in both FY17 and FY18, resulting in a total investment of $500,000 annually for marketing (roughly one percent of general operating revenue).
Action 2.4.10 a: Continually examine best-in-class institutions’ practices and incorporate into Missouri S&T marketing planning, as applicable

- Analysis has begun on the news coverage by media type and social media usage as one aspect of a best-in-class institution. The campus looks at the following coverage: blog, college publication, daily newspaper, magazine, non-daily newspaper, online, radio, trade press, television, and wire service.
- Social media is also analyzed including: Facebook, blog, Twitter, and YouTube.

Action 2.4.11: Centralize all communications and marketing operations

- Established a new branding strategy to include a refreshed web design, an email signature generator, poster templates, and multiple business card designs as part of the centralized approach.

Action 2.4.12: Develop an annual publication of the Chancellor’s Fellows Research Yearbook to enhance the visibility of graduate education

- The Office of Graduate Studies published its first Chancellor’s Fellows Research Yearbook in FY14. The Chancellor’s Fellowship program will be phased out but similar yearbook publications for new programs such as the Chancellor’s Distinguished Fellowship and Dissertation Completion Fellowship will be developed in 2016.
- The yearbook lists the research topics or areas of interest, student bio, and includes a photo.

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

- In FY15, Scholars Mine was transformed and optimized for discoverability in Google and Google Scholar. The data has been migrated to a new platform and is being exposed to a global audience. In calendar year 2015 there were 270,355 downloads. The states with the largest visits are California, Texas, and Missouri. The largest visits by country included Canada, United Kingdom, China, India, and the United States.

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

- Athletics enhanced visibility through the following: 1) a former Miner student-athlete received postgraduate scholarship; 2) swimming program was awarded Scholar All-America for 2015 spring semester by the College Swimming Coaches Association of America; 3) the men’s and women’s track and field teams earned academic honors from the United States Track and Field and Cross Country Coaches Association of America; 5) Missouri S&T live webcasted football, volleyball, and soccer (Miners were the most watched in the Great Lakes Valley Conference); and 6) Miner swimming was ranked 16th nationally.
- Student Affairs enhanced visibility through the following: 1) developed a new division tri-fold display for promotional events; 2) coordinated Twitter and Instagram for departments within the division; 3) redeveloped marketing materials to align with Miner for Life strategy; 4) developing a calendar with the theme “Putting the Pieces Together - Becoming a Miner for Life;” 5) developed promotional videos; 6) developed YouTube video and postcard to raise visibility of Missouri S&T; and 7) in coordination with USA Today created and implemented the “Buzz,” a Missouri S&T news app, available through the Apple Store and Google Play.
Lever Summary:

Modifying the conventional methods of teaching and integrating technology is a priority for the campus. The number of blended courses offered per year increased from the baseline of 27 to 42, a 56 percent increase. The number of students enrolled in online courses has increased 65 percent since fall 2012.
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 instead of taking a field trip)

- A new program for mid-semester teaching evaluations is being piloted with five instructors. Initial results are positive.
- A committee is working to determine how to increase the visibility, participation and process for end of semester teaching evaluations.
- Resources were expanded on the education technology website.
- Education technology: 1) facilitated 57 contacts during the fall semester; 2) performed 88 sessions (123.5 recording hours) in studio; 3) worked with faculty in Freshmen Faculty Forum with 45 participants; 4) piloted a new tracking system for instructional design with 28 instructors and 84 formal consultations; 5) piloted Canvas Learning Management System with 3,000 students, 94 instructors, and 200 courses; 6) increased clicker usage of the student response system with 38 instructors, 39 percent of first-year students, 22 percent of sophomores, 17 percent of juniors, and 24 percent of senior or graduate students; and 7) performed a Tegrity lecture capture with 34 instructors and 9,452 student views.
- All classrooms have been equipped with web cams and skype capability allowing the faculty to utilize video lectures.
- The classrooms have been equipped with document cameras allowing for 3D objects to be used for problem solving.
- Virtual field trips are also being utilized in the classroom. This technology allows the class to effectively study on a global scale.

Action 2.5.3: Increase instructional design support and online facilitators for teaching faculty

- Education Technology provided the following workshops: 1) Capturing the Student Learner (28 attendees); 2) Making Homework Effective (33 attendees); 3) Flipping a Class (50 attendees); 4) Tackling Emerging Student Issues (154 attendees over three sessions); 5) Building Blocks Workshop (16 attendees); 6) EdTech U/iPad U workshop (43 attendees); 7) Syllabus Makeover workshop (35 attendees); 8) Clicker FLC (31 attendees); 9) Great Expectations-Bridging the Gap Between Instructor and Student Expectations (86 attendees); and 10) Active Learning (60 attendees).
- The eStudio provided 43 sessions and 75 hours of recording time.

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

- The eFellows 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.
- In FY15, there were seven Tier One, five Tier Two and one Tier Three eFellows awards.
Action 2.5.8: Redesign high-volume courses through integration of new technology and modified teaching methods to enhance student learning

- A series of high-volume courses is being redesigned is Calculus I, II and III. The redesign of the calculus courses is tied to an FY14 strategic initiative granting $132,000 one-time cost dollars matched with Missouri S&T one-time cost dollars of $66,000.
- 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. Of those, 81 students or 58 percent earned a satisfactory grade. Almost all of the 140 would have received a D or F if they had remained in Calculus I. Early indicators demonstrate this has impacted student success. [This course is an option for those students who are failing Calculus I in week eight. The course does not have a GPA penalty, is 4 credit hours (3 lecture and 1 lab), and is designed to teach algebra and trigonometry in the context of calculus].
- In fall 2015, the new Calculus II labs were piloted. Calculus III labs will be piloted in the 2016 spring semester.
- The pre-calculus library has been piloted. This library consists of short videos with closed captioning. It is available to all Missouri S&T students, not just those students enrolled in calculus. The library is an ongoing project as new videos will continually be added.
- Graduate students taught the interactive lab as a part of the extended pilot. The graduate students participated in a new training program.
- In summer 2015, redesigned Calculus III online course was piloted.
- During the annual Mathematical Association of America Mathfest Conference, Missouri S&T presented the overview of the calculus redesign. As a result, South Dakota State University is implementing a version of the Missouri S&T Success for Calculus course.
- Faculty presented the redesign at the Joint Mathematics Meetings in San Antonio, Texas.
- The redesign was presented at the Teaching and Learning Technology conference and the Missouri section meeting of the Mathematical Association of America.
Lever Summary:
The campus has implemented structural changes needed to facilitate the campus strategy and raise national visibility. The organizational chart below depicts the first phase of structural changes which primarily focused on academic affairs.
Action 2.7.1: Implement the organizational structure appropriate to strategic plan

- Accounting and budget offices have been merged.
- Human Resources, Affirmative Action, Diversity and Inclusion has been reorganized and renamed to Human Resources, Equity and Inclusion.
- Vice provost and deans were hired when developing the two colleges.
- An associate dean was added in each college and is responsible for research initiatives and proposals; overseeing responsible research conduct and safety; and managing comprehensive external relations programs that engage donors, faculty, students, and other key stakeholders.
- An associate dean was added in each college and is responsible for overseeing curriculum and instruction matters; development and implementation of strategic planning related to academic programs; establishing plans for program development, faculty recruitment, and professional development; and coordinating academic program review with the department chairs in the college to review, study and develop curriculum, and improve instruction.
- Executive directors of development were hired for each of the colleges.
- One of the organizational structure changes was the addition of the vice chancellor for global and strategic partnerships who oversees international and cultural affairs; global learning; and corporate relations, which oversees the office of sustainable energy and environmental engagement.
### Campus or Unit:
Missouri University of Science and Technology

### Lever Number:
3.1

### Lever Description:
Evaluate current academic programs and create, modify, eliminate or combine in order to ensure a relevant portfolio that supports Missouri S&T’s Carnegie classification as a national research university

### Lever Metric:
Increase department determined productivity measures by 10 percent (by 2020)

### Lever Summary:
All academic affairs departments have established productivity measures. These measures have been divided into two primary areas; external measures that are designed for comparison to other institutions and internal measures that are designed for departmental comparisons at Missouri S&T. The measures are demonstrated in Action 3.1.1.

One of the programs Missouri S&T determined was valuable for the state is the new teacher education program. Students enrolled in this program are among the nation’s most prepared to enter classrooms, according to a recent National Council on Teacher Quality report. The report included Missouri S&T in its list of 35 colleges and universities in the nation to earn an “A.” The rating considers specific state regulations on teacher certification standards, university course content, degree plans, and admissions selectivity. Missouri S&T offers eight core areas of study for secondary education: applied mathematics, biology, chemistry, economics, English, history, physics and psychology. Students interested in pursuing teaching in elementary schools may pursue a Bachelor of Arts in Multidisciplinary Studies with a concentration in math or science. The National Council on Teacher Quality also named Missouri S&T as one of the best values in teacher education in Missouri.

Missouri S&T continues to develop and advance the Ph.D. in Integrative Biosciences and Biotechnology.
**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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<tbody>
<tr>
<td>Ph.D. Enrollment per T/TT</td>
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<td>Research expenditures per T/TT(OSP)</td>
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**Engineering Management and Systems Engineering**

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**Chemical and Biochemical Engineering**

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**Civil, Architectural, and Environmental Engineering**

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**Electrical and Computer Engineering**

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<tr>
<td>Research expenditures per T/TT(OSP)</td>
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### Arts, Languages, and Philosophy

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### History and Political Science

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### Chemistry

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### Mathematics and Statistics

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### Physics

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<tr>
<td>Publications per T/TT</td>
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<tr>
<td>Research expenditures per T/TT(OSP)</td>
<td>4,526</td>
<td>736</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 personnel attended the Oak Ridge National Lab’s Graduate Fair. Graduate Studies staffed a booth at the event to increase name recognition and recruit doctoral students.
- The Midwest Association for Graduate Schools has membership from 14 states and over 70 graduate schools. The theme for 2016 is “Graduate Education Pathways.” Missouri S&T staff have been awarded the chair-elect position and will be a part of the thesis committee.
- The development of department productivity measures and 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 in 2016.
- The campus was awarded strategic initiative funding to increase Ph.D. enrollment and part of this proposal included adding a data analyst dedicated to graduate studies. This analyst position is focused on priority areas needed to increase national rankings. These metrics will be determined in FY16.

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

- This action is currently in progress and is ongoing.
Lever Summary:

The Office of Global and Strategic Partnerships was established and the new vice chancellor for global and strategic partnerships is in place. Reporting to this office is a new Office of Corporate Relations, which is responsible for growing and enhancing corporate partnerships, developing a web portal for corporate and industry partners, and creating a corporate relations stewardship program. The campus views this as a priority and has reallocated $666,000 to support these offices as they transition to a self-sustaining model.
Action 3.2.1: Create a corporate relations office and determine the role it should play in assisting the various interests within the Missouri S&T community in establishing appropriate relationships with external constituents

- One of the key criteria for establishing an effective office is the personnel. The new executive director of the Office of Corporate Relations has begun meeting with external constituents.

Action 3.2.3: Develop a funding mechanism to support the office and its activities

- A budget for the corporate relations office has been identified, approved, and allocated.

Action 3.2.6: Broadly identify needs of external constituents that could be met by Missouri S&T

- The executive director is implementing a plan to identify the needs of external constituents. The office developed a rubric and evaluated the depth of relationships with external partners. Understanding the needs of the external partners first began with understanding "why" they have a relationship with Missouri S&T. That relationship could be focused on research, co-ops, internships, post-graduation hires, charitable contributions, and other factors.

Action 3.2.7: Determine mechanisms to develop reciprocal partnerships

- Four Missouri S&T faculty members visited the Smithsonian Tropical Research Institute in Panama City for the purpose of developing a strategic partnership and collaborative research with the institute.
- Stephen Roberts, vice provost and dean for the College of Arts, Sciences, and Business, performed research at the Smithsonian Tropical Research Institute to enhance the relationship with the institute.
- The university developed the following international agreements: Cork Institute of Technology in Ireland; Chitkara University in India; University of Bologna in Italy; Singapore Polytechnic in Singapore; Universidad Privada Del Norte in Peru; Housing and Building National Research Center in Egypt; Bangladesh University of Engineering and Technology in Bangladesh; Istanbul Technica University in Turkey; Hohai University in China; PES University in India; Ministry of Higher Education, Science and Technology in the Dominican Republic; Instituto Tecnologico Del Cibao Orienal in the Dominican Republic; Perm State University in Russia; Universita degli Studi di Perugia in Italy; Amrita Vishwa Vidyapeetham University in India; Indian Institute of Technology Guwahati in India; Indian Institute of Technology Ropar in India; Maharana Pratap University of Agriculture and Technology, College of Technology and Engineering Udaipur in India; National Institute of Technology Calicut, VNR Vignana Jyothi Institute of Engineering and Technology in India; University of Aquila in Italy; University of Brescia in Italy; University of Palermo in Italy; INTI International University and Colleges, Suband in Malaysia; Guangdong University of Technology in China; Institut Polytechnique LaSalle Beauvais in France; and Universidad Nacional de Ingenieria in Nicaragua.
- The university has developed a proposal to increase interaction with the St. Louis Science Center. This proposal includes a reciprocal partnership and plans to increase our visibility.
- The university signed a master research agreement with Boeing.
- The campus signed a master collaboration agreement with Honeywell Federal Manufacturing and Technologies.
- The university signed a memorandum of understanding with Phelps County Regional Medical Center (PCRMC).
• The university joined Kansas City Regional Consortium (Kansas City University of Medicine and Biosciences, University of Kansas, University of Missouri-Kansas City) for musculoskeletal disorders and diseases.
• Investigating leasing space from PCRMC for additional research, educational opportunities, and information technology.

**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.)**

• The executive director will develop and apply a plan that will evaluate the relative strength and breadth of the partnerships with external constituents and a plan to expand or improve those 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 executive director is developing a matrix in FY16.

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

• The executive director established a website. The website should be completed in 2016.
• The executive director disseminated the one-stop approach throughout the campus and provide a concierge contact approach which allows 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**

• A complementary marketing plan to the concierge approach will be developed.
• An internal and external newsletter is planned in 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**

• The customer relations management database will be further developed. A partnership with IT will be utilized to develop the customer relations management database which provides easy access to usable and actionable information. This process should be completed in 2016.
Lever Summary:

This lever is linked to an FY14-funded strategic initiative proposal to expand instructional laboratory equipment and renovation at a level of $500,000, plus $500,000 in non-appropriated funds. In addition to an original match commitment of $492,500, Missouri S&T reallocated $366,312 and information technology reallocated $100,000 to match an additional $366,312 in gifts. Our original $1 million investment in instructional laboratories grew into a $1.8 million investment. Those labs are identified in Action 3.1.1.

The campus has completed or initiated several major projects to enhance the campus and student learning:

- Geothermal project and Havener Center promenade - $37.1 million
- Bertelsmeyer Hall - $24 million
- McNutt Hall HVAC - $3.5 million
- Computer Science, Engineering Research Lab and Engineering Management HVAC - over $2.6 million
- Bullman student recreation geothermal - $8.1 million
- Physics geothermal - $2.6 million
- Parker, Norwood and Harris HVAC - $5 Million
- IDE and Nuclear HVAC - $350,000
- Athletic and recreational field improvements - $2 million
- Schrenk Hall HVAC - $560,000
- Residential housing - $30 million
- Experimental Mine building - $2.4 million
- Schrenk Hall Phase 2 renovations - $18.1 million
- Norwood Hall roof, masonry, testing center, graduate studies - $4 million
- Biological Field Station - $8,952 (annual operating costs)
- Curtis Laws Wilson Library - $230,000
Action 3.3.1: Leverage strategic funds for instructional laboratories with matching funding from non-appropriated sources

- Computer Science, Electrical and Computer Engineering, Business and Information Technology departments upgraded servers and added computer equipment for virtualization and big data usage.
- The Physics department upgraded equipment and software to support seven different courses that enroll some 1,000 students each semester.
- Chemical Engineering has upgraded computers, data acquisition systems, state-of-the-art Emerson Delta V process control management hardware, and virtual software Mynah Mimic.
- Nuclear Engineering added a liquid scintillation detector.
- Mechanical and Aerospace Engineering upgraded two laboratories, a dynamic systems and controls lab, and a gas turbine facility.
- Chemistry purchased new field flow fractionation equipment that is used in five courses within Chemistry and in Chemical and Biochemical Engineering.
- Chemistry upgraded the nuclear magnetic resonance spectrometer to determine the physical and chemical properties of atoms and molecules.
- Geosciences and Geological and Petroleum Engineering upgraded the high-pressure, high-temperature rheometer and began upgrading the active collaborative microscopy learning laboratory.
- Electrical and Computer Engineering upgraded control systems equipment.
- Mining purchased a rock test system.
- The Materials Science and Engineering lab was upgraded.
- Civil, Architectural and Environmental Engineering upgraded three labs including System and Process Assessment Research Lab. Upgrades included: 1) a distributed optical fiber sensing system that is currently one of a few dozen units in the world; 2) a complete process of optical fiber sensor innovation, fabrication, calibration, analysis and application; 3) a fully integrated loading, sensing, corrosion, sensing calibration system; and 4) multiple measurement devices (acoustic, electromagnetic, magnetic, photonic).

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 equipment needs, strategies for leveraging those investments through matching programs will be 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 has been completed and was 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 will renovate Schrenk Hall.
- A 50/50 request was submitted to the state for an addition to Butler-Carlton Hall for an advanced construction materials lab.
Action 3.3.5: Develop and disseminate a research infrastructure database to help departments share equipment

- A preliminary process has been developed. The two vice provost and deans will play an integral role in implementation.

Action 3.3.7: Investigate building a Learning Commons to enhance student learning and research. This facility should allow for reconfiguration as needs change, technologies evolve, and the student population changes. It should include as much hands-on technology as possible, available to all, in an interdisciplinary environment

- Refer to Lever 1.2 and Action 1.2.2 for Learning Commons progress made to date.
- An analysis of the work areas and access for student learning has been utilized to determine preliminary drawings of the Learning Commons which aligns with Lever 1.2, Action 1.2.2.

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

- Learning space guidelines have been created and provide a framework for classroom spaces that contain presentation technology. The guidelines highlight the most common points of convergence at which architecture and audio-visual technology intersect and are an integral part of the learning environment.
- Space utilization guidelines have been 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

- The library director will partner with the vice provost for undergraduate studies to develop a plan in FY16.

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

- Athletics installed new softball and baseball scoreboards, new lockers, a new permanent PA system, added fencing for better vision from home plate, and refinised the gym floor. Athletics also installed a new retaining wall for increasing spectator space at the softball complex. Plans are being developed for updated privacy shower stalls.
- Installed a Starbucks with dining option in the library.
- Renovated and expanded food options at Einstein’s in Havener.
- Remodeled interview suites in Norwood Hall.
- University Commons will open in fall 2016.
- The geothermal project in the Gale Bullman Building and the Student Recreation Center was completed.
- In order to meet student needs, the testing center was enhanced. The testing center administered 3,212 exams to 2,094 candidates in fall 2015.
- New printing services within the residence halls allow students to print from their personal devices.
- Replaced units in Miner Village computer lab to increase speed and enhance user experience.
- Residential life is discussing developing an entrepreneurial learning community in the new residence hall. Discussions, a proposal, and timelines are under development for implementing learning communities focused on entrepreneurship, international, service, leadership and honors in all residence halls. The communities will be phased in over three years.
- Career Opportunities and Employer Relations developed a dedicated online interviewing space, with high-resolution webcam capabilities, a Missouri S&T backdrop, and appropriate lighting. Several iPads have been purchased to record and assist students during mock interviews.
Lever Summary:

The campus remains committed to creating a diverse and welcoming environment for faculty, staff, and students. The number of staff underrepresented minorities has increased by 31 percent; the number of female faculty has increased by 30 percent.

The campus is committed to attracting a diverse, excellent pool of candidates, while retaining excellent faculty and staff. The campus provided $90,000 in incentives to departments that hired female or underrepresented minority faculty.

To demonstrate commitment to diversity and inclusion, Missouri S&T reallocated $564,728 and matched UM System strategic funds of $464,059 to support Human Resources, Student Affairs, and Title IX.
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 will receive a $10,000 incentive to their E&E budget for every faculty member hired. The department will retain the $10,000 recurring funds as long as that faculty member remains with the department. This incentive demonstrates that diversity in hiring practices is a priority at Missouri S&T.

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

- The Chancellor’s Scholarship was revised and now 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.
- University Advancement is working with a group of donors who have committed to invest $1 million to be paid over time for underrepresented minorities.

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

- In 2015, an articulation agreement was completed with Mission College, a predominantly Hispanic-serving community college located in the Silicon Valley area. The campus is looking into arranging agreements with additional colleges in the area.
- The second agreement planned for this fiscal year will be with West Valley Community College which is also located in Silicon Valley. Ventura College in California is another targeted campus with a 49 percent Hispanic population.
- To help increase the African-American transfer students, a renewal of the articulation agreement with Lincoln University in Jefferson City is underway.

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

- 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 resources available.
- An online program, Not Anymore, which focuses on prevention of sexual assault, was implemented in fall 2015. This workshop is required for new incoming students.
- An in-depth, interactive, diversity and inclusion course hosted in the online learning management system is being developed. This is a stand-alone professional development tool that can also be used as a part of an HR certification process.
• Diversity and inclusion training has been developed and delivered to over 130 Missouri S&T faculty and staff.
• The campus created a Title IX Strategic Curriculum Committee which developed a campus plan.
• The Equity Hearing Panel for students has been formed and trained. Six Student Affairs staff participated in the monthly meetings.
• The dean of students participated in Title IX training for Athletics and collaborated with institutional equity to serve as a liaison with faculty in Title IX accommodation for students.
• Student Affairs staff attend STEP UP! Committee monthly meetings.
• Counseling provided a training session for faculty and staff focused on eliminating gender violence and discrimination for the campus and in the classrooms.

**Action 3.4.6: Develop a comprehensive diversity and inclusion plan that would incorporate various action items**

• An outside consultant was contacted regarding the development of a comprehensive plan.
• The annual CLERY report reflects changes to UM System policy on the reporting and handling of sexual assault incidents.
• The dual-career hire policy underwent revisions as requested by the Female and Underrepresented Minority Faculty Recruiting and Retention Task Force.
• To help with safety, security, and equality the campus purchased body cameras for all police officers.

**Action 3.4.7: Bring to campus underrepresented faculty as visiting scholars**

• Human Resources, Equity and Inclusion is collaborating with the College of Arts, Sciences, and Business to prepare a proposal for a visiting scholar program focusing on diversity scholarship and is planned for fall 2016 recruitment.

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

• A portfolio of existing and proposed work-life policies, procedures, and programs has been developed.
• Workshops have been provided on work-life balance.
• In the development phase are: a job sharing arrangement, take your kids to work day, volunteer leave policy, and faculty and staff exercise leave policy.

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

• The recruitment process has been enhanced as evidenced by the number of female faculty hires. 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 is and 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 comprehensive redesign of the diversity and inclusion training for search committees was implemented in August 2015 and 10 sessions were conducted.
- Monthly communication occurred to department representatives on any compliance issues.
- Workshops conducted by the employee assistance practitioner cover 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 has been launched. The website consolidates all diversity and inclusion efforts across campus and includes a monthly newsletter, a workshop schedule, and helpful tips.

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

- Athletics recruited 102 males and 34 females, 113 freshman and 23 transfers from 18 states and 5 countries.
- Student-athletes were educated for diversity, alcohol and drugs, and sexual assault.
- Student-athletes attended a diversity program known as “Giving Voice,” a workshop on micro-aggressions in the classroom.
- NCAA guides for sexual assault and interpersonal violence have been distributed to all athletes.
- Athletics provided Saturday tours to prospective student-athletes and their families.

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

- The Chancellor's Committee on Diversity and Inclusion is developing a proposal to amend the campus strategic plan with measurable goals that infuse diversity into strategic objectives across campus.
- HREI continues “Let's Talk” events. In fall 2015, it facilitated discussions on religious freedom and sexual assault.
- Missouri S&T attended the St. Louis vendor fair in October 2015. This fair was designed to facilitate discussions between employers and agencies that assist with placement of veterans and persons with
disabilities. The campus is partnering with Fort Leonard Wood to provide resume workshops for their veteran and active duty personnel seeking civilian employment.

- HREI is partnering with Leadership and Cultural Programs on multiple programs. In October, a display of “things heard at S&T” highlighted micro-aggressions underrepresented students have experienced on campus. “Giving Voice,” a touring workshop on micro-aggressions in the classroom, was provided in September.

- In October 2015, the Missouri S&T theatre program performed Good Kids, a play based on the intersection between sexual assault, alcohol use and social media. Counseling services provide Talk Back sessions after every performance.

- HREI has partnered with Residential Life to provide training for staff on cultural competence.

- Title IX Strategic Curriculum Committee is a cross-functional committee composed of members from all levels. The committee is split into three working groups: 1) content and curriculum – creating a complete inventory of prevention efforts on campus, both inside and outside of the classroom; 2) bystander and online education – an assessment of engagement Missouri S&T’s Step UP! program and Not Anymore; 3) assessment and sustainability – focused on continued committee makeup, annual assessment of Title IX prevention efforts, marketing of Title IX resources. The group will present to the Chancellor in spring 2016.

- COER staff attended LGBTQ Advisory Council meeting, attended trainings on “Finding employment that works for individuals with Asperger’s,” and held employer events for three diversity groups.

- Leadership and cultural programs: 1) co-sponsored two movies that dealt with issues related to diversity and inclusion; 2) promoted global awareness through International Day of Peace with 200 participants; 3) engaged 262 students in Hispanic Heritage Month; and 4) participated in six events dedicated to positive interactions with students including: Black Men’s Think Tank, Let’s Talk, and Black and Gold Pageant.
Lever Summary:

A committee was formed to analyze current processes and create a strategy for developing a culture of lifetime engagement among the university and its students, faculty, staff, and constituent groups. The committee was divided into two groups: external and internal.

The external group framed its findings around information provided from the Educational Advisory Board. The information focused on benchmarked universities’ programs and services. The external team concluded there is a need for a streamlined first-year experience program. This first-year program is considered vital for maintaining a connection with its students. The committee recommends that departments look for more intentionally coordinated student engagement opportunities that contribute to transitioning new students in the Missouri S&T campus community with an emphasis on programs beginning with their admittance through the completion of their first year. There is also a need to develop strategies that engage students as they transition from students to alumni. Additionally, there is a need to develop an engagement program for alumni who are close to Rolla in locations like St. Louis, Kansas City, Springfield, and Central Missouri.

The internal team conducted an audit of students and alumni. This team determined the campus has many engagement activities but are all independent. One department is unaware of the engagement activities in another department. The team recommends one central theme such as the athletics’ “Miner for Life.” An expanded campaign could start with recruitment of incoming students and immersion into campus culture by enhancing freshman convocation, opening week activities, Greek life, Reconnect I and II, Sophomore Summit, and the Student e-Connection. A unified campaign can help the students affiliate and become engaged members of the campus community.

The committees concluded that enough engagement programs currently exist, but a central owner is needed. The committee recommends that university advancement own the process. This would align with the alumni relations engagement activities and the marketing efforts created by marketing and communications. The committee further concluded that undergraduate studies, student affairs, and enrollment management all
should have a vested interest in fostering lifetime engagement. Each department should designate representatives to assist with incorporating the Miner for Life theme into activities.

The campus is vested in its alumni and this can be demonstrated through its commitment of $500,000 in matching funds; an additional $500,000 which is allocated at $100,000 per year for five years to a Hasselmann Alumni House maintenance endowment; and $35,000 per year for custodial and landscape assistance.

The campus-secured property at 605 W. 11th Street engages students and alumni. The campus allocated $600,000 for purchase and renovation of this property to house diversity, outreach and women’s programs, which connect many alumni with current students and programs. An additional $25,000 was allocated to create an innovation and collaboration space for the students.

**Action 3.5.1: Utilize the library and archives in creating collaborative online areas where alumni can view yearbooks, the Miner, photos and other memorabilia. As we digitize these collections, we can engage alumni in identifying people, events, and in telling stories online**

- The library has fully digitized yearbooks and is discoverable on Google and Google Scholar. The yearbooks have been viewed by 916 current students and 872 alumni.
- The library has implemented a tracking mechanism and developed a sample survey to track alumni satisfaction and usage.
- The yearbooks are currently being viewed from all over the globe from areas such as Finland, France, and in the U.S. from Washington state to New York state.

**Action 3.5.3: Create a multifaceted engagement program that brings students through graduation and to the Academy levels**

- Leadership and Cultural Programs connected alumni with 140 current students through the Stand Up Stand Out program and worked with the LGBTQA Advisory Board to promote a Homecoming reception for LGBTQA alumni.
- COER engaged with freshman at PRO and during opening week activities. COER revised and distributed 4,600 Professional Development Plans to guide students through their experience. In addition, three alumni participated in interviewing and 35 students applied to the Boeing Mentoring program.
- The Student Affairs staff engaged students through the following: 1) a residential life House Calls initiative to connect students to the campus, faculty and staff; 2) introducing the “Miner Today Alumni Tomorrow” initiative during orientation; 3) hosting the Greek President’s Kick-off which engaged staff and student leaders; 4) leading test anxiety workshops for students; 5) presenting to the Miner Alumni Board Association during Homecoming on the possibility of being in the Mentor a Miner campaign to increase engagement; 6) engaging nearly 3,200 parents and families in communication activities throughout the semester to encourage student engagement; and 7) engaging 4,610 students in one or more recognized student organizations.
Action 3.5.5: Develop a Young Alumni Council and engage alumni through quarterly Young Alumni events

- The Young Alumni Council was created for alumni under the age of 35. This council is designed to engage alumni closer to graduation. The alumni had planned events at the fall homecoming with eight events occurring this past year.
- In fall 2015, members of the Young Alumni Council attended the Board of Trustees meeting.

Action 3.5.6: Explore feasibility and options of expanding our visibility and engagement with international alumni

- The international alumni received the Fall/Winter Missouri S&T Magazine.
- The campus reallocated $30,000 for international recruiting; see Lever 2.2 for international enrollment information.

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

- COER: 1) fully implemented new key performance indicator (KPI) tracking sheet for better oversight of strategic initiatives and alignment with National Association of Colleges and Employers (NACE) standards; 2) attended the graduate fair to collect job reports for graduate students; and 3) facilitated employer, student and career fair surveys that were integrated in process improvement.

Action 3.5.8: Promote Miner for Life strategies with student-athletes to encourage lifetime commitment

- Athletics continued planning with Academy of Miner Athletics for life skills seminar.
- Incorporated Miner for Life theme into engagement with 230 students during Miner Rama and Greek President’s Kickoff.

Action 3.5.9: Strengthen residential living communities to develop lifelong leaders

- Continued enhancement of the Residential Second Year Experience by offering a unique living community experience promoting academic success, career development, and experiential connections. Provided eight active program offerings with 91 students. Developed a newsletter focused on typical needs and opportunities for second-year students.
- The Second Year Experience was launched in fall 2014 and involved 40 students. In fall 2015, that increased to 91 students.
- A connections community was developed for the new student housing establishments in the downtown community. This experience allows students to shape their living community through a common theme or issue of interest.
- The Greek Academy was established as a tiered professional development program designed to enhance the living communities for students in fraternity and sorority housing units.

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

- Student Affairs developed an active engagement strategy: 1) performed 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.

- The campus implemented the Starfish S&T Connect retention solutions and early warning system for at-risk students. This system raises a red flag to faculty for any 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 web for students. It allows students to request appointments with instructors and identify tools and resources available to help.
Lever Summary:

The largest initiative on campus is the sustainable energy geothermal project. This project provides heating and cooling to 17 buildings on campus and was originally projected to cut energy usage by 50 percent, reduce carbon dioxide emissions by 25,000 tons per year, and decrease water usage by 10,000,000 gallons per year. The BTU usage was actually reduced by 60 percent during the system's first year, representing an energy cost savings of $1.2 million. Water usage decreased by 18,730,000 gallons in its first year of operation, representing a 40 percent decrease. Deferred maintenance has been reduced by $60 million.

Another initiative on campus involves the Havener Center and food waste. Dining services collected 16,244 quarts of pre/post-consumer waste valued at $48,000 for use among local farmers.

Residential Life integrated recycling procedures in leased downtown properties.

Student Affairs integrated a trash compactor in the Havener Center and reduced solid waste cost by 40 percent in its first month.
Action 3.8.1: Stabilize long-term funding for the Office of Sustainable Energy and Environmental Engagement

- The office of sustainable energy and environmental engagement reports to the new executive director for corporate relations. A funding plan is under development.

Action 3.8.2: Led by the Office of Sustainable Energy and Environmental Engagement, initiate and create student awareness programs and associated funding vehicles to promote our sustainable research and campus initiatives

- The Student Council President was invited to join the Strategic Sustainability Planning Committee.
- The campus has several initiatives dedicated to sustainable energy. The first initiative is the Solar Village. The Solar Village houses the first four competition entries from the U.S. Department of Energy Solar Decathlon.
- A second initiative and a supplement to the Solar Village is the Eco Village, which houses the 2013 and 2015 decathlon homes with room for four additional homes in the future. Missouri S&T is the only university that has earned an opportunity to compete in seven of the eight competitions with its recent invitation to the 2017 competition. $265,000 was reallocated to provide appropriate infrastructure for the expansion of the Eco Village. One of the homes in the Eco Village has integrated sensors for extensive research on the human factors of energy usage. This research will explore not just when appliances can be turned off for energy savings but also the limits people are willing to accept.
- The Solar Village utilizes a solar grid and smart grid power system. The Microgrid Project at the Solar Village offers intelligent switching capabilities for renewable power and advanced energy storage. A grant provided from the American Public Power Association through City Utilities of Springfield funded the installation of the battery array, and graduate students now conduct research on energy storage. NEC Energy Solution donated a 960V lithium ion battery; Milbank donated the Synap6 energy management hardware and electric vehicle charging station; Ameren in partnership with Electric Power Research Institute provided a residential fuel cell; and Ameren provided a Dynapower bi-directional inverter. A new industry consortium has been created to further research solar grid systems.
- As part of the university’s commitment to sustainability, Missouri S&T’s Dining Services has a contractual agreement that includes stipulations for effective waste management. Dining Services promotes its activities, which minimize the impact to the environment through reducing, reusing, and recycling – with a primary focus on reduction. This waste-reduction program and green initiative is called TrimTax.

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

- Members of the Student Council presented a bike-friendly plan to the Strategic Sustainability Planning Committee. The committee felt that a student-driven plan would be more successful for obtaining funding and for student compliance efforts.
- Public transportation is 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 the campus has funded this through cost dollars through FY16.
The eBus completes a loop around the Missouri S&T campus twice an hour beginning at 7:30 a.m. to 4 p.m. Monday through Friday. It leaves its terminal at E3 Commons and makes stops at Miner Village, Emerson Hall, Centennial Hall, Havener Center, and Gale Bullman Building before returning to E3 Commons. The bus began a new stop in the fall 2016 semester by providing transportation to campus for students living in the new downtown housing. The eBus also helps students without transportation to fulfill their personal needs by making community runs to local grocery stores.

**Action 3.8.6: Investigate existing and new courses for sustainability awareness for faculty, staff and students**

- The Office of Sustainable Energy and Environmental Engagement and student employees compiled a preliminary list of existing sustainability related courses.
- Missouri S&T currently offers minors in sustainability, global studies, and global sustainable economics.

**Action 3.8.7: Create campus sustainability project revolving fund that will allow savings to be invested back into the fund to underwrite future projects**

- A sustainability fund is in place to support future projects. The Office of Sustainable Energy and Environmental Engagement has received several grants and contracts including the AAPA and 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**

- The Office of Sponsored Programs tracks grants and contracts including those involving energy, environmental, and sustainability. The Office of Sustainable Energy and Environmental Engagement along with student workers are compiling an initial list of sustainability-related research projects using monthly reports on grants and contracts.
- The Office of Undergraduate Studies has modified its application process to include a checkbox for undergraduate research projects related to sustainability, a process that should help with tracking.
- The new 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**

- All new construction can be evaluated with LEED standards and principles. Physical facilities and construction management will continue to monitor.
- The 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.
- These 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.
- Bertelsmeyer Hall received a LEED Silver rating in July 2015.
Action 3.8.14: Produce one-hour monthly program called Energy Today to be broadcasted over KMST and made internationally visible via KMST.org

- Energy Today explores energy from all angles, how to generate it, how to store it, and how to use it. It is hosted by the director of the Energy Research and Development Center. This program is offered the first Saturday of every month. After the two-year launch plan, a five-year syndication plan is in place.
- KMST is currently evaluating the effectiveness of the program via a listener survey.
- KMST repackaged out-takes of the Energy Talk program as five minute news features. These news modules will be made available to other Missouri stations through the online Missouri Public Radio Network.

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.
- Residence hall student workers are trained on customer service, emergency procedures, and front desk operations. The residential living communities completed building coordinator training and were distributed emergency response kits.
- Missouri S&T has signed a pledge through the American College and University Presidents' Climate Commitment to incorporate resilience into existing carbon neutrality efforts.
- In conjunction with our climate commitment, we have developed a signature area, Smart Living, which also focuses on understanding technology and human impact. As a campus we are concerned about the global climate change and the impacts that it has on our nation and world. Our students look for innovative solutions and through the signature area, Missouri S&T is seeking solutions to those complex problems.
Lever Summary:

Gifts reflect a 38 percent increase over the $10.1 million baseline.

Endowment fundraising had a 12.9 percent increase over baseline.

The endowment market value grew 1.5 percent last year, from $175,100,000 (FY14) to $177,800,000 (FY15).

Alumni participation rate is 9 percent, halfway through the year.

Gifts closed on December 29, 2015 at $6,133,479 with $1,230,409 designated for endowment.

In FY 16, the university launched four crowdfunding projects raising in excess of $18,000 benefitting each of the following: Solar House, Celebration of Nations, Formula SAE and Miner Challenge

University Advancement implemented a division-wide sustainability retention program integrating key concepts in talent management, inclusion, well-being, and return on investment.

University Advancement hosted two young alumni events in Missouri and one event in Washington, DC. Four new alumni council members joined the Board of Trustees dinner in fall 2015.

The comprehensive campaign remains a top priority for the campus as evidenced by the reallocation of $750,000 in general operating revenue for FY15 and $828,044 for FY16 to hire additional staff to lay the foundation for the campaign.
Action 3.9.10: Leader review and decision-making by senior campus leadership to identify and prioritize fundraising opportunities based on new strategic plan and updated campus master plan

- All 250 principle tier prospects have been validated by prospect research.
- Fundraising opportunities have been identified.

Action 3.9.11: Develop campaign case statement based on prioritized list of fundraising targets

- The case statement is currently being shared to invite feedback.
- The department visited 27 percent of the campaign’s top prospects.

Action 3.9.12: Recruit, train and hire staff

- University Advancement hired two annual giving officers, a planned giving director, executive director of development, two development officers, and a manager of special events.

Action 3.9.13: Identify prospects for campaign cabinet and recruit cabinet

- In partnership with the Chancellor, a subcommittee of the Missouri S&T Board of Trustees will assist in identifying potential campaign cabinet members.

Action 3.9.15: Develop campaign proposal templates

- Proposals templates are under development.

Action 3.9.16: Solicit leadership, major, and participatory gifts

- The comprehensive campaign began in FY16.

Action 3.9.17: Conduct faculty/staff campaign

- The faculty/staff campaign will likely commence in 2020.

Action 3.9.18: Public announcement of campaign and goal

- The campaign will go public once 70 percent of the goal has been achieved.

Action 3.9.19: Develop campaign report, metrics, format, and process

- Reports are in process of being developed.

Action 3.9.22: Begin planning and laying groundwork for an Arts, Sciences, and Business Academy

- Planning phase has begun.

Action 3.9.32: Identify and appoint directors of development for each college

- The two executive directors have been hired, one for each college.
Action 3.9.33: Complete reorganization

- Two new annual giving officers were hired to focus on leadership annual giving and KMST.
- Three directors of development were hired in 2015 to serve as liaisons to each college, as well as supporting the provost. These directors identified the top fundraising priorities for each college that will be integrated into the campaign. This fiscal year, the vice provost and deans completed 52 donor visits with key alumni and friends of the university.

Action 3.9.34: Explore the feasibility and resources required to create for donors an online repository of personal giving records

- This action is being explored through a University of Missouri System initiative.

Action 3.9.37: Ensure major prospects are visited face to face annually

- As of December 31, 2015, development staff visited 416 individuals and individuals or groups representing 65 corporate partners.
Lever Summary:

Fifteen online master’s degree programs at Missouri University of Science and Technology are ranked among the best in the country according to *US News and World Report*. Rankings are determined by factors including student engagement, faculty credentials, peer reputation, student services and technology.

Missouri S&T’s online graduate programs in the computer information technology category tied for 8th overall and ranked 5th among public universities. This is a major improvement over last year’s ranking of 26th overall and 16th among public universities.

The university’s online graduate engineering programs [aerospace engineering, civil engineering, computer engineering, electrical engineering, engineering management, environmental engineering, explosives engineering, geotechnics, manufacturing engineering, mechanical engineering, mining engineering and systems engineering] ranked ninth overall and sixth among public universities. This is an improvement from last year where the programs ranked of 20th overall and 17th among public universities.

Missouri S&T’s online MBA program tied for 72nd overall and 56th among public universities.

According to SuperScholar, Missouri S&T’s online Masters in Industrial Organizational Psychology ranked sixth in the nation.

The university has experienced an increase in student enrollment in online/distance courses from 1,513 in fall 2012 to 2,500 in fall 2015, representing an increase of 65 percent.
Action 4.1.1: Conduct a focused market study analysis to serve as the foundation for a comprehensive distance and online education strategy

- Funding for this area was linked to a strategic initiative proposal expanding instructional laboratory equipment. A portion of these allocated funds (approximately 20 percent) were used to configure laboratories for remote access.
- The new assistant vice chancellor for global learning began in July 2015 and one of his first priorities is to bring the distance and online programs under one umbrella.

Action 4.1.2: Bring together distance and online programs under one umbrella so as to leverage advantages of both, to pool resources, and to eliminate confusion

- A policy became effective July 1, 2015, to establish a revenue distribution model. The policy stipulates that instead of assigning a specific dollar amount of overhead when budgets are established, all distance education and off-campus programs will be assessed a full cost charge of 15 percent of gross revenue. In addition to the 15 percent full-cost charge, distribution will continue to be made to the provost equal to 5 percent of gross revenue, as well as a 5 percent gross revenue distribution made to the vice provost and deans.
- The campus updated the membership in the State Authorization Reciprocity Agreement.
- The Video Communications Center (VCC) was utilized in the calculus redesign for production of video lecture and demonstration. The center also developed several distance courses, continuing education courses, and webinars for a number of departments and centers. This highlights the advantage of pooling resources.
- Education Technology merged with Global Learning in September 2015.
- The department is currently working on restricting/reorganizing the website to present a cohesive presence for global. This process will take several months and is expected to be completed in 2016.

Action 4.1.3: Create a uniform marketing strategy to raise visibility of distance and online programs

- Global Learning is developing a communication plan that incorporates the university’s Miners Dig Deeper branding.
- Rebranding distance education centers outside of Rolla as Missouri S&T Global. We are investigating locations for expansion.

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

- By June 2016, a presentation packet for non-credit distance education portfolio will be developed.
- The goal for this fiscal year is to meet with three academic departments and aid in the development of new non-credit programs. Engineering management and computer science began discussions in fall 2015.
- Systems engineering has delivered course product for Honeywell that will be made available for the public.
- Education Technology is working with civil, architectural and environmental engineering to develop Engineering Ethics.
- Education Technology is working with the Office of Sustainable Energy and Environmental Engagement to develop training materials for national partners.
• A contract was developed with the Association of State Dam Safety Officials to deliver “Soil Mechanics for Earth Dam Design and Analysis.”
• Global Learning launched the online training “Relative Permeability: Petroleum Reservoir Engineering Technology.”
• Online training for General Motors occurred and the GM TEP Letter of Agreement for Paint Technology and Process Control Certificate was renewed.
• In fall 2015, “Introduction to Automotive Conveyor Systems” was completed.
• Global Learning is providing additional development trainings for Honeywell, “Systems Engineering Training for INCOSE Exam Preparation.”
• Global Learning established a five-year contract with the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) for explosives engineering courses.
• The new assistant vice chancellor for global learning is meeting with companies and agencies to help them develop and deliver additional non-credit distance education courses.

**Action 4.1.5: Involve library to work on storage, usage and copyright issues involving online resources including multimedia**

• The library is working with Global Learning on a plan for storage, usage, and copyright. The plan will be completed in FY16.
• The library offered a series of workshops and sessions regarding copyright, author rights, and fair use. There is an online link for copyright guides made available to all students.

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

• Global Learning acknowledges and supplements distance revenue to departments who utilize adjunct faculty for teaching distance courses.
• Global Learning distributed an instructor booklet on useful tips for teaching distance courses to all faculty.
• The new assistant vice chancellor is working with the vice provost and deans and department chairs to create an additional incentive program to offer more online and blended courses. For some departments, the additional courses may be taught by full-time tenured or tenure-track faculty while other departments may need to hire adjunct instructors to reduce the workload of current full-time faculty.
• The eFellows program awarded nine grants in fall 2015: 1) History 1300 was a Tier 1 redesign to improve overall learning, facilitate better in-class participation and reduce seat time; 2) French 1102 was a Tier 1 grant to develop a blended course and included a core group to study abroad; 3) Engineering Management 5412 was a Tier 1 grant and will replace half of the traditional class time with online content; 4) Theater 1190 was a Tier 1 grant to offer the class fully online; 5) Chemistry 1319 lab was a Tier 1 redesign utilizing a blended format where the students conduct half of the course activities in the traditional lab setting and half of the activities in common spaces on campus; 6) Engineering Management 4710 is a Tier 2 grant for recording course material and making it available online; 7) Metallurgical Engineering 2110 was a Tier 2 grant offering online assignments and “flipped Fridays” allowing students to view course content online before presentations; 8) Engineering Management 6323 was a Tier 2 grant developed asynchronous team-building exercises for student teams,
experiential learning opportunities in the community, and clear learning outcomes in Blackboard; and 9) Mathematics 1120 is providing online videos for algebra and geometry.

- Education Technology completed two sessions of Building Blocks Workshops, 13 faculty attended.
- Global Learning integrated a new pilot program with the College of Arts, Sciences, and Business for two summer online courses.
- Global Learning offered two sessions of eLearning Community of Practice to 30 attendees.

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

- Global Learning conducted a VCC studio classroom utilization and revenue generation analysis that indicated additional offerings are limited by classroom availability. Results of this study were reviewed with the Space Committee for consideration of changes in how classrooms are used.
- The assistant vice chancellor is evaluating the funds available for expanding the number of online synchronous and asynchronous courses. Discussions with faculty and academic departments that offer online courses will occur in FY16 to focus on expanding the number of online or asynchronous courses.
- The campus has allocated funds for two academic departments to create online and distance master’s courses. Chemical engineering will create two classes per semester until the program is fully-available online. Mechanical engineering is creating two classes per academic year, these courses could also be a part of the proposed Missouri State University expansion.

**Action 4.1.9: Create more online capability in classrooms**

- Global Learning worked with Video Communications Center to expand capability in two classrooms within Bertlesmeyer Hall and one classroom in electrical and computer engineering.

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

- Strategies are currently being explored.
Lever Summary:

Missouri S&T strives to be a leader in how instructional labs for science and engineering courses are designed and delivered in a blended or online format. The Transforming Instructional Lab project aims to develop a set of eLearning models, processes, and strategies for the redesign of traditional laboratory courses for blended/online delivery, pilot a blended/online laboratory experience in at least two courses, and create a handbook for use by instructors and institutions to apply these models. This overall effort is known as DELTA, or Delivering Experiential Labs To All.

We have received an Online Learning Consortium 2015 Effective Practice Award honoring innovation in online education.

Redesigned instructional lab update provided below:

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<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>

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

Redesigned instructional lab update provided below:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Cell Biology</td>
<td>Flipped lab with video demonstrations and quizzes are provided online before the wet lab experimentation in the traditional setting</td>
</tr>
<tr>
<td>General Biology</td>
<td>Online lab using lab kits and an online learning platform</td>
</tr>
<tr>
<td>General Chemistry</td>
<td>Blended lab using lab kits and traditional lab with course content supplemented within the Learning Management System (Canvas)</td>
</tr>
<tr>
<td>Electrical Engineering</td>
<td>Piloted fall 2015 in the Introductory Circuits lab</td>
</tr>
<tr>
<td>Materials Testing</td>
<td>Online lab using custom lab kits created by the instructor</td>
</tr>
<tr>
<td>Microbiology</td>
<td>Flipped lab with video demonstrations and quizzes provided online prior to the wet lab experimentation in the traditional setting</td>
</tr>
<tr>
<td>Nuclear Engineering</td>
<td>Video equipment installed and streaming live class to remote locations</td>
</tr>
</tbody>
</table>
Action 4.2.1: Explore how to partner with other universities, community colleges, high schools or extensions to deliver lab experiences

- This lever is tied to a funded strategic initiative, where a portion of allocated funds (approximately 20 percent) were used toward configuring laboratories for remote access.

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

- A model framework has been developed by Educational Technology.
- A handbook for use by the instructors has been developed by Educational Technology.
- Civil engineering developed the online course, Phytoremediation and Natural Systems, and the new distance composites design course.
- Engineering management developed blended courses: ENG MGT 1100, ENG MGT 1210 and ENG MGT 3320 and redesigned ENG MGT 4907.
- Materials science developed 6110 and MSE 6120 and blended course CER 3230.
- Geological engineering developed online courses: GEO ENG 6400, GEO ENG 5415 and GEO ENG 5332; new blended courses GEO ENG 5471 and GEO ENG 6477; and a new course for the humanitarian engineering and science minor, GEO ENG 1880.
- Piloted in fall 2015, the combined GEO ENG 1150 (Introduction to Physical Geology, a three credit course with lab component), GEO 1110 (Physical and Environmental Geology, a three credit lecture), and GEO 1119 (Physical and Environmental Geology Laboratory, one credit). These combined courses created a corresponding/co-listed, one-credit lab (GEO ENG 1119).
- Chemical and Biochemical Engineering created a bioprocess safety course.
- Psychological Science developed an online course, personnel selection.
- Physics developed new shared courses with UMSL as part of the Ph.D. cooperative program: Physics 4301 and Physics 5301; Optics (Physics 4503) was modified for online delivery; and Engineering Physics I and II (Physics 1135 and 2135) were both redesigned to include blended options which allowed enrollment to increase from 450 to 600 per semester for each course, a 33 percent increase.
- History developed a flipped course, History 1200 and a blended course History 1300. History 2430 and History of Science are now offered as both online and blended; History 2790 is now offered as a blended course; and History 3360 is offered as a seminar-style course.
- Math developed new blended courses, Analysis of Categorical Data and Statistical Shape Theory. As part of the shared courses with UMKC, the course Mathematical Foundation of Finite Element Methods was developed.
- Electrical and Computer Engineering redesigned EE 2120 into a blended format and began enrolling in fall 2015.
- Arts, Languages, and Philosophy developed a new Digital Art course (Art 3001) and a new philosophy course (Phil 300). Nearly half of the philosophy courses are now blended. One Russian course is blended and French developed a blended course.
- English and Technical Communication is course-sharing with the UMSL English department for technical communication. The department also redesigned 12 courses.
- The campus also participates in the System-funded inter-campus course sharing model. Missouri S&T offers courses through this system which combines online, video conferencing, and traditional teaching:
1) Civil Engineering 4448, Fundamentals of Contracts and Construction Engineering, offered to students at MU; 2) Electrical and Computer Engineering 5600, Interference Control in Electronic Systems, and Computer Engineering 5620, Signal Integrity was taught in spring 2015 and offered to UMKC; 3) Mathematics 6602, Mathematical Foundation of Finite Element Methods, offered to students at UMKC; 4) Introduction to Ethics, offered to students at UMSL. (Missouri S&T students are enrolled in UMSL’s ethics in science course); 5) Physics 4503 (Classical Optics), Physics 4533 (Nanotechnology), Classical Optics and Nanotechnology courses are offered via the Missouri Physics Collaboration (UMSL is teaching relativity and cosmology to Missouri S&T physics students); 6) four technical communication courses – International Dimensions of Technical Communication (4450), Usability Studies (5530), Proposal Writing (4550) and Technical Editing (4510) – will be taught by Missouri S&T faculty and offered to UMSL students (Three UMSL courses – Advanced Business and Technical Writing, Editing, and Special Topics in Writing: Technical Presentations – will be taught by UMSL faculty and delivered to Missouri S&T students); 7) two Missouri S&T history courses – History of Technology (2510) and Architecture, Technology and Society: 1750-Present – offered to UMSL students (two UMSL courses – The Networked Society and Social Informatics – are offered by UMSL to Missouri S&T students).

- Environmental and civil engineering students at Missouri S&T will enroll in Watershed Management and Water Quality, a course offered by MU in collaboration with Missouri S&T.
Lever Summary:

This lever is tied to an FY15 strategic initiative to enhance the recruitment process for Ph.D. students by providing stipends for GRAs/GTAs and a premier Chancellor’s Distinguished Fellowship. The campus has reallocated $500,000 in general operating revenue and provided a 2,875-square-foot newly renovated space dedicated to Graduate Studies by allocating an additional $250,000 in cost funds. Marketing materials were developed and the website updated.

Several new programs have been developed to recruit, retain and reduce time-to-degree. Some of these programs are:

**Experience S&T** - program developed to increase enrollment. This program invites graduate candidates to the Missouri S&T campus and includes hotel, meals, travel allowance (up to $500), dinner with the faculty, campus tour, lab visits, and faculty visits.

**Chancellor’s Distinguished Fellowship** - designed to be a highly competitive package. The fellowship includes all tuition and fees, a $28,000 stipend, and a $1,250 travel allowance to conferences.

**Dissertation Completion Fellowship** - developed to increase graduation rates. The program provides in-state tuition and fees, and a $24,000 stipend.

Under development is the **Provost Fellowship** - developed to attract high-quality graduate students. This program will be a competitive package offering tuition and fees, and a stipend ranging from $16,000-24,000.

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**Campus or Unit:** Missouri University of Science and Technology

**Lever Number:** 4.5

**Lever Description:**
Engage in transformative doctoral student recruiting/retention and placement

**Lever Metric:**
- Increase the number of publications per research-based graduate degrees awarded by 15 (2020)
- Increase the total student support per funded graduate student to $17,500 (2020)
- Increase Ph.D. enrollment by 200-400 (2020)
Action 4.5.3: (Recruit) Develop memoranda of understanding and articulation agreements with reputed national and international schools to recruit high quality doctoral students

- Graduate studies is visiting India and Thailand to recruit students and promote academic collaborations.
- The vice provost and dean for graduate studies represented Missouri S&T and participated in the American Council on Education (ACE) Institute for Leading Internationalization workshop. Intent of the workshop was to understand and learn from ACE experts on how to effectively weave internationalization into strategic mission and goals.

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 third year. The member cohort has increased to eight students per campus, previously five. Various degrees are represented: civil engineering, electrical engineering, chemistry, mathematics and statistics, geological engineering, computer science and systems engineering.
- The “Experience Missouri S&T” is a visitation program for prospective doctoral students. A flyer was created and mailed for marketing purposes.
- Experience S&T occurred in fall 2015: September 17-18, October 1-2, and October 16.
- Graduate studies attended Oak Ridge National Lab’s ORAU graduate fair. Missouri S&T had a booth to increase recognition (Lever 2.4) and to recruit top-quality doctoral students.
- Midwest Association of Graduate Schools has 70 plus graduate school memberships from 14 states. Missouri S&T’s vice provost and dean for graduate studies served as the chair-elect and will chair the 2016 annual conference.
- Doctoral enrollment has increased from fall semester 2012 to fall semester 2015 by 15 percent.
- The Chancellor’s Distinguished Fellowship (CDFs) is open for fall semester 2016 awards and awardees will be announced in February.
- Graduate studies creatively utilized CDFs to match eight Graduate Assistance in Areas of National Need, Department of Education. Missouri S&T was awarded four for fall 2015.
- The university is performing preliminary research on a new fellowship aimed at promoting the values of diversity and inclusion. Several universities have fellowships dedicated to socio-economic status, first-generation U.S. citizen, first-generation college student, disability, individuals who can demonstrate historical commitment to diversity and inclusion, or students who are underrepresented in the field of study.
- Missouri S&T has reengaged with the National GEM Consortium to increase the participation of underrepresented minorities at the master’s and doctoral levels in engineering and science.

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

- Graduate Studies, design and construction management, and the library director met to discuss moving forward with a graduate resource center being housed in the library.
• A survey was conducted with faculty and students on the type and usage preference of a graduate resource space. The conclusion from the survey indicated an academic, social, and collaborative space would be utilized and welcomed.

**Action 4.5.9: Develop and implement a plan for a comprehensive graduate student division of Career Opportunities and Employer Relations (COER)**

• A COER staff member was hired in fall 2015 to focus on job opportunities for graduate students.
• The new graduate-focused career advisor: 1) provided advising to 414 graduate students; 2) provided workshops on job searching internationally, creating power introductions, and networking; and 3) integrated opportunities for graduate students in the Employer Seminar Series.

**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**

• Based on the approved FY15 strategic funding initiative, the campus implemented a visitation week for prospective doctoral students. The program includes: hotel, meals, travel allowance (up to $500), dinner with the faculty, campus tour, lab visits, and faculty visits.
• The first Experience S&T attendees were: seven males and four females. Six students visited the College of Engineering and Computing; five students visited the College of Arts, Sciences, and Business; and all students who attended were planning a direct Ph.D. after they completed their undergraduate.
• A student ambassador has been hired to work on the Missouri S&T experience.

**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**

• First annual Three Minute Thesis (3MT) competition took place in November 2015. 3MT is an academic competition that challenges graduate students to describe their research within three minutes to a general audience. It has been designed to celebrate the discoveries made by students and encourages communication. This event had 41 student participants and 19 judges from the campus and the Rolla community. The winner will compete in April 2016 at the Midwest Association of Graduate Schools conference.
• Theses/Dissertation Boot Camps were held in September and November each with 22 attendees. The boot camps consisted of the following workshops: Thesis/Dissertation, Using Endnote, Stress Management, and Formatting Your Theses/Dissertation.
• A series was conducted with the Chancellor’s Fellows, and seminars were offered on editing and creating a powerful personal introduction.
• Graduate studies hosted seven workshops in fall 2015.
• Encouraging camaraderie for the graduate students, a family Halloween party was held in October 2015 and over 50 students attended with their families.
• A graduate student lunch-and-learn was created offering the following seminars: formatting, learning about copyright, social networking, academic writing skills for ESL graduate students, learning about LaTeX, creating a style sheet in Word, and writing your thesis/dissertation.
**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

- Starfish S&TConnect will be used to track student engagement. The launch will be January 2016.
- A graduate studies dashboard is being developed.
- Graduate studies completed a new thesis and dissertation defense rubric to be used across all units. A staff brainstorming meeting was held to train the academic department staff and discuss the rubric and end-of-semester reporting. All departments have complied with the new rubric. Annual reports will be due in April 2016.
- A climate survey was performed with all graduate students. Graduate certificate, masters and Ph.D. students were contacted. The survey consisted of 25 in-depth questions. This survey provided information on what the university does well and areas where it could improve. According to the survey, 25 percent of graduate students plan to pursue careers in industry production and 22 percent plan on industry research. Several students commented that industry experts should teach some of the courses rather than traditional academics. This type of information allows the university to become more strategic on analyzing adjunct and non-tenure track faculty hiring needs.

**Action 4.5.24:** Determine the feasibility of implementing a fully electronic graduate application management and review system

- The Slate application management system was purchased, designed, and went live in the 2015 spring semester for fall 2015 applications. The customer relations management software, Slate, replaced Hobson’s to provide a better application management experience.
Faculty mentoring for all junior faculty has been developed on a departmental level. The objectives of the mentoring program are to conduct a systematic review of faculty’s teaching, research, and service. The intent is to provide guidance and support for faculty professional development. Many of the departments have created mentoring teams which consist of full-time or senior faculty. The team members should be at least one rank above the junior faculty while most mentor teams consist of tenured faculty. Most teams are very focused, with one member focusing on research, another member focusing on teaching, and a third member focusing on service. The team provides written reviews.

Human Resources, Institutional Equity and Inclusion developed an eight-module professional development series for faculty administrators. Module one covers faculty recruitment and is a one and a half hour workshop designed for understanding faculty recruitment and strategies for developing a diverse team. Module two covers finance and budget. This one and a half hour workshop is focused on university finances and the budgeting process. Module three is leading by influence, not authority. This one and a half hour workshop covers shared governance and strategies on leading by influence. Module four, policies and procedures. This one and a half hour workshop is dedicated to policies and procedures that are beneficial to faculty and academic administrators. Module five, highlights tips on conflict resolution in the academic world. This one and a half hour workshop delves into conflict subjects that faculty and administrators typically encounter and provides tips. Module six, Title VII and Title IV. This one and a half hour workshop promotes the academic administrator’s role in compliance. Module seven, leveraging university advancement. This two hour workshop is designed to familiarize faculty with the services and resources available in university advancement, provide an introduction to fundraising, the basics of endowment, working with alumni, an overview of marketing, including public radio, KMST. Module eight, student success strategies. This one and a half hour workshop
focuses on factors influencing student success and the activities that promote career preparation and professional development.

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

- During the incoming students’ Preview, Registration and Orientation (PRO) one-day session, students are given the Missouri Mathematics Placement Test and trigonometry exam to determine their placement into beginning math classes. The algebra exam was developed as a statewide exam in 1970 by Carl Willis, Charles Krauskopf, and Paul Burcham of University of Missouri-Columbia. The trigonometry exam was developed by Gus Garver of Missouri S&T. The algebra exam is 40 questions completed in 40 minutes. The trigonometry exam is 25 questions completed in 60 minutes. Both exams are given without the use of calculators. The tests are scored and the math advisor looks at high school grades, incoming credit, and ACT scores to determine the appropriate beginning math class. Results are shared the same day with the student and they are registered into class.
- A task force was developed to analyze the feasibility of an online math assessment. The task force investigated math assessments at comparable universities and online assessment software, and analyzed the pros and cons of online math assessments. Reviewing practices at the other three University of Missouri campuses plus 15 comparators, the task force discovered a variety of approaches. Cal Tech, MIT and NJIT use a placement test process similar to Missouri S&T but almost half of the comparator group begin with calculus, making placement testing irrelevant. Some campuses use ACT scores for initial placement. Several universities used a proctored test, ALEKS.
- Missouri S&T may decide to use ALEKS online math assessment. Some of the advantages of this assessment are: no reading assessment, all questions are open ended, and learning modules identify learning gaps. Student learning access cards are provided to each student allowing them to work through their own assignments. The task force sees this as an excellent tool for prepping students. Students immediately see the results as they go through the modules and the system ultimately recommends the math level. Each student can take five placement exams over a year with a cost of $25 per student.

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

- A plan is being developed 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.

**Action 4.6.3: Complete feasibility study of upgrading degree audit software and implementing academic mapping planner**

- As part of the Comprehensive Retention Initiative, the four UM campuses have determined to upgrade the degree audit. The decision has also been made to move forward with the academic mapping planner U Direct.
- The degree audit software is interactive and tracks student academic progress in meeting degree requirements. The software tracks approved substitutions and assists students with planning for future semesters.
The academic mapping planner software creates a semester-by-semester roadmap for student course enrollment based upon their approved degree audit. The software informs students of appropriate course sequencing and provides alerts so advisors know when a student is on or off track.

The product will go live in summer 2016.

**Action 4.6.4: Explore the feasibility of a Center for Teaching and Learning**

- A plan is being developed by the provost to start on some aspects of a center for advancing faculty excellence in teaching and learning. Although full implementation may not be feasible in FY16, certain programs will be rolled out to begin the process.

**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**

- The S&T Connect system offers a comprehensive online advising and mentoring tool. This tool was implemented in 2015.
- The Comprehensive Retention Initiative team at Missouri S&T, which consists of Enrollment Management, Information Technology, and Undergraduate Studies, continues to plan for the full implementation of academic mapper and planning software (U Direct), update to the degree audit system (U Achieve), and addition of class scheduler resources.
- 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**

- The provost's office is reviewing the development of this program.

**Action 4.6.7: Enhance the new faculty orientation program**

- The current new faculty program begins with a two-day orientation. A campus welcome and strategic overview is provided by the Chancellor. Professors present on: “Teaching Expectations and Assessment;” “Developing Approaches and Viewpoints to Achieve Career Success;” “Getting Ready for your First Class at S&T;” “Diversity of Scholarship at Missouri S&T;” and “Working with Students.” The Provost discusses leadership and campus organization. An introduction to sponsored research is provided. The library provides information on data management and scholarly tools. The campus promotion and tenure committee discusses the tenure process.
- After orientation is completed, new faculty are connected with a mentor.
- New faculty met monthly in fall 2015 and will meet at least twice monthly in spring of 2016 to network with other faculty and answer any questions.
Action 4.6.8: Develop guidelines for faculty mentoring focusing on three core areas: teaching, research and service

- Mentoring occurs at the departmental level. A plan is being discussed about feasibility of addressing this as a part of a Center for Advancing Faculty Excellence.

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

- Pilot programs are being explored in FY16.

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

- The Graduate Leadership Development Program (GLDP) provides students from various disciplines at Missouri S&T to network and collaborate with each other and with graduate students from University of Missouri 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” will be completed in spring 2016. All forms were approved by graduate faculty in December 2015. These forms will be incorporated into the graduate staff manual.
Lever Summary:

The Burns & McDonnell Student Success Center (BMSSC) - had a soft launch in the fall of 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 staff then plans and implements necessary changes and continues effective programming. An established annual report summarizes the year’s events as well as lists planned future activities. BMSSC is committed to ensuring that students have many opportunities for positive experiences and success.

Student Success Mentor program - this is formalization of the assistance available in the Student Success Center for students who may be 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) along with their family or guests who attend PRO with them. During their first and second semester the Success Coach informs the students about programs and resources available.
The chart shows Fall 2015 probationary admitted students that are in the Student Success Mentor program and how attending the mentor meetings as well as Reconnection improves the student’s first semester GPA at Missouri S&T. Actually, the group with the highest average ACT, who chose to not attend any meetings or Reconnection, received the lowest GPA. Those that participated fully in the program, even though their ACT average was the lowest, had the highest GPA. This data has been consistent the past two years since the Student Success Mentor Program was initiated.

Fall 2015 results: 125 students were entered in the success mentor program, 77 attended a meeting, 56 attended a meeting plus Reconnection, 16 did not attend a meeting but did attend Reconnection, and 42 did not participate at all.

**Action 4.7.1: Explore the feasibility of a first-year success course**

- The On-Track student success course for probationary students served a total of 113 students in fall 2015.
- Elements of a first-year success course will be rolled into freshmen engineering.

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

- The College of Engineering and Computing is working with faculty to transform freshman engineering to encourage innovative thinking among students in the program.
- Advisors have been hired and dedicated to freshmen engineering to help with student success.

**Action 4.7.3: Enhance student mentoring program**

- Faculty presence in the Student Success Center includes Faculty Corner Brown Bag Lunches where the students can have lunch with faculty; certain faculty office hours available in the SSC; outreach
programs by faculty to bring in students, including “How to Approach Faculty” and “Importance of Talking with Your Professor.”

- Veteran student mentoring – two students were hired to work specifically with our military veteran population. Both students are veterans.
- In 2015, the Student Success Center began a monthly newsletter that highlighted their services and new mentor and outreach programs - [http://studentsuccess.mst.edu/about/monthlynewsletters/](http://studentsuccess.mst.edu/about/monthlynewsletters/).
- Success coaches/mentors: collaborated with the math department to meet with struggling students in the Success Calculus Course. Success Coaches met with these students and mentored on goals, study strategies, time management, etc.
- Sophomore Year Experience – “Sophomore Summit,” for our second-year year students (topics: study Abroad, career/majors, involvement, alumni involvement, leadership, co-ops, internship, research, etc.). The first offering of this event in 2014 had over 200 participates. In 2015, several sophomore programs were implemented and integrated into a sophomore series called “Sophomore Jump.” Included in this series for sophomores were: Sophomore Summit, Sophomores and Trivia, Majors and Minors, Guest speaker addressing Sexual Violence Issues, and Halfway to Graduation Celebration (planned for spring 2016).
- Midterm Recovery – Undergraduate Advising and the Student Success Center hosted Midterm Recovery where students received information about how to bounce back and raise their grades before the end of the semester. They had the opportunity to network with Success Coaches and On-Track Mentors. A total of 92 students participated in fall 2015 event, compared to 60 in spring 2015.
- Missouri S&T Trailblazers – the first event took place in October of 2015. First-generation students have different struggles and may not have the support and guidance as other students have from family members who attended college. This program was designed for that first-generation student to find out about opportunities on campus, to connect and hear stories with first generation faculty, staff and current/successful students.
- Other general mentoring activities in fall 2015: The BMSSC advisor collaborated with several departments on campus to train current students in mentoring/advisor position in the Professional Skills program. Participation in Reconnection I & II increased from 1,083 students in fall 2014 to 1,220 in fall 2015.
- Majors and Minors program had over 200 participants in fall 2015.
- Tutoring Sessions increased from approximately 700 sessions in fall 2014 to over 800 sessions in fall 2015. Training sessions for tutors were enhanced.
- The university enhanced the Greek Scholarship Chair mentor training and increased participation from 10 houses in fall 2014 to 12 houses in fall 2105.
- BMSSC advisor and Assistant Director presented at the National Transition Conference in Austin, Texas, on Reconnection I and II – Extended Orientation in fall 2015.
- 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.
- Student Veteran Resource Center (SVRC) – had a soft launch in fall 2015. A Student Service Specialist II (advisor) was hired in December 2015. This advisor will coordinate 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.). This advisor will also assist the BMSSC advisor in coaching, mentoring, tutoring, scholarship advising, chair trainings and programs. The advisor will assist in PRO and Opening Week activities (advising, testing, and programming). The official opening and welcome back to campus orientation was held on January 19, 2016 - when veterans and service members start back to school. The Open House and grand opening will be on March 19, 2016. Educating the campus is key to understanding the Missouri S&T veteran student’s transition from military life to life as a successful Missouri S&T student. There are several presentations booked in 2016 on educating the campus. The new SVRC is located in space leased from the Baptist Student Union.

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 and institutional research met to develop a dashboard.
- An FY15 Strategic Initiative provided a graduate data analyst to create the dashboard and analyze national rankings.

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.)

- The Ph.D. Residency Policy was passed by Graduate Faculty in May 2015 and was inserted into the Graduate Catalog for fall 2015. This policy will provide the necessary flexibility for professional students to pursue distance Ph.D. education.
- Graduate Studies collaborated with Graduate Council to evaluate and benchmark current graduate stipends at comparator universities.

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

- The campus piloted the Dissertation Completion Fellowship (DCF). This program is available to current doctoral students to help them focus their energy on completing their dissertation and provides full coverage of tuition and fees for one year and a $24,000 stipend. Eleven students were awarded the DCF, nine were full-year commitments and two were fall semester. The average GPA of those in the pilot was 3.9/4.0. Nine were males and two were females; seven are from the College of Engineering and Computing, and four from the College of Arts, Sciences, and Business.
- The mid-year review of DCF awardees revealed that 100 percent of the 11 students were on track to complete their dissertation in July 2016. In November, two students passed their final defense and one student completed his degree requirements. Faculty were asked about the success of the program and said the program was exceptionally helpful to allow students to focus on their research. Students were also interviewed and felt it “liberated a very useful amount of time” and allowed them to make “enormous progress and improve the scientific merit” of their work.
- Boot camps also assisted with theses/dissertation completion. One student who completed the campus said it was a “great experience. I learned more than I expected and it was well worth my time.”
Action 4.7.7: Explore additional work study opportunities and other student engagement programs

- In fall 2014, there were 30 socio-economically challenged students with a projected below-average retention rate. These students became part of the institutional Work Study program. Early projections demonstrate that students in the program, which heavily emphasizes engagement with the student, will have a higher return rate than similar students. The first-year return rate for these students was 90 percent, an increase from fall 2014 at 87 percent. Historically, the retention rate for this group is around 75 percent.
- Programs targeting second-semester students are being designed. A new engagement program, “Beyond First Semester,” is under development. This engagement program will focus on second, third, and fourth semester students. A pilot program with the College of Arts, Sciences, and Business targets second-semester students within the college.
- The Institutional Work Study program makes innovative use of champions within departments that hire low-income and/or underrepresented students. The director of student financial assistance will present in July 2016 at the National Association of Student Financial Aid Administrators (NASFAA) national conference in Washington, D.C., on this program’s concept and its success.
- Other engagement programs have been funded by the $25,000 Missouri Department of Higher Education (MDHE) default prevention grant, which the Student Financial Assistance Office secured for the third year. This grant funds several programs, including implementation of a financial literacy website and more coordination with COER for exit counseling. Some of the programs funded by the grant this year include: In fall 2015 - Credit Basics, Scholarships, Budgeting Basics, and Life After S&T. Planned for spring 2016 - Identity Theft & Credit Recovery, FAFSA Week, How to Live Off-campus and Other Ways to Save Money, and Life After S&T.

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

- 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 and has expanded the courses included. This report is generated and distributed in March after the first freshman projections are released. The distribution of this report is provided weekly to the vice provost and dean for enrollment management, the vice provost and deans of each college, and the affected department.
- The new report has the desired outcome and is deemed successful.

Action 4.7.10: Investigate offering courses in an innovative modular format

- The provost is examining the feasibility of an innovative modular format.
Action 4.7.11: Identify strategies and technologies promoting awareness of Disability Support Services to meet the needs of a diverse student population

- Disability Support Services (DSS) created procedures and guidelines for comfort and support animals in conjunction with our requirements pertaining to the Fair Housing Act.
- DSS integrated disability resource content in case management outreach with students.
- DSS hired a new advisor to raise awareness and connect students with resources.

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

- Student Affairs: completed a STEP UP! retreat involving 23 staff members; performed STEP UP! training for 99 students and mentors; participated in Math Assistance where Success Happens with 225 students; engaged 200 parents during Miner Adjustment; performed alcohol screening for 128 students; and Counseling met with 150 faculty.
- The University Committee for Assistance, Response, and Evaluation (UCARE) focuses on providing prevention and amelioration strategies for students. In fall 2015, UCARE reviewed 133 cases and helped students develop success plans. Success plans are designed to provide strategies and resources for the students to remain successful at Missouri S&T.
- Starfish Early Alert system provides an enhanced system that allows students to request appointments with their instructors and provides academic alerts to students and academic advisors.