



MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY

Office of the Vice Chancellor for
Global and Strategic Partnerships

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Thomas Schuman
Faculty Senate
142 Schrenk Hall
Rolla, MO 65409

July 28, 2017

Dear Dr. Schuman:

Missouri S&T is one of 12 universities in a cohort working with the American Council on Education (ACE) in a 20-month program that is to assist our institution in advancing our accomplishments in internationalization. ACE's 2017 "[Mapping Internationalization on U.S. Campuses, 2017 Edition](http://www.acenet.edu/news-room/Documents/Mapping-Internationalization-2017.pdf)" (<http://www.acenet.edu/news-room/Documents/Mapping-Internationalization-2017.pdf>) reports that:

- "Survey data indicate that internationalization continues to gain momentum among U.S. colleges and universities. In terms of the pace of progress, nearly three-quarters (72 percent) of respondents indicated that internationalization accelerated in recent years."
- ACE survey findings revealed that "increasing study abroad for U.S. students" was the highest priority for internationalization among the U.S. institutions responding to the ACE survey. Partnerships with [foreign] institutions was #3, internationalizing the curriculum/co-curriculum, was #4, and faculty [international] development was #5. Recruiting international students was ranked #2.
- "... an increasing percentage of institutions are implementing academic and co-curricular policies and programming that facilitate on-campus global learning ..." and "... internationally focused professional development opportunities for faculty."
- "Nearly two-thirds (64 percent) of institutions have specified international/global student learning outcomes for all students." And, "In 2016, almost half (49 percent) of institutions reported that their general education requirements include an international/global component."
- "According to data collected by the College Board's Annual Survey of Colleges (ASC) ... approximately one-third (more than 800) reported awarding institutional grant or scholarship aid to enrolled international undergraduate students in 2014-15."

The Internationalization (IZN) Committee's Chancellor's Charge, the Internationalization Vision, and the Internationalization Objective are included in Tab 3 of the appendix binder. The Vision statement cites the following as Internationalization objectives: "... develop and broaden the

cultural knowledge of our community, enhance the future careers of our students, improve the university's international reputation and competitive position, and expand our faculty's research and worldwide recognition."

The IZN's steering committee—chairs of the committee's subcommittees—has attended meetings led by ACE. These ACE meetings were held in August, 2016, and February, 2017. Each of the cohort institutions has an ACE member who serves as an advisor to the institution's plans and accomplishments.

Our IZN initially identified five principal actions or activities ("Recommendations" pp 20-21 in Tab 5: "Report on Internationalization Efforts at Missouri S&T") which were approved by Chancellor Schrader and Provost Marley.

The IZN then conducted a SWOT ("Strengths, Weakness, Opportunities, and Threats") analysis. The evaluation resulted in 61 Strengths, 63 Weaknesses, 38 Opportunities, and 41 Threats being identified and reported. This analysis was accepted and approved by Chancellor Schrader and Provost Marley in August, 2016.

The IZN submitted a proposed new strategic plan Lever in November, 2016 to be included in our Missouri S&T Strategic Plan. That Lever and its 11 Actions were adopted and have been formally included in the campus strategic plan effective July, 2017.

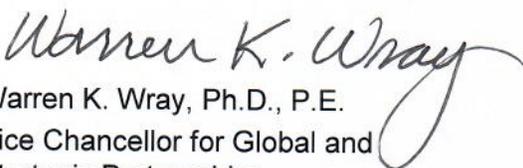
The five recommended principal actions or activities, the 213 SWOT items, the new strategic plan Lever 2.8 and its 11 Actions, and the ACE advisor's suggestions were evaluated and seven goals to be achieved or applied were adopted by the IZN at its March committee meeting.

Discussion at the committee's April meeting resulted in the committee choosing to hold a day-long Retreat session in June to take advantage of wide discussions of the seven goals that had been selected. The summary report of the Retreat recommendations and decisions are provided in Tab 9. The ACE advisor to Missouri S&T, Dr. Susan Sutton, visited campus on June 19 and met with Interim Chancellor Maples, Provost Marley, and the IZN committee members. Dr. Sutton's summary report, suggestions, and recommendations are provided in Tab 11.

Plans for actions or activities to apply and/or achieve the seven goals are to be made in August, 2017 for implementing in the upcoming 8 months.

Members of the Internationalization Committee would be pleased to answer any questions.

Sincerely yours,


Warren K. Wray, Ph.D., P.E.
Vice Chancellor for Global and
Strategic Partnerships

Atch: Internationalization at Missouri S&T Report

Chancellor's Charge to the Internationalization Committee

The Internationalization Committee is charged to oversee efforts to advance S&T's internationalization and global reputation by providing international learning, teaching, and research experiences, and encouraging intellectual and cultural exchange with international scholars and educated persons, to further engage our faculty, staff, students, and alumni for success in a rapidly changing global community in coordination with the Faculty Senate committees "Academic Freedom and Standards Committee" and "Student Affairs Committee."

Internationalization Vision

Missouri S&T's internationalization vision is to strengthen our international programs and relationships to provide for members of our campus and community increased global opportunities and understanding. We seek to develop and broaden the cultural knowledge of our community, enhance the future careers of our students, improve the university's international reputation and competitive position, and expand our faculty's research and worldwide recognition.

Internationalization Objective

The overall objective of the internationalization effort is to advance Missouri S&T's international mission by providing our faculty, staff, students, and alumni with international learning, teaching, and research experiences that prepare them for success in a rapidly changing global community. We seek to encourage intellectual and cultural exchange with scholars, business leaders, institutions, and community members from other countries and with programs that are partnered from many areas around the globe. Missouri S&T has the quality and credentials to nurture lifelong relationships with international alumni and academic partners to expand and enhance Missouri S&T's global reputation.

CONCLUSION

With submittal of this report to the Chancellor and the Provost, the Internationalization Committee has achieved three of its four goals: (1) establish an S&T Internationalization and Global Engagement Team and Committee; (2) map the current state of internationalization on the S&T campus; and (3) submit a summary report of the findings of the Committee along with recommendations. The fourth goal was to perform a SWOT analysis of S&T's internationalization if the Chancellor and Provost decide to elevate the internationalization of the Missouri S&T campus. The fourth goal will be addressed after the Chancellor and Provost decide if this internationalization effort is to move forward to improve Missouri S&T's current internationalization status.

The ACE/CIGE organization identified six interconnected target areas—using the term “Pillars”—for institutional initiatives, policies, and programs. The six Pillars consisted of:

- Articulated institutional commitment
- Administrative leadership, structure, and staffing
- Curriculum, co-curriculum, and learning outcomes
- Faculty policies and practices
- Student mobility
- Collaboration and partnerships

A total of 23 principal actions or activities were included in the six Pillars. The Committee addressed each of these principal actions or activities as explained above. The Committee cited 15 of the principal actions or activities as being of major importance to our campus and chose five of the 15 as being of top priority.

RECOMMENDATIONS

The fourth goal of the Internationalization Committee was to conduct a SWOT analysis of the internationalization actions or activities of Missouri S&T and submit recommendations to be addressed that could improve the internationalization actions and activities on the S&T campus. Initiating this fourth goal was to be a decision of the Chancellor and Provost after they had had an opportunity to read and evaluate the Committee's report.

The five principal actions or activities considered by the Committee to be of top priority were:

- Prioritizing internationalization within the strategic plan, including providing GRA (“rate”) funding for OICA staff and its internationalization actions, and

coordinating internationalization with experiential learning and other co-curricular activities.

- Establish a standing faculty mobility support program to provide seed-funding to S&T faculty members to establish new research and education collaborations, including study abroad, with high quality international universities.
- Financial aid and funding to support student mobility, both for S&T students studying abroad and for international students coming to study at S&T, as well as faculty members seeking to fulfill collaborative research or scholarly objectives.
- Appoint a standing campus-level Internationalization Committee with staggered membership appointments.
- Seek outside expertise on how we can review/revise/improve our internationalization goals/strategic plans by joining ACE's Internationalization Laboratory.

The Committee unanimously recommended that S&T join the ACE/CIGA Internationalization Laboratory. This "Lab" is a 20-month event overseen and guided by ACE and is detailed in Appendix F. The ACE/CIGA Lab commences each year in August. Performing a SWOT analysis would prepare the campus for initiation of the ACE/CIGA Internationalization Laboratory participation. The cost of the Lab is \$33,000, payable over a two-year period. A participating institution is also required to fund travel for ACE personnel and external mentors from other universities assigned by ACE to assist each participating university. Thus, the total two-year cost is estimated at approximately \$45,000. As pointed out by one member of the Committee, this expense can be covered by increasing our international enrollment by a single international student for a two-year period.

Report on Internationalization Efforts at Missouri S&T

Part B: SWOT Analysis

August, 2016

PREFACE

The fourth goal of the Internationalization Committee was to conduct a SWOT analysis of the internationalization actions or activities of Missouri S&T and submit recommendations (strengths, weaknesses, opportunities, and threats) to be addressed that could improve the internationalization actions and activities on the S&T campus. Initiating this fourth deliverable was a decision of the Chancellor and Provost after they had had an opportunity to read and evaluate the Committee's report on the first three goals.

The Committee addressed the SWOT considerations in the same manner that the first three goals were considered, i.e., utilizing the six pillars of the Center for Internationalization and Global Engagement (CIGE) internationalization model.

The Chancellor and Provost unanimously recommended that S&T join the ACE/CIGA Internationalization Laboratory program. Thus, the effort of the Committee as it considered the SWOT considerations was to include both the S&T strategic plan and the supportive efforts to be realized from participation in the ACE/CIGE Internationalization Laboratory program.

The three subcommittees addressed each of the four SWOT principal areas (Strengths, Weaknesses, Opportunities, and Threats) as they applied to their respective two pillars. The total results of each subcommittee's efforts are shown in Appendices A, B, and C. The principal considerations of each subcommittee are summarized as follows.

SUMMARY OF SWOT ANALYSIS

Pillar 1: Articulated Institutional Commitment

- **Strengths.** The campus has an excellent strategic plan. The plan is mid-way towards completion and will be evaluated in November, 2016. Thus, the Internationalization Committee is excellently positioned to contribute new input into the revised plan.

- **Weaknesses.** More data regarding internationalization is needed from campus stakeholders while at the same time internationalization efforts by various groups across campus are too diffuse and it is not easily known what is being done, who is doing it and the purpose of doing it.

- **Opportunities.** Many companies specifically interview and hire international students from the S&T campus. This gives us an opportunity to increase the number of institutional agreements and cooperative/collaborative activities and events.

- **Threats.** With many international students attending with their tuition, fees, and other costs being paid by their home country or their employer company, world-wide economic reductions can drastically impact the campus's revenue and seriously impact revenue reductions. For example, reduced petroleum production in international countries resulted in a 77 international student enrollment reduction in Fall semester 2015 and a nearly \$2 million reduction in tuition and fee revenues this past FY.

Pillar 2: Administrative Leadership, Structure, and Staffing

- **Strengths.** The S&T campus has very supportive senior leadership regarding internationalization efforts and events. The campus has a well-established international office (Office of International and Cultural Affairs or OICA), that superbly handles international concerns, both internally and externally.

- **Weaknesses.** The OICA, although well organized and manned with very good staff, is understaffed as the international student enrollment has more than doubled (increased by more than 600) in the past 7 years. The majority of the OICA's annual budget is funded from "soft" money revenue received from international student fees but is adversely affected when international student enrollments unexpectedly decline as a result of world economy declines.

- **Opportunities.** Senior campus leaders often host international officers visiting the S&T campus and also often travel to meet with international senior leaders at their home institutions to seek or obtain partnerships. The campus Corporate Relations office can assist in developing potential connections between the S&T campus and foreign company needs.

- **Threats.** Particularly during times of international economic declines, competition with other universities, particularly those that can award scholarships or reduced tuition to international students, causes reductions in student enrollments and revenue collection. Other threats include changes in U.S. visa and immigration policies and state-level public university appropriations that negatively affect OICA funding.

Pillar 3: Curriculum, Co-Curriculum, and Learning Outcomes

- **Strengths.** S&T requires all undergraduate students to fulfill an experiential learning requirement for graduation. This requirement can be satisfied by study abroad or other academic activities involving the student's participation in international courses or programs. "Engineers Without Borders" and "distance learning" courses/certificates/degrees also contribute sizably to this item.

- **Weaknesses.** Study abroad courses taken at international institutions do not always satisfy S&T degree requirements and may lengthen the time to complete the degree. Most S&T academic departments have not identified global competencies for graduation and such competencies are not explicitly identified in student learning outcomes.

- **Opportunities.** Outside consultants, both domestic and international, can work with students on senior design and capstone courses to provide internal interactions. The S&T campus can raise its international reputation through targeted campus internationalization efforts, and can also create opportunities for international funding and partnerships.

- **Threats.** Some competitive institutions are ahead of S&T in establishing innovative internationally-focused programs (e.g., Univ of Rhode Island, Texas Tech Univ.) that include internships and study abroad.

Pillar 4: Faculty Policies and Practices

- **Strengths.** Missouri S&T has clear protocols for bringing in international scholars who can also bring an international perspective to the university. Current S&T faculty members have many individual connections with international colleagues that allow for collaboration in research, teaching, exchange of students, etc. Grants are available for S&T faculty to develop short term study abroad programs. The S&T campus has a large number of international university partnerships administered by academic departments and research centers.

- **Weaknesses.** Although individual connections exist among the faculty, they are often not leveraged to bring broader benefits to the university. There is no central database to track all of the international activities that take place among the faculty, staff, and administration of the university. There are limited resources available to support international travel for faculty members. The university does not give credit for an international background or experience in hiring and/or tenure/promotion policies.

- **Opportunities.** Missouri S&T's identity as a STEM-focused institution allows the university to easily locate international partners. The university's strategic goal is to hire more faculty members who can expand diversity. Existing partnerships can allow the university to tap into international research funding.

- **Threats.** The campus is unable to hire in some instances good candidates for faculty positions because of the perception that international experiences are not valued. Missouri S&T's international efforts are not visible enough, and we cannot compete with other institutions that have campuses and programs located abroad. Although S&T ranks highly on a number of U.S. rankings, the university does not rank highly enough on major world rankings of universities to meet some highly-ranked international institutions' objective to partner with the highest ranked universities.

Pillar 5a: Student Mobility: Study Abroad

- **Strengths.** Study abroad is widely accepted as experiential learning activity required for graduation. Our strong Engineers Without Borders program and contacts in selected countries offer many students the opportunity to work in an international country. The S&T chancellor has committed to achieve double the number of students participating in study abroad by 2020.

- **Weaknesses.** A lack of sufficient funding and space for optimal staff structure to lead a sustainable study abroad program has reduced the ability of OIAC to attract students to commit to study abroad. Although there are currently more students participating in study abroad than ever before, the number of study abroad students is still low. Parents do not always understand the value of study abroad. There is limited financial support for faculty members to develop study abroad programs.

- **Opportunities.** Study abroad for a semester is a growing trend even though the number of students is not high. The experiential learning requirement may allow a four week study abroad option between semesters, and summer sessions can also offer study abroad possibilities.

- **Threats.** Economic uncertainty is an issue as minimal scholarships are available for study abroad students. Also, the international educational systems attended by our students can be very different (tests, lectures, workload, and language requirements).

Pillar 5b: Student Mobility: International Students on Campus

- **Strengths.** Missouri S&T has a good academic reputation and attracts many international exchange or study abroad students to S&T for either one or two semesters. S&T has reasonable costs and a good return on investment. Classes at S&T are reasonable in size and, thus, attractive to students. The S&T Intensive English Program is accredited and provides extensive support for non-native English speakers.

- **Weaknesses.** Additional funding is needed for faculty and staff international student recruitment. Students need more attention (virtual “hand-holding”) in the application process; staffing is needed for follow-up for international students who express interest. Students might be denied due to department constraints at the graduate level. It is challenging to maintain contact with alumni.

- **Opportunities.** Work visa (OPT) has increased the amount of time for a possible maximum of 36 months (STEM students only). U.S. education, particularly STEM degrees, are highly valued.

- **Threats.** No commercial airport at Rolla can create transportation issues for new arrivals. S&T is highly ranked in many U.S. rankings but is not ranked in the top 100 worldwide universities. There is a perception of racism in the U.S. Other universities offer scholarships to international students and other universities have larger budgets for international student recruitment.

Pillar 6: Collaboration and Partnerships

- **Strengths.** S&T has a well-established support infrastructure to facilitate MOUs. S&T has many MOUs with leading universities around the world and some MOUs result in student recruitment. The S&T strategic plan addresses international collaboration and partnerships. Faculty with international reputations often assist with strategic partnerships.

- **Weaknesses.** In some instances there is limited involvement of faculty members when seeking partnerships abroad.

- **Opportunities.** Partnerships are necessary to consolidate study abroad/student exchange, including short-term missions. Faculty are often encouraged to develop partnerships and spend time abroad to consolidate and create opportunities for others.

- **Threats.** University ranking outside the international top 100 can limit partnership opportunities with top ranking international universities. Students from partnering institutions might prefer to live in a more urban environment.

Appendix A:

Pillar 1: Articulated Institutional Commitment

and

Pillar 2: Administrative Leadership, Structure, and Staffing

**Pillar 1: Articulated Institutional Commitment
SWOT Analysis**

Internal Factors	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Campus has a strategic plan and the current committee has already begun to plan to add internationalization to it • Internationalization Committee in place (preliminary) with proposed standing committee structure • Diverse international faculty (function of STEM) 	<ul style="list-style-type: none"> • Need more data from campus stakeholders • Have not done much data-driven assessment • Need more (awareness of) procedures for faculty/student international exchange • Internationalization efforts by various groups across campus = too diffuse • Undergraduate demographic perhaps less open to internationalization than more cosmopolitan or urban campuses • Location of S&T perhaps not conducive to recruitment or retention of international faculty/students (although the perception of safety is a plus)
External Factors	
Opportunities	Threats
<ul style="list-style-type: none"> • Companies hiring international students specifically • Opportunity to diversify markets/majors • Potential to increase number of institutional agreements and cooperative/collaborative activities and events 	<ul style="list-style-type: none"> • International economy – potential economic downturns, such as petroleum, and subsequent reduction in international enrollment and tuition revenue fluctuation with currencies and money exchange

**Pillar 2: Administrative Leadership, Structure, and Staffing
SWOT Analysis**

Internal Factors	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Supportive leadership • Established international office • New colleges/deans in place to incentivize departments toward internationalization 	<ul style="list-style-type: none"> • Office of International and Cultural Affairs (OICA) is understaffed • OICA staff currently funded to too great an extent on “soft” money—doesn’t allow for stability/continuity over time • Lack of English language resources and support services for matriculated international students (e.g., ARAMCO-funded)
External Factors	
Opportunities	Threats
<ul style="list-style-type: none"> • Corporate Relations office can connect S&T with potential international sponsored-student companies • Proposals to/establishing relationships with international governments, ministries, universities 	<ul style="list-style-type: none"> • Competition with other universities • Change of UM System administration • Volatile legislative funding • Uncertain future for U.S. visa policies

Appendix B:

Pillar 3: Curriculum, Co-Curriculum, and Learning Outcomes

and

Pillar 4: Faculty Policies and Practices

**Pillar 3: Curriculum, Co-Curriculum, and Learning Outcomes
SWOT Analysis**

Internal Factors	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Global Studies minor established and available to all undergraduate students • The new experiential learning requirement for all students can be fulfilled by a study abroad experience • Graduate certificates can be easily developed and approved that could focus on international issues • Graduate programs have a significant percentage of international students who are integrated on the campus through research and assistantship assignments • The campus has excellent distance learning facilities • A strong “Engineers Without Borders” program provides students with exposure to engineering issues in an international context • There is a significant number of international faculty on campus who can potentially serve as a resource for internationalization 	<ul style="list-style-type: none"> • Minimal foreign language course offerings and no majors in foreign languages • Preliminary survey identified only about 30 courses with a focus on “international studies” or the society, culture, and/or language of a foreign country • Study abroad experience and credits do not always transfer to student degree programs -- this may increase the time to degree • Limited course offerings and majors in social sciences and humanities reduce the diversity of course and curriculum options for students • Academic departments have not identified global competencies as a priority for graduation and are not explicitly identified in student learning outcomes • Faculty and academic departments have not traditionally made efforts to embed international themes into specific classes or program modules • The Colleges do not collaborate consistently to offer general education, senior design, or capstone courses that are internationally focused for students across disciplines • Academic departments do not make significant efforts to identify how students who want to study abroad can participate and finish a degree without delays caused by these opportunities • The campus does not exploit opportunities for hybrid learning that could provide exposure to international issues, such as distance learning courses held in conjunction with an international partner • Some faculty members may be concerned that their internationalization efforts do not fit well into their current courses

External Factors	
Opportunities	Threats
<ul style="list-style-type: none"> • Companies that hire our graduates consistently stress that they want students with greater exposure to global interactions • Outside consultants could work with students on senior design and capstone courses to provide international experience • International competitions are becoming more available to student design teams • S&T offers specialized coursework, training and research that is not readily available in many countries and could be offered in cooperation with our partners; in addition, our partners may offer specialized training not available on our campus • Our programs are globally relevant, creating opportunities for international funding and partnerships • ACE Internationalization Lab can help raise campus internationalization awareness • S&T can raise its international reputation through targeted campus internationalization efforts 	<ul style="list-style-type: none"> • Companies have indicated that our graduates are technically savvy, but lack other skills, including communication and cultural competencies • Our competition is ahead of us in establishing innovative internationally focused programs (e.g., Rhode Island program with internships in Germany, or Texas Tech Engineering school's requirement for study abroad) • Strict ABET and state requirements can limit our ability to offer curriculum that is more internationally focused • Universities will lose the competitive edge if the skills needed by graduating students are fulfilled by other competing educational models

Pillar 4: Faculty Policies and Practices
SWOT Analysis

Internal Factors	
Strengths	Weaknesses
<ul style="list-style-type: none"> • The university has clear protocols in place for bringing in international scholars • A large number of visiting scholars brings an international perspective to the university • Faculty members have many individual connections with international colleagues that allow for collaborations in research, teaching, etc. • Grants have been made available for faculty to develop short-term study abroad programs • S&T has a large number of international university partnerships • HR provides assistance with hiring faculty on H1-B visas 	<ul style="list-style-type: none"> • The university does not give credit for an international background or experience in hiring and/or promotion (tenure) policies • There is limited engagement by the faculty in community outreach efforts • Limited resources are available to support international travel for faculty • Limited internationally-focused professional development opportunities exist on campus for faculty and staff • Although individual connections exist among the faculty, they are not leveraged to bring broader benefits to the university • There is no central database to track all of the international activities that take place among the faculty, staff and administration of the university • The demands of the tenure track rubrics do not fully allow junior faculty to engage internationally
External Factors	
Opportunities	Threats
<ul style="list-style-type: none"> • Our identity as a STEM-focused institution allows the university to find partners easily • The university's strategic goal to hire more faculty members who can expand diversity • Existing partnerships can allow the university to tap into international research funding • Develop parity faculty exchange opportunities with international universities • There are opportunities to provide consulting services to universities in developing countries attempting to begin STEM-focused programs 	<ul style="list-style-type: none"> • Unable to hire in some instances good candidates for faculty positions because of the perception that international experiences are not valued • U.S. immigrations' English language requirements may complicate free exchange of visiting scholars and faculty from other nations • Our international efforts are not visible enough, and so we cannot compete with other institutions that have campuses and programs located abroad • The university does not rank highly enough on major world rankings of universities

Appendix C:

Pillar 5a: Student Mobility: Study Abroad

and

Pillar 5b: Student Mobility: International Students on Campus

and

Pillar 6: Collaboration and Partnerships

Pillar 5a: Student Mobility: Study Abroad

SWOT Analysis

Internal Factors	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Study abroad is widely accepted as experiential learning activity required for graduation • Strong cultural programs on campus encourage interaction and provide exposure to international concepts and experiences for domestic students who may not be able to travel abroad • Strong EWB program and contacts in selected countries • Strong distance education program provides opportunities for team teaching, ensures continuity for students and faculty • Good support for students when they study abroad (e.g. updates on safety concerns, preparation, timely responses, emergency phone numbers; health insurance, pre-departure orientation) • Terra Dotta implementation, database management for students studying abroad. Adds safety and security • Study abroad coordinator outreach and relationship development with colleges to encourage, foster and support study abroad opportunities • Study Abroad Advisory Council is developing stronger connections to encourage study abroad • Received one-time \$20K for five faculty-led programs FS2015 with activity commencing 2017 • Chancellor commitment to Generation Study Abroad program to double number of students abroad by 2020 • Received one-time scholarship of \$7,500 from IIE • Have limited scholarship funds of \$5K per year • Students indicate they gain skills such as independence, personal growth and new interests • Financial aid available for students who are qualified to receive this support • Alumni working in senior management state that their companies value study abroad • 50% of S&T freshman say that they want this experience • Participation rate for Missouri S&T has doubled since fall 	<ul style="list-style-type: none"> • Lack sufficient funding and space for optimal structure to lead a sustainable study abroad program. Funding needed for staff salaries and office space requirements (UMKC has excellent model) • Low rate of participation of S&T students • Limited funding to help faculty develop study abroad programs (faculty discovery grants for study abroad) • Limited support for faculty at the department level to develop study abroad opportunities – important to allow release-time for development • Study abroad not sufficiently recognized in the promotion and tenure guidelines • Limited incentives for faculty to develop short-term study abroad options necessitating departmental and college-level support • Curricular barriers (does not fit into program of study; no time / rigid curriculum) • Increase in number of semesters to graduate • No dedicated CRN (course catalog and student registration system) for many study abroad courses, particularly those involving short term study • Difficulties predicting how particular courses will count toward requirements for major or minor in some areas • Variable level of understanding of value of study abroad for students in some majors • Costs can be prohibitive or perceived as such; registration in programs like Terra Dotta has a fee • Parents do not always understand the value of study abroad • S&T does not seem to use study abroad programs or funding opportunities for study abroad as part of recruitment strategy. It is important to provide information to high school counselors • Students indicate that exposure to new cultures can increase feelings of isolation, challenge to adapt to foreign customs. Need to increase communications while they're abroad

External Factors	
Opportunities	Threats
<ul style="list-style-type: none"> • Study abroad for a semester is growing trend that is appealing to employer/university admission • Experiential learning may allow four weeks study abroad option • Summer sessions possibilities • Combining opportunities with EWB missions • Develop similar opportunities for foreign professor to lead short-term opportunities at S&T (take advantage of existing distance education strength) • Important to connect study abroad experience to either educational goals or career goals. • Need to standardize what constitutes an experiential learning activity vis-à-vis study abroad • Universities use study abroad as a drawing point to recruit students (to stress during open house visits ...) 	<ul style="list-style-type: none"> • Economic uncertainty • Fluctuation with currencies and money exchange • Loss of students income when overseas • Are we allocating resources appropriately? • General education approval process takes a long time • Political unrest, safety • Issues of racism/discrimination, concerns of students who could be a minority in their new environment • Educational systems can be very different – tests, lecture, workload and language

**Pillar 5b: Student Mobility: International Students on Campus
SWOT Analysis**

Internal Factors	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Great academic reputation • Reasonable costs, good return on investment • Safe community • Acculturation programs organized by office of International and Cultural Affairs are inclusive and aid in the retention of students (example: Celebration of Nations) • Opportunities for domestic/international interaction through on campus cultural programs improve intercultural awareness and aid in international student acculturation • High starting salary for graduates of S&T • Small class sizes • Supportive communications from initial contact (recruitment) to issuance of I-20, and welcome to campus • Immigration advising is professional and high quality • University and departmental degree programs are accredited • Intensive English Program is accredited and provides extensive support for non-native English speakers • Strong international student organizations help support newly arrived students and teach leadership skills • Presence of cultural and religious centers in a small town is a strength and helps in recruitment and retention • Housing is close to campus • Alumni are engaged and loyal 	<ul style="list-style-type: none"> • Additional funding is needed for faculty and staff international recruitment • Need for a more visible recruitment plan which would also include high quality materials • PhD students need additional support, perhaps in the form of tuition waivers • No satellite campus abroad • Students need more attention (hand-holding) in the application process; staffing is needed for follow-up for international students who express interest • Language barriers create opportunities for miscommunication about admission • Students might be denied due to department constraints at the graduate level • Costs of health insurance seems like a burden • Retention program could assist in mentoring new arrivals • Campus needs to be better lit at night (safety) • Difficult to find ranking information for our university/departments • Challenging to maintain contact with alumni

External Factors	
Opportunities	Threats
<ul style="list-style-type: none"> • Work visa (OPT) has increased the amount of time for possible maximum of 36 months (STEM only) • Other institutions establish foreign campuses and send their faculty abroad • US Education is highly valued • English language skills are highly valued • Educational system in the US allows access to hands-on research and experience • US is a leader in the areas of technology and research • Universities in the US provide clear information on accreditation standards 	<ul style="list-style-type: none"> • Exchange rates vary and this impacts student finances • No airport in the community, creates transportation issues for new arrivals • Issues with visas and I-20's • University is not ranked in top 100 universities worldwide • Other campuses have operations abroad – students don't need to travel to earn a degree from an American university • European programs require less time to graduation and are often less expensive • Building up infrastructure in countries has reduced reliance on outside education, for example Malaysia and Botswana are improving their universities to attract and retain their students; many countries are recruiting international student populations • Australia is leading in Asian recruitment – travel is easier to home • Perception of racism within the US • Perception of danger in the state of Missouri • Competitors offer scholarships to international students • Regulatory (immigration) requirements • Other institutions employ international alumni coordinators • Other institutions have larger budget for recruitment

**Pillar 6: Collaboration and Partnerships
SWOT Analysis**

Internal Factors	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Well established support infrastructure to facilitate MOUs • Several MOUs signed with leading universities around the world • Some MOUs resulting in student recruitment (both undergrad and grad students) • Good support system for faculty seeking collaboration • Flexibility of allowing MOU on department/center level • Included in the strategic plan • Opportunities to participate in existing partnerships: for example the South Africa program, Mazoon College • Research Centers on campus could serve as a means of communicating research opportunities to interested faculty members • Faculty members with international reputations could assist with strategic partnerships • Core group of faculty who are actively engaged and willing to facilitate and develop collaborative partnerships 	<ul style="list-style-type: none"> • Unclear road map regarding selection of collaboration and or partnership universities • Limited follow up to enhance collaboration, how do we check the status of the relationship? • Critical to clearly define goals in the strategic plan • Limited involvement of faculty when seeking partnerships abroad • Limited feedback to colleges/departments about existing opportunities and how they can benefit from (faculty contacts) • Low level of actual collaboration between parties on both sides (workshops, student exchange, dual degrees, joint degrees...) • Costs can be prohibitive to maintain relationship – on-site visits, protocol visits • Lack of reporting requirements for existing MOUs • Important to communicate about trips and travels abroad • Hard to locate international alumni; critical to have sufficient staffing and a formal communication process in place.
External Factors	
Opportunities	Threats
<ul style="list-style-type: none"> • Partnerships are necessary to consolidate study abroad/student exchange, including short-term missions • Encourage faculty to develop partnerships and spend time abroad to consolidate and create opportunities for others • Integrate into sabbatical system • Alumni are in important positions abroad and might be able to assist with securing partnerships • International universities seek partnerships that are mutually beneficial • Encourage faculty members to consider sabbaticals overseas with international partners 	<ul style="list-style-type: none"> • Complicated formalities to host visitors (insurance and visa formalities) • University ranking limits opportunities with top ranking universities • Students from partnering institutions might prefer to live in a more urban environment • Cost justification, important to analyze all costs involved in maintaining active collaborations • Political unrest • Other universities are well ahead of us through satellite campuses (Texas A&M)

IMPLEMENTATION PLAN | PORTFOLIO MANAGEMENT OF ACTIONS

Lever 2.8: Promote innovative practices through strategic internationalization initiatives which will foster student development and campus/community engagement and further elevate Missouri S&T's global reputation

Prioritized Actions	Incorporated Into Plan	Action Start Date	Duration	Owner(s)	Baseline	Key Metric to Track
2.8.1: Encourage academic departments to include global competencies in their curriculum by integrating global competency and internationalization concepts into their student learning outcomes for both undergraduates and graduate students	FY18	7/1/17	2 years	Vice Chancellor for Global and Strategic Partnerships, Vice Provost and Deans, Vice Provost for Graduate Studies, Vice Provost for Undergraduate Studies	Initial survey conducted as part of the internationalization self-study in 2015	Number of Student Learning Outcomes (SLO) and Graduate Learning Outcomes (GLO) that included global competencies and internationalization awareness
2.8.2: Investigate funding models which encourage departments to explore and develop international programs, projects, and associated recruitment strategies	FY18	7/1/17	2 years	Assistant Vice Chancellor for International and Cultural Affairs, Vice Chancellor for Finance and Administration, Provost, Vice Provost and Deans, Vice Provost for Graduate Studies	No funding model currently exists	Funding model in place

Lever 2.8: Promote innovative practices through strategic internationalization initiatives which will foster student development and campus/community engagement and further elevate Missouri S&T's global reputation

Prioritized Actions	Incorporated Into Plan	Action Start Date	Duration	Owner(s)	Baseline	Key Metric to Track
2.8.3: Encourage increased campus and community participation in activities that meet global learning objectives such as Celebration of Nations, Global Showcase, cultural adjustment programs, and school outreach	FY18	7/1/17	2 years	Assistant Vice Chancellor for International and Cultural Affairs, Vice Provost and Deans, Vice Provost for Graduate Studies, Vice Provost for Undergraduate Studies	Baseline academic year 2013-14	Number of activities, satisfaction surveys
2.8.4: Increase student and faculty engagement in Study Abroad	FY18	7/1/17	2 years	Vice Provost for Undergraduate Studies, Vice Provost and Deans, Assistant Vice Chancellor for International and Cultural Affairs	Baseline academic year 2013-14	By 2020, achieve double the number of students studying abroad for credit from 39 to a minimum of 78
2.8.5: Secure funding to support Study Abroad initiatives such as: scholarships, faculty support, and administrative costs	FY18	7/1/17	3 years	Vice Chancellor for Global and Strategic Partnerships, Assistant Vice Chancellor for International and Cultural Affairs, Vice Chancellor for University Advancement	Funding provided in 2015-2016	Amount of funding per year for five years

Lever 2.8: Promote innovative practices through strategic internationalization initiatives which will foster student development and campus/community engagement and further elevate Missouri S&T's global reputation

Prioritized Actions	Incorporated Into Plan	Action Start Date	Duration	Owner(s)	Baseline	Key Metric to Track
2.8.6: Identify best practices for processing international documents to increase recruitment yield	FY18	7/1/17	2 years	Assistant Vice Chancellor for International and Cultural Affairs	Measured against peers	Report best practices and recommend improved processing procedures
2.8.7: Leverage international alumni support to aid in recruitment and retention of international students and to develop support networks for students studying abroad	FY18	7/1/17	Ongoing	Assistant Vice Chancellor for International and Cultural Affairs	No formal process exists	Track international alumni (and American alumni living abroad) as recruitment support; track alumni to support study abroad students; develop a network system in major urban areas
2.8.8: Review peer institutions to investigate the development of a "recruitment scholarship" (small prestigious financial incentive) that can be used to attract prospective international students	FY18	7/1/17	1 year	Assistant Vice Chancellor for International and Cultural Affairs, Vice Provost and Dean for Enrollment Management, Vice Chancellor for University	No model exists	Report on potential mini-scholarship models
2.8.9: Develop Global Initiatives Council to annually identify and promote international collaborative opportunities	FY18	7/1/17	1 year	Assistant Vice Chancellor for International and Cultural Affairs, Vice Provost and Dean for Enrollment Management, Vice Provost for Research	No council exists	Council members identified; opportunities identified

Missouri University of Science and Technology

Lever 2.8: Promote innovative practices through strategic internationalization initiatives which will foster student development and campus/community engagement and further elevate Missouri S&T's global reputation

Prioritized Actions	Incorporated Into Plan	Action Start Date	Duration	Owner(s)	Baseline	Key Metric to Track
2.8.10: Institute mechanism to communicate and track international collaboration	FY18	7/1/17	3 years	Vice Chancellor for Global and Strategic Partnerships	Current number of collaborations	Number of international collaborations and partnerships
2.8.11: Encourage partnerships and collaborations which enhance Missouri S&T's reputation, visibility and international ranking	FY18	7/1/17	Ongoing	Chancellor's Committee for Internationalization, Global Initiatives Council, Vice Chancellor for Global and Strategic Partnerships, Assistant Vice Chancellor for International and Cultural Affairs, Vice Provost for Research	Academic year 2013-14	Track number of partnerships Monitor rankings on QS, US News & World Report, Academic Ranking of World Universities (formerly Shanghai Rankings)

2017 Identification of Seven Key Goals for Action by IZN Committee

- A. Work on and implement immediately **Action 2.8.10** of the Strategic Plan: Institute mechanism to communicate and track international collaboration at S&T
- B. Building off of item A: Create a readily accessible centralized database of all significant international activities/international contacts/signed agreements, etc. undertaken by S&T faculty and staff. **Action 2.8.10**
- C. Use a survey and/or focus groups in order to identify faculty/staff/student interest in internationalization and also to collect data for items and leads on info related to A. and B. above.
- D. Establish the permanent IZN committee as a Chancellor's committee.
- E. Move forward with **Actions 2.8.9** and **2.8.11** once permanent INZ committee is established. Action 2.8.9 → Develop Global Initiatives Council to annually identify and promote international collaborative opportunities. Action 2.8.11 → Encourage partnerships and collaborations which enhance our reputation, raise visibility and increase global ranking of Missouri S&T and its programs.
- F. With respect to **Action 2.8.1** and incorporating global competencies into the curriculum, continue to build upon the great start last year and continuing this year with funding of faculty-led study abroad programs with focus on encouraging cross-college and cross-disciplinary collaboration in these programs.
- G. Explore the interest in and feasibility of establishing an enrollment-based performance budget model for various units or a tuition sharing approach to encourage study-abroad, international exchange, cooperative international educational and research programs, etc. **Action 2.8.2** (Recruitment and projects) Some overlap with secure funding to support Study Abroad initiatives **Action 2.8.5**

Internationalization Retreat Summary

Goal i + ii

Action Item 2.8.10: Institute mechanism to communicate and track international collaboration

Participants: Birdie, Greg, Jeanie, Kent

Challenges: determining procedure, raising awareness, what items can be shared internally? Externally?

Process:

- Important to provide information on the official process of creating an official partnership (MOU)
- Current process: Excel spreadsheet that tracks partnerships, dates of signature, key contact
- Fields that are important: review current spreadsheet, consider making some columns more specific
- Creating an “expert” contact list: fields: country, institution, company
- Consider sending a reminder to academic departments about the agreement process. Include a short survey for self-reporting international travel. Survey would capture: Travel location, name, department, contacts
 - Perhaps visit department chair meeting?

Question: How do you get participation?

- **Articulate benefits:** enhances global reputation, increases networking opportunities, consider incentives for faculty – perhaps a “faculty spotlight” on the website?

Benchmarking: visitors to Texas Tech reviewed their database. Our IT department is not able to support this proposed database.

- Question: could we use Access? (Microsoft product)
- How do we secure confidential information? Login access
- Question – how do we share the database(s)? Website? Google? Flash drive?
- Important to share some information on the website, especially the process for partnerships

How do we invite faculty to participate on our expert list?

Does communications still maintain an experts resource list? Could we collaborate on this?

Two possible mechanisms needed: Official list of agreements and database of country experts

Owner of database/mechanism: Office of International & Cultural Affairs

Goal iii

Would “focus groups” be more effective and allow us to get more representative responses than a survey?

How do we motivate people (students, staff, faculty) to participate?

It is critical that we hear a consistent and strong message from the Chancellor and Provost (and all S&T leadership) about the importance of INZ and INZ Lab experience.

We must be careful about getting biased inputs – non-representative—so if we polled specific classes or departments we have to be careful

Who do we survey? All students? A sampling [e.g student council has fairly good representation at its meetings with at least one student from each student org on campus]?

Should we do a separate survey or focus groups for domestic students? Int’l students? Grad students? Undergrad? Should we target specific student groups or not?

New Student Programs does an extensive survey of just about all incoming freshmen. What can we extract from that survey relevant to INZ?

Opening Week: maybe we could incorporate a small INZ event , perhaps do a short, targeted survey of all those incoming freshmen about INZ.

We all agreed that we should be guided by an outside consultant of some sort in terms of developing the survey questions or organizing focus groups, because there is a science to doing these things correctly.

Could we use the John Hudzik event in the fall to provide some enthusiasm and motivation so that faculty/students/staff would be more interested in answering survey questions or participating in a focus group?

We could use “clickers” to get audience to participate and answer some brief targeted questions – maybe at the John Hudzik event – maybe a pre-presentation survey and then a post-presentation survey?

Goal iv

Establish a permanent INZ Committee as a Chancellor's Committee and recommend principle actions and activities.

- The Retreat Committee recommends that Goal iv be implemented. The sense of the committee is that this would establish a permanent voice and advocate for internationalization on the S&T campus. By making it a Chancellor's Committee, it would not be necessary to seek approval at Faculty Senate. The committee should have a similar composition as our present INZ Committee with members from the faculty, staff and students with a majority of the members from faculty.
- The committee also discussed the possibility of creating an advisory subcommittee to the INZ Committee. This advisory committee would be similar to advisory committees that many academic departments establish to help set department goals through alumni and industry input. This advisory committee could consist of S&T alumni, corporate people, and members of selected international embassies. It would meet 1-2 times per year and provide outside input on our efforts for increased internationalization on campus.

Goal v1. Action 2.8.9.

Develop a Global Initiatives Council to annually identify and promote international collaborative opportunities.

- A committee of this kind already exists on the Missouri-Columbia campus. Some suggested characteristics of the committee are below:
 - The committee should be faculty-heavy with some student involvement. Members should be on-campus people.
 - Chair should be an international faculty leader on campus.
 - One approach for the committee would be to establish one-year projects to enhance campus internationalization. For example, the committee could work to establish international connections with a promising foreign country or international university. Another prospect could be to propose guidelines and policies that would serve to increase international student enrollment at S&T.
 - Funding for travel or other activities of the committee could come from tuition revenues or other sources.

In addition to the committee discussions and recommendations on Goal iv and Goal v1, Action 2.8.9., the committee also discussed the importance of giving the International and Cultural Affairs (ICA) Office a more prominent place in the new campus organizational chart. In particular, the following recommendations were discussed:

- ICA should be placed directly under the Provost's Office in the organizational chart and Dr. Jeanie Hofer should be given the title of Vice-Provost for International and Cultural Affairs. This would allow Dr. Hofer to report directly to the Provost rather than through Global Learning.
- Having ICA report directly to the Provost would put S&T in line with policies at a large number of universities across the country, including UMC and UMSL. It creates a prominence for ICA which should be a major goal of the INZ committee.
- There may be a reorganizational effort to move a number of the cultural programs currently in ICA, including the Celebration of Nations Parade, under the new proposed Chief Diversity Officer. Our committee discussion urged that this should not occur. It was felt that those programs that affect international students be kept separate from those that support campus diversity. International students are being well-served by the ICA Office.

In summary, there was a general recognition on the committee that ICA be placed directly under the Provost, that Dr. Jeanie Hofer receive the title of Vice-Provost for International and Cultural Affairs and that cultural programs and events related to International students, for instance the Celebration of Nations Parade, not be moved to the Chief Diversity Officer, but instead remain under International and Cultural Affairs.

Goal v2

Assigned topic of discussion: Action item 2.8.11: Encourage partnerships and collaborations which enhance our global reputation, raise visibility, and increase global ranking of Missouri S&T and its academic programs

Discussion:

The Shanghai Index and rankings are critical. College of Engineering and Computing has been working with Andy Careaga in Communications to discuss the ranking; ways to improve our status

- ECE and ME are listed as top programs on the Shanghai
- S&T does not have a high rank
- Challenges posed by low ranking: Lose traction for recruiting students and faculty
- It is important to review these rankings

Rankings data from Velvet Hasner June 9, 2017:

There are a couple different international rankings we've been discussing. They are:

1. The "Shanghai Ranking," www.shanghairanking.com, which is the Academic Ranking of World Universities
2. QS World University Rankings, <https://www.topuniversities.com/>

So where do we stand?

Shanghai Ranking:

- The 2016 ranking goes up to 500 and we are not in the top 500 for this ranking. (MU makes the top 300.)
- We do show up in the 2016 rankings for academic subjects, as mentioned at the retreat:
 - Top 100 in civil engineering
 - Top 100 in electrical and electronic engineering
 - Top 300 in mechanical engineering
 - Top 400 in materials science and engineering

Andy has been in contact with a person who works for these rankings.

QS ranking:

This was the ranking that Dr. Brow and Birdie emailed about yesterday. (Thank you for the information.)
The 2018 QS rankings just came out:

- We dropped from the top 550 (501-550 range) to the 651-700 range for universities throughout the world. (MU is ranked in the 601-650 range.)
<https://www.topuniversities.com/universities/missouri-university-science-technology#wurs>

But here is another QS ranking:

- We DO make the **top 100 U.S. universities**, <https://www.topuniversities.com/where-to-study/north-america/united-states/ranked-top-100-us-universities>. This is dated April 20, 2017. It is curious to me that we make the top 100 U.S. rankings but rank so low in the world rankings.

Question – how can we leverage our partnerships to enhance our global reputation?

Discussion:

Tongji University in Shanghai – highly ranked. Good relationships based on department. How do we leverage individual relationships to improve campus relationships.

If we have a database, identify nodes of cooperation.

Example: EMC is very productive, research funds, has great reputation.

Use international partnership database to correlate with potential university partners

How do we capture informal relationships to leverage into more formal relationships?

Could we use google scholar to identify S&T informational partners (collaboration and research)

Note – we could work with reference librarian to filter Scholar Mine for this information.

Note – follow through on providing update on the morning ‘partnership database discussion.’

How do we tap individual actions? (personal relationships abroad) We can leverage this into improving our reputation

How do we prioritize country and university affiliation/partnerships?

- Important to leverage current relationships
- For example – if we know a colleague will be in the US, find funds to support their visit, perhaps assist with travel. Critical to get key partners to our campus so that they can see our quality.
- If we have a list of universities we could prioritize interactions, consider funding options for visits

Rankings – Critical to care about doing the things that help you achieve higher rankings (don’t play the game for the game – but know how it works!)

Building relationships with international corporations

Example – EMC has relationships multiple corporations.

Could we use campus signature areas to drive prioritized collaborations?

Goal vi

Approaches and considerations for Lever 2.8.1, which broadly calls for incorporation of global competencies into curricula.

- Some faculty will be more interested, and hence more willing, to incorporate global competencies into courses and curricula. Such faculty should be identified and engaged and “champions” of this strategic goal.
- Create incentives for engagement in incorporating global learning competencies into curricula. These might include:
 - favorable consideration of such activity in teaching portfolios evaluated for tenure, promotion, and post-tenure review
 - mini-grants for incorporation of global learning competencies into curricula, and international course collaboration
 - fully-funded one-year sabbatical leaves in which faculty relocate to an international university for research and activity that specifically intends to incorporation of global learning competencies into curricula
 - Creation of campus and/or college-level award that recognizes incorporation of global competencies into curricula
 - Reward faculty who receive major external grants that specifically aim to incorporate global competencies into curricula (larger match share and/or larger return of IDC to PI)
- Find out what other UM System campuses are doing to promote incorporation of global competencies into curricula. Possibly partner with them to more easily or impactfully incorporate global competencies into curricula
- Formally recognize student learning activity that involves significant level of international experiences, such as foreign language courses, other courses with significant international content, study abroad, international internships/co-ops, international travel for student design competition, etc. Create a category of distinction for students that have a threshold amount of such experiences, and recognize these students (perhaps termed International Scholars) at commencement and on transcripts and diplomas.
- Create/improve scholarships specifically for students participating in international experiences such as Engineers Without Borders, international Miner Challenge trips, international internships/co-ops, study abroad, etc.
- Hire more faculty that specifically engage international scholarship, and are much more likely to incorporate global competencies into curricula. Such faculty might include those in foreign languages; history and political science; international business and economics; international engineering (see International Engineering Programs at Texas A&M, University of Maryland, and University of Wisconsin).

Goal vii

2.8.2: Investigate funding models which encourage departments to explore and develop international programs, projects, and associated recruitment strategies:

Action start date: 7/1/17

Owners:

Asst. V.C. for International and Cultural Affairs

V.C. for Finance and Administration

Provost

Vice Provost and Deans

Vice Provost for Graduate Studies

Dean Brow led the discussion.

Academic departments are not anxious to receive additional cohorts of students without a return of tuition dollars to the department which is serving the students.

Reasons why the departments are not anxious to receive these students include:

- Faculty members already feel overloaded by the increase in student enrollment
- Many international students need more assistance than domestic students in acculturating to the campus/understanding the academic rigors
- Some international students, particularly those for whom English is not their native language, naturally need more assistance in writing which consumes faculty members' time and energy.
- Graduate students may be a burden on the department in regard to advisement time and providing needed equipment/software and tools for conducting their research.
- Some sponsored students require a level of recording and reporting that is over and above what is required for domestic students (requires faculty time).
- Many other university models encourage faculty buy-in through a tuition sharing model; some departments see international students as a burden.

These constraints mean:

- Some graduate departments are not accepting international students (or are not moving on their applications)

-S&T revenue from international student tuition is decreasing due to lower student numbers

-S&T is not seizing market opportunities which can generate revenue

Ways to create faculty-buy in/benefits to campus

-Create funding model wherein academic departments receive a percentage of tuition to compensate for extra time, energy, costs

-Return of percentage tuition would provide an incentive to faculty members to become S&T recruiters of international students (thereby increasing overall revenue).

-Show faculty members that involvement in international programs increases S&T visibility (faculty members are eager to see S&T rise in rankings).

Recommendations Discussed:

-Copy funding model from Mizzou's international office housed in the College of Engineering (55% of tuition funds is used to pay the academic departments, deans, etc. as well as staff members and travel supporting a particular recruitment initiative).

-55% tuition profit sharing model

-Includes all new formal programs which generate international student enrollment from particular initiative which involves a new agreement

-Begin new profit sharing model FS2017

-Encourage departments to brainstorm creatively to develop programs which can generate revenue (such as the computer science program at Warrensburg)

-Hold discussions which will lead to a proposed profit sharing funding model.

-Stipulations could be attached, for example, if departments didn't spend their tuition allocation and only "banked it", they could be required to use a percentage of non-used funds toward study abroad scholarships, payment to faculty members to develop study abroad programs or other international program involvement.

-Add Dr. Greg Gelles to the team so that he can appropriately help frame the economic metrics involved in proposal generation.

There was general recognition that UMKC international office distributes 200 in-state waivers to international students, and Mizzou's College of Engineering both have built models that encourage recruitment.

Report on Mid-term Visit to Missouri University of Science and Technology

June 18-19, 2017

Susan Buck Sutton

Internationalization Laboratory

American Council on Education

Itinerary

June 18th

- | | |
|-----------|--|
| 5:00-5:30 | Arrived in Rolla, checked into Hampton Inn. |
| 6:00-8:30 | Dinner with members of Internationalization Lab Steering Committee at Alex's Restaurant - Kent Wray, Jeanie Hofer, Jeff Cawlfeld, and Venkat Allada. |

June 19th

- | | |
|-------------|---|
| 10:00-11:45 | Met with Drs. Wray and Hofer |
| 12:00-1:00 | Lunch with Interim Chancellor Chris Maples (with Drs. Wray and Hofer) |
| 1:30-2:30 | Met with Provost Robert Marley (with Drs. Wray and Hofer) |
| 2:30-3:15 | Met with members of the full Internationalization Lab Committee (Wray, Hofer, Cawlfeld, Dick Brow, Greg Gelles, Roberta Morgan, Steve Roberts, Velvet Hasner) |
| 3:30 | Departed for St. Louis airport |

Purpose of the Visit

- To discuss the conclusions reached by the S&T Internationalization Lab Committee at its June 7, 2017 retreat.
- To update university leadership on the thinking of the Lab Committee at this mid-point in its activities.
- To understand how administrative transitions and proposed structural changes might intertwine with S&T's internationalization efforts.
- To offer assessments, ideas, research, and comparative material that might be of use to the Lab and S&T leadership in moving forward, especially regarding what was discussed at the retreat.

Lab Process and Results Thus Far

S&T began a comprehensive examination of its international activities several years before joining ACE's Internationalization Lab. In this light, it mapped its existing international work according to each of ACE's six pillars of internationalization. It also conducted a SWOT analysis of the landscape for further international efforts at S&T.

This work encouraged S&T to go still further in international planning. To aid in this process, S&T joined the 14th cohort of ACE's Internationalization Lab in August 2016, thus becoming part of a select group of institutions engaged in strategic international planning, with advice and guidance from ACE, a leader in this field. Goals for

participation in the Lab were to 1) prioritize internationalization at S&T, 2) involve a wider cross-section of the university in international efforts, 3) move toward an internationalization committee for S&T as a whole, and 4) work toward identifying and focusing its next steps in internationalization.

The Lab Steering Committee and four Subcommittees were soon established, with attention to engaging a range of S&T units and constituencies. They also serve as pilots for developing a permanent S&T internationalization committee structure.

During the 2016-17 academic year, Lab participation also spurred S&T to add a new lever to its overall Strategic Plan, thereby giving internationalization prominence and identifying an overall purpose and vision for it at S&T. Lever 2.8 will take effect on July 1, 2017 and reads as follows.

Lever 2.8 Promote innovative practices through strategic global initiatives, which will foster student development and campus/community engagement and further elevate Missouri S&T's global reputation.

Lever 2.8 contains 11 Prioritized Actions. During spring 2017, the Lab committees thus turned their attention to identifying those internationalization goals of greatest urgency, mapping these to the Prioritized Actions. The Lab team used the June 2017 Retreat to explore and expand each of the seven goals that had been developed, ultimately reducing the number to six by combining two. Questions to be answered, information to be gathered, and possible steps for enacting each goal were identified.

My Overall Assessment at this Stage

S&T's Internationalization Lab effort is moving along extremely well. The Steering Committee and Subcommittees have made significant progress, building on the high-quality foundational work done before joining the Lab. All four Lab objectives are either already accomplished or well under way: prioritizing internationalization at S&T, engaging a cross-section of the institution, trying out a university-wide committee, and articulating an overall vision with prioritized goals and next steps.

The June 2017 Retreat pulled this work together in order to guide the final nine months of the Lab. Lever 2.8 sets an excellent conceptual framework for further international work at S&T, one that identifies internationalization as important to the institution as a whole. It articulates a broad, comprehensive vision. To my eyes, the six goals explored at the Retreat are very appropriate next steps for putting Lever 2.8 into action.

Collectively, these goals promise to stabilize an institution-wide approach to internationalization; track and communicate S&T's international work more broadly; and set in motion systems for further planning and prioritizing in the future. The goals also make forays into the complex and difficult issues of funding and curriculum internationalization. In short, these goals combine to establish the needed infrastructure for comprehensive internationalization at S&T. If successful, they will yield a robust framework under which a wide range of future activities can be developed.

In taking this institution-wide approach to internationalization, S&T aligns itself with what is happening nationally – as shown in ACE’s latest (June 2017) edition of *Mapping Internationalization on U.S. Campuses*, reporting the results of a survey to which 1,126 U.S. institutions responded. The survey shows 91% of doctoral universities have accelerated internationalization over the last three years (with another 2% saying they did not accelerate it because they have long been leaders in internationalization). The survey also shows 71% of doctoral institutions now referring to internationalization in their mission statement (up from only 54% five years ago).¹

Ideas and Responses with Respect to Specific Items: The Six Goals under Lever 2.8

Goal 1. Institute mechanism to communicate and track international collaboration at S&T and create a readily accessible centralized database of all significant international activities/international contacts/signed agreements, etc. undertaken by S&T faculty and staff.

Excellent. This is very important. Comprehensive internationalization asks institutions to take stock of all they are doing, monitor how things are changing over time, and make this information available to faculty, staff, students, and others. Such information enables different units to know what others are doing, builds synergies, engages new participants, assesses program effectiveness, proclaims the importance of internationalization at the institution, and uses this to attract high-quality students, faculty, and external funding, as well as increase the institution’s global reputation.

Some international tracking is already well established at S&T, especially concerning incoming international students, study abroad participants in exchange programs, and cultural programming such as the Celebration of Nations. As the Retreat report says, however, additional tracking is worth pursuing in several areas.

The first area concerns S&T’s international partnerships. Basic information is now placed in an Excel spreadsheet, but more could be added. Tracking existing affiliations is key step in developing an effective international partnership strategy, such as that discussed under Goal 4b below. Items that S&T might want to consider adding to its database (and sometimes used by other institutions) include: the purpose of the agreement, date it needs to be reviewed, what activities have occurred, what benefits have resulted (e.g., publications, course revisions, joint research). Making the spreadsheet searchable by country and discipline is also useful.

The Retreat report also raises the possibility of creating an international expert list for S&T. Maintaining a database of faculty (and staff) with international ties and expertise can be very useful. This is only sometimes connected to certifying such faculty and staff

¹ I have attached a sheet that pulls out several other findings from the survey, which can be consulted in more detail at <http://www.acenet.edu/news-room/Pages/Mapping-Internationalization-on-U-S-Campuses.aspx>.

as global experts, however (as is done at Kennesaw State University, for example). In other cases, it is simply a way of knowing who has knowledge and connections in a particular country, and where the institution has the greatest concentrations of international strength. Officially certifying someone as a Global Expert is a complex process that should only be done if it has a purpose. Simply providing an index to the institution's international ties and expertise may be all that is needed.

Since S&T has around 300 faculty, it might be possible to develop such an informational database, searchable by country, using a student assistant to populate it by going through faculty webpages. For each relevant faculty member, the entries might include: research on or in a country, courses with international content, international collaborations and publications, study abroad programs led, and having come from or lived in a country. The assistant could prepare the entry and send it to the relevant faculty member for approval and editing, before it is placed in the database.

Keeping track of faculty and staff overseas travel is more complicated – and generally not part of such expert databases. Most institutions consider one-off travel as not relevant to the database and find that the expertise that comes from sustained travel to a particular country shows up in other ways.

The issues of institutional responsibility for faculty and staff while overseas is another matter. If the travel is completely at the faculty or staff member's own initiative and funding, there may be few or no legal liability issues for the institution. If the travel is funded (even in part), sponsored, or encouraged by the institution, however, it may require some of the same support and management as that for students who travel overseas on institutionally supported programs (covered in the next paragraph). In such cases, it is valuable for institutions to know when faculty and staff are traveling, how to contact them if an emergency arises, and who to notify in such a case. It is also important to let them know about any health and safety concerns for the country, as well as any insurance the institution offers for overseas travel. Some institutions are now making receipt of university funds for overseas travel contingent on the recipients registering their trips. Others purchase overseas health and evacuation insurance, for which faculty and staff only receive the identification number after they register their trips.

Tracking student travel on institutionally-sponsored programs (credit-bearing or not) is absolutely critical, and the Lab team may want to make sure to look at this as well. As is the case with S&T, tracking students on long-standing exchange or semester-abroad programs is often well established. As faculty-led study abroad and international service programs increase (a beneficial and national trend), however, institutions often find they do not know all that is happening. Students can be taken overseas without the standard safeguards in terms of preparation, health, and safety. This is poor practice in terms of the quality of the student experience and raises issues of institutional liability and crisis management. It is vital to insure that S&T has data on all students going on such programs, prior to travel, and that these students have adequate health and evacuation insurance. Organizations, such as Terra Dotta, can assist with this tracking, although many institutions develop their own systems. The website of the Forum on Education

Abroad provides a useful entry into matters of student health and safety while abroad (<https://forumea.org/>).

While not explicitly addressed in the Retreat report, this first goal also calls for greater communication of S&T's international activities. Once again, this fits with a growing trend for doctoral institutions. S&T might consider one or more of the following strategies that are increasingly in use: dedicated pages on the institutional website; international highlights appearing regularly on the image carousel on the institution's home page; periodic spotlight reports on the international activities of particular faculty, students, and alumni; periodic international newsletters; and inclusion in institutional branding or recruiting materials.

The possibility of creating annual awards for international work might also be considered (if this is not already in place).

Goal 2. Use a survey and/or focus groups to identify faculty/staff/student interest in internationalization and also to collect data for items and leads on information related to Goal 1.

This is also a great idea and unfortunately one that many institutions skip (due to constraints of time, expertise, and institutional survey fatigue). Comprehensive internationalization is an institution-wide process, however, and best done with the input and engagement of as many people as possible.

S&T will be in the vanguard if it pursues this goal, especially if it recognizes that collecting information can also be a process of opening up conversations, engaging more people, allowing difficulties to surface and be addressed, identifying cross-cutting commonalities, and sparking mutual learning about the ever-evolving world of internationalization. Developing programs that reflect the international strengths and interests of the S&T community asks for continuing conversation with members of that community about the importance and meaning of internationalization, as well as their evolving interests under its broad umbrella.

In recognizing the complexity of this goal, the Retreat report poses a series of questions to be resolved. It might help to begin by identifying the many objectives that can be served by such conversations and data collection (deciding which are most important at S&T):

1. Gathering information on what is already happening internationally at S&T
2. Gathering information on the international interests, expertise, and background of various members of the S&T community
3. Stimulating continuing conversations and learning about internationalization and how it relates to the specific nature of S&T and its students, faculty, staff, and surrounding community
4. Learning what kinds of existing programs are of greatest interest to students, and what kind of impact they have had on them
5. Assessing what possibilities for new steps in internationalization have the greatest interest and support

6. Bringing more people into the work of internationalization activities,
7. Building relationships between those who lead internationalization and the S&T community as a whole
8. Insuring that all viewpoints on internationalization are represented,
9. Allowing concerns and difficulties to surface and be addressed

This is a long list, but all are worthy, several intertwine with the objectives of Goal 1 above, and more could probably be added. Asking members of the S&T community for information makes demands on their time that merit consideration of the benefits that might result – and shaping efforts accordingly. It pays to think broadly at the beginning, see this as more than simple data collection, and identify what is most important in the S&T context.

Once objectives have been settled, it is easier to identify methods and audiences. No matter what, these will be multiple. No one tactic will suffice, and not everything can be done immediately. You may decide to stage this process over a year or more, with only some of it completed by the end of the Lab.

Part of this process should be identifying what information already exists or can be obtained by means other than survey and focus groups. In terms of collecting data on what is already happening internationally at S&T and the international background of S&T faculty, the webpage culling described in Goal 1 above may be sufficient. In terms of learning student interests, some ideas can be learned from NSSE data, as well as student evaluations of their study abroad and other international learning experiences. NSSE, for example, asks incoming students if they are interested in study abroad. Comparing how S&T students answer this today with how they answered it five years ago could be revealing, as would comparing S&T results with national norms. The institutional research office may be able to suggest other relevant data as well.

For many of the other objectives listed above, you will need to ask students, faculty, staff, and others what they think directly. This is where surveys and conversational methods (interviews, focus groups, etc.) come into play. The value of surveys lies in their ability to reach a large number of people and provide numerical data on how many do or think various things. The value of conversational methods is that they enable people to go more deeply into issues, provide more detail, go beyond their first reactions, and bring up topics unanticipated by the researcher. Conversational methods can also be a form of relationship building.

In social science, it is common to begin with conversational methods and then to develop a survey that reflects the activities, opinions, and interests that surface in the conversations. Such an approach also works well in developing relationships, stimulating interest in the topic, spreading the word about projects such as the Lab, developing common understandings of key terms, and allowing respondents to vent their frustrations and evolve in their thinking before their opinions are inscribed in survey counts.

Following an approach that starts with conversational methods and then moves to survey may also be a good response to the Retreat report's question about whether to this

research before or after the November 2017 visit by John Hudzik. Conversational methods could be done before the visit and a survey (if you decide to do one) afterwards. This approach might also build interest and enthusiasm for Hudzik's visit.

A range of conversational methods could be used: focus groups concerning particular topics; asking for time at regularly scheduled departmental or club meetings; opening up a faculty/staff learning community that meets every so many weeks. At least at some of these gatherings, it would be wise to separate students, faculty, and staff. These groups have different entry points and experiences with internationalization, and it is important to give each time to speak and register opinions freely.

In organizing these conversations (and building interest in Hudzik's visit), you might want to have certain issues discussed in all gatherings – with some being issues he will likely address. It might be interesting to label the semester as a series of conversations on internationalization, STEM fields, what is useful for students to learn, what institutions like S&T might do, and what they should be wary of – or something like that. In the course of pursuing these topics, the conversations could also ask about what people are already doing, what more they might like to do, and what kind of support would be most effective.

However you approach the conversations and surveys, they should be framed as an invitation to participate in the internationalization planning process. Given that there is much confusion about what the word internationalization means, it might also be useful to start all conversations with a definition and put one at the top of the survey instrument (perhaps using Hudzik's definition of comprehensive internationalization).

Finally, as the Retreat report suggests, it is always useful to consult with experts on social research in developing the questions and topics that guide both focus groups and surveys. The S&T office of institutional research may be able to make some suggestions, as may particular faculty members at S&T or in the Missouri system.

Goal 3. Establish a permanent internationalization committee as a Chancellor's committee and recommend principle actions/activities.

Absolutely. The Internationalization Lab should be seen as the start of an institutional conversation that continues long after the Lab is over. Having a permanent committee, appropriately positioned within the institution is essential for an institution to move forward internationally. The 2017 ACE *Mapping* survey shows that 65% of doctoral universities have such a committee.

In constituting this committee, it is important to insure that all relevant groups are represented and that its role is clearly defined. At most institutions, such committees are more advisory than decision-making bodies. A few tasks may fall to these committees (e.g., reviewing existing programs and partnerships), but they spend more of their time sharing information, coordinating efforts, and proposing new ideas (to be taken up by whatever body is appropriate). The committees work with the international office, departments, and other units; they do not replace them.

Here is a sample description of one such committee. “The International Coordinating Council will be the overarching body charged with taking a broad, cross-institutional view of the College’s international work. Its primary function will be to think comprehensively about the overall nature and impact of the College’s global efforts. To this end, the ICC will collect and share information on these efforts, consider issues that cross-cut them, suggest ways they might support or intersect with each other, propose or deliberate possible new initiatives, and respond to challenges the College faces with respect to global learning.”

In this light, it can be useful to articulate what the institution gains from such a committee. Here are some possibilities to consider. You may well see others.

- enabling new initiatives to arise from on-going, institution-wide conversations
- making the institution’s international strengths more widely known
- sharing knowledge and developing an institution-wide body of expertise
- identifying interests that span departments and offices, with the potential for developing collaborative projects
- placing global learning within the context of other institutional initiatives
- seeing the connections between curriculum and co-curriculum, theory and application, research and community engagement
- facilitating an institution-wide set of international partnerships and networks
- providing a process for responding to new international possibilities and invitations
- reducing unnecessary duplication, finding cost and time efficiencies, and streamlining procedures

The Retreat report also raises the possibility of establishing an advisory council, composed of alumni and representatives of industry and the community. Such groups can be very useful in understanding what students need to learn, what kinds of positions they might seek after graduation, and how S&T can collaborate with businesses and civic groups on international matters. Such an external council can also increase institutional recognition overseas. Members of such councils have told me, however, that they get discouraged when the council is viewed primarily as a means of fund-raising and donations. They are much more interested in being seen as a source of information and advice, and when they are engaged in planning events and activities (e.g., meeting with prospective students, collaborating on a project, etc.).

Goal 4a. Once the permanent internationalization committee is established, develop a Global Initiatives Council to annually identify and promote international collaborative opportunities.

It is not clear if this GIC is intended to be a subcommittee of the overall internationalization committee. To my eyes, this work overlaps that of the internationalization committee. Hence, either the GIC should be a subcommittee or these charges should be given directly to the larger committee (with no subcommittee). What

is the rationale for a second grouping? It may be a good one, but it needs to be articulated.

The possibilities for GIC action proposed in the Retreat report are certainly worth pursuing, the question is simply whether a separate committee needs to be created to do this. It might be useful to consider various scenarios, including one in which the GIC (or the internationalization committee as a whole) identifies an initiative for an upcoming year, and then a designated group of faculty, staff, and students with expertise particularly relevant to that initiative are supported in carrying it out.

No matter how it is organized, the idea of developing one-year projects, possibly pursuing connections with a particular country would give energy, creativity, and distinctiveness to S&T's international work. It could make S&T stand out from the crowd.

Such projects generally need input from a range of faculty, staff, and students. Is there a reason that the Retreat report says it will be faculty-heavy? If so, perhaps I am misunderstanding the purpose of the GIC.

Goal 4b. Once the permanent internationalization committee is established, encourage partnerships and collaborations which enhance our reputation, raise visibility and increase global ranking of Missouri S&T and its programs.

According to the ACE *Mapping* survey, 98% of U.S. doctoral institutions now have partnerships with entities overseas (in most cases, with overseas universities). Many of these linkages, however, were developed haphazardly. Institutions often find they have cabinets full of dormant agreements, as well as active collaborations that have not been through any formal review process because the participants did not realize there was one. Some large partnerships on paper do nothing, while some informal affiliations have great potential but remain undeveloped. There is thus a general move toward greater intentionality and planning in international partnerships.

In this light, research universities are increasingly developing plans or strategies that establish goals and procedures to make international partnerships more effective. In so doing, one-on-one faculty collaborations are generally distinguished from larger institutional linkages. Both are important and supported, and the former can grow into the latter, but they are on different levels of complexity and overall institutional impact. Examples of such strategic partnership plans may be found at the University of Illinois, Michigan State University, Colorado State University, and Clemson University, among others. See also <http://teamup-usjapan.org/> for general principles of partnership development and maintenance over time. Also <http://www.acenet.edu/news-room/Pages/Internationalization-in-Action.aspx>.

This attention to partnerships reflects their growing importance. While student exchange linkages have historically been the most common type, partnerships now fulfill a range of functions spanning teaching, research, and service. They are also, as suggested in the

Retreat report, a way that institutions engage the emerging global system of higher education and establish their positioning within it. As also suggested in the Retreat report, pursuing linkages solely for the sake of raising ranking rarely works, as this often leads to sterile, paper-only agreements – since the main goal is to collect names of highly ranked institutions. As the report says, it nevertheless pays to be aware of the criteria used in these systems.

For the three most widely used international rankings,

Shanghai (ARWU) Quality of Alumni (awards) – 10%
 Quality of Faculty (awards – 20%, frequency of citation – 20%)
 Quality of Research (papers in *Nature* or *Science* – 20%, papers in
 Science and Social Science Indices – 20%)
 Academic Performance – 10%

QS World University Academic peer review (global survey) – 40%
 Faculty/student ratio – 20%
 Citations per faculty – 20%
 Employer reputation (of graduates) – 10%
 International student ratio – 5%
 International faculty ratio – 5%

London Times HE Research citations – 32.5%
 Reputational survey of research – 19.5%
 Reputational survey of teaching – 15%
 Research income – 5.25%
 Doctoral students per faculty – 6%
 Undergrads per faculty – 4.5%
 Papers per faculty – 4.5%
 International diversity of faculty and students – 5%
 (and even smaller amounts for a handful of other factors)

What runs across these global rankings is the importance of 1) research publications and citations, and 2) (in two of the three) surveys of institutional reputation. Partnering with highly ranked institutions overseas may raise the reputational score a bit. Robust research collaborations, even with less highly ranked institutions, will have a greater impact, however. They can result in more globally cited publications, at the same time that they increase awareness of your institution overseas.

As the Retreat report says, international partnerships are valuable for many reasons that go beyond ranking. They provide known and trusted connections that open the world to your institution's efforts in research, teaching, and civic engagement. They share resources and bring a range of perspectives to every task. They model the skills of international competence that we want for our students. As institutions increase their partnership activities, we are also learning what makes them work. They are more likely to succeed when they: are signed only after lengthy discussions, operate on principles of

shared decision-making and mutual benefit, are a good match in terms of institutional strengths and interests, involve multiple individuals on both sides, pay attention to relationship-building, and spark a range of activities over time.

S&T is well-positioned to enhance its partnership profile, by building upward on some existing affiliations and identifying where, with whom, and on what topics new ones might be developed. S&T's distinctive constellation of disciplines and excellence in STEM, business, and certain other fields make it a desirable partner. One of the first actions of the permanent internationalization committee (or the GIC, if it is given this charge) might be to develop a partnership strategy that articulates S&T strengths and identifies where it already has connections with potential to grow, where surrounding businesses and community organizations are internationally engaged, what opportunities for important new affiliations exist, how many and what kind of partnerships it wants, and what supports are needed for further partnership development.

This process may result in building upward on some existing partnerships – ones that are small-scale and possibly informal now, but have potential for increased impact for S&T. Such partnership expansion often includes the following elements: inviting other individuals to become involved, sponsoring joint conferences that attract faculty and students from both sides, using COIL modalities (Collaborative Online International Learning – see <http://coil.suny.edu/>) to beam faculty to team teach, exploring joint/dual degrees, sending short-term faculty-led study trips back-and-forth, defining a research problem that will be tackled collaboratively, working with businesses that have bases in each location, and so forth. Such actions build a larger network of relationships, out of which new activities arise.

External funds can also be sought to support partnership work. Title VI funds within the U.S. Department of Education and Educational and Cultural Affairs funds within the Department of State are two very common sources, as are some Fulbright programs. US AID and various U.S. Embassies abroad also periodically announce competitions for partnerships that focus on a particular issue, as in the recent U.S.-Indonesian initiative to build collaborative research centers in STEM fields (<https://www.iie.org/Programs/SHERA>). S&T may want to establish a system to track such opportunities. See http://www.iupui.edu/~icjp/_includes/docs/GRANT-MAKING-ORGANIZATIONS.pdf for a general listing of funding sources.

Goal 5. Encourage academic departments to include global competencies in their graduation requirements by integrating global competency and internationalization concepts into their student learning outcomes for both undergraduates and graduate students.²

Curriculum internationalization is indeed one of the most important and most complex aspects of comprehensive internationalization. It is always multi-pronged, proceeding step by step, as faculty and departments come to understand what global learning might

² While the Agenda for the Retreat gives a narrower goal, the Retreat notes seem to indicate that the entire 2.8.1 was discussed. That is why I have given it here.

mean for their particular students. While it will take some time for S&T to move on this front, the Lab team is right to place getting started on the light of high priorities.

As Lever 2.8.1 says, curriculum internationalization starts by thinking about learning outcomes. This is a multi-year task, as faculty think about what their students need to learn to be successful in a globalized world. The answers are also not as clear for some disciplines as for others. STEM fields tend to fall into this category – even though their laboratories and research programs are among the most internationally collaborative places on earth. This fact alone suggests such learning outcomes as knowing how to work with scientists from other countries and knowing how to develop a comparative, global perspective to solve problems. There is much more that could be considered, however. NAFSA has some interesting resources on this topic (http://www.nafsa.org/Professional_Resources/Browse_by_Interest/Internationalizing_Higher_Education/Colloquia/Internationalizing_STEM_Education_Resources_from_NAFSA_s_2014_Colloquium/), as do AAC&U (<http://diversityweb.org/Digest/vol9no3/hovland.cfm>) and ASEE (www.asee.org/public/conferences/27/papers/8363/download). The engineering program at the University of Rhode Island is an often cited model (<http://web.uri.edu/iep/>). Getting some conversation going on global learning outcomes for STEM students could also contribute to building interest in the visit by John Hudzik (from Michigan State).

Once at least a preliminary understanding of learning outcomes is reached, activities can be developed to achieve these. The Retreat report gives very good suggestions in this regard: look for faculty champions, create incentives, consider formal recognition for students who do global learning, enhance scholarships for international experiences, think about this in hiring new faculty, and find out what other UM campuses are doing in this regard. The resources listed above give additional ideas (and the ACE series lists multiple examples of global learning certificate programs).

Goal 6. Explore interest in and feasibility of establishing an enrollment-based performance budget model for various units or a tuition sharing approach to encourage study-abroad, international exchange, cooperative international educational and research programs, etc.

The Lab team is also right that the ever-vexing issue of funding must remain front and center if internationalization is to move forward. Some activities can proceed with current funding levels, but others need additional support. This is difficult for public institutions, many of which face funding stagnation or decline. The importance of internationalization for the future of the institution asks that something be found nevertheless. John Hudzik and Penelope Pynes have produced an important publication that gives an overview of the strategies that various institutions use (<http://www.nafsa.org/Shop/detail.aspx?id=130e>). These strategies range from spreading costs and funds across the institution in new ways to seeking external funding to pursuing income-generating international activities.

In terms of spreading costs and funds across the institution in new ways, the Retreat report offers an idea worth considering: returning some tuition funds from S&T's

international students to the receiving departments in order to compensate for the extra effort and equipment they devote to these students. This would encourage departments to welcome international students, which might in turn generate more students, which generates more income. A number of institutions have such a tuition-sharing model, which takes different forms depending on whether the institution has responsibility-centered budgeting or not. Sometimes the shared tuition also contributes to curriculum internationalization initiatives and study abroad. It is particularly important to understand that in the long run, attracting international students rests on using some of their tuition to provide them with a welcoming and internationalized atmosphere in which to study while they are on campus.

While returning some tuition to departments will address some of the issues given in the Retreat report concerning international students, it might be worth considering additional actions. There appears to be some concern at S&T about the quality of the international students and the extra demands their presence makes. It might be useful to stress the value that they bring as well: giving U.S. students experience in working in a globalized atmosphere, serving as language buddies for U.S. students, bringing new perspectives into labs and classrooms, establishing connections for future research, their generally high level of math and science skills, and so forth. Increasing the number of students coming from S&T's international partner institutions can also establish a level of knowledge and stability that makes integration of international students easier.

Another concept worth considering is viewing funding international initiatives as an investment expected to yield additional revenue in the future. Mitch Leventhal at SUNY has written about this idea, which he calls "performance based reinvestment" (<http://www.universityworldnews.com/article.php?story=20110211204106430> and <https://www.slideshare.net/Intead/ml-presentation-37293602> and <http://equityforeducation.wordpress.com>). The concept is to support activities that generate funding: recruiting international students, programs that attract more U.S. students, projects that can earn external grants, collaborations with private industry, etc.). The return on investment is then measured, with some of it reinvested in more international activities. IUPUI, for example, used some of the indirect costs associated with external grants for international projects to create small, internal seed grants for faculty looking to start new projects.

Ideas and Responses to Other Items that Came Up During My Visit

The possibility of developing a comprehensive international student enrollment management plan is a good one. The plan would look at the overall international student environment; S&T's mission, strengths, and strategic goals; and its overall enrollment goals to identify what kinds of students it wants, from where, how they can be recruited, how partnerships can play a role in this process, and what impact this will have on S&T's budgeting. Just released good news for increasing such numbers comes from the U.S. Department of Homeland Security, which revealed that although application numbers of international students applying to U.S. institutions were down this year, the number of those who are actually coming is up. As of May 2017, F and M student visas are up 1.7%

from last year. While the number coming from Saudi Arabia and South Korea are down, the numbers for those from Vietnam, South America, Nepal, and India are up (<https://www.insidehighered.com/quicktakes/2017/06/26/spring-data-show-increase-foreign-students>).

The possibility of instituting a fee (c. \$80) for S&T's international students who pursue the OPT option after graduation (including those with STEM extension) sounds reasonable, although this should be checked against peers.

Various transitions, including the upcoming retirement of Dr. Wray, have opened the possibility of reorganizing S&T's administration of international programs. In thinking this through, it may be useful to consider that the ACE *Mapping* survey shows that 82% of doctoral universities have a full-time administrator who oversees or coordinates multiple internationalization activities and programs. Furthermore 66% of these positions report directly to the Provost. In an aside, the Retreat report having the head of International and Cultural Affairs report to the Provost (as is the case with UMC and UMSL), and this would certainly be in keeping with national norms. Internationalization is inherently a cross-campus endeavor that affects all units. A direct line to the Provost is a declaration of the importance of internationalization to the institution, enables expert knowledge to enter directly into the decisions of the Provost's council, and facilitates communication to a wide range of units.

In the same vein, and also mentioned as an aside in the Retreat report, the possibility of splitting the cultural programming from other international activities would go against current trends. The *Mapping* survey shows that 71% of doctoral universities have a single office that leads international activities and programs (a significant change from only 40% five years ago). While there should be coordination and collaboration between diversity units and international units, the management/development of activities with a specifically international focus requires a level of expertise that comes from immersion in international activities and with international students more generally. ACE's *At Home in the World* gives insight into these issues (<https://bookstore.acenet.edu/products/home-world-bridging-gap-pdf-version>).

Finally, the Interim Chancellor and Provost see S&T as an institution in transition and are taking a new look at the goals that might drive its next phase, all while maintaining S&T's distinctive strengths and niche. As the Lab Committee goes forward, it is important to explore how internationalization connects to the goals that are emerging. Spend time articulating the specific value that internationalization can bring to S&T, following in mold of Michigan State, Colorado State, Purdue, UC-Davis, Clemson, and Georgia Tech, all of which place a high premium on internationalization. In a similar vein, time could be spent articulating the value of internationalization at S&T for the community and the state. Build on the great success and impact of the Celebration of Nations to show what an internationalized university of science and technology can do.

Keep going. You are very much on track.

Mapping Internationalization on U.S. Campuses, 2017 Edition
American Council on Education

(Survey administered in 2016. 1,126 U.S. institutions responded.)

Selected results for doctorate-granting institutions.

During the last three years has internationalization accelerated on your campus?

91% - yes
(and another 2% said No, but my institution has always been a leader in this area)

What are your institution's main reasons for internationalizing? Select up to THREE:

- 81% Improve student preparedness for a global era
- 50% Diversify students, faculty, and staff
- 35% Become more attractive to prospective students at home and overseas
- 34% Generate new revenue for the institution
- 28% Raise international reputation and rankings
- 18% Contribute to international development initiatives
- 17% Attract global talent (faculty and researchers)

What have been the highest priority internationalization activities on your campus in the last three years (academic years 2012–13 to 2014–15)? Select up to THREE:

- 71% Increasing study abroad for U.S. students
- 66% Recruiting international students
- 59% Partnerships with institutions/organizations abroad
- 34% International research collaborations
- 29% Internationalizing the curriculum and/or co-curriculum
- 11% Faculty development

Are internationalization or related activities (e.g. international or global education) specifically referred to in your institution's mission statement?

71% - yes
(a significant change from 54% in 2011)

Does your institution have a campus-wide committee or task force that works solely on advancing internationalization efforts on campus?

65% - yes

Which best describes the administrative structure of the international activities and programs at your institution?

71% - a single office works leads internationalization activities and programs
(a significant change from 40% in 2011)

Is there a full-time administrator who oversees or coordinates multiple internationalization activities or programs?

82% - yes

To whom does this individual report?

66% - chief academic officer (provost)

Did your institution provide specific funding for the following faculty activities in the last year (2014-15)? Select all that apply.

90% Travel to meetings or conferences abroad

86% Leading students on study abroad programs

82% Studying or conducting research abroad

65% Hosting visiting international faculty

53% Teaching at institutions abroad

48% Internationalization of courses or programs

42% Faculty development seminars abroad

Does your institution have an international student recruitment plan for the institution as a whole, and/or for any of its schools/colleges?

75% - yes

To recruit full-time degree-seeking international undergraduate students, did your institution provide funding for the following in the last year (academic year 2014-15)? Select all that apply.

84% Scholarships/fellowships/stipends 84

62% Travel for recruitment of officers (employed by the institution)

31% Engagement of overseas student recruiters (agents)

98% have partnerships with entities abroad

(academic institutions, NGOs, governmental agencies, corporations)

Has your institution articulated a formal strategy for international partnership development?

66% - yes or in the process of developing one

Does your institution operate any international dual/double degree program(s) with a partner institution(s) abroad? In a dual/double degree program, students take courses and receive a degree or diploma from each participating institution.

71% - yes or now developing one