

THE DEPARTMENT OF ENERGY
Office of Science

News Media Contact: Rick Borchelt, rick.borchelt@science.doe.gov

For Planning Purposes: Thursday, February 13, 2014

MEDIA ADVISORY: DOE Speakers and Sessions at AAAS

Representatives from the Department of Energy's (DOE's) Office of Science and its labs will be active participants in a variety of sessions at the 2014 AAAS Annual Meeting

CHICAGO – Attendees of the 2014 AAAS Annual Meeting are invited to the events at which representatives from DOE's Office of Science and its labs will play an active part. A roundup of those events is below:

President's Address

2014 AAAS co-chair Eric Isaacs, Director of Argonne National Laboratory (Argonne Lab) will make brief opening remarks, as will fellow co-chairs Robert J. Zimmer, President of the University of Chicago, and Morton Schapiro, President of Northwestern University, before the presentation of AAAS President Phillip A. Sharp.

- **WHEN:** Thursday, February 13: 6:00 p.m.-7:30 p.m.
- **WHERE:** Imperial Ballroom (Fairmont Chicago)

Outsourcing Science: Will the Cloud Transform Research?

Startups, larger companies, and consumers all outsource major information management and manipulation tasks to cloud providers. This symposium investigates the question of whether, how, and when a similar transformation may occur in science. Rick Stevens, Argonne's Associate Laboratory Director for Computing, Environment and Life Sciences will be one of the speakers at this presentation organized by Ian Foster, Argonne Lab.

- **WHEN:** Friday, February 14: 8:00 a.m.-9:30 a.m.
- **WHERE:** Acapulco (Hyatt Regency Chicago)

Hydraulic Fracturing: Science, Technology, Myths and Challenges

Leaders from industry, academia, and the environmental community will discuss how science and technology have helped to fuel the shale revolution, debunk myths about hydraulic fracturing, and identify challenges and possible solutions needed to ensure the safe and sustainable development of these resources. Organized and moderated by Christopher B. Harto, Argonne Laboratory, with co-organizer Alfred P. Sattelberger, also of Argonne Lab.

- **WHEN:** Friday, February 14: 8:30 a.m.-11:30 a.m.
- **WHERE:** Comiskey (Hyatt Regency Chicago)

Chemistry and Materials Science of Solar Energy Utilization: Opportunities for New Materials in Photovoltaics

The Department of Energy's SunShot Initiative is a collaborative national program to make solar energy cost competitive with other forms of energy by the end of the decade. Reducing the installed cost of solar energy systems by about 75 percent will drive widespread, large-scale adoption of this renewable energy technology and restore U.S. leadership in the global clean energy race. This talk, at which Ramamoorthy Ramesh, Deputy Director for Science and Technology at Oak Ridge National Laboratory will speak, outlines the most promising options in emerging materials for photovoltaics.

- **WHEN:** Friday, February 14: 1:00 p.m.-2:30 p.m.
- **WHERE:** Toronto (Hyatt Regency Chicago)

Reconstructing and Deconstructing Paintings: Innovations At and Below the Surface

Moderated by a museum leader, this symposium will present cross-disciplinary and international perspectives on the scientific study of paintings from all ages. It will include an address by Argonne Lab's Volker Rose on the topic "Picasso at the Nanoscale: Investigating the Chemistry of Iconic Paints."

- **WHEN:** Friday, February 14: 1:00 p.m.-2:30 p.m.
- **WHERE:** Grand Ballroom A (Hyatt Regency Chicago)

Research Challenges in Climate Change: What's New and Where Are We Going?

This session will look at what we have learned in climate science, examine where the science is heading, and discuss the major issues where new scientific advances are needed. Michael Wehner of Lawrence Berkeley National Laboratory will speak on the topic of "Research Challenges Affecting Extreme Events in a Changing Climate."

- **WHEN:** Friday, February 14: 1:30 p.m.-4:30 p.m.
- **WHERE:** Grand Ballroom B (Hyatt Regency Chicago)

Next Generation Electrical Energy Storage: Beyond Lithium Ion Batteries

The symposium will examine the impact that such electricity storage technologies will have on the grid and transportation, and the promising discoveries and innovations beyond today's lithium ion battery technology that will raise performance and lower cost. It is organized by George Crabtree of Argonne Lab, with co-organizer Jeff Chamberlain, also of Argonne Lab.

- **WHEN:** Friday, February 14: 3:00 p.m.-4:30 p.m.
- **WHERE:** Columbus IJ (Hyatt Regency Chicago)

U.S. National User Facilities: A Major Force for Discovery and Innovation

This symposium provides an overview of the capabilities offered by the United States' national scientific user facilities and highlights outstanding recent examples of discovery and innovation stemming from their work. It will include presentations by the major federal sponsors of the user

facilities with time for discussion of the policy challenges facing this key facet of the U.S. scientific enterprise now and into the future. Patricia Dehmer, Acting Director of DOE's Office of Science will speak on the topic, "The Office of Science User Facilities: Challenges and Opportunities," at this symposium, which is organized by Susan Strasser, Argonne Lab with co-organizer Ben Brown, DOE's Office of Science.

- **WHEN:** Saturday, February 15: 8:30 a.m.-11:30 a.m.
- **WHERE:** Columbus EF (Hyatt Regency Chicago)

Have You Heard About the Higgs? How to Share Your Science Globally

This workshop will identify the specific strategies and practices that build international science-news collaborations, distinct from international science collaborations. It is being coordinated by Katie Yurkewicz, Fermi National Accelerator Laboratory (Fermilab).

- **WHEN:** Saturday, February 15: 11:45 a.m.-12:45 p.m.
- **WHERE:** Grand Ballroom F (Hyatt Regency Chicago)

Extremities of the Cosmos: New Experimental Results in Particle Astrophysics

This symposium will feature presentations on several areas of particle astrophysics in which new experimental techniques are producing new results with rapid improvements in precision and/or sensitivity. It will include presentations by leading experts at Argonne Lab, Fermilab and the University of Chicago. Organized by Craig Hogan, Fermilab and University of Chicago.

- **WHEN:** Saturday, February 15: 1:30 p.m.-4:30 p.m.
- **WHERE:** Regency C (Hyatt Regency Chicago)

Promoting Science Through Storytelling: A Case Study

Fermilab and 137 Films will present a case study in using storytelling to communicate and promote science to the general public. Kurt Riesselmann of Fermilab is the presenter.

- **WHEN:** Saturday, February 15: 2:15 p.m.-3:15 p.m.
- **WHERE:** Grand Ballroom F (Hyatt Regency Chicago)

Innovations in Crystallography Meet Demands in Materials Science, Energy, and Health

This session will look at advances in the field of crystallography – which range from targeted drug design to improvements in computer memory – made possible by X-ray light sources as well as new research tackling some of the biggest challenges in materials science, energy, sustainability, and global health. It is organized by Argonne Lab's Tona Kunz.

- **WHEN:** Saturday, February 15: 3:00 p.m.-4:30 p.m.
- **WHERE:** Columbus EF (Hyatt Regency Chicago)

Targeting Tumors: Ion Beam Accelerators Take Aim at Cancer

This symposium will explore the physics, biology, and clinical use of advanced particle therapy cancer treatments and related economic and ethical issues. The symposium and its associated

press briefing have been organized by Karen McNulty Walsh, Media & Communications Office, Brookhaven National Laboratory (Brookhaven Lab) with Co-Organizers Stephen Peggs, Physicist, Brookhaven Lab, and Eric Colby, DOE's Office of Science.

- **WHEN:** Sunday, February 16, 8:00 a.m. (*symposium*) and 11:00 a.m. (*press briefing*)
- **WHERE:** *Symposium:* Hyatt Regency Chicago, Grand Ballroom A; *Press Briefing:* Swissôtel, AAAS briefing room, adjacent to the newsroom, second floor.

Exploring the Foundations of Magnetism with New Nanoscale Probes

Studies of the small-scale behavior of tiny magnets and their interfaces with other materials have become essential for global challenges in health and sustainability. This symposium will bring together prominent researchers from around the world who are pioneering approaches to probe the foundations of nanoscale magnetism. Argonne Laboratory's Volker Rose will address the topic, "Synchrotron X-Ray Scanning Tunneling Microscopy."

- **WHEN:** Sunday, February 16: 8:30 a.m.-11:30 a.m.
- **WHERE:** Columbus EF (Hyatt Regency Chicago)

Dark Matter Discoveries: Challenges and Innovation

This is a timely symposium at the crossroads of particle physics, astrophysics, and cosmology that will include a theoretical overview and talks on the latest results and technologies of the leading dark matter particle searches. Fermilab's Joseph Lykken will present on the topic, "Dark Matter Particles: What Could They Be? How Do We Look for Them?"

- **WHEN:** Sunday, February 16: 1:30 p.m.-4:30 p.m.
- **WHERE:** Columbus IJ (Hyatt Regency Chicago)

2014 AAAS attendees are also invited to learn more about the efforts of DOE's Office of Science at the booths on the Exhibit Hall and at the following events and activities:

"Mapping the Unseen" Science Film Showcase

This event, which is free and open to the public, will include a simulation of the dark universe and a model of blood flow, to which the Argonne Leadership Computing Facility made significant contributions.

- **WHEN:** Wednesday, February 12: 5:30 – 9:00 p.m.
- **WHERE:** University of Chicago International House

Meet the Scientists: Part of the Family Science Days Activities

This event, which will be held at the Riverside Center of the Hyatt Regency Chicago, will include the following presentations:

- *Saturday, February 15*

- 1:30 p.m. “The Power of Wind!” A presentation by Doug Sisterson, research meteorologist and senior manager for DOE’s Atmospheric Radiation Climate Research Facility at Argonne Lab.
- 2:30 p.m. “Mr. Freeze:” Jerry Zimmerman of Fermilab will perform his popular cryogenics show involving lots of balloons and liquid nitrogen, which boils at minus-321 degrees Fahrenheit.
- 3:00 p.m. “Art Meets Science: Picasso at the Nanoscale:” Volker Rose, Argonne Lab physicist, will show how extremely precise microscopy allowed scientists to prove that Picasso used common house paint rather than traditional artists’ paint in some of his artwork.
- 4:00 p.m. “The Mysteries of Mass and Matter: An exploration into the wonders of the subatomic world from the Higgs boson to the search for dark matter:” Marcela Carena, senior scientist at Fermilab and professor in physics, is well known for her research on the Higgs particle and appeared in the documentary “The Atom Smashers.”
- *Sunday, February 16*
 - 3:00 p.m. “Future Energy: Taking on Humankind’s Greatest Challenge”: Seth Darling, Argonne Lab scientist and fellow of the Institute for Molecular Engineering, will explain why energy is at the heart of our future as a society and why we need to rethink where we choose to get our energy.

The Department’s Office of Science is the single largest supporter of basic research in the physical sciences in the United States and is working to address some of the most pressing challenges of our time. For more information please visit <http://science.energy.gov>.

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