School of Chemical Engineering

2010 Year in Pictures
PURDUE UNIVERSITY
School of Chemical Engineering

SAVE THE DATE
OCTOBER 7-8, 2011

Centennial Celebration
A Century of People and Progress

1911-2011
Centennial Celebration
1911-2011

Event-Filled Year
In 2011, the School of Chemical Engineering at Purdue University will celebrate 100 years of education and research excellence. Honored guests are Chemical Engineering faculty, staff, students and alumni who have brought prominence to the school since its 1911 inception.

Save the Date
Plans are being finalized for the spotlight event at Purdue, Oct. 7-8, 2011. Mark your calendars now and attend this special weekend that has been 100 years in the making!

Friday, Oct. 7, 2011
• Centennial Lectures
• Industrial, Academic and Entrepreneurial Panels
• Poster Session for Graduate and Undergraduate Students
• Celebration Dinner

Saturday, Oct. 8, 2011
• Tours of Forney Hall and Discovery Park
• Pregame Reception
• Football Game

Especially You!
You have been instrumental in Purdue Chemical Engineering’s reputation as a catalyst of innovation and excellence. We will be honored by your participation in the centennial activities.

Details to come.

https://engineering.purdue.edu/ChE/Centennial
E-mail che.centennial@ecn.purdue.edu • Phone 765-494-0027
In preparing its students for the work force, Purdue University – 4th in the US Purdue Engineering – 2nd in the US!

Survey of 842 top recruiting executives to find the schools that best prepare students to land satisfying, well-paying jobs that also have growth potential.
## Bachelor's Graduates

<table>
<thead>
<tr>
<th>Rank</th>
<th>University</th>
<th>Degrees</th>
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<td>1</td>
<td>Michigan, U of, Ann Arbor</td>
<td>113</td>
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<tr>
<td>2</td>
<td>Purdue U</td>
<td>106</td>
</tr>
<tr>
<td>3</td>
<td>Texas, U of, Austin</td>
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</tr>
<tr>
<td>4</td>
<td>Georgia Institute of Technology</td>
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<tr>
<td>5</td>
<td>Wayne State U</td>
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<tr>
<td>6</td>
<td>Pennsylvania State U</td>
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<td>7</td>
<td>Puerto Rico, U of, Mayaguez</td>
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</tr>
<tr>
<td>8</td>
<td>California, U of, Berkeley</td>
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<tr>
<td>9</td>
<td>Cornell U</td>
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<tr>
<td>10</td>
<td>North Carolina State U</td>
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## Doctoral Graduates

<table>
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<td>1</td>
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<tr>
<td>2</td>
<td>Georgia Institute of Technology</td>
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<tr>
<td>3</td>
<td>Texas, U of, Austin</td>
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<td>4</td>
<td>Northeastern U</td>
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<tr>
<td>4</td>
<td>Purdue U</td>
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<td>6</td>
<td>Wisconsin, U of, Madison</td>
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<td>7</td>
<td>Illinois, U of, Urbana-Champaign</td>
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<td>7</td>
<td>Minnesota, U of, Twin Cities</td>
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<td>9</td>
<td>Northwestern U</td>
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<td>Cornell U</td>
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<td>10</td>
<td>Rensselaer Polytechnic Institute</td>
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</tr>
<tr>
<td>10</td>
<td>Wayne State U</td>
<td>16</td>
</tr>
</tbody>
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Source: Report of the ACS Committee on Professional Training, 2009
ChE Strategic Plan 2010-2014

• **Vision:** Be widely recognized among the premier ranks of chemical engineering programs in the world.

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

• **Values:** Leadership, excellence and innovation, relevance and impact, commitment and responsibility, teamwork and partnership, diversity and respect, safety and sustainability.
ChE Strategic Plan 2010-2014

Focus Areas

• **Research:** To pursue breakthrough research that extends the boundaries of chemical engineering into areas which promote sustainability and which will have the greatest positive 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.
Focus Areas - continued

- **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, students and staff 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 and 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 and 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.
Chemical Engineering Faculty

Rakesh Agrawal
ScD, MIT, 1980

Osman Basaran
PhD, Minnesota, 1984

Chelsey D. Baertsch
PhD, UC - Berkeley, 2001

Stephen P. Beaudoin,
PhD, NC State, 1995

James M. Caruthers
ScD, MIT, 1977

Raj Chakrabarti
PhD, Princeton, 2002

David S. Corti
PhD, Princeton, 1997

W. Nicholas Delgass
PhD, Stanford, 1969

Elias I. Franses
PhD, Minnesota, 1979

Robert E. Hannemann
MD, Indiana, 1959
Emeritus Faculty

Lyle F. Albright
PhD, Michigan, 1950

Ronald P. Andres
PhD, Princeton, 1962

Kwang-Chu Chao
PhD, Wisconsin, 1956

Robert A. Greenkorn
PhD, Wisconsin, 1957

Robert G. Squires
PhD, Michigan, 1963

George T. Tsao
PhD, Michigan, 1960

Nancy W. Y. Ho
PhD, Purdue, 1968

Research Faculty
David Corti
Promoted to Professor, August 2010
Congratulations to ChE Faculty

**Rakesh Agrawal**
- Elected Fellow, AIChE (2010)

**Nicholas Delgass**
- Inaugural NACS Award for Distinguished Service in the advancement of Catalysis (2010)

**Neal Houze**
- ConocoPhillips Faculty Award (2009-10)
Congratulations to ChE Faculty

**Jim Lister**
- Elected Fellow of the Australian Academy of Technological Sciences and Engineering

**Rex Reklaitis**
- George Lappin Award, National Program Committee Service Award, AIChE (2008)

**Fabio Ribeiro**
- Appointed as an Editor for the *Journal of Catalysis*
Congratulations to ChE Faculty

**Arvind Varma**
- Elected Foreign Member of Mexico’s National Academy of Engineering (2010)

**Phillip Wankat**
- Joseph J. Martin Award, ASEE (2010)

**Yue Wu**
- DuPont Young Professor Grant (2009-13)
Hannemann – 40 Years in Purdue ChE
1970-2010
Houze – 40 Years in Purdue ChE
1969-2009
Wankat – 40 Years in Purdue ChE
1970-2010
Faculty Honors

Purdue College of Engineering - 2010 Faculty Excellence Awards

**Team**: Pharma ERC led by Gintaras V. Reklaitis
Osman A. Basaran
Stephen P. Beaudoin
Michael T. Harris
James D. Litster
D. Ramkrishna
V. Venkatasubramanian

**Mentoring**: Ramkrishna

**Research**: Basaran
Recent Alumni Honors - Purdue

Honorary Doctorate (HDR)
Deb Grubbe (BS ’77)
Tim McGinley (BS ’63)
Recent Alumni Honors - Purdue

Norman Gilsdorf, BSChE ’77
President, Honeywell Process Solutions

- Distinguished Engineer Alumnus (DEA), College of Engineering, Purdue
- Outstanding Chemical Engineer (OChE), School of Chemical Engineering, Purdue
Recent Alumni Honors - Purdue

2010 OChE

William Greer with his wife Carolyn, and his grandson, Eric Vaughan (BS 2006)

William Greer, BS ’45, MS ’49 with Professors Varma and Reklaitis
Recent Alumni Honors - Purdue

2010 OChE

William Greer (BS ’45, MS ’49)
Harold Igdaloff (BS ’47)
Peter Kraemer (BS ’88)

Harold Igdaloff, BS ’47
with Professors Varma and Litster
Recent Alumni Honors - Purdue

2010 OChE

Peter Kraemer and a group of faculty

Peter Kraemer (BS ’88) with Professors Varma and Houze
Alumni Awards

**Duncan Mellichamp, PhD '64**
Professor Emeritus,
University of California, Santa Barbara

CACHE Award, ChE Division, 2010, ASEE

**Antonios Mikos, PhD ’88**
J. W. Cox Professor of Chemical and
Bioemolecular Engineering
Rice University

• Meriam/Wiley Distinguished Author Award, 2010, ASEE
• Food, Pharmaceuticals and Bioengineering Award, 2010, AIChE
Alumni Awards

Elefterios “Terry” Papoutsakis, MS ’77, PhD ’80
Eugene DuPont Chair
Department of Chemical Engineering
Delaware Biotechnology Institute

International Metabolic Award, 2010
Class of 2010
Graduate Student Recognitions

**Grayson Ford**
Graduate Student Poster Award
35th Photovoltaic Conference

**Hye Yeon Park**
Graduate Student ConocoPhillips Scholarship, 2010-11
Graduate Student Recognitions

Vishesh Shah
Graduate Student
Graduate Student Award
AIChE Separations Division, 2010

Sara Yohe
Graduate Student and
GSO President
NSF Graduate Fellowship, 2010
Undergraduate Student Honors

Caitlin Schmitt
ChE Senior
PESC President, 2010-11

Tyler Teykl
ChE Junior
Elected Purdue Student Trustee
Undergraduate Student Honors

Lindsey Williams
Class of 2010

- Purdue Engineering Student Council (PESC) President, 2009-10
- Purdue Student Engineering Foundation (PSEF) Outstanding Senior Award, 2010
Co-Op Students, Spring 2010
Staff Awards

Linda Davis
Industrial Education Director
2010 Leadership Award, College of Engineering
Jeff Valley
Building Deputy
15 Years of Service with the School of Chemical Engineering
Staff Awards
December 1, 2009

Larry Campbell, Shipping and Receiving Clerk, 40 Years at Purdue

Carolyn Blue, Administrative Assistant, 30 Years at Purdue

Karen Heide, Secretary, 35 Years at Purdue
AIChE Blood Drive
November 30, 2009
ChE-SAC Hot Chocolate Social
December 13, 2009
January 2010
Freezing 5k – OXE
February 19, 2010

- During E-week 2010 (Purdue Engineers Week)
- Attendance of over 100 students
- Raised $900 for the American Cancer Society
“Strike Out Suffering”
March 19, 2010

ChE Undergrads Bowling for "Strike Out Suffering", a bowling fundraiser held by Market Square Lanes and the Almost Home Humane Society
Kelly Lecture
March 30-31, 2010

Rakesh K. Jain
• Andrew W. Cook Professor of Tumor Biology
  Harvard Medical School
• Director, Edwin L. Steele Laboratory for Tumor Biology
Normalizing Tumor Vasculature to Treat Cancer: From Mathematical Model to Mouse to Man
3:30-4:30 p.m. Tuesday, March 30 • Room G140, Forney Hall

Cancerous tumors require blood vessels to grow and spread to other organs. Dr. Jain demonstrated that the blood vessels of tumors are abnormal — not only in their structure, but also in their function. Using a mathematical model, he showed consequences of this abnormality — specifically, how this abnormality contributes directly to malignant properties of a cancer and prevents treatments from reaching and attacking tumor cells.

Dr. Jain proposed a novel concept that “normalizing” tumor vessels would allow cancer therapies to penetrate the mass and to function more effectively. He then went on to show first in mice and then in cancer patients that drugs originally designed to destroy tumor vessels could, paradoxically, also repair them, creating a window of opportunity to attack the cancer most effectively. This concept is also opening doors for treating other vascular diseases such as macular degeneration, a leading cause of blindness, and neurofibromatosis-2, which can lead to deafness.

Delivery of Molecular and Nanomedicine in Tumors
9:30-10:30 a.m. Wednesday, March 31 • Room 3059, Forney Hall

A solid tumor is like an aberrant organ — comprised of cancer cells and host cells embedded in an extra-cellular matrix — nourished by blood vessels and drained by lymphatic vessels. In its journey from the blood stream to cancer cells, a therapeutic agent must cross the vessel wall and the extra-cellular matrix in which the cancer cells are ensconced. By developing novel imaging tools and tumor animal models, Dr. Jain showed that blood and lymphatic vessels as well as matrix associated with tumors are abnormal and can impair drug delivery in tumors.

Dr. Jain also discovered that the lack of functional lymphatic vessels within tumors contributes to elevated hydrostatic pressure and reduces convective transport in tumors. His team discovered the molecular and cellular mechanisms underlying these abnormalities, and then developed strategies to “normalize” these barriers and thus, improve delivery and efficacy of treatments. Finally, he translated some of these strategies from bench to bedside. His findings are critical not only for the delivery of conventional drugs, but also for gene therapy and nanomedicine.
2nd Women in Chemical Engineering Seminar – Career Perspectives
Saturday, April 10, 2010

Undergraduate and graduate women Chemical Engineering students and Chemical Engineering alumnae met for a day of networking on career choices, opportunities and challenges for women chemical engineers. Two of our remarkable Chemical Engineering alumnae and a Shell representative shared their career and personal experiences and perspectives during this energizing and fun event.
Women in CHE Seminar

Linda Davis, Director of Industrial Education and Seminar Organizer, Delivering the Welcome Address at the 2nd Women in ChE Seminar
Women In ChE Seminar

Emily Liggett (BS ’77)
CEO
Nova Torque
Women In ChE Seminar

Nicole Vaughn (PhD 2005)
Senior Engineer
ExxonMobil
Women In ChE Seminar

Mary Slater
(BS Mgmt 2003, MBA 2005)
Project Manager
Shell
Relay for Life – 2010
April 10, 2010

Undergraduate Chemical Engineering students participating in a night walk to raise funds for Relay for Life
Chemical Engineering Kids Day

April 17, 2010

ChE Undergraduates students provided the opportunity for 40 3rd & 4th graders in Lafayette and West Lafayette to learn about Chemical Engineering

Activities included:
- Clean It Up! (filtration)
- Ice Cream in a Bag (freezing-point depression)
- Magic Milk (Hydrophilic/hydrophobic interactions)
- Fuel Mystery Dissolved (reaction rates)
The Purdue Electric Vehicle Grand Prix was launched in 2010 as part of Purdue’s electric vehicle initiative and is funded by a $6 million federal grant led by Professor Caruthers.
EV Grand Prix
EV Grand Prix
EV Grand Prix
At the invitation of CSi, faculty, staff and students visited the Fowler Wind Farm in Benton County, IN.
Other CSi Initiatives

Reusable mugs for seminars and receptions

Live trees for the Henson Atrium
Spring Around the School
Renovation Progress

Forney Go60 in April 2010 and August 2010
Ground Floor – Renovation in Progress
Ice Cream Social

April 30, 2010

Faculty and staff served ice cream to students to wish them good luck to exams!
Ice Cream Social
ChE Faculty, Staff and Student Appreciation Reception
May 7, 2010
ChE Faculty, Staff and Student Appreciation Reception
ChE Faculty, Staff and Student Appreciation Reception
ChE Faculty, Staff and Student Appreciation Reception
Graduation Reception
May 15, 2010
Graduation Reception
Larry Campbell, Shipping and Receiving Coordinator, received a surprise party for this 70th birthday. Larry has been employed at Purdue since 1969 and in Chemical Engineering since 1982.
Graduate Student Organization (GSO)

Sara Yohe  
President

Qing Zhu  
Vice President

Ahmad Al-Kukhun  
Co-Curricular Committee

Santosh Appathurai  
Co-Curricular Committee

Shane Bates  
Outreach Committee Chairperson
GSO Soccer Tournament
June 28, 2010
GSO Social Pitch In
August 2, 2010
19th Annual Graduate Research Symposium
August 18-19, 2010

Graduate Student
Kaoutar Abbou Oucherif
presenting a poster

Arvind Varma with Seminar Speaker
Shekar Shetty, CTO Air Liquide,
and Sara Yohe, GSO President
GSO Symposium – Poster Session
GSO Symposium – Banquet
August 19, 2010
GSO – New graduate Students
Welcome Picnic
August 23, 2010
GSO – New Graduate Students
Welcome Mixer
August 24, 2009
GSO Paintball
September 12, 2010
Scholarship Banquet
September 21, 2010
Class of 1970 – 40 Year Reunion
September 23, 2010
November 2010
Around the School
Professor Agrawal and His Research Group
Professor Caruthers and His Research Group
Professor Liu
and Her Research Group
Engineering Research Center Group
Led by Professor Reklaitis
Professor Varma
and His Research Group
Professor Wu and His Research Group
ChE Academic Advisory Board

Kristi Anseth
Tissone Professor and HHMI Investigator,
Chemical and Biological Engineering
University of Colorado

Alexis Bell
The Dow Professor of Sustainable Chemistry
UC Berkeley

Ignacio Grossman
Rudolph R. and Florence Dean
University Professor
Chemical Engineering,
Carnegie-Mellon

Michael Ramage
Executive Vice President,
ExxonMobil, Retired

Gregory Stephanopoulos
W. H. Dow Professor of Chemical Engineering
MIT

Frank Bates
Regents Professor and Department Head
Chemical Engineering and Materials Science
University of Minnesota
Industrial Advisory Council Meeting

October 15, 2010

Front row, left to right: Hector Dalton (3M), Ronna Robertson (Roquette), Arvind Varma (Purdue), Cristina Farmus (Purdue)

Middle row (left to right): Greg Lewis (Lubrizol), John Morgan (Purdue), William Bussing (BP), Rick Roberts (ChevronPhillips Chemical), Evan Bauman (Shell), Peter Kraemer (Anheuser Busch)

Back row (left to right): Billy Bardin (Dow), Mark Evans (P&G), Richard Narta (ExxonMobil), Shailendra Bordawekar (Abbott), Phillip Armstrong (Air Products)
October 16, 2010 Homecoming

Undergraduate students Peter Carroll, Ashley Vacchiano and Tod McMillan at the ChE Table

Julie Paolillo, Director of Development, and Cristina Farmus, Administrative Director, Hosting the ChE Homecoming Table
Homecoming Guests

Robertta Gleiter, BS ChE 1960, and Professor Varma

Robertta Gleiter, BS ChE 1960, (center), with Leah Jamieson, Dean of Engineering, and her husband, John Gleiter, BS AAE 1960
Thank you!

Prepared by
Cristina Farmus
Administrative Director
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765-494-0027