

Research Workshop
Future Opportunities in Nuclear Power

7-8:30 PM, Thursday, October 16, 2014
7:30 AM - 4:00 PM, Friday, October 17, 2014

Agenda

October 16 (Thursday)

5:00-6:30 PM Dinner (by invitation only) – Anniversary Drawing Room, PMU

7:00 PM Welcome - Loeb Playhouse
Alan H. Rebar, Senior Associate Vice President for Research and Partnerships and Executive Director, Discovery Park, Purdue University, West Lafayette, Indiana

Discovery Lecture Series/Public talk
Past, Present, and Future of Nuclear Power
Sal Golub, Associate Deputy Secretary for Nuclear Technologies at U.S. Department of Energy, Washington, D.C.

Day #2: October 17 (Friday) MRGN 121

(Note: Posters will be displayed throughout day and viewing during break time 10-10:30 am)

7:30-8:00 AM Registration and breakfast

8:00 AM Welcome
Maureen McCann, Professor of Biological Sciences; Director, Purdue Energy Center, Global Sustainability Institute, Discovery Park & DOE EFRC Center for Direct Catalytic Conversion of Biomass to Biofuels

Anter El-Azab, Professor, School of Nuclear Engineering, Purdue University, West Lafayette, Indiana

Leah Jamieson, John A. Edwardson Dean of Engineering and Ransburg Distinguished Professor of Electrical and Computer Engineering

Maureen McCann, Professor of Biological Sciences; Director, Purdue Energy Center, Global Sustainability Institute, Discovery Park & DOE EFRC Center for Direct Catalytic Conversion of Biomass to Biofuels

Keynote lecture
Research/technical challenges, opportunities for advanced nuclear energy systems in the 21st Century
Phillip Finck, Chief Scientist, Idaho National Laboratory, Idaho Falls, Idaho

9:00-10:00 AM Panel #1: Advances in nuclear fuel/materials
Moderator and panel member
Anter El-Azab, Professor, School of Nuclear Engineering, Purdue University, West Lafayette, Indiana

Keynote speaker
Stuart A. Maloy, Ph.D., P.E., Transmutation Core Materials Technical Lead, Fuel Cycle Research Development Advanced Fuels Campaign, Los Alamos National Lab, Los Alamos, New Mexico

Panel member

Phillip Finck, Chief Scientist, Idaho National Laboratory, Idaho Falls, Idaho

10:00-10:30 AM Break – Poster viewing

10:30-11:30 AM Panel #2: Advances in reactor concepts/next generation of reactors

Moderator and panel member

Martin Lopez-De-Bertodano, Associate Professor, School of Nuclear Engineering, Purdue University, West Lafayette, Indiana

Panel member

Shripad Revankar, Professor, School of Nuclear Engineering, Purdue University, West Lafayette, Indiana

Keynote speaker

Won Sik Yang, Professor, School of Nuclear Engineering, Purdue University, West Lafayette, Indiana

11:30-12:30 AM Panel #3: Advances in radiation detection and monitoring

Moderator

Robert Bean, Assistant Professor, School of Nuclear Engineering, Purdue University, West Lafayette, Indiana

Keynote speaker

Jeffrey Allen Chapman, Distinguished Safeguards Engineer, Safeguards & Security Technology, Nuclear Security & Isotope Technology Division, Oak Ridge National Lab, Knoxville, Tennessee

Panel member

David Koltick, Professor of Physics and Director, Applied Physics Laboratory, Purdue University, West Lafayette, Indiana

12:30-2:00 PM Break and working lunch

Panel #4: Industry/Policy perspective

Research/technical and policy challenges in nuclear power

Moderator and panel member

Amit Varma, Professor and University Faculty Scholar, School of Civil Engineering, Purdue University, West Lafayette, Indiana

Desmond Chan, Ph.D., Manager of Technology, Bechtel Power Corporation, Frederick, Maryland

Christopher Fallon, Vice President, Nuclear Energy Development, Duke Energy Corporation

Derek Ebeling-Koning, Fellow Engineer, New Plants Engineering, Westinghouse Electric Company

Dan Schmidt, Policy Director, Energy, Environment, & Transportation, Governor Mike Pence Office, Indianapolis, Indiana

2:00-2:15 PM Break

2:15-4:00 PM Facilitated open discussion/next steps - MRGN 129

Moderators

Maureen McCann, Professor of Biological Sciences; Director, Purdue Energy Center & DOE EFRC Center for Direct Catalytic Conversion of Biomass to Biofuel

Anter El-Azab, Professor, School of Nuclear Engineering, Purdue University, West Lafayette, Indiana

Pankaj Sharma, Managing Director, Energy Center, Purdue University, West Lafayette, Indiana

Questions to brainstorm...

- How to best capitalize on Purdue's School of Nuclear Engineering to create interdisciplinary programs and teams that span the wider Purdue community?
- What are the possible areas of collaborations? (e.g. materials, thermal sciences, corrosion, nuclear fuel cycle and fuel performance, reactors, radiation detection, nuclear forensics, medical/environmental/ geological)
- What partnerships we should capitalize on? New partnerships?

Possible participants

In addition to a few external guests, faculty members from several Purdue academic units have been invited to participate in this discussion: College of Science - Chemistry, Physics, Earth, Atmospheric and Planetary Sciences; College of Engineering – Civil Engineering and Nuclear Engineering; College of Health and Human Sciences – School of Health Sciences and Department of Nutrition Science; College of Pharmacy – Department of Pharmacy Practice; College of Technology – Department of Engineering Technology; College of Veterinary Medicine – Clinical Sciences.

- *Amit Varma, Professor and University Faculty Scholar, School of Civil Engineering, Purdue University, West Lafayette, Indiana*
- *Berdine R. Martin, Senior Research Scientist, Department of Nutrition Science, Purdue University, West Lafayette, Indiana*
- *Christopher Fallon, Vice President, Nuclear Energy Development, Duke Energy Corporation*
- *Christopher Foreman, Assistant Professor, Electrical Engineering Technology, Purdue University, West Lafayette, Indiana*
- *Connie Weaver, Distinguished Professor and Department Head, Department of Nutrition Science, Purdue University, West Lafayette, Indiana*
- *Dan Schmidt, Policy Director, Energy, Environment, and Transportation, Governor Mike Pence Office, Indianapolis, Indiana*
- *David Koltick, Professor of Physics and Director, Applied Physics Laboratory, Purdue University, West Lafayette, Indiana*
- *Deborah Knapp, Dolores I. McCall Professor of Comparative Oncology, Department of Veterinary Clinical Sciences, Purdue University, West Lafayette, Indiana*
- *Derek Ebeling-Koning, Fellow Engineer, New Plants Engineering, Westinghouse Electric Company*
- *Desmond Chan, Ph.D., Manager of Technology, Bechtel Power*
- *Huiling (Linda) Nie, Assistant Professor, School of Health Sciences, Purdue University, West Lafayette, Indiana*
- *James Christophe Foreman, Assistant Professor of Electrical and Computer Engineering, Purdue University, West Lafayette, Indiana*
- *Jean Poulson Associate Professor of Radiation Oncology, Department of Veterinary Clinical Sciences, Purdue University, West Lafayette, Indiana*
- *Jeffrey Allen Chapman, Distinguished Safeguards Engineer, Safeguards & Security Technology, Nuclear Security & Isotope Technology Division, Oak Ridge National Lab, Knoxville, Tennessee*
- *Jim Schweitzer Assistant Professor of Health Physics and Director, Radiological and Environmental Management, Purdue University, West Lafayette, Indiana*
- *Kadir Sener, Post-Doctoral Assistant, Civil Engineering, Purdue University, West Lafayette, Indiana*
- *Kara Duncan Weatherman, Clinical Associate Professor of Pharmacy Practice, Purdue University, West Lafayette, Indiana*
- *Martin Lopez-De-Bertodano, Associate Professor, School of Nuclear Engineering, Purdue University, West Lafayette, Indiana*
- *Nader Satvat, Reactor Supervisor and Assistant Lab Director, School of Nuclear Engineering, Purdue University, West Lafayette, Indiana*

- *Osman El-Atwani, Visiting Assistant Professor, School of Nuclear Engineering, Purdue University, West Lafayette, Indiana*
- *Phillip Finck, Chief Scientist, Idaho National Laboratory, Idaho Falls, Idaho*
- *Robert Bean, Assistant Professor, School of Nuclear Engineering, Purdue University, West Lafayette, Indiana*
- *Robert Kenley, Associate Professor of Engineering Practice, School of Industrial Engineering, Purdue University, West Lafayette, Indiana*
- *Sal Golub, Associate Deputy Secretary for Nuclear Technologies at U.S. Department of Energy, Washington, D.C.*
- *Takashi Hibiki, Associate Head and Professor, School of Nuclear Engineering, Purdue University, West Lafayette, Indiana*
- *Vikas Tomar, Associate Professor of Aeronautics and Astronautics, Purdue University, West Lafayette, Indiana*
- *Won Sik Yang, Professor, School of Nuclear Engineering, Purdue University, West Lafayette, Indiana*
- *Yeon Sang Jung, Post-Doctoral Associate, School of Nuclear Engineering, Purdue University, West Lafayette, Indiana*

Sponsors: Energy Center, Discovery Park; Lilly Endowment; College of Engineering; School of Nuclear Engineering; Purdue Energy Forum; Krannert Energy Club; American Nuclear Society, Purdue.

Contact: Anter El-Azab (NE); Pankaj Sharma & Maureen McCann (Energy Center)
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Note takers:

- *Brian Sims, Graduate Student, School of Nuclear Engineering, Purdue*
- *Haoyu Wang, Graduate Student, Department of Physics, Purdue*
- *Miltos Alamaniotis, Research Assistant Professor, School of Nuclear Engineering, Purdue*