Over 200 alumni, students, faculty and faculty emeriti gathered as a community for the spring MSE ALUMNI WEEKEND.
FROM THE CHAIR’S CHAIR

Greetings friends and alumni! Last fall I invited you to join us for a celebration of the MSE community and the 50th anniversary of our department. Many friends and cheerful faces indeed did return to Grounds this March for a marvelous MSE alumni weekend. Launched by a stellar career panel which inspired students and invigorated faculty, the weekend’s events included a poster session run by the graduate students, an MSE trivia takeover of West Main Street Cafe, a BBQ luncheon in Darden Court, and culminated with an elegant evening of fellowship at the Omni Hotel. I hope we won’t wait fifty years before we have another such celebration!

With much sadness, the department announces the death this June of Professor Raul Baragiola (page 10). Some people are larger than life, and Raul was one of those people. He was a proponent of anyone whom he believed was being treated unfairly and, from his early years in Argentina to his last days at U.Va., he did not hesitate to speak truth to authority. Raul was a vivid presence in materials science and his example of fortitude, perseverance in the face of hardship, and courage will be missed by students, staff and faculty.

The department congratulates Rick Gangloff on his retirement this summer. His many contributions include chairing the department for six years and mentoring countless students and faculty. Rick not only personally enriched the lives of his colleagues, but was also a consummate professional and source of wisdom and collegiality. Rick and Maggie are looking forward to spending more time together and with their grandchildren, which may be a challenge as Rick has already started a more vigorous consulting regimen - - not surprising given Rick’s anathema to idleness.

This summer, we also welcomed two new faces and congratulated a familiar one. James Burns, a former student now colleague of Rick Gangloff, joined the tenure track faculty as an assistant professor this summer. Building on his success as a research professor, Jimmy will continue to deepen the department’s historic strength in the area of mechanical metallurgical fatigue and fracture. Helge Heinrich joined the department in May as UVA Alcoa Research Scientist as a result our continued relationship with Alcoa.

The career panel presenters were Charles “Chip” Blankenship (MSE Ph.D. ’92), CEO of GE Appliances & Lighting; Linda Horton (MSE Ph.D. ’82), Director of the Materials Science and Engineering Division of the U.S. Department of Energy; Raymond J. Kilmer (MSE Ph.D. ’93), Executive Vice President and Chief Technology Officer of Alcoa; Greg Olsen (MSE Ph.D. ’71), entrepreneur and space explorer, and Gayle Schueller (MSE Ph.D. ’93), Vice President, Global Sustainability at 3M.

The career panel’s free ranging but comprehensive overview of many issues in materials science industry and education elicited enthusiastic participation from a capacity audience. Streaming video feeds not only provided coverage to the overflow area outside the auditorium, but allowed the discussion to be captured as a full HD video which can be found online in the alumni section of the MSE website. One of the biggest positive benefits of the weekend was impact the panel had on current students. After the panel, one student commented “I need to set my sights higher.”

Friday evening’s later events included a poster session organized by the students in conjunction with a wine and cheese reception. Later in the evening, students and alumni joined on teams for a trivia takeover hosted by faculty emeritus Bill Jesser and Associate Dean George Galen. Questions ranged from...
technical ones to more lively stories of the MSE department (some of which are not suitable for us to print).

Saturday, following a windy B-BQ lunch in Darden Court, the entire MSE community gathered for a Gala Dinner at the Omni Hotel. For more photos of the event please visit: http://www.virginia.edu/ms/50thgala/

As part of the celebration, and thanks to generous support from so many of you, we have launched the MSE Research Excellence Fund. The fund supports the department’s research infrastructure, including undergraduate and graduate student research, student travel to conferences and the acquisition of new instruments. If you haven’t already done so, please consider making a gift. With your support, we can advance our research programs and empower our graduates for success.

This reunion was just a first step in strengthening alumni engagement. There are numerous ways to reconnect and stay involved. Consider mentoring current students, hiring graduates for your company or an intern for the summer, or hosting an event in your hometown.

Please contact us today to let us know how you’d like to get involved!

On May 20 at the White House Forum on Small Business Challenges to Commercializing Nanotechnology, Jill Ferguson (ES ’17) spoke before members of the White House Office of Science and Technology Policy and members of the National Economic Council, along with business leaders and representatives of academia. According to a White House press release, the forum is just one effort in recognition of nanotechnology as an important emerging growth sector. Part of the larger National Nanotechnology Initiative (NNI), the forum sought to address challenges to the “second era” of nanotechnology that will “require new collaboration and partnership activities – involving both the private and public sectors – aimed at collectively advancing manufacturing, entrepreneurship, and the development of a workforce with the needed skills.” Jill attended the forum representing NExT, the Nano and Emerging Technologies Club of U.Va. She is pursuing an Engineering Science degree with a concentration in Materials Science and Engineering, a minor in Nanotechnology and a minor in Engineering Business. Jill’s notable active roles in academia and in the science and technology community, coupled with events like her participation in the forum, aide in answering the President Obama’s call for all sectors of the nanotechnology community to come together as pillars and to continue to build and enforce nanoscience and nanotechnologies.

Last fall, nine finalists competed for a chance to win the sixth annual University of Virginia Entrepreneurship Cup competition. The first place $20,000 prize went to a team led by fourth year Nanomedicine student Kevin Eisenfrats (ES ’15).

Less invasive than surgery, the winning concept solves the problem of neutering animals in a way that is not only humane and cost effective, but reversible. The process involves the use of a contraceptive polymer gel which gets injected into the vas deferens. The handheld ultrasound device guides veterinarians during the procedure, and in follow-up visits, aids in checking the status of the preventative gel.
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When Rob Golden (MSE Ph.D.) and Bob ‘R.A.’ Johnson met for the first time at the MSE Gala Dinner, they found they both shared more than just a passion for materials science. In 2014, when the MSE floor hockey team formed, they thought they were the first such club. Not so. Pictured below in 1978, Professor R.A. Johnson led Maxwell’s Demons on the actual ice. For most of the MSE department’s 50 years - whether softball, kickball, or hockey - club sports have always played an important part of the MSE “team building” outside the lab and beyond the classroom.

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Above: Jill Ferguson of U.Va.’s NExT Club speaking to National Economic Council in the White House.
Below: Kevin Eisenfrats (second from right) with the E-cup prize
Several students landed competitive fellowships this year. Zach Hoffman (MSE Ph.D.) was awarded U.Va.’s first ever Environmental Resilience and Sustainability (ERS) Fellowship. The work will be conducted in collaboration with the Department of Chemistry and focus on research in electrochemical reduction of CO2 to hydrocarbons using bimetallic electrocatalysts.

Not only did Marybeth Parker (MSE Ph.D.) earn a VSGC research fellowship, but she was renewed for a Rolls Royce Graduate Student Fellowship as well. Emma Mitchell (EP Ph.D.) also earned two fellowships: a NASA Earth and Space Science Fellowship as well as a Virginia Space Grant Consortium Fellowship. Emma was not the only VSGC winner this past year, as Marcel Mibus (MSE Ph.D.) earned his first.

Mary Lyn Lim (MSE Ph.D.) was one of the 15 awardees honored with an All-University Graduate Teaching Assistant Award. The award, given by the Office of Graduate and Postdoctoral Affairs, recognizes graduate students for their commitment to and excellence in undergraduate instruction.

Three students were also recognized for their contributions to the department at this year’s Tea Time Awards.

Brad Richards, being praised by his advisor Haydn Wadley. Equally lavish in their esteem of their students were John Scully and Rob Kelly regarding Rebecca Schaller and Mary Lyn Lim.

The 2015 Doris Kuhlmann-Wilsdorf Outstanding Graduate Student Award was awarded to two deserving students this year: Rebecca Schaller (MSE Ph.D.) and Bradley Richards (MSE Ph.D.) The Doris Kuhlmann award recognizes “outstanding research and scholarly achievements and exemplary contributions to the advancement of the MSE academic mission.”

Mary Lyn Lim (MSE Ph.D.) earned the 2015 Fred D. Rosi Outstanding Citizen Award for her “contributions to the academic, educational and outreach goals of the MSE department.”
IN REMEMBRANCE: RAUL BARAGIOLA

By Anne E. Bromley

Raul Baragiola, the Alice and Guy Wilson Professor of Engineering Physics and Materials Science in the University of Virginia’s School of Engineering and Applied Science, died June 21 in Charlottesville. He was 70.

Baragiola had directed the Laboratory for Astrophysics and Surface Physics, which he founded in 1990. His multidisciplinary research interests were in the areas of astrophysics and astrochemistry, atomic physics, solid state physics and space sciences. A member of the 20-year Cassini mission exploring Saturn, he received many awards, including a NASA Achievement Award and a lifetime achievement award. The awarding committee honored him saying that the award was given in recognition of: “His brilliant career and pioneering contributions to the field of environmental cracking in high performance metallic alloys. His quantitative characterization and mechanistic interpretation of the interactions between electrochemistry, metallurgy, and mechanics has enhanced prognosis methods and informed alloy development for aerospace, transportation, infrastructure, and energy applications. The FDSM conference series is thankful for his technical inputs, continuous participation, and collegiality.”

Gary Shiflet has returned from a two-semester stint at the National Science Foundation where he headed the NSF Program for the MPS/DMR Metals and Metallic Nanostructures (MMN). Gary’s directorship was due in part from his longstanding contributions to the field. The Metals and Metallic Nanostructures program oversees and prioritizes scientific investigations regarding the structure and properties of metals and their alloys and the synergistic use of experimentation coupled with computational materials science as applied to both bulk and nanoscale metals.

FACULTY NOTES

Bill Johnson received the Office of Graduate and Postdoctoral Affairs Champion of Diversity Mentoring Award at the Graduate Diversity Banquet in Spring 2015. The award recognizes his dedication to serving and supporting diverse graduate students.

James Groves was selected this year as a recipient of the Hartfield-Jefferson Teaching Prize. The award recognizes faculty who exemplify “the highest standards and practices of learning.” While the award recognizes Groves’s individual teaching accomplishments, his contributions go beyond those at the individual level since he has broadly impacted distance learning pedagogy. For the past several years, Professor Groves has served as the Assistant Dean of Online Innovations and was founding Director of PRODUCED in Virginia. His nominations primarily came from his online students in the PRODUCED in Virginia program.

At the 2014 International Conference on Fatigue Damage of Structural Materials, Professor Rick Gangloff received the lifetime achievement award. The awarding committee honored him saying that the award was given in recognition of: “His brilliant career and pioneering contributions to the field of environmental cracking in high performance metallic alloys. His quantitative characterization and mechanistic interpretation of the interactions between electrochemistry, metallurgy, and mechanics has enhanced prognosis methods and informed alloy development for aerospace, transportation, infrastructure, and energy applications. The FDSM conference series is thankful for his technical inputs, continuous participation, and collegiality.”

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FACULTY FOCUS: STEPHEN MCDONNELL

Professor Stephen McDonnell joined the department in August, coming to the University from the University of Texas at Dallas. Stephen’s areas of expertise include how layered materials, such as transition metal dichalcogenides, interface with other materials in electronic devices at the nanoscale, as well as understanding the growth of two-dimensional semiconductors by using in-situ characterization techniques.

One of the things that made the position attractive to him was the “expectation of interdisciplinary research… the chance to bridge the area of surface/interface characterization with the area of electronic material design and synthesis by establishing a combined growth and characterization ultra-high vacuum system.” Stephen says joining “U.Va. allows me to work with world class researchers and apply my knowledge of nanoelectronics to new fields of study such as materials for sustainable energy.”

“He feels fortunate to have been able to recruit Stephen,” explained Haydn Wadley, who chaired the search committee. The department’s nanoscience opening attracted a large and very competitive pool. Wadley continued, “Many of the candidates were extraordinary individuals who were already making very substantial contributions to their fields of research… Stephen clearly stood out as a leader in this group, and he is at the forefront of the development of 2D materials.”

Though he comes from a large family whose occupations span the fields of education, aviation, medicine, finance, trades, and sales, he noted that, “being Irish, we are all united in our sometimes overzealous love of Gaelic Games.” When asked what he likes most, so far, about Charlottesville, Stephen responded, “The sense of community both at U.Va. and from the people of Charlottesville has been extremely comforting. It has been easy to consider this my home after only a short time here.”

CONTRACT US

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Find out more about our department and how you can be a part of it. Please send us any events or story ideas of your own that we can help publicize.

ALUMNI UPDATES

Top Left: Bill Jesser enjoyed a visit from Toshihiro Hanamura (MSE Ph.D. ’81), his former student now at National Institute for Materials Science, one of the largest scientific research centers in Japan. The meeting was the first between the two in 26 years. Dr. Hanamura and his colleague Professor Shiro Torizuka of Hyogo Prefectural University gave seminars on the mechanical properties in 0.1C-5Mn martensitic steel.

Top Right: Jeremy Gilbert, a former CMU colleague of Bill Johnson, spent time with us as a visiting scientist.

Center: Jeff Glass (MSE Ph.D. ’81), faculty member at Duke Engineering and a member of our MSE external advisory board, recently won a three-year, three million dollar D.O.E. grant to develop a miniature methane monitor. Jeff is pictured at the MSE Alumni Weekend seated next to his former advisor, George Cahen.

Below Left: Eric Schindelholz (MSE Ph.D. ’14) was selected for the 2015 Morris Cohen Graduate Award of the Corrosion Division of the Electrochemical Society. The story was picked up by KOAT news in Albuquerque where he is a research scientist.

Below Right: Mara (Shedd) Shindelholz (MSE MS ’13) and Erica (Neisser) Macha (MSE MS ’10) visited. Respectively at Sandia National Lab and Southwest Research Institute, both stopped by to discuss ongoing research collaborations with the Center for Electrochemical Science and Engineering.

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As our undergraduate numbers continue to grow, so does the pool of excellent young engineering science and materials science students looking for summer internships. If you are interested in publicizing a summer internship, contact Susan Bagby (sh7h@virginia.edu), MSE undergraduate coordinator.