The Fall 2014 semester began with the same high level of excitement, energy, and anticipation as always. This fall, our School is home for 555 undergraduate students, 139 graduate students (essentially all PhD, including 6 National Science Foundation Graduate Research Fellows), and 30 faculty members (including 6 members of the National Academy of Engineering.)

Looking back over the past year, we have good reasons to be proud of our faculty accomplishments. Fabio Ribeiro, the R. Norris and Eleanor Shreve Professor, was elected a Fellow of AIChE; Professor Elias Franses published a new textbook “Thermodynamics with Chemical Engineering Applications; R. Byron Pipes, John Leighton Bray Distinguished Professor, published the fourth edition of his book “Experimental Characterization of Advanced Composite Materials; Drs Carl Laird and Zoltan Nagy were invited to attend the 2014 Frontiers of Engineering Education Symposium; Dr. Raj Gounder received the Ralph E. Powe research award; and yours truly received the 2013 AIChE Warren K. Lewis award. On the local front, John Morgan and You-Yeon Won were promoted to Professor rank while Julie Liu was promoted to Associate Professor rank with tenure.

Our students also had an amazing year. For the fourth year in a row, students from the School of Chemical Engineering were part of the winning team in the annual Student Soybean Product Innovation Contest sponsored by the Indiana Soybean Alliance. Graduate student Nicole Devlin, and then senior Yanssen Tandy (who graduated with a BSChE degree in May 2014) were part of the three person team which won the top honors and took home a $20,000 prize. Austin Tackaberry, a senior, serves as Chair of the national AIChE Executive Student Committee for the 2014-15 term; he is also the recipient of the 2014 John J. McKetta Undergraduate Scholarship Award, AIChE’s largest national financial undergraduate award. Haefa Mansour, current senior, has garnered numerous recognitions, including a prestigious Barry Goldwater scholarship.

It is great to enjoy current results, but sustainable accomplishments can only be achieved with strategic foresight. Our School is now formulating the 2015-19 strategic plan, in an effort to build on the success of the current strategic plan and also to implement the College of Engineering strategic growth initiative which calls for adding 107 more faculty members, 88 TAs and 105 staff members over a course of the next four years. To host such growth, we need top quality facilities. We are in the fortunate position of having sufficient space in Forney Hall and were thrilled to receive a $6.02 million allocation from the State of Indiana and Purdue to renovate the East Wing of Forney Hall, the last part of the building that had not yet been renovated. Work is scheduled to begin in summer 2015 and complete in fall 2016. At the completion of this project, we will have state-of-the-art facilities throughout Forney Hall (total space 177,000 square feet), including the new wing that was built in 2004, enabling us to educate the next generation of ChE leaders and conduct field-defining research with wide impact.

As you will see from each page of this report, we are enjoying productive, exciting times and we invite you to stop by for a visit to witness our progress.

Sincerely,

Arvind Varma
R. Games Slayter Distinguished Professor
Jay and Cynthia Ihlenfeld Head of Chemical Engineering
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OUR VISION: Be widely recognized among the premier ranks of chemical engineering programs in the world.

OUR MISSION: Provide students with a rigorous and relevant education, conduct field-defining research and enhance the School’s global impact.

RESEARCH: To pursue breakthrough research that extends the boundaries of chemical engineering into areas which promote sustainability and which will have the greatest impact on our global society.

EDUCATION:

Graduate Programs: Recruit and retain high caliber graduate students from top-tier chemical engineering programs, provide challenging and relevant research programs, and a quality graduate level education.

Undergraduate Programs: Recruit and retain the most capable, motivated and diverse class of undergraduates, and help them to obtain a solid and relevant education throughout their Purdue experience.

GLOBAL IMPACT: Educate undergraduate and graduate students who will be successful in a global environment. Cultivate and expand research relationships with prominent international research organizations.

DEVELOPMENT: Secure and improve the School’s financial foundation as a means to continually improve its programs and physical facilities, while balancing short and long term goals.

ENGAGEMENT: Encourage faculty, staff and students to develop a sense of personal responsibility and accountability for service at both the local and national levels. Promote entrepreneurial activity, leading to intellectual property, including invention disclosures and patents. Become a leader in sustainability on the Purdue campus.

PROFESSIONAL DEVELOPMENT & RECOGNITION: Encourage all faculty, staff and students to participate in activities that will enhance their career, develop their skills, and help them become more creative and productive. Actively promote recognition by internal and external award nominations.

CULTURE & ENVIRONMENT: Create an environment where faculty, staff and students are treated with respect and where superior teamwork is achieved. Enhance and expand safety activities and safety education.

OUR VALUES: Leadership; excellence and innovation; relevance and impact; commitment and responsibility; teamwork and partnership; diversity and respect; safety and sustainability
RESEARCH BY FUNDAMENTAL TOPIC AREA:

BIOCHEMICAL AND BIOMOLECULAR ENGINEERING:
Franses, Liu, Morgan, Ramkrishna, Wang, Won, Yuan

CATALYSIS AND REACTION ENGINEERING:
Andres, Delgass, Gounder, Greeley, Morgan, Ramkrishna, Ribeiro, Thomson, Varma

FLUID MECHANICS AND INTERFACIAL PHENOMENA:
Basaran, Beaudoin, Corti, Franses, Harris, Kim, Litster

MASS TRANSFER AND SEPARATIONS:
Agrawal, Boudouris, Wang, Wankat

NANOSCALE SCIENCE AND ENGINEERING:
Agrawal, Andres, Beaudoin, Boudouris, Corti, Delgass, Franses, Gounder, Harris, Pol, Ribeiro, Thomson, Won

POLYMERS AND MATERIALS:
Boudouris, Caruthers, Harris, Litster, Liu, Pipes, Varma, Won, Yuan

PRODUCT AND PROCESS SYSTEMS ENGINEERING:
Agrawal, Kim, Laird, Litster, Nagy, Pekny, Reklaitis

THERMODYNAMICS, MOLECULAR AND NANOSCALE MODELING:
Corti, Greeley, Thomson, Won

RESEARCH BY APPLICATION AREA:

BIOTECHNOLOGY:
Franses, Harris, Liu, Morgan, Ramkrishna, Wang, Won, Yuan

ELECTRONICS:
Agrawal, Beaudoin, Boudouris

ENERGY:
Agrawal, Boudouris, Gounder, Greeley, Morgan, Pekny, Pol, Reklaitis, Ribeiro, Varma

MANUFACTURING:
Agrawal, Basaran, Corti, Franses, Harris, Kim, Nagy, Pekny, Reklaitis, Varma, Wang

PHARMACEUTICALS:
Basaran, Beaudoin, Harris, Kim, Laird, Litster, Nagy, Reklaitis, Varma

HOMELAND SECURITY:
Basaran, Beaudoin, Boudouris, Laird, Nagy
RAKESH AGRAWAL
Winthrop E. Stone Distinguished Professor
Sc. D., Massachusetts Institute of Technology, 1980

Member, National Academy of Engineering
Member, American Academy of Arts and Sciences


Selected Professional Activities
Fellow, AIChE
Member, Editorial Advisory Board, I&EC Research
Member, ChE Department Advisory Committee, WPI
Visiting Chair Professor, ExxonMobil, Dept. of ChE & Biomolecular Engr., National University of Singapore, 2011-2014
Member, ATMI, 2010-present
Member, Editorial Board, Current Opinion in ChE, 2011-present
Member, Editorial Advisory Board, ChE Progress, 2012-present
Member, Advisory Council, Dept. of Chemical and Biomolecular Engineering, University of Delaware, 2012-present
Member, Consulting Editors Board, AIChE Journal, 2012-2016
Member, Editorial Board, Energy Technology, 2012-present
Member, Aspen Tech Academy, Aspen Tech, 2012-present

Selected Invited Lectures
"Nanocrystal Ink Based Route for Thin Film Solar Cells of Quaternary Chalcogenides," Keynote Lecture, 3rd International Congress on Sustainability Science and Engineering (ICOSSE), Nagahama, Japan, September (2013)


"Nanoparticle Ink Based Route for Efficient Thin Film Solar Cells," The 3rd Annual KAIST CBE Global Distinguished Lecture, Department of Chemical and Biomolecular Engineering, KAIST, Daejeon, Korea, November (2013)

"Nanoparticle Ink Based Route for Efficient Thin Film Solar Cells," CHEMCON, Indian Institute of Chemical Engineers, Mumbai, India December (2013)

"Solar Energy - A Key to a Sustainable Energy Future," Purdue President’s Westwood Colloquia, West Lafayette, IN, February (2014)

Selected Publications


OSMAN A. BASARAN
Burton and Kathryn Gedge Professor
Ph.D., University of Minnesota, 1984

Research Areas: Fluid Mechanics, Rheology, Drop Dynamics, Interfacial Phenomena, Finite Elements, Computational Analysis, Ink-Jet Printing, MEMS, Electroseparations

Selected Professional Activities
Fellow, American Physical Society
Member, AIChE Journal Consulting Editors Board, 2012-2016

Selected Publications

Selected Conference Presentations


(below) Professor Basaran, Ron Unnerstall (BSChE 1983, OChE 2013) and Arvind Varma, at the Fall 2013 Outstanding Chemical Engineer Awards Banquet
STEPHEN P. BEAUDOIN
Professor
Interim Associate Vice Provost for Academic Affairs
Ph.D., North Carolina State University, 1995

Research Areas: Particle and Thin Film Adhesion, Explosives Detection, Electronic Materials

Selected Professional Activities
Honorary Member, Alpha Lambda Delta Phi Eta Sigma Honor Society

Selected Invited Lectures


Selected Publications


Selected Conference Presentations


Intellectual Property

Students in the Fundamentals Laboratory
BRYAN W. BOUDOURIS
Assistant Professor
Ph.D., University of Minnesota, 2009
Teach for Tomorrow Award, 2014
Research Areas: Synthesis, Nanostructural Characterization and Device Physics of Novel Functional Homopolymers and Block Copolymers for Advance Photovoltaic, Thermoelectric, Biomedical and Homeland Security Device Applications

Selected Professional Activities
Member, American Society for Engineering Education (ASEE)
Member, American Physical Society (APS)

Selected Invited Lectures
“Non-conjugated Radical Polymers as an Emerging Class of Transparent Conductors for Organic Photovoltaic and Thermoelectric Applications,” 30th International Conference of the Polymer Processing Society (PPS-30), Cleveland, OH, June (2014)

Selected Publications

Selected Conference Presentations

Intellectual Property
JAMES M. CARUTHERS
Gerald and Sarah Skidmore Professor of Chemical Engineering
Sc. D., Massachusetts Institute of Technology, 1977

Research Areas: Non-linear Viscoelasticity of Polymer Glasses and Elastomers, Olefin Polymerization Catalysis, Epoxy Cure Kinetics, Battery Sensory Technology

Selected Professional Activities
Chair, Mechanics of Glassy Polymers, Society of Rheology Meeting, 2014

Selected Invited Lectures
“Linear and Nonlinear Mechanical Behavior of Carbon Black Filled Elastomers,” Exxon-Mobil, Houston, TX, October (2013)

Selected Publications


Selected Conference Presentations
DAVID S. CORTI
Professor and Director of Undergraduate Studies
Ph. D., Princeton University, 1997

University Faculty Scholar, Purdue University, 2011-2016

Research Areas: Molecular Thermodynamics, Metastable Liquids, Nucleation Phenomena, Colloidal Dispersions, Computer Simulation Techniques, Molecular Simulation

Selected Professional Activities
Chair, Area 1a, Programming Committee, AIChE, 2010-2013
Editorial Board, ISRN Computational Mathematics, 2011-2014

Selected Invited Lectures

Selected Publications


Uline, M. J. and Corti, D. S., “Molecular Dynamics at Constant Pressure: Allowing the System to Control Volume Fluctuations via a ‘Shell’ Particle,” *Entropy*, 15, 3941-3969 (2013)


Selected Conference Presentations


ELIAS I. FRANSES
Professor
Ph. D., Minnesota, 1979

Research Areas: Adsorption and Tension Equilibria and Dynamics of Surfactants and Proteins at Fluid/Fluid and Fluid/Solid Interfaces, Sorbents and Sorbent-Solvent-Sorbate Interactions of Chiral Molecules for Chiral Bioseparations of Enantiomers, Coloidal Stability of Aqueous Dispersions of Pigment Nanoparticles and of Hydrocarbon Hydrate Particles in Hydrocarbons

Selected Invited Lectures


Selected Publications


Selected Conference Presentations


Books
**RAJAMANI GOUNDER**  
Assistant Professor  
Ph. D., University of California, Berkeley, 2011

Ralph E. Powe Junior Faculty Enhancement Award, 2014

**Research Areas:** Heterogeneous Catalysis and Kinetics, Inorganic Materials Synthesis, Petroleum and Shale Gas Conversion, Biomass Conversion, NOx Pollution Abatement

**Selected Professional Activities**
Session Chair and Organizer, Catalysis with Microporous and Mesoporous Materials, AIChE Annual Meeting, 2013
Session Chair, General Catalysis, ACS Fall Meeting, 2013

**Selected Invited Lectures**
"Truth, Beauty and Elegance in Catalysis Research," Truth and Beauty Seminar Series, Purdue University, West Lafayette, IN, November (2013)


"Confinement Effects on the Catalytic Diversity of Molecular Sieves," ACS Meeting, Dallas, TX, March (2014)

"New Insights into the Properties of and Mechanistic Roles of Brunsted Acid Sites in Cu-zeolites that Catalyze NOx SCR with NH3," DOE Cross-Cut Lean Engine Emissions Reduction Simulations (CLEERS) Workshop, Dearborn, MI, April (2014)

**Selected Publications**


**Selected Conference Presentations**


Assistant Professor Gounder with his research group, from left: Haefa Mansour (senior student), John Di Iorio (graduate student), Ravi Joshi (graduate student), Michael Corolon (graduate student), Raj Gounder, and Austin Tackaberry (senior student)
Selected Professional Activities
Co-organizer of Symposium, Current Topics in Electrochemistry, Fall Meeting of the American Chemical Society, 2013
Guest Editor, Surface Science Special Issue, Reactivity Concepts at Surfaces, 2014

Selected Invited Lectures

"First principles studies of biomass-related chemistry on metal surfaces" and "Perspective on catalyst modeling and design from first principles," Fall Meeting of the American Institute of Chemical Engineers, San Francisco, CA, October (2013)

Selected Publications


Selected Conference Presentations

Graduate Students Frank DeVilbiss, Harshavardhan Choudhari and Ridade Sayin at a Seminar Session
MICHAEL T. HARRIS
Professor, Director of Graduate Studies, School of Chemical Engineering (July 2012 - July 2014)
Associate Dean, Undergraduate Education, College of Engineering
Ph. D., University of Tennessee-Knoxville, 1992


Selected Professional Activities
Member, Board of Trustees, AIChE Foundation
Fellow, AIChE
Chair, ASEE Minority Division, 2013-2014
Member, Advisory Board, Advance Grant, Rutgers University

Selected Publications

Selected Conference Presentations


MICHAEL T. HARRIS
Professor, Director of Graduate Studies, School of Chemical Engineering (July 2012 - July 2014)
Associate Dean, Undergraduate Education, College of Engineering
Ph. D., University of Tennessee-Knoxville, 1992


Selected Professional Activities
Member, Board of Trustees, AIChE Foundation
Fellow, AIChE
Chair, ASEE Minority Division, 2013-2014
Member, Advisory Board, Advance Grant, Rutgers University

Selected Publications

Selected Conference Presentations

ROBERT E. HANNEMANN
Visiting Professor
M.D., Indiana University, 1959

Research Areas: Healthcare Engineering, Modeling Erythrocyte Size Distribution for Evaluation of Leukemia Therapy, Serum Bilirubin Determination by Skin Reflectance, Surfactant in Respiratory Distress Syndrome Treatment

Selected Professional Activities
Executive Committee and Liaison, Center for Assistive Technology, Regenstrief Center on Healthcare Engineering, Purdue University
Chair, Healthcare Engineering Signature Area, Purdue University
Board of Directors, National Center for Missing and Exploited Children
Indiana Clinical and Transitional Sciences Institute Project Development Team

Selected Teaching Activities
Fall 2013 - CHE 46100 Biomedical Engineering

R. NEAL HOUZE
Professor
Ph.D., University of Houston, 1966

Selected Professional Activities
Member, American Institute for Chemical Engineers
Fellow, American Society for Engineering Education
Member, Tau Beta Pi
Member, Phi Kappa Phi
Member, Sigma Xi
Member, Omega Chi Epsilon
Honorary Member, Mortar Board
Reviewer, McGraw-Hill Company, 2003-present
Reviewer, J. Wiley & Sons, 2004-present
Reviewer, Chemical Engineering Education, 2002-present

Selected Teaching Activities
Fall 2013 - CHE 37800 Heat & Mass Transfer
Fall 2013 - CHE 46300 Applications of Chemical Engineering Principles
SANGTAE KIM
Distinguished Professor
Ph.D., Princeton University, 1983

Member, National Academy of Engineering


Selected Professional Activities
Co-Chair, Special AIChE Symposium Honoring Howard Brenner (2014)
Consulting Editor, KICHE Journal
Fellow, AIMBE
Member, External Review Committee, Communities of Excellence Program, University of Buffalo
Member, FDA Science Board Subcommittee on Global Health
Member, International Advisory Panel, National University of Singapore Graduate School
Member, International Advisory Board, Korea-Australia Rheology Journal
Member, Investment Advisory Committee, Venture Investors Early Stage Funds IV and V
Trustee, AIChE Foundation

Selected Invited Lectures
"Translational Research," University of Buffalo, Buffalo, NY, September (2013)


"Ho-Am Commemorative Lecture on Cyberinfrastructure and Information Technology," Korean Minjok Leadership Academy, Hoengseong, Korea, May (2014)

Selected Publications

Selected Books
CARL LAIRD
Associate Professor
Ph.D., Carnegie Mellon University, 2006


Selected Professional Activities
Director, AIChe CAST Division (2012-present)
INFORMS Computing Society Conference Stream Chair, "Nonlinear Programming," 2013
Session Chair: Advances in Dynamic Optimization, INFORMS Computing Society, 2013
Session Chair: Nonlinear Programming Topics, INFORMS Computing Society, 2013
Session Chair: Efficient Solution of Large-Scale Nonlinear Optimization Problems, INFORMS Computing Society, 2013
International Program Committee, Foundations of Computer Aided Process Design (FOCAPD), 2014

Selected Invited Lectures
"Parallel Solution of Large-Scale Nonlinear Parameter Estimation Problems," ICCOPT, Portugal, July (2013)


"Interior-Point Methods for Parallel Solution of Nonlinear Programming Problems," SADCO Summer School and Workshop on Optimal and Model Predictive Control, Chair of Applied Mathematics, University of Bayreuth, Bayreuth, Germany, September (2013)

"NLP Approaches for Estimation of Seasonal Transmission Parameters in Childhood Infectious Diseases," INFORMS Annual Meeting, Minneapolis, MN, October (2013)


Selected Publications


Selected Conference Presentations


JAMES D. LITSTER
Professor of Chemical Engineering and Industrial & Physical Pharmacy

Ph. D., University of Queensland, 1985

Professor Arun S. Mujumdar Visiting Fellowship, Institute of Chemical Technology, Mumbai
Visiting Professor, University of Sheffield, United Kingdom, 2013

Research Areas: Particle Design and Formulation, Granulation and Agglomeration, Crystallization of Bioactives, Engineering Education

Selected Professional Activities
International Organizing Committee, Partec 2013, Nurnberg, Germany, 2013 (and conference session chair)
External PhD Examiner: Sheffield University, University of Limerick
Fellow, Australian Academy for Technological Sciences and Engineering
Honorary Professor, The University of Queensland
Consultant, International Fine Particle Research Institute
2007-present
Powder Technology Editorial Board, 2002-present
Particle and Particulate Systems Characterisation Editorial Board, 2002-present
AAPS Pharmaceutical Science and Technology Editorial Board, 2002-present
Fellow, Institution of Chemical Engineers (UK)
Faculty Committee, National Institute of Pharmaceutical Technology and Education (NIITE)
Awards Committee, Particle Technology Forum, AIChe

Selected Invited Lectures

“Research in Granulation at Purdue,” BASF Research and Development, Mannheim, Germany, November (2013)


“Modeling and Optimization of Continuous Granulation,” University of Strathclyde, Glasgow, Scotland, November (2013)


“Modeling and Optimization of Continuous Granulation,” Surrey University, Guildford, UK, January (2014)

Selected Publications


Selected Conference Presentations


Sayin, R., Litster, J.D., “Mechanistic Studies of Twin Screw Granulation,” 7th World Congress of Particle Technology, Beijing, May (2014)


Smith, R., David, N.J. and Litster, J.D., “Unit Cell Approach to DEM Simulations of Particle Flows,” 7th World Congress of Particle Technology, Beijing, May (2014)
Selected Professional Activities
Programming Chair, AIChE Engineering Fundamentals, Life Science, Area 15d/e, 2012-2013
Chair, SFB Biomaterials Education Special Interest Group, 2013-2015
Member, SFB Education & Prof Development Comm., 2014-2015
Advisory Board, Ivy Tech Biotechnology Program, 2013-present
Co-Organizer, SFB Session
Abstract Reviewer, SFB Session
Proposal Reviewer, NSF
Proposal Reviewer, AO Foundation
Proposal Reviewer, National Science Centre of Poland

Selected Invited Lectures
“Designing Protein-based Biomaterials for Medical Applications,” Chemistry and Biochemistry, Andrews University, Berrien Springs, MI, October (2013)

Selected Publications


Selected Conference Presentations


ENRICO MARTINEZ
Visiting Professor
Ph. D., University of Notre Dame, 1972
Member, National Academy of Engineering, México
Research Areas: Biomass Torrefaction, Biodiesel Production from Nonconventional Sources

Selected Professional Activities
National Researcher, National System of Researchers, Mexico
Secretary, National Academy of Engineering-Mexico, Chemical Engineering Division, 2012-2014
Editor in Chief, Journal of Enzyme Engineering, October 2012-present
Specialized Reviewer, Revista Ingeniería Investigación y Tecnología, Universidad Nacional Autonoma de México
Evaluator, Project Proposals, CONACYT (Mexico), Program of Stimulus to Innovation, 2014

Teaching Contributions
Fall 2013 - CHE 30600 Design of Staged Separation Processes
Fall 2013 - CHE 43500 Chemical Engineering Laboratory
Spring 2014 - CHE 348000 Chemical Reaction Engineering
Spring 2014 - CHE 43500 Chemical Engineering Laboratory

Virginia Ewing, Secretary, Melissa Laguire, Secretary, and Enrico Martinez at the Alan H. Fox Unit Operations Laboratory Dedication
JOHN A. MORGAN
Professor
Director of Graduate Studies, School of Chemical Engineering (July 2014 onward)
Ph. D., Rice, 1999

Research Areas: Metabolic Engineering, Biocatalysis

Selected Professional Activities
Programming Coordinator, Long Range, AIChE, 2012-2014
Associate Editor, Bioprocess and Biostystems Engineering
Editorial Board, Frontiers in Plant Metabolism and Chemodiversity
Editorial Board, Frontiers in Plant Systems Biology
Panel Reviewer, Department of Energy, Young Investigator Program, 2013
Panel Reviewer, Department of Energy, BES Energy Center Program, 2014
Chair, Algal Biofuels, BIT's 3rd Annual World Congress of Bioenergy, 2013

Selected Invited Lectures
“Metabolic Flux Analysis of Photosynthetic Bacteria,” Department of Chemical and Biological Engineering, University of British Columbia, Canada (2013)

Selected Publications

Selected Conference Presentations
ZOLTAN K. NAGY
Professor
Ph. D., Babes-Bolyai University, Romania, 2001


Selected Professional Activities
Associate Editor, Journal of Process Control
Associate Editor, Control Engineering Practice
Associate Editor, Chemical Engineering Research and Design
Associate Editor, Asia-Pacific Journal of Chemical Engineering
Member, Steering Committee of the American Association for Crystallization Technology
Member, Steering Committee of the Crystallization Working Party of the European Federation of Chemical Engineering
Member, Steering Committee of the Process Management and Control Group of the IChemE
Chair, Young Author Prize Committee of International Federation of Automatic Control

Selected Invited Lectures
"Advanced Control of Pharmaceutical Manufacturing Processes," Lilly-Purdue Technology Day, Eli Lilly, Indianapolis, IN, September (2013)


Selected Publications


JOSEPH F. PEKNY

Professor
Interim Director, Burton D. Morgan Center for Entrepreneurship
Ph. D., Carnegie Mellon University, 1989


Selected Professional Activities
Interim Director of the Burton D. Morgan Center for Entrepreneurship at Discovery Park
Technical Advisor – Advanced Process Combinatorics, Inc.

Selected Invited Lectures

Selected Publications


Selected Conference Presentations


R. BYRON PIPES
John Leighton Bray Distinguished Professor
Director, Purdue Institute for Defense Innovation
Ph. D., University of Texas-Arlington, 1972
Member, National Academy of Engineering

Research Areas: Application of Nanotechnology to Engineering Disciplines including Aerospace, Composite Materials, Polymer Science and Engineering

Selected Professional Activities
Fellow, American Society of Mechanical Engineers
Fellow, Society for Advanced Materials and Process Engineering
Fellow, American Society of Composites
Key Note, ASC Conference, Arlington, TX, 2012
Session Chair ICCM-19 Conference, Montreal, CA
Chairman, Army Research Laboratory Technical Assessment Board, 2013-2014

Selected Publications


Selected Books

A graduate student at conducting research in a chemical engineering laboratory
Associate Professor
Ph. D., University of Bar-Ilan, Israel, 2005

Brian Kelly Award, British Carbon Society, World Carbon Conference, Rio-Brazil, 2013


Selected Professional Activities
Editorial Review Board, Frontiers in Energy Research Journal, Switzerland

Selected Invited Lectures


“Batteries,” Duke Energy Foundation, Purdue University, West Lafayette, IN, June (2014)


Selected Publications


Selected Conference Presentations

Intellectual Property
DORAISWAMI RAMKRISHNA

H. C. Peffer Distinguished Professor
Ph. D., University of Minnesota, 1965

Member, National Academy of Engineering

L. K. Doraiswamy Distinguished Lecture at ISU and NCL
2013 Sigma Xi Faculty Research Award, Purdue University

Research Areas: Applied Mathematics, Dispersed Phase Systems, Biochemical Engineering, Chemical Reaction Engineering

Selected Professional Activities
Special Editor, Special Issue of Processes

Selected Invited Lectures


“Metabolic Complexity. Is there Music Behind it?” Purdue University Sigma Xi Faculty Research Award Lecture, Purdue University, West Lafayette, IN, October (2013)

“Dynamic Modeling of Metabolism. The Cybernetic Approach,” Department of Chemical Engineering, Ohio State University, Columbus, OH, October (2013)


Selected Publications


Selected Conference Presentations


GINTARAS V. “REX” REKLAITIS
Burton and Kathryn Gedge Distinguished Professor of Chemical Engineering, Deputy Director, NSF ERC on Structured Organic Particulate Solids
Ph. D., Stanford University, 1969
Member, National Academy of Engineering
Session in honor of GVR, 2013 AIChE Annual Meeting

Selected Professional Activities
Member Founding Committee & Director, AIChE, Pharmaceutical Discovery, Development & Manufacturing Forum Conference
Smart Manufacturing Leadership Coalition (non-profit), Purdue representative
Editorial Board Computers & Chemical Engineering, Pergamon Press/Elsevier Science
Editorial Board Computer Applications in Engineering Education
Editorial Board Journal of Pharmaceutical Innovation
Editorial Board Journal of Process Systems Engineering
Search Committee, NAE Section 3
Board Member, AIChE Foundation

Selected Invited Lectures
“Advances in Pharmaceutical Manufacturing,” University of Connecticut, Department of Pharmaceutical Sciences, September (2013)

“Advances in Pharmaceutical Manufacturing,” University of Iowa, College of Pharmacy, Iowa City, IA, December (2013)

“Process Systems Engineering Approach to Optimizing Drug Therapy,” Carnegie Mellon University, Department of Chemical Engineering, Bayer Lecture, Pittsburgh, PA, April (2014)

Selected Publications


Austin, J., Gupta, A., McDonnell, R., Reklaitis, G.V., Harris, M.T., “A Novel Microwave Sensor to determine particulate blend composition on line,” Analytica Chimica Acta, 819, 82-93 (2014)


Selected Conference Presentations


FABIO H. RIBEIRO
R. Norris and Eleanor Shreve Professor of Chemical Engineering
Ph. D., Stanford University, 1989
Elected AIChE Fellow, 2014

Research Areas: Surface Science and Kinetics of Heterogeneous Catalytic Reactions

Selected Professional Activities
Director-at-large, North American Catalysis Society, 2013-2017

Selected Invited Lectures
“Water-gas Shift Catalysis Over Transition Metals Supported on Molybdenum Carbide,” Symposium on Nanotechnology Applications in Energy, American Chemical Society, Division of Energy and Fuels, American Chemical Society 2013 Fall National Meeting and Exposition, Indianapolis, IN, September (2013)


Selected Publications


Selected Conference Presentations


JEFFREY SIIROLA
Professor of Engineering Practice
Ph. D., University of Wisconsin-Madison, 1970
Member, National Academy of Engineering


Selected Professional Activities
Board of Directors, ABET
Secretary, ABET
Executive Committee, ABET
Committee Chair, AIChE Education and Accreditation
Society Liaison, ABET AIChE
Strategic Plan Review Task Force, AIChE
Consulting Editors Board, AIChE Journal
Trustee and Conferences Chair, CACHE
Editorial Advisory Board, Computers and Chemical Engineering
External Advisory Board, Georgia Institute of Technology, School of Chemical and Biomolecular Engineering
Advisory Committee, Illinois Institute of Technology, Chemical and Biological Engineering Department
Science Fair Judge, Mother of Sorrows School, Los Angeles, CA, Engineering is Elementary Mentor, STEM Outreach
Board of Advisors, Tennessee Technological University, Chemical Engineering
Advisory Board, University of California-Los Angeles, Chemical and Biomolecular Engineering
Advisory Council, University of Delaware, Chemical Engineering
Advisory Board, University of Delaware, Energy Institute
Advisory Board, University of Delaware, Catalyst Center for Energy Innovation
Advisory Board, University of South Carolina, Chemical Engineering
Advisory Board, University of Utah, Chemical Engineering
Industrial Career Panel, National Science Foundation, Process and Reaction Engineering
Review Coordinator, National Research Council, Establishing and Promoting a Culture of Safety in Academic Laboratory Research Search Committee, National Academy of Engineering, Chemical Engineering Section
Advisory Board, US Department of Energy Carbon Capture Simulation Initiative Industrial

Selected Invited Lectures


“The Rollercoaster Ride of Natural Gas as a Chemical Industry Fuel and Feedstock,” Department of Chemical Engineering, University of California-Los Angeles, Los Angeles, CA, March (2014)

Selected Publications

Selected Conference Presentations


Teaching Contributions
Spring 2013 - CHE 59700 “Special Topics in Chemical Engineering”
KENDAL T. THOMSON
Associate Professor
Ph.D., University of Minnesota, 1999

Research Areas: Computational Catalysis Design, Computer-Aided Design of Nanoporous Materials, Ab Initio Molecular Dynamics, Molecular Electronics, Modeling Nano- and Mesoporous Materials

Selected Invited Lectures


Selected Teaching Activities
Fall 2013 - CHE 37700 Momentum Transfer
Fall 2013 - CHE 69700 Special Topics in Chemical Engineering
Spring 2014 - CHE 32000 Statistical Modeling & Quality Enhancement

Carmen Valverde-Paniagua, Yanssen Tandy (BSChE 2014) and Chemical Engineering Graduate Student Nicole Devlin, winners of the 2013 Student Soybean Product Innovation Competition, show off a 3-D printed shark made from the soy-based filament that they created.
ARVIND VARMA
R. Games Slayter Distinguished Professor of Chemical Engineering
Jay and Cynthia Ihlenfeld Head of Chemical Engineering
Ph.D., University of Minnesota, 1972

Warren K. Lewis Award, AIChE 2013

Research Areas: Chemical and Catalytic Reaction Engineering,
New Energy Sources, Synthesis of Advanced Materials

Selected Professional Activities
Fellow, AIChE
Fellow, AAAS
Fellow, ACS, Industrial and Engineering Chemistry Division
Foreign Member, Academy of Engineering, Mexico
Series Editor, Cambridge Series in Chemical Engineering, Cambridge University Press
Editorial Board, Industrial & Engineering Chemistry Research
Member, International Committee, AIChE
Member, Council of Fellows, AIChE
Chair, Awards Committee, &EC Division, ACS
Chair, Engineering Research Council Awards Cmte, ASEE
Member, Advisory Committee, Department of Chemical and Biological Engineering, University of Colorado-Boulder
Member, Board of Judges for 2013 Kirkpatrick Award
Member, International Advisory Committee, 9th World Congress of Chemical Engineering, Seoul, Korea, August 2013
Member, International Advisory Committee, International Symposium on Self-Propagating High-Temperature Synthesis - 13, South Padre Island, TX, October 2013
Member, Scientific Committee, ISCRE-23, Bangkok, Thailand, September 2014

Selected Invited Lectures
"Topics In Chemical and Catalytic Reaction Engineering," The Dow Chemical Company, Freeport, TX, July (2013)


"Topics In Chemical and Catalytic Reaction Engineering," 50th Anniversary Symposium, Korea University, Seoul, Korea August (2013)

"Purdue University & School of Chemical Engineering - Overview," Kazan National Research Technical Univ., Kazan, Russia, September (2013)

"Selected Topics Related to Energy and Chemicals," National Chemical Laboratory, Pune, India, January (2014)

"Selected Topics Related to Energy and Chemicals," Northwestern University, Evanston, IL, March (2014)

"Current and Recent Research in Catalysis and Reaction Engineering," UOP; Des Plaines, IL, March (2014)

Selected Publications


Selected Conference Presentations

Keynote: "New Methods to Generate Hydrogen from Boron Compounds for Vehicle Applications," 9th World Congress of Chemical Engineering (WCCE-9), Seoul, Korea, August, 2013.

"Catalytic Hydrodeoxygenation of Guaiacol," ACS Annual Meeting, Indianapolis, IN, September 2013


N.H. LINDA WANG
Professor
Ph.D., University of Minnesota, 1978

Research Areas: Chemical and Biochemical Separations, Mass Transfer, Adsorption, Ion Exchange, Simulated Moving Bed Chromatography

Professional Activities
Session Chair, “Novel Adsorbents,” Interinational Symposium on Preparative and Process Chromatography (PREP) 2013
Chair, “Gerhold and Kunesh Plenary Session on Separations,” 2013 AIChE Meeting
Chair, Separations Division, AIChE, 2013
Advisory Committee, AIChE Separations Division

Selected Invited Lectures

“Simulated Moving-Bed Technologies for Multi-component Separations with High-Purity and High-Yield;” 7th Sino US Conference in Chemical Engineering, Beijing, China, October (2013)

Selected Publications


Selected Book Chapters


Selected Conference Presentations


PHILLIP C. WANKAT
Clifton L. Lovell Distinguished Professor
Ph. D., Princeton University, 1970

Research Areas: Adsorption Operations, Large-Scale Chromatography, Distillation, Engineering Education

Selected Professional Activities
Co-Editor, Chemical Engineering Education, 2014-present
Associate Editor, Chemical Engineering Education, 1995-2013
Editorial Board, Separation Science and Technology, 1977-present
Editorial Board, Adsorption, 1993-2013
Editorial Board, Separation and Purification Reviews, 1998-2014
Contributing Editor, College Teaching, 2006-present
Member, AIChE, NPC, Group 4, Education

Awards

Selected Invited Lectures
“Tools for Academic Success,” New Faculty Seminar, University of California-Riverside, Riverside, CA, November (2013)

“Academic Careers for Effective, Efficient Grad Students & Post-Docs,” Chemical & Environmental Engineering, University of California-Riverside, Riverside, CA, November (2013)

“Improving Distillation is Not an Oxymoron: Columns with Vapor Feed,” 16th Johansen-Crosby Lectures, Department of Chemical Engineering and Materials Science, Michigan State University, Lansing, MI, April (2014)


Selected Publications


Selected Conference Presentations


Books
YOU-YEON WON
Professor
Ph. D., Minnesota, 2000

Research Areas: Cancer Drug/Gene Delivery and Theragnosis/Theranosis, Interfacial Phenomena Involving Polymers, Polyelectrolytes, Block Copolymers, Colloids, Biomacromolecules

Selected Professional Activities
Organizer/Chair, KICHE US Chapter Forum, AIChE Annual Meeting, 2014
Organizer/Chair, Emerging Topics in Biochemical Engineering, US-Korea Conference (UKC), 2014
President, Korean Institute of Chemical Engineers (KICHE), US Chapter, 2014

Selected Invited Lectures
“Assisted Gene Delivery,” Department of Chemical and Biomolecular Engineering, University of Illinois, Urbana-Champaign, IL, November (2014)

“A Photo-Degradable Gene Delivery System for Enhanced Nuclear Gene Transcription,” Minnesota Block Polymers Symposium, Departments of Chemical Engineering and Materials Science and Chemistry, University of Minnesota, Minneapolis, MN, April (2014)

Selected Publications


Selected Professional Activities
Session Chair, Charged and Ion-containing Polymer, AIChE, 2013
Session Co-chair, Bio-nanotechnology, AIChE, 2013
Session Co-chair, Structure and Properties in Polymers, AIChE, 2013

Awards
Lung Cancer Concept Award, CDMRP

Selected Invited Lectures
“Seeking the Critical Traits of Epigenetic Modifications for Early-Stage Disease Diagnosis,” Chemical Engineering, Cornell University, Ithaca, NY, February (2014)

“Seeking the Critical Traits of Epigenetic Modifications for Early-Stage Disease Diagnosis,” Department of Physics, George Washington University, Washington, D.C., April (2014)

Selected Publications


Selected Conference Presentations


Undergraduate students in the Fundamentals Laboratory
## GRADUATE DEGREES AWARDED

### PH.D. DEGREES

#### August 2013

Gaik, Steven  
*A High Throughput Materials Discovery Approach for Investigation Solution Processed Solar Cell Absorber Layers*  
(Hillhouse)

Gupta, Anshu  
*Intelligent Alarm System Management and Value of Information Analysis Applied to Continuous Pharmaceutical Manufacturing*  
(Reklaitis)  
Air Products, Allentown, PA

Hirshfield, Laura  
*Development of Dropwise Additive Manufacturing of Pharmaceutical Products*  
(Reklaitis)  
Post Doc, Oregon State University, Chemical & Biological Engineering, Corvallis, OR

Kim, Jaewoo  
*Multi-Axial Deformation and Dynamics in Glassy Polymer and its Nonlinear Viscoelastic Properties*  
(Caruthers)

Lee, Hoyoung  
*Identification of Optimal Intracellular Location and Time for DNA Release from Polyration/DNA Complexes in Gene Transfection*  
(Won)  
Petrochemicals & Polymers R&D, Daejeon, Korea

Sambath, Krishnaraj  
*Dynamics of Drop Disintegration and Coalescence with and without Electric Fields*  
(Basaran)  
Chevron Corporation, Houston, TX

Suchomel, Mark  
*Direct State-of-Charge Determination for Lithium Ion Batteries*  
(Caruthers/Pekny)  
BP America, Naperville, IL

#### December 2013

Bates, Shane  
*Spectroscopic and Kinetic Study of Copper-Exchanged Zeolites for the Selective Catalytic Reduction of NOx with Ammonia*  
(Ribeiro)  
Albemarle Corporation, Baton Rouge, LA

Ghose, Ranjita  
*Oxidative Coupling of Methane using Catalysts Synthesized by Solution Combustion Method*  
(Varma)  
ExxonMobil Chemical Co., Baytown, TX

David, Anand  
*Effect of Manufacturing Conditions on the Performance of Lithium-Ion Batteries*  
(Caruthers)  
3M Company, Maplewood, MN

Jimenez-Useche, Isabel  
*Effects of DNA Methylation Pattern on the Chromatin Structure*  
(Yuan)  
Purdue University, School of Engineering Education, West Lafayette, IN

Mallapragada, Dharik  
*Energy Systems Analysis for a Solar Economy*  
(Agrawal/Delgass/Ribeiro)  
Sabic, Sugar Land, TX

Ogebule, Oluwaseyi  
*The Effects of Composition on the Linear and Nonlinear Mechanical Properties of Particulate Filled Elastomers*  
(Caruthers)  
Intel Corp, Rio Rancho, NM

Son, Sang Ha  
*Development of Quantitative FT-IR Methods for Analyzing the Cure Kinetics of Epoxy Resins*  
(Caruthers)  
LG Chem Research Park, Daejeon, South Korea

Tsui, Huang-Wei  
*Elucidation of Chiral Recognition Mechanisms of Solutes by Amylose TRIS([S]-alpha-Methylbenzylcarbamate) Sorbent*  
(Franses/Wang)  
Post Doc, National Taiwan University

Yadav, Gautum  
*Design and Assembly of Nanostructured Complex Metal Oxide Materials for the Construction of Batteries and Thermoelectric Devices*  
(Wu)  
Post Doc, CUNY, New York, NY

Yohe, Sara  
*High-Pressure Vapor-Phase*  
(Agrawal, Delgass, Ribeiro)  
ExxonMobil, Clinton, NJ
## PH.D. DEGREES

**May 2014**

- **Al-Musleh, Easa**
  Efficient Processes for Power Generation and Energy Storage
  (Agrawal/Reklaitis)
  Qatar University, Doha-Qatar

- **Austin, John**
  Investigation Into the Use of Microwave Sensors to Monitor Particulate Manufacturing Processes
  (Harris)
  Gilead Sciences, Foster City, CA

- **Freer, Alex**
  Surface Mineralization and Characterization of Tobacco Mosaic Virus Biotemplated Nanoparticles
  (Harris)
  ExxonMobil, Philadelphia, PA

- **Park, Hye Yeon**
  Novel Nanoparticles Synthesis and Nano-Ink Film For Photovoltaic Applications
  (Agrawal)

- **Smith, Kathryn**
  Particle Adhesion in Nano-Structured Microelectronics Systems
  (Beaudoin)

- **Walker, Bryce**
  Low Cost Photovoltaics Through Nanotechnology
  (Hillhouse/Agrawal)
  Intel, Hillsboro, OR

## M.S. DEGREES

**August 2013**

- **Bauman, Michael**
  (Boudouris)
  Whirlpool Corporation, Benton Harbor, MI

- **Parekh, Atish**
  Mechanistic Study of NO Oxidation in Copper Zeolites
  (Ribeiro/Delgass)
  Continuing to Ph.D., Purdue University

- **Venkatakrishnan, Vinod Kumar**
  M.S.
  (Ribeiro/Agrawal)
  Continuing to Ph.D., Purdue University

- **Verma, Anuj**
  (Ribeiro/Delgass) August 2013
  Continuing to Ph.D., Purdue University

**December 2013**

- **Tsouris, Vasilios**
  A Nano-Carrier that Enables Co-Delivery of Chemotherapy and siRNA Agents
  (Won)

**May 2014**

- **Adigun, Oluwamayowa**
  Mechanistic Study of the Hydrothermal Reduction of Palladium on the Tobacco Mosaic Virus
  (Harris)
  Continuing to Ph.D., Purdue University

- **Graeser, Brian**
  (Agrawal)
  Continuing to Ph.D., Purdue University

- **Huff, Josh**
  (Agrawal)
  Continuing to Ph.D., Purdue University

- **Joglekar, Chinmay**
  CSSe Thin Film Solar Cells: Surface Treatment
  (Agrawal)

- **Louvier, Matt**
  (Venkatasubramanian/Reklaitis)
  Continuing to Ph.D., Purdue University
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FORNEY HALL OF CHEMICAL ENGINEERING
In October 2004, the School of Chemical Engineering dedicated a 100,000 ft² expansion ($20 million) that more than doubled the size of our building. The building was then renamed the Forney Hall of Chemical Engineering. With new lecture facilities and new bioengineering, catalysis, and nanoscience research laboratories, the School has, for the first time in decades, space to grow. The renovation of the original building ($10.5 million), including associated spaces, was completed in Spring 2012.

BINDLEY BIOSCIENCE CENTER
The Bindley Bioscience Center, a $15 million building, consists of 48,000 square feet, including 20,000 square feet of lab space to facilitate research activity of multiple life sciences teams in parallel. Research core activity in metabolomics, proteomics and cytomics supports dozens of academic and corporate projects. The facility’s equipment, technology, state-of-the-art labs and research expertise have sparked life science and bioscience research collaborations with state, regional, national and international industry partners.

BINDLEY MULTIDISCIPLINARY CANCER RESEARCH FACILITY
The Multidisciplinary Cancer Research Facility enhances existing capabilities of Birck Nanotechnology, Center for Cancer Research, Biomedical Engineering and Structural Biology to integrate scientific expertise from the molecular level through animal disease modeling. This $14.9 million addition to the Bindley Bioscience Center was completed in Spring 2014. The facility has more than 15,000 square feet, including more than 11,000 square feet of laboratory space.

BIRCK NANOTECHNOLOGY CENTER
The Birck Nanotechnology Center is a 207,000 square, $58 million home for a class 1-10-100 nanofabrication cleanroom, the Scifres Nanofabrication Laboratory. Analytical services to support a wide variety of research. Surface analysis facility includes nanotech labs to support and facilitate technology transfer and entrepreneurship. High collaborative atmosphere is supported by functionally designated labs, including lab space for industry partners and companies.

ONCOLOGICAL SCIENCES CENTER
The Oncological Sciences Center is housed at the Burton D. Morgan Center for Entrepreneurship. The Oncological Sciences Center is seeking to discover new opportunities, forge new partnerships, and nurture new relationships to advance cancer research beyond the laboratory. The $7 million, 26,000 square feet building offers central meeting places for workshops, seminars and classes, and works in conjunction with all Discovery Park centers and the Purdue Research Park.

DRUG DISCOVERY FACILITY
The Drug Discovery Facility provides state-of-the-art drug discovery research space that is modular and capable of strict environmental control. This $28.7 million facility was completed in Spring 2014 and has more than 24,000 square feet of space for laboratories, office and meetings.
The Chemical Engineering Industrial Advisory Council (IAC) was initiated in 1988 through the leadership support of senior executives from Abbott Laboratories, Air Products and Chemicals, Amoco, Dow Chemical and Quantum Chemical. Today the ChE IAC remains a partnership of leading corporations with the School of Chemical Engineering to advance and improve the education and professional preparation of chemical engineers who will meet the needs of industry in the 21st century. These corporations provide advice, guidance and financial support for curriculum innovations, scholarships, experimental facilities enhancements, instructional computing facilities and start-up support for young faculty. The Fall meeting took place in Forney Hall, Purdue University on September 13, 2013, while the Spring meeting was held on March 28, 2014 in Des Plaines, IL, hosted by UOP/Honeywell.
September 3, 2013
Prof. Mercouri Kanatzidis
Department of Chemistry, Northwestern University
“Panoscopic Approach to High Performance Thermoelectric Materials”

September 17, 2013
Prof. Paschalis Alexandridis
Chemical and Biological Engineering, University of Buffalo/New York
“Nanostructured Polymers and Solvents: Opportunities in Health, Environment, and Energy Applications”

October 1, 2013
Dr. Thomas Degnan
ExxonMobil
“The Outlook for Energy: A View to 2040”

October 3, 2013 - Mellichamp Lecture
Prof. Brian Pfleger
College of Engineering, University of Wisconsin
“Sustainability via Synthetic Biology – A Growing Role for Biotechnology in the Chemical Industry”

October 15, 2013
Prof. Alan Lesser
Department of Polymer Science & Engineering University of Massachusetts
“Aspects of Physical Aging, Rejuvenation, and Work Hardening in Polymer Glasses”

October 22, 2013 - Sigma Xi Lecture
Prof. Doraismani Ramkrishna
School of Chemical Engineering, Purdue University
“Metabolic Complexity. Is There Music Behind It?”

October 29, 2013
Prof. Richard Braatz
Department of Chemical Engineering, Massachusetts Institute of Technology
“Systems Nanotechnology: Engineering Nanomaterials for Chemical, Pharmaceutical, and Biological Applications”

October 31, 2013
Prof. Pulickel Ajayan
Department of Mechanical Engineering & Materials Science, Rice University
“Engineering of Nanostructures - Challenges and Opportunities”

November 12, 2013
Prof. Shinji Hasebe
Department of Chemical Engineering, Kyoto University, Japan
“Process Systems Engineering for Realizing Micro Chemical Plants”

November 19, 2013
Prof. Rakesh Agrawal
School of Chemical Engineering, Purdue University
“Engineering a Sustainable Energy Future”

December 3, 2013
Prof. Christodoulos A. Floudas
School of Engineering and Applied Science, Princeton University
“Discovery and Computational Characterization of Novel Materials for Shape Selective Separations: Theoretical Advances and Applications”

December 5, 2013
Prof. Stephen Z. Cheng
College of Polymer Science and Polymer Engineering, University of Akron
“Giant Molecules Based on ‘Nano-Atoms’: A New Platform for Engineering Structures at Nanometer Feature Sizes”
January 14, 2014
Prof. Chongli Yuan
School of Chemical Engineering, Purdue University
“Seeking the Critical Traits of Epigenetic Modifications for Early-Stage Disease Diagnosis”

March 25, 2014
Prof. Benny Freeman
University of Texas, Austin
“Materials Science Opportunities in Polymer Membranes for Water Purification”

April 1, 2015
Prof. Deborah Leckband
Department of Chemistry, University of Illinois - Champaign-Urbana
“Thermally Responsive Polymers In Biotechnology: New Perspectives On An Old Problem”

April 8, 2014
Prof. Linda Wang
School of Chemical Engineering, Purdue University
“Fundamental Advances and Applications of Chromatography”

April 10, 2014
Prof. Joona Bang
Korea University
“Design of Cross-Linkable Block Copolymers for Various Nano-Fabrications”

April 15, 2014 - Kelly Lectures
Prof. Enrique Iglesia
Department of Chemical & Biomolecular Engineering, University of California - Davis
“Chemistry & Engineering Challenges in the Catalytic Conversion of C1 Molecules” and “Nanoparticles and Nanospaces: The Catalysis Toolbox”

April 22, 2014
Prof. Howard Stone
Princeton University
“Elementary channel flows with surprising responses: (i) Biofilms and flow and (ii) Trapping of bubbles in stagnation point flows”

April 29, 2014
Prof. Fabio Ribeiro
School of Chemical Engineering, Purdue University
“Kinetics of Heterogeneous Catalytic Reactions”