

Mudslinger

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

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Ceramics Faculty Now Head Both Materials Research Center and Department

On January 1, 2001, **Prof. Richard Brow** succeeded **Prof. Wayne Huebner** as Chair of Ceramic Engineering and Wayne became the director of the **Materials Research Center**. This change increases the importance of the Ceramics Department in the materials research activities of the campus.

In becoming the new director of **MRC**, **Wayne Huebner** assumes a critical responsibility for the campus by undertaking a leadership role in its pressing needs to increase externally supported research. Wayne felt fortunate in being able to accept the position, knowing he had an able and popular replacement available for the department. (To remind those not familiar with the unique structure of MRC, its members continue as active teachers and researchers in their departments; so, we will not lose the great influence Wayne has had on the Dept. He'll just be freed up from one kind of administrative duty to take on another.) Wayne succeeds **Prof. Jim Stoffer**, who elected to accept an early retirement offered to the campus this past Fall Semester. Until the early '90's, **Dr. Delbert Day** was MRC's director.

Phonathon Dates
February 25-
March 1, 2001

From Our New Chairman, Richard Brow



I think that for most of you, a word of introduction is in order. As to my background, I grew up in New York state and received my B.S. in Ceramic Engineering from Alfred University in 1980 and a Ph.D. in Ceramic Science from Penn State in 1985. From 1985 through 1997 I was a staff member at Sandia National Labs in Albuquerque where I was responsible for developing glasses for a variety of applications. While at Sandia, I collaborated with **Delbert Day** on a number of projects and it was through Del that I became familiar with the Ceramic Engineering program at UMR. I arrived here in January 1998 and have since picked up the undergrad glass courses and have started a couple of graduate glass and optical materials courses. My current research includes studies of platinum impurities in laser glasses, the preparation and characterization of rare-earth containing glasses, and the strength and fatigue-behavior of glass fibers.

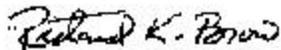
As you probably know, UMR is one of the last universities in the US to maintain ceramic engineering as a separate and distinct materials discipline - and this attracted me to the department. I have been a ceramic engineer for better than twenty years. I like what we do and the people who do it. It is my goal to maintain the Ceramic Engineering discipline at UMR as a vital and attractive program for the foreseeable future.

In some respects, maintaining a distinct department will be easy to achieve. Our students are highly sought-after with starting B.S. offers averaging \$50K in 2000. Our faculty are very productive, averaging about \$230K in sponsored research last year, the highest per capita research effort on campus. With Wayne now director of MRC, the opportunity for an even greater research presence on campus is enhanced.

Nevertheless, we feel the pressures of the campus-wide financial and enrollment problems. Your financial support of the department during our phonathon and throughout the year is making the difference. You can also help us by proselytizing for Ceramic Engineering. As successful members of the business, research, and academic communities, you can inspire young people to consider Ceramic Engineering as a career option. Do you know a high school student with an inclination for math and science? Tell him or

her about us! Do you have contacts with a local high school or community college? We'll provide you with materials that describe our program including the Jackling Institute, to pass along. Does your business hire students in summer or co-op positions? Give us a call! Would you like to meet our students and tell them about your experiences as a ceramic engineer? Let me know and I'll add you to our undergraduate seminar list.

In my three years here, I now appreciate the crucial role that our alumni can play in maintaining the vitality of this department. I look forward to working with even more of you as you help us meet the challenges that we face. Stop in the office when you are on campus or drop me a line. I'll tell you about what's new in the department and I'll seek your advice about how we can improve things. I won't be able to swap hunting stories like Wayne does, but I'll talk about my golf game with anyone.



Richard K. Brow
573-341-6812
brow@umr.edu

You set a giving record in 2000!

Our most enthusiastic thanks to the Ceramic engineering alumni who helped us set a new record for pledges and gifts during the 1999-2000 fiscal year. More than 170 alumni pledged \$24,760 to the department and sent in \$25,105 in actual gifts. This trounced the previous record of \$16,200 in actual gifts, established in 1998-99. Thank you again for your generosity! We believe we could have done even better if we could have reached more alums. Between lost addresses, answering machines, call-screening and modem connections, we could only make telephone contact with about 25% of you! If you were missed last year but wanted to participate, please get in touch with us.

The average gift of \$147 for the 1999-2000 fiscal year was also the highest ever in the history of Ceramic Engineering's phonathon. And, of course, with any average, that meant **one-half** our alums gave more than that! This giving level was 50% higher than the previous high in 1995-96. This year we will again be asking for each of our alumni to make a gift of \$200, or more. Once again, after expenses, these funds, will go into building the **Ceramic Alumni Endowed Scholarship Fund** which is now up to \$140,047. We had hoped it would be larger, but this proved to be a weak year for endowment investments.

"Your support makes such a difference in our department," says new Chair **Richard Brow**. "Scholarships are extremely important because they help us attract students from a dwindling pool and keep them once in the department."

This year, we will begin calling alumni on Sunday, Feb. 25. 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 forty 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.

Convention Banquet '00

On May 1, 2000, during the American Ceramic Society Convention, at Shannon's restaurant in St. Louis, approximately 98 alumni, friends and spouses gathered for



a reunion and to honor **Dr. Charles Sorrel** for his years of teaching service at UMR. After a fine dinner, **Wayne Huebner**, gave a personal reflection on how influential Dr. Sorrel had been in making his initial selection of ceramic engineering and what a role model he became for him after he enrolled. The attendees were regaled by many funny stories as Wayne

told about faculty idiosyncrasies, lab mistakes and primitive facilities. While Dr. Sorrel's remarks refined the historical accuracy of some of the earlier comments, he gave credit to those who had come before and after him and spoke with pride about his family. The guests greeted his remarks with a standing ovation to finish an unforgettable evening. Another banquet is planned for the next Annual Meeting, in Indianapolis on Monday night, April 23, 2001 starting at 6:30 pm. at Jillian's. Details at (<http://www.umn.edu/~ceramics/special.html>) or **contact Denise Eddings at 573-341-4401**. **The deadline for registering for the dinner is April 16, 2001.**

New Chancellor for UMR



Dr. Gary Thomas, former provost and professor of electrical and computer engineering at the New Jersey Institute of Technology in Newark, is the new chancellor of the University of Missouri-Rolla. Thomas, 62, succeeded Chancellor **John T. Park** who retired on September 1, 2000. Thomas served as provost and senior vice president of academic affairs from 1990 to 1998 at the New Jersey Institute of Technology in Newark. At NJIT, he helped to form the school's College of Science and Liberal Arts, the School of Management, and the Dorman Honors College.

Before the NJIT, he served in several academic and administrative posts at the State University of New York at Stony Brook. As Associate Dean of the graduate school for Stony Brook, he was the chief spokesperson for research at the university. He was chairperson for the Energy Technology Laboratory at Stony Brook. He was also a member of the Licensure Approval and Accreditation Board for the New Jersey Department of Higher Education.

A native of California, Thomas earned his bache-

lor's degree in electrical engineering at the University of California at Berkeley, in 1960. He earned his master's degree in physics at UC-Berkley in 1962 and his Ph.D. in electrical engineering and computer science at the same institution in 1967.

Among some of his announced plans are his intentions to create a business program on campus with an eventual MBA program.

ABET and You

ABET, the Accrediting Board for Engineering and Technology, is continuously revising the criteria for program evaluation, and this impacts us every six years. The current emphases are not quantitative, but outcomes-oriented. As never before, we have to get feedback from alums and employers, along with students and faculty. So, please take time to interact with us this year, and in the future. It will be vitally important to continuing the accreditation of the Ceramic Engineering program. Our ABET review will occur during the Fall 2002 semester.

Does your input have an effect? By all means it does. When we surveyed alumni last year about the department curriculum, many of you responded that a course on organic materials would be beneficial. As a result, we have rewritten our undergraduate requirements to include the new course *Organic Additives in Ceramic Processing (CER315)*, to be taught this winter by Profs. Rahaman and Hilmas. We also received many comments about your use of statistical techniques for designing processes and materials and so in response we modified our math requirements. All our students still take three semesters of calculus, but then have the choice of taking either differential equations and one statistics course, or two statistics courses, including design of experiments.

In preparation for our ABET review, we would like to collect some information about how we prepare our students for careers as Ceramic Engineers. Enclosed with this newsletter is a brief survey that lists a set of desired learning outcomes, or abilities, that each graduate of our department should possess. Please take a few moments to consider your own career and let us know what you think. As before, we will use your input as we design the curriculum for UMR students in the 21st century.

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 Anne Weller at 573-341-6090 or e-mail her at aweller@umr.edu.



Equipment Donations

Has your company recently upgraded your laboratory equipment and the old equipment is gathering dust in the corner? If your company has a university donation program, keep us in mind! We are particularly interested in powder and sample preparation and characterization equipment that can be used in our sophomore, junior and senior labs. Examples of equipment that will find immediate use include DTA's, dilatometers, lab-scale presses and furnaces, saws and polishing equipment, optical microscopes, viscometers, etc. If you are interested in donating equipment, please contact Richard Brow at 573-341-6812 or brow@umr.edu.



Sean Landwehr explaining low temperature materials to high school students.

Keramos Student News

Keramos was quite busy in the year 2000. The UMR Keramos chapter was presented the James I. Mueller Outstanding Chapter Award during the American Ceramic Society's 102nd Annual Meeting held in St. Louis. *This was the fifth consecutive year for the UMR chapter to receive this award.* Keramos members also won the Mug Drop Competition, an event where students from several Universities create a ceramic mug, and the mug that survives being dropped the farthest wins. Last spring, Keramos members ventured to St. Louis to participate in E-Week, where we demonstrated such things as superconductors and a space shuttle tile at the St. Louis Science Center. The ACerS/NICE and Keramos Annual Banquet was held at



Bill Denk, '60 (r), with **Wayne Huebner** was honored as "Outstanding Alumnus" at the Spring 2000 ACerS/Keramos awards banquet.

the Rosati Winery.

This fall, Keramos sponsored a departmental float trip where current students and prospective freshmen and sophomores enjoyed the cool water of the Current River. An Alumni Barbeque was held in McNutt Hall during Homecoming, allowing students to meet some of the recent and not so recent graduates of this department. Senior Farewells were held at Jesse James' Hideout, where graduating seniors were given a final send-off by their peers prior to graduation.

Throughout the year 2000, Keramos has enlightened the public in regards to Ceramic Engineering by giving laboratory tours to Elementary, Middle, and High School students, as well as parents. Keramos also sponsored a freshman open house, where students could come and talk to current students about the department and learn more about ceramics.

Roger Smith, Keramos President

ACerS Student News

The members of the UMR student chapter of the American Ceramic Society have been enjoying a prosperous and active year. We had our highest turnout of students attending the Annual Meeting and Exposition. We were a force to be reckoned with in St. Louis! We are hoping for equal turnout this year and not only are we going to have a participant in the putter contest. We are going to win it. This I can guarantee!

For the beginning of the school year we had our annual fall picnic to see everyone after the summer and to welcome all the new students. We regretfully say that the Faculty and Graduate Students got the best of us in the softball game. The good news is that we completely whopped the Metallurgical Students in softball later that semester.

We are now planning for the 103rd Annual Meeting and Exposition in Indianapolis. We hope that all of you attending the event will make time to stop by our booth, chat, and see exactly what we have been up to. We will have some pictures and a drawing for our alumni. Hope to see you all there!

Jessie Rife, ACerS President

Graduates in 2000

UMR awarded 15 B.S. degrees, 7 M.S. degrees, and 3 Ph.D. degrees in Ceramic Engineering at the 2000 May and 2000 December graduation ceremonies. At the May 2000 ceremony, **Leslie Group** ('75 M.S., High Temp, Inc.) was awarded a Professional Degree. In December 2000, **Douglas Schwarz** (M.S. '74, Dow Chemical) was awarded a Professional Degree.



May 2000 B.S. Graduates



December 2000 B.S. Graduates



Leslie Group with Dr. Harlan Anderson at May 2000 commencement.

Faculty News

Dr. Harlan U. Anderson, Curators' Professor Emeritus



Dr. Harlan Anderson has been as busy as ever even though officially "retired", maintaining his post as the Director of the Electronic Materials Applied Research Center and the Editor of the Journal of the American Ceramic Society.

Research over the last year has grown substantially, with focus on oxygen separation membranes (Praxair), syngas production (University of Alaska), solid oxide fuel cells (DOE and Nextech), electroluminescent displays (Lumimove) and high energy density dielectrics (Honeywell). The year 2001 will bring several changes to the group, including the departure of Brian Gorman (joining North Texas State as a postdoctoral associate), Toshio Suzuki (back to his company in Kyoto), C.J. Monzyk (unknown destination as of yet), and Richard Xie (joining Intel). The old red Nissan was finally booted out, and replaced by a new white Chevy pickup. The highlight of the year had to be the "Geriatric Salmon Fishing Expedition" to Alaska, where he stared down a grizzly and caught lots of king salmon. Score one for the elk this year, but look out next year as Harlan brings his full arsenal to bear against the wilds of Colorado. (harlanua@umr.edu)

Dr. Richard K. Brow, Professor



Dr. Brow's current research activities involve studies of the properties, structures and applications of glass. We are characterizing the dissolution behavior of platinum in phosphate glass melts and have determined how Pt⁴⁺ ions are incorporated into the glass structure. These results are being used by Lawrence Livermore National Lab to aid production of laser amplifiers for the National Ignition Facility. We have prepared new series of rare earth ultra-phosphate glasses and have used synchrotron radiation to show how the local environment of the rare earth ion changes with glass composition. These studies will help explain the unusual optical and mechanical properties of these glasses. Finally, we have recently started two new projects to investigate the fracture strengths and elastic moduli of silicate and phosphate glasses to develop new compositions for structural fiber applications. Details of some of these research programs can be found at www.umr.edu/~brow.

Dr. Delbert E. Day, Curators' Professor Emeritus



Dr. Day sends belated wishes for a successful new year to all his former students. His busy group of research aides, graduate students, visiting scholars, and research professors continue to be involved in many interesting glass projects.

The FDA gave its approval and patients in the US with liver cancer are now being treated with the radioactive glass microspheres, trade name TheraSphere, at two sites, soon to be four sites. Early reports from the physicians are encouraging.

The NASA sponsored research on nucleation and crystallization of glass in space and on earth occupies a large amount of **Dr. Chandra Ray's** time. There is growing interest in the DTA techniques Dr. Ray has developed since it is a very rapid method for measuring the nucleation and crystal growth rates in glass.

Another three year contract was received from DOE to continue research on the chemically durable iron phosphate glasses for vitrifying nuclear waste. Interest in these fascinating glasses continues to grow. Within the past year, these glasses were found to have an unusually high tensile strength higher than the common E-glass and 60% of that of fused silica—the strongest glass known.

Competition for graduate students is very keen so if you know of students in engineering, materials science, chemistry, or physics (or you are tired of working and want to return to UMR for another degree), please mention our program to them. (day@umr.edu)

Dr. Bill Fahrenholtz, Assistant Professor



Since joining the department as an assistant professor in the summer of 1999, Bill has taught the sophomore lab classes (Cer. Eng. 111 and 122), thermodynamics (Cer. Eng. 259), and phase equilibria (Cer. Eng. 251). In the past year, Bill has worked to establish a statewide math and science competition for high school students in Missouri, the Academic Challenge (www.umr.edu~wyse). He has continued his research in the area of ceramic-metal composites with 4 funded research projects. The University of Missouri Research Board supports a study of the effect of interfacial adhesion on strength and toughness in copper-alumina composites. Caterpillar funds the development of alumina-nickel composites for diesel engine applications. Work is continuing on the characterization of cerium-based conversion coatings for the corrosion protection of aluminum, a collaborative project with **Professors Matt O'Keefe, Tom O'Keefe, Jim Stoffer, and Tom Schuman** that is funded by a direct Congressional appropriation sponsored by Senator Bond. Finally, a project has just ended that was supported by the Appleyard Endowment in the School of Mines and Metallurgy on the reaction of mullite ceramics with aluminum and aluminum-copper alloy melts. (billf@umr.edu)

Dr. Greg Hilmas, Assistant Professor



Dr. Greg Hilmas currently is conducting research in the areas of structural and electronic ceramics. Recent R&D in Fibrous Monolithic ceramics (materials with coextruded architectures) has led to the development of extremely wear and chip resistant materials. These novel, "honeycomb-shaped" composites are tungsten carbide and diamond based and are currently being manufactured for drill bit inserts by Smith International, Inc. in Houston, TX. Smith is a world-wide supplier of rock drill bits for the petroleum drilling industry. Extrusion of novel ceramic architectures has also captured the attention of the electronic ceramics industry, and part of the research group is focused on coextrusion of multilayered ceramic capacitors for high energy density application as well as novel architectures for solid oxide fuel cells. His group currently consists of one visiting scientist (Tieshu Huang), four graduate students (Dustin Beeaff, Michael Matthews, Angela Mercer, and Xilin Xu), and four undergraduate students (Sean Landwehr, Doug Legel, Brett Scarfino, and Jeremy Watts). (ghilmas@umr.edu)

Dr. Wayne Huebner, Professor



This has been a hectic yet rewarding year for me. Two of my graduate students, Eric Carleton and Chad Essary successfully defended their M.S. theses. Eric is now a Ph.D. student at Berkeley, and Chad is a Ph.D. student at the University of Florida. Both are doing very well and enjoying the change in atmosphere. Brian Gilmore, XiaoDong Zhou and Zach Byars are all still slaving away on their dissertations. I'm anticipating that XiaoDong and Brian will graduate in May or August, so if you're looking for any great students let me know.

Zhang, Xiao Mei and Jaci are all doing very well and working hard on the high energy density capacitor project. This year I lost Marvin Pennell - he now works at MoSci in Rolla performing R&D. We still get together and race on the stairmasters, but now at 6:00 a.m. instead of lunch! I'm sure Taco Bell misses us.

Research is still going as strong as ever, with active projects in fuel cells, capacitors, insulators and directed energy weapons. Of course the latter is probably my favorite since it involves shooting things, even if it is just EM waves or electrons.

The biggest news about me you already know if you've read the Mudslinger from the front - as of January 1st I'm the Director of MRC. I'll miss the daily grind of interacting with students, but I think I can have an even larger impact on the well-being of UMR from that post.

I went to Hawaii again this year for a conference, but this time didn't get to be on Baywatch! I did manage to get a nice elk this year in Colorado. Greetings to all of you, and I look forward to talking to you during the Phonathon, at the Convention, or in person at UMR. (huebner@umr.edu)

Dr. Doug Mattox, Professor Emeritus



Dr. Mattox's title suggests what's new in his career as he was one of over forty faculty to accept an early retirement incentive offer with half-time rehire. Dr. Mattox is concentrating on teaching, and some recruiting and development, including editing the newsletter. This past year he completed research projects on using municipal waste glass additions to lower energy costs in brick manufacture and studies of the developing morphology of thick film electronic paste systems. (dmattox@umr.edu)

Dr. Robert Moore, Curators' Professor Emeritus



Dr. Moore and his staff in the Refractories Satellite of the Center for Glass Research have obtained funding for a third project under this NSF coordinated consortium of thirty companies. The company delegates elected in November 2000 to fund a project entitled Electrochemical Sensor for Measuring NaOH Vapor Content in glass Tank Melters. The research involves the development of a beta-alumina probe which can be inserted into production furnaces to obtain a real time reading of the concentration of NaOH in the combustion space of oxyfuel-fired furnaces as well as conventional air/fuel fired furnaces. Partnering in this exciting prospect are **Dr. David Robertson** of UMR's Pyrometallurgy Center and the Ionotec Company (UK), producers of ceramic cells for similar measurements. **Dr. Derek Frey** of Cambridge University has produced a seal-less version of an Ionotec product for use in gas phase media containing Na or K-bearing volatiles. The ability to obtain rapid, accurate measurements of NaOH concentrations at any location in the combustion space of glass furnaces will be important for process control, process optimization, physical and computer modeling of the furnaces and of refractory corrosion mechanisms as well as for laboratory experimentation. **Dr. Mariano Velez** is principal investigator of this \$150,000 three-year effort. (rmoore@umr.edu)

Dr. P. Darrell Ownby, Professor Emeritus



Dr. Darrell Ownby had a record number of 18 students in his Interfacial Phenomena course. They included graduate students from China, India, Mexico and 11 U.S. citizens. By the end of the semester, the students searched the most recent literature on selected topics and all increased their presentation skills with many demonstrating innovative special effects using Power Point computer techniques. One sessile drop study was completed and another continues. Garrick Ackart studied aluminum wetting of titanium diboride. He is planning to return to UMR next Fall to complete his residency requirements for his M.S. degree. Ben Eldred is studying iron and steel wetting of refractory oxides for his PhD. He presented a paper at the International Conference on High Temperature Capillarity in Kurashiki, Japan this past Fall. He is finding some interesting atmos-

phere effects with titanium killed steels. Zheng (Peter) Yang is studying the mechanical properties of optical germanium. He hails from Mainland China and should complete his M.S. degree this year. **Jason Peters** is back from his two year mission to Belgium and is writing two more papers from his M.S. thesis work. That brings his total to six papers – more than many students write for their PhD! Dr. Ownby and his students are also working on surface effects to concentrate zinc and germanium from non-traditional sources together with **Dr. John Watson** from the Metallurgy department at UMR. (ownby@umr.edu)

Dr. Mohamed (Len) Rahaman, Professor



Dr. Rahaman spent six weeks in the summer of 2000 as a National Research Council Associate in the Air Force Summer Faculty Fellowship Program performing collaborative research with the Processing Science Group at the Air Force Research Lab, Wright-Patterson AFB. He continues his research in ceramic processing and sintering and is currently in the process of revising his textbook. (rahaman@umr.edu)

St. Louis Section Meeting

The St. Louis Section of the American Ceramic Society will sponsor the 37th annual symposium on the theme “Refractories for Aluminum”, on March 23rd, 2001 to be held in St. Louis at the St. Louis Airport Marriott. A block of rooms have been set aside at the Marriott at the rate of \$99. Hotel arrangements can be made by contacting the Marriott directly at (800) 228-9290 or (314) 423-9700, please refer to the **ST. LOUIS SECTION** when making your reservations. **Cut-Off date to receive the St. Louis Section special hotel rate is MARCH 5th, 2001.** The evening of March 22nd, there will be an outing to attend a St. Louis Blues hockey game. The cost for the game which includes a pre-game party is \$60/per person (**cut-off date for hockey tickets is FEBRUARY 25th**). Please contact Patty Smith if you are interested in attending the symposium or hockey game. Phone (573) 341-6265, Fax (573) 341-6151 or email psmith@umr.edu.



UMR students took a field trip in August 2000 to Kohler Company, Caterpillar, and Argonne National Lab. **Dan Karraker, '92** of Kohler Company with the students showing a Kohler process.

VIRTUAL REUNION

We thought of a way to reconnect alums with one another. Here's the idea. We thought of having a place on our home page called "Virtual Reunion". It would consist of yearbook pictures of participating alums along with their graduation year. When you click on the picture, you would get a current picture of the alum, a family picture or anything tasteful that is simply "you". With your permission, we can put an e-mail address under it and you can be reached by your classmates. So, if you'd enjoy such page(s), please send us a non-returnable picture that you'd like to connect to your graduation picture and we'll do the rest. If there is a large response, we'll post the pictures for a month at a time and replace them. This voluntary page sounds like fun to us. What do you think? For further information, contact Prof. Doug Mattox at dmattox@umr.edu.

Phonathon/Alumni News (2000)

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," the "where's," and the "what's and current status." We really would like to hear! Fill out the "What's New" form enclosed or email Dr. Mattox at dmattox@umr.edu.

Charles Achuff, '33, Turned 90, but still goes to work one day a week for now-sold Achuff Architectural Products.

Everett Sharp, '40, active in investing (recommending biotechs last winter.)

Vernon Kasten, '45,'46, Ceramo Co., Jackson MO, terracotta mfg. Active in business and travel.

Bernard J. Eck, '50, At age 71, working bout 25% of time as a consultant and travelling the world.

Bob, '50 and Sybil Bloome, are still enjoying his retirement from GM in Nov. 1987.

Thomas C. Brown, '51, Enjoying the invention called retirement, says golden years may actually be "rusty" years.

John Bartel, '52, Hermann, MO, wants local alums and MO industry to get active in St. Louis section of ACERS. Moves of refractories industry headquarters from MO have impacted attendance. "Come on out!"

Jim Cauthorn '53. Enjoying retirement after 40 yrs. with Lucent Technologies. Completed cruise of Mediterranean in '99 and loves ballroom dancing. (1,2,3...1,2,3)

John Ford, '53, Retired as VP and GM, Vernay Products, after 25 years in 1994 (now sold to Centek). Continues to work as consultant to Centek. Company is industry leader in design and manufacture of marine exhaust components and systems. John offers to help anyone having exhaust problems with their boat to give him a ring or drop him a line!

Dr. Gene Haertling, '54, retired from Clemson U., living in AZ playing tennis and making and painting pottery (naturally).

Bill Denk, '60, retired in Oct. 2000 after wife Rosemary retired in May. Looks forward to enjoying new grandchild and a move to hill country of Texas.

Dr. Orville Hunter, '60, enjoying retirement from A.P.Green in Columbia, MO.

Ira Phillips, '61, Executive V.P. Ames Co. - "oldest continuous brand name in U.S., (1774)"

George Taylor, '64, VP National Refractories (formerly Wellsville Firebrick)

John Banks, '64. Director Value Focus (lean mfg.), 3 children (Chris, sales, Nat. Starch - Kelly, Relocation Co., Cleve. - Allen, Landscaping Architecture, WVU.)

Dr. Bill Daniels, '64, makes his home in Ohio and announces 37 years of marriage and first granddaughter.

Vic Marshall, '65, starting new company along with being independent glass rep.

Mike Fair '71. Dir. Sales, Construction Products, A.B. Chance, Co.

Dr. Edward Boulos, '71 (Ph.D.), received Ford Motor Co.'s most prestigious Henry Ford Technological Award in November, 1999.

Lindell Rutherford, '71, 29-year Naval career, currently Rear Admiral. "Aye, Aye, Sir".

Russ Smith, '72, V.P. Operations, Isolatek, Stanhope, NJ.

Dr. John Halloran, '73, Appointed to Alfred Holmes White Chair of Materials Science, Univ. Mich., Feb. 2000. (Congrats!)

Don Orcutt, '74, Owner of three companies: Industrial Firebrick of Detroit, H.R. Products and Lama Associates.

John Middleton, '75, moved to MPD (formerly GE Microwave Products Div.) recently and is enjoying ESOP. John's also become an ordained minister in his denomination.

Dr. Jeff Stevenson '77, '92 at Battelle working on solid oxide fuel cell program. Recently promoted to Senior Research Scientist, II.



*Would you like the 2001 St. Pat's sweatshirt? Contact Denise Eddings at 573-341-4401 (eddings@umr.edu) to place your order. **Deadline** for ordering is March 9, 2001.*

Dr. Tom Wetteroth, '79, still at Motorola but now doing low temperature co-fired ceramics.

Kate (Fox) Snyder '80 juggles a marketing business while married to **Tim Snyder** '79 and parenting five (5) children (3 of college age.), hopes to send son Daniel to UMR in four years.

Mary (Alane) Hartnett, '82, who is currently staying home raising two boys, Tommy (4) and Jonathan (2), reports, "Life couldn't be better!"

Dr. Dean Anderson, '82, in State College, PA, now proud owner of new Suburban, and oh, yes, two kids.

Jeff Phillips, '84, successfully defended Ph.D. in April, where he worked with Dennis Ready at Colorado School of Mines. Jeff was recently promoted to Engineering Mgr. at CoorsTek, in Golden, CO. [And what do you do in your spare time? - Ed.]

Erica Skouby (84) enjoyed KC Royals spring training this year (as observer) and returned to engineering in April, working on solventless silicone liners at 3M. Also, working part time as church Adult and Family Life Ministries Director. In spare (?) time is a quilter, as well.

Patricia (Pike) Daluga, '84, proud mother of millennium baby Magdalen Daluga born Jan. 12.

Dan Beck, MS '86, living in Parma Heights, OH.

Paul McLaughlin, '86, '89 is a father again, and again, and again! He and Laura became the proud parents of quadruplets on Dec. 26, 1999. Philip, Meredith, Jenna, and James.

John Witham, Ph.D., '90, reports a new job in July as Product Engineer with Johanson Dielectrics, Sylmar, CA. John says "it is good to be working with electronic ceramics every day again." John will be at Indianapolis this Spring.

Jim Hann, '90, retired last February from U.S. Army Corps of Engineers after 20 years of service. Taking a B.S. from St. Mary College, in Leavenworth to become an elementary education teacher until daughter graduates from H.S.

Beth Baumbach, '90 Still with Sunnen Corp. in St. Louis area and visited at student booth.

Jacqueline (King) Spetz, '92, who had been a Process Engineer for Motorola in the Ceramic Technologies Research Lab in Tempe Arizona left at the end of August along with her husband to make her home in Bozeman, MT and will be looking

for a new job. Best wishes Jackie!

Darryl Presley, '91, four years at Magneton, Boonville, KY. Beth and Darryl are proud parents of MaKenzie, born 7/26/99.

Amy McIntyre ('91,'93) reports that she and husband, Paul Pritchard (Civ. E., '97) are focused on Ryan, who at 4.5 months old on Saturday (4/1/00), parents have determined to be a "real cutie." Amy works for MEMC as a process engineer in EPI wafer manufacturing and is responsible for four reactors plus various other projects. They have also bought several acres and built a home.

Chris Leach, '92, Noranda Aluminum. Certified as 6-sigma, black belt in June, 2000 and finished MBA in October.

Mike Grasch ('92) still working in lamp making as a process engineer, now with Osram Sylvania in Lexington, KY. Mike and Sarah welcomed Jonathan 8/26/99 to family to join two year old David.

Krista (Sheftick) Hoppe, '92, 3 children, part time with Archer Daniels Midland, IA.

Mike Koenigstein, '93, and **Karen (Niehaus) Koenigstein** ('93) were busy preparing for the arrival of their first child on, or about, July 1, 2000. Congratulations!

John Conrad, '91, '93, is now with LVR (Lehigh Valley Refractories), working out of Jefferson City, MO.

Jeff Birkenmeier, '93, now studying to become Dr. of Chiropractic, in Logan College of Chiropractic, Chesterfield, MO. Jeff says, "time spent at Rolla with the tough curriculum and the work experience over my 6 year career as an engineer has proved to be excellent preparation for this new endeavor." Jeff would be happy to help readers contact Chiropractic world for research, etc. (Jeff, you're not pulling our leg are you? – Ed.)

Dan Krueger ('94) and **Nikki (Ritter) Krueger** '94, are enjoying the newest addition to their family, daughter Reagan, (3 mos. Old). She joins 2 ½ year brother Ritter. Dan's working at Honeywell in Kansas City now.

Dr. De-Yin Jeng, '91 at YTC America Inc. in CA.

Matt Seabaugh, '94 Continues with NexTech in Columbus, OH married "Jeri" 5/28/00, who is completing a degree in accounting.

Joe Tutka, '94 promoted from Sales Engineer to New Product Specialist with Kyocera.

Josh ('94) and Pam (Walk) **Sabec** ('94 Min. Eng.) just bought their first house in Newport News Virginia.

Jason Canon, '95, '97 Is Director of Research and Development for Wahl Refractories, and is often pictured in Cer. Bull.

Laura (Vrabel) Lowe, '93, Left North American Refractories for a sales position in factory automation with C&E Sales, Inc., Dayton, OH.

Steve Keltner, '96 has recently become a homeowner and changed positions at MEMC, St. Peters, MO. Now in research.

Amy Barnes, '97 pursuing Ph.D. at Penn State and into extreme sports, rock climbing and mountain biking. (Whew!)

Mike Vincent, '97 has been at Spectrum Control for three years in thick film products and has recently been promoted to Product Engineer. He's enjoyed New Orleans very much, uses his AC all year and has got active in SCCA Solo II Autocross, where he races his Acura Integra sports car. "Vrooom!"

Gary Ross '97, gaining real world experience with sleep deprivation running Cores-Tek CVC SiC plant in Texas. Technology moved to Benton, AR in March, where Gary's looking forward to R&R.

Sean Teitlebaum, '97, as Army officer in Fort Bragg, NC, became Maintenance Officer in charge of the 1st COSCOM in December. Married Stacy Becker (UMC-'99) in Fulton, MO in April. Best Wishes!

Shahid Lakhwani, '97(M.S.) began career at Corning this year.

Matt Willer '98, "happy to hear the alumni are responding so favorably [to phonathon], but it really doesn't surprise me as the Ceramic Engineering Department has been an invaluable launch to my professional career." Speaking of launches, Matt's in love with Whitehall, MI where he has "a great group of friends . summers are incredible" and "spends every weekend on his boat."

Jason Smith, '98, continues with Becton-Dickinson Accu-Glass and urges undergrads to get business-finance exposure.

Ingeborg Kaus, '98(Ph.D.), working as consultant and married Marius Irgens in Norway, summer '00.

Daisie Hobson, '98, completed rotation through manufacturing at Motorola and has been promoted to Factory Planning Analyst. Will be travelling to Scotland and France often, bought a house and is helping family relocate to Arizona. Daisie was featured in Alumni magazine.

Sam Conzone, '99 Ph.D. at Schott Glass, Duryea, PA, married and father of Athena Julia, 3/16/00. Baby born in morning, Sam had to make presentation in evening - what a professional!

Erika (Middleton) Rezek, '99 (2nd gen. UMR-Ceramist) married and moved to Albany, NY.

Katie Jost '99, working at River Cement Company, Arnold, MO.

Aric Buchta, '00, is a plating process engineer at Motorola.

Aaron Shipley '00, is a thin films engineer at Motorola, working on bipolar technology responsible for six sputtering units and related equipment.

In Memoriam

We were sad to belatedly learn from his wife of the passing of **George Ledbetter**, '57 who died in 1998.

Our condolences are also extended to **Joe Michelotti**, '52, on learning of the death of his beloved wife Rachael on Sept. 15, 1999.

