Corporate Development Council (CDC)
Spring 2018 Meeting

Hosted by:
Office of the Vice Chancellor of Student Affairs
Welcome and Overview

- Debra Robinson, Vice Chancellor, Student Affairs and CDC Executive Director
- Dave Sextro, Emerson Automation Solutions Process Simulation Center of Excellence and CDC Chair-Elect
- CDC Member Introductions
  - Name
  - Company
  - Association with Missouri S&T (Alumni, Advisory Board(s), etc.)
  - Interesting fact about yourself

CDC Mission: Engaging Alumni and Employers to prepare S&T students for success in the corporate world.
CDC Funded Initiatives

CDC Mission: Engaging Alumni and Employers to prepare S&T students for success in the corporate world.

2017-2018 Academic Year

- Alternative Weekend Breaks
- Miner Trek
- Stand Up Stand Out!*
- Student Leadership Conference
- Suit Closet
<table>
<thead>
<tr>
<th>Funding Update</th>
<th>Amount</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Miner Leadership Weekend</strong></td>
<td>$7,500</td>
<td>55 students attended the Kickoff event</td>
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<td>88 students attended the Student Leadership Conference</td>
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<td>102 students attended Greek Academy</td>
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<tr>
<td><strong>Alternative Weekend Breaks</strong></td>
<td>$2,500</td>
<td>10 students + Honeywell completed 80 hours of service regarding food sustainability</td>
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<tr>
<td><strong>Miner Trek</strong></td>
<td>$1,500</td>
<td>22 students, visited 4 companies in the St. Louis Area</td>
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<tr>
<td><strong>Stand Up! Stand Out!</strong></td>
<td>$1,000</td>
<td>123 Women+5 Men = 128 Attendees</td>
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<td>20 Presenters</td>
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<tr>
<td><strong>Suit Closet</strong></td>
<td>$500</td>
<td>223 students have visited this academic year</td>
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CAREER FAIR

• >230 companies at Spring Career Fair on Feb. 20
• $65,000 average starting salary for S&T undergrads
• $80,000 average starting salary for S&T graduate students
• Fall Career Fair set for Sept. 25, 2018
Fall 2017 by the numbers:

- 8,884 students: 6,920 undergrads and 1,964 grads
- 70% Missourians
- 18% out-of-state
- 11% international
- 77% men
- 23% women
- 73% white
- 13% minority
- 11% international
- 2% not specified

Steady Enrollment

<table>
<thead>
<tr>
<th>Year</th>
<th>Undergraduates</th>
<th>Graduates</th>
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<tbody>
<tr>
<td>2011</td>
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<tr>
<td>2012</td>
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<tr>
<td>2017</td>
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Totals may not equal 100% due to rounding.

Higher Education Support Per Capita, by State, FY 2015

Missouri, $193 (43rd among states)

U.S. average, $285
STATE & NATIONAL TRENDS

- Decrease in state support
- Tuition cap
  - Particularly problematic when coupled with decreasing state support
- Increased competition for excellent students, faculty, and staff
  - Especially prevalent for out-of-state students & underrepresented groups
- Changing demographics
  - High-school graduation generally flattening
  - High-school diversity generally increasing
- Changing demands for degrees, certificates, & locations
  - Increasing emphasis on post-graduate degrees and certificates
  - Students increasingly want degrees and certificates to come to them (jobs, too!)
- Cost/benefit of attending college
  - Loans and student debt increasing
  - More students with credits in hand (dual enrollment, transfer credits, etc.)
  - Increasing disparity between haves and have-nots
SERVING MISSOURI

- Trained workforce
- Research and education aimed at solving problems affecting nation’s aging infrastructure
- Technology developed at S&T used in dozens of Missouri bridges
- Developing robotic tools (drones) to monitor and inspect bridges
- Water quality testing
UM SYSTEM INITIATIVES

> Strategic planning: Missouri Compact for Education, Research, Engagement and Economic Development

> Administrative review with PwC
  – Activity Analysis Survey for all staff
    (does not include faculty)

> Affordable and Open Educational Resources Initiative
EXPERIENTIAL LEARNING

Students required to complete experiential learning component

Examples of qualifying experiences may include:

- Internships
- Study abroad
- Research
- Community service
- Leadership
- Design teams

Katie Frogge, an aerospace engineering student from Lee's Summit, Missouri, was among the first members of the public to get an inside look at a new Boeing jet in 2018.
THANK YOU! QUESTIONS?
Corporate Development Council

CEC Presentation
March 1, 2018
OBJECTIVE

Grow the stature of the college and the faculty

Increase rankings as evidence of this change
What is greatness?
Characteristics of Great Institutions

VALUES
- Integrity
- Mutual respect
- Diversity
- Inclusion

PRACTICES
- Intolerance for mediocrity
- Strong communication
- Blend of autonomy and leadership
- Universal engagement

ATTITUDES
- Apolitical
- Equitable
- Positive energy
- Sense of mission
Constituencies

People of the State of Missouri

Students and their Families

Faculty and Staff

Alumni, Companies and Funders

College of Engineering and Computing
Some CEC Priorities

1. Double externally funded research within 5 years
Integrated Research Themes

Infrastructure and Sustainability

Manufacturing and Economic Development

Smart Living

Engineering for Extremes
Infrastructure and Sustainability

Interdisciplinary research to safely and sustainably create the next-generation composites, chemicals and concrete needed for our aging infrastructure.
Manufacturing and Economic Development

Collaborating with industry partners to help companies create better products through additive manufacturing and other innovative processes
Smart Systems

Merging computer science with architecture, design, big data and the social sciences to develop smart homes, buildings and entire communities.
Engineering for Extremes

From hurricanes and tornados to hypersonic flight, extreme conditions require adaptable engineering solutions.
National search about to begin
Some CEC Priorities

1. Double externally funded research within 5 years

2. Implement a coordinated development effort across college to attract major donors
Development Activities

> Dr. Rebecca Johnson recruited as the new Director of Advancement
> In the two months last fall, personally had 40 total visits, with 24 individuals and 16 companies
> Strategic visits:
  – St. Louis and Kansas City
  – Board of Trustees
  – Initiated out-of-state outreach in Texas, our largest alumni base outside of Missouri
  – Special focus on completing funding for ACML
Some CEC Priorities

1. Double externally funded research within 5 years

2. Implement a coordinated development effort across college to attract major donors

3. Graduate half our undergraduates in 4 years and the remainder in 5 years
Factors in Undergraduate Rankings

Eng Rank

Student/Faculty

4-yr Grad Rate

6-yr Grad Rate
Some CEC Priorities

1. Double externally funded research within 5 years

2. Implement a coordinated development effort across college to attract major donors

3. Graduate half our undergraduates in 4 years and the remainder in 5 years

4. Deliver unique undergraduate and graduate programs statewide at an affordable cost
Enhance Statewide Reach
Excellence Through Innovation

STUDENT DESIGN AND EXPERIENTIAL LEARNING CENTER

2018
1300+ Design Team Students

19 Design Teams

23 Team competitions

99 Safety Classes in 21 safety courses

69,635 Miles on Design Center Vehicles to and From Competitions

6,496 man-hours in training

2,251 Student course enrollees

Learn, Succeed, Have Fun!
ENGINERS WITHOUT BORDERS
Serving people and saving lives

EWB saves lives and serves people. S&T students evaluate conditions in four “client” communities in South and Central America, and devise systems that improve the residents’ quality of life.

IGEM
• Bacteria as a tool

IGEM creates biological “machines” that neutralize smoke stack effluent, warn of encroaching contaminated river water or treat fungal disease in bat colonies.
AAVG & HPER

Two aerospace design teams in one; the airplane team designs and builds an aircraft that can lift double its own weight, while the High Performance Engineered Rocket group manufactures its own propellant to launch scientific payloads to 10,000 feet.

NUCLEAR SCIENCE DESIGN TEAM

S&T’s newest team will submit their design to the American Nuclear Society Student Design Competition. The event is strictly a “paper” submission but they’ll build a complex vacuum chamber to validate their ideas on Inertial Electrostatic Confinement, a concept that holds promise as a mode of propulsion for interplanetary space travel. Four internal groups are designing several different models to explore the problem.
STEEL BRIDGE

“Bid” on your first bridge project while still in school. The faster you can assemble it and the fewer people you need to build it, the lower the bid “price.” Lowest cost means you get the "contract."

CONCRETE CANOE

There isn't much of a market for concrete canoes, but there is a market for young engineers who can adapt a material to fit an unorthodox challenge. Students prove that ultra-light concrete can be light, strong and fun to paddle.
The Solar Car team builds and races entirely solar powered vehicles. Vehicles built by the team compete the American Solar Challenge, which is an 1800-mile cross country road race, and the Formula Sun Gran Prix, a three-day track race. Nearly 50 members work year-round to design, build, and test their vehicle. Following a 4th place finish in 2015, the team is currently building a brand new car.
MARS ROVER
First Place in the University Rover Challenge

World Champions
This undergrad team looks to the Red Planet and envisions a new generation of Mars robots, machines that will work in tandem with astronauts to explore earth’s neighbor. The event is a massive effort to determine which rover designs offer the most potential for an actual manned mission to Mars.
FORMULA SAE
USA Ranking: 1st
World Ranking: 7th
Formula SAE designs and manufactures an autocross style race car with a 0-60 time of just over three seconds. The team spends months tuning everything from suspension to the aerodynamics package to ensure optimum vehicle performance.

FORMULA ELECTRIC
Zoom zoom
This team builds a torque-crazy car using the latest battery technology. The group uses modular construction to maximize performance, flexibility and safety while minimizing manufacturing and maintenance costs.
HUMAN POWERED VEHICLE

Fast bike

A practical, enclosed human-powered “car” for running neighborhood errands, commuting to work and school, or just for fun. It’s comfortable, weighs less than 50 lbs, and reaches 40 mph.

BAJA SAE

• Max speed - 45mph

The Miner Baja SAE team builds a prototype off-road vehicle that must stand up to abuse from mud, dust, trees, hills, jumps and even collisions. And do it again the next day. Durability, marketability, presentation, cost and safety all add up to a winning design.
SOLAR HOUSE

A solar house is more than slapping solar panels on your roof. It’s about maximizing every square foot of a home. The 2015 Nest Home was inexpensive, easy to assemble, and a crowd favorite at the 2015 Solar Decathlon.

ROBOTICS

• Competes in two events

Robots are designed to perform specific tasks, and this team has its eye(s) on autonomous maneuvers on the earth’s surface as well as mining lunar materials.
Solar Car

Innovation by Necessity

- Team identified a problem
- Investigated unique ways to solve it
- Designed a world-class battery protection system

Excellence Through Innovation
STUDENT DESIGN AND EXPERIENTIAL LEARNING CENTER
2018
Human Powered Vehicle

Innovation by Idea

- “Crazy” idea brought from concept to final product
- Unique, patentable product
Mars Rover

Innovation by Failure

- Failure at first competition
- Maintained organizational structure
- Focused on technical skills
- Built an award-winning Rover, Ranked 1st in the World
Excellence Through Innovation

Missouri S&T

Excellence Through Innovation
STUDENT DESIGN AND EXPERIENTIAL LEARNING CENTER

2018
Student Research Displays

Missouri/Ozark Room

> Undergraduate Research Posters
> Graduate Fellows Poster
  – Chancellor Fellow
  – Distinguished Fellows
Student Diversity Initiatives
Student Diversity Initiatives

Mission

The mission of the SDI office is to foster diversity and inclusion in the Missouri S&T community by providing a welcoming climate for all students. The department aims to support underrepresented, first generation, and low income students from all walks of life through programming, retention, and mentoring initiatives.
Student Diversity Initiatives

Advisement of Underrepresented Student Professional Organizations, Outreach Activities

National Society of Black Engineers (NSBE)- PCI Weekend
Society of Hispanic Professional Engineers (SHPE)- Si Se Puede
Society of Women Engineers (SWE)- Girls Lock-In
Student Diversity Initiatives

Cultural Programming

Hispanic Heritage Month (September 15-October 15)
International Day of Peace (September 21)
National Coming Out Week (October 11)
Native American Heritage Month (November)
Black History Month (February)
Women’s History Month (March)
Night to Network

Night to Network is a collaboration of the Student Diversity Initiatives Department and Career Opportunities & Employer Relations. Networking event held the night before each Missouri S&T career fair. Approximately 100 employers and 250 students attend biannually (Spring and Fall), cultivating friendships, sponsorships, and career networking.

For additional information contact us at 573-341-7286.
Student Diversity Initiatives

Additional Support

Professional Development Opportunities
Commuter’s Commodities Food Pantry
Closets are for Clothes, Clothes Closet
The SDI Student Center- Study Space
Diversity Scholar’s Mentoring Program- Fall 2018’
Luncheon discussion with Campus Leaders and Students about Volunteer-ism

Service and volunteerism mean different things depending upon how you have chosen to serve, via a leadership role in a civic or professional group, as a volunteer youth coach, as a project leader or a general contributor. Reflecting upon the various ways you’ve served on campus or in the community, as students and alumni/partners, how has the choice to serve contributed to your career opportunities or success?
Student Leading Student Presentations

- Alternative Weekend Break
  - Erika Simple
    > Senior, Civil Engineering
  - Jessica Haywood
    > Program Administrator for Volunteerism & Greek Life

- Stand Up! Stand Out!
  - Emily Lapreze
    > Senior, Civil Engineering
Alternative Weekend Break Programs (AWB)

Presented by: Erika Simple & Jessica Haywood
About AWB

Alternative Weekend Break is a volunteer program that encourages S&T students to get involved and engaged in communities throughout Missouri.

- A group of 10 students travel to cities within Missouri for a weekend of volunteering in the community and learning about social issues.
- We leave Rolla on Friday afternoon, participate in service and reflection on that Saturday and half of Sunday, and return to Rolla Sunday afternoon.
- Each trip is led by a student leader and attended by a faculty/staff advisor.
- Trips are interdisciplinary and open to any student.
Past Programs

Fall 2016
Hunger & Homelessness with MYNAH Technologies

Spring 2017
Environmentalism & Sustainability with AT&T

Fall 2017
Sustainable Food Systems with Honeywell
Corporate Partners

- Each trip partners with a corporation that has ties to Missouri S&T
- Corporations send volunteers to work alongside our students on Saturday
- Great opportunity for students and employees to interact and network
- Many corporate volunteers who have joined us have been S&T Alumni.
Alternative Weekend Break
Fall 2017

Sustainable Food Systems-Kansas City, MO
Logistics

- Students register online
- The group of 10 students meets a few days prior to the trip to discuss community partners, projects, and travel logistics
- We stayed at an affordable group lodging, at facilities called Jerusalem Farm.

Alternative Weekend Break - Sustainable Food Systems KC

**Schedule**

**Friday**
3:00pm- Meet at SILC  
3:15-3:30pm- Leave Rolla  
7:00pm- Arrive at Jerusalem Farm  
7:30pm-8:30pm- Cook dinner, eat, clean up  
8:30pm-10pm- Reflection, group time, games, etc.

**Saturday**
7:45am-8:45am- Breakfast  
8:45am- Leave for 7 Oaks Community Garden  
9:00am- Start Service Project  
12:00pm-1pm- Lunch Break  
1:30pm- Finish Service Project  
3:00pm- Free time or time to explore KC  
6pm- Cook dinner, eat, clean up  
6pm- Reflection  
9pm- group time, games, etc.

**Sunday**
6:00-7:00am- Breakfast  
7:00am- Load vans  
7:15/7:30am- Leave for Gleaning  
8am-12pm- Volunteer gleaning with After the Harvest  
12pm 12:30pm- Lunch  
12:30-2pm- Finish service project  
2pm- Reflection  
2:30pm- Leave for Rolla  
6pm- Arrive at Rolla
Sustainable Food Systems

Community Partners

> Kansas City Community Gardens
  • Mission – assist low-income households and community group to produce vegetables and fruit from garden plots.

> After the Harvest
  • Mission – rescues nutritious fruits and vegetables from going to waste and donates them to agencies that serve hungry people.
Honeywell

- About 8 volunteers who were employed at Honeywell joined our group of students to volunteer at the KC Community Garden on Saturday.
- While we worked, students and employees were able to connect, talk about school and work, and network.
Reflection

> After each service, as a group, we reflected and discussed the things we learned and did that day.

> This allowed the group to have an open discussion and think deeply about the community and social issues that exist.
Overall Experience

- Different Experience – Living environment and working with people with different backgrounds.
- Learned a lot from the community partners & corporate partners.
- Fun and Adventurous
- Meeting new people and working with others that enjoy helping others.
- Teamwork!
Upcoming Program

- April 20-22\textsuperscript{nd}, 2018
- Saint Louis
- Homelessness & Hunger
- Corporate Partner: Ameren
CDC Support

> The funding from CDC enables us to largely subsidize the cost for participants, who only pay $25.00

> This makes the program more accessible

> Each program costs about $500-$600

> CDC corporations can partner with us for service
Student Impact

> Overall, we have seen a lot of student interest in this program.

> We are drawing a very diverse group of students, including international and graduate students

> Students have great things to say about their experiences

93% Of participants agree or strongly agree participating in AWB made them want to Volunteer more

100% Would recommend our program to their peers

"Volunteering really helps to educate me on issues and ignite a passion to make a difference."
-Fall 2017 participant

"I liked the reflection activities to really think deeper about the impacts we are trying to improve or the issues around the world we don’t usually think about"
-Fall 2017 participant
Questions?
Interested in partnering with us?

Contact:
Jessica Haywood
Program Administrator for Volunteerism & Greek Life
haywoodj@mst.edu
STAND UP!
STAND OUT!
Empowered Women, Empower Women!
Overall:

Attendees:
> Women’s Empowerment Event
  – Engineering School
> Networking Opportunity
  – College level
  – Professional level

Personally:
> Networking with speakers
> Interview topic
> Future event knowledge
> Public speaking skills
Numbers:

> 1 Keynote Speaker
> 3 Panels
> 3 Sessions
> 10 different presentations

> ~150 attendees
> 12 donors
> 10 out of town speakers
> 8 organizations
Thank You

> Boost Attendance:
  – Lunch Provided
  – Raffle Prizes

> Travel Assistance

> Handouts for Event

> Peace of Mind
  – Future relations
Student Panel Representatives

> Paul Black
  – Associated Students of the University of Missouri, Miner Aviation (Aircraft Design Team) Student Activity and Finance Board, National Residential Hall Honorary, American Institute of Aeronautics and Astronautics, Student Council, and Residence Hall Association

> Lauren Hindrichs
  – Zeta Tau Alpha, Panhellenic Council, and Associated General Contractors

> Elizabeth Oberley
  – Chi Omega, Miner Challenge, Alternative Break Program, and Blue Key Honor Society

> Andrew Rausch
  – Mars Rover and Cycling Club

> Heather Reynolds
  – Phi Sigma Rho Social Sorority, Greek Independent Board, National Residential Hall Honorary, and Student Union Board

> Amalia Tettambel
  – Women's Varsity Soccer, Student Athlete Advisory Committee, Chi Omega, and American Nuclear Society

> Scottie Thomas
  – Student Council President, Student Union Board, and Chancellors Leadership Academy
Student Panel Questions

> As a result of your leadership experiences, what do you believe will help you the most when you graduate?

> What do you want in an employer?

> What are the most important things you look for in an employer?

> What are your expectations regarding performance feedback?

> What are your overall expectations of an employer?

> What opportunities do you have for employers to engage with your group?
  - How do you want employers to engage your group?
Round Table Discussions

Please check the information sheet at your place setting for your specific group and location.

- Table 1 – Meramec/Gasconade Room
- Table 2 – Shamrock Room
- Table 3 – Meramec/Gaconade Room
- Table 4 – Meramec/Gaconade Room
- Table 5 – Meramec/Gaconade Room
- Table 6 – St. Pat’s Ballroom C
- Table 7 – Mark Twain Room
- Table 8 – Meramec/Gasconade Room
Student Engagement Opportunities

> Career Opportunities and Employer Relations (COER)
  – Spring Break Externship, March 26-30
  – Miner Trek
    > For more information, contact Sammatha Wilcox, sammatha@mst.edu.

> Chancellor’s Leadership Academy (CLA)
  – Meetings are Wednesdays from 4:00 p.m. to 6:00 p.m.
    > For more information, contact Dr. Eddie Grover-Bisker egroverb@mst.edu.

> The Professional in You (student employee training)
  – October 2, 2018 from 5:30-8:30PM
    > For more information contact Sara Lindeman, stryffelers@mst.edu.
Student Engagement Opportunity TODAY!

Etiquette Dinner Sponsored by Career Opportunities and Employer Relations, 4:45-7:00 PM, Havener Center, St. Pat’s Ballroom A&B
Thank you for attending!

Hosted by:
Office of the Vice Chancellor of Student Affairs