

Mudslinger

Spring 2002

A departmental newsletter for UMR-Rolla Ceramic Engineering Alumni and Friends

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From Our Department Chairman, Richard Brow



This has been a transitional year for the department. It started with Wayne Huebner's move from the Chairman's position to Director of the Materials Research Center, then (in May 2001) on to Parker Hall as Vice Provost for Research. We initiated a search this past summer for the impossible task of

replacing Wayne and in December, we made offers to two highly acclaimed academics, living on opposite coasts, to consider a move to the 'middle of everywhere' to join the department. This January, we received the good news that Prof. Fatih Dogan (University of Washington) and Prof. Robert Schwartz (Clemson University) will join us this spring. Prof. Dogan is well-known for his research on superconducting ceramics and he will continue that work here and will collaborate with Harlan Anderson on the development of materials for solid oxide fuel cells and will teach courses on crystal chemical principles. Prof. Schwartz is a fixture in the ferroelectric community, best known for his research on thin films for a variety of applications. He will also collaborate with Wayne on our dielectric materials research programs and will be responsible for our course on electrical properties of ceramics (CER284).

A second transition involves our curricular offerings. The Ceramic Engineering Department was involved in the development of two new collaborative graduate options: A non-thesis Masters Degree in Materials Engineering (in collaboration with the Metallurgical Engineering Department)

and an option in Biomaterials (in collaboration with the Biological Sciences Department). New graduate level courses on *Atomic Structure in Solid State Materials* (CER/MET 477) and *Thermodynamics and Kinetics of Materials* (CER/MET 478) were developed for the Materials Engineering degree and were first offered this year. New graduate and undergraduate courses on biomaterials will be offered in the fall of 2002. Based in large part on advice from alumni, we added a new, two-hour senior-level course last winter called *Organic Additives in Ceramic Processing* (CER315). Our undergraduate labs are being revamped to include new experiments, to incorporate more design elements and to give our students more opportunities to hone their leadership and communications skills. Again, this is in response to feedback we have received from alumni 'in the field'. There is a move on campus to create a uniform standard of 128 academic hours for a UMR degree. We presently require 134 hours for a BS in Ceramic Engineering. This spring, we will do a comprehensive review of our curriculum to determine how we will meet this campus-wide standard. Input from alumni about particularly useful courses you took, or courses you wish were offered, will be very useful to us as we do our review. The enclosed survey is one way your voice can be heard. In addition, please contact one of the faculty members or me and let us know how we might best prepare young engineers for the challenges of the workplace.

Some things change and others remain the same. Our Keramos chapter was named the nation's outstanding student organization for the sixth consecutive year at the annual meeting of the American Ceramic Society in Indianapolis last April. Our faculty members continue to be recognized for their achievements- Delbert Day won the 2001 Morey Award for research from the Glass and Optical Materials Division of ACerS, Jeff Smith was named an ACerS Fellow, Bill Fahrenholtz and Greg Hilmas received a Faculty Excellence Award and Outstanding Teaching Award from the UMR. Our football team still struggles. (Some things never change).

Finally, I hope you get a chance to spend some time with some of our students, whether its during the Phonathon, at the ACerS convention (this year in St. Louis), on campus or in your place of business. You will them enthusiastic about our profession, engaging and bright. Just like our alumni!

Leaving a legacy through your will

A planned gift makes a perpetual statement about your dedication to MSM-UMR. While many may not be able to establish an endowment today, they find that they are able to leave a significant legacy to the university through a planned gift, such as a bequest, life income gift or life insurance. By making a planned gift, you show your loyalty to an institution that has played a significant role in shaping your future. For more information about giving a planned gift, contact Judy Cavender at 573-341-6090 or e-mail her at judyc@umr.edu.

The St. Louis Section and the Refractory Ceramics Division of the American Ceramic Society will sponsor the 38th annual symposium on the theme "Refractories for Continuous Casting of Steel", on March 21-22, 2002 to be held at the DoubleTree Hotel & Conference Center in Chesterfield, MO. A block of rooms have been set aside at the DoubleTree at the rate of \$99. Hotel arrangements can be made by contacting the DoubleTree directly at (636) 532-5000, please refer to the **ST. LOUIS SECTION OF THE AMERICAN CERAMIC SOCIETY** when making your reservations. **Cut-Off date to receive the St. Louis Section special hotel rate is March 1st, 2002.** Cost to attend the symposium is \$225 pre-registration, \$275 on-site registration, and \$50 for students. Please contact Patty Smith for further information. Phone (573) 341-6265, Fax (573) 341-6151 or email psmith@umr.edu.

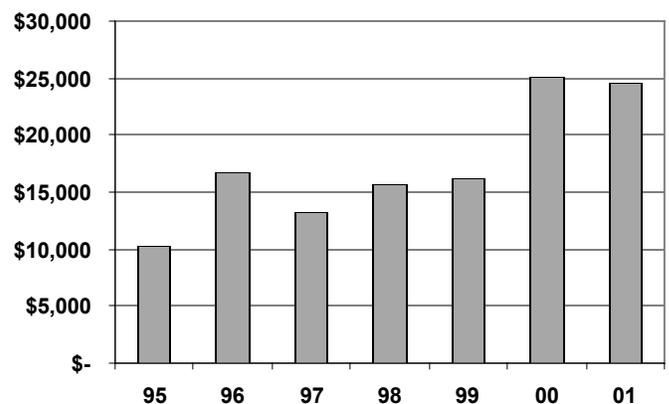
Ceramic alumni give \$24K during 2001 Phonathon

More than 170 alumni pledged \$23,875 to the Ceramic department and sent in \$24,517 in actual gifts. This was very close to last year's record of \$25,105 in actual gifts. The average gift for 2000-2001 was \$145. Thank you for your generosity!

Your increased support provides funds for scholarships through the Ceramic Alumni Endowed Scholarship Fund.

This year, we will begin calling our alumni Feb. 24. When the phone rings, please take a moment to share some of your Rolla experiences with a current student, and say, "Yes," when asked for a pledge. Taxpayer support accounts for only 40 percent of the university's revenue, making your contribution a vital ingredient in the revenue pie. Private funding also helps distinguish UMR from other universities, increasing the value of your education. Any amount you give will be appreciated, and most importantly, your participation will help make UMR a leader in alumni giving among public universities.

Gifts



Phonathon Dates

February 24 - 28, 2002

JB Arthur and Family Scholarship - Forty-five Years of Support

The J.B. Arthur and Family Scholarship Fund is the oldest and most significant scholarship fund available to undergraduates in the Ceramic Engineering Department. The fund was started in December 1955 with the donation of 400 shares of common stock from Mexico Refractories Company, worth \$2000, and \$120 in cash. Scholarships were first provided in 1957 and recipients then included Delbert Day, who received \$250/semester, enough to pay his fees and out of state tuition. Today, the endowment is worth over \$560,000 and a total 307 students have received scholarships in the 45 years it has been available. As the following comments indicate, the JB Arthur scholarship has played a vital role in the lives of many of our alumni:

Bill Carty, '85 & '86, "The J.B. Arthur Scholarship allowed me to stay in school and complete my BS degree. It was, at the time, a significant amount of money (I have no idea what the award is now) and went a long way towards the paying of tuition. I was honored to be chosen for the scholarship. I know that without the scholarship, I would not have been able to transfer to Rolla, nor complete my B.S. degree. Of course, completing my B.S. degree allowed me to pursue graduate studies, eventually getting both the M.S. (at UMR), and the Ph.D. (at University of Washington). I know that my life would have turned out much differently if I had not gone to Rolla and somehow garnered the trust and faith of Bob Moore."

Dan Krueger, '94, "The J. B. Arthur scholarship was helpful in the last few semesters when other scholarships had expired. It was a relief to know that I had a little less tuition to worry about paying those semesters and let me concentrate more on class and other school activities."

Mary Grimm, '96, "The Ceramic Engineering program at the University of Missouri-Rolla is exceptional and prepares students for a variety of postgraduate work environments. The education I received in ceramic engineering (along with a few biology and organic chemistry courses) prepared me for medical school and also for graduate school in biomedical engineering. The J. B. Arthur Scholarship enabled me to study ceramic engineering and receive the superb training offered by the Ceramic Engineering Department."

Kara Kopplin, '92, "Since the JB Arthur Scholarship covered some of my costs at UMR, a detour into materials engineering in Sheffield, England was attainable. On completion of my semester abroad, I returned to UMR to complete my course work and earn my ceramic engineering degree. The education and world experiences have served me well in my career and in my life. Thank you."

James Shelby, '65, '66, & '68, "As a result of my education at Rolla, I have been able to fulfill my dream of becoming a college Professor. The J.B. Arthur Scholarship was very important to my education, allowing me to complete my

undergraduate degree with a minimum of debt. Without this assistance, I would have needed to go directly to a job rather than continue to graduate school. I will always be grateful to the providers of this scholarship for their assistance I have more than returned their money in the form of gifts to the division since that time – as I feel all former recipients should do."

Stephanie Solofra, '97, "The J.B. Arthur Scholarship still means a lot to me. It helped me get through school which led me to my career with CeramTec NA. And in essence, the scholarship helped me get my first house by lowering the amount of debt I would have had without it - and that is a wonderful feeling."

Mike DeBarr, '90 & '91, "The J.B. Arthur Scholarship helped provide the additional financial assistance that I needed to complete my undergraduate engineering education at UMR. This, in turn, was a catalyst for further education, and a successful career to date."

The growth and reach of this scholarship program would probably surprise and gratify JB Arthur. The scholarships are crucial to our efforts to attract new students to Ceramic Engineering and so play a vital role in maintaining the strength of our department. The legacy of JB Arthur's generosity grows with every commencement ceremony and we look forward to recruiting and educating future JB Arthur recipients.

Jackling Institute- Introducing High School Students to Ceramic Engineering

We enjoyed another exciting summer with high school students participating in the Jackling Summer Institute. Last summer, approximately 120 'soon-to-be' high school seniors spent a week on campus investigating the degrees and opportunities offered by the departments in the School of Mines & Metallurgy. Nine of these students returned to campus in July for the 'Jackling II program', spending two weeks with students and faculty in the Ceramic Engineering Department, performing research and learning more about us. Jackling II normally costs a student \$250 to cover their room and board, however, a generous donation from *Caterpillar, Inc* helped cover the costs for our participants.

The Jackling Institute is a very important recruiting activity for Ceramic Engineering. If you or your company would like to sponsor a 'Jackling Scholar' this coming summer, please contact Denise Eddings at eddings@umr.edu or 573-341-4401.

Ceramic Engineering Graduates in 2001

Bachelor's Degrees:

Julie Barton	Kristine Miller
Jason Bodson	Tara Milligan
Geoff Brennecka	Wilbur Reichman, II
Catherine Buelter	Jessie Rife
William Davis	Roger Smith
Adam Lang	Kari Troyer

Master's Degrees:

Dustin Beeaff, "Fabrication of Multilayer Ceramic Capacitors via Thermoplastic Coextrusion"
Kenan Fears, "Formation of Hollow Hydroxyapatite Microspheres"
Elena Melnik, "Mechanical Properties of Phosphate Glasses"
Courtney Monzyk, "Thermochemical Compatibility of Doped-Cerium Oxide with Various Potential Substrates in the Fuel Reforming Environment"
Hector Ruiz-Ruiz, "Magnesia Dissolution in Steelmaking Slags"
Todd Sander, non-thesis
Zheng Yang, "The Mechanical Properties of Germanium"
Haifeng Zhou, "Characterization of Cerium-Based Conversion Coating on 7075-T6 AL Alloy"

Ph.D. Degrees:

Toshio Suzuki, "Microstructure of Nanocrystalline Undoped and Doped Cerium Oxide Thin Films and Their Electrical and Optical Properties"
Xiao-Dong Zhou, "Processing and Characterization of Nanocrystalline Ceria"
Brian Gilmore, "Development of High Energy Density Dielectrics for Pulse Power Applications"
James Hemrick, "Creep Behavior and Physical Characterization of Fusion-Cast Alumina Refractories"



Jennifer Posda, '76, received a Professional Degree at the December 2001 commencement. Chancellor Gary Thomas (left) and Dr. Richard Brow (right).

Ellis & Carolyn K. Smith Family Endowment

This past year, Ellis '55 and Carolyn Smith made a significant contribution to the Ceramic Engineering Department to create an endowed fund to be used to further the education mission of the department. This year, our undergrads, with the assistance of Dr. Jeff Smith, are using the first disbursement from the fund to build a custom furnace that will be used to fire large ceramic pieces prepared in the undergrad labs and by our student groups for ACerS competitions. The generous donation by Ellis and Carolyn will enable the department to provide additional materials and equipment to enhance the training opportunities for our students.



Faculty News



Dr. Harlan Anderson, Curators' Professor Emeritus

Fueled by a \$2.8 million grant from the U.S. Department of Energy, Dr. Anderson's research group is working to develop a cheaper and more efficient fuel cell – a technology that holds promise as a clean, alternative energy source. The three-year project which involves one other university, two national research labs, and a private fuel cell maker, is part of a national effort by the Department of Energy. The initiative aims to make fuel cells an economical power source by the end of this decade. The project involves the fabrication and testing of solid oxide fuel cells, with the ultimate goal of developing a cell capable of producing a 5 kilowatts of electricity – enough to power an average house.



Dr. Richard K. Brow, Professor

My research group presently includes six graduate students, two visiting faculty members, Dr. Murat Bengisu (Eastern Mediterranean University, North Cyprus) and Dr. Andrew Burns (Kent State University) and several undergraduates. Our research projects include a study of the effects of platinum and water contamination on the optical properties of Nd-doped laser glasses, studies on the strength and stress corrosion susceptibility of glass fibers, preparation and properties of rare earth phosphate glasses, the development of new glass-ceramic materials for high temperature sealing applications, and the reactions of borate glasses in aqueous environments, including simulated body fluids for bio-applications. I continue to teach the 'sophomore glass course' (CER103) and a couple of senior and graduate-level courses on glasses and optical materials (CER369, 418 and 450), as well as contributing lectures and labs to some of our introductory courses. I'll be chairing the Glass & Optical Materials Division of ACerS this coming year and I look forward to working with the many UMR alumni associated with that organization.



Dr. Delbert Day, Curators' Professor Emeritus

TheraSpheres™, the glass microspheres that were developed jointly at UMR (Ceramic Engineering Department and UMC (Research Reactor) have been approved for commercial use in the US. Patients with liver cancer are now being treated weekly at seven sites in the US. These sites are the Greenebaum Cancer Center at the University of Maryland and Johns Hopkins Hospital in Baltimore, the University of Pittsburgh, William Beaumont Hospital in Detroit, the University of Pennsylvania Hospital in Philadelphia, Good Samaritan Hospital in Phoenix AZ and Wakeforest University in Winston-Salem. A total of 12-14 sites should be in operation by mid 2002.

Patients suffering from liver cancer are treated on

an out-patient basis and receive an injection of 40 to 100 mg of radioactive glass microspheres whose average diameter is 25 microns (about 1/3 the diameter of a human hair. The beta emitting radioactive (Y-90) glass microspheres are injected into the blood stream such that the small microspheres are carried into the capillary bed of the liver, by the blood, where they become lodged in the malignant tumors and irradiate the tissue surrounding each microsphere. Because the radiation is very localized and is delivered in-situ, it is possible to safely deliver unusually large doses of radiation by this procedure. An important advantage of this technique is that the patients' quality of life remains high after treatment, with none of the side effects associated with chemotherapy. The patients' liver continues to be irradiated for about 4 weeks, after which time the glass microspheres are no longer radioactive. The response of patients to this treatment is considered encouraging at this time.

Persons desiring more information about this interesting application of glass microspheres can contact MDS Nordion at www.therasphere.com or by email at therasphere@mds.nordion.com.



Dr. Bill Fahrenholtz, Assistant Professor

The past year has been a productive and successful one for me both at home and at work. My wife Jill, my son Karl, and I welcomed a new addition to our family in 2001. Our second son, Eric was born on May 12, 2001. My work at UMR has been very rewarding as well. I was honored to be voted the outstanding faculty member by the undergraduates in the department for 2000-2001. In addition, I received a faculty excellence award from UMR in recognition of my contributions in teaching, research, and service. This past year found all of the ceramics faculty busy, and I was no exception. This year, I taught both of the sophomore laboratory classes (Cer. Eng. 111 and Cer. Eng 122), thermodynamics (Cer. Eng. 259), and a new graduate class on crystal chemistry and characterization (Cer. Eng 477). My research in ceramic-metal systems has also continued. Currently, I have active research projects on the strength and toughness of alumina-copper composites, processing and properties of alumina-nickel composites, and corrosion protection of aluminum alloys with cerium oxide-based coatings. My first M.S. student, Haifeng Zhou, finished his M.S. degree and graduated in May 2001. Currently, I have two graduate students and two undergraduates working with me and will take on two new students in the coming year. One of the areas where I hope to expand my research is in the processing of ultra-high temperature materials in collaboration with Greg Hilmas. My other major commitment is a high school math and science competition that I am organizing in Missouri. For the past two years, I have been working with Worldwide Youth in Science and Engineering (WYSE) to promote their Academic Challenge competition in Missouri. This year, the multi-tiered competition will be held at seven sites, with the state finals at UMR on April 8. We look forward to the continued growth of this exciting competition in Missouri.



Dr. Greg Hilmas, Assistant Professor

Dr. Greg Hilmas' research group, consisting of one visiting scientist, six graduate students and as many undergraduate students as he can afford, is once again focusing on a diverse group of R&D activities from structural cermets to electronic ceramics to biomaterials. In 2000-2001, technology was transferred to Smith Int'l in Houston, TX for the production of diamond/carbide composites for high-end drill bit inserts for the petroleum drilling industry. Both Mr. Tieshu Huang (Visiting Scientist) and a new graduate student (Sean Landwehr, B.S. UMR-2002) will be working on this project in 2002 which now focuses on coextrusion of tungsten carbide/metal composites to enhance the fracture toughness and wear resistance of their base carbide bit inserts. Xilin Xu is still performing his Ph.D. studies on extrusion of multilayered ceramic capacitors for high energy density dielectrics. Dustin Beeaff graduated with his M.S. last year and has been pursuing his Ph.D. by developing high strength, porous electrodes for solid oxide fuel cells. Michael "Duck" Matthews is well into his M.S. studies on developing an adjustable intraocular lens for the human eye, work that is being funded by Dr. Harry Eggleston, an eye surgeon in St. Louis, and the National Institute for Health through a new grant. Jeremy Watts (B.S., UMR-2002) will also be starting his M.S. studies this year on a project yet to be determined. Finally, Adam Chamberlain (B.S., UMR-2002) will be co-advised by Dr. Fahrenholtz and will be working toward a Ph.D. developing ultra-high temperature diboride-based ceramics for sharp leading edges of hypersonic vehicles in conjunction with NASA Ames. (ghilmas@umr.edu)



Dr. Wayne Huebner, Professor & Vice Provost

Dr. Wayne Huebner abandoned ship last year when he assumed his new position of Vice Provost for Research. In this position he is in charge of UMR's research mission. The primary goal is to elevate UMR's status in the National Research Council's rankings of universities, and to do this will require more than doubling our research productivity to \$45 M, graduating twice the number of Ph.D. students, and publishing more refereed publications. It is interesting to note that the Ceramic Engineering Department is the only department on campus already performing at a level well above the necessary criteria per faculty member.

For the first time in 15 years he didn't teach, and while the students probably thought that was great, he missed the classroom dearly. He is still doing research, with activities focused on 1) preparation and characterization of the dielectric materials; 2) development of processing for a set of high energy density capacitors with varying geometries and voltage requirements for pulsed power applications; 3) improvement of reliability of the capacitors based on the theoretical understanding of charge - discharge process; 4) preparation and characterization of ferroelectric thin film on

the various substrates; and 5) the development of solid electrolyte and electrodes materials for the fuel cell applications. His group still includes Shi Zhang, Xioa Mei, Jaci, and six students. Miraculously Brian Gilmore completed his Ph.D. !



Dr. Douglas Mattox, Professor Emeritus

Dr. Mattox's is concentrated on teaching and business consulting this past year. Teaching includes crystal structures (102), an economics of manufacturing course (205) and senior design (261-262). Regarding, 205, it's encouraging hearing students talk about business plans, ROI's, depreciation, etc. This year they designed plants to make products based on ceramic razor blades. Any venture capitalists reading this interested in hearing a couple of great ideas? In addition, for the first time, seniors are working on a rollover project from 2000-2001 to make low temperature co-fired ceramic substrates stronger. This has resulted in much greater technical progress and it appears that at least one of the ideas may literally pay off. (dmattox@umr.edu)



Dr. Robert Moore, Curators' Professor Emeritus

Last spring I announced the research in our group on the Center for Glass Research funded project, "Electrochemical Sensor for Measuring NaOH Vapor Content in Glass Tank Melters." In December, the first model of the sensor was tested in the UMR designed and constructed oxygen simulator alongside a laser instrument developed by Dr. Steve Rice and colleagues at Sandia National Laboratories. Both performed well. Credit goes to Jose Almanza, Ph.D. student, Tom Burns, M.S. student and co-advisors Mariano Velez and David Robertson. Bill Headrick (Ph.D. UMR 2001) has joined the UMR Refractories Group and has obtained support from the Department of Energy for research on creep of spinel refractories and corrosion testing of black liquor gasifier refractories.

Dr. Velez has a new DOE funded project on High-density Infrared Surface Treatment of Refractories and (with Dr. Karakus) an NSF sponsored digital library of refractory microstructures. This effort is coordinated by the University of Dayton and involves three universities (University of Missouri-Rolla, Georgia Institute of Technology and North Carolina A&T State University).

Refractories Applications and News, a technical tabloid published by our group is now in magazine format and is read by over 4,000 refractories professionals worldwide. If you are interested you can write for a request form for a free subscription by sending an email request: leem@umr.edu. The website for RAN is www.umr.edu/~refapp.



Dr. Darrell Ownby, Professor Emeritus

It's my third year of "retirement" and my University hours and noon-time racket ball competitions are constants keeping my old heart wildly fibrillating with enthusiasm.

Two of my graduate students finished their work and are now working for their Ph.D.'s. Zheng (Peter) Yang completed his M.S and is now at Notre Dame University. Jason Peters is at the University of Utah after completing three post M.S. projects.

Ben Eldred is hoping to finish his Ph.D. on wetting in steel forming. He is also following up our wetting of polycrystalline mullite by glass melts paper with Dr. Rahaman and Dr. Huang by collaboration with Dr. Schneider of the German Aerospace Center who provided us with single crystal mullite with various orientations to answer the absence of grain boundaries questions.

My Phase Equilibria students did a great job creating 32 tutorials treating many of the most important Phase topics. Even though some students bitterly complained, they all endured to the end and will someday be proud of their work, and the knowledge and skill they gained as they use it in their careers. You may see and use their tutorials by going to my web page, (www.umar.edu/~ownby) under Cer. 251.

This year the 14th International Boron Symposium is in St. Petersburg, Russia and having been on the scientific committee of these symposia for many years, I have been invited to present a paper there.

A few years ago we calculated and published the X-ray diffraction patterns of the possible diamond polytypes and this year we actually found and characterized a commercial source of the 6H polytype powder. This breakthrough should be in the literature soon.

This is my second of three years of service on the National Research Council's Evaluation Panel for Associateship Programs in Washington, D.C. I enjoy flying our Grumman Tiger down to Southern Virginia to be with our East Coast children and grand children during that time.

Over the Christmas holidays, Nina and I moved in with our West Coast offspring, skiing and frolicking in the snow on Oregon's Mt. Hood, California's Squaw Valley, and Utah's Alta and Brighton where we checked out the snow conditions for the Salt Lake 2002 Winter Olympics. All is well!



Dr. Mohamed (Len) Rahaman, Professor

Dr. Rahaman is continuing his research in ceramic processing but the focus areas have gradually shifted more toward chemical synthesis of ceramics and synthesis of biomaterials. The nucleation and growth of dense epitaxial films on single crystal substrates at relatively low temperatures under hydrothermal conditions are being investigated by surface science and structural characterization techniques. Hydrothermal synthesis is also being used for the formation of particles and coatings of calcium hydroxyapatite, the main mineral constituent of bone. A third area of research is concerned with understanding durability issues in thermal

barrier coatings related to sintering and phase transformation of the coatings. In the area of teaching, in addition to his regular courses, Dr. Rahaman is assisting in the development of a graduate curriculum in biomaterials, which represents a future growth area for the department and for the materials effort on the UMR campus.

ACerS Student Group

The UMR chapter of ACerS has been doing great this past year. There was a very good student turnout last spring at the 103rd Annual Meeting and Exposition in Indianapolis. While there we learned, and also played a little. We had a fantastic luau at Jillian's where students got a chance to meet and talk to many alumni.

We also had our end of the year banquet at The Douglas Company, where the outstanding members of our department were honored. Sean Landwehr was chosen as the outstanding undergraduate, Roger Smith was outstanding senior, and last but not least Dr. Bill Fahrenholtz was outstanding faculty member.

It was a good time for all at this year's fall picnic. There was good food and games of football and softball. For those keeping track, the faculty and grad students beat us once again in softball.

We are in the process of getting ready for this year's Annual Meeting and Exposition in St. Louis. We should have great student involvement once again especially with its location being right in our backyard. Vice-president Laura Brenneka has been working closely with Dr. Jeff Smith to make sure we can have a ceramic putter to enter into competition. We hope to see you in St. Louis. Come by our booth and see what we have been doing and what we are up to now.

Keramos Student Group

This past semester the new officers of Keramos were Brian Johnson, President; Mandy Young, Vice-President; Ben McCarthy, Treasurer; Natalie Vanderspiegel, Secretary; and Liz Sandefur, Herald. We were very busy planning and executing events for the fall term. We held the Annual Alumni BBQ at Homecoming, which had both good food and company. Keramos also helped the department by having meetings with all of the prospective professor candidates. A committee of ten members was set up on a rotating schedule, and we informally met and talked to all of the candidates for approximately half an hour. We were very excited to be a part of such a large decision the department was making, and we believe our input was useful and enlightening. Keramos finished the semester by helping Dr. Brow write a proposal for funds to help educate high school students in the field of Ceramic Engineering, and designing a departmental T-Shirt to be sold next semester.

Keramos participated in a service project for the Salvation Army this semester. We signed up for an entire day to "Ring The Bell" at Wal-Mart. The members split up into two hours shifts and braved the cold to raise over seven hundred dollars.

Phonathon News (2001)

This section is expanding annually, but we'd like it to be bigger! This can only happen if you pass information back to us. So, please give us news. If you haven't made this list, we need to hear from you. If you don't feel you've much of a story, just give us the "who's, where's, what's and current status." We really would like to hear! Contact Denise Eddings (eddings@umr.edu or 573-341-4401) if you have a message you'd like included here!

OLDEST ALUM WALTER KELLER '30 died recently at age 101. Dr. Keller taught geology at UMC for 43 years before retiring in 1970, but even at age 100 he still drove to his campus office six days a week, where he could be found reading books and magazines. Among his notable research accomplishments were developing firebricks that strengthened the engines of Liberty Ships in World War II, discovering critical uranium deposits in Utah in the 1950s and deciphering moon rocks collected during the first lunar landing in 1969. He held a bachelor's degree in ceramic engineering from UMR, AB and MA degrees in geology from UMC, an MA degree in geology from Harvard University, and a Ph.D. in geology from UMC.

William J. Smothers, '40 died November 15, 2001 at the age of 82. He earned his B.S. in 1940 and M.S. in 1942 from UMR and his Ph.D. from UMC. All his degrees were Ceramic Engineering. He had worked at Bowes Seal-Fast, the University of Arkansas and Ohio Brass Co. He retired from Bethlehem Steel Corp, as section manager, refractories in 1982 after 18 years with the company. He is survived by his wife, Marjorie, a son, a daughter and three grandchildren.

Robert Bloome, '50, and wife Sybil celebrated their 50th wedding anniversary 7/7/2000 with surviving son William and grandchildren Daisy Lynn and Justin.
Congratulations!

Don Kummer, '55, is ten years into retirement from McDonnell Douglas and providing help and advisement to UMR. *(Thanks Don.)*

Ellis Smith, P.E., '55, retired from APGreen 10 years, but active in asbestos and silicosis defense litigation. *Read about his generous endowment to the department in another section of the newsletter.*

Jim Stubbs '71 & '80, has two daughters in college now!

Mike Vancil, '60, still riding motorcycles and has been ten years in steel industry selling to cyclists. Was semi-pro boxer for 3 years. Held five part-time jobs at UMR. Mike graduated from same high school as Dr. Day!

James Hill, '64, is retired since 12/98 after 34 years in research with A.P. Green and 6 mos. after buyout by Harbison-Walker. Taking advantage of the "great outdoors after years in office/lab."

George Taylor, '64, reports foundry Refractories are slowed by automobile downturns. *Sounds like an excuse for us to buy new cars, doesn't it?*

Bill Daniels, '64, working as consultant and coping with their daughters living on opposite coasts, including their first granddaughter Lucille Rose (2 yrs).

Tim Clancy, '68, is with Materials for Information Technology, at the U. Alabama, in Tuscaloosa and still longing for more camping time.

Mike Lamp, '75, starting in fuel cell components (PEM) graphite polymer composites.

Tom Wetteroth, '79, '83, Still with Motorola, but now with Life Sciences making SNP gene microarray chips. His migration is being assisted by his wife's getting Ph.D. in Molecular and Cellular Biology.

Jennifer Wang Posda, '76, has been named Director for New Jersey Science & Technology for the NJ Commission on Science & Technology who manage R&D Excellence for the state. *Congratulations, indeed!*

Mike Boyer, '83, after taking degree from George Mason University at night, has spent most of his career in patents and is currently, Chief Patent Counsel & Technology Director, Orscheln Management Co, Moberly, MO. Mike strongly feels that grads need greater understanding of intellectual property matters, which includes patents.

Roger Steinbrueck, '84, is planning on adding title of Pastor to name as he is enrolled at Concordia Seminary studying Greek and Hebrew.

Ramona Venable, '82, visited Antarctica, the Falklands and South Georgia Island last year. Why? Because she could. *(No cold feet there!)*

Bill Carty, '85, '87, and Sylvia announce new son Duncan born 7/00, who joins 3-year old brother Parker. Bill was tenured at Alfred in 2000 and is Director of the Whitewares Center.

Erik Erbe, '87, V.P. Orthovita and announcing newly launched bone graft substitute after FDA approval. Children Ashley is 15 and entering high school. Ryan is 11.

Greg Wesling, '88, '90, is Sr. Mfg. Eng. At Howmet. Just became father for first time to Connor born 9/00 checking in at 7 lb. 15 oz (what's that in metric?) *Greg thinks the "DOE is an exceptional idea."*

John Barr, '91, '97? says NASDAQ [doesn't rule] rules! (Please stay tuned for updates on this late-breaking story.) Wife Nancy, '89 **Chem. Eng.**, becoming statistical Quality leader at Caterpillar.

Amy McIntyre '91, '93 says that **No. 2** was expected in August 2001 to join Ryan, who enjoyed this year's survey (very tasty, it seemed.) Amy's at MEMC on special projects in a realigned engineering support.

Mike Grash, '92, working for Osram-Sylvania implementing TPM (Total Production Maintenance) says **DOE** is very important.

Eric Wilkins, '90, '92, and Valerie welcomed Olivia Rene into their home in November, 2000, joining her sister.

Dan McIntyre, '91, working at Wheaton Glass and he and Jennifer have new baby, Julia Bernice (2/2/01)

Jacque King Spetz, '92, has left Motorola and moved to Bozeman, MT with husband. Scenery is gorgeous, but electronic materials work scarce.

Cindy Arens Kokatt, '92, working at Medtronic and is expecting first.

Kerry Meinhardt, '93, is still at Pacific NW National Labs and working on fuel cells. He's been married 3 years to Sherri and also reports that **Vince Sprenkle, '92, '96**, has joined group already including **Jeff Stevenson, '77, '91**.

Scott Haling, '93, announces birth of **Jackson**, the first boy after three daughters (Alli, Kayla and Madison.)

Drew Hanser, '92, finished Ph.D. and is working for start-up Kyma Technologies doing semiconductor processing of AlN and GaN for substrates.

Mary Grimm, '96, is finishing up M.S. in Biomedical Eng. At U. Minnesota and planning to start a Ph.D., in Mat. Sci. in Fall.

Jen Remley '97, still working at MEMC in St. Louis and began MBA program at Wash. U. in Fall.

Josh Sabec, '97, still at Howmet married to Pam Walk (Min.E., '97). They have adopted a cat (Max) in their new house and have subsequently lost confidence in their potential parentability. (*Guess they're Max-ed out!*)

Shahid Lakhwani, '97, Ph.D Rutgers, '00, working at Corning on catalytic convertors.

Melissa Mesko, '97, has returned to Corning after two years at Alfred University working with **Prof. Jim Shelby, '68**. She and husband live about 15 miles N. of Corning. She's excited to be back at Corning working on automotive glass and flat panel displays.

Sean Teitelbaum, '97, expects things to be booming as he moves to Fort Lee, VA for Captains Career School and a hoped for assignment to explosive ordinance disposal training. (*Duck!*)

Ryan Shawgo '98 finally tied the knot with **Rebecca Scheidt, '98** on April 1, 2001 (really!) **Ryan** works for Zinetics and is building oak cabinets in his condo! (*He says sound insulation is good. We'll ask neighbors.*) **Rebecca** is two years into Ph.D at MIT and will be researching microchip drug delivery.

Sarah McGee, '98, is now working as a Process Eng. For Guardian Industries in North Carolina.

Matt Bourbina, '99 is finishing M.S. research at Sandia Labs for Georgia Tech.

Erika (Middleton) Rezek, '99 works as a fuel cell engineer at Ovonic Battery.

Katie Hillstrom, '00, works for Wesgo and welcomed **Paige** to family (6/15/00).

Pat Schroeder, '00, is now settled in "beautiful" Albuquerque working for CTS Wireless Components, as kiln engineer for the RF division. "Continue microelectronics emphasis as more students become more involved in the industry. We may not need to know everything about it in great detail but it has helped me understand plating, lapping, etc., and in general, the process of making electronic materials."

Vic Gonzales-Tait, '99, is now working for Intel on dry etch and has just bought a new house.

Brandon Cordts, '93, and wife have a new baby (**Baylor**) born 10/14/2000. *Congratulations.*

Douglass Churovich, '83, is now a practicing patent attorney.

What's New With You?

Job change? New address? New kids? Grandkids? Great vacation? Got married? Let us know. We're always glad to hear from you! We'll pass on to the Alumni Office for publication in the MSM Alumnus. We would also appreciate any comments about our newsletters, (what you would like to see, how often, etc.). (You can also submit changes online via our webpage at <http://www.umn.edu/~ceramics/Employdata.html>)

Name _____ Class Year _____

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City _____ State _____ Zip _____

Job Title _____ Employer _____

Work Address _____

Work Phone _____ Email _____

Comments:

(Just fold and staple or tape closed)

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