

**PURDUE**  
UNIVERSITY



WINTER 2012

**CHEMICAL ENGINEERING**

NEWSLETTER

**OUR FUTURE IS IN GOOD HANDS**



# MESSAGE FROM THE HEAD



Welcome to the fall 2012 issue of the Chemical Engineering Newsletter!

This fall we welcome Professor Zoltan Nagy, who obtained both his BS and PhD degrees at Babes-Bolyai University, Romania, in 1994 and 2001 respectively. Dr. Nagy comes from Loughborough University, UK, where he was a Professor of Chemical Engineering and leader of the Process Control and Pharmaceutical Systems Engineering research groups. His research interests include: pharmaceutical systems engineering, modeling, monitoring, optimization and control of chemical processes in particular crystallization systems, and process analytical technologies.

Two other outstanding faculty members were recruited during the past Spring semester. Dr. Jeffrey Greeley, PhD (2004) from the University of Wisconsin and currently Scientist in the Center for Nanoscale Materials at Argonne National Labs, will join us in January 2013 as Associate Professor. Dr. Raj Gounder, PhD (2011) from the University of California – Berkeley and currently postdoctoral research associate at Caltech, will join as Assistant Professor in August 2013. Their addition will bring the School's faculty count to 28 and we have 3 additional faculty positions to fill during the current year.

The 2012 AIChE annual meeting, held in Pittsburgh during October 29 – November 2, was an exceptional opportunity for us to recognize three faculty members who received awards: Nicholas Delgass received the R.H. Wilhelm Award in Chemical Reaction Engineering, James Litster received the Thomas Baron Award in Fluid-Particle Systems, and Gintaras “Rex” Reklaitis received the Van Antwerpen Award.

We also have some wonderful news to report about our alumni. In April 2012, Alec Scranton (PhD '90) was named Dean of Engineering at the University of Iowa. Just as I was writing this message, I received news that Dr. Antonios G. Mikos (MS '85, PhD '88) has been elected to the Institute of Medicine of the National Academies. Dr. Mikos is recognized “for seminal contributions and visionary leadership in tissue engineering and regenerative medicine.” He is the Louis Calder Professor of Bioengineering and Professor of Chemical and Biomolecular Engineering at Rice University, and is also Director of the Center for Excellence in Tissue Engineering at Rice University. In addition, two of our alumni were also honored with AIChE awards: Donald R. Miller (PhD '84) received the Industrial R&D Award and Terry Papoutsakis (MS '77, PhD '80) received the James E. Bailey Award.

We currently enrol 485 sophomores-seniors and 120 graduate students, almost all at the PhD level, including 27 who joined us this August. Our research programs are reaching farther than ever. Just to give one example, advised by Professor Mike Harris, two of our graduate students, Anand Venkatesan and Aniruddha Kelkar, won the top \$20,000 prize in the 2012 Indiana Soybean Alliance Innovation Competition, with their soybean-based substrate that can be used to make computer circuit boards. We are proud of their accomplishment and invite you to visit our School and witness our continued progress.

*Arvind Varma*

Arvind Varma  
R. Games Slayter Distinguished Professor  
Jay and Cynthia Ihlenfeld Head of Chemical Engineering

To make a gift to the School of Chemical Engineering please contact:  
**Diane Klassen**, Director of Development and Alumni Relations  
(765) 494-4065  
dklassen@purdue.edu

## TELL US WHAT YOU THINK:

Share your memories, react to a story, or let us know your thoughts about a particular issue. Write to us at [cheschool@ecn.purdue.edu](mailto:cheschool@ecn.purdue.edu). In doing so, you grant us permission to publish your letter in part or in whole in an upcoming issue. We reserve the right to edit letters for length and clarity.

## ADMINISTRATION:

Head: **Arvind Varma** Administrative Director: **Cristina Farmus**  
Website: <https://engineering.purdue.edu/ChE>

## COVER PHOTO CREDIT:

**Amir Gharachorlou, PhD Candidate, School of Chemical Engineering, Purdue**  
From left to right: **Chongli Yuan, Julie Liu, Bryan Boudouris, Yue Wu**

# AROUND THE SCHOOL

## FACULTY AWARDS AND HONORS

**Bryan Boudouris** - Received the Young Faculty Award from DARPA, 2012; Received an AFOSR Young Investigator Research Program Award, 2012

**Nicholas Delgass** - Received the R.H. Wilhelm Award in Chemical Reaction Engineering, AIChE, 2012

**James Litster** - Received the Thomas Baron Award in Fluid-Particle Systems, AIChE 2012

**Julie Liu** - Received a Scientist Development Grant from the American Heart Association, 2012

**Gintaras "Rex" Reklaitis** - Received the Van Antwerpen Award, AIChE 2012; Received the Long Term Achievements Award of the Working Party on Computer Aided Process Engineering of the European Federation of Chemical Engineering, 2012

**You-Yeon Won** - Selected as an Inaugural Bindley Bioscience Fellow, Purdue, 2012

**Fabio Ribeiro** - Received the Henry J. Albert Award from the International Precious Metals Institute, 2012

**Linda Wang** - Elected Fellow of AIChE, 2011

## FALL 2012 GRADUATE STUDENT ORGANIZATION SYMPOSIUM AWARDS PRESENTATIONS

First Place: **Anand Venkatesan**, Advisor **Phillip Wankat**, "Low Cost Synergistic Desalination Processes"

Second Place: **Sara Yohe**, Advisors **Nicholas Delgass** and **Fabio Ribeiro**, "High Pressure Catalytic Hydrodeoxygenation Reaction Pathways and Kinetics for Dihydroeugenol over Pt/ZrO<sub>2</sub> and Ru/ZrO<sub>2</sub> Catalysts"

Third Place: **Krishnaraj Sambath**, Advisor **Osman Basaran**, "Fission and Fusion of Liquid Drops"

Honorable Mention: **Jayachandran Devaraj**, Advisor **Doraiswami Ramkrishna**, "Model-based Individualized Treatment for Childhood Leukemia"

## POSTERS

First Place: **Gautam Yadav**, Advisor **Yue Wu**, "Design and Assembly of Nanostructured Materials for the Construction of Batteries and Thermoelectric Devices"

Second place: **Aniruddha Kelkar**, Advisors **David Corti** and **Elias Franses**, "Multi-Scale Approach to Dispersion Dynamics: Plug Formation in Sub-Sea Oil Pipelines"

Third Place: **Kaiwalya Sabnis**, Advisors **Nicholas Delgass** and **Fabio Ribeiro**, "Water-Gas Shift Catalysis over Transition Metals Supported on Molybdenum Carbide"

## STUDENT AWARDS AND HONORS

**Shane Bates** (Graduate Student) - First place student poster competition, 33rd Michigan Catalysis Society Spring Symposium, 2012

**Candace Corso** (Senior) - Elected President, Purdue Co-Op Ambassadors Student Organization

**Charles Hages** (Graduate Student) - Best Poster Award, IEEE Photovoltaics Specialists Conference, 2012

**Aniruddha Kelkar** (Graduate Student) - First place in the Indiana Soybean Alliance Competition, 2012

**Caleb Miskin** (Graduate Student) - National Science Foundation Graduate Fellow, 2012

**Andrew Nguyen** (Senior), Centennial Scholarship, Chemical Engineering, Purdue, 2012

**Oluwaseyi (Shay) Ogebule** (Graduate Student) - Best Paper Award, 182nd Technical Meeting of the ACS Rubber Division, 2012

**Shankali Pradhan** (Graduate Student), Centennial Fellowship, Chemical Engineering, Purdue, 2012

**Lizbeth Rostro** (Graduate Student) - National Science Foundation Graduate Fellow, 2012

**Meenesh Singh** (Graduate Student) - Separations Division Graduate Student Research Award, AIChE, 2012; McDonnell Douglas Fellowship, Purdue, 2012

**Kathryn Smith** (Graduate Student) - IBM Fellowship and IBM Fran Allen PhD Fellowship Award, 2012

**Anand Venkatesan** (Graduate Student) - First place in the Indiana Soybean Alliance Competition, 2012

**Anuj Verma** (Graduate Student) - Second place student poster competition, Chicago Catalysis Club Spring Symposium, 2012

**Haorang Yang** (Graduate Student) - Eastman Summer Graduate Fellow, 2012; Phillips 66 Fellow, 2012

**Sara Yohe** (Graduate Student) - First place student poster competition, Chicago Catalysis Club Spring Symposium, 2012

## STAFF AWARDS

**Cristina Farmus**, Administrative Director - Received the College of Engineering Staff Leadership Award, 2012

**Sandy Hendryx**, Undergraduate Program Secretary - Received the School of Chemical Engineering Staff Excellence Award, 2012, and the Purdue University Mortar Board Rose Award, 2012

# UP CLOSE ALUMNI SKIDMORE & SKIDMORE

By: D. Klassen

**Providing excellent service, engaging in philanthropy and graduating from Purdue are family traditions for the Skidmores.**



Jerry (BSChE '54) & Doug (BSChE '84) Skidmore, the charming, dynamic, and successful father-son team at Skidmore Sales, have a simple company philosophy: to be of service to their customers and suppliers. Their simple philosophy has led to the tremendous success of Skidmore Sales.

Jerry started Skidmore Enterprises in 1963 which became Skidmore Sales and Distributing Company, Inc. in 1971. The company is now one of the largest distributors of industrial food ingredients to the food industry with sales coverage in 22 states.

Jerry was previously National Sales Manager with Archer Daniels Midland and has a Masters in Management from Cornell University. While at Purdue he participated in the Purdue Student Union Board, Chairman of the Military and the Summer Ball Committees, and served as fraternity treasurer and house manager. He was elected to Iron Key, a society that emphasizes the value of service-oriented leadership, where it does not matter who receives the credit. He was also in ROTC and served 2 years in the military after graduation.

With easily detectable fatherly pride, Jerry states *"Doug has moved easily into my shoes and is doing very well."* Doug has been CEO of Skidmore Sales since 2003 and President since 1994. He joined the company in 1990 as a Marketing Manager after working for IBM, Intellitech and Proctor & Gamble. He has his Masters in Management from Northwestern University.

The Skidmores' desire to serve shows up in their lives as they volunteer in their communities and support local charities. Jerry has served on the Board of the Cincinnati and Hamilton County YMCA, the Board of Twin Towers & Twin Lakes Retirement Community and the Board of Cincinnati Federal Savings and Loan Association. He was also chairman of the Southwest Ohio Institute of Food Technologists (IFT) and national chairman of the Committee on Membership and Professional Advancement for IFT.

Doug has been president of the Food Ingredient Distributors Association since 2009 and its trustee since 2005. He is a member of the Board of Directors of Cincinnati Financial Corporation, and serves on their audit and nominating committees. Doug is also a member of the Industrial Associates Program in Food Science at Purdue. While at Purdue he served, like his father, on the Purdue Student Union Board. He was also a Student Representative to the University Senate. He has served on the Finance Committee and as a Trustee of his church Westwood United Methodist in Cincinnati.

Sarah "Sally" Garrison Skidmore, Jerry's wife, has also volunteered extensively over the years at Westwood United Methodist Church. Sally headed up several departments and was instrumental in starting the nursery school. She volunteered at her children's schools while they were growing up as well as serving on the PTA. She has served on the board of the Clovernook Association for the Blind, volunteered at the Twin Towers Retirement Home and the Cincinnati Symphony Orchestra.

Laura Watkins Skidmore (BS Atmospheric Sciences '84), Doug's wife, was active in Alpha Xi Delta and volunteered with Purdue Student Union Board and Old Masters while at Purdue. She is a bible study leader, youth group leader and volunteer at Westwood United Methodist in Cincinnati. She also does service projects for the Wyoming Junior Women's Club, Wyoming Parent School Association, Wyoming Middle School, Wyoming City Schools Wellness Committee and is a Trustee and V.P. of Marketing for the Wyoming School Foundation.

As an extension of this service philosophy and philanthropic tradition, Jerry and Sally Skidmore endowed a Professorship in Chemical Engineering this year to support the School. They have given \$750,000 to endow the Gerald and Sarah Skidmore Professorship. This gift will be matched 1:1 through Purdue's Faculty Fund for Excellence, to bring the total for the professorship to \$1.5 million. This gift will allow the School of Chemical Engineering to recruit and retain top-notch faculty to educate our outstanding students and conduct field-defining research. Jerry received the School's Outstanding Chemical Engineer award in 2011.

Jerry states, *"Purdue was my first and only choice for an engineering education. I was not disappointed. The opportunities available to me allowed not only a wonderful professional and technical education but the chance to interact with the other students and faculty to develop many of the skills necessary to succeed in the business world. I will always be grateful to Purdue for the fine education and wonderful campus experiences. My wife and I are delighted to have the opportunity to give back to Purdue."*

Jerry and Sally have been married 53 years and have three sons: Bradbury, a doctor, Charles, a lawyer, and Doug. They divide their time between their homes in Naples, FL and Covington, KY and enjoy travelling and spending time with their seven grandchildren.



## JAY (BSChE '74) AND CYNTHIA IHLENFELD ENDOW CHEMICAL ENGINEERING HEADSHIP

Jay (BSChE '74) and Cynthia Ihlenfeld plan to contribute \$1.5 million over a three-year period towards the establishment of an endowment to name the Chemical Engineering Headship, while the College of Engineering will provide \$500,000 in matching funds. When matured, the total \$2 million gift will provide approximately \$100,000 annually "to be used for the benefit of the School of Chemical Engineering." From now on, the Chemical Engineering Head will carry the title "Jay and Cynthia Ihlenfeld Head of Chemical Engineering."

While at Purdue, Jay Ihlenfeld was a member of the Phi Delta Theta fraternity. He was a Co-Op student and was active in several organizations in the School of Chemical Engineering. After graduating from Purdue, Ihlenfeld married Cynthia Ames. In 1978 he obtained a PhD degree from the University of Wisconsin and joined as a senior engineer in the Telecomm Products division of 3M, a company where he worked for his entire career.

Throughout his outstanding career at 3M, Ihlenfeld held numerous positions, including research specialist, technical manager, laboratory manager, business director, general manager, Division Vice President, Chief Technology Officer, and was posted overseas in Germany, Belgium and Japan. He recently retired as Senior Vice President, Asia Pacific. In this role, he was based in Hong Kong and his travels took him throughout Asia on a regular basis.

In 2001, Jay Ihlenfeld received the Outstanding Chemical Engineer Award and also the Distinguished Engineering Alumni Award from Purdue. He has previously served on the Board of Chemical Sciences and Technology (BCST) of the National Academy of Sciences and was recently elected a member of the Board of Directors for Celanese Corporation. In his free time, he enjoys golf, music, opera and serves on the Board of Directors of the Minnesota Orchestra.

Ihlenfeld's wife Cynthia, also a Wisconsin native, graduated from the University of Wisconsin with a degree in Business and received her MBA from the University of Minnesota. She also worked with 3M for many years and now is active in community affairs in the Twin Cities. The couple splits their time between their homes in Minnesota and Southern California.

The School of Chemical Engineering is grateful for this generous contribution which will benefit the School in perpetuity, and is proud of the outstanding accomplishments of its alumnus Jay Ihlenfeld.



**ACTING PRESIDENT TIM SANDS, LARRY AND GINNY FAITH, AND LISA CALVERT, VP FOR DEVELOPMENT**

## FAITHS MAKE PLANNED GIFT TO CREATE DISTINGUISHED PROFESSORSHIP

The School of Chemical Engineering is grateful to Virginia "Ginny" (BS PSYC '60) and Larry Faith (BS ChE '59), who have created a planned gift to endow the Larry E. and Virginia C. Faith Distinguished Professorship of Chemical Engineering. Larry and Ginny (Chandler) met and married while attending Purdue. They currently live in The Woodlands, Texas, where Larry retired from Shell Oil Co. as Senior Engineer for Environmental & Utilities Engineering. Ginny retired from the position of supervisor from the Texas Department of Human Services, Children's Protective Services section. Larry holds a PhD from UCLA and while at Purdue he was a member of Phi Sigma Kappa social fraternity and the Tau Beta Phi and Omega Chi Epsilon honorary societies. Ginny holds an MS in Social Work from the University of California- Berkeley. She was a member of Phi Mu social sorority while at Purdue.

Their generosity will support the hiring and retention of top-notch professors who exemplify the research and teaching excellence that the Faiths are eager to champion. "This can provide more support for the university to attract the

best faculty members," Larry says. "We decided that it would be a good idea to set up the distinguished professorship because we felt that Purdue was the best institution in which to make that investment."

The Faiths returned to Purdue on October 5, 2012 and received the Pinnacle Award at the President's Council Pre-game event from Acting President Tim Sands and Lisa Calvert, Vice President for Development. The Pinnacle Award is given to donors who make a contribution to Purdue of a million dollars or more. The Faiths have also created a Strategic Initiative Endowment in the School of Chemical Engineering.

# UP CLOSE FACULTY

By: C. Farmus



## **BRYAN BOUDOURIS** ASSISTANT PROFESSOR

BS: University of Illinois at Urbana-Champaign, 2004

PhD: University of Minnesota, 2009

Postdoctoral Fellow: University of California, Berkeley, 2009-2011

Joined the School:  
Fall 2011

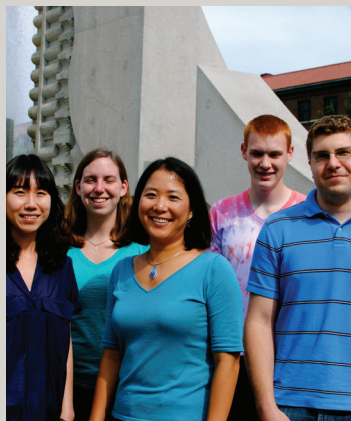
Bryan's research is focused on *"the development of designer polymers for energy and biopharmaceutical separations end uses."* His work covers a broad range of applications, from development of solar cells and flexible electronics, to methods to capture waste heat using mechanically-robust, flexible thermoelectric units, and not least, polymers for improved pharmaceutical treatments and reduced patient costs. His projects are motivated by high aspirations to improve the society as a whole, with specific end user applications in mind, such as new polymers to encapsulate cancer drugs for enhanced effectiveness, a new technique to separate biopharmaceutical materials for reduced costs of cancer and autoimmune disease treatments, or flexible memory units so that fully-foldable smart phone and tablet devices can be made readily. Bryan is the principal investigator for five highly competitive research grants, including the Air Force Office of Scientific Research (AFOSR) and Defense Advanced Research Projects Agency (DARPA) Young Faculty Awards.

Bryan is very fond of his teaching activities. *"I put myself in the shoes of the students; I put them first."* He earned high rating from his students after co-instructing the materials and energy balances course, ChE 205 - Chemical Engineering Calculations, for the first time with Professor Stephen P. Beaudoin in Fall 2011. He especially enjoyed hearing from students who returned from the co-op and internship programs who reported how useful the things they have learned in this introductory course were while working in practice.

His activities with students extend beyond the lab and classroom. Most recently, he has been appointed as the faculty advisor of the AIChE undergraduate student chapter, and he also advised a student team who qualified for the Finals of the Burton D. Morgan Business Plan Competition at Purdue University, and the Midwest finals for the Green Energy Challenge sponsored by the Department of Energy.

Bryan is quick to acknowledge the positive influence the Purdue name has had on his accomplishments as a fresh Assistant Professor: *"It is great to have a billion dollar campus to help you during the start-up period. The Purdue reputation helped to establish credibility during my first year."* He is also grateful for all the support and encouragement he has received from the administration and other faculty members in the School and points that as a differentiating factor for the Purdue ChE program over many other top-ranked programs in the nation. For Bryan, fun is characterized by this equation:

**Hard Work + Good Time = More Funding + More Grads!**



## **JULIE LIU** ASSISTANT PROFESSOR

BS: Princeton, 2000

PhD: California Institute of Technology, 2006

Postdoctoral Fellow: University of Massachusetts Medical School, 2006-2007

Joined the School:  
Spring 2008

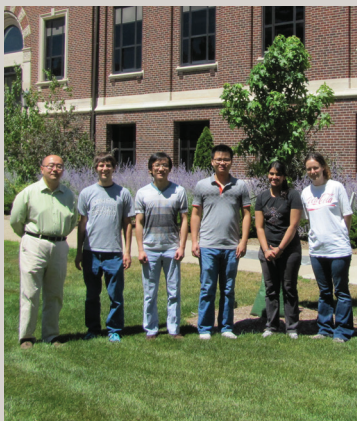
Julie Liu brought a new research direction to our School - design of new protein and biomaterials aimed at replacing damaged tissue – in a nutshell: tissue engineering. Julie has research programs specifically aimed at regeneration of cartilage, bone, and vascular tissues. The process starts with adult stem cells, stimulating them to emulate the desired tissue. The current focus is to understand how stem cells function, what drives them to become bone versus cartilage, how to fine tune the process and apply cues to produce functioning, healthy tissue ready to be utilized for patients.

Another project involves collaborating with the School of Chemistry at Purdue to create a new surgical adhesive, a bio-bandage to be used instead of sutures or staples in surgeries. This is the holy grail of any researcher: to create a tangible result, an application that will significantly improve the quality of life for any patient with an incision.

Being a professor and a researcher gives Julie the *"flexibility to pursue original ideas, and the satisfaction of working with students to see them improve."* While at Purdue, Julie received two highly competitive awards, the 3M Non-tenured Faculty Grant in 2011 and the American Heart Association Scientist Development Grant in 2012. The objective of the Scientist Development Grant is to support promising beginning scientists in their progress toward independence by encouraging and adequately funding research projects that can bridge the gap between completion of research training and readiness for successful competition as an independent investigator.

Julie has received well-deserved praise from students for her teaching style. She uses everyday examples to exemplify abstract theoretical concepts and improve retention of lecture material. For example, in ChE 378 - Heat and Mass Transfer, she has worked with Dr. David Corti to implement several open ended projects such as optimizing the size of a furnace for a house, designing a Thermos, or evaluating the thermostat setting given limitations on energy consumption.

In academic terms, success does not come easy. Every PhD student receiving their diploma and every paper published has countless hours of work invested. When coupled with teaching large classes and staying active in a dynamic faculty arena, being a chemical engineering professor is a tough act. Julie manages to do this with scientific excitement and academic enthusiasm, while remaining approachable and candid in all her interactions. She credits the students for being friendly challengers who keep her curiosity and love for teaching alive, and her Purdue colleagues for maintaining a supportive culture that facilitates results.



## YUE WU ASSISTANT PROFESSOR

BS: University of Science & Technology, Hefei, China, 2001

PhD in Chemistry:  
Harvard, 2006

Post Doctoral Miller Research Fellow  
in Chemistry: University of California,  
Berkeley, 2006-2009

Joined the School:  
Fall 2009

Yue Wu's research goal is to develop nano materials to convert waste heat into electricity. "58% of all energy generated in the US is wasted, mostly as heat." Currently, there is no technology to enable recovery of this wasted energy at a reasonable cost. The approach Yue proposes is to develop new thermoelectric materials in the form of a super thin, nanosize coating, to be used as an insulator between hot and cold surfaces. When connected to an electrical circuit, the coating will maintain the temperature difference between the two environments constant, while converting heat into electricity. While the process seems straightforward, the challenge is to develop the material for the coating with the desired characteristics at a competitive cost.

Applications for the new materials are varied and of great importance for our society. A 2007 survey from the Department of Transportation estimates there are 254 million vehicles registered in the US, with an estimated 1 billion cars in the world. A portion of the engine heat harvested with thermoelectric fabric could be converted into powering the vehicle again, in a system similar to hybrid vehicles. Another major example is roofing material. Presently, most households use energy to cool or heat their homes, but also to power appliances. What could be more efficient than transforming the sun heat from the roof into electricity to cool your house or run TVs?

All applications are driven by sponsors and in Yue's case the majority of his current funding comes from the Air Force Office of Scientific Research. The new fabric could be used to develop thermoelectric clothing which would make the wearer more comfortable in extreme temperatures, or render them invisible for infrared devices, the ultimate thermo-invisible soldier. He also has another project underway from the Hitachi Institute to develop a material to harvest low grade heat from manufacturing and power plants. Imagine all the energy intensive plants and how much could be saved by wrapping all their pipes in such type of material, then converting it back into electricity and lowering the production cost!

Besides research, Yue is a gifted teacher. He has introduced new elective courses in the ChE curriculum, such as Introduction to Nanoscale Science and Engineering. He is also teaching a special course, Introduction to Energy Storage Systems. Each of these topics benefits from his outstanding research expertise and prepares the students for rapidly spreading innovations in the real world.

Yue's philosophy revolves around high standards. "Journal papers are going to be read for a limited time only, but if you can make something useful and take it to the market – that is real engineering problem solving." He mentions that the reputation Purdue Engineering has in developing real life applications was critical in his decision to join Purdue.



## CHONGLI YUAN ASSISTANT PROFESSOR

BS: East China University of Science and Technology, 2002

PhD: Cornell University, 2007

Postdoctoral Fellow: ETH, Zurich,  
2007-09

Joined the School:  
Fall 2009

Chongli Yuan's research focuses on understanding the basis of human disease and creating molecular based solutions to prevent it. She is using fluorescent spectroscopy to facilitate the identification of critical biomarkers early in the disease process. Her goal is to create high sensitivity devices that can quickly analyze patient samples and indicate the presence of abnormal cells. By using blood and urine samples, her approach has the advantage of being less invasive than current detection methods, especially for cancer patients.

Another approach of her research is to identify categories at risk, given known genetic factors and the presence of certain environmental conditions. This would entail recommending frequent screening and tests for people who fall into a certain profile, leading to early detection and treatment for a multitude of genetic diseases.

Chongli always wanted to specialize in a discipline that would benefit society; Chemical Engineering positioned her at the intersection between medicine and engineering and enabled her to follow her dreams. "Being a Chemical Engineering professor at Purdue is the best choice! You have the benefits of a freelance professional coupled with the structure of a great University." She acknowledges that her Purdue ChE colleagues create a great environment and are always available to help her.

Since joining Purdue, Chongli has been involved in teaching several classes: ChE 211 - Introduction to Chemical Engineering Thermodynamics, ChE 442 - Chemistry and Engineering of High Polymers (an elective), and ChE 500 - Engineering of Biological Molecules. Her teaching philosophy is to teach students how to teach themselves. She stresses that they will only spend a limited time in a structured learning environment such as the college, but they will need to learn new things their entire life. She is also an advocate for people to get involved in the general community, to explore issues from a more general perspective, not just from the lab or classroom angle. By being active participants in the local and professional community, one can generate more effective solutions for society's grand challenges.

Chongli is also an advocate and mentor for women in engineering and sciences. Her research group is comprised of several young ladies with their aims set on promising STEM careers. In April 2012, she participated as a panelist for the "Women in Chemical Engineering" seminar organized by our School. The seminar was attended by more than 50 students and alumni, encouraging young women to choose a Chemical Engineering career and giving them tools to succeed. Isabel Jimenez-Useche, Chongli's first PhD student, is close to graduation; this will bring a cycle to a close, but will also set the stage for a new beginning, as Isabel is considering an academic career.

# PURDUE COLLEGE OF ENGINEERING DISTINGUISHED ENGINEERING ALUMNA AWARD



Kristi Anseth (BS '92) received the 2012 Distinguished Engineering Alumna award from the College of Engineering on February 24, 2012. She was given the Outstanding Chemical Engineer award at the same time.

Kristi is the Tisone Distinguished Professor of Chemical and Biological Engineering, and a Howard Hughes Medical Institute Investigator at the University of Colorado – Boulder. She has received numerous prior recognitions, including AIChE's Allan Colburn and Professional Progress awards; NSF's Alan Waterman Award; and membership in the National Academy of Engineering and the Institute of Medicine.

# PURDUE CHE OUTSTANDING CHEMICAL ENGINEERING ALUMNI AWARD

On October 4, 2012, the School recognized six alumni with the 2012 Outstanding Chemical Engineering Alumni award.



**FROM LEFT TO RIGHT:  
BRUCE DALE,  
STEVE SWANSON,  
RICHARD NARTA**

- William R. Clark (BS '82, MS '94) is Vice President of Medical Strategy at Gambro AB, a global dialysis company.
- Bruce E. Dale (PhD '79) is Professor of Chemical Engineering and former Chair of the Department of Chemical Engineering at Michigan State University.
- Marilyn Glenn Forney (BS '47) is volunteer leader of a non-profit organization. She was the first woman appointed to the Delaware Magistrate Selection Committee. She served six years on the Delaware State Human Relations Commission and was its Education Chairman.



**FROM LEFT TO RIGHT:  
MARILYN GLENN FORNEY,  
WILLIAM CLARK,  
RICHARD LEWIS**

- Gregory R. Lewis (BS '82) retired as Corporate Vice President, Global Risk Management and Chief Ethics Officer of Lubrizol. He is currently Vice President at the Ethisphere Institute.
- Richard A. Narta (BS '80) is Global Feedstock & Optimization Manager, ExxonMobil.
- Steven J. Swanson (BS '71, MS '72, PhD '75) retired as Global Process Engineering Manager for Chemicals Major Projects, Shell Oil Company.



# UP CLOSE UNDERGRADUATE STUDENT NOMA OGBEIFUN

By: C. Farnus



Noma Ogbeifun is a non-traditional student in the most traditional way. He emigrated from Nigeria when he was 17 to attend Chemical Engineering at a US University. After realizing the program in which he was accepted did not have the accreditation and recognition he sought, he left without completing his degree. He spent the next six years travelling through the United States. *"I needed to learn how the fabric of US culture and enterprise was constructed. What is this about? How can I be successful?"*

This eventually led him back to completing his education at Purdue; he was admitted in fall 2010, after completing two years at Indiana University-Purdue University campus in Indianapolis.

He gives several reasons for choosing Purdue - one of them being that it offers the best value for the tuition paid. He is grateful for Purdue accepting him and acknowledges he has had a great time, even though the program is challenging. *"Purdue has taught me how to approach problems. The Purdue system demands a certain level of excellence from you which forces you to maximize your talents and evolve into a refined engineer."*

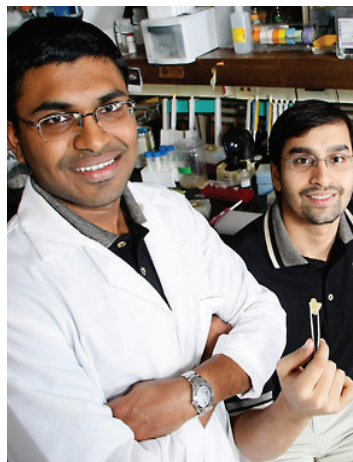
Noma recounts an experience during his first semester, preparing for a ChE 205 - Chemical Engineering Calculations exam and performing under his expectations. He really had to stop and think "Is this for me?" He bounced back, studied even harder and earned a good overall grade. He then realized this is different than his other educational experiences. He gives credit to his classmates as being "the best of the best" and challenging him to work harder, be better. When he took a Co-Op assignment the following spring with ExxonMobil, his decision to become a chemical engineer was solidified. He took satisfaction from discovering the real world application of concepts learned in the classroom. The Co-Op program also allowed him to build his confidence and hone his problem solving abilities.

Noma has big plans for the future. *"If you can control flow of energy you have the power to control the economy of the world. Energy is the currency of the 21st Century!"* Not surprisingly, he wants to work for an energy company, start in a rotational program that will allow him to travel extensively, and ultimately get on the leadership track. He assembled a diverse portfolio of experiences during his time in Nigeria working for the family business, and as a young immigrant trying to define his roadmap to success, wandering through the United States. He has seen many business models and knows how to look at problems from multiple perspectives; what his Purdue Chemical Engineering education gives him are the tools to approach these challenging problems and generate innovative solutions.

During his time at Purdue, Noma has received several scholarships. He acknowledges the difference that support makes in his life: *"How would I be able to come back to Purdue every year if it weren't for them, for the alumni who give scholarships?"* He plans to start his own scholarship fund at Purdue, to enable underprivileged children from around the world to have access to education. With such high aspirations and solid principles and education, Noma will have no difficulty finding ways to contribute to the bottom line of any business where he will work after he graduates in May 2014.

# UP CLOSE GRADUATE STUDENTS

By: C. Farnus



Anand Venkatesan (left) and Aniruddha Kelkar (right) won the top \$20,000 prize at the 2012 Indiana Soybean Alliance Innovation Competition with their Soytronics team, along with Carmen Valverde-Paniagua, a Mechanical Engineering undergraduate student. Mentored by Professor Michael Harris, their team invented a printed circuit board made of soybean oil, a by-product after the components used for food are extracted.

Anand Venkatesan received his ChE BTech from IIT Madras in 2008, with a minor in Industrial Engineering. The same year he joined the School of Chemical Engineering at Purdue under the guidance of Professor Wankat. Anand is a Donnan Fellow and his work involves process synthesis and optimization with multiple unit operations with a focus on desalination. Aniruddha Kelkar began his studies in Chemical Engineering at Purdue in fall 2010, after finishing his BS ChE at the Institute of Chemical Technology, Mumbai (formerly UDCT). He is advised by Professors Franses and Corti and his research focuses on the dispersion stability of gas hydrate systems and related flow assurance issues. During 2012-13, Aniruddha is completing a second Senator term in the Purdue Graduate Student Government.

They were invited to become part of a team participating in the Soybean competition through a friend in Electrical Engineering. After all original members dropped out, they formalized the idea of an eco-friendly substrate for printed circuit board applications such as those inside a computer. They purchased supplies and started experiments with the help of a few fellow ChE grad students working with polymers, which led them to develop the formula for Flexoy, a flexible, lightweight and low-cost substrate on which an electronic circuit is printed. *"The key advancement is in replacing petroleum-derived, epoxy-based substrates currently used for making printed circuit boards,"* noted Anand. The new product is biodegradable, eco-friendly, flexible and reusable.

They credit their Chemical Engineering background with providing the tools needed to approach concepts outside their specialization. *"This experience proves that a ChE degree is so versatile; we had no hands-on experience but we knew the general ChE concepts from our undergraduate times!"* (Aniruddha)

The Soybean competition is organized at Purdue and is sponsored by the Indiana Soybean Alliance; the goal is to teach students to become innovative entrepreneurs with such an abundant resource as soybean. The competition required a significant effort on their part for several months, from generating the idea, to determining the Flexoy formula, to taking their product to shelf ready form, complete with packaging, handling and safety information. Going through all phases from concept to commercialization gave them an entirely new perspective on everything they do in the lab: *"It is not enough to have a great idea, you have to constantly ask yourself: What will make this product work or fail? Doing good research is just as important as how you present it!"* mentions Aniruddha as one of the most important lessons he learned from the competition.

They are already on the path to file for a patent for Flexoy and have a company showing interest in their product. They are encouraging other ChE students to participate in more entrepreneurship competitions and become involved in various University and community activities to get a well-rounded experience as graduate students.

# CLASS NOTES

## 1950's

**David A. Barrett II** (BS '59) retired from the medical field in Chicago and now spends his time in Australia and Tennessee.

## 1960'S

**Gerhard (Gary) Bolen** (BS '65) is the director of Business Development at PPG Industries.

**David Boles** (BS '66) retired from Owens Corning after 46 years.

## 1970's

**Larry O. Bowler** (BS '71) is the Process Safety and Risk Leader for Saudi Arabia Basic Industrial Chemical (SABIC) in Evanston, IL.

**Gregory A. Bates** (BS '72) retired from Solae (DuPont) and is now working as a consultant. He is also a Six Sigma Certified Master Black, Learn Practitioner and Instructor.

**Carl T. Behr** (BS '74) is a Captain with Delta Airlines.

**Norman Gilsdorf** (BS '77) has been named Honeywell President & CEO High Growth Regions, Middle East, Russia & Central Asia.

**Terry Papoutsakis** (MS '77, PhD '80) received the James E. Bailey Award at the 2012 AIChE annual meeting, October 28 - November 2, Pittsburgh, PA.

## 1980's

**Elizabeth (Beth) Ballard** (BS '81) is the Director of Engineering and Technology for TPC Group LLC in Houston, TX.

**Donald R. Miller** (PhD '84) received the Industrial R&D Award, AIChE, 2012.

**David Rockstraw** (BS '86) was named Head, Department of Chemical Engineering, New Mexico State University.

## 1990's

**Alec Scranton** (PhD '90) was named Dean of the College of Engineering, University of Iowa.

**Kristi Anseth** (BS '92) was the inaugural recipient of the Materials Research Society Mid-Career Researcher Award, 2012.

**Ronna Robertson** (BS '92) is Director of Engineering and Reliability with Packaging Dynamics.

**Brad Berowicz** (BS '93) is the Associate Director of Engineering at Merck in Summit, NJ.

**Joshua Bishop** (BS '98) is an Associate Attorney at the Calfee, Halter & Griswold LLP law firm in Cleveland, OH.

**Catherine R. Barrow** (BS '99) is a Supply Chain Innovation Manager at Unilever in Palatine, IL.

## 2000's

**Halle Brooks** (BS 2001) is an FCC Process Engineer at BP (North America Products) based in Naperville, IL.

**Neil Ackerman** (BS 2005) is a Senior Process Development Engineer at Unilever and has been promoted to a position in the Food Solutions Division as part of their R & D group. He is also managing the division's pilot plant facility.

**R. James Anderson** (BS 2007) is a Product Engineer at Air Products and Chemicals and will be starting his MBA at the University of Chicago Booth School of Business.

## 2010's

**Sarah Beigh** (BS 2010) is now a Process Engineer with Syngenta.

**Saurabh Chaugule** (PhD 2010) received two Special Recognition Awards in 2012 from Shell, for his leadership in Shell's cross-functional Continuous Improvement initiative using LEAN process improvement tools and for delivering a significant positive impact on Shell Downstream's margins through a team effort, since recognized as a "Margin R&D - Needle Mover" project.

**Stephan Berube** (BS 2012) is a Production Process Specialist with Citizens Energy Group.

**Eric King** (BS 2012) is a R&D scientist for Clorox in their Hidden Valley Ranch division located in San Francisco, CA.

**Eric Borders** (BS 2012) is finishing up training in Syracuse, NY for Carrier Corporation where he will be a sales engineer based in Indianapolis, IN. He is now also a certified Leader in Energy and Environmental Design (LEED) Green Associate.

**Eoin Condon** (BS 2012) is a supply chain associate as part of the Supply Chain Leadership Development Program with Clorox.

**Antonio "Kike" Coelles** (BS 2012) is working at Air Liquide in the ALLEX rotational program starting in Burlington, WI.



**RICHARD KORSMEYER,**  
MS 1980, PhD 1983, was  
elected to the National  
Academy of Engineering, 2012.  
Richard is a Senior Research  
Fellow with Pfizer.

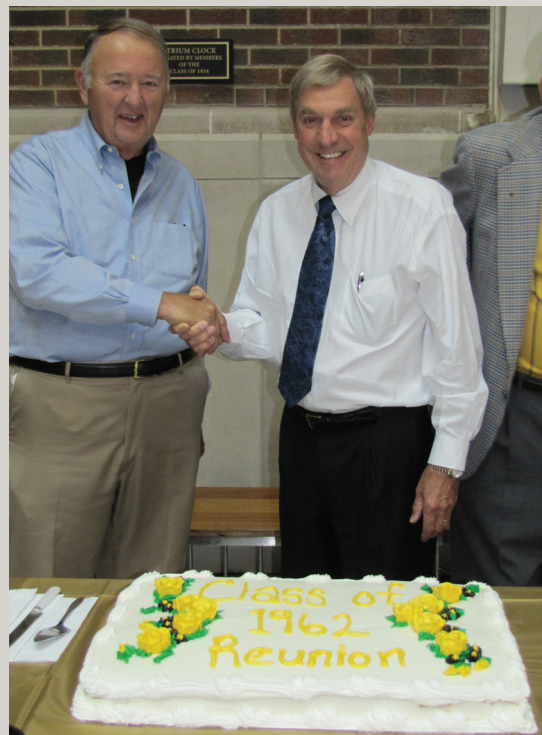


**ANTONIOS MIKOS,**  
MS 1985, PhD 1988, was  
elected to the National Academy  
of Engineering, 2012, and  
the Institute of Medicine of the  
National Academies, 2012. Tony  
is the Louis Calder Professor of  
Bioengineering and Professor  
of Chemical & Biomolecular  
Engineering at Rice University.

**THE CLASS OF 1952 AND CLASS OF 1962 CELEBRATED  
THEIR 60 AND 50 YEARS REUNION ON SEPTEMBER 28, 2012.**



**CLASS OF 1952: JON BROOKS, BOB BAILEY, AND JOE CORNS**



**CLASS OF 1962: DAVE REA AND BEN LIPPS**

For the class of 1953 and 1963 reunion,  
please contact Diane Klassen at  
[dklassen@purdue.edu](mailto:dklassen@purdue.edu) or call **765-494-4065**.

Send your professional updates to  
[chealumni@purdue.edu](mailto:chealumni@purdue.edu). Due to the large  
number of responses, we may only be able to  
publish the most recent updates.



Our School uses a LinkedIn group to share information about the School, announce events, and post jobs. If you are interested in becoming a member, log in to LinkedIn, search for "Purdue ChE Alumni" under "Groups" and ask to join. Please make sure your ChE degree and graduation year are listed in your profile to enable fast processing.

School of Chemical Engineering  
480 Stadium Mall Drive  
West Lafayette, IN 47907

