ChE Newsletter

Spring/Summer 2004

Arvind Varma Takes the Reins in Chemical Engineering

David Umberger

Arvind Varma

On January 1, 2004 Professor Arvind Varma began his tenure as the head of the School of Chemical Engineering and the R. Games Slayter Distinguished Professor of Chemical Engineering. He was the Arthur J. Schmitt Professor of Chemical Engineering, and Director, Center for Molecularly Engineered Materials, at the University of Notre Dame. From 1982 to 1988 he was chair of Chemical Engineering. He has written more than 225 peer-reviewed journal papers and holds two patents. He also has co-authored three books since 1997, co-edited two others, and serves as founding Editor of the Cambridge University Press Series in Chemical Engineering. His professional recognitions include the 1993 R.H. Wilhelm Award from the American Institute of Chemical Engineers and the 2000 Chemical Engineering Lectureship Award from the American Society for Engineering Education. He has held visiting faculty appointments at the University of Wisconsin-Madison, California Institute of Technology; Indian Institute of Technology – Kanpur, University of Cagliari - Italy; Princeton University; and the University of Minnesota. He earned his doctoral degree in chemical engineering from the University of Minnesota in 1972, an MS in chemical engineering from the University of New Brunswick in 1968, and a BS degree in chemical engineering from Panjab University in 1966.

His research has made significant contributions to chemical and catalytic reaction engineering, combustion synthesis of advanced materials, and inorganix membranes and reactors. In 2001 he was the inaugural recipient of the University of Notre Dame's Research Achievement Award.

PURDUE
UNIVERSITY

School of Chemical Engineering

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State of the School from the Outgoing Head

Editor's note: In December 2003, G.V. "Rex" Reklaitis completed 17 successful years as head of the school and will resume full-time teaching and research activities. (See related story on page 19.) This is his final address as head.

With this edition of our newsletter, I would like to report on the status of our school. There have been a series of noteworthy developments in our faculty and facilities over the past six months.

First, my colleagues and I were saddened at the sudden and untimely loss of our good colleagues of many years, **Roger Eckert** and **David Kessler**, both professors in Chemical Engineering. Roger passed away in late April 2003; David in October 2003. Roger was active in teaching the senior laboratory course up until just a few weeks of his death. David was in the midst of his third year of emeritus status when the symptoms of his terminal illness surfaced. Each had enjoyed over 30 years of their professional lives at Purdue and made many contributions in all areas of faculty endeavor: teaching, research, and service. They represent a key chapter in the history of this school, having played noteworthy roles in the growth and evolution of Purdue Chemical Engineering.

New leadership. On January 1, 2004, **Arvind Varma**, previously the Arthur J. Schmitt Professor of Chemical Engineering at Notre Dame University, assumed the position of R. Games Slayter Distinguished Professor and Head of Chemical Engineering. His appointment is the result of a vigorous year-long search led by Professor **Doraiswami Ramkrishna**. The faculty of the school has great confidence that Professor Varma will lead the school to even greater prominence in our discipline, taking full advantage of the outstanding faculty and forthcoming new facilities that will enhance chemical engineering research and endeavors.

New faculty: Professor **Varma** is part of an outstanding group of new faculty who has joined our school since the close of the 2002-2003 academic year. Assistant Professors **Chelsey Baertsch** and **You-Yeon Won** and Associate Professors **Steve Beaudoin** and **Fabio Ribeiro** arrived in the summer of 2003 and are now in the process of building their research facilities at Purdue. Chelsey and Fabio bring great strength and enthusiasm to our catalysis/surface science faculty cluster. You-Yeon reinvigorates our polymer synthesis and drug delivery emphasis. And Steve introduces new energy in the semiconductor manufacturing, specifically the chemical-mechanical planarization, domain. In November 2003, the faculty was delighted to welcome Dr. **Sangtae Kim** who joined Purdue to assume the position of Feddersen Distinguished Professor. Sangtae is returning to academia after an extended "sabbatical" from the University of Wisconsin, during which he held leadership positions in pharmaceutical R&D, to resume a research program in micro- and nano-fluidics and applications. With these new colleagues our school's faculty headcount has grown to 27—the highest in its history. This growth is a result of President Jischke's goal of increasing the Engineering faculty roster by 75 new positions over the next five years. We hope to continue in this growth under the leadership of Professor Varma, focusing particularly in expanding the biochemical/biomolecular research area of the school.

G. V. "Rex" Reklaitis

Research: The existing school faculty continues to make important strides and achieve noteworthy accomplishments and recognitions which are described in the body of this newsletter. Among these important achievements, I call to your attention the launching of the catalyst design by discovery informatics project under U.S. Department of Energy funding. This multi-million dollar project, led by Professor **Nick Delgass**, involves a team of seven chemistry and

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chemical engineering colleagues. It represents one of the early fruits of a strategic decision by the school to emphasize catalysis/surface science as a core, long-term strength. Indeed, the top floor of the new addition consists of state of the art laboratories dedicated to this core domain. Another key development included the successful multi-investigator NSF MURI grant, led by Professor **Hugh Hillhouse**, which has created a leading edge facility for in-situ X-ray structural analysis of nanomaterials. We are likewise delighted that Professor **Kendall Thomson** was awarded a CAREER Award on computer-aided design and discovery of novel nanoporous materials. With Kendall's award, six of the ten junior faculty of the school are CAREER Awardees.

Facilities: In parallel with these exciting faculty developments, our facilities project has made excellent progress. The construction of the Addition is progressing on schedule with completion expected in the summer of 2004. The Addition will nearly double the assignable space of the school, including new teaching laboratory facilities at both the sophomore-junior level as well as the advanced undergraduate-graduate level. It will include a new 200-seat amphitheater-style lecture hall and two medium-size multimedia-equipped classrooms. We have also made good progress in completing the planning of the remodeling of the existing building working with an engineering firm to develop a detailed conceptual design in preparation for the first phase of remodeling early this spring. The second and larger phase will take place once the new addition can be occupied and space is selectively vacated in the existing building. We are looking forward to the combined ChE facilities project to be completed by the summer of 2005. The resulting complex, the Forney Hall of Chemical Engineering, will provide the world-class platform on which the school will move to the next level of excellence.

Alumni: Last but not least, the school is very proud to have an outstanding worldwide network of highly accomplished and committed alumni. Our reputation is built on their accomplishments. Over the past year we have been privileged to be able to formally recognize several of these alumni for their successes with Distinguished Engineering Alumnus and Outstanding Chemical Engineer Awards. You will find more information about them in the following pages of this newsletter. Please congratulate these leaders of our profession when next you have the chance. Moreover, please call our attention to your classmates who have reached similar levels of accomplishments. We'll include them among our awardees in the future.

I would like to close by recognizing an outstanding group of our alumni and friends who have and are serving on the school's New Directions Industrial Advisory Council (IAC). The leadership of the Executive Committee of the IAC, chaired by Bill Smith of Eli Lilly, has been particularly outstanding. It has been an honor to work with these senior industry leaders who give generously of their time and talent to develop and enhance the education and training of our chemical engineering graduates. They have set a new standard for what it means to "give back."

Over the past nearly 17 years, it has been my privilege to work with an outstanding faculty and staff team to create an exciting environment for teaching and research for our excellent and motivated students. Everything achieved has been through our collective collegial efforts. I look forward to contributing to the continued progress of Purdue ChE in the years to come.

With warm regards,

G. V. Reklaitis
Edward W. Comings Professor of Chemical Engineering

Kudos for ChE


Basaran


Reklaitis


Albright


Caruthers


Sinclair Curtis

ChE faculty members receive honors, awards, and distinctions for their achievements. To follow are some of our best.

Osman Basaran was named Reilly Professor of Fluid Mechanics. Basaran's research interests are drop and bubble dynamics, fluid mechanics, electrohydrodynamics micro-electro-mechanical systems (MEMS), ink-jet printing, biochips, and bioanlytical devices. He holds nine patents and has 65 refereed publications in academic journals. In 1994 he received the Research and Development Accomplishment Award from Martin Marietta Energy Systems. In 1995, he received the Exxon Education Foundation Award.

G.V. "Rex" Reklaitis was named the Edward W. Comings Professor of Chemical Engineering (see related story on page 19). Comings, the fourth head of the department, wrote more than 80 publications and the book *High Pressure Technology*. In 1956, he received the William H. Walker Award, the highest AIChE honor.

Lyle Albright was named the recipient of the 2003 F. J. and Dorothy Van Antwerpen Award for Service to the Institute. The award recognizes contributions in both the professional and technical areas of Institute activity. Albright said that he was especially pleased that Dow Chemical Company sponsored the award. When he needed financial assistance to continue his schooling, he worked at Dow until he earned enough to complete his undergraduate education.

Gary Blau was the inaugural Park M. Reilly Lecturer of the Department of Chemical Engineering at the University of Waterloo, Canada. The lecture, entitled, "Bayes, Bias, and Balderdash: Drivers in Risk Management for New Product Development," was made possible by the Park Reilly Endowment Fund. This award recognizes his contribution to the application of statistics in chemical engineering.

James Caruthers is the lead researcher on several cross-disciplinary teams, partnering with industry sponsors to examine critical design problems through the Center for Integrated Materials to Product Design.

Jennifer Sinclair Curtis received the American Society for Engineering Education (ASEE) Sharon Keillor Award for Women in Engineering. The award recognizes and honors a woman educator who has an outstanding record in teaching engineering students. Provost Sally Frost Mason approved the selection of Curtis as a University Faculty Scholar, which recognizes outstanding faculty who are on an accelerated path for academic distinction.

W. Nicholas Delgass was elected to Purdue's Book of Great Teachers. He received the Charles B. Murphy Award and the 2003 Schools of Engineering Mentoring Excellence Award, which is given in recognition of excellence by faculty in the Schools of Engineering in the mentoring of graduate students, post doctorate staff or junior faculty. He is also the principal investigator on the Catalyst Design by Discovery Informatics project which is one of nine successful proposals in a nationally competitive U.S. Department of Energy grant. Delgass and a cross-disciplinary team of six faculty have been awarded a three-year, $2.25 million grant which is a prelude to a national center competition.


Delgass


Houze


Lee


Venkatasubramanian


Wankat

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Mark E. Davis Delivers Kelly Lecture

Mark E. Davis, Warren and Katharine Schlinger Professor of Chemical Engineering and Executive Officer of Chemical Engineering at the California Institute of Technology, was the 2002 Kelly lecturer. Davis (left in photo) was the first engineer to win the NSF's Alan T. Waterman Award. He has over 250 scientific publications, one textbook, and over 25 patents. He is also the recipient of the ACS's Langmuir Lecture and Ipatieff Prize, the AIChE's Allan P. Colburn Award and Professional Progress Award, and the International Zeolite Association's Donald Breck Award—all for his pioneering work in the synthesis of catalytic materials. Davis is a founding editor of CaTTech and has been an associate editor of Chemistry of Materials and the AIChE Journal. He is a consultant for numerous petroleum, chemical, and pharmaceutical companies. In 1997, Davis was elected to the National Academy of Engineering.

Davis' lectures were titled, "New Catalytic Materials for the Selective Oxidation of Light Alkanes" and "Engineering of Synthetic Gene Delivery Systems."

Arthur Kelly, a Purdue alumnus, established the Kelly Fund at Purdue University in 1956. The income from this fund is used to bring outstanding scientists and engineers to the campus for lectures and discussions in the Department of Chemistry and the School of Chemical Engineering.

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Michael Harris was elected a director of the Materials Engineering and Sciences Division of the AICHE. He was also named a University Faculty Scholar.

R. Neal Houze is the 2003 recipient of the Schools of Engineering A. A. Potter Best Teacher in Engineering Award. Houze is also a recent recipient of the School of Chemical Engineering Shreve Award for undergraduate teaching excellence. Along with Delgass, he was elected to Purdue's Book of Great Teachers.

Gil Lee leads an interdisciplinary research team that received a two-year $1.3 million grant through the State of Indiana's 21st Century Fund to establish a Center for Membrane Protein Biotechnology.

John Morgan and **Kendall Thomson** received the Faculty Early Career Development award from NSF, joining David Corti and Hugh Hillhouse who received the same award in 2002.

Venkat Venkatasubramanian was invited to serve on a National Panel on Homeland Security organized by the National Academy of Engineering. He was also elected as the President of CACHE for a two-year term beginning in 2002. He also received the G. S. Laddha Distinguished Professorship Award from his alma mater, A. C. College of Technology, Anna University, Madras, India.

Phillip Wankat was named the Walter L. Robb Engineering Education Senior Fellow of the National Academy of Engineering.

New Faculty Recruits Reinforce the Ranks

Chelsey Baertsch, Assistant Professor, received her PhD in 2001 from the University of California, Berkeley under Enrique Iglesia, and joins us from a post-doctoral position at MIT working for Klavs Jensen. Her areas of expertise include heterogeneous catalysis, synthesis and characterization of metal-oxide support catalyst, and MEMS fabrication and application.

From Arizona State University **Stephen Beaudoin**, Associate Professor, brings expertise in the areas of particle and thin film adhesion and electronic materials processing. Stephen received his PhD in 1995 from North Carolina State University and works in a variety of fields related to interfacial engineering and electronic materials, including particle and thin film adhesion, electronic materials processing, surface cleaning, chemical mechanical polishing, and coatings for biosensor applications. He also brings added atomic force microscopy expertise to Purdue with which he studies adhesion of particles to surfaces, developing experimentally-validated, science-based models for adhesion.

Fabio Ribeiro, Associate Professor, joins us from the Worcester Polytechnic Institute and brings expertise in the area of surface science and heterogeneous catalysis. Ribeiro received his PhD in 1989 from Stanford University working with Michel Boudart. Ribeiro will continue his work in modeling kinetics of heterogeneous systems and developing techniques and equipment fabrication to study catalysts under dynamic reaction conditions with Raman and ATR-FTIR spectroscopy. His fundamental approach has been applied to the areas of hydrodechlorination, catalytic combustion of natural gas, synthesis of carbon nanotubes, water-gas shift reaction for fuel cell applications, partial oxidation of hydrocarbons, and NOx traps for automotive applications.

You-Yeon Won, Assistant Professor, received his PhD from the University of Minnesota in 2000 working for Ted Davis and Frank Bates. Won joins us from a post-doctoral position at Harvard working for David Weitz. Won's areas of expertise include micellar structure of amphiphilic block copolymers, anionic and free-radical synthesis of block copolymers, and macro/micro-rheological characterization.

Chelsey Baertsch

Stephen Beaudoin

Fabio Ribeiro

You-Yeon Won

Distinguished Chemical Engineering Alumni

Purdue Distinguished Engineering Alumni are "visionaries for change;" they are leaders of the marvelous advance of humankind. Their achievements stand not only as technical triumphs, but as inspirations to us all. In recognition of their exemplary achievements, the College of Engineering conferred upon the following chemical engineering alumni the title of Distinguished Engineering Alumnus or Alumna.

2002 DEAs

Deborah L. Grubbe

Corporate Director, Safety and Health
DuPont Company
BSChE '77

Ms. Grubbe is the corporate director of Safety and Health at DuPont, where she is accountable for DuPont's global safety and health leadership. At all stages of her DuPont career, she has implemented change in some of DuPont's most strategic business units and has built an impressive record of leadership that improves profitability, innovation, and safety. She has been an invaluable mentor to young women pursuing an engineering career.

Ms. Grubbe was named the Delaware Engineer of the Year for 2002, received the Purdue Engineering Alumni Association Service Award in 2001, and was named a Purdue Outstanding Chemical Engineer in 1994. She was the first woman and the youngest elected member on the State of Delaware Registration Board for Professional Engineers from 1985 to 1989. She is also a member of the Purdue Chemical Engineering Industrial Advisory Executive Committee.

Donald L. Lamberson

Major General (Retired)
U.S. Air Force
BSChE '53

General Lamberson began his distinguished 35-year Air Force career as an ROTC student at Purdue. He continued his education at the Air Force Institute of Technology, earning a master's degree in nuclear engineering in 1961 and a doctorate in aerospace engineering in 1969. Before retiring as a Major General in 1989, his technical expertise and leadership in directed energy physics made him the father of lasers in the Air Force. He held a critical role in high-energy laser development in the Air Force in the 1970s and 80s, and was particularly influential in his leadership over the Airborne Laser Laboratory, the first high-powered laser to work from an aircraft for precision targeting.

General Lamberson received the Air Force Outstanding Research and Development Officer Award in 1964, the Theodore von Karman Award and the Legion of Merit in 1978, the Defense Superior Service Medal in 1983, and the Distinguished Service Medal in 1989. He is a member of Purdue's Aeronautics and Astronautics Industrial Advisory Council and was a member of Purdue's Engineering Visiting Committee from 1986 to 1990.

Deborah L. Grubbe

Donald L. Lamberson

Richard H. Grabham

Ben J. Lipps

2003 DEAs

Richard H. Grabham

Vice President, Global Polypropylene
ExxonMobil Chemical Co.
BSChE '70

Richard H. Grabham began his career at Exxon in 1973 as a project and process engineer for the Baton Rouge Plastics Division. Over the past 30 years, he methodically rose through the ranks, ultimately reaching his current position as vice president of ExxonMobil's Global Polypropylene Business Unit. Over the course of his career, Grabham has helped pioneer the global plastics market for both polyethylene and polypropylene. Notably, he was part of a group that transformed Al Jubail, Saudi Arabia, from a tiny fishing village in 1985 to one of the world's largest chemical sites.

Grabham was named Outstanding Chemical Engineering graduate in 1999. From 1997 to 2003 he was on the New Directions Advisory Council for Chemical Engineering and the Advisory Board of the Childrens' Museum of Huston, one of the top-rated children's museums in the country. He was part of the group that developed the strategic plan for the School of Chemical Engineering and helped raise the funding for the new Forney Building of Chemical Engineering.

Ben J. Lipps

President and CEO, Fresenius Medical Care, North America
Chairman, Management Board, Fresenius Medical Care, AG
BSChE '62

Ben J. Lipps ended his Purdue career with a bang when he graduated with highest honors and was selected as one of the Top Ten Chemical Engineering Bachelor of Science Graduates in the United States. He received a National Institutes of Health fellowship to MIT, where he received his master's and doctoral degrees in chemical engineering. From there he went on to work for Dow Chemical Company as part of a research team that ultimately led to the development of the first hollow fiber dialyzer.

Since 1988, Lipps has been chief executive officer with Fresenius USA Inc. and, since it was formed in 1996, has also been chief executive with Fresenius Medical Care, the world's largest fully integrated dialysis products and services company. The company engages in clinical research and product development and also provides direct patient care through its network of approximately 1,450 dialysis clinics to over 110,000 patients around the world.

Outstanding Chemical

Each year, the school recognizes notable alumni who have achieved distinction as leaders in their careers and communities. Through their accomplishments, they have shaped the chemical engineering profession and brought recognition to the school and Purdue. Over the years, ChE faculty members have recognized only 95 of the school's 9,000 alumni with this prestigious award. In 2002 and 2003, five more became members of this exemplary class.

Michael J. Graff, MS '79

2002 OChEs

Michael J. Graff, MS '79
President, BP Polymers Americas

Mike Graff joined Amoco in May 1977 as a research engineer for Amoco Chemicals' Plastic Products Division. Early in his career, he held several engineering and supervisory positions, as well as positions in Operations Management in Amoco Oil's Texas City, Whiting and Yorktown Refineries. From that point on he held positions of increasing importance. In 2000, he was named vice president with responsibility for BP's Worldwide Polypropylene Business with commercial offices in 11 countries. In his current role, he has responsibility for BP's combined Polyethylene and Polypropylene businesses.

Michael Ott, BSChE '74

Michael Ott, BSChE '74
President, Polysciences

Michael Ott is the owner and operator of Polysciences, Inc., a diversified manufacturer of chemicals for the medical research and diagnostic device markets. Polysciences produces specialty monomers and polymers, microspheres, histology and microscopy reagents, and a wide range of materials for life science applications. His career has taken him from Auckland, New Zealand to Mexico City to Philadelphia. As the only engineer on the premises, Mike has surrounded himself with PhD chemists and biologists for the development of new products for the specialty marketplace.

Engineers Honored

Ellen Tobias, BSChE '83

Paul A. Dickensheets, BSChE '74, MSChE ' 76

Tom Maliszewski, BSChE '73

2003 OChEs

Ellen Tobias, BSChE '83
General Manager,
Clinton Laboratories
Eli Lilly and Company

As general manager of Clinton Laboratories, Ellen Tobias is responsible for a facility that employs 750 people and uses batch organic reaction and natural fermentation technologies to make human health and animal health products. In addition, she holds a global leadership role within Lilly for natural fermentation processes and is responsible for optimizing asset utilization, leveraging development resources, and increasing learning across the four fermentation plants at the company. At Purdue she gives lectures to chemical engineering classes and to the Society of Women Engineers.

Paul A. Dickensheets,
BSChE '74, MSChE '76
Vice President & General Manager, Interior Systems and Engineering Operations,
Johnson Controls-ASG

Paul Dickensheets joined Prince Corporation (now Johnson Controls) in 1994 as vice president of Engineering. Today, as Vice President and General Manager of Interior Systems and Engineering Operations for the Automotive Systems Group, Dickensheeets oversees the execution of entire vehicle interior programs, including components such is instrument panels, overhead systems, door systems, floor consoles, and hard/soft trim, as well as the development of the technologies required for total interior integration (acoustics, safely, environmental, and human factors, etc).

Tom Maliszewski, BSCHE '73
Senior Process Engineering Associate (Retired)
Dow Chemical Company

Tom Maliszewski joined Union Carbide Corporation in 1973. He worked in Process Engineering for UCC's Ethylene Oxide, Silicones, and Urethane Polyols businesses. Maliszewski worked in R&D on two new process technologies for Ethylene Glycol production and was co-inventor on a patent. Over the next two decades, he moved up through a series of management positions and was named Corporate Fellow in 1998. When Union Carbide and the Dow Chemical Company merged in 2001, he continued to work in the process engineering area until his retirement on January 1, 2003.

Alumni Earn Accolades

Our alumni make us proud. To follow are some of the notable alumni achievements that came to our attention recently.

Pedro Arce (MS '87, PhD '90) is Chairperson of Chemical Engineering at Tennessee Tech University.

Christopher N. Bowman (PhD '91) is Department Chair of Chemical and Biological Engineering at the University of Colorado and the Gillespie Faculty Fellow. He is also Clinical Professor of Dentistry, University of Colorado, Health Sciences Center, and Co-Director, Industry/University Cooperative Research Center for Fundamentals and Applications of Photopolymerizations.

Alec B. Scranton (PhD '90) is Professor of Chemical and Biochemical Engineering and Associate Dean of Academic Programs at the University of Iowa. He is also Co-Director of the Photopolymerization Center (NFS IUCRC).

The **TR100 Award**, recognizing the 100 top young innovators, is given biannually by the magazine Technology Review and has become a very prestigious recognition of early success in engineering and sciences. **Kristi Anseth**, Professor, University of Colorado, received the TR100 in 1999; **Surya Mallapragada**, Associate Professor, Iowa State University, received the TR100 in 2001.

Tony Lowman (PhD '97), President, Gelifex Inc. in Philadelphia and Associate Professor of Chemical and Biomedical Engineering at Drexel University created a novel way of shielding insulin inside polymer-based hydrogels. The technology, now in animal testing, could enable patients with type 1 diabetes (more than a million in the U.S.) to take insulin-filled gel pills in lieu of injections. Lowman is researching a similar approach to delivering drugs for cancer, osteoporosis, and other conditions. In his part-time job as chief technical officer for Gelifex, a Philadelphia-based company he co-founded in 2002, Lowman is designing injectable hydrogels for repairing degenerative discs, the cause of back pain in five million Americans. He recently prepared a gel that could restore disc pressure and function. Clinical trials may begin in late 2004.

Balaji Narasimhan (PhD '96), Associate Professor of Chemical Engineering at Iowa State University, is devising time-release polymers to replace multiple vaccine injections to help prevent common worldwide diseases such as tetanus and diphtheria. When injected, the polymers slowly release the vaccines in precise amounts at precise times over a one-year period, thereby maximizing immune response and making booster shots unnecessary. Narasimhan is also devising noninteractive polymers to deliver fragile proteins involved in cancer therapies. He expects both systems to be ready for human testing within five years. Before his work with polymer-based drug delivery, Narasimhan and researchers from the Swiss chemical company Clariant invented a more efficient process for making photoresists—polymers used in the manufacture of computer chips. Clariant is now operating a pilot photoresist production facility in New Jersey that uses this process.

American Institute of Chemical Engineers Awards

Kristi Anseth (BS '92), Associate Professor and Howard Hughes Medical Investigator, University of Colorado, received the 2003 Allan P. Colburn Excellence in Award Publications Award.

Terry Papoutsakis (PhD '79), Walter P. Murphy Professor of Chemical Engineering, Northwestern University, received the 2003 Alpha Chi Sigma Chemical Engineering Research Award.

Alumni Notes 2003

1950s

Roger A. Riehm ('54) and his wife, of Elmore, Ohio, celebrated their fiftieth anniversary in October.

1960s

James T. Cobb, Jr. (MS '62, PhD '66) received the 2002 Environmental Scientist/Engineer/Technologist Award (from the Carnegie Science Center Awards for Excellence) for his work on biomass cofiring in the Pittsburgh region.

John L. Cooper ('66) has been elected as one of fifteen national regents of the American College of Trial Lawyers for Northern California and Nevada.

Lloyd M. Robeson ('64) received the ACS Award in Applied Science in recognition for his significant achievements in the areas of polymer blends, block copolymers, membranes, adhesives, engineering thermoplastics, and thermosets. Elected to the National Academy of Engineering in 2001, he is currently a principal research associate at Air Products & Chemicals.

1970s

John T. Feiler ('71) is an assistant professor of clinical medicine in the Department of Family and Community Medicine in the Baylor College of Medicine.

Frank J. Hearl ('74) is a senior adviser for the Centers for Disease Control and Prevention's National Institute for Occupational Safety and Health in Washington, D.C.

Jay Ihlenfeld ('74) is Vice President for Research and Development at 3M.

Emily Liggett ('77) joined Capstone Turbine Corporation as chief operating officer. During a 16-year period with Raychem Corporation she had lead positions in divisional marketing and sales functions, was a divisional director of operations, was general manager of a telecommunications and energy products business, and was ultimately the chief executive officer of the EloTouchSystems subsidiary.

Steven P. Brinduse ('79) is an advanced research specialist for 3M Company in St. Paul, MN.

1980s

Charles E. Smith ('80) is president and chief executive officer of Countrymark Cooperative LLP in Indianapolis, IN.

Richard O. Brajer ('83) is president and chief executive officer of Liposcience in Raleigh, NC.

Susan Hardman ('83) was promoted to VP/General Manager for EXAR Corporation's interface products division.

Terry W. Russell ('83) is Vice President Operations, Asia Pacific for DuPont Photomasks, Inc. in Taiwan.

Gary B. Fritze ('85) is the head brewer at Gordon Biersch Brewery Restaurant in Memphis.

Maria J. Rumbaugh Gross ('85) is teaching at Little Rock Christian Academy in Little Rock, Arkansas.

Jean F. Meyer ('85) owns a vacation rental reservations service on Sanibel Island.

Richard M. Noller ('85) is a Fellow in the Society of Plastics Engineers.

Michael A. Perry ('86) is a pediatrician for Building blocks Pediatrics in Columbus, OH.

1990s

Aleck Alexopoulos (MS '88, PhD '92) is at the Laboratory of Polymer Reaction Engineering at CPERI (Chemical Process Engineering Research Institute) located outside Thessaloniki in Greece. He is a research associate with interests centered on the application of population balances and CFD in polymerization reactors, especially emulsion and suspension.

Meg A. (Brannan) Fortney ('94) is a process manager for Woodbridge Corporation in Pacific, MO.

Chad R. Lischge ('94) is a supplier quality engineer for Lear Corporation in Wauseon, OH.

Steven W. Matthews ('94) is manager of General Electric's Carolina Products Plant in Goldsboro, NC.

Pamela A. Leatherwood ('96) is a senior technology development engineer for Microchip Technology in Tempe, AZ.

Melissa Foutz Marcum ('96) is a process improvement engineer for Eli Lilly in Indianapolis, IN.

Jason M. Niccum ('96) is a manufacturing engineer for Aisin USA in Seymour, IN.

Dominick Siu ('96) is a marketing specialist for Rocheux International in Plainfield, NJ.

Alex Bentley ('97) joined Salion, Inc. as Professional Services consultant in Detroit. Salion provides revenue acquisition management software for automotive suppliers.

Adam S. Butterbaugh ('99) is a chemical technical services representative for Eli Lilly in Lafayette, IN.

Chad E. Eagleson ('99) is a staff process control engineer for BP Amoco Polymers in Deer Park, TX.

Ellen Grosh ('99) is an Advanced Manufacturing Engineer in the Safety & Security Systems Division of 3M. She is also a board member for the Twin Cities Purdue Alumni Club.

2000s

James E. Shively ('01) is a process engineer for ExxonMobil in Joliet, IL.

Jenny Witman ('01) passed her candidacy exam and earned her master's degree at Cal Tech; she is continuing work on her doctorate.

Brandon Golden ('02) is an Associate Technical Professional in Production Enhancement with Halliburton Energy Services in Alice, Texas.

Christina B. Geiger ('02) is an associate engineer for Hershey Foods in Hershey PA.

Jerome D. Krintz ('02) is a refinery engineer for AE Staley/Tate & Lyle in Decatur, IL.

Jacob D. Smith ('02) is a process engineer at National Starch and Chemical Company in Meredosia, IL.

Nathan A. Turner ('02) is a product sponsor for DuPont in Towanda, PA.

Wendy A. Wyatt ('02) is a member of the manufacturing leadership program with W.R. Grace in Cambridge, MA.

ChE Bids Farewell to Two of Our Finest

Last year we mourned the loss of Professors Roger E. Eckert and David P. Kessler, educators, colleagues, and friends who served the school for more than a combined 75 years. We will miss their expertise, leadership, and friendship.

Roger E. Eckert

Professor of Chemical Engineering
1926–2003

Roger E. Eckert was born in Lakewood, Ohio, on August 8, 1926. He died at St. Elizabeth Medical Center, Lafayette, Indiana, on Saturday, April 26, 2003. Surviving are a son, Roger E. Eckert Jr. of San Jose, California, and two daughters, Rhonda E. Mapes of Freeville, New York, and Robyn C. Zeeman of Shorewood, Illinois.

Eckert attended Princeton University where he worked with Richard H. Wilhelm on the sulfonation of toluene and received a BSE in chemical engineering with highest honors in 1948. In 1951, he received a PhD in chemical engineering at the University of Illinois while studying diffusion in liquid and solid metals.

He was a member of Covenant Presbyterian Church and had been active in service at Purdue as a senior faculty Fellow at Earhart Hall since 1973. He was a World War II veteran in the U.S. Army, serving from 1946 to 1947 while stationed in Japan.

Professor Eckert worked as a senior research engineer for DuPont in Wilmington, Delaware from 1951 to 1964. His 39 year career with Purdue University began in 1964 and he was promoted to Professor in 1973. From 1970 to 1975, he served as the Assistant Head of the School of Chemical Engineering. Along with the internal operations of the school his responsibilities included relations with the College of Engineering and other University divisions. He also worked closely with Freshman Engineering on admissions, requirements, policies, and special programs, and handled contacts with the three regional campuses that transfer engineering students to the main campus. Industrial liaison, contributions, and contacts with employers through the Placement Center were among the responsibilities. From 1987 to 1995 he was Director of Chemical Engineering Undergraduate Programs.

Professor Eckert's service included numerous University committees, including the University Senate, Graduate Council, Faculty Fellows Program and Phi Beta Kappa Academic Honorary. In addition, he was a consultant in the areas of polymers, plastics, and statistical design and analysis of experiments with several companies, including Mobil; Midwest Applied Science, Fiberfil, Glidden-Durkee; and Packaging Corp. of America.

In his teaching he brought special experience in developing chemical engineering models from laboratory data with use of design of experiments and statistical methods from his teaching and research. He initiated and developed several courses in this area with new material. His unique approach unified the material by means of matrix algebra and regression concepts and enabled the engineering student to learn more applied statistics than was possible in standard courses on this topic. He taught such courses every year for all but the last five of his years at Purdue.

Professor Eckert was the recipient of several awards, including the Purdue University Shreve Prize in 1965 for Chemical Processing. He was a member of American Institute of Chemical Engineers, Society of Rheology, Sigma Xi, Alpha Chi Sigma, Phi Beta Kappa at Princeton, Phi Lambda Upsilon National Chemistry Honor Society, Phi Mu

continued on next page

Farewell continued

Professor Eckert served on nearly 90 committees leading to graduate Chemical Engineering degrees. He supervised 32 graduate students leading to advanced Chemical Engineering degrees.

He will be remembered by students and faculty for his commitment to a quality Chemical Engineering degree program. He set a continual example of dedication to the classroom and laboratory experience and of leading students to pursue and achieve their utmost in abilities and accomplishments.

Professor Roger Eckert's personal traits of character and integrity will be remembered by those who knew him. His belief in academic accountability and in service to others was evident in all that he did, and students, colleagues and industry leaders alike will long remember and respect his leadership by example for those whose lives he touched.

David P. Kessler

Professor of Chemical Engineering
1934-2003

David P. Kessler was born in Anderson, Indiana on November 1, 1934. He died at home in West Lafayette, Indiana on October 22, 2003. Surviving are his wife Carolyn, two sons, Eric R. Kessler of Hendersonville, Tennessee, Joel R. Kessler of Hermosa Beach, California, two daughters, Lisa A. Czerwonky of Lafayette, Indiana, Beth C. Eifrig of Chicago, Illinois, and five grandchildren.

He attended Purdue University and received a BS, Chemical Engineering with highest honors in1956. He received an MS, at the University of Michigan in 1959. From 1959 to 1962 he was an NSF Fellow at the University of Michigan receiving a Ph.D., Chemical Engineering in 1962.

After earning the BS degree he went to work for the Dow Chemical Company in Midland, Michigan as a Process Engineer. He married Carolyn Pollard on June 9, 1957 and after two years at Dow they moved to Ann Arbor, Michigan where he obtained his graduate degrees. Their two sons were born while they were in Ann Arbor. After finishing his graduate studies and a short time in the Air Force Reserve he went to work for Procter and Gamble in Cincinnati, Ohio as a Group Leader in Exploratory Development. Their first daughter was born in Cincinnati. David joined the faculty of Chemical Engineering at Purdue as an Assistant Professor in the fall of 1964 where he remained on the faculty until his retirement in 2001. Their fourth daughter was born in West Lafayette.

At Purdue his research interests included transport in dispersed media, biomedical models, stochastic models and numerical solutions of nonlinear models. He is the holder of several patents covering dialysis incorporating a portable hemodialyzer for use as an artificial kidney. He taught a number of courses with a special interest in transport and transfer phenomena and in data analysis with emphasis on statistics. He co-authored three textbooks in these areas. Professors Kessler and Greenkorn developed a TV course on Data Analysis that was presented on local television for five years as well as in the classroom. He received the Shreve Prize and the Tau Beta Pi outstanding instructor award in 1972.

In addition to his academic pursuits as a researcher and teacher David was involved in many service activities throughout his 37 year career at Purdue. He chaired the University senate in 1972-1973. From

1976–1980 he was Assistant Provost and from Division of Interdisciplinary Studies from 1982 to 2000 and Acting Head of Freshman Engineering from January to June, 1992.

The author or co-author of more than 80 books, book chapters, research papers, and conference papers, he was for many years a member of the American Society of Engineering Education, the American Institute of Chemical Engineers, the American Association of University Professors, and the Society of Professionals in Dispute Resolution.

As an escape from the quantitative world of engineering, for about thirty years he was active in Indiana and Illinois in alternative dispute resolution as well as expert witness testimony. This took the form of a variety of arbitration, mediation, and fact-finding activities, ranging from teacher contract negotiations, farm debt mediation to mediation of United States Postal Service disputes.

Outside of the classroom, Prof. Kessler revealed a side of himself that extended from love of music to playing snooker. His droll humor spilled over to the classroom though some students missed the subtleties. Although a decent golfer his main sports passion was tennis. He had a love of books including an extensive collection of volumes on aphorisms, epigrams, and quotations. Other hobbies included fly fishing, handgun, trap,and skeet shooting.

Prof. Kessler was a true Renaissance man having broad and varied interests. We will miss his good nature and humor. We will remember his dedication to Purdue, students, and faculty colleagues.

In Memoriam

Regretfully, we have recently learned of the passing of the following alumni:

1920s

Fred E. Fishman ('23) • Virgil D. Hager ('27)

1930s

Houston R. Baker ('32) • Fred C. Lehman ('34)
Walter J. Liebrecht ('34) • Wayne M. Harvey ('35)
Warren K. Smith ('35) • Richard T. Myer ('35)
Joseph Van Auken Longcor ('36) • John Willy ('36)
Max G. Wirick (BS '36, MS '39) • Rogers A. Hartman ('37)
Samual H. Riggs ('37) • Harry W. Anderson ('38)
Charles W. Dudding ('38) • Willard A. Olsen ('38)
Charles V. Ward ('38) • Charles J. Benner ('39)
Clinton W. Hartman ('39)

1940s

Thomas E. Hoover ('41) • R. Scott Bowles ('41)
Alexander B. Clarke ('41) DEA and OCHE
Alfred C. Goerss ('41) • R. Kenneth Mack ('41)
Edward C. Lewis ('42) • Richard E. Million ('43)
John B. Wells ('43) • Howard W. Davis Sr. ('44)
Theodore E. Kline ('44) • Arnold N. Nawrocki ('46)
David Sursa ('46) • Robert W. Brooks ('47)
Arthur E. Brumfield ('47) • James S. Benson ('48)
Robert J. Groben ('49) • Donald S. Schnedeker ('49),
Lester G. Weber ('49)

1950s

Richard R. Mybeck ('50) • Robert F. Wernet ('50),
Harold L. Hoover ('51) • Neil E. Carpenter ('53),
Harry B. Lansing ('54) • Roy D. Bundy ('58)

1960s

Larry R. Bright ('63)

1970s

Michael L. Duhl ('74)

1990s

Jeffrey Kao (MS '96)

Students Receive Awards, Scholarships, & Fellowships

Each year outstanding students rise up from the pack to gain our notice for outstanding academic achievement, research, teaching, and service. The awards below impart recognition and financial assistance to some of our finest.

2003 Undergraduate Awards

Senior

Lottes Award — Pat Stenger

AIChE Award — Kanishka Mapa

Omega Chi Epsilon Bruce A. Wilson Award — Don Owens

Purdue Student Foundation Award (PSEF) — Josh Schoenherr

Junior

Stephen Craig Award — Ben Rosenbaum

George T. Tsao Award — K. Tjiptowidjojo

2003 Graduate Awards

Magoon Awards for Excellence in Teaching — Rob Collins, Jeff Kloosterman, Scott McClellan, Dave Wells

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In addition, at a celebration of graduate student teaching, **Scott McClellan** was honored for his outstanding teaching contributions. **Rajan Agarwal** received a Graduate Teacher Certificate for completing the Preparing Future Faculty Program. Finally, **Rob Collins** was the Chemical Engineering nominee for this year's Purdue Graduate Student Government Distinguished TA Award.

Reklaitis Switches Gears

In December 2003, Rex Reklaitis put the finishing touches on 17 prolific years as head of the School of Chemical Engineering, but his contribution to the school is not coming to a close; it's just moving in a new direction. He will resume full-time teaching and research activities as the recently ratified Edward W. Comings Professor of Chemical Engineering. In addition he will act as co-executive director of the Institute for Advanced Pharmaceutical Technology, a Discovery Park initiative which brings together engineering disciplines, industrial pharmacy, and life sciences.

During his tenure as head, Reklaitis spearheaded significant advances in faculty recruitment, student and faculty diversity, and facilities expansion and improvement.

"Professor Reklaitis has led the School of Chemical Engineering in an exciting time of growth and expanded research," said Sally Mason, provost. "The fruits of his labor are partially evident in the project under way to build an addition to the chemical engineering building."

Reklaitis, who was named head of the school in 1987, has been at Purdue since 1970. From February to August of 1980, he was senior Fulbright lecturer at Vilnius State University and Lithuanian Academy of Science. From 1985 to 1988, he served Purdue as assistant dean of engineering, graduate education and research. From 1992 to 1999, he also served as director of the Computer Integrated Process Operations Center. For the past 10 years he has been editor-in-chief of the journal *Computers & Chemical Engineering.*

Reklaitis' research involves the application of computing and systems technology to support the design and operation of processing systems. His focus has been on issues arising in batch operations, which are heavily used in food, specialty chemicals and pharmaceuticals manufacturing. In this domain, he has co-authored four books, edited three others and has published more than 150 papers. A Fellow of the American Institute of Chemical Engineers (AIChE), he has been recognized with several national awards, including the Computing in Chemical Engineering Award of the AIChE.

From the beginning to the present...

ChE Calendar for 2004

Engineering Send-Off	May 15
May Graduation	May 15
August Graduation	August 7
Graduate Symposium	August 18-19
Classes Begin	August 23
Homecoming, Purdue vs. Wisconsin	October 16
Outstanding ChE awards	October 21
Dedication of Addition to Forney Hall of Chemical Engineering	October 22
Purdue University President's Council Back-to-Class	October 22
December Graduation	December 19

You supported us in our successful ChE: Champions of Excellence campaign to raise Chemical Engineering at Purdue to the next level. Now, join us for a special ceremony as we dedicate the ChE Addition as part of Forney Hall of Chemical Engineering and as we express our appreciation to you—our generous supporters— for making the vision for Chemical Engineering a reality.

October 22, 2004

10:00 a.m.	Dedication Ceremony for ChE Addition Forney Hall of Chemical Engineering
10:30 a.m.	Reception and Tours: ChE Addition Forney Hall of Chemical Engineering

Watch for the story of the Addition, from rendering to reality, in our next issue.

School of Chemical Engineering
Forney Hall of Chemical Engineering
480 Stadium Drive Mall
West Lafayette, IN 47907-2100

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