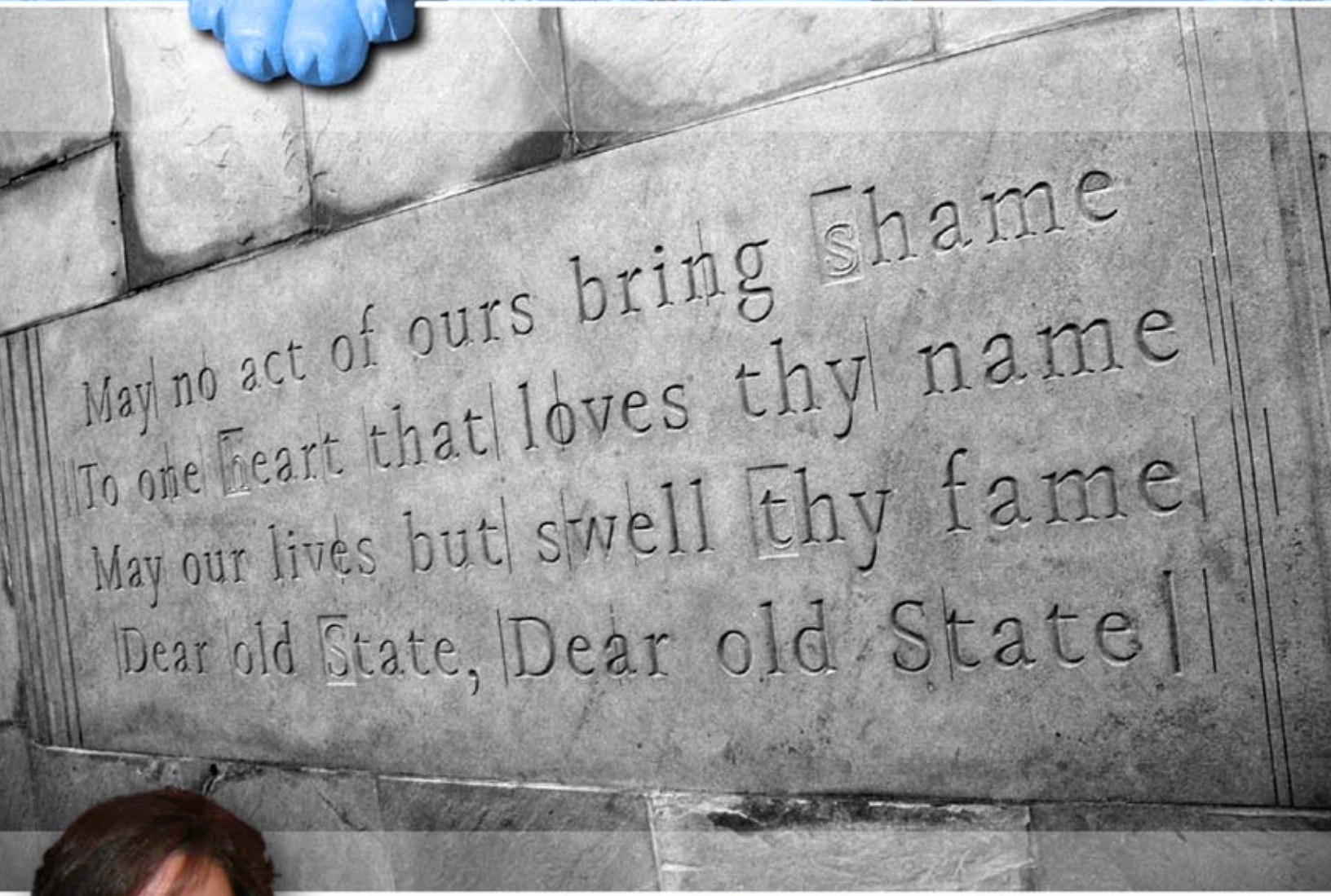


PENNSTATE



# MatSENews

Materials Science and Engineering Fall 2007 [www.matse.psu.edu](http://www.matse.psu.edu)



May no act of ours bring shame  
To one heart that loves thy name  
May our lives but swell thy fame  
Dear old State, Dear old State





**Dr. Gary L. Messing**

**Distinguished Professor of Ceramic Science and Engineering  
Head, Department of Materials Science and Engineering**

In this issue of MatSE News we highlight a number of alumni and future alumni. It has been a rough time around here lately as we lost dear alumni and faculty. The individual contribution of these gentlemen was impressive. Their lives did indeed “swell thy fame” of “Dear Old State”. They will be sorely missed.

Your contributions allow us to make further improvements of the educational landscape in Steidle Building. The new Materials Processing Laboratory sits in the former home of the “Mud Lab”. We still need a few major instruments to complete the project but I can assure you that you will not recognize the old lab. We also put together a summary of how scholarships created only a few years ago have impacted so many students since the scholarships were established. We appreciate your assistance in creating opportunities for students who would not otherwise be able to afford Penn State. Likewise,

your scholarships allow us to recruit many exceptionally talented young people to the field.

Our student organizations continue to excel. A first for us was the “Penny Wars” organized by the Material Advantage student organization to raise monies for their activities. Unfortunately, for Joe Flemish and me we “won” the right to have a pie smooched in our faces. Of course, this resulted in the intellectual challenge of naming the person who throws the pie (pier?) and the recipient of the pie (piee?). Wikipedia was no help and we have finals coming soon so let us know if you have the answer.

If you make it to town, look us up and we will be honored to show you around and to introduce you to some exceptional young people who’ve taken your place in the labs and classes. We are indebted to you for making MatSE the world-class department it is today.

**PENNY WARS!**

Material Advantage (MA) is a student organization comprised of undergraduate and graduate students of the department. In a fundraising effort, MA coordinated an event titled “Penny Wars”. Penny Wars is a competitive game that encourages donations of silver and discourages donations of pennies, well unless your goal is to get pied! This year, the competition was held in October in Steidle Building. Many students, staff, faculty and friends donated to this fun and worthy event. They were able to raise \$685.66 for the Materials Advantage student group. The honored winners, aka pies of this event were Dr. Joseph Flemish and Dr. Gary Messing. Nia Juwondo, an undergraduate student in Dr. Messing’s group was the pier for Dr. Messing. Nick Dietz, an undergraduate in Dr. Flemish’s MatSE 201 course was the pier for Dr. Flemish. Thank you to all that helped with this successful event and special thanks to Joe and Gary for being great sports!



**In this Issue:**

- Department News 3**
- Alumni News 6**
- Faculty News 8**
- Student News 9**
- In Memory 11**

Editor: Gary L. Messing  
 Writer/Editor: Katina L. Bartley-Posney  
 Design/Layout: Michael W. Fleck

MatSE News  
 Department of Materials Science and Engineering  
 The Pennsylvania State University  
 121 Steidle Building  
 University Park, PA 16802  
 (814) 865-0497

DEPARTMENT OF  
**MATERIALS  
 SCIENCE AND  
 ENGINEERING**

COLLEGE OF EARTH AND  
 MINERAL SCIENCES

### Richard Ernest Tressler, June 14, 1942 - September 8, 2007



Richard Ernest Tressler, 65, of Oak Hall, died Saturday, Sept. 8, 2007, surrounded by family at the Mount Nittany Medical Center. He died of ALS (Lou Gehrig's Disease).

He was a 1959 graduate of Bellefonte Area High School. He earned his B.S. degree in Ceramic Technology from Penn State in 1963, his M.S. at MIT

in 1964, and his Ph.D. in Ceramic Science at Penn State in 1967. He was a decorated veteran, serving as a Captain in the United States Air Force, then joined the Ceramics faculty at Penn State in 1972. He served as Head of the Department of Materials Science and Engineering for 10 years, was President of the American Ceramic Society, and Founding Director of the Center for Advanced Materials at Penn State. He also served on the technical advisory boards of Kyocera, Air Products, and Alcoa, as well as the Board of Directors of AVX Corporation. In recognition of his accomplishments he was named Academician of the World Academy of Ceramics, Honorary Member of the Societe Francaise de Metallurgie et de Materiaux, the International Prize of the Japan Fine Ceramics Association, and was named Distinguished Life Member of the American Ceramic Society, and received the Hosler Alumni Scholar Award of the College of Earth and Mineral Sciences. He retired as Professor Emeritus of Materials Science and Engineering in 2001.

He made a significant contribution to the field of Materials Science by being an outstanding mentor to his students. In addition to enjoying time on his farm with his family and particularly his grandchildren, he was an avid hunter and fly fisherman. He loved to garden, chop wood, and drive his tractor. His hobbies included restoring old homes and antique automobiles. He was a lover of music and played the flute and bass. He was a lifelong supporter of Penn State and dedicated himself to philanthropic efforts on behalf of the University. He will be remembered for his quick wit and sense of humor. He was a member of St. Paul's United Methodist Church, a life member of the Penn State Alumni Association, and a member of the Obelisk Society of the College of Earth and Mineral Sciences at Penn State.

The family encourages donations in his memory to:  
*The Richard E. Tressler Career Development Professorship in Materials Science and Engineering*  
The Pennsylvania State University  
121 Steidle Building  
University Park, PA 16802.

### MatSE welcomes new faculty member, Michael Hickner

Mike Hickner received a B.S. in Chemical Engineering from Michigan Technological University (Michigan Tech) and a M.S. and Ph.D. in Chemical Engineering from Virginia Polytechnic Institute and State University (Virginia Tech). In graduate school he worked under the direction of James E. McGrath and also spent time at Los Alamos National Laboratory. Before joining Penn State as an Assistant Professor in 2007, he was a postdoc and subsequently became a staff member at Sandia National Laboratories. Professor Hickner's research and teaching interests include all aspects of polymeric materials, polymer micro and nano-structure, transport characterization, electrochemistry, and new materials for energy applications.



### MatSE Faculty Member leads The Center for the Study of Polymeric Systems (CSPS)



New CSPS Director Coray Colina speaks with an attendee at the opening of the CSPS in April, 2007.

The Center for the Study of Polymeric Systems (CSPS) at Penn State was created under the Direction of Dr. Coray Colina (Materials Science and Engineering), and Dr. Ron Danner (Chemical Engineering). The CSPS specializes in the synthesis, characterization, modeling, and processing of polymeric systems. Our kick-off meeting was held on April 10, 2007 where Center faculty discussed their areas of expertise. CSPS faculty, their graduate students and industrial guests also gathered to discuss the latest advances and trends in polymeric research in an interactive poster session.

The experimental, modeling, and theoretical activities of the Center are of interest to scientists and engineers involved in the design, control, and operation of numerous polymer processes including functional polymers, B/C/M graphitic materials for hydrogen storage, polyelectrolytes, ionomers, liquid crystalline polymers, networks, gels, and elastomers, thermodynamics of polymer solutions, blends and copolymers, polymers for biomedicine and from renewable resources, nanocomposites, polymer electronics and optoelectronics, and membranes. Our vision is to become the leading research center that responds to the needs of industry, government laboratories and universities for experimental data and models to treat polymeric systems. You can find more about CSPS at [www.csp.spsu.edu](http://www.csp.spsu.edu).

## William Easterling Named Dean of EMS

William Easterling, director of Penn State's Institutes of Energy and the Environment and professor of geography and earth system science, was appointed dean of the University's College of Earth and Mineral Sciences, effective July 1.



"Bill Easterling has the expansive vision and leadership qualities that will position one of the University's most distinguished colleges for an even brighter future," said Rod Erickson, Penn State executive vice president and provost.

Since 2001, Easterling has served as director of the Penn State Institutes of Energy and the Environment, an affiliation of eight Penn State academic colleges and several University research institutes and centers. He joined the faculty of the College of Earth and Mineral Sciences in 1997 and also holds an affiliate faculty appointment in agronomy in the College of Agricultural Sciences.

He has held positions at Resources for the Future, a Washington, D.C. think tank, and the University of Nebraska-Lincoln. From 1996 to 1998 Easterling was interim director of the National Institute for Global Environmental Change for the U.S. Department of Energy.

Easterling is an internationally recognized expert on how global warming may affect the Earth's food supply. He was a lead author of the United Nation's Intergovernmental Panel on Climate Change report on the effects of climate change that was recently released in Brussels. This group was recognized with the Nobel Prize which was shared with Al Gore.

"My focus is on helping the college strengthen its position as a world leader in the earth, material, and energy sciences and engineering. The college has unique strengths to train students and create the new knowledge needed to solve some of the greatest challenges of our time, whether in the development of materials with unprecedented properties, desirable energy alternatives or the

**"My focus is on helping the college strengthen its position as a world leader in the earth, material, and energy sciences and engineering."**

*EMS Dean, William Easterling*

science for a secure, economical and sustainable planet. It is particularly important that the college be a leader in Penn State's new emphasis on energy science and engineering," said Easterling.

The College of Earth and Mineral Sciences encompasses five highly ranked academic departments -- energy and geo-environmental engineering, geography, geosciences, materials science and engineering, and meteorology -- as well as four research institutes. Over more than a century, the college has built an outstanding reputation for high-quality teaching, research and service to industry, government and communities. During the 2006-07 academic year, the college was engaged in more than \$71 million in research activity. Easterling received a doctoral degree in geography-climatology from the University of North Carolina at Chapel Hill; he received post-doctoral fellowships at the National Academy of Sciences and the University of Illinois-Champaign-Urbana.

*By Jill Shockey and Annemarie Mountz, Penn State Live*

## Howard Pickering Joins Ranks of Emeritus Faculty

After 10 years as a research scientist at US Steel, Dr. Howard W. Pickering joined Penn State in 1972 as Associate Professor of Metallurgy. During the next 35 years he gained a reputation as one of the world's foremost experts in electrochemistry and metals corrosion. A PhD graduate of the renowned Fontana Lab at Ohio State, Howard established research collaborations in Germany, Japan, England and Egypt. He served for 20 years as the North American Editor for the Journal of Corrosion Science and served on many committees for the National Association of Corrosion Engineers (NACE), the Electrochemical Society (ECS) and TMS-AIME. At Penn State Howard served for five years as Chair of the Metallurgy program and for almost 20 years organized the Penn State Read Conference on Electrodeposition.

A prolific researcher, Dr. Pickering has published over 350 papers, graduated more than 30 MS and 25 PhD students, and welcomed over 40 post-doctoral students and scientists to his lab. In recognition of his many contributions to the fields of corrosion engineering and electrochemistry, Howard was named Fellow of both NACE and ECS and was presented with ASM's highest recognition with the Lifetime of Distinguished Membership Award. In addition Howard received the top awards in his field with the Uhlig Award from ECS and the Whitney Award from NACE as well as many others. As a result of his stature in the field of materials science and engineering Howard was named Distinguished Professor of Metallurgy at Penn State in 1990.

After 35 years on the faculty Dr. Pickering has decided to retire. Like many of the emeritus faculty in MatSE, Howard will continue to have an active presence in the department as he continues to oversee his research program, works on a book on corrosion engineering and electrochemistry, and teaches MatSE 421- Corrosion Engineering and MatSE 597 – Professional Development. Join me in congratulating Howard on an outstanding career and for all he has done for MatSE and Penn State (pickering@matse.psu.edu). Of course, we congratulate him on his 'retirement' but I dare say we won't notice a change with all of the activities above.

Thank you Howard.



## Alcoa donates to the Materials Science and Engineering Dr. Richard E. Tressler Professorship



Doug Weirauch (Alcoa) with Dean Esterling and Gary Messing

Alcoa has granted \$75,000 to support the establishment of a Professorship in Materials Science and Engineering to honor Professor Richard E. Tressler. Dr. Tressler, emeritus Professor of Materials Science and Engineering, provided exceptional service to The Pennsylvania State University and made numerous contributions to the international materials community. Dick served as Head of the Department of Materials Science and Engineering for 10 years, was President of the American Ceramic Society, and Founding Director of the Center for Advanced Materials at Penn State. He also served on the technical advisory boards of Kyocera, Air Products, and Alcoa. In recognition of his accomplishments Professor Tressler was named Academician of the World Academy of Ceramics, Honorary Member of the Societe Francaise de Metallurgie et de Materiaux, the International Prize of the Japan Fine

Ceramics Association, and was named Distinguished Life Member of the American Ceramic Society, and received the Hosler Alumni Scholar Award of the College of Earth and Mineral Sciences.

The professorship will provide financial support and encouragement to junior faculty members starting their academic careers in the field of materials science and engineering at Penn State. The career development professorship will allow junior faculty to direct initial energies to the classroom, and also provide start-up funds for new areas of research.

Alcoa is the leading producer and manager of primary aluminum, fabricated aluminum and alumina.

[www.alcoa.com](http://www.alcoa.com)

## Office of Undergraduate Studies Reorganization:

### Hellmann Named Associate Dean for Undergraduate Education



Professor John Hellmann has been selected to be the next Associate Dean for Undergraduate Education in EMS. This is a huge loss for MatSE but a terrific gain for the College. John has done an exceptional job for us in recruiting outstanding undergraduates; his recruiting has increased our undergraduate student enrollment by 50% in recent years. John has been a leader in helping the College develop its current strategic approach to undergraduate education and has vigorously supported Total Orientation to Earth and Mineral Sciences (TOTEMS), Earth and Mineral Science Exposition (EMEX) and emerging programs such as the EMS Academy of Scholars. We look forward to working with John in his new position and wish him all the best in this very important promotion.

### Kimel Named Associate Head for Undergraduate Studies

Dr. R. Allen Kimel has been selected to serve as Associate Head for Undergraduate Studies. Since joining the department in July 2002, Allen has organized and taught almost all of the undergraduate laboratory courses, created and taught MatSE 13 "Applied Materials Chemistry for Engineers" with James Adair, and taught a section of Freshmen Seminar for mostly MatSE freshmen. He received the 2006 College of Earth and Mineral Sciences Wilson Teaching Award for his leadership in organizing TOTEMS - Total Orientation to EMS - the freshmen student orientation program, his excellence in teaching, and his enthusiastic



engagement with the students. Allen has also played a critical role with John Hellmann in increasing the department's undergraduate enrollment. With the ABET review in October 2008, a goal of increasing undergraduate enrollment to 200 and the development of a new strategic plan, Allen will have a very full first year. Please, join us in congratulating Allen on his promotion to this critically important position in MatSE and to giving your assistance to Allen and his office in their quest for Good to Great.

### Dobbins Receives Alumni Achievement Award



*Tabbetha Dobbins and Gary L. Messing*

**Tabbetha A. Dobbins** ('02) assistant professor with a joint appointment in physics at Louisiana Tech University and Grambling State University was one of 10 alumni to receive the 2007 Penn State Alumni Associations Alumni Achievement Award. This award recognizes alumni who are 35 years of age and younger for their extraordinary professional accomplishments. After receiving her doctorate from Penn State in 2002, Dobbins was awarded the prestigious National Research Council Post-Doctoral Fellowship to do research at the

National Institute of Standards and Technology. Dobbins' dissertation focused on how high-temperature thermal spray conditions affected the quality of thermal barrier coatings—a critical component to the performance of commercial jet engines. She continues to do cutting-edge research in applying synchrotron x-ray analysis to modern engineering problems in carbon nanotubes, the hydrogen fuel economy, and polymer self-assembly. She already has an excellent record of publication in the top journals for materials research, which includes 13 scholarly publications.

Dobbins also excels in teaching and outreach. In her position, she has mentored students in both graduate and undergraduate research projects and promoted the students' professional research. She works diligently to engage Louisiana Tech and Grambling State universities in joint research with Penn State in the area of synchrotron X-ray studies. One focus of this collaboration is on introducing women and minority students to state-of-the-art instrumentation and to the excitement of materials research. Students from these two institutions travel to Penn State to conduct research expanding the capabilities and relationships of all three universities, while at the same time, attracting and recruiting students to Penn State's graduate science programs.

Dobbins is a member of the Louisiana Science Teacher's Association and serves on the Louisiana State University Center for Advanced Microstructures and Devices User Participation Committee. She lives in Ruston, La.

### Dennis Receives 2007 David Ford McFarland Award



*L-R - Mahlon Dennis, Bob Newnham, and Gary Messing*

Dr. Mahlon Dennis '69; '71 is the founder and currently President of Dennis Tool Company in Houston, TX. He was awarded a B.S. in Chemistry and Physics from Mansfield College in 1965. From 1965 to the fall of 1967 he was a Research Chemist for fluorescent chemicals at G.T.E. Sylvania in Towanda, Pa. After leaving Sylvania, he received his Master and Doctor of Philosophy degrees in Ceramics Science from The Pennsylvania State University in 1969 and 1971, respectively. He stayed for one year as a Post Doctoral Fellow to solve beer bottle explosion problems for the glass container industry. In 1973, General Electric hired him to work in the diamond business. He became a leader of a team that developed polycrystalline diamond

compacts into a large worldwide business. In 1980, the call to the oilfield beckoned, and Houston became home. He founded a company, Strata Bit Corporation, which developed a new drilling technology. In just four years, sales approached \$50,000,000. In 1985, he sold the company to Sandvik and worked part-time for them in Sweden for several years. In 1989, he decided to go back to his primary interest - diamonds. Dennis Tool Company was started as a diamond company, and his sons are now contributing as well. Dr. Dennis has been awarded several dozen patents and published several international papers. He was written up with a two-page article in *Business Week* and honored as Entrepreneur of the Year in Texas. In 1998, he received the "Distinguished Alumnus of Penn State" award.

### Kaniuk Receives 2007 MatSE Distinguished Alumni Award

John A. Kaniuk '69 received the 2007 MatSE Distinguished Alumni Award on May 2, 2007 at the annual MatSE Awards Banquet held at the Atherton Hotel, State College. John graduated with a BS degree in Ceramic Science from Penn State in 1969, followed by graduate work in Nuclear Engineering, also at Penn State. Upon graduation, he worked as a ceramic engineer in Bethlehem Steel's Homer Research Laboratory (1970-1980) where his expertise in blast furnace and electric arc remelt furnace refractories was highly valued and frequently cited by his colleagues throughout the



*John Kaniuk and Gary L. Messing*

industry. He parlayed that expertise and moved into a research manager role at North American Refractories (NARCO) from 1980-1990. While at NARCO, John was a frequent host, mentor and guest lecturer to students in our department. John moved from NARCO in 1990 to become President of Zircoa, Inc, a world leader in the manufacturing of zirconia products and components for electronic applications, thermal spray nozzles for application of aerospace coatings, continuous casting nozzles for the steel industry,

components for production of optical fibers, refractory and precious metals casting, extrusion dies, and high performance valve for the petrochemical industry. He is the holder of three patents and the author of numerous technical publications. John is a frequent contributor of his time and resources to the MatSE Department.

### MatSE Thanks Alumni, Timothy Easler

Timothy E. Easler '80 MS, '83 PhD donated a series of oxide and non-oxide ceramic fiber cloths and composites used to make space shuttle parts. These items are on display on the first floor of Steidle Building as part of the "Science in Space" display. Dr. Easler currently works in San Diego at COI Ceramics, Inc., an ATK Space Systems Affiliate.



## The MatSE External Advisory Board (EAB)

The External Advisory Board (EAB) of the Department of Materials Science and Engineering is a select group of representatives from industry, government agencies, academia and the profession who advise, support and assist the faculty, staff and students of the department in order to heighten the visibility and quality of the department.

If you would like to nominate a fellow alumni to be a member of the EAB please contact Kathy Spicer at [spicer@matse.psu.edu](mailto:spicer@matse.psu.edu) or 814-863-1779 for more information.

### EAB Members

**Dr. Charles G. Carson, III** - '66; '70

Retired VP Environment Affairs, U.S. Steel Group

**Dr. John A. "Jack" Coppola** - '69; '71

Retired, Senior Vice President of Science & Technology, Johns Manville

**Dr. Katherine Faber** - '78

Professor of Materials Science and Engineering, Northwestern University

**Ms. Sandra Greenberg Kosinski** - '78

Self-employed Consultant

**Dr. David W. Johnson** - '64; '68

Retired, AGERE Systems

**Dr. Theresa A. Kotanchek** - '84; '87; '91

Global Technology Director, Asia Pacific, Dow Chemical Company

**Dr. Leslie D. Kramer** - '68; '71

Director, Engineering Fellow, Lockheed Martin Missiles and Fire Control

**Dr. Robert Kumpf** - '84; '86; '88

Vice President, Chief Administrative Officer, Bayer MaterialScience, LLC.

**Dr. James Loftus** - '84; '86; '88

Research Associate, Owens Corning

**Dr. David Michel** - '66; '68

Retired, United States Naval Research Laboratory

**Mr. Sam Mouck** - '82

Manufacturing Engineering Manager, Intel Corporation

**Dr. Robert Petcavich** - '76; '77; '80

President, Health Beacons, Inc.

### Message from the External Advisory Support Board Chair-Elect - Jack Coppola

Greetings from the External Advisory Board,

Firstly, let me again introduce the purpose and content of the External Advisory Board (EAB). We are a group of Materials Science & Engineering alumni who were formed last year under the guidance of Professor Messing to assist the department in three key areas; Recruitment, Marketing and Development. As such, our initial efforts have been focused on the value and impact that research in materials science brings to our every day life. We believe, as I am sure you would also agree that materials are key enablers to new and improved processes in energy systems, transportation, communications, electronics, health and the environment.

Penn State University has one of the country's finest research efforts in materials and the Materials Science & Engineering department is ranked in the top ten in both undergraduate and graduate studies. However, as good as Penn State and MatSE are, it is important to get the word out to prospective students and the general public. Given these challenges, the EAB is developing some simple messages around "What is Materials Science?" and "Why Penn State's MatSE department?" to help get the story out about Penn State's exciting materials science efforts. We will be sharing these messages with you in the future.

In addition to the marketing activity, the board members, working directly with the department, will be assisting with undergraduate recruiting. As part of this effort, we will be working with alumni to help get the word out about the value of a Penn State materials science and engineering education to high school students and their counselors. As always, we are in need of new alumni volunteers so if you have an interest in getting more involved with the department, please let us know.

Sincerely,

Jack Coppola, MS '69 PhD '71

Chair-Elect, External Advisory Board



The Materials Science and Engineering Department sponsored a Penn State reception in conjunction with the Materials Science and Technology Exposition on September 18, 2007. Over eighty alumni, students, faculty and friends attended the event held in Detroit, MI.

We would like to congratulate Robert Rentschler, '85, who won the autographed Joe Paterno football.

Coming Fall 2008 we are planning an event in Pittsburgh. Mark your calendars for Tuesday, October 7, 2008 at the David L. Lawrence Convention Center in Pittsburgh, PA.



## Green Receives Von Humboldt Award

Professor David J. Green, Department of Materials Science and Engineering, was presented with a 2006 Humboldt Research Award. The Alexander von Humboldt Foundation grants up to 100 of these Research Awards annually to scientists and scholars from outside Germany with internationally recognized academic qualifications. The research award honors the academic achievements of the award winner's lifetime. Furthermore, award winners are invited to carry out research projects of their own choice in Germany in cooperation

with colleagues for periods of between six months and one year. The Alexander von Humboldt Foundation is a non-profit foundation established by the Federal Republic of Germany in 1953 for the promotion of international research cooperation. It enables highly qualified scholars not resident in Germany to spend extended periods of research in Germany and promotes the ensuing academic contacts. The Humboldt Foundation promotes an active world-wide network of scholars from 125 countries.

Professor Green will be based at the Technical University in Darmstadt and will be performing research on the mechanical behavior of ceramics with Professor Juergen Roedel. The research is aimed at better understanding the stresses that arise in the drying of ceramic thin films and the influence of strain mismatch during the processing of ceramic materials. These stresses are known to cause damage and distortion during processing, which impacts the quality and performance of the material. This research will be performed over a three-year period which began June 2006.



## Muhlstein Named Corning Faculty Fellow: July 1, 2007 - June 30, 2010

Chris Muhlstein, Assistant Professor of Materials Science and Engineering is an expert in fracture and fatigue behavior of thin films and nanomaterials with an emphasis on the durability and performance of microelectromechanical systems (MEMS). A significant portion of his current research explores the mechanical properties of structural ceramics such as silicon and silicate glasses, as well as the coupled electro-mechanical performance of electroceramics. A National Science

Foundation CAREER awardee, Dr. Muhlstein's research is also supported by the Army Research Office, industrial partners, and research consortia such as the Center for Glass Research. Dr. Muhlstein currently leads a research group of eight graduate students, has written over 50 technical publications, and has given numerous invited talks at international symposia and workshops. He is also active with our Department's Undergraduate Recruitment Committee and with outreach activities for middle and high school students such as the WISE and TMS summer camps. He has also developed, in collaboration with Penn State Public Broadcasting and staff from the State College Area School District, internet-distributed, electronic course resources for middle and high school science teachers that help them bring cutting edge nanoscience into their classrooms.



## Howell Receives EMS Faculty Mentoring Award

Paul Howell, Professor of Metallurgy has served for over ten years as the sole Metal Science option advisor. In addition he serves as one of two faculty advisors for all freshman and sophomore students before they officially declare their Materials option in MatSE. Paul also serves as one of two advisors for all Schreyer's Honor College students in MatSE. Paul has freely given countless hours mentoring undergraduate students in MatSE. His total commitment to the students is impressive as he guides them to make critical decisions affecting their education in MatSE and professional growth in the materials field.

## Kimel Receives Wilson Award for Excellence in Teaching



Allen Kimel, assistant professor of Materials Science and Engineering, is recognized as one of the most enthusiastic professors in MatSE. Kimel instills his excitement for the field and his high academic standards to provide an excellent learning environment for the students. He does a superb job organizing TOTEMS, the first exposure that EMS freshman have to the College.

At the onset of their Penn State experience he teaches them about the collegial environment and highly student centered atmosphere for with EMS is respected.



## Vogler Promoted to Professor

Erwin Vogler, Professor of Materials Science and Engineering and Bioengineering was promoted to Professor this past year. Congratulations Erwin!



## Liu Selected as an ASM Fellow

In 1969, ASM established the Fellow of the Society honor to provide recognition to members for their distinguished contributions to materials science and engineering and develop a broadly based forum of technical and professional lead-

ers to serve as advisors to the Society. Dr. Liu received the award in Detroit on Tuesday, September 18, 2007.

## Manias receives Polymer Physics Prize



Congratulations to Vikram Kuppala, Sirilak Menakanit, Ramanan Krishnamoorti, and Evangelos Manias, whose paper "Simulation Insights on the Structure of Nanoscopically Confined Poly(ethylene oxide)" was selected to receive the Journal of Polymer Science Part B: Polymer Physics Prize for 2006. This prize

is awarded annually to the best paper published in the journal. A panel of editorial board members selected this paper from over 600 manuscripts published in JPSB during the past two years (2003-2005).



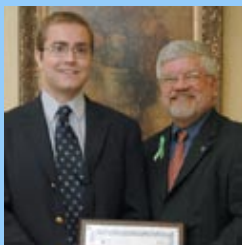
## Annual MatSE Awards Banquet Held on May 2, 2007

The MatSE Department annually celebrates the achievements of its students, staff, faculty and alumni at the annual Awards convocation at the Atherton Hotel. More than 180 students, staff, faculty and alumni gathered for a reception and dinner followed by an awards program. After a warm welcome and remarks by Gary Messing, department head, the program was then handed over to the student emcees, Joseph V. Ryan and Jennifer L. Rygel.

### Undergraduate Awards



**MatSE Academic Excellence Award**  
Griffin T. Jones



**MatSE Service and Leadership Award**  
Trevor Buehl

### Graduate Awards



**Graduate Award for Academic Excellence: Rituraj Nandan**  
Advised by: Tarasankar DebRoy



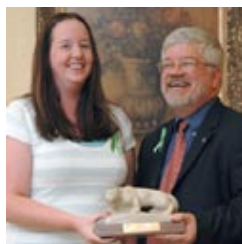
#### Kennametal Fellowship Awardees:

Back row: Rohit Rai, James Saal, Tanmoy Maiti  
Front row: Manjeera Mantina, Jennifer Ray Sloppy

### Faculty & Staff Awards



**Outstanding Faculty Award:**  
Zi-Kui Liu



**Staff Excellence Award:**  
Rachel Arnold

### Annual Poster Competition Winners

#### Graduate Individual Poster Awardees:

**1st Place: Burcu Unal** - "Design of Hydrogels for Cultivation of Nitrogen Fixing Bacteria" Advised by: Ron Hedden

**2nd Place: Samrat Choudhury** - "Computer Simulations of Ferroelectric Domains and Switching using Phase-Field Approach" Advised by: Long-Qing Chen

**3rd Place: Jennifer Ray Sloppy** - "Improving Capacitor Technology: Fundamental Studies on Tantalum Pentoxide" Advised By: Beth Dickey and Digby Macdonald

#### Undergraduate Individual Winner:

**1st Place: Garnia Juwando** - "Formation of Textured  $\alpha$ -Alumina by High Shear Deformation" Advised by: Gary Messing

**2nd Place: Krystle Dzienis** - "Dielectric Polymer-Ceramic Nanocomposite Materials" Advised by: Ronald Hedden

**3rd Place: Griffin Jones** - "Metallography of Ultra-fine and Nano-grained Nickel Films" Advised by: Christopher Muhlstein

#### Undergraduate Team Winner:

**Jonathan Shipper, Aaron Welsh, Danielle Williams, Billy Woodford**

"Replacement of Zircon in Investment Casting"  
Advised by: John Hellmann

For a complete list of awardees please visit the MatSE website.

### Congratulations Graduates!

#### Spring - B.S.

Alexander Adler  
Alexana Cranmer  
Michael Dankanich  
Krystle Dzienis  
Matthew Fimiano  
John Foreman  
Anne Friedman  
Nicholas Gray  
Thaddeus Janus  
Mark Jenkins  
Griffin Jones  
Michael Muscarella  
Gary Paradee  
Prashant Patel  
Scott Wilhour  
Tyler Wise

#### Spring - M.S.

Andres Bujanda  
Jason Claude  
Ioanna Mina  
Patrick Ray

#### Spring - Ph.D.

Pornpen Atorngitjawat  
Kristen Brosnan  
Robert Daum  
Shichen Dou  
Xueyong Guan  
Robert Klein  
Kun Li  
Amy Robinson  
Bum-Wook Roh  
Dongwon Shin

#### Summer - B.S.

Trevor Buehl  
Stacey Kelly  
Jason Kruiise  
Heyong Jae Lee  
Jennifer Rygel

#### Summer - M.S.

Young Ho Jin  
Jennifer Rygel  
Hung-Kai Shu

#### Summer - Ph.D.

Jeremy Acord  
Jianer Bao  
John Creek  
Soham Dey  
Matthew Heidecker  
Walter Luscher  
Seung Ho Park  
Ronald Polcawich



## Million-dollar U.S. Steel Foundation Gift Will Create Trustee Scholarships for Financially Needy Students

United States Steel Foundation has committed \$1 million to endow Trustee Scholarships for Penn State undergraduates who have financial need. First preference for the awards will go to students enrolled in various academic majors in business, engineering and information technology. The foundation is the philanthropic arm of Pittsburgh-based U.S. Steel Corp. The U.S. Steel Trustee Scholarships are part of Penn State's Trustee Matching Scholarship Program, a unique initiative aimed at keeping a high-quality college education accessible to all qualified students, regardless of their financial means.

"We are deeply grateful to the U.S. Steel Foundation for its generosity and especially for choosing the Trustee Matching Scholarship Program as a beneficiary," said Penn State President Graham B. Spanier. "This visionary act of philanthropy will open new opportunities to countless students in the years to come who otherwise may not have had the resources to make their career dreams a reality."

John P. Surma, U.S. Steel chairman, president and chief executive officer and a 1976 Penn State graduate, noted that students who hold U.S. Steel Trustee Scholarships also will have opportunities to be considered for internship and co-op programs with the company.

"These scholarships will further the development of a highly educated and diverse workforce, an asset of critical importance to our company," said Surma. "We also see these scholarships as another step in strengthening our mutually beneficial partnership with Penn State." Surma, who has worked for U.S. Steel and predecessor companies since 1997, serves as a Penn State Trustee representing business and industry. He also is a member of the Smeal College of Business board of visitors.

Eligible students across the University will be considered for the scholarships, with preference given to those majoring in the following academic fields: accounting or supply chain and information systems in the Smeal College of Business; computer, electrical, industrial or mechanical engineering in the College of Engineering; information sciences and technology in the College of Information Sciences and Technology; and materials science engineering in the College of Earth and Mineral Sciences.

**"This visionary act of philanthropy will open new opportunities to countless students in the years to come who otherwise may not have had the resources to make their career dreams a reality."**

*Penn State President Graham B. Spanier*

Implemented in 2002 upon approval by Penn State's Board of Trustees, the Trustee Matching Scholarship Program has grown steadily and aided more than 4,000 students in 2006-07. The matching component of Trustee scholarships effectively doubles the financial impact of each gift. The University matches 5 percent of the principal of each gift annually, combining these matching funds with the spendable income earned by the endowment, which over the long term is also in the realm of 5 percent. Thus approximately \$100,000 would be available through the U.S. Steel Trustee Scholarships to assist students each year in perpetuity.

*Compiled by the Penn State Newswire*

In the Spring MatSE newsletter we highlighted the Anthony J. and Alberta L. Perrotta scholarship. We stated that since 1998-1999, the Perotta's have given scholarships to thirty-three students. We are pleased to announce that this fall semester eight more students have benefited from their scholarship!

Thank you!

## Scholarship Spotlight

**William and Estelle Turney** created a scholarship in Ceramic Science and Engineering in 1998. The purpose of this scholarship was to provide recognition and financial assistance to outstanding students enrolled or planning to enroll in the Ceramic Science and Engineering Program in the College of EMS. Since the 1999/2000 academic year the Turney's have given scholarship has benefitted thirty-six students.

**George H. and Madeleine Hager Todd** created a scholarship in the Metals Science and Engineering program of the College of EMS in 1995. The purpose of this scholarship was to provide recognition and financial assistance to outstanding students enrolled or planning to enroll in the Metals Science and Engineering program. Since the 1998/1999 academic year the Todd's have given scholarships to fifty-four students.

**AVX/ Kyocera Foundation** created a scholarship in Materials Science and Engineering in 1997. The purpose of this scholarship was to provide recognition and financial assistance to full-time undergraduate students enrolled or planning to enroll in the Materials Science and Engineering in the College of EMS. Since the 1998/1999 academic year the AVX/Kyocera Foundation was given scholarships to eighty-one students.

**The Frances Hamilton Byers Scholarship** was created in the College of EMS in 1977. The purpose of this scholarship was to provide scholarships for outstanding undergraduate students enrolled in the College of EMS. Since the 1998/1999 academic year the Byers scholarship was given to fifty-three students.

**The Sam Zerfoss Memorial Scholarship** was created in memory of Samuel Zerfoss in 1967. The purpose of this scholarship was to provide tuition scholarship for qualified students in the field

of Ceramic Science. Since the 1998/1999 academic year the Sam Zerfoss Memorial Scholarship was given to sixty-eight students.

**The C. Phillip Cook, Jr. Memorial Scholarship in Ceramic Science and Engineering** was created in 1986. The purpose of this scholarship was to recognize undergraduate students enrolled or planning to enroll in the College of EMS majoring in Ceramic Science and Engineering for their academic achievement and professional dedication. Undergraduate students enrolled or planning to enroll in the College of Earth and Mineral Sciences majoring in Ceramic Science and Engineering. Since the 1998/1999 academic year the C. Phillip Cook, Jr. Memorial Scholarship has been given to fifty-seven students.

Donald W. Hamer created **The Donald W. Hamer Scholarship in Electronic and Photonic Materials** in the College of EMS in 1998. The purpose of this scholarship was to provide recognition and financial assistance to outstanding undergraduate students enrolled or planning to enroll in the Electronic and Photonic Materials program in the Materials Science and Engineering Department. Since the 1998/1999 academic year the Donald W. Hamer scholarship was given to forty-five students.

**The Harvey P. Kocher Memorial Fund** was created in the Metallurgy program of the Department of Materials Science and Engineering in 1980. The purpose of this fund was to provide monies for the benefit of the Metallurgy program in the Department of MatSE for improving instruction, improving research and providing financial assistance to undergraduate and graduate students enrolled in the Metallurgy program. Since the 1998/1999 academic year the Kocher Memorial Fund has given to fifty-three students.



**Dr. William Reynolds Bitler** passed away on April 18, 2007. Dr. Bitler earned a Bachelor's Degree, Master's Degree, and Ph.D. in Physics from the Carnegie Institute of Technology. Dr. Bitler began his teaching career at Carnegie Institute of Technology in Metallurgy and came to Penn State in 1962, where he was first an Associate Professor (1962-1970) and then a Full Professor until 1995, when he became Emeritus. His interests were broad,

ranging from physical metallurgy to magnetic materials. After becoming Emeritus, he continued to teach on an ad hoc basis for several years.

Memorial contributions can be made in Dr. Bitler's name to the Robert W. Lindsay Memorial Scholarship. Checks can be made out to Penn State University, College of Earth and Mineral Sciences, attn: Robert W. Lindsay Memorial Scholarship. Send to: College of Earth and Mineral Sciences, Development Department 105 Deike Bldg., University Park, PA 16802.



**Dr. Richard (Dick) M. Spriggs** passed away Saturday, July 21, 2007. Dr. Richard M. Spriggs was Professor Emeritus of Ceramic Engineering at the New York State College of Ceramics at Alfred University. Prior to retiring in 1997, he was the first John F. McMahon Professor of Ceramic Engineering, the Executive Director of the NYS Center for Advanced Ceramic Technology, and Director of Sponsored Research Programs at

the College. He held BS, MS and PhD degrees in Ceramics and Ceramic Engineering from Penn State and The University of Illinois. Prior to joining the Alfred faculty in 1987, he served as Senior Staff Officer and Staff Director of the National Research Council at the National Academy of Sciences and as Professor and later as Vice President for Administration at Lehigh University. He had earlier industrial experience with AVCO and Ferro Corporations. He also served as a Lieutenant in the United States Navy after his graduation from Penn State.

A Fellow, Past President, and Distinguished Life Member of the American Ceramic Society, he received numerous honors and awards for his contributions to ceramic science, technology and education. He most recently served as a board member of the Ceramics Corridor Innovation Centers (Alfred Technology Resources, Inc.) and Sugar Hill Development Corporation. Dr. Spriggs was widely known over many years as an outstanding ambassador for the American Ceramic Society. He was well-known for his kind and friendly demeanor.

Dr. Spriggs established two endowments at Penn State. The Richard M. and Patricia B. Spriggs Award for Achievement in Ceramics recognizes outstanding achievement by alumni in the field of ceramic science and engineering. And to honor his late wife, Patricia, Dick established the Blaney-Spriggs Family Scholarship to support academically outstanding students from the Colleges of Agricultural Sciences, Health and Human Development, Smeal College of Business and EMS.



**Dr. Charles David Greskovich** passed away on Saturday July 7, 2007. He completed all of his degrees in Ceramic Science and Engineering at Penn State finishing his Ph.D. in 1968. Chuck was world renowned in his field of Ceramic Technology. In 1968, he was awarded a NSF Post-doctoral Fellowship in Germany and in 1969 became a staff ceramist in the Ceramics Laboratory of GE's Corporate Research and Develop-

ment Center in Schenectady, N.Y. His research and technological interests have encompassed preparation of optically transparent, polycrystalline ceramics, useful as scintillators in advanced medical x-ray detectors, arc tube envelopes for high intensity discharge lamps, and as possible ceramic lasers and optical windows. He worked on refractory ceramic molds. He is co-inventor of the first efficient ceramic scintillator, now used in nearly all computed tomography (CT) body scanners sold by GE since 1988. He developed the "Gas Pressure Sintering Process" used by many material companies. In 1997 and 1998 the College of Earth & Mineral Science at Penn State University recognized him as "Centennial Fellow" for distinguished accomplishments that bring honor to the College and University, and also with the Charles L. Hoslar Alumni Scholar Medal for outstanding contributions to science through research. In 2000 he was elected to the United States National Academy of Engineering, one of the highest professional distinctions accorded an engineer, and was cited for technical innovations in ceramics and their manufacturing processes. In 1983 he was the American recipient of the Richard M. Fulrath Award of the American Ceramic Society which took him to Japan to lecture around the country. In 1980 he became a "Fellow" of the American Ceramic Society. In 1991 he was awarded a Coolidge Fellowship, the GE R&D Center's highest honor.

Memorial contributions for an endowed scholarship in his memory may be made out to Penn State University, College of Earth and Mineral Sciences, attn: Charles D. Greskovich Scholarship. Send to: College of Earth and Mineral Sciences, Development Department 105 Deike Bldg., University Park, PA 16802.



**Dr. Lee Joseph Cuddy** passed away on Monday, April 16, 2007. He received a B.S. in Metallurgy from Drexel University, and an M.S. and D. Eng. Sci. in Metallurgy from Columbia University. He worked at the Battelle Institute in Columbus, Ohio and the U.S. Steel Research Center in Monroeville, before joining the Penn State Metallurgy Program in 1985 as Associate Professor. Lee retired with emeritus status in 1994.

PENNSTATE



## MatSE News

Department of Materials Science and Engineering  
The Pennsylvania State University  
121 Steidle Building  
University Park, PA 16802  
Phone: (814) 865-0497

NON-PROFIT  
ORGANIZATION  
U.S. POSTAGE  
**PAID**  
STATE COLLEGE, PA  
PERMIT #1

Address Service Requested



For all MatSE News, please visit us online at

[www.matse.psu.edu](http://www.matse.psu.edu)

### Department of Materials Science and Engineering Materials Processing Lab Fund

**If you would like to make a gift to our Materials Processing Lab Fund,  
please complete and return this form, including a check made payable to:**

The Pennsylvania State University  
121 Steidle Building  
University Park, PA 16802

**Name:** \_\_\_\_\_

**Address:** \_\_\_\_\_  
\_\_\_\_\_

**Phone:** \_\_\_\_\_

**e-mail:** \_\_\_\_\_

MatSE News is a publication of the Department of Materials Science and Engineering. For a free subscription, send your name and address to: MatSE NEWS, 121 Steidle Building, The Pennsylvania State University, University Park, PA 16802

This publication is available in alternative media on request.

The Pennsylvania State University is committed to the policy that all persons shall have equal access to programs, facilities, admission, and employment without regard to personal characteristics not related to ability, performance, or qualifications as determined by University policy or by state or federal authorities. It is the policy of the University to maintain an academic and work environment free of discrimination, including harassment. The Pennsylvania State University prohibits discrimination and harassment against any person because of age, ancestry, color, disability or handicap, national origin, race, religious creed, sex, sexual orientation, gender identity, or veteran status. Discrimination or harassment against faculty, staff, or students will not be tolerated at The Pennsylvania State University. Direct all inquiries regarding the nondiscrimination policy to the Affirmative Action Director, The Pennsylvania State University, 328 Boucke Building, University Park, PA 16802-3901; Tel: 814-865-7700V, 814-865-1150 TTY. U.S.G. 08/27