ENGAGING ALUMNI AND EMPLOYERS TO PREPARE S&T STUDENTS FOR SUCCESS IN THE CORPORATE WORLD

Corporate Development Council
CDC INITIATIVES

- Opening Week Mini Career Fair
- Backpack to Briefcase
- Student Leadership Conference
- Etiquette Dinner
- Externship Program
- Suit Closet
- Miner Challenge
- Keynote Speaker for Diversity Awareness Program
- Student Professional and Leadership Development Guides
Five course dinner focusing on the fundamentals of proper dining etiquette
Spring 2015 Externship Employers

AT&T
Black & Veatch
Bric Partnerships
Cargill
Cerner
Concrete Strategies
Garmin
Honeywell

International PROOF Systems
Kohler
Lumate
Mallinckrodt
MoDOT
Monsanto
TSI Engineering
Zieson Construction
• “My favorite part was conversing with the employers. Being able to ask them questions about their career, why they choose their career, and how it related to their degree choice really helped me narrow a direction for my future career.”
  - Cerner Extern

• “I liked learning how parts of my education that I am getting right now could/will come in handy in the future...”
  - Code Consultants, Inc. Extern

• “I really enjoyed the externship program. The best part was getting to see the ways that my classwork is applied in industry. I met with several chemical engineers all doing completely different projects within the same company. This is a great program. Thanks so much for setting it up! The things that I learned and the people that I met were really cool. This experience was invaluable.”
  - Mallinckrodt Pharmaceuticals Extern

• "The externship program was an amazing learning experience for me! I originally applied for the program because I was unsure of the kind of career that I wanted. Spending four days with employees from Cargill made me realize not only how diverse their company is, but chemical engineering as well. Talking with others about their experiences allowed me to see the numerous career choices within chemical engineering."
  - Cargill Extern
98% would recommend Miner Challenge to a friend
97% gained a greater awareness of their values, beliefs, and ideas
95% had improved perspective of issues related to service and involvement
## Winter Break Trip
Nicaragua  
Community Development

## Spring Break Trips
Harlan, KY  
Poverty
Hammond, LA  
Disaster Relief
Colorado Springs, CO  
Economics & Community
Montgomery, AL  
Inter-City Development
Harden County, TN  
Animal Rescue/Environmental
• “As a trip leader, I learned a lot about myself, how I work, and how I can better lead a group of people in the future.”

• “It has been one of the best experiences in my entire life. No questions”

• “The trip was beyond my expectations. We worked really hard, which I loved because it made it feel like we were truly contributing to the community. But we also were able to interact on a very meaningful level with the community members and understand their history, their way of life, their culture, and their goals for the future.”

• “I built many meaningful relationships and felt I had a true impact on the lives of the community. Every day was a new challenge and pushed me further than I expected. The amount of work the community of Santa Julia performs and the fact that they are so open and welcoming to new people really touched me. I was able to take back a new lesson each and every day and hope to incorporate it into my daily life.”
Ethics Scenarios - Could This Be You?
- Evening game show event covering ethical scenarios grads are likely to encounter

Engaging Students in Industry-led Projects
- Working with faculty and administration, develop a process and list of projects of interest to CDC member companies that enable engagement of students with industry

Students Leading Students
- Juniors and seniors lead a group of freshman to accomplish a task in alignment with the goals of a charitable/service organization, technical society, or possibly an MS&T initiative.
NEW CDC INITIATIVES

- The Professional In You
- Miner Trek
- Leadership Certificate Program Peer Mentor Stipends and Training Materials
- Lunch and Learn Professional Development Programs
- Diversity Leadership Conference Scholarships for Students
- Career Fair Boot Camp
- Brand U

The Professional in You

Wednesday, September 9, 2015
5:30PM - 8:30PM
LEADERSHIP CERTIFICATE PROGRAM

Emerging Leadership Institute
Organizational Leadership Institute
Professional Leadership Institute
Corporate Development Council

Elizabeth Smith, Chief of Staff

Sept. 9, 2015
Record enrollment

- 92% increase in students since 2000

First-week numbers:

- 6,840 Undergraduates
- 2,051 Graduates
- 8,891 Total
Increasingly diverse students

We’re breaking several records this year*

<table>
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<tr>
<th>Students</th>
<th>2014</th>
<th>2000</th>
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<tbody>
<tr>
<td>Hispanic-Americans</td>
<td>270</td>
<td>7%</td>
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<tr>
<td>Asian-Americans</td>
<td>270</td>
<td>17%</td>
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<tr>
<td>Multi-Race/Ethnicity</td>
<td>190</td>
<td>14%</td>
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<tr>
<td>Total Minority</td>
<td>1,063</td>
<td>9%</td>
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<tr>
<td>Under-represented Minority</td>
<td>724</td>
<td>4%</td>
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<tr>
<td>Female</td>
<td>2,047</td>
<td>5%</td>
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</table>

* Numbers as of the end of the second week of class

** Students have been able to identify as multi-race/ethnicity since 2010
Pathways to Missouri S&T

33% took at least one class through Project Lead the Way

19% attended summer camp at Missouri S&T

12% involved with VEX Robotics

15% involved with FIRST Robotics
Schrenk Hall Renovation
As enrollment increases, a focus on meeting the needs of students and faculty

- Residential Complex
- Experimental Mine
- Dining options
First-year students now required to complete experiential learning component to graduate

Examples of qualifying experiences may include:

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

Kayla Billadeau, ME ‘13, paraglided in Vancouver, Canada, while working as an intern for ConocoPhillips in Alaska
National rankings put Missouri S&T in the spotlight

3rd Public university for annualized return on investment
Payscale.com, 2015

4th Number of athletes named academic All-Americans
NCAA Division II, 2015

6th Best small-town campus among public universities
BestColleges.com, 2015
Successful graduates

Starting Salary Potential

15th in the nation public and private
7th in the nation public universities
2nd in the Midwest public and private
10th in the nation for engineering

Undergraduate
Starting Salary:
2012: $59,504
2013: $61,412
2014: $63,350

Graduate
Starting Salary:
2014: $75,182
John F. Eash
Executive Director of Corporate Relations

**Start date:** Aug. 3  
**Background:** Division Director for Supplier Quality Regional Operations for Boeing, a Missouri S&T graduate and past president of Miner Alumni Assoc.

Dr. Anthony R. Petroy
Assistant Vice Chancellor for Global Learning

**Start date:** July 13  
**Background:** Assistant Vice President for Online and Off-campus programs at Robert Morris University
Royalty income
FY13 – $220,000
FY14 – $368,000
FY15 – $483,000

U.S. patents filed
FY13 – 25
FY14 – 29
FY15 – 31

Number of license and option agreements
FY13 – 16
FY14 – 22
FY15 – 35

Courtney Fiebelman, a graduate student in applied and environmental biology, studies fruit flies in a Schrenk Hall laboratory.
• **Goal to add at least 100 additional faculty by 2020**, many in Signature Areas

• We have hired 25 new faculty

• We are in the process of hiring 13 additional faculty
THANK YOU!
From Mars
Office of Technology Transfer and Economic Development

ecodevo.mst.edu | businessdevelopment.mst.edu | techtransfer.mst.edu
## Technology Transfer

- **Record year for Royalty Income**: $483K

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<thead>
<tr>
<th></th>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
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<tr>
<td>Invention Disclosures</td>
<td>40</td>
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<td>Patents Filed</td>
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<td>22</td>
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<td>15</td>
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<tr>
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<td>10</td>
<td>6</td>
<td>16</td>
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<tr>
<td>Royalty Income ($K)</td>
<td>195</td>
<td>427</td>
<td>228</td>
<td>265</td>
<td>220</td>
<td>368</td>
<td>483</td>
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Borate Bio-Glass Tissue Repair

11 Inventions/17 Patents Issued and Pending

License to MO-Sci for Human use
License to RediHeal for Veterinary Use

Direct Market Dermafuse® (wound care)
Sublicense for Dental Care
Sublicense for Acne treatment
Sublicense for Bone Repair

Initial 7 Days 127 Days

6.6cm L x 7.5cm W x 2.5cm D
6.0cm x 6.75cm x 1.5cm ~50% decrease in volume
Resolved

http://www.rediheal.com/RediHeal/Case_Studies/Case_Studies.html
MoodTrek works side-by-side with your therapy plan and allows you to track your progress by capturing three areas of daily life: activity, sleep and mood.

MoodTrek helps you quickly share symptom history with your provider via an export, allowing you to focus your time on what is important to you.

- “App” to assist with mental health concerns
- Licensed to Cerner Corporation & commercialized through the Tiger Institute
- mood-trek.com
Faculty and Graduate Student Entrepreneurship

- 8 Weeks session – 1st cohort completed, 5 ongoing business

- Based on Steve Blank – lean launch pad/business model canvas methodology

- Will repeat in the fall 2015

http://steveblank.com/category/lean-launchpad/
https://www.udacity.com/course/ep245
Venture Lab - Student Business Incubator

Services Provided:
• Professional work space
• Use of building conference room
• Mentoring and business assistance
• Access to venture financing
• Rapid Prototyping, 3D printing

Current tenants: Dual Case, Off Kilter Studios, Canvas Electronic, ProtoQ, SoloBuy, Victory Pieces, Zimmerman Tech, HuffleHealth, Intercept Research

http://ecodevo.mst.edu/info/student-business-incubator/
James Brizendine
Senior, Environmental Engineering

Exploring commercialization opportunities for using Missouri S&T technology to improve how biofuel refineries produce biodiesel.

Bhanu Baddipadiga
Ph.D. candidate, Electrical Engineering

Exploring commercialization opportunities for using a plug-n-play high-gain DC-DC converter to allow solar panel manufacturers to integrate renewable energy and energy storage capabilities into DC-based smart grids.
Primary Objective

The primary objective of this project was to use Steve Blank’s customer development methodology coupled with the Jobs-To-Be-Done (JTBD) approach to innovation and Anthony Ulwick’s outcome-driven innovation (ODI) framework to improve the technology commercialization process at Missouri University of Science and Technology (Missouri S&T).

The Office of Technology Transfer and Economic Development (TTED) at Missouri S&T used this approach to evaluate commercialization opportunities for the non-destructive testing (NDT) technology portfolio developed by Dr. Reza Zoughi and his research team in the field of human skin burn treatment.

Original Commercialization Concept Statement

Use {the non-destructive testing (NDT) technology portfolio developed by Dr. Reza Zoughi and his research team} to improve how {skin burn specialists at burn treatment centers} {treat severe skin burn wounds on human patients}.
Intro to Corporate Relations

Missouri University of Science and Technology
Founded 1870 | Rolla, Missouri | www.mst.edu
Topics

• My Background
• Mission/Vision/Roles
• Corporate Touchpoints/Tiers
• Q&A
My Background

• Education
• McDonnell Douglas/Boeing
• Campus Engagement
• Boeing S&T Exec Focal
• S&T Corporate Relations
Mission
Establish and grow relationships with all levels of corporate partners that provide mutual benefit to all stakeholders

Vision
S&T is the institution of choice for partners seeking a highly qualified workforce, innovative research, relevant educational programs, and technology and ideas that help solve the great challenges of our time
Roles of Corporate Relations Office

• Integrate university functions to fundamentally improve industry partnerships
• Connect industry needs with university assets
• Serve as a single interface to assist companies with university engagements
Corporate Touchpoints
Corporate Partner Tiers

**Description**
- **Single Point of Engagement**: Involved in a limited capacity
- **Managed Relationship**: Has a few points of interest that require coordination
- **Tailored Partnership**: CR Works closely with Co to identify value-added opportunities for deep relationship
- **Broad Based Engagement**: Engaged across multiple units in a variety of ways, with company leadership participation
- **Strategic Partner**: Relationship is long-term, with significant, ongoing, financial contributions (sponsored research, gifts, etc). Requires coordination with multiple internal offices

**Levels of Engagement**
- **Tier 5**: Traditional Engagement
- **Tier 4**: Company A - Clinical Trials, Company B - Vendor, Company C - Sponsored Research
- **Tier 3**: Company D - Student Group, Recruiting, Gifts, Company E - Sponsored Research, Gifts, Company F - Matching Gifts, Executive Speaking
- **Tier 2**: Company G - MBA Recruiting, Gifts, Trustee, Company H - Eng, Recruiting, Faculty Awards, Gifts, Sponsored Research, Company I - Clinical Trials, Gifts, Board member
- **Tier 1**: Company J - Sponsored Research, Gifts across campus, Student Groups, Trustee, Company K - Master Agreement, Company L - Student Group GIK, Sponsored Research, Gifts across campus, Company M - Sponsored Research, Gifts across campus, Recruiting, Student Groups, Trustee, Recruiting, Student Groups
Sustainable Education Experience

- Wednesday, 4 November, 9:00 – 3:15
- Missouri S&T Havener Center
- Overview of Distance Education Programs
  – Degree and Non-Degree
- Demo of HD Classroom Technologies
- Interactive Forum/Panel Discussion
Q & A