FY15 SEMI-ANNUAL REPORT
COVER PAGE

Campus or Unit: Missouri University of Science and Technology

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STRATEGIC PLANNING: SEMI-ANNUAL REPORT (FY15)

Campus or Unit: Missouri University of Science and Technology

Lever Number: 1.1

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

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

Lever Summary:

The definition of experiential learning has been approved and in fall 2014 the primary focus has shifted to establishing the processes and an agreement on what constitutes significant activity. To help the campus frame the criteria for understanding what constitutes significant experiential learning, a rating rubric was created. This rubric includes: 1) length which is defined as how we measure time - both the length of the activity and the number of hours per week. For student workers who are mostly paid, but also some volunteer work activities, a year-long 40 hour/week activity (e.g., co-op) is the standard for the upper end of the range (a rubric rating of a “10”); lesser time periods or weekly time commitment should be scaled down accordingly (a year at 20 hours/week no more than “6”; a semester at 20 hours/week no more than 3-4); for non-work activities, the length standard may need to be different than it is for work; a substantial amount of committee and program development work, for example, may be intensive for that kind of activity but not compared (in terms of total hours) to some work roles; 2) the developmental impact component will automatically assign low scores on the time dimension to anything that isn’t at least 20 hours a week; 3) engagement level is defined by how much engagement is expected of the student in the role/position: a) exposure which is mostly passive activity, such as webinars, lectures, speeches, etc.; b) interactive which is a service or collaborative programming role; and c) application which requires application of training received, with potential work product/outcome resulting. This rubric is offered to all academics departments but is not a requirement. Experiential activities that lie outside of the academic domain will utilize the rubric.

Experiential learning is a priority for the campus and for the students. Undergraduate students on co-op earn $3,165 per month and graduate students earn $4,165 per month, averaging $13 million in student earned income per year. Experiential learning is core to student success and retention. One of the main reasons students withdraw from college is financial. Experiential learning activities can help the students stay in school and prepare them for lifelong success.

To demonstrate the campus commitment to experiential learning; the campus allocated 5,800 additional square feet to the Kummer Student Design and Experiential Learning Center which houses 14 student design teams. The build-out of this addition has now nearly doubled the space to allow for expansion of design teams.
**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 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.
- Experiential learning implementation guidelines for the campus have been established: 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; 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.
- In fall 2014, the career opportunities staff interacted with 1,300 freshmen to discuss experiential learning opportunities.
- Undergraduate studies and student affairs are discussing utilization of OrgSync for tracking experiential learning.

**Action 1.1.2 b: Draft a statement describing degree requirements**

- Each department has jurisdiction over their curricula and authority over what activities will meet the significant experiential learning standard. The departments are actively involved in determining the degree requirements.
- After a department has determined an undergraduate student has satisfied the departmental requirement, the department will notify the office of undergraduate studies who will maintain records. The undergraduate office will notify the registrar’s office who will update the student’s degree audit status.

**Action 1.1.2 c: Department approval detailing ways students will be able to complete requirement**

- This phase is in the developmental process. The Missouri S&T Curriculum Committee will need to review departmental requirements.

**Action 1.1.2 d: Approval by degree-specific curriculum committees**

- The approval process cannot occur until departments have determined the degree requirements as stated in Action 1.1.2.b.
Action 1.1.2 e: Faculty Senate approval

- This action is dependent upon completion of degree curriculum and will be implemented when that phase is complete.

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

- During fall 2014 opening week, mini career fairs were offered with ten employers participating.
- During the fall semester: 1) three tent events occurred with Garmin, Union Pacific and Boeing; 2) six employer seminar series; 3) 304 employers attended the fall career fair; 4) over 120 interviews in September, 143 interviews in October and 23 on-campus interviews in November; 5) hosted seven employers in December who interviewed students for internships.
- Career opportunities consulted with 600 students on co-op, internship and externship opportunities.
- During the fall semester, 200 employers provided co-op opportunities to 230 students which represented a 13 percent increase over the prior year.
- A total of 1,407 job openings were created for the fall semester and 4,598 students registered in MinerJobs.
- The Alumni Board was consulted for ideas on developing partnerships to increase the amount of undergraduate externship opportunities.

Action 1.1.6: Establish experiential opportunities through peer advising and mentoring

- The Peer Involvement Program has been revised and has shifted focus to mentoring incoming freshman and first year students. Four Peer Involvement advisors were hired and trained in the fall semester. These advisors collaborated with Community Standards to assist students in becoming positively engaged with the campus community.
- Nine Joe’s PEERS performed 20 hours of advising and mentoring during the opening week.
- Student health services provided 166 mentoring hours in November and 126 hours in December.
- The Counseling, Disability Support, & Student Wellness department added work study students to assist with peer advising on MinerJobs and GoinGlobal.
- The Health Career Mentoring program accepted seven students who commit to 25 hours of mentoring per week.
- Career Opportunities and Employer Relations facilitated a Boeing Mentoring Program with 36 students.
- The Havener Center implemented a building operations mentoring program.

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.
- Miners by Design is an annual giving society that has been created to recognize donors who support the activities of the Kummer Student Design and Experiential Learning Center with gifts exceeding $500.
- Current membership in the Miners by Design society is 113.
In fall 2014, the campus solicited for new society members via direct mail. A plan has been outlined to focus on a phone-a-thon in early 2015. This phone-a-thon typically renews past gifts and also increases membership.

University Advancement is considering the initial crowdsourcing campaign to support one of the student design center teams.

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

- Experiential learning opportunities have been promoted on campus. The marketing and communications department have written stories, developed news releases, posted stories on the main website and produced video.
- To provide some examples of the preliminary promotional activities that occurred in fall 2014, the marketing and communications department: 1) wrote a story about Andrea Wolfe, senior in engineering management and mechanical engineering, and her real-world experience through an internship at Boeing; 2) wrote a story about Melissa Elder, senior in environmental engineering, who performed undergraduate research as part of her experience with Engineers Without Borders. These stories were written to excite the students about experiential learning and inform of possibilities.
Lever Summary:

To foster innovation and creativity the campus developed an Innovation Team. An innovation proposal form has been developed, guidelines for awarding funding were established, and a website was created. The website allows the Missouri S&T family to submit innovative proposals for the Innovation Team to review on a quarterly basis. In fall 2014, 13 proposals were submitted. The Innovation Team was originally provided a $75,000 recurring budget, but discussions are underway to increase the budget amount. In addition to the innovation proposals, the team evaluated the scholarship process for effectiveness and efficiencies and offset general operating revenue by $324,410 in fall 2014.

Fostering innovation for students can be enhanced by recognizing that where students learn plays an important role in the learning process. This lever also focuses on implementing a Learning Commons on campus. The library has undergone, and will continue to undergo, several changes to adapt not only to technology but also to the way students want to utilize their learning spaces. In fall 2014, the library experienced an increase in student contact and research consultations that exceeded the entire previous academic year. Data is provided in the chart below and demonstrates that these innovative changes have been successful.

### Library Contacts with Students

<table>
<thead>
<tr>
<th>Semester</th>
<th>Research Consultations</th>
<th>Classes</th>
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<tbody>
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<td>5</td>
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<tr>
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<tr>
<td>Fall 2014</td>
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<td>30</td>
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**Campus or Unit:** Missouri University of Science and Technology

**Lever Number:** 1.2

**Lever Description:** Foster innovation and creativity for faculty, staff, students and administration

**Lever Metric:**
- Implement innovation projects with an 80 percent success rate
- Develop minor and certificate programs (1 in year one)
**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 strategic planning website. This proposal remains on the website to allow for ongoing suggestions from the Missouri S&T family and are reviewed quarterly. The proposal focuses 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. The proposal form was updated in fall 2014.
- 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; 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 and 13 proposals were submitted in the fall semester. The submitted proposals included areas such as: cloud computing, health and safety courses, business intelligence, writing center iPads, a center for science communication, autism spectrum disorder research, mental health awareness, international alumni relations, a hackathon event, project H.O.P.E., Chancellor’s Collaboration Series and wellness support.
- There were three proposals approved in the fall 2014: 1) integrating iPads into the writing center has motivated other universities to utilize the same tools; 2) developing a mental health awareness week and sponsoring the “Next to Normal” rock musical to increase student awareness and aid in eliminating the stigma of mental health; and 3) leveraging big data and visualization to study autism factors that can create visual analysis software to aid in earlier prediction and prevention of Autism Spectrum Disorder.
- Another role of the innovation team is to look at campus processes and assist in streamlining those processes that are not effective or efficient. In fall 2014, the scholarship process was completely revised. An analysis of the process revealed: only 20 percent of academic departments listed their scholarships in Academic Works; minimal communication between units; confusion on disbursement report; no policy on carry forward balances; student finance reviewed fiscal limits annually; and no one person was responsible for scholarships. The core recommendations were to place all academic department scholarships in Academic Works, develop a dashboard report, realign the department structure to make one person accountable for the process-scholarship manager, collaborate between financial aid and the university advancement team to pinpoint endowments that are difficult to award, set a five percent carryforward limit, develop a communication plan including marketing materials to students and develop a Scholarship Advisory Board. This successful process, which launched in the fall semester, has offset an additional $324,410 in general operating revenue. This process directly relates to the president’s priority of improving long term financial viability and improving efficiency and effectiveness.

**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.
• In FY14, the Learning Commons underwent a transformation with a new multi-media center with four new high performance CAD 3D graphic work stations, additional quick print stations, co-lab spaces, enhanced presentation rooms and reference materials were relocated to provide more student seating on the first floor.
• In fall 2014, a 3D scanner was added and a Nonavitra visualization wall was created. The visualization wall consists of nine 55 inch tiles of thin, energy efficient flat screen monitors. This technology allows each screen to work independently or to work together as one.
• Library services experienced increases in interlibrary lending (from 3,580 in 2013 to 8,791 in 2014) and interlibrary borrowing (from 2,994 in 2013 to 8,024 in 2014).

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. This action has yet to progress into experiential learning.

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. A total of 26 presentations were delivered. A few examples of the TedX-like presentations: 1) president of the Ozark toastmasters presented “Get to the Point”; 2) a student presented “Caves of Missouri”; and 3) a faculty member presented “Optical Time Machines.”
• The baseline established in FY15 is for one event per academic year and this metric has been achieved with the November 10th “Ignite Rolla” showcase.

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

• Leadership and cultural programs established a National Leadership Society of Leadership and Success. Monthly meetings were established to monitor students’ leadership development and progress.
• Plans were developed to expand the Global Leaders Institute to a weekly, semester-long program.
• The co-curricular event, Miner Challenge, was expanded from four to five. In FY15, the teams will visit: Costa Rica, Mississippi, Arkansas, Pennsylvania and Detroit.
• 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 competence programming as a part of a co-curricular event.

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 has been completed and students enrolled in fall 2014.
• The creativity minor is in the development process.

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

• The National Science Foundation awarded Dr. Chellappan and Dr. Das a $50,000 grant to accelerate the translation of knowledge derived from fundamental research emerging from products and services that can attract subsequent third party funding. This proposal was submitted in cooperation with the I-Corps team which serves as an entrepreneurial application with graduate students.
• In October and November 2014, an informational session was provided regarding the upcoming Entrepreneurs Workshop. These workshops are designed to offer guidance to faculty, post-docs and graduate students on how to turn their ideas into successful businesses.
• The Entrepreneurs Workshop is an eight-session workshop that will maximize their research and increase the success rate of startup ventures. These workshops are free of charge and will utilize the Business Model Canvas, Lean LaunchPad and Kauffman TechVenture methodologies. Topics for these workshops include: pitching to investors, distribution channels, intellectual property and financial projections.
Lever Summary:

The president's number one priority is to lead and model attraction, development and retention for the best and brightest leaders: successful new hires, effective performance management, and talent management. All of these priorities directly link to this lever. The campus is fully committed to this lever as demonstrated through $71,000 revenue allocation for the new faculty orientation program and freshman faculty forum. This program starts the developmental and mentoring process for incoming faculty, allowing them to become more successful. It increases the mentoring contact hours and focuses on developing skills in areas such as: student advising, learning assessment, grant award management, course design, entrepreneurship and the role of service.

The campus has completed succession planning in all divisions and focuses on developing a quality pipeline. Two divisions on campus, student affairs and university advancement, piloted a performance management tool that lays the foundation for talent development.

The new college campus structure creates a succession pipeline by placing two associate deans in each college creating developmental opportunities for future academic leaders. The campus reallocated $240,000 in general operating revenue to this priority.

Succession planning, staffing pipelines and additional developmental opportunities are in place. The Chancellor has developed a new program, Faculty First Fridays, which allows faculty and administration to develop relationships and provides professional growth opportunities over lunch. Lunchtime has evolved into a professional development hour. The employee assistance practitioner facilitates Lunch and Learn sessions for all employees fostering teamwork and trust skills, assessing emotional intelligence, being successful at work, civility in the workplace and work-life balance.
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 campus is offering continuous training in the areas of diversity and inclusion. In fall 2014, 100 faculty and staff participated in this training.
- The Associate Vice Chancellor for Human Resource Services, Affirmative Action, Diversity and Inclusion is working with system to develop online performance appraisals within the myPerformance system. The myPerformance is a priority for the campus.
- Several departments had retreats and requested professional development workshops at their retreats.
- The new supervisor training series had 15 supervisors participating. This series is a six month commitment for 90 minutes every two weeks. The format has online prep work prior to each session and bi-weekly discussion sessions.
- Each of the department chairs continued to engage their faculty in some form of professional development.

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

- Career Opportunities and Employer Relations (COER) printed 5,000 pamphlets for residential life students on how to utilize the services provided in COER. COER also distributed 1,300 professional development plans to freshman.
- Leadership and cultural programs distributed 428 leadership guides.

Action 1.4.3: Identify, develop and implement developmental experiences designed to enhance students’ interpersonal, communication and leadership skills

- In fall 2014, Student Affairs: 1) revised the student leadership inventory as a measure to gauge student learning outcomes; 2) implemented a Joe’s PEERS training manual; 3) conducted workshops for 75 student leaders which focused on team building and enhancing communication skills.

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

- Student affairs presented healthy eating and physical wellness workshops to students.
- A strength and conditioning staff member started in fall 2014 and is responsible for delivering workshops associated with nutrition and strength training.
- The campus conducted Ebola screening for new international students and issued Ebola notices to the campus community.
- In fall 2014, the campus screened 200 students for Tuberculosis.
- In fall 2014, the campus initiated a flu shot program for students and performed 300 vaccinations.
- Student affairs performed stress management presentation to psychology students.
- Student affairs is collaborating with UMKC for a Mind, Body, and Connection tour and collaborated with the local holistic community to partner for wellness week.
- In fall 2014, the campus implemented a bystander intervention committee, STEP UP!. This committee has 43 members and five subcommittees which conducted training on 287 participants with 10 groups.
• Student affairs performed Social Justice training for 65 students, hosted a Sex and Sundaes program promoting awareness of Title IX with 50 attendees, and facilitated a quiz bowl trivia game promoting mature management of alcohol with 50 attendees.

• Collaboration efforts between Alpha Psi Omega, the counseling center and Phelps County Regional Medical Center, has resulted in a musical production of “Next to Normal” planned for late January. Students performing in the musical committed their winter break to practice. Mental Health Awareness Week, in conjunction with the production, will occur in the first week of the spring semester.

• 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.

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

• A thesis and dissertation boot camp was piloted in November of 2014. The boot camp involved 11 students attending a 5 day workshop with dedicated writing time. This workshop is a jump-start to enhance their thesis or dissertation skills. The workshop included: Writing Your Thesis, Using EndNote, Stress Management and Formatting Your Thesis. Based on the waiting list for the spring semester, these boot camps will be delivered on a regular basis.

• Collaboration between graduate studies and career opportunities has begun to further enhance the professional skillset of graduate students.

• There are five students who have been selected into the Graduate Leadership Development Program. This program allows students from various disciplines to network and collaborate with each other and students from other UM System campuses.

• In November, two students attended the National Association of Graduate Professional Students conference in Columbia.

• Graduate Studies conducted a workshop series with the Chancellor’s Fellows in fall 2014. 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, provide headshots and record the introduction to allow for creation of a YouTube video. This event had 18 participants and is planned to become a requirement for all Fellows recipients.

• An iThenticate and EndNote presentation was performed in collaboration with EdTech and the library to aid graduate students in documenting and citing in thesis, dissertations, articles and proposals.

**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 they visited the Mizzou Leadership Center as another benchmarking effort.

• The target audience for a student leadership certificate has been identified as well as the program structure. The theoretical model for the certificate program has also been identified and will be further enhanced in the spring semester.
Lever Summary:

This lever is tied to two strategic initiatives, one FY14 initiative and one FY15 initiative. The FY14 strategic initiative dedicated 12 faculty lines to complement each of the strategic areas began this year. The FY15 initiative is dedicated to the hiring of national academy stature faculty to support the first two signature areas. Through this strategic initiative funding, Missouri S&T has begun the hiring process of endowed chairs, research specialists, engineering research technicians, grant writers, entrepreneurs in residence and technical illustrators. The campus commitment to this priority can be demonstrated through the $3,000,000 in start-up for the 12 faculty supporting the signature areas and $500,000 in reallocation of existing faculty time to support the research.

This lever is a campus priority and directly ties into the President’s priority to lead and model attraction, development and retention of the best and brightest leaders. The campus is searching for national academy faculty to raise the visibility of the campus and its research.

Another important aspect of this lever and a priority to the campus is faculty compensation. The provost has developed an effective faculty compensation strategy that directly links merit increases to performance results. Linking merit increases with performance measures is also tied to the president’s metrics in priority number one.
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.
- A process on unit performance measures has been developed.

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 $6,000 FY15 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 $4,000 in FY15 and ending at $5,000 in FY16.
- In FY15, the faculty hiring process has been redesigned and has adopted a new process flow including: 1) a preparation phase which first analyzes if the hire is strategic; 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 onboarding process has changed the roles and responsibilities for both human resources and the hiring authority. This initial process is the foundation to hiring and retention which ties into the president’s priority.
- Advertisements have been placed for hiring additional faculty to support the signature areas. The faculty will initially be hired in three of the signature areas. Advertisements have been placed in: The Chronicle of Higher Education, Diverse Issues in Higher Education and online resources such as HigherEdJobs. Each signature area has also selected journals for advertisements that directly tie to the research need.
- Due to the vastness of research in the fourth signature area, it is still under review. Discussions around the possibility of working with a search firm are occurring.
- A national academy stature chair from a comparator university is visiting the campus in the spring to give Missouri S&T recruiting advice.

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

- This action ties to Lever 3.9. The comprehensive campaign framework is currently under development.

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

- This action commences after national academy stature faculty are identified.

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

- Companies and donors are being identified.
- In FY15, 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 donors are being identified.

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

- The third signature area is currently recruiting and interviewing for three faculty hires.
- The fourth signature area has not begun the recruiting process.
Campus or Unit: Missouri University of Science and Technology

Lever Number: 2.2

Lever Description: Leverage S&T as Missouri’s technological research university
Increase faculty by 67 T/TT and 33 NTT (16 year one)
Increase undergraduate enrollment by 500 (90 year one)
Increase Ph.D. enrollment by 200-400 (19 year one)
Increase number of agreements with UM campuses by 3 (1 year one)

Lever Metric:

FACULTY HIRES

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<th>Tenured, Tenure-Track</th>
<th>Non Tenure Track</th>
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<td>Physics</td>
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Tenured, tenure-track faculty lines currently in the interviewing process: engineering management, civil engineering, mechanical engineering, mechanical and aerospace engineering, psychological science and psychological science.

The other priority within this lever is enrollment growth. Enrollment increases for both undergraduate and Ph.D. are identified as metrics in this lever. Missouri S&T has made significant progress towards the 2020 goal of 500 undergraduate enrollments and 200-400 Ph.D. enrollments. The undergraduate enrollment baseline was 5,843 and enrollments increased in fall 2014 to 6,145. The metric for Ph.D. enrollment is an additional 200-400 with fall 2014 representing an increase of 66.
**Action 2.2.1: Increase Missouri S&T’s undergraduate enrollment by 500 by 2020**

- The undergraduate enrollment for fall 2014 is 6,145, an increase of 302.
- Underrepresented enrollment increased by eight percent.
- Female enrollment increased by six percent.
- The average ACT score for entering freshman was 28.3.
- International undergraduate enrollment increased by 33 students.

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

- Total graduate enrollment for fall 2014 is 2,120.
- Ph.D. enrollment for fall 2014 is 583 students, a 12 percent increase over the baseline.
- Feeder schools were identified in fall 2014 for targeting Ph.D. enrollment.
- A graduate recruitment position is currently in the interviewing phase. This person will be dedicated to increasing Ph.D. enrollment.

**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)**

- Based on 53 faculty requests; 19 initial faculty positions were approved in the following job classifications/departments:
  - Assistant Professors (tenure track): engineering management and systems engineering (interviewing), physics (filled), biological sciences (filled), electrical and computer engineering (filled), mining (filled), chemistry (filled), civil engineering (filled), geological science (filled) and two mechanical and aerospace engineering (one filled; other interviewing).
  - Associate Professors (tenure track): two computer science (filled) and civil engineering (interviewing)
  - Assistant Teaching Professors (non-tenure track): computer science (filled), electrical and computer engineering (filled), chemical engineering (filled) and education (filled).
  - Assistant Research Professor (non-tenure track): two materials science and engineering (filled)
  - All of the faculty hires aligned with the strategic plan Lever 3.4 promoting inclusion and diversity.
  - The campus filled 19 vacancies and 17 additional faculty started in fall 2014.
  - In fall 2014, the campus increased female faculty by 18 [includes tenured-tenure track and non-tenure track].
  - The campus increased ranked NTT by 12 [from 43 to 55].
  - The campus is currently recruiting and or interviewing for nine signature area hires; one additional mechanical and aerospace engineering faculty; and one additional psychological science faculty.

**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 faculty positions on their impact to the strategic plan including 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. In fall 2014, the campus technical staff remains at 96. The professional staff increased by 18 for a total of 231.
- In fall 2014, the campus increased the number of staff minorities from 59 to 84, an increase of 25.
- The campus increased underrepresented staff minorities from 42 to 55, an increase of 13.

**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.
- An agreement with UMSL to deliver philosophy undergraduate courses and graduate courses in MS/ISO is in process.
- Several course sharing initiatives with the UM system are in the development process: 1) MU for construction engineering and environmental engineering; 2) UMSL for classical optics, philosophy, sociology and history; 3) UMKC for electrical engineering and mathematics.
This lever has two primary areas of importance: research and creative faculty. The first area is research. The campus is focused on increasing its research expenditures and this is related to the president priority number four, improving financial viability. In the 7/1/14-12/31/14 timeframe: net grant and contract expenditures were $15,761,138, which represented a slight decline from the 2013 timeframe. In 2013, there were three new start-ups and currently the campus has seven. The royalty revenue is $239,506, which increased by $43,091 from prior year.

Research expenditures are just one facet to the overarching area of research. Undergraduate research is also a priority. This research is an important aspect of student learning at Missouri S&T. When the undergraduate requirement for experiential learning becomes fully operational, undergraduate research should increase. The campus is focused on providing students research activities through the Opportunities for Undergraduate Research Experience (OURE). This spring, the campus will measure the increased participation rates in undergraduate research.

In order to stimulate innovation and creativity among students, exposure to visiting faculty plays an important role in this process. Developing that culture of creative activity among faculty is identified in this lever. A metric in this lever stipulates that Missouri S&T will host visiting world-class faculty. In fall 2014, the campus hosted two full-time visiting faculty, nine visiting scholars and two visiting research professors.
**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 for FY15 and will be tracked.

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

- Graduate Studies plans to engage with the vice provost and deans of the two colleges to select the five programs by the end of this fiscal year.
- A data analyst position was filled in December 2014 to look at the graduate programs, create a campus level dashboard, analyze metrics for national rankings, and graduate learning outcomes.

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

- Drs. Sriram Chellappan and Sajal Das received a NSF grant to accelerate the translation of knowledge derived from fundamental research emerging products and services that can attract third-party funding.
- In November 2014, an NSF program director visited the university to discuss research centers.
- A national stature faculty recently visited the campus and discussed how the university can lead an engineering research center.
- The campus intends to solicit for an NSF engineering research center in summer 2015, which is the designated call for proposals timeline.

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

- A new consortium, Particle Gel Conformance Control became effective in October 2014. Water production is a major problem for most mature oilfields. Excessive water production results in increased corrosion, increased environmental concerns and can eventually shut down the well. A re-cross linked particle gel has been developed that can control the water solution problem. The morphology of the gel can be dry particle, wet particle, emulsion or turbid liquid. This research can be used in the oil industry as a solution for problems associated with conformance control, fluid loss control and leakage blocking underground.
- The Kent D. Peaslee Steel Manufacturing Research Center is a consortium of steel companies, foundries, suppliers and university researchers working together to address fundamental steel casting issues.
- The Small modular reactor Research and Education Consortium (SmrREC) led by Missouri S&T provides its members with research results to advance the design, construction and operation of 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**

- Undergraduate Studies is exploring options for additional research opportunities.

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

- IFC endorsed a flexible workload policy that the campuses are encouraged to implement. This endorsement is under review.

**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 freshman faculty forum have been enhanced to instill excellence. These programs have establish 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. The framework is currently being developed and this should be completed in FY15 with full implementation in FY16.
Lever Summary:

Raising the visibility of the campus remains a strategic priority and directly relates to the president’s third priority for communicating the value and importance of the University of Missouri System to all Missourians. This lever identifies actions that are designed to enhance the campus reputation. The campus can demonstrate its commitment to this priority through resource allocation of $200,000 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 per year, for the next three years.

- The campus had nearly 15.8 million page-views, representing a 3.9 percent increase
- Mobile and tablet access increased by 44 percent
- Social media mentions on Facebook were 1,909
- Social media mentions on Twitter were 1,851
- Missouri S&T News Coverage, by media type
  - Daily newspaper – 1,021
  - Television – 1,002
  - Online – 739
  - Magazine – 216

Campus or Unit: Missouri University of Science and Technology

Lever Number: 2.4

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

Lever Metric: Percentage of General Operating Revenue dedicated to institutional marketing and visibility efforts comparable to best-in-class universities (2020 target, 1 percent)
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. This team continues to meet and ensure the development of an integrated communications and marketing plan.

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 Ologie.
- SimpsonScarborough will perform market research to gauge awareness and perception of key customer groups. The qualitative research findings were presented in November 2014 to the campus. These findings were based on focus groups and in-depth interviews with the following key customer groups: prospective undergraduate students, prospective master’s and Ph.D. students (both traditional and online) current students, recruiters, research partners, alumni and academic peers.
- Ologie will provide a marketing plan based on the conclusion of the market research.
- SimpsonScarborough will perform a capabilities assessment and communications audit to determine campus readiness to carry out a marketing campaign.

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.
- Determining who will be responsible for implementing the communication plan cannot be fully determined until the plan is completed.

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**

- This action is contingent on the completion of the communication and marketing plan.

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**

- In fall 2014, 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**

- Campus leadership has budgeted $200,000 in recurring funds for marketing.
- A plan is in place to increase the marketing and communication budget by $100,000 in recurring funds each year over the next three years.

**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. In FY15, the campus looked at the following coverage: blog, college publication, daily newspaper, magazine, non-daily newspaper, online, radio, trade press, television, and wire service which included 1,072 mentions.
- Social media was also analyzed including: Facebook, blog, Twitter, and YouTube for 3,966 mentions.

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

- No progress on this action in fall 2014 as it is contingent on Action 2.4.3.

**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 yearbook lists the research topics or areas of interest, student bio and includes a photo.
- The yearbook will again be published in the spring 2015 semester as an annual publication.

**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**

- Conversion to the new platform begins in early January 2015 with the URL conversion completion expected in late January.
Lever Summary:
Modifying the conventional methods of teaching and integrating technology is a priority for the campus. Increasing blended learning directly ties to the president’s fifth priority for increasing online offerings so as to improve student outcomes, achieve strategic goals and increase revenue. The president’s priority has a metric of a five percent increase in the number of students enrolled in blended, number of students enrolled online and student credit hours.

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**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)**

- 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.
- To enhance faculty resources, the following occurred in fall 2014: 1) a workshop called, eLearning Community of Practice, was offered twice with 39 total in attendance; 2) the Online Presence and Resources were updated for teaching tips; 3) a series called EdTechU/iPad U had 45 attendees; 4) the Curators Teaching Summit covered the topic, “bridging the gap between instructor and student expectations” and had 86 total attendees; 5) the Faculty Learning Communities presented how to redesign syllabi to 35 participants; 6) the estudio scheduled 92 sessions with 184.5 hours of recording time.

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

- Education Technology has provided workshops for faculty: 28 attended capturing the student learner; 33 attended making homework effective; 50 attended flipping a class; 3 sessions were offered in tackling emerging student issues with 154 in total attendance.

**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 has a three-tiered reward approach. Tier One, based on a complete full course redesign, has a stipend of $5,000. Tier Two, smaller scope with just one or more aspects of the course being redesigned, has a stipend of $2,000. Tier Three, has minor changes and not a complete redesign, has a stipend of $1,000.
- In FY15 there are 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 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 meets one day per week for 75 minutes, is open to any student enrolled in a Calculus I lecture, is standardized, interactive and has limited class size of 30 students. Two faculty taught the pilot labs and worked closely together to develop interactive activities. A survey was given to the redesigned labs and the traditional labs to gauge comparative student reaction to the redesigned labs.
- The pre-calculus library was piloted in the fall. This library is comprised of short videos, with closed captioning, that will be made available to all Missouri S&T students, not just those students enrolled in
calculus. There will be an extensive video series, around 30-50 individual videos, that covers prerequisites for Calculus I.

- The next phase of the pilot will take place in the spring semester with the new interactive labs being taught by GTAs.
- During the annual Mathematical Association of America Mathfest Conference, Missouri S&T presented the overview of the calculus redesign. South Dakota State University received unexpected funding and is implementing a version of our proposed success course. Collaboration has begun so our campus can learn from their experiences and vice versa.
- In summer 2014, faculty visited the University of Michigan to view their extensive GTA training program. One of the lead professors visited Missouri S&T and spoke in depth about their GTA training program as well as to conduct hands-on training sessions with our current GTAs.
- In fall 2015, a new course “Success for Calculus” will be piloted. This course will be an option for those students who are failing Calculus I in week eight. The course will not have a GPA penalty, will be 4 credit hours (3 lecture and 1 lab) and designed to teach algebra and trigonometry in the context of calculus. The class will be offered in a blended format.
- The nuclear reactor lab piloted a lab redesign in fall 2014 along with five other courses.
- In fall 2014, cellular biology piloted a flipped lab with video demonstrations and quizzes provided online before wet lab experimentation in the traditional setting.
- In fall 2014, microbiology flipped a lab with video demonstrations and quizzes provided online before wet lab experimentation in the traditional setting.
- Several other departments are working on the development of online labs: general biology will have an online class with lab kits; materials testing lab will be offered online; introductory computer engineering lab and introductory physics labs are all being redesigned for an online/blended format.
- The chemistry department redesigned general chemistry, which is the largest class on campus. The department integrated smartphone polling and texting, tablet assisted presentations, online office hours with Google handouts and AdobeConnect Sessions. The content, textbook and difficulty of assignments did not change and the results have positively impacted student success. In fall 2014, the blended chemistry lab using lab kits outside of the laboratory and traditional labs inside the laboratory were piloted.
Lever Summary:
The campus has implemented structural changes needed to facilitate the campus strategy and raise the 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 the strategic plan

- The position of vice provost for academic affairs was eliminated and two new vice provost and dean positions now provide academic oversight.
- Robert Marley was named as the provost and executive vice chancellor at Missouri S&T. Marley began his duties in July 2014.
- Stephen Roberts was named the vice provost and dean for the College of Arts, Sciences, and Business. He oversees: Army and Air Force ROTC; arts, languages and philosophy; biological sciences; business and information technology; chemistry; economics; English and technical communication; history and political science; mathematics and statistics; physics; psychological science and teacher certification programs. Roberts joined Missouri S&T in August 2014.
- Ian Ferguson was named the vice provost and dean for the College of Engineering and Computing. He oversees: chemical and biochemical engineering; civil, architectural and environmental engineering; computer science; electrical and computer engineering; engineering management and systems engineering; geosciences and geological and petroleum engineering; materials science and engineering; mechanical and aerospace engineering; and mining and nuclear engineering. Ferguson joined Missouri S&T in August 2014.
- One of the organizational structure changes is the addition of the vice chancellor for global and strategic partnerships who oversees international affairs, global and online learning; and a new office of corporate relations that includes the office of sustainable energy and environmental engagement. The office of global and strategic partnerships became effective in August 2014. Searches are currently underway for the executive director of the corporate relations office, and the assistant vice chancellor for global learning.
- Recruiting efforts for the chief of staff position started in fall 2014.
- A new associate dean position was added in the College of Arts, Sciences, and Business. Dr. Yinfa Ma was named associate dean for research and external relations. Ma will facilitate major research initiatives and proposals; oversee responsible research conduct and safety; manage comprehensive external relations programs that engage donors, faculty, students and other key stakeholders; and work as a member of the college administrative leadership team on issues related to college governance and administration.
- Another new associate dean position was added for the College of Arts, Sciences, and Business. As associate dean for academic affairs, Dr. Kate Drowne will oversee curriculum and instruction matters; oversee development and implementation of strategic planning related to academic programs; establish plans for program development, faculty recruitment and professional development; and coordinate academic program review with the department chairs in the college to review, study and develop curriculum and improve instruction.
- The College of Engineering and Computing is actively interviewing for the two associate dean positions with expected onboarding in the spring.
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 annual report will provide analysis on academic department productivity measures, which will inform resource allocation and academic program development.

The campus has enrolled 15 students in the multi-disciplinary studies degree. Students in this degree program may choose the new STEM elementary education certification that began in fall 2014. Other new programs offering enrollment in fall 2014: humanitarian engineering and science minor, entrepreneurship minor, master’s in industrial organizational psychology and a Ph.D. in explosives engineering.
**Action 3.1.1: Continue performing comparisons of academic department productivity to peer institutions**

- All departments have performed comparisons and completed productivity measures. The campus will monitor the results and provide details annually.
- Departments: arts, languages and philosophy; economics; history and political science. The external measures selected are: student credit hours per full-time employee, degrees awarded per tenured/tenure-track faculty, scholarly refereed activity per tenured/tenure-track faculty and the student survey results from the Committee for Effective Teaching, per full-time employee.
- Departments: chemistry, math and physics. The external measures selected are: total degrees awarded per tenured/tenure-track faculty, research dollars generated per tenured/tenure-track faculty, publications per tenured/tenure-track faculty and citations per tenured/tenure-track faculty.
- Departments: chemical and biomedical engineering; civil, architectural and environmental engineering; electrical and computer engineering; mechanical and aerospace engineering; mining and nuclear engineering. The external measures selected are: Ph.D. enrollment per tenured/tenure-track faculty, research expenditures per tenured/tenure-track faculty and archival publications per tenured/tenure-track faculty.
- Departments: biological science, business information and technology, English and technical communication and psychological science. The external measures selected are: peer reviewed publications per tenured/tenure-track faculty and number of degrees awarded per tenured/tenure-track faculty. Biological science will also measure external funding. Business and psychology will measure the percent of faculty with journal publications.

**Action 3.1.2: Identify and take actions to improve the metrics that contribute to increasing the national ranking of all graduate programs**

- The development of departmental productivity measures and strategic plan strategy metrics aid in the development of internal processes that improve efficiencies and increase outcomes for graduate programs.
- The campus was awarded strategic initiative funding for increasing Ph.D. enrollment and part of this proposal included adding a data analyst dedicated to graduate studies. This analyst position should be able to provide metrics needed to increase national rankings. These metrics should be determined this fiscal year.

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

- This action is currently in progress and will continue to be an ongoing process.
- A two-hour session involving 49 faculty members from Missouri S&T and physicians from Phelps County Regional Medical Center met to discuss strategic partnerships. Discussions revolved around medical, biomedical, and engineering/science research pertaining to medical applications and the need for research in special medical areas. These discussions could evolve into new degree programs.
Lever Summary:
The structure for the Office of Global and Strategic Partnerships has been identified. The new vice chancellor for global and strategic partnerships is in place. Reporting to this office is a new Office of Corporate Relations. This latter office will grow and enhance corporate partnerships, develop a web page portal for corporate and industry partners, and create a corporate relations stewardship program. Although the search has been initiated, the executive director of corporate relations has not yet been hired. The campus views this as a priority and has reallocated $666,000 to support these two offices as they transition to becoming self-sustaining.
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

- The office was formed in July 2014.
- One of the key criteria for establishing an effective office is the personnel. The search for the executive director for the Office of Corporate Relations is in progress. A campus committee has been established and the search firm Isaacson Miller is being utilized. This position is expected to be filled in the spring semester.

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

- The development of a funding mechanism has been identified.
- A budget has been identified and approved.

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

- A study to determine the needs of external constituents has been completed and is ready for implementation, but is dependent on the executive director for implementation.

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.

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.)

- This action will be further developed when the executive director is on board.

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

- The concierge approach will be further developed when the executive director is on board.

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

- The marketing plan will be developed when the executive director is on board.

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 when the executive director is on board.
Lever Summary:
This lever is linked to an FY14 funded strategic initiative proposal which called for expansion of instructional laboratory equipment and renovation at a level of $500,000, plus $500,000 in non-appropriated funds. In addition to our original match commitment of $492,500, Missouri S&T has reallocated $366,312 and information technology has reallocated $100,000 to match an additional $366,312 in gifts. Our original $1,000,000 investment in instructional laboratories has grown into a $1,800,000 investment. The lab upgrades are:

- The computer science departments, electrical and computer engineering, business and information system technology, and information technology department are in the process of upgrading servers and adding 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. This upgrade is complete.
- Chemical engineering is in the process of upgrading Delta V process controls equipment with expected completion in fall 2015.
- Nuclear engineering will add a liquid scintillation detector in fall 2015.
- Mechanical and aerospace engineering is installing the new gas turbine engine and this upgrade will be complete within this fiscal year.
- Chemistry purchased new field flow fractionation equipment that is utilized in five courses within chemistry and the chemical and biochemical engineering departments. This equipment is used to separate and detect soluble compounds as well as insoluble particles in solutions and is important for nanomaterial research. This upgrade is complete.
- Chemistry is upgrading the nuclear magnetic resonance spectrometer to determine the physical and chemical properties of atoms and molecules. This upgrade is still in progress.
- Geology and geophysics is reexamining utilization and optimization for the space. Further discussions and usage research will occur in the spring semester. This upgrade is currently on hold while additional information is collected.
- Electrical and computing will add additional control systems equipment and this upgrade will be completed by fall 2015.
Mining purchased a rock test system and this equipment is expected to arrive in May 2015. Prior to the installation of the new equipment, power supply issues had to be addressed.

Petroleum engineering ordered a high-temperature high-pressure rheometer and this upgrade will be completed within this fiscal year.

**Action 3.3.1: Leverage strategic funds for instructional laboratories with matching funding from non-appropriated sources**

- All departments that have secured match funding have begun planning the upgrades, purchasing equipment or performing renovation.

**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.

**Action 3.3.5: Develop and disseminate a research infrastructure database to help departments share equipment**

- A preliminary process has been developed and the two new 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. These guidelines are still in the approval process.
- Space utilization guidelines have been approved by the Space Committee and are ready for executive leader approval.

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

- Two properties in Rolla were acquired in strategically selected areas to facilitate campus expansion.
- The design team has been selected to begin construction in the spring for new student housing.
- The Allgood-Bailey Stadium and intramural turf project was completed.
• New scoreboards were installed at the Gale Bullman Building, Allgood-Bailey Stadium and the soccer field.
• The geothermal project in the Gale Bullman Building and the Student Recreation Center was completed.
• In order to meet the student needs, the testing center was enhanced. The testing center administered 3,425 exams (an increase of 19 percent) to 2,299 candidates (an increase of 42 percent).
• The campus opened a downtown housing area with seven new facilities providing alternative housing for 350 students.
• To offer healthier options for students, the campus food service created a made to order fresh salad station.
• Career Opportunities and Employer Relations is planning a technology upgrade for online interviewing of students. A dedicated interview space with high resolution webcam capabilities along with a Missouri S&T backdrop and appropriate lighting is currently in progress. Several iPads are also being purchased to record and assist students during mock interviews.
The campus remains committed to creating a diverse and welcoming environment for faculty, staff and students. The number of staff minorities has increased by 30 percent and the number of female tenured, tenure-track faculty has increased by 14 percent. The campus continues to remain committed to becoming competitive in a global environment as demonstrated in the chart below.

<table>
<thead>
<tr>
<th></th>
<th>Fall 2013</th>
<th>Fall 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of tenured-tenure track faculty</td>
<td>285</td>
<td>306</td>
</tr>
<tr>
<td>Number of women tenured-tenure track faculty</td>
<td>56</td>
<td>64</td>
</tr>
<tr>
<td>Number of ranked non tenure-track</td>
<td>41</td>
<td>55</td>
</tr>
<tr>
<td>Number of women ranked non tenured-tenure track</td>
<td>16</td>
<td>24</td>
</tr>
<tr>
<td>Number of staff-minorities</td>
<td>59</td>
<td>84</td>
</tr>
<tr>
<td>Number of staff-underrepresented</td>
<td>42</td>
<td>55</td>
</tr>
<tr>
<td>Number of staff-women</td>
<td>490</td>
<td>511</td>
</tr>
</tbody>
</table>

The campus is committed to attracting a diverse pool of candidates but also is committed to retaining excellent faculty and staff. The campus allocated $365,000 for retention efforts this year; and also provided $80,000 in incentives to departments that hired female or underrepresented minority faculty.
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 those departments that attract an underrepresented minority or female faculty member to join the department; that department will receive a $10,000 incentive to the department’s E&E budget. 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 and is successful. Of the faculty hires that started in fall 2014, 50 percent of those hires were female or underrepresented minorities.
- The campus spent $80,000 in fall 2014 to departments that hired women or minorities.

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 in fall 2014 to include one $1,500 runner-up scholarship and five $1,000 honorable mention scholarships.
- Scholarships 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 Dr. Harvest and Shirley Collier Endowed Scholarship.

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

- In fall 2014, a new transfer articulation agreement with West Valley-Mission Community College District was signed and in the spring semester the campus expects to sign an agreement in Silicon Valley.
- Richland College (TX), Ouachita University (AK) and McKendree University (IL) are active transfer articulation agreements for fall 2014.

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

- 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 is actively developing a campus plan.
- The Equity Hearing Panel for students has been formed and trained.
- The “Not Anymore” bystander intervention program has been implemented on campus.
- The campus has placed focus on creating a welcoming environment and completed the following activities this fall: 1) 1500 students participated in Sex, Alcohol and Clickers session; 2) hosted a national speaker on high-risk alcohol and sexual assault; 3) implemented a bystander intervention committee, STEP UP!, and conducted training with 287 participants; 4) implemented training for Stereotypes, Biases and Micro-aggression for student health; 5) worked with alumni relations to recruit alumni that can serve on the Lesbian, Gay, Bi-sexual, Transgender and Ally Advisory Board; 6) facilitated three officer summits on diversity and leadership topics; 7) trained 55 Greek leaders in Title
IX; 8) revised the UCARE threat assessment rubric and implemented this rubric for every student of concern case; 9) presented the residence halls with webinars/trainings on students with autism; 10) facilitated an Asperger support group for 12 students; 11) launched additional website content on gender-neutral, disability-accessible restrooms and resources.

- Two police officers attended a four-day course in interviewing and interrogation to better equip them for handling sexual assault cases.
- The campus revised the Show-Me-Safety program and is awaiting input from UM System.

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

- A comprehensive plan is still in the process of being fully developed.
- The annual CLERY report reflects changes to UM System policy on the reporting and handling of sexual assault incidents.
- The dual-career hire policy is currently undergoing 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**

- Several departments brought underrepresented faculty to Missouri S&T as guest speakers. The campus continues to work on solidifying a plan for increasing underrepresented visiting faculty.

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

- Several departments on campus have developed work-life balance policies. The standardized policy is still under review.
- The telecommuting policy is under review
- The sabbatical process is currently under review.

**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 for fall 2014. 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.
- A child development center was considered during the campus master planning process; however, it was not placed as a priority due to the lack of a sound business plan.
Action 3.4.12: Develop and deliver regular workshop training sessions for faculty and staff on compliance, Equal Employment Opportunity and recruitment practices

- Workshops conducted by the employee assistance practitioner cover diversity and inclusion and recruitment practices.
- All search committee members are required to be trained in 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

- The campus recruited 133 new student-athletes of which 104 were freshman and 29 were transfers. Of these recruitments: 105 were males and 28 were females. These student-athletes hailed from 21 states and 7 foreign countries.
- NCAA guides for sexual assault and interpersonal violence were distributed to all athletes.
- Athletics provided Saturday tours to prospective student-athletes and their families.
- This fall, the campus expanded athletics media promotions with social media and text-based communications.
- The Miner Sports Network initiative as a part of the GLVC Sports Network began live streaming numerous sporting events as a part of the conference initiative.
- Women’s volleyball was selected for the NCAA National Tournament, two student-athletes were named to the Capital One Academic All-America team, the National Collegiate Scouting Association was ranked 35th in Division II.
The campus is vested in its alumni and this is 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 Hasselman Alumni House maintenance endowment; and $35,000 per year for custodial and landscape assistance. The campus secured property at 605 W. 11th Street to engage students and alumni. The campus allocated $600,000 for purchase and renovation of this property to house diversity, outreach and women’s programs, which engage many alumni with current students and programs.

A committee was formed and charged with investigating the creation and implementation of a student and alumni lifetime engagement strategy. To accomplish this charge, the committee was divided into sub-teams to conduct internal and external audits.

The external team framed its findings around information provided by the Educational Advisory Board that benchmarked programs and services designed to establish lifetime engagement at other institutions. The recommendations are to develop a streamlined first year experience and develop transition strategies from student to alumni status that incorporates consistent communication.

The internal team determined the campus provides numerous activities that foster lifetime engagement; however, departments act independently as opposed to collaborating on initiatives.

A coordinated engagement effort between the institution, students and alumni is essential. The committees support the development of a strategy to engage student from the time of matriculation through graduation to alumni status with continued efforts to reconnect alumni through various points of contact.
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 begun digitizing yearbooks, the Miner and photos.
- 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 US from Washington to New York.

Action 3.5.2: Create lifetime email addresses that support contact and engagement

- The university system’s technological capabilities now allows assigning lifetime email addresses to members of the Missouri S&T community (students, employees and alumni).

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

- Career Opportunities and Employer Relations actively engaged with freshman at PRO and during opening week activities, revised and distributed 4,600 Professional Development Plans to guide students through their experience, three alumni participated in interviewing, and 35 students applied to the Boeing Mentoring program. Engaging students at the beginning of their academic program with mentorship opportunities increases student engagement levels and provides professional development.
- 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) engaged with the “Miner Today Alumni Tomorrow” initiative during orientation; 3) hosted Greek President’s Kick-off which engaged 10 staff and 25 student leaders; 4) led test anxiety workshops for 26 students; 5) presented to the Alumni Board during Homecoming on the possibility of being in the Mentor a Miner campaign to increase engagement; 6) engaged 4,839 students in one or more recognized student organizations; 7) engaged nearly 3,000 parents and families in communication activities throughout the semester to encourage student engagement; and 8) coordinated a Garmin Programming Showdown with alumni.

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 and several events are planned in early 2015; such as the Young Alumni Council bowling night.

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

- An innovation proposal was submitted to compensate faculty who are already traveling to regions where groups of international alumni exist. The faculty or staff would assist in developing an alumni event and be compensated for a set amount on their travel expense.
- The international alumni received the Fall/Winter Missouri S&T Magazine
- An alumni reception was held in Panama and a dinner was hosted in Turkey.
- The campus reallocated $30,000 for international recruiting fees.
Action 3.5.7: Improve tracking measures of employment data and related feedback to enhance lifelong career development

- Career Opportunities and Employers Relations performed the following in fall 2014: developed a new KPI tracking sheet for better oversight of strategic initiatives, aligned with NACE standards breaking records in 17 of the 29 metric categories, attended graduation and the Graduate Fair to collect job reports for graduate students, participated in a regional conference for assessment in career services, facilitated employer, student and career fair surveys that were integrated in process improvement, and attended a webinar on career outcomes and engaged in NACE outcomes survey.

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

- Several Miner for Life strategies occurred in fall 2014, including: 1) the Student-Athlete Advisory Committee sold 408 t-shirts to support the Make-A-Wish Foundation; 2) Miner Pride t-shirts were given to all student-athletes (P is for passion, R is for respect, I is for inspiration, D is for determination and E is for excellence) and a session was given to understand the meaning; 3) athletes engaged in five Miner Kids Club activities; 4) the student-athlete board collected 1,500 food items for the community and hosted a reception to present graduating student-athletes with “Miner for Life” sashes; and 5) the Jackling Jocks organization facilitated engagement with the Academy of Miner Athletics.

Action 3.5.9: Strengthen residential living communities to develop lifelong leaders

- A second year experience was launched in fall 2014 that engaged 40 students. This program focuses on career readiness, professional development and student success for developing lifelong leaders.
- A connections community was developed for the new student housing establishments in the downtown community. This experience is unique in that it allows students to shape their living community through a common theme, 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

- In fall 2014, Student Affairs: 1) performed BASICS training for residence hall advisors and counselors and engaged 30 students in the training program; 2) completed a Victim Assistance Training for residence advisors; 3) participated in the Campus Save Committee meeting; 4) the counseling department provided 82 transfer students wellness information; 5) participated in and promoted suicide prevention training; 6) enhanced the STEP UP! bystander intervention with additional implementation efforts, training, and promotion - the program was promoted during the Civic Engagement Fair and various committee meetings; 7) Walk a Mile/It’s on Us had 150 students participate; 8) implemented tobacco and depression screening process; and 9) promoted ethical and healthy decision making.
- The campus implemented the Starfish retention solutions and early warning system for at-risk students, in fall 2014. This system raises a red flag to faculty for any at-risk student and the student receives an email notification when they have been flagged. The campus aggressively transitioned from the legacy system to the improved Starfish S&T Connect. The program was promoted in emails, on blackboard and on the web for students. It allows students to request appointments with instructors, 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 is projected to cut energy usage by 50 percent, reduces carbon dioxide emissions by 25,000 tons per year and decreases the water usage by 8,000,000 gallons per year. In fall 2014, the BTU usage has been reduced by 60 percent representing a reduced utility budget of $1,042,000 and reduced deferred maintenance by $60 million.

This initiative also contributed to student learning through $321,000 in scholarships and eight internships. There is also a test well where students and faculty can conduct research and a visual in Toomey Hall that allows students to understand the system real-time.

Campus or Unit: Missouri University of Science and Technology

Lever Number: 3.8

Lever Description: Exercise leadership in sustainability on campus and in the community by modeling sustainable practices in daily operations and practicing environmental stewardship

Lever Metric: A comprehensive sustainability plan created and approved
Action 3.8.1: Stabilize long-term funding for the Office of Sustainable Energy and Environmental Engagement

- The office has general revenue allocation of $160,000 for FY15.
- The office will report to the new executive director for corporate relations.

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 will be 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 US Department of Energy Solar Decathlon. We are developing a Solar Suburb that will house the 2013 and 2015 homes. Missouri S&T is the only team that has earned an opportunity to compete in six of the seven competitions including the upcoming competition in 2015.
- Solar Village utilizes a solar grid and smart grid power system. The Solar Village Microgrid Project, offering intelligent switching capabilities for renewable power and advanced energy storage, was dedicated in 2014.
- The geothermal project is another campus initiative dedicated to sustainability and the commissioning process is ongoing.
- 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 minimizes 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 Trim Tax.

Action 3.8.3: Create in conjunction with Physical Facilities and Environmental Health and Safety, a sustainable waste management plan for all university waste

- The waste minimization program provides resources for the campus to demonstrate sustainable practices through green chemistry and hazardous waste reduction.
- The chemical pickup request program provides campus personnel with a user-friendly method for requesting disposal of hazardous materials in a safe and environmentally sound manner.

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 will present a bike-friendly plan to the Strategic Sustainability Planning Committee in the spring. 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 electrically powered bus began routing students in
FY14; however, grant funding will expire at the end of FY15. The Strategic Sustainability Planning Committee is currently working on funding options moving forward.

- 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 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 are compiling a list of existing sustainability related courses that will be used as a baseline. This list is expected to be completed in February 2015.
- 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 have received several grants and contracts including the AAPA and City Utilities of Springfield grant providing $125,000 for the microgrid.

**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 utilizing the Annual Reports on Grants and Contracts and the monthly report on grants and contracts.
- The Office of Undergraduate Studies has modified their application process to include a checkbox for undergraduate research projects related to sustainability as this process should help with tracking.

**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 is evaluated with LEED standards and principles. The campus will continue to monitor.
- The LEED principles were applied to: the new James E. Bertelsmeyer Hall for Chemical and Biochemical Engineering Building; the Technology Development Center; and the Kummer Student Design and Experiential Learning Center.
- These principles have aided the campus in achieving a Silver STARS (Sustainability Tracking Assessment and Rating System) rating. This rating, performed by the Association for Advancement of Sustainability in Higher Education, evaluated the areas of education and research; operations and planning; and administration.
**Action 3.8.14: 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.
- In September 2014, the show covered coal energy with guests from Peabody Energy from MO, Deseret Power from UT, and RJM International from the UK.
- In October 2014, the discussion focused on the power grid. In December 2014, the show covered alternative fuels.

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

- Residential life is collaborating with the City of Rolla to develop a recycling plan for the downtown housing community.
- 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.
- Fifty resident hall student workers were trained on customer service, emergency procedures and front desk operations.
- The residential living communities completed building coordinator training and were distributed emergency response kits.
Donor Satisfaction with the giving experience, as displayed in the table below, demonstrates that 88 percent of donors were satisfied or very satisfied.

<table>
<thead>
<tr>
<th>DONOR SATISFACTION</th>
<th>OGS</th>
<th>Non-OGS</th>
<th>Direct Mail</th>
<th>Total</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Satisfied</td>
<td>103</td>
<td>572</td>
<td>76</td>
<td>751</td>
<td>39.3%</td>
</tr>
<tr>
<td>Satisfied</td>
<td>67</td>
<td>735</td>
<td>126</td>
<td>928</td>
<td>48.6%</td>
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<tr>
<td>Neutral</td>
<td>15</td>
<td>163</td>
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</tr>
<tr>
<td>Dissatisfied</td>
<td>1</td>
<td>11</td>
<td>1</td>
<td>13</td>
<td>0.68%</td>
</tr>
<tr>
<td>Very Dissatisfied</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>12</td>
<td>0.63%</td>
</tr>
<tr>
<td>Total</td>
<td>189</td>
<td>1,487</td>
<td>232</td>
<td>1,908</td>
<td></td>
</tr>
</tbody>
</table>

Annual fundraising had a 36 percent increase from $10.1 million to $13.8 million in FY14. Renewal rates of alumni donors remained consistent at 68 percent. The endowment market value grew 6 percent, from 142,649,653 to 153,566,537. Gifts closed on December 31, 2014 at $5,238,875 with $911,564 designated for endowment.

The comprehensive campaign remains a top priority for the campus and is evidenced by the reallocation of $750,000 in general operating revenue to hire additional staff to lay the foundation for the upcoming comprehensive campaign.
Action 3.9.4: Review update and approve naming policy

- The naming policy has been updated and approved.

Action 3.9.9: Update gift officer portfolios based on wealth screening

- The gift officer portfolios have been updated.
- Gifts closed on December 31st at $5,238,875 with $911,564 designated for endowment.

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

- University Advancement is seeking input from senior campus leaders to identify and prioritize fundraising.

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

- The case statement is currently under development. It is important to identify and prioritize fundraising opportunities from the strategic plan and the campus master plan.

Action 3.9.12: Recruit and hire staff

- University Advancement received a staffing investment to add five new positions.
- A new senior development officer, prospect researcher and administrative assistant were hired.
- Paschal Murray is providing executive search and recruitment services for the two executive level positions.

Action 3.9.13: Train new staff

- Training for the new hires is currently underway.

Action 3.9.14: Identify prospects for campaign cabinet

- This action will begin later in the spring semester

Actions 3.9.15, 3.9.16, 3.9.17, 3.9.18, 3.9.19, 3.9.20, 3.9.21, 3.9.22 and 3.9.23 are contingent upon completion of other actions and will begin in the spring 2015 semester.

Action 3.9.24: Develop campaign report, metrics format and process

- The metrics, format and process of the campaign reports have been outlined.

Action 3.9.25: Determine donor satisfaction baselines, set goals for improvements

- Satisfaction with the Missouri S&T giving experience has been determined. The satisfaction baseline is 88 percent with a goal of 90 percent.

Action 3.9.26: Implement Advizor data tool

- The Advizor tool has been installed and is currently being utilized.
**Action 3.9.27: Complete iModules installation**
- iModules has been tested and will go live in February 2015.

**Action 3.9.28: Dedicate Bertelsmeyer Hall**
- The dedication of Bertelsmeyer Hall occurred October 17, 2014.

**Action 3.9.29: Dedicate Hasselmann Alumni House**
- Construction is still in progress.
- The dedication for Hasselmann Alumni House is scheduled for March 14, 2015.

**Action 3.9.30: Launch online honor roll of donors**
- This action is in progress with an expected completion this fiscal year.

**Action 3.9.31: Begin planning and laying groundwork for an Arts, Sciences, and Business Academy**
- Preliminary discussions have taken place to begin the planning phase.

**Action 3.9.32: Identify and appoint directors of development for each college**
- One executive director has been hired and the search for the second executive director is underway.

**Action 3.9.33: Complete reorganization**
- This action is dependent on the completion of other actions that are currently in progress.

**Action 3.9.34: Explore the feasibility and resources required to create for donors an online repository of personal giving records**
- This action is currently being explored.

**Action 3.9.35: Plan and host recognition events for lab upgrade donors**
- The laboratory dedication ceremony is planned for April 16 during Philanthropy Week.

**Action 3.9.36: Evaluate inaugural Philanthropy Month and develop opportunities for expansion**
- One area for expansion that has been included in the Philanthropy Month is the lab dedication ceremony. Additional expansion opportunities will be clarified in the annual report.

**Action 3.9.37: Ensure major prospects are visited face to face annually**
- A plan is in place to visit the major prospects. With the staffing increases and realignment of the office, this action can be achieved.

**Action 3.9.38: Implement RuffaloCody phone-a-thon program**
- University Advancement has contracted with RuffaloCody for managing the phone-a-thon.
Action 3.9.39: Enhance content of annual endowment reports to communicate meaningful student/faculty interaction to donors

- One aspect of the scholarship process reevaluation was analyzing the communication between donors and students. Donors of endowed scholarships now receive a photo of the scholarship recipient and personal hobbies or interests. The donor also receives a handwritten thank you note. This is packaged with the endowment report to build a better connection to the university. One donor, upon receiving the aforementioned information, donated additional scholarship funding. This is one way to communicate meaningful interactions between students and donors.
Lever Summary:

Fifteen online master’s degree programs at Missouri University of Science and Technology are ranked among the best in the country in four categories according to *US News and World Report*. 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) were tied for 20th place overall and ranked 17th among public universities.

Missouri S&T’s online computer information technology programs ranks 26th overall and placed 16th among public universities.

Missouri S&T’s online MBA program tied for 55th overall and ranked 41st among public universities.

<table>
<thead>
<tr>
<th>Campus or Unit:</th>
<th>Missouri University of Science and Technology</th>
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<tbody>
<tr>
<td>Lever Number:</td>
<td>4.1</td>
</tr>
<tr>
<td>Lever Description:</td>
<td>Create a comprehensive distance and online education strategy</td>
</tr>
<tr>
<td></td>
<td>Increase the number of distance/online courses offered per year from a baseline of 200 to a target of 300 per year (2020)</td>
</tr>
<tr>
<td></td>
<td>Increase the number of distance/online students enrolled per year from a baseline of 1,513 to 2,013 (2020)</td>
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<table>
<thead>
<tr>
<th>Lever Metric:</th>
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<table>
<thead>
<tr>
<th>Fall 2013 - 100 Percent Online</th>
<th>Fall 2014 - 100 Percent Online</th>
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<tbody>
<tr>
<td></td>
<td>Number of Students</td>
</tr>
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<tr>
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<tr>
<td>UNDERGRADUATE</td>
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<td>College of Engineering and Computing</td>
<td>971</td>
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<tr>
<td>College of Arts, Sciences, and Business</td>
<td>69</td>
</tr>
</tbody>
</table>
Action 4.1.1: **Conduct a focused market study analysis to serve as the foundation for a comprehensive distance and online education strategy**

- Missouri S&T initiated a market survey with the Education Advisory Board out of Washington, DC. This report will be completed in the spring semester.
- Online enrollments, student credit hours have increased in fall 2014.
- Funding for this area has been linked to a strategic initiative proposal; expanding instructional laboratory equipment. A portion of these allocated funds (approximately 20 percent) will be used to configure laboratories for remote access.

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**

- The vice chancellor for global and strategic partnerships joined online learning with distance learning to create the global learning unit. The finalization of the merging of the two functions awaits the appointment of the new assistant vice chancellor for global learning.
- A financial planning draft was submitted for consistent assessment and the generation of an institutional report.
- In October 2014, discussions occurred on the process for coordinating the use of classroom space and distance education platforms.

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

- Two professional development non-credit distance education course offerings were created: Corrosion Engineering: Introduction and Fundamentals launched in November 2014 and Relative Permeability: Petroleum Reservoir Engineering Technology will be launched in the spring.

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 FY15.

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

- An incentive program has been created that returns 40 percent of the gross revenue to the academic department that produces the distance courses. This incentive encourages departments to develop new distance offerings.
- Discussions regarding initiating supplemental distance revenue to departments that utilize adjunct faculty for teaching distance courses are occurring.

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

- Developed 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 in December 2014 for consideration of changes in how classrooms are utilized.
Redesigned instructional lab update provided below:

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

Lever Summary:

Redesigned instructional lab update provided below:

<table>
<thead>
<tr>
<th>Course</th>
<th>Instructor(s)</th>
<th>Pilot Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cell Biology</td>
<td>Terry Wilson</td>
<td>Pilot 2014</td>
<td>Flipped lab with video demonstrations and quizzes provided online before wet lab experimentation in the traditional setting</td>
</tr>
<tr>
<td>General Biology</td>
<td>Terry Wilson</td>
<td>Pilot 2015</td>
<td>Online lab using lab kits and online learning platform</td>
</tr>
<tr>
<td>General Chemistry</td>
<td>Klaus Woelk, Shayna Burchett</td>
<td>Pilot 2014</td>
<td>Blended lab using lab kits and traditional lab with course content supplemented within the LMS (Canvas)</td>
</tr>
<tr>
<td>Electrical Engineering</td>
<td>Kelvin Erikson, Amardeep Kaur</td>
<td>Projected Pilot 2015</td>
<td></td>
</tr>
<tr>
<td>Materials Testing</td>
<td>Jeff Thomas</td>
<td>Pilot 2014</td>
<td>Online lab using custom lab kits created by the instructor</td>
</tr>
<tr>
<td>Microbiology</td>
<td>Dave Westenberg</td>
<td>Pilot 2014</td>
<td>Flipped lab with video demonstrations and quizzes provided online before wet lab experimentation in the traditional setting</td>
</tr>
<tr>
<td>Nuclear Engineering</td>
<td>Ayodeji Alejo, Bill Bonzer, Craig Reisner</td>
<td>Pilot 2014</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**

- The Department of Electrical and Computer Engineering (ECE) hired an NTT faculty member to develop labs to support circuits and electronics courses taught at community colleges.
- This lever can also be tied to a funded strategic initiative, where a portion of allocated funds (approximately 20 percent) will be 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 education technology that asks the faculty to review their class and take the approach of regarding why they teach the class the way they currently teach it. The faculty are also asked to look at course goals and learning objectives. Once that initial framework has been completed, the determination of the appropriate delivery model can be made.
- A handbook for use by the instructors has been developed by education technology.
- The campus also participates in the System funded inter-campus course sharing model. Missouri S&T will offer courses through this system which combines online, video conferencing and traditional teaching: 1) Civil Engineering 4448, Fundamentals of Contracts and Construction Engineering, taught by Dr. Eric Showalter, associate teaching professor of civil, architectural and environmental engineering, and offered to students at the University of Missouri-Columbia; 2) Electrical and Computer Engineering 5600, Interference Control in Electronic Systems, taught by Dr. Victor Khilkevich, assistant professor of electrical and computer engineering; and Computer Engineering 5620, Signal Integrity, to be taught in spring 2015 by Dr. Jun Fan, associate professor of electrical and computer engineering, and offered to students at the University of Missouri-Kansas City. In addition, UMKC’s Dr. Ghulam Chaudhry is working with Erickson to deliver two UMKC courses in electrical and computer engineering to Missouri S&T students: Emerging Nanotechnologies and Light and Switch Surges Power; 3) Mathematics 6602, Mathematical Foundation of Finite Element Methods, taught by Dr. Xiaoming He, assistant professor of mathematics, and offered to students at UMKC. He is working with Drs. Xianing Li and Zhiglang Chen at UMKC on the course-sharing project; 4) Introduction to Ethics, taught by Drs. Joel Dittmer, assistant professor of philosophy, and Jonathan Finch, lecturer in philosophy, and offered to students at UMSL. In addition, Missouri S&T students are enrolled in UMSL’s Ethics in Science course through the program. Dittmer and Finch are working with Dr. Andrew Black at UMSL; 5) Physics 4503 (Classical Optics) and Physics 4533 (Nanotechnology), taught by Dr. Alexey Yamilov, assistant professor of physics. Classical Optics is offered to UMSL students and the Nanotechnology course is offered via the Missouri Physics Collaboration, which includes MU and UMSL. In addition, UMSL’s Dr. Ta-Pei Cheng is teaching Relativity and Cosmology to Missouri S&T physics students, and is working Dr. Dan Waddill, professor and chair of physics at Missouri S&T; 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. Drs. Ed Malone, Kathryn Northcut and David Wright are working with UMSL’s Drs. William Klein and Jeanne Allison on the collaborative course delivery; 7) two Missouri S&T
history courses – History of Technology (2510) and Architecture, Technology and Society: 1750-Present – are being taught by Dr. Jeff Schramm, associate professor of history, and offered to UMSL students. Two UMSL courses – The Networked Society and Social Informatics – are offered by UMSL to Missouri S&T students. Schramm is working with UMSL’s Drs. Larry Irons and Robert O’Keel on the project.

- In addition, environmental and civil engineering students at Missouri S&T will enroll in Watershed Management and Water Quality, a course offered by Dr. Jason Hubbart of MU in collaboration with Dr. Joel Burken, professor of civil and environmental engineering at Missouri S&T.
Lever Summary:
This lever is tied to a FY15 strategic initiative. This initiative will enhance the recruitment process for Ph.D. students by providing stipends for GRAs/GTAs and provide 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.
Action 4.5.3: (Recruit) Develop memorandum of understandings and articulation agreements with reputed national and international schools to recruit high quality doctoral students

- The vice chancellor for global and strategic partnerships traveled to Panama and India during the fall 2014 semester and visited seven institutions to increase the international presence for Ph.D. enrollment.
- Two universities signed memoranda of understanding in fall 2014.
- In the spring semester, travel is planned for the Dominican Republic, Botswana and China. Visits are planned with ten institutions and the expectation is an additional three MOU’s. The Botswana Ministry of Higher Education is also scheduled for a meeting.

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

- The communications department and senior leadership will be deciding on the marketing agency the campus will utilize for brand development. Until this determination is completed, a fully developed graduate marketing plan cannot be implemented. The marketing and communication department is engaging in research toward the perspective graduate audience and a focus group was held with current Ph.D. students in fall 2014.
- An “Experience Missouri S&T” is planned for the spring semester. This experience is a visitation program for prospective doctoral students. Marketing of this program begins in January.
- The Office of Graduate Studies has developed a Chancellor’s Fellows Research Yearbook as described under Action 2.4.12.

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

- The Office of Graduate Studies performed a ten question survey for faculty and students on the possibility of a graduate resource center and its possible usage.
  - The first survey question asked for what purpose a resource center would be used. Both the students and faculty felt it should be used for academic purposes.
  - Question two asked what resources would contribute to an academic atmosphere. The faculty and students felt strongly that writing tutors should be offered. The students also wanted additional books, journals and handouts.
  - Question three asked the respondent to list the academic resources they would like to see.
  - Question four asked what they would like to see to contribute to a collaborative environment. Both the faculty and staff felt strongly about flexible seating that could be rearranged quickly.
  - Question five asked the respondents to list the collaborative resources they would like to be included.
  - Question six asked about resources for creating a social atmosphere. Both the faculty and students felt the comfortable seating was the most important.
  - Question seven asked for listing additional social resources.
  - Question eight asked the technological resources they would like to see available. Both the students and faculty agreed that whiteboard walls are needed.
Question nine asked the respondents to list the items for technology. Question ten asked what events they would like to see hosted within the space. Students wanted to see workshops and the faculty wanted to see thesis and dissertation boot camps.

- Graduate Studies, Design and Construction Management, Color Art, and the library director met to discuss moving forward with a graduate resource center being housed in the library. Conversations regarding the type of furnishings and design of the space were discussed.

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

- Initial discussions revolving around this action have occurred with the Office of Graduate Studies and Career Opportunities and Employer Relations.
- A recommendation report will be completed by the end of the fiscal year.

**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 plans a visitation week for prospective doctoral students.

**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**

- Workshops presented in fall 2014: 11 students attended the Thesis/Dissertation boot camp, 18 students attended the Power Pitch, 70 attendees to the “Ignite Rolla” event, 10 students attended iThenticate and Endnote.

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

- Implementation of Slate began in fall 2014. The inquiry form was completed in September 2014 as this is the first building block for the system. The second building block is events and this was completed in October 2014. The third area is the application design, requirements, system and status page; these were completed in October 2014. The reader, review, process and definition were completed in November 2014. Academic departments underwent training in a test environment in November. The “go live” is planned for the summer/fall 2015 enrollments.