Alumni Day 2012

Colorful mums of the season and welcome banners greeted polymer engineering alumni back to UA on the sunny, fall afternoon of Oct. 5. The special day marked the first joint Alumni Day for the Department of Polymer Engineering and the Department of Polymer Science. The event was attended not only by alumni, but also by members of industry and the community, as well as UA faculty, contract professionals, staff and current students.

A continental breakfast and registration in the Goodyear Polymer Center was followed by a morning symposium dedicated to Polymer Science. Speakers included Dr. Christopher Macosko from the University of Minnesota, Dr. Benjamin Hsiao of Stony Brook University, Dr. Christopher Li of Drexel University, and the Polymer Science Outstanding Alumni Award recipient, Dr. Rong-Ming Ho from the National Tsing Hua University in Taiwan.

An awards luncheon followed that honored Dr. Ho and this year’s Polymer Engineering Distinguished Alumni Award recipient, Dr. James “Jim” Scobbo, Global Analytical Technology Leader for SABIC’s Innovative Plastics business in Mount Vernon, Ind. Scobbo leads a team of more than 200 technologists in the Americas, Europe, and Pacific regions who are responsible for solving business and technical problems by leveraging chemical and physical characterization technologies. He also leads the Analytical Community of Excellence across all of SABIC, which brings together characterization experts across every SABIC strategic business unit.

Over his 23-year career with the company, Scobbo has held roles with increasing responsibility across a breadth of functional areas and product lines. He has numerous publications and patents, has taught short courses around the world, and has authored/coauthored two book chapters.

Scobbo received a B.S. in chemical engineering (1984), M.S. and Ph.D. degrees in polymer engineering (1986 and 1989 under Dr. Nobuyuki Nakajima), as well as an M.S. in physics (1989), all from The University of Akron. In 1992 he also completed an M.B.A. from Union College.

"Do you know what this is? 
See page 10 for answer.”

Dr. James Scobbo (R) with his former advisor and Alumni Day speaker, Dr. Nobuyuki Nakajima.
Alumni Day 2012 (continued)

After the luncheon, attendees traveled to the Polymer Engineering Academic Center for an afternoon symposium devoted to Polymer Engineering. Speakers, in addition to Dr. Scobbo, were Dr. Chanyeong Kim from Kent State University, Dr. Donald Meltzer of Lubrizol Advanced Materials, and Professor Emeritus, Dr. Nobuyuki Nakajima. Both Drs. Bob Weiss and Then Kya served as moderators for the afternoon.

A special thank you goes out to members of the Polymer Engineering Student Organization (PESO), including Stuti Rajgarhia and Ryan Lang, who not only staffed a table of PESO items for sale as a fundraiser, but who also graciously helped out with audio-visual and hospitality needs during the symposium. Particular credit goes to Han Mangalara, who gave up an entire afternoon to serve as photographer of the event. All photos of Alumni Day in this newsletter are courtesy of Hari.

At the conclusion of a beautiful autumn day at UA, it was wonderful to have welcomed alumni and friends back to the College, to learn from different researchers, renew and strengthen friendships, and make new contacts. We look forward to hosting alumni and friends on campus again in the future!

Message from the Chair

BY BOB WEISS

The new academic year is well underway, and already it is an exciting time for the Department of Polymer Engineering, as we welcome two new faculty members to the department: Dr. Younjin Min and Dr. Nicole Zacharia. Dr. Min, who joined the department in December, received her Ph.D. from the University of California at Santa Barbara and completed a postdoctoral fellowship with Dr. Paula Hammond at MIT. Dr. Zacharia did her graduate work at MIT and is currently an assistant professor of mechanical engineering at Texas A&M. She will move to Akron for the beginning of the fall 2013 semester.

During the last year, department faculty have spent considerable time and effort to revise our core curriculum and the Ph.D. qualifying exam. This is largely in response to the significant change in faculty backgrounds and expertise, but also to allow us to be more competitive in the diverse field of polymer engineering. New emphases in polymer physics now complement our core expertise in polymer engineering. We now enjoy strengths in polymer surfaces and interfaces, photovoltaics, flexible electronics and functional materials, in addition to polymer processing and reaction engineering. The new curriculum consists of four core courses that will all be given in the graduate student’s first semester. The Ph.D. qualifying exam will be given immediately following the first semester, so that the students can more quickly get involved with their research. This curriculum will go into effect during the fall 2013 semester.

While the department remains in very good shape, the poor economic climate in Ohio, and in the country in general, has had some effect on us. The University is facing severe monetary shortfalls, and that has trickled down to the College and the departments, resulting in considerable belt-tightening for all of us. Still, the department is healthy, the research programs are continuing to grow, and students are finding jobs. We are expanding the student awards to give more recognition to the hard work and innovation of our graduate students. We are also increasing our effort to recruit domestically while the 3 + 2 China program is facing severe monetary shortfalls, and that has trickled down to the College and the departments, resulting in considerable belt-tightening for all of us. Still, the department is healthy, the research programs are continuing to grow, and students are finding jobs. We are expanding the student awards to give more recognition to the hard work and innovation of our graduate students. We are also increasing our effort to recruit domestically while the 3 + 2 China program.

I sincerely hope that the past year has been kind to you and your family. We would love to hear from you regarding your activities and achievements.

Mark Your Calendar

2013

- Mar 18-22 American Physical Society (APS) March Meeting Baltimore, Md.
- Mar. 27-31 National Society of Black Engineers (NSBE) Annual Convention Indianapolis, Ind.
- April 1-5 Materials Research Society (MRS) Spring Meeting San Francisco, Calif.
- April 7-11 American Chemical Society (ACS) Spring National Meeting New Orleans, La.
- April 22-24 Society of Plastics Engineers (SPE) Annual Technical Meeting (ANTEC) Cincinnati, Ohio
- April 23 Alumni Reception at ANTEC 6-7:30 p.m. Location TBA
- Sept. 8-12 American Chemical Society (ACS) Fall National Meeting Indianapolis, Ind.
- Oct. 24-26 Society of Women Engineers (SWE) Annual Conference Baltimore, Md.
- Oct. 30-Nov. 3 Society of Hispanic Professional Engineers (SHPE) Annual Conference Indianapolis, Ind.
- Nov. 3-8 American Institute of Chemical Engineers (AIChE) Annual Meeting San Francisco, Calif.
- Nov. 15-21 American Society of Mechanical Engineers (ASME) International Mechanical Engineering Congress & Exposition San Diego, Calif.

Editor
Sarah Thorley

Connect With DPE
Published by the Department of Polymer Engineering at The University of Akron for DPE alumni, students, faculty, contract professionals, staff and friends.
Dr. Adam Beers (M.S. 1999)
Accepted a position as a research scientist with Dr. Diya Bandyopadhyay (Ph.D. 2012) and projects.
In addition, Beers received two awards from Abbot Vascular in Murrieta, Calif.

Dr. Johanna Baena (Ph.D. 2006)
Accepted a position as Senior Product Development Engineer with Nexans Electronics & Cables in Etoy, N.C.

Dr. Sunil Gowrishankar (M.S. 1999)
Accepted a post-doc position with Dr. Kshitij Jha (Ph.D. 2012) and Synova, Horsham, Pa.

Dr. Pratyush Dayal (Ph.D. 2007)
Relocated to Dudley, Mass., as a polymer engineer with ExxonMobil.

Dr. Alexie Malekova (Ph.D. 2010)
Accepted a position as Platform Research Scientist at Bioventures in Temper, Tex.

Dr. Emmanuel Pitta (Ph.D. 2012)
Accepted a position as senior scientist with the Lord Corporation in Erie, Pa.

Dr. Prabhu Soundarrajan (M.S. 2003)
Joined RAE Systems, Inc., in San Jose, Calif., as Global Director of Applications and Solutions.

Dr. Sergey Lapshin

Presented "Innovations in Water Soluble Delivery Systems" during the IHS Specialty Plastic Films (SPF) Annual World Symposium on Performance Films held in Dusseldorf, Germany, June 2012. Lapshin is in the Technology Leadership Development Program at Avery Dennison in Mentor, Ohio.

Christopher Rottmayer (M.S. 2004)
Accepted a position as process engineer with PolyOne Corporation in Avon Lake, Ohio.

Dr. Haifeng Shan (Ph.D. 2006)
Accepted a position with PolyOne Corporation in Avon Lake, Ohio.

Dr. Alexie Malekova (Ph.D. 2010)
Relocated to Houston, Texas, to become Materials Technology Engineer for Femer Advanced Sealing Technologies.

Dr. Kent Miller (Ph.D. 1998)
Accepted a position as Platform Research Scientist at Celanese in Florence, Ky.

Phani Nagaraj (M.S. 2003)
Along with wife, Sandhya, welcomed the birth of their second daughter, Vedanth, on July 9, 2012. Nagaraj serves as Business Manager at Chemtura Corporation in Middlebury, Conn.

Dr. Ho-Sung “Edward” Park (Ph.D. 1990)
Accepted a position as Platform Research Scientist at Mitsubishi in Tokyo, Japan.

Dr. Sergei Lapshin

Presented "Innovations in Water Soluble Delivery Systems" during the IHS Specialty Plastic Films (SPF) Annual World Symposium on Performance Films held in Dusseldorf, Germany, June 2012. Lapshin is in the Technology Leadership Development Program at Avery Dennison in Mentor, Ohio.

Christopher Rottmayer (M.S. 2004)
Promoted to R&D Technical Manager at CCL Label in Villach, Austria.
Dr. Mike Calmak

October 2012 — Received $40,000 from NASA Glenn Research Center for “Flexible Aerosel Film Manufacturing.”

September 2012 — Awarded $84,000 in continued funding from Kent Displays for “Electronically Changeable Color Skins for Consumer Electronics.” For this same project, Calmak received a no-cost extension from the Ohio Board of Regents Research Incentive Match in June 2012 and again in September 2012. This brings Calmak’s total award to $134,000.

Dr. Kevin Cavitch

Summer 2012 — Cavitch, along with Dr. Cary Helfer, Assistant Director of Science Education Outreach for the Akron Global Polymeric Academy (AGPA), were co-PIs on a $395,921 National Science Foundation Research Experience for Teachers (RET) program. Eleven local high school teachers worked with several UA professors over the summer to conduct polymer engineering research and take their lessons back to their classrooms.

June 2012 — Received $8,750 in supplemental funding from the National Science Foundation for “Supramolecular Assembly of Low Molecular Mass Organogelators.” This brings Cavitch’s total award to $263,750.

Dr. Hendrik Hentschel


October 2012 — As Co-PI to Dr. Matthew Espe and Dr. David Mooney, both from UA’s Department of Chemistry, was awarded $62,500 from the Centro de Investigación en Materiales Avanzados en Meso for “Organic and Hybrid Organic Solid-State Photovoltaic Materials and Devices.”

On September 25, 2012, Hentschel and wife Ojaga welcomed the birth of their son, Leonard Hentschel.

Dr. Aaron Ivey

December 2012 — Awarded the 2012 James L. White Innovation Award of the Polymer Processing Society (PPS). The award is given in recognition of innovative development in the field of polymer processing technologies with recent commercial impact. It aims to recognize originality, innovation and creativity in the science and technology of processing polymers and polymeric products. Dr. Ivey was presented the award during the 29th international PPS conference held in Pattaya, Thailand, Dec. 11-15, 2012.

October 2012 — As Co-PI to Dr. Mark Soucek, received a $152,550 award from the United Soybean Board for “Soya-Based Reactive Materials for Tires and Other Elastomers.”

October 2012 — Featured in a University Focus article on recycling devalued rubber, “Breakdown Services,” written by Keith Read for the October 2012 issue of Tire Technology International. The article may be viewed online at http://technetinternational.com/magazine/article.php.

October 2012 — As Co-PI to Dr. Calbar Batur of the University of Akron Research Foundation for “Continuous Ultrasonic In Situ Copolymerization of Rubber Blends Suitable in Tire Applications.”

Dr. Badran Jana


October 2012 — Awarded $9,925 from the National Science Foundation for “UCURC Phase 1: Center for Tire Research.” Other Co-PIs are Dr. Erdal Sanerli, Dr. Judit Puskas of Chemical and Biomolecular Engineering, and Dr. Shing-Chung "Josh" Wong of Mechanical Engineering. Virginia Tech is also a partner with a separate budget.

July 2012 — Awarded a no-cost extension from the Lubrizol Corporation for “Development of High-Throughput Computational Systematic Thermoplastic Polyurethane Films.”

Dr. Thien Khu

October 2012 — Awarded $67,000 from the Ohio Soybean Council for “Antioxidant Activity of Generation-III Polyetherimide and UV-Stabilization of Biodegradable Polymers.”


Dr. Younjin Min

December 2012 — Joined the Department of Polymer Engineering as Assistant Professor.

Dr. Alamgir Karim

November 2012 — Received a continuing Community Industrial Assistantship from Promerus for doctoral student Anis Hayrufiyono.

October 2012 — Awarded $100,000 from the American Chemical Society, Petroleum Research Fund for “Oil Water Separations from Zone Annulled Block Copolymer Films.”

October 2012 — Awarded $30,000 by Howard University for “Feasibility Study to Evaluate Candidate Materials of Nanofilled Block Copolymers for Use in Ultra High Density Powder Power Capacitors.”

August 2012 — Received $318,611 from the U.S. Department of Energy for “In Situ Neutron Scattering Determination of 3D Phase-Morphology Correlations in Full-enna-Block Copolymer Systems.” This brings Karim’s total award to $881,066.

July 2012 — Appointed as the Section Chair of the Physics Evaluation Group of the National Science Foundation and Engineering Research Council of Canada (NSERC) for one-year term ending June 30, 2013. As Chair, he will coordinate the comprehensive evaluations and deliberations of the numerous proposals received by NSERC for soft matter and polymers.

July 2012 — Awarded a no-cost extension from the Lubrizol Corporation for “Development of High-Throughput Computational Systematic Thermoplastic Polyurethane Films.”

Dr. David Simmons


Dr. Mark Soucek

October 2012 — Awarded $132,902 from the United Soybean Board for “Soya-Based Reactive Materials for Tires and Other Elastomers.”

Soucek serves as Principal Investigator and Dr. Aaron Ivey is co-PI on the award.

October 2012 — Received $85,000 from Eucic Chemical Company for “Synthesis and Evaluation of New Polyureafoamate Admixture.” This brings Soucek’s total award to $170,000.

October 2012 — Received $25,125 from Lubrizol Advanced Materials for a Community Industrial Assistantship for doctoral student Tengtai Gao.

October 2012 — Awarded $55,000 from Delphi Automotive Systems for “Wear-End Compression Resistance.”

July 2012 — Received a no-cost extension from the Ohio Soybean Council for “Soya-Based Reactive Materials for Tires and Other Elastomers.”

Soucek serves as Principal Investigator and Dr. Aaron Ivey is co-PI on the award.


June 2012 — Received $216,750 from MesoCoat, Inc., for “High Power Density Powder Coating System.”
A W A R D S  (C O N T I N U E D)

S T U D E N T S

Kushal Bahl
Awarded a Victor Montenyohl Scholarship for Fall 2012. The scholarship is awarded to a doctoral student studying in the field of rubber chemistry. Bahl was nominated for the award by his advisor, Dr. Sadhan Jana.

Mauricio Echeverri
Selected as the polymer engineering student recipient of the 2012 Frank N. Kelley Graduate Student Award. Echeverri is completing a doctorate with Dr. Thein Kyu.

Fateme Emami
Received an NSF-sponsored fellowship to attend the Foundations of Molecular Modeling and Simulation (FOMMS) 2012 conference held in Mt. Hood, Ore., July 22-26, 2012. Emami is a doctoral student with Dr. Hendrik Heinz.

Sepideh Niknezhad
Awarded an Excellence in Engineering Plastics Award from Ticona. Niknezhad is a doctoral student studying with Dr. Sadhan Jana.

Hadi Ramezani-Dakhel
Awarded an Excellence in Engineering Plastics Award from Ticona. Ramezani-Dakhel is a doctoral student with Dr. Hendrik Heinz.

Andrew and Elizabeth Shinko
Married Elizabeth Saballa on October 6, 2012, in Minerva, Ohio. Best men included recent 2012 DPE alums Dr. Kent Miller and Dr. Travis Getrie. Shinko is completing his doctorate with Dr. Sadhan Jana.

» Bayer Lectureship

Dr. C. Grant Wilson, Professor of Chemistry and Reid Engineering Regents Chair in the Department of Chemical Engineering at the University of Texas, Austin, delivered the 2012 Bayer Lectureship on October 11 and 12, 2012. Dr. Wilson presented seminars on “Microelectronic Devices: A View of the Future” and “Chemistry for High Resolution Imaging Technology.” Shown to the right, Dr. Wilson receives the Bayer Award. From L-R: Dr. Bob Weiss, Dr. Paul Nowatzki of Bayer MaterialScience, Wilson, and Dr. Tao Yu, also of Bayer.
At times one would wonder why a colleague is so low-profile despite making prolific, significant contributions in several areas of polymer engineering and receiving the highest academic rank (distinguished professor) from The University of Akron. One such colleague is Professor Avraam Isayev, who recently celebrated his landmark 70th birthday and is still going strong in research, teaching and mentoring graduate students and several junior colleagues.

Dr. Isayev has made numerous contributions to archival literature on polymer processing, rheology and rubber materials. He co-authored two editions of one monograph, edited or co-edited seven books and issued 25 patents. He has also published 120 articles in refereed journals, 30 chapters in books and seven papers in encyclopedias, as well as supervised 40 Ph.D. and 36 M.S. students. Despite all this, he maintains a low profile, is congenial with his colleagues, and takes great interest in the well-being of the department.

Dr. Isayev received the James L. White Innovation Award from the Polymer Processing Society at its annual meeting in Pattaya, Thailand, in December 2012 for his innovative work on polymer processing by ultrasound. The award is named after the late Professor James L. White, who along with Isayev and a few other colleagues founded the Department of Polymer Engineering. His career at the University has not come full circle yet. We see in him many future years of productive research, teaching and mentoring of graduate students.

A fellow of the Society of Plastics Engineers (SPE), Dr. Isayev has served on the board of the Engineering Properties and Structure Division (EPiSDIV), and has served as a technical program chair. In view of his contributions to polymer engineering, SPE has assigned a special session in his honor under EPiSDIV at the SPE Annual Technical Conference (ANTEC) in Cincinnati, Ohio, April 22-24, 2013. The symposium will host six internationally renowned speakers from various parts of the world, including (alphabetically) Dr. Eric Baer from Case Western Reserve University, Dr. Miko Cakmak from UA, Dr. Mahesh Gupta from Michigan Tech, Dr. David Kazmer from UMass Lowell, Dr. Musa Kamal from the University of Akron, Dr. Petr Saha from Thomas Bata University (Zlin, Czech Republic). Our intent is to schedule the symposium in the afternoon of April 23, prior to the Department of Polymer Engineering Alumni Reception.

We invite Dr. Isayev’s current and former students, colleagues and friends to join us at the symposium and later at the alumni reception to enjoy his company and possibly some Russian jokes. Happy birthday to Dr. Isayev—we will celebrate it at your symposium!
In Memoriam – Dr. Alan Gent
BY KENT MARSDEN
Dr. Alan Neville Gent, the Dr. Harold A. Morton Professor Emeritus of Polymer Physics and Polymer Engineering, died peacefully at home on September 20, 2012, at the age of 84. A native of Leicester, England, Gent joined the faculty at The University of Akron in 1961 and spent the next half century as a pioneer in his field. Internationally known, Gent was widely regarded as the foremost expert on the fracture mechanics of rubber and plastics. His research yielded significant contributions to the world’s understanding of the physics of adhesion and the fracture of rubbery, crystalline and glassy polymers. Gent’s work had the potential of impacting nearly every rubber or plastic product developed today.

Respected and admired by his colleagues and students, Gent never relinquished a desire to contribute to his field, and he remained active with the University and the College of Polymer Science and Polymer Engineering until his passing. In honor of his international recognition and his service to The University of Akron, the Board of Trustees of the University voted unanimously to change the name of the Ohio Research Scholar Professor at The University of Akron to henceforth be named the “Alan N. Gent Ohio Research Scholar Professor of Polymers.”

He is survived by his extended family, including his wife, Ginger Lee; former wife, Jean Gent; three sons, Martin, Michael, and Andrew; 15 grandchildren and several great-grandchildren.

Recent Polymer Engineering Graduates
SUMMER 2012

Ali Ammar, M.S.
“The Morphology and Mechanical Properties of Polysulfone/Polyimide Nanocomposite Films”
Advisor: Dr. Alamgr Karim

Diya Bandyopadhyay, Ph.D.
“Controlling Polymer Thin Film Instabilities via Tuning of Polymer-Substrate Interactions and Suppression of Capillary Waves”
Advisor: Dr. Alamgr Karim

Li Feng, Ph.D.
“Investigation of the Relationships between the Thermodynamic Phase Behavior and Gelation Behavior of a Series of Tripodal Trisamide Compounds”
Advisor: Dr. Kevin Cavicchi

Kent Miller, Ph.D.
“Production of Poly(lactic acid) Biodegradable Films and the Introduction of a Novel Initiation Method for Free Radical Polymerization via Magnetic Fields”
Advisor: Dr. Mark Soucek

Emmanuel Pitia, Ph.D.
“Composite Proton Exchange Membrane Based on Sulfonated Organic Nanoparticles”
Advisor: Dr. Bob Weiss

Chaitanya Pratiwada, M.S.
“High Fidelity Detection of Defects in Polymer Films Using Surface-Modified Nanoparticles”
Advisor: Dr. Alamgr Karim

Xiaojiang Wang, Ph.D.
“Polyester Based Hybrid Organic Coatings”
Advisor: Dr. Mark Soucek

Xueyuan Wang, Ph.D.
“Control and Characterization of Textured, Hydrophobic Ionomer Surfaces”
Advisor: Dr. Bob Weiss

Dr. Bob Weiss Receives Honorary Doctorate

Prof. Robert Weiss, the Hezzleton E. Simmons Professor of Polymer Engineering and Chair of the Department of Polymer Engineering, was conferred an honorary doctorate by Brno University of Technology, Czech Republic, on October 15, 2012. The award was bestowed upon Weiss for his outstanding achievements in science and engineering.

Located in Central Europe, Brno University of Technology is one of the Czech Republic’s leading research and teaching institutions. Weiss was invited to speak at the ceremony and give a presentation to the University’s Department of Chemistry.