Chair’s Corner

Dear Alumni, Colleagues and Friends,

Greetings from Rolla! As I write this letter we are two weeks into the new semester, and once again students are living at hotels in town. Enrollment is over 7,000! Numbers like these occurred in the early 80’s when I was an undergraduate, and I remember the stress this placed on everybody. Ceramic and Metallurgical Engineering both have healthy enrollments (72 MetE and 67 CerE Soph/Jr/Sr) – a number we can handle in terms of lab facilities and placement. And we have 52 new Freshmen! Wow. That’s a record. Honestly it’s the strong support of our alumni that allows our CerE/MetE disciplines to exist as stand-alone programs, and thrive during years of budget cuts and lack of state funding for equipment. As shown in the accompanying tables, only three ABET-accredited CerE programs and seven MetE programs remain. The other have gone the way of materials science and engineering, and often become subsets of larger departments such as mechanical or chemical engineering. Our steadfast dedication bodes well for our graduates in terms of employers who seek the in-depth education we give the students.

This newsletter reports on many of the important issues that affect student success, our #1 priority. Almost every measure we gauge ourselves on is on the increase, including enrollment, scholarships awarded, average starting salaries, research productivity, and student and faculty awards and recognitions. This is a direct result of the quality of our students, staff and faculty. I know you will enjoy reading about all the great things going on.

This year many distinguished alumni and leaders came to the department to give lectures, most notably Robert C. Tooke (MetE ’62, ’66 & ’72), the Inaugural Thomas J. O’Keefe Lecturer, and David Matlock, the Golick Lecturer. Both gentlemen gave inspiring seminars to the students. This fall Kenneth D. Gielow (’70, ’71 MetE) will give the 2nd O’Keefe lecture – details are herein.

We hope to see you there! Last year Bill Horst (’51 MetE) and his wife Ann endowed the Thomas J. O’Keefe Student Professional Fund, and I’m proud to let you know that as a result, the new activities of Materials Advantage, AFS, Alpha Sigma Mu and Keramos won them national awards again.

The Phonathon is coming up on October 6–7th, and 10-14th. As always, we’ll have a hard-working group of students calling for your help. Last year the Metallurgy and Ceramics departments raised a $65,107. Thank you for helping the future generations of Metallurgical and Ceramic Engineers!

Wayne Huebner
September 2010
Congratulations Graduates!
During AY 2009-10≈ 80% of MSE graduates had a job when they walked across the stage, and almost all had a job within a few months of graduation. The average starting salary of 2009-2010 graduates:
Met: $59,500
Cer: $57,500

At the career fair held on September 21st over 150 companies came to campus to recruit students. Of these ≈28 were seeking CerE and MetE students.

The accompanying figures show where the CerE and MetE graduates have been employed over the last ten years. Most of our students head to industry, although with the downturn in the economy many more stayed in school to pursue a graduate degree.
Meghan McGrath Attends Nobel Laureates Meeting

Meghan McGrath, a Ph.D. candidate in Metallurgical Engineering, was one of 650 young researchers from around the globe to attend the 60th Annual Lindau Meeting of Nobel Laureates and Students in Lindau, Germany—an island city in the Lake of Constance, Germany. This was the 3rd interdisciplinary meeting that brought together young researchers with 59 Nobel Laureates from the fields of physiology or medicine, physics and chemistry with the intention to provide an environment for open and informal meetings between the young researchers and the Laureates.

Meghan passed a multi-stage international selection process in which over 20,000 young researchers from over 60 countries applied. The process began with a nomination from Dr. Wayne Huebner and her advisor, Professor David Van Aken. Meghan was one of 75 graduate students from the United States to attend the meeting, who were sponsored by the Department of Energy, National Science Foundation, Mars, Inc., Oak Ridge Associated Universities, and National Institutes of Health. Her selection was based on her current research being funded by a NSF-DOE grant to develop a new advanced high strength steel that is lighter weight for the automotive industry. The meeting provided outlets for the students to interact with one another and to build networks within and outside of their fields. Interdisciplinary research was greatly emphasized throughout the meeting.

During the meeting, the Laureates lectured on topics related to their fields in the morning sessions and participated in small group discussions during the afternoon sessions. Many of the talks focused on interdisciplinary issues connecting biology, chemistry and physics along with global issues such as diseases, education, and energy. According to Meghan, Oliver Smithies, a 2007 Nobel winner in physiology/medicine, gave one of the more revere lectures of the meeting by providing anecdotal stories of his research with sharing pages from his lab notebooks. He provided great advice about being a researcher that could resonate with anyone—find work that you wake up every day excited to do. Along with lectures and discussions, young researchers interacted with the Laureates through organized lunches and dinners, where Meghan had the chance to talk with Walter Kohn (1998 Nobel winner in chemistry), Yuan Tseh Lee (1986 Nobel winner in chemistry), and James Cronin (1980 Nobel winner in physics).
Mark your calendar, we will be calling.

Phonathon 2010
October 6-7 & 10-14

ASM Materials Education Foundation Scholarship Winners

Josh Holzhausen
William P. Woodside
Founder’s Scholarship

Roger M. Rettig, IV
George A. Roberts Scholarship

FEF College Industry Conference

Sam Buckholz, Edith Martinez, Von Richards, Valerie Jamerson, Jacob Johnson and Ryan Shaw

The 62nd annual conference was held in November in Chicago. Over 225 industry executives, students (74), and key professors were in attendance. In total $35,000 in scholarships and awards were presented, and S&T student, Jacob Johnson, received the Robert Wolf Memorial Scholarship.

Professor Von Richards is a FEF Key Professor, and makes sure our students always are in the hunt for CIC and FEF scholarships and awards!

AGPM Scholarship Winners

Alex Wilmot, Margret Powell and Maddy Bowles won scholarships sponsored by the Association of Glass and Pottery Manufacturers. The AGPM is a small group of US factories that produce glassware and pottery primarily for the American market. The organization created this new scholarship program at Missouri S&T to both enhance recognition of the glass and pottery manufacturing segment and to encourage recruitment at the collegiate level.

MSE MetE Students Win the Speaking Contest at AISTech 2010
Pittsburgh, PA, May, 2010

Speech Title: “Antimicrobial Applications of Copper Alloys”

AIST Scholarships

MetE students were again the top university in North America in receiving scholarships from the steel industry through the AIST Foundation.

Scott Pisarik  AIST Foundation Premier Scholarship ($20,000 - $10,000/year for 2 years
Brandon Ensor  Ferrous Metallurgy Education Today Scholarship ($10,000 - $5,000/year for 2 yrs)
Stephanie Mieth  Ferrous Metallurgy Education Today Scholarship ($10,000 - $5,000/year for 2 yrs)
Kyle Bevans  Ferrous Metallurgy Education Today Scholarship ($10,000 - $5,000/year for 2 yrs)
May 2010 Commencement

Professional Degree recipients

Each year the department is allowed to nominate distinguished alumni to be honored at Commencement Exercises with a Professional Degree. This year MSE was successful with two nominees, Mike Deelo, MetE ‘67 and Tom Wetteroth, CerE ‘79 & ‘83.

New Academy Members inducted at the Spring Mines and Metallurgy Academy Meeting

The Mines & Metallurgy Academy was established in 1995 with the mission of recognizing outstanding alumni, counseling and advising university leadership, promoting the goals and programs of the departments, and providing a mechanism whereby individual members may support the departments. Today, the Academy has close to 100 members, representing ≈1% of our living alumni. Members are nominated and selected based on their pre-eminence in their chosen field or profession. This year two MSE alumni were inducted, Ryan Howell, MetE ‘09 and Fred Niemeier, MetE ‘95. Ryan is a Major in the survivability materials branch for the Army Research Lab; he is currently serving in Afghanistan. Fred is the Vice President of portfolio management for Baird Capital Partners.

Material News, Volume 1, Number 6 September 2010

Fall 2010 Phonathon: October 6th-7th; 10th-14th

The figures and tables contain a seven year comparison of funds raised in CerE and MetE through the Phonathon. With the rising costs of an education the generosity of our alumni plays a key role in access and affordability for the students. Last year 444 of our alumni donated $65,107 to the Phonathon, which includes $12,300 in matching gifts from many of your companies. These funds were used for many things directly related to recruitment and student professional development, most notably freshman scholarships, student group support, and undergraduate facilities. The impact? Every student in MSE has as scholarship, Keramos and the Materials Advantage won the national outstanding student chapter awards again, and several new pieces of equipment were added to the undergraduate labs.

MSE Alumni Support the Students!

♦ Metallurgy scholarships: $213,550
♦ Ceramic scholarships: $102,925
♦ MSE undergrads also received over $125,000 in scholarships from professional organizations (FEF, WAAIME, AIST, SWACerS, Copper Club, Modern Casting…)

FEF: Foundry Education Foundation
AIST: Association for Iron & Steel Technology
WAAIME: Women’s Auxiliary to the American Institute of Mining, Metallurgy and Petroleum Engineers
SWACerS: Southwest Section of the American Ceramic Society

2009 Phonathon Results

2004 - 2010

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The 21st A. Frank Golick Lectureship

Dr. David K. Matlock

ARMCO Foundation Fogarty Professor
Colorado School of Mines
Director, Advanced Steel Processing and
Products Research Center

“Development of New Microalloyed
Carburizing Steels for High Temperature
Processing”

“Metallurgical Engineering and the Ski
Industry: Applications of Metallurgical
Failure Analysis”

April 29th & 30th, 2010

Professor Matlock received his B.S. degree in engineering science from the University of Texas at Austin (1968), and his M.S. (1970) and Ph.D. (1972) degrees in materials science and engineering from Stanford University.

He is the Armco Foundation Fogarty Professor in the Department of Metallurgical and Materials Engineering at Colorado School of Mines (CSM), Golden, Colorado. He joined the CSM faculty in 1972 and is involved in teaching and research, primarily related to mechanical properties of materials. He is one of the co-founders and currently serves as Director of the Advanced Steel Processing and Products Research Center, an industry-university cooperative research center established at CSM in 1984. The Center currently has 25 corporate sponsors and is recognized as one of the most successful industry/university research centers in the world.

Professor Matlock is a Fellow of the American Society for Metals (ASM), a Fellow of the American Welding Society (AWS), and a member of the National Academy of Engineering. In his 37+ year career at CSM he has received outstanding teaching awards on many occasions including in 1987 being named the first CSM Outstanding Educator by CSM’s President and in 2006 as the CSM Board of Trustees' Outstanding Faculty Award Recipient. In addition his teaching and research efforts have led to awards from several professional societies including the Metallurgical Society of AIME, the Iron and Steel Society, ASM, AWS, the Society of Automotive Engineers, and the American Nuclear Society. He has authored or co-authored over 300 technical publications, mostly related to steels.

MetE Students and Faculty receive AFS Best Paper Awards at the Cast Expo ’10 / 114th Metalcasting Congress, March 20-23, 2010, Orlando, FL

Cast Iron Division:

Steel Division:
R. Howell, T. Weerasooriya, and D. Van Aken, “Tensile, High Strain Rate Compression and Microstructural Evaluation of Lightweight Age Hardenable Cast Fe-30Mn-9Al-XSi0.9-0.5Mo Steel”

The Inaugural Dr. Thomas J. O’Keefe Lecture

Robert C. Tooke

Met ’62, ’66, ’72

“UNDER THE TECHNOLOGY TREE”

October 22, 2009, 3:30 pm
G3 Schrenk Hall

Bob was reared in Cape Girardeau, MO, entered the Missouri School of Mines and Metallurgy in 1958, and received a B.S. in Metallurgical Engineering in 1962. While at MSM, his campus activities included ASM, AIME, AFS, Pi Kappa Alpha, St. Pat’s Board, varsity football, and M club. He was elected St Pat in 1962 and was selected for Who’s Who in American Colleges and Universities.

Following graduation, his professional career began with Bethlehem Steel. After three years as a project engineer in several integrated steel mills, Bob returned to Rolla to continue his education. “This was a longer stop than anticipated” but he emerged with a wife, two children, an association with Dr. Thomas J. O’Keefe, and M.S. (1966) plus Ph.D. (1972) degrees in Metallurgical Engineering. During this period Bob served as an instructor on the faculty of the Dept. of Met. Engr. and was a principal research metallurgist under contract with the Dept. of the Army.

After four years as manager with Bodine Aluminum in St. Louis, he migrated to Minneapolis, MN. The next 18 years were spent building a company as executive vice president of Acrometal Companies, Inc., a diversified manufacturing company, and president of the largest subsidiary, Progress Casting Group. In 1980 he supplemented his technical education with an intensive course at Stanford University Graduate School of Business. During Bob’s leadership tenure, Progress expanded from a $2M (no technology) to a $40M (high technology) aluminum casting company. After divesting his interest in this company in 1992, he began semi-retirement and consulting.

The final career chapter was a three-year involvement with a venture capital company, Magnetic Processing Systems, Inc., developing technology acquired from Russia. In his capacity as V.P. and Chief Technical Officer, Bob dealt extensively with scientists at the University of Moscow.

Throughout his life, Bob has served on at least 16 Boards of Directors of business, professional, charitable, and civic organizations.

Bob and his wife of 43 years, Renee, have enjoyed retirement in Phoenix, AZ since 1996, where he remains active with golf, tennis, swimming, bridge, travel, gardening, and community affairs.
Ken was reared in Red Bud, Illinois, entered the University of Missouri-Rolla in 1966 and received a B.S. in 1970 and an M.S. in 1971, both in Metallurgical Engineering. While at UMR, his activities included ASM, AFS, AIME, and management of the Shamrock Eating Club. Ken was active in Alpha Sigma Mu and was elected to membership in Tau Beta Pi and Phi Kappa Phi.

The AIST Metallurgy Technology Division has selected the paper: “Inclusions and Nozzle Clogging during Billet Continuous Casting Process,” Jianwei Gao, Mujun Long, Yufeng Wang, Xiangjun Zuo, Lifeng Zhang to receive the 2010 Jerry Silver Award for Best Paper at the MS&T Conference on Tuesday, October 19, 2010. The award is presented to the author of a process metallurgy or product applications technical paper judged to be the best of class by the AIST Metallurgy – Rolling and Processing Technology Committee.

MSE Faculty honored at Missouri S&T Awards Banquet
- Faculty Excellence Awards (5 awards campus-wide)
  - Greg Hilmas and Bill Fahrenholtz
- Research Award (10 awards)
  - Len Rahaman
  - Matt O’Keefe
  - Fatih Dogan
- Teaching Award (6 awards)
  - Ron Kohser
- Service Award (5 awards)
  - Ron Kohser
- Faculty Achievement Award (5 awards)
  - Scott Miller
In June Curators’ Professor Brow received the UM President’s Award for Research and Creativity. This is the highest distinction that can be bestowed upon a faculty member in the UM system. The competition for this award is fierce; only MSE Professors Del Day (1996) and Manfred Wuttig (1984) have won this award before. Professor Brow’s professional achievements in the field of glass science and engineering stem from his work on the structure-property relationships exhibited by phosphate glass, a material which has unique optical, mechanical and corrosion-resistant properties. As such it is useful for nuclear waste disposal, high strength fibers, laser glasses, sealants, etc. For over 25 years Professor Brow has published his work in a variety of high profile scientific journals, including the Journal of Non-Crystalline Solids (the leading publication for glass scientists), the Journal of the American Ceramic Society (the leading publication for Ceramic Engineering), and the Journal of Materials Science (the leading publication for Materials Scientists). Since becoming a professor at Missouri S&T in 1998, he has 54 refereed publications in print (8 submitted; 112 total), 30 refereed proceedings papers (50 total), and four patents (ten total). His most highly-cited paper (271 times), "Review: The Structure of Simple Phosphate Glasses," J. Non-Cryst. Solids, 263/264 1-28 (2000), is the paper which ultimately established him as the world’s leading authority in this area.

Dogan on Sabbatical
Professor Fatih Dogan is on a sabbatical leave at the UC San Diego working on energy-related research projects including the development of TiO₂-based materials as high-performance photoelectrodes. Such electrodes are the most promising candidates for photoelectrochemical generation of hydrogen by water splitting using solar energy. The main challenge of these research efforts is tailoring the functional properties of titanium oxide through defect chemistry, particularly synthesis of p-type TiO₂ that can be utilized in a bi-photoelectrode cell for generation of solar-hydrogen as a sustainable fuel.
Our 7th year of hosting an ASM Residential Student Materials Camp drew over 100 student applicants, the highest ever. Fifty high school students were selected to spend the week of July 25-30th on the S&T campus learning about the career opportunities in metallurgical and ceramic engineering. The participants, who will be entering either their junior or senior years of high school, came from fifteen states.

During their stay, they heard presentations on: Materials Engineering as a Career Field, Environmental Aspects of Materials, Thin Films and Materials Characterization, Forensic Metallurgy, Engineering Ethics, High-Temperature Materials, Materials Research on the S&T Campus, and the S&T Competition and Project Teams. During the morning hours, the students broke into small groups and conducted projects under the guidance of department faculty, grad students, and undergrads. The afternoon hours included activities and demonstrations at a variety of laboratory facilities, including the High Temperature Materials Lab, Friction Stir Processing Lab, Foundry, Mechanical Testing Laboratory, Ceramic Processing Lab, and the Glass Processing Laboratory. On Tuesday afternoon, the group traveled to the Rolla industrial park to be the guests of Mo-Sci Corporation (Dr. Day’s business), where the students were exposed to the high-tech aspects of glass microspheres used for a variety of medical and industrial applications. The bulk of Wednesday was an all-day field trip to the Carondelet Division of Metal-Tek Corp. (an iron foundry) and Saint-Gobain Containers (glass bottle manufacturing), both in Pevely, Missouri. Thursday evening was our infamous “Walk-on-Water” contest. On Monday, the students were grouped into teams of approximately seven individuals and challenged to design and build “shoes” that would attach to their feet and allow a member of their group to “walk” across the university’s indoor swimming pool. They could spend up to $50 on their “shoes” which needed to address the features of buoyancy, stability and propulsion. Design commenced on Monday night, and materials requisition lists were submitted on Tuesday morning. The materials were delivered on Tuesday evening, and construction commenced. One of the most successful designs involved a frame of PVC tubing with floatation devices at the four corners and buoyant, propelling shoes that slid back and forth along PVC rails that were mounted into the frame - engineering creativity at its best! Most of the others were phenomenal flops, however, but all had fun trying, and everyone learned a bit about engineering design and materials.

ASM requires that its Materials Camps be totally FREE to the participants! Financial sponsorship for this summer’s program came from ASM International, two divisions of Nucor Steel (Yamato and Decatur), Chevron, the campus’ Jackling Fund, and the MSE department. Co-directors continued to be Dr. Ron Kohser and Dr. Mary Reidmeyer.
The new ≈ $1.5M TEM is here (in boxes)!

Electron Microscope Lab Renovation

Congressional earmarks are providing the competitive edge for Missouri S&T in obtaining state-of-the-art equipment for our teaching and research mission. By leveraging these Congressional funds, the MSE department has been able to apply for competitive Major Research Instrumentation grants through NSF. The NSF program requires a cost share by the University, which is difficult to meet in these difficult economic times. However, the Congressional money can be used to lower the overall NSF budget request and make it financially possible for the University to compete.

Dr. Miller lead the effort in 2007 in obtaining the Helios Nano Lab 600 Focused Dual Ion Beam microscope and this past year a group of Missouri S&T researchers, headed by Professor Van Aken, and included MSE Professors Fahrenholtz and Mishra, secured funding from NSF to purchase a new analytical transmission electron microscope. The cost of the new microscope was $1.2 million of which $0.5 million was provided by Dr. Richards contract with Army's Benet Laboratories.

Acquisition of the new TEM precipitated in a complete remodeling of the space used for electron microscopy at S&T. The renovation included: enlarging the existing TEM space to accommodate the new FEI Tecnai G2 F20 STEM instrument, re-configuring the old darkroom space into a microscopy suite for the Hitachi S-4700 FESEM (moved from the basement of MRC), redesign of the HVAC and lighting systems, and re-routing of electrical conduits to provide a better environment for high-resolution microscopy. A store front architecture was employed to display each of the NSF supported MRI acquisitions. The renovation will allow these instruments to perform at their peak resolutions, as well as providing a wonderful space to show visitors and perspective students some of the cutting edge research being conducted in the department.

Robertson receives the J.F. Elliot Lectureship

Dr. David Robertson was the recipient of the J.F. Elliott Lectureship Award for 2010 from the Association of Iron and Steel Technology (AIST). The citation reads "For application of process modeling to steel refining technology, and for advances in quantitative analysis of metallurgical processes." The Award carries with it a stipend of $5k to be used to travel to Universities in North America to give a lecture to several Materials Advantage Student Chapters. Dr. Robertson will be giving the lecture at the Universities of Alabama, Michigan, Minnesota, Texas El-Paso, and Utah; and at Colorado School of Mines, Michigan Tech, Montana Tech, and the South Dakota School of Mines. The title of Dr. Robertson's lecture was "Innovation in Metals Production – Faster, Cheaper, Safer".

Dr. David Robertson is Professor Emeritus at the Missouri University of Science and Technology. He graduated with his B.S. from Imperial College, London, and obtained his PhD from the University of New South Wales in Sydney, Australia in 1968. He was Professor of Metallurgy at UMR from 1985 until his retirement in 2008. He was the TMS Extractive Metallurgy Lecturer in 2008. He was the Director of the national Mineral Technology Center for Pyrometallurgy (funded by the US Bureau of Mines) from 1985-1996. Dr. Robertson's teaching and research interests have covered the smelting and refining of all the metals - from aluminum through copper and steel to zinc. He and his colleagues have always worked closely with industry, both in the US and internationally. Recently Dr. Robertson was a Visiting Professor at the Indian Institute of Technology, Kanpur, India for the Winter semester of 2010. He taught a class on "Fluid flow, and heat and mass transfer in extractive metallurgy", and entered the class in the Steel University Challenge, organized by the World Steel Association through steeluniversity.org.
Pennell and Suiter receive Outstanding Alumnus Awards at Spring Banquet

Gary D. Pennell, MetE ‘82, Chief Metallurgist, Nucor-Yamato Steel

Gary Pennell is Chief Metallurgist at Nucor-Yamato Steel Company in Blytheville, AR. Gary was the first UMR graduate metallurgist that Nucor Steel hired straight from college. Since that time, Gary has been instrumental in hiring a large number of summer interns, coop students, and permanent engineers throughout the Nucor Steel organization. Gary started as a metallurgist in 1997 when he graduated and was promoted to plant metallurgist and then his present position of chief metallurgist. Gary is one of Nucor’s most respected metallurgical engineers both within Nucor Steel and throughout the steel industry.

Gary helped organize Nucor’s corporate recruiting task force to increase Nucor’s presence on our campus as well as Nucor’s other core universities. This resulted in Nucor becoming one of Missouri S&T’s top recruiters on campus. Gary has been influential in providing important gifts to the university both individually and through Nucor. Nucor (through Gary’s direct influence) was the charter corporate sponsor of Missouri S&T’s materials camp which has allowed us to bring 30 to 40 students per year to Missouri S&T at no cost. This has been a tremendous recruiting tool for Missouri S&T and the materials undergraduate programs. In addition, Nucor has been a sponsor for a number of other organizations on campus. Through Gary Pennell’s efforts and support, Nucor Steel provided a $2 million gift in 2006 to Missouri S&T’s Materials Science and Engineering Department to endow the F. Kenneth Iverson Chair of Steelmaking Technologies. This was the largest corporate cash gift in the history of our school.

David J. Suiter, CerE ‘74 ’99, Senior Engineer, Boeing

David Suiter is a Senior Engineer at Boeing in St. Louis; he’s been there ever since graduating in the 70’s. He is an enigma of sorts – his career has been dedicated to the application of ceramic systems for military platforms, and as such we have no idea what he really does! Top secret. Suffice to say that he has played an important role in providing the materials know-how to make some of Boeing’s jets the best in the world. He often comes to Rolla to discuss research and the department, and has been instrumental in hiring and mentoring UMR/S&T graduates. He’s one of our alumni who is always in a great mood, always supports the Phonathon generously, and is a proud alum who probably has more St. Pat’s sweatshirts than anybody. He bleeds silver & gold. David is the kind of person who never seeks the limelight, yet his skills as an engineer have brought great acclaim to our department and university within Boeing.


The UHTC group unfortunately had to say ‘goodbye’ to Shi Zhang this year as he finally retired. Instead of working in the lab 100+ hours per week, Zhang will be learning to surf on the California coast. We miss you Zhang – have fun in retirement! Life in the UHTC group without Zhang means double duty for the remaining, and new, graduate students. They have a lot to live up to as the UHTC group has published over 41 journal papers on the processing-microstructure-property relationships in UHTCs over the past four years. 2009-10 also saw the start or continuation of several R&D programs on “Fundamental Thermal and Mechanical Properties of Boride Ceramics” funded by AFOSR, “Atomistically Informed Materials Design of Ultrahigh Temperature Ceramics for Improved Mechanical Behavior in Oxidizing Environments” funded by AFOSR through the University of Houston, “Solid Solution and Isotope Effects on the Properties of Boride Ceramics” funded by NSF, “Support of the National Hypersonic Science Center: Hypersonic Materials and Structures” funded by NASA & AFOSR through Teledyne, “Ultra-High Temperature Materials for Hypersonic Aerospace Vehicles” funded by AFRL through Universal Technology Corporation, and “Joining of UHTCs” funded by AFOSR through and STTR subcontract to MO-SCI Corporation. To say the least, UHTCs are an EXTREMELY HOT TOPIC!
Material Advantage hosts BBQ for MSE freshmen

Incoming freshmen show up a week earlier than other students to participate in all sorts of activities including building an RC car to race, trigonometry and chemistry classes, etc. This year the Materials Advantage students showed up early as well to host our new group’s first event. New members showed up early to join and help with the activities. The event was a success and we look forward to seeing everyone at future events. For more information, please contact Keramos Activities (Fall 2010) - The Missouri S&T Keramos Chapter has a full schedule this semester. The main focus for the fall will be fundraising. As part of a new fundraising activity, donuts and coffee are being sold on Monday mornings in the McNutt Commons area. As in years past, the chapter will also sell T-shirts in the department and at the MS&T Conference in Houston this October. In addition to fundraising, plans are also being made for our 2nd annual etiquette dinner on October 10th. The etiquette dinner is required for all new Keramos initiates and is designed to give them better networking skills. All department faculty and Keramos members are invited. Committees are also being formed to make sure the event is successful. The Missouri S&T Keramos Chapter hosts a full schedule this semester. Keramos Activities (Fall 2010)

Keramos Activities (Fall 2010)

The Gaffer’s Guild is back to the school year with a new glasses blowing club under student organization!! We will be putting on socials, workshops and demos from our own glass blowing club after a few strenuous years. Come join us with any to no experience needed, but lots to learn. Non Profit Org.
U.S. Postage PAID
Permit No. 170
Rolla, MO