

GSE is a Campus Treasure: An Economic Powerhouse at Missouri S&T

1. **Enrollment:** As of Spring 2012, GSE total student enrollment is 503 students.
 - ♣ 2nd largest graduate student enrollment among 19 departments: 146 total MS and PhD's
 - ♣ 5th largest undergraduate enrollments among 19 departments: 251
 - ♣ 4th largest total campus plus distance enrollment among 19 departments: 503
2. **Distance Enrollment:** 3rd largest enrollment among 10 depts who offer distance classes: 106
3. **International Student Enrollment:** Students come from all over the world to study GSE programs. GSE's programs are "destination" programs which attract many students. Other campus programs have SCH's because of GSE majors.
 - ♣ 2nd largest department on campus in total international student enrollment: 172
 - ♣ 1st largest department on campus in undergraduate international student enrollment: 71
 - ♣ 19.6% of all international students on campus are in GSE. (ECE is #1 with 20.8% total)
 - ♣ 40.6% of all undergrad intl students on campus are in GSE. (Min/Nuc is #2 with 19.4%)
4. **Faculty/Staff:** GSE's number of equiv faculty (20) is 10th on campus. (GSE has 3 clerical staff)
5. **GSE's General Revenue Allocation is 10th on Campus among 19 departments.**
GSE's Gen Revenue Allocation is \$2.4 million, which is 8th on campus per faculty FTE. Geology and Geophysics professors in particular are underpaid: The average G&G professor earns \$84,773 per AY—\$20,000 under comparable science and engineering departments at Missouri S&T. Most GSE faculty are underpaid compared to the industry and our S&T peers.
6. **GSE is #6 on the campus in the total number of Student Credit Hrs taught per faculty in 2011.**
 - ♣ GSE is #2 on the campus in the total number of graduate SCH taught in 2011!
 - ♣ AND, GSE is the LARGEST Engineering Department in SCH/FTE.
 - ♣ GSE is #12 on the campus in the total number of undergraduate SCH taught in 2011!
7. **GSE is #5 on the campus in total research expenditures (\$1.67 million) in Cal Yr 2011.**
 - ♣ GSE is #4 on the campus in the total indirect (\$581K) returned to the campus in Cal Yr 2011.
8. **GSE is #6 on the campus in total income generated from SCH in 2011 (\$3.3 million).**
9. **GSE is #2 on the campus in profit (SCH income plus total indirect return minus Gen Rev Alloc): \$1.4 million!**
 - ♣ GSE is #6 based on the total economic footprint of the department and based on net economic benefit.
 - ♣ GSE produces \$7.45 million of activity on a General Revenue Allocation of \$2.4 million
 - ♣ GSE's Net Economic Benefit to the Campus is \$5 million (\$7.4 million - \$2.4 million)
 - ♣ GSE is #2 based on the net economic benefit of the department per FTE faculty (\$248K per FTE faculty)
 - ♣ GSE is #2 based on the ratio (Net Economic Benefit to Campus)/(General Revenue Allocation)
 - ♣ GSE produces \$2.09 of economic benefit to the campus for every \$1 of General Revenue it receives.

In my opinion, GSE is underfunded with General Revenue funds relative to its total economic productivity compared to other engineering departments.

I believe that this is a time that S&T should invest more resources (funding, office/lab/other space, faculty lines, clerical) into the GSE program. We have proven to be a highly profitable department in this time of growth in the energy sector. More resources invested into GSE will enable us to continue to draw students from around the world, to continue to produce competitive research, and to play a key role in addressing the energy crisis which is the world's greatest global challenge.

Alumni and Mines and Met members: Thank you for your generosity over the years, especially when we weren't this strong! Your investment and support have made all the difference!

Ralph E. Flori

March
2012

m & m academy newsletter

Chair's Corner

Dear Mines and Metallurgy Academy Members,



It is once again time for our annual Spring meeting, banquet, and induction ceremony. This year's events will be held on Thursday, April 19, 2012. You will see the highlights of our business meeting on the attached agenda. There will also be a luncheon planned for spouses attending.

This year we will again be recognizing two faculty members for their excellence in teaching and research. In addition, we will be honoring seven students selected from the 20 that were nominated as graduating seniors with the highest potential to excel in their professional careers.

You will see on the attached reports some of the great accomplishments made by our three departments as well as some departmental concerns. Enrollment has remained at about 1200 students. The Mining Engineering Program is now the largest, and Nuclear Engineering is now the 5th largest undergraduate program in the United States. The Geological Sciences and Engineering Department now has the second largest graduate student enrollment among 19 departments on campus. Materials Science and Engineering had a 100% graduate placement rate in December 2011. Graduates in all three departments continue to receive impressive starting salaries.

We will be inducting Dr. Dennis Croessmann ('81 Nuclear Engineering), Senior Manager, Sandia National Laboratories; Philip McPherson ('83 Ceramic Engineering), Senior Vice President, Technology at Saint-Gobain Containers, Inc.; Dr. Phillip Ferguson ('88, '93, and '95 Nuclear Engineering), Neutronics Team Leader, Oak Ridge National Laboratory, and Ricky Martin ('82 Metallurgical Engineering), Enterprise Manager, Boeing.

Our two faculty honorees are Dr. Bill Fahrenholtz, Professor of Ceramic Engineering, and Dr. Runar Nygaard, Assistant Professor of Petroleum Engineering.

Hope to see you on April 19th.
Keith Wedge, Chair
Mines and Metallurgy Academy
March 2012

Mines and Metallurgy Academy Business Meeting April 19, 2012	
9:30 AM	Opening Remarks/Introductions
9:40 AM	Approval of Minutes/Committee Reports
10:00 AM	Development Report (Mary Bird)
10:30 AM	Break
10:45 AM	Department Reports
11:30 AM	Lunch with Student Scholars
12:30 PM	Student Presentation of Work Supported by Jackling Fund
12:45 PM	Faculty Award Recipients / Introduction and Presentations
1:30 PM	Tour of Mo-Sci
6:00 PM	Reception (McNutt Hall)
7:00 PM	Dinner, Scholars Awards, Faculty Recognition, and New Member Induction

Students

- ♣ **180** total undergrad students (even)
→ 93 MetE / 87 CerE
- ♣ **49** graduate students (down 15%)
→ 8 Met / 9 Cer / 32 MSE
- ♣ ≈ \$329K in endowed scholarships given out in AY11-12; ≈ \$125K in competitive scholarships from professional organizations
- ♣ Keramos & Material Advantage Groups win National Awards at MS&T



- ♣ 100% placement rate in Dec 2011; starting salaries Met: \$57,444 Cer: \$64,880



Alumni

- ♣ December 2011 Commencement Professional Degree recipients



Faculty

- ♣ Professor Hilmas named Curators' Professor at the December 2011 Commencement



- ♣ The 23rd A. Frank Golick Lecture was given by Daniel Shechtman, 2011 Nobel Prize Winner in Chemistry



- ♣ Eugene Olcott (MetE '40) Metallography Lab completed



News from 2011-12

2011-12 MNE STATISTICS

- ❑ Enrollment at **456**; **236** Seniors, Juniors, and Sophomores; **110** Freshmen; **110** ME/MS/PHD
- ❑ **\$350K** in endowed, industry & competitive scholarships
- ❑ MNE will graduate **54** MinE and **35** NucE students, the Largest in a decade
- ❑ **100%** placement for Fall 2011 grads with **\$68K** starting salary
- ❑ **More than 90%** of MNE students are involved in Extracurricular Activities

MAJOR MNE RESEARCH

- ❑ A New **\$1.2 M** Faculty Development Grant and Scholarships from USNRC
- ❑ **\$650K** funding by CDC NIOSH, Caterpillar, Peabody on *Dump Truck Vibrations Research*
- ❑ **\$430K/Year** funding by Department of Homeland Security for *Counter-Terrorism Research*
- ❑ **\$1.7 M** funding by CDC-NIOSH for *Mine Safety and Health Research*
- ❑ **\$2.4 M** DOE award for *Slurry Jet in Enhanced Geothermal Energy* (With Impact Tech as PI)
- ❑ **\$1.75 M** USNRC/USDOE, for *Faculty Development*
- ❑ DOE **\$180K** funding for *S&T-Lincoln Partnership in Education Research*

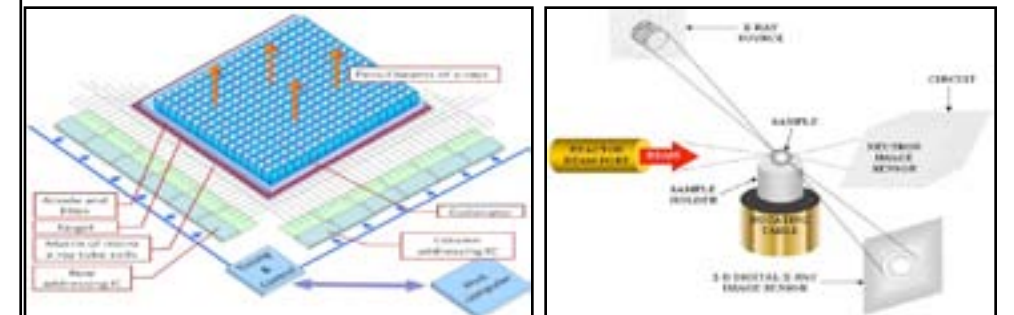
MINING AND NUCLEAR ENGINEERING GROWTH!!

- ❑ **Enrollment** has more than doubled over 5 years from 220 to 456. Mining Engineering is the largest program in the US; Nuclear Engineering has the 5th largest undergraduate program in the US
- ❑ **Graduate Enrollment** has more than tripled from 30 to 110
- ❑ **Research Capacity:** \$2 million per year with expectation to increase rapidly as the 7 new faculty members gain traction
- ❑ **New Programs:** (i) MS, Graduate Certificate and Explosives Technology in Explosives Engineering; (ii) A Mineral Processing Minor; (iii) Nuclear Medicine Research Focus. **Future programs:** (i) PhD in Explosives Engineering; (ii) BS in Mining Engineering (with Mineral Process Option); (iii) MS in Energy/Mineral Economics; and (iv) BS/MBA Option for Mining Engineering.
- ❑ **Global Frontiers:** (i) MNE is developing a new Mining School in Saudi Arabia; (ii) Partnering with Barrick Gold to develop a 2+2 program in the Dominican Republic; (iii) Contributing to develop the Mining Engineering Program at the new Sichuan Missouri University in China; (iv) Strengthen its relationship with Botswana, Ghana, Brazil, China, Peru and Australia
- ❑ **Space for Growth:** Mining Engineering lost over 60% of its space in McNutt in 1990 and 2000. A new building is in order to cater for the expansions in MNE and other programs in McNutt.

LABORATORY CAPACITY ADD VALUE TO EDUCATION



Mining Engineering will complete its \$700K Surface Mining Simulator Facility by April 2012 for Education and Research



The New X-Ray Source/CT Imaging Laboratory has created the Environment to advance Nuclear Medicine Research