Not your average physics conference...

Every four years physics students, alumni, and faculty gather for a Sigma Pi Sigma Congress. They spend a packed weekend interacting with distinguished speakers, debating common concerns for the discipline and society, and touring significant physics locations. Join us for the 2008 Sigma Pi Sigma Quadrennial Congress at Fermilab this November!

Reflections from the 2004 Congress

“The topics, the plenary speakers, and the informal interactions among the very diverse attendees were very good.”

“I enjoyed the guest speakers immensely, but I found the workshop discussions on ethics education especially rewarding.”

“The Sigma Pi Sigma and SPS members who attended the [Trinity Site] tour had the exiting experience of witnessing an important piece of scientific and American history first hand.”

“The 2004 Congress was truly a unique experience.”
Come to the Congress for...

Plenary Speakers

Richard Garwin is IBM Fellow Emeritus at the T. J. Watson Research Center in New York and is a consultant to the U.S. Government on military technology and arms control. He has made contributions to many areas of physics, including low-temperature physics, superconducting devices, nuclear weapons design, and more.

Rachel Ivie is Research Manager at the Statistical Research Center at the American Institute of Physics. She provides social science expertise in the collection, analysis, and reporting of data about women minorities in the fields of physics and astronomy.

Fred Jerome is a co-author of the book *Einstein on Race and Racism*. He is also the author of *The Einstein File: J. Edgar Hoover’s Secret War Against the World’s Most Famous Scientist*. He is a veteran journalist and science writer, whose articles and op-ed pieces have appeared in dozens of publications, including *Newsweek* and *The New York Times*.

Young-Kee Kim is the Deputy Director of Fermilab and Professor of Physics at the University of Chicago. Kim studies experimental elementary particle physics centered on the origin of mass in the universe, and is a strong supporter of undergraduate research.

Neal Lane is a Professor at Rice University. He also holds appointments as a Senior Fellow of the James A. Baker III Institute for Public Policy, where he is engaged in matters of science and technology policy, and in the Department of Physics and Astronomy. He is a former Director of the National Science Foundation (NSF).

Leon Lederman is an experimental physicist and Physics Nobel Laureate for his work with neutrinos. He is Director Emeritus (1979-1989) of Fermilab and a former President and Chairman of the American Association for the Advancement of Science.

Margaret Murnane is a Fellow of JILA (formerly known as the Joint Institute for Laboratory Astrophysics) and a faculty member of the Department of Physics and Electrical and Computer Engineering at the University of Colorado. Her interests include ultrafast optical and x-ray science and technology and increasing diversity in science and engineering.

Pier Oddone has been the Director of Fermilab since July 2005. His research interest is experimental particle physics, and his work focused primarily on electron-positron colliders at the Stanford Linear Accelerator Center. Before coming to Fermilab he was the Deputy Director of Lawrence Berkeley National Laboratory.

Jill Tarter is Director of the Center for SETI Research at the SETI Institute. She is deeply involved in the education of future citizens and scientists, and frequently speaks at meetings and science centers. Many people are familiar with her work as portrayed by Jodie Foster in the movie *Contact*.

Rodger Taylor is a co-author of the book *Einstein on Race and Racism*. His articles on city life, jazz, early African American New York, and the African Burial Ground have been published widely in newspapers and magazines, including several in *New York Newsday*. 
Interactive Workshops

What is the role of the physicist in society?

How should physicists respond when school boards allow intelligent design to be taught in science classrooms?

What role should they play in public discussions of global warming, stem cells, and other “political” science issues?

What do elected officials with backgrounds in physics have to say about these issues?

These questions and more will be addressed at the 2008 Sigma Pi Sigma Congress during workshops led by scientists working in the trenches.

Workshops, moderated by Philip “Bo” Hammer (pictured below), Vice President, The Benjamin Franklin Center, will consist of short presentations followed by round-table discussions. Recommendations produced in these sessions will set the course for ΣΠΣ’s involvement in these issues.

Aziza Baccouche, president of AZIZA Productions, Inc., will discuss her experience as a physicist using media to share science with the public in a workshop titled Mediating Public Perception, a Physicist’s View from Behind the Camera.

Mike Fortner, State Representative in the Illinois General Assembly and former mayor of West Chicago, will share his experience as a physics-trained politician during the workshop From Researcher to Representative.

David Goldston, Scholar in Residence at the Woodrow Wilson School, will talk about the American Physical Society (APS) study on energy efficiency that he co-chaired, in a workshop titled Energy Efficiency: Benchmarks and the Citizen’s Response.

Louis Lanzerotti, distinguished research physicist and Chair of the American Institute of Physics (AIP) Governing Board, will talk about being mayor and a member of his local school board during the workshop From Researcher to Representative.

Adrian Melott, Professor at the University of Kansas and founding director of Kansas Citizens For Science, will talk about his fight to keep evolution in and intelligent design out of the classroom in a workshop titled The Evolution of Science Curricula.

Julia Phillips, Director of the Physical, Chemical, and Nano Science Center at Sandia National Labs, will talk about her experience on the forefront of the national energy policy discussions, during the workshop Energy Efficiency: Benchmarks and the Citizen’s Response.

Poster Sessions

All members of Sigma Pi Sigma and the Society of Physics Students are invited to submit a poster for the Congress. Start thinking now about what you’d like to present!

Abstracts can be submitted via the Congress website.

Friday Poster Session: Nov. 7, 2008:
• Research from any field of physics or applied physics.
• Stories of physics careers and career paths.

Saturday Poster Session: Nov. 8, 2008:
• General science education and outreach activities.
• Stories of Future Faces of Physics events.

Chapters that present a poster on a Future Faces of Physics event are eligible for a $200 travel stipend to the Congress.

See the Congress website for detailed information:
www.sigmapisigma.org/congress/2008/
Come to the Congress for...

Tours of Remarkable Places

All registrants will be treated to tours of Fermilab’s cutting-edge experiments and facilities. Anticipated tour stops include:

**The Linac**, approximately 500 feet long, accelerates charged hydrogen ions to about 70% of the speed of light.

Fermilab’s **Tevatron** is currently the most powerful particle accelerator in the world. Protons and antiprotons circle around the four-mile accelerator at almost the speed of light in opposite directions, before colliding in one of the detectors.

Protons and antiprotons accelerated in the Tevatron collide head-on inside the huge **Collider Detector at Fermilab (CDF)** and the **DZero detector**, where their collisions are studied. International collaborations of scientists use the detectors to search for evidence of new physics, such as the Higgs particle, and to measure the properties of particles.

Protons from the accelerators are also used to create a beam of neutrino particles. The **Main Injector Neutrino Oscillation Search (MINOS)** experiment shoots a beam underground through the “near” detector located underground at Fermilab to a “far” detector located in a historic mine 450 miles away, to study neutrino oscillations, an effect related to neutrino mass.

The **Lederman Science Center**, named for Nobel Laureate, former Fermilab Director, and Congress plenary speaker Leon M. Lederman, is host to several interactive exhibits including ones on accelerators and detectors. This facility is used for education and outreach to children of all ages.

While at Fermilab you’ll also get to see a number of unique **sculptures** that represent the intersection of art and science, **floor-to-ceiling blackboards** covered in equations and diagrams, award-winning **wetlands**, distinctive **architecture**, and maybe even Fermilab’s **herd of American bison**.

Exhibits & Discussions on Art & Science

The Fermilab grounds boast unique architecture, sculpture and art. Founding director Robert R. Wilson, a renowned physicist and an accomplished artist and sculptor, believed that a research laboratory should be a cultural center for the community and the nation. In this spirit, our Friday evening dinner speaker will address the topic **Intersections of Physics and Art**.

**Art Contest**

In celebration of Wilson’s vision, Congress participants are encourage to submit their 2- and 3-D creations for display and/or judging at the Congress.

Submissions of any type of visual art, such as paintings, photographs, holograms, and sculptures are invited from all Congress attendees. Collaborative projects, particularly those by SPS or Sigma Pi Sigma Chapters, are also invited.

See the Congress website for rules & detailed information:

www.sigmapisigma.org/congress/2008/.
Networking with Physicists of All Types

The Congress is unique in that it brings together physics students, physics alumni (many of whom are now “hidden physicists”), and physics faculty to discuss many of the scientific issues currently facing society.

The Congress will include a number of events designed to facilitate networking and mingling, such as:

• An art exhibit and competition open to all attendees in celebration of the connection between art and science exemplified at Fermilab.
• Round-table discussions during the workshops, where attendees will work together to form recommendations for Sigma Pi Sigma.
• Poster sessions where Congress attendees are encouraged to share their stories, outreach, and physics research.
• An informal “Breakfast with the Fermilab Scientists and the AIP Governing Board” for Congress attendees and Fermilab scientists.

Help others get to the Congress

If you’re a Sigma Pi Sigma alumnus interested in helping students get to the Congress, consider supporting a Chapter Reporter Award! If you’d like to help, full details can be found online at:

www.sigmapisigma.org/congress/2008/.

Here’s how it works:

• Chapters sending four or more members to the Congress register in advance as Congress Reporters with the National Office.
• After the Congress, attendees compile a report that includes tales from the road, photos, and other highlights.
• The Chapter sends the report to SPS and to the donor(s) that sponsored the award.
• Upon receipt of the Chapter report, SPS sends the Chapter a check for $500.

Represent Your Sigma Pi Sigma Chapter

At the 2008 Congress, attendees will formulate recommendations for action by the Society and its members on issues of scientific citizenship. These recommendations will then be discussed and prioritized by attendees.

All chapters are encouraged to send a minimum of “One & One” to the Congress, one student and one alumni to represent their chapter in these discussions.

Of course, every chapter should send as many students and alumni as possible to engage in the important questions of scientific citizenship!

If you’re a Sigma Pi Sigma alumnus, now is a great time to contact your chapter and see how things are going, and to volunteer as a “One & One” participant at the Congress.

Visit the 2008 Congress website to sign up for the Congress mailing list and request current contact information for your Sigma Pi Sigma chapter.

Note: To see the ethics recommendations adopted at the 2004 Sigma Pi Sigma Congress, visit:

www.sigmapisigma.org/congress/2004/ethics.htm

Scientists J. Womersley, A. Boehnlein, and G. Brooijmans looking at data collected from DZero events.
### Preliminary Agenda

#### 2008 Quadrennial Congress

**THURSDAY, NOVEMBER 6, 2008 (Holiday Inn Select, Naperville, IL, beginning at 6:00pm)**
- Registration and Exhibit Hall (3:00-8:00pm)
- Dessert Reception (7:00pm)
- Welcoming Remarks (8:00pm)
  - Ann Viano, President, Sigma Pi Sigma and Professor of Physics at Rhodes College
  - James Stith, Vice President, Physics Resources Center, American Institute of Physics
- Plenary Lecture: Science as a Contact Sport, Experiences of a SETI Researcher (8:30pm)
  - Jill Tarter, Director of the Center for SETI Research at the SETI Institute

**FRIDAY, NOVEMBER 7, 2008 (Fermilab, beginning at 7:30am)**
- Breakfast with the Fermilab Scientists and the American Institute of Physics Governing Board (7:30am)
- Welcoming Remarks (9:15am)
  - Pier Oddone, Director of Fermi National Accelerator Laboratory
  - Philip Hammer, Vice President, The Benjamin Franklin Center at the Franklin Institute
- Scientific Citizenship Workshop I: The Evolution of Science Curricula (9:40am)
  - Adrian Melott, Prof, Physics and Astronomy, Univ. Kansas; Founder, Kansas Citizens for Science
- Plenary Lecture: U.S. Science Policy at a Turning Point? (11:00am)
  - Richard Garwin, IBM Fellow Emeritus at the IBM T. J. Watson Research Center
- Fermilab Tours (2:00pm)
- Poster Session I: Physics Revealed, Stories of Research and Careers (4:30pm)
- Plenary Lecture: Fermilab and the Frontier of Particle Physics (6:00pm)
  - Young-Kee Kim, Deputy Director of Fermi National Accelerator Laboratory
- Dinner and Plenary Lecture: Intersections of Physics and Art (7:00pm)

**SATURDAY, NOVEMBER 8, 2008 (Fermilab, beginning at 8:30am)**
- Future Faces of Physics: Jeopardy (8:30am)
- Scientific Citizenship Workshop II: Energy Efficiency: Benchmarks & the Citizen’s Response (9:15am)
  - David Goldston, Scholar in Residence at the Woodrow Wilson School
  - Julia Phillips, Director, Physical, Chemical, and Nano Sciences Center, Sandia National Labs
- Plenary Lecture: Addressing Diversity in Physics (10:45am)
  - Fred Jerome and Rodger Taylor, Co-authors of the book “Einstein on Race and Racism”
  - Margaret Murnane, Dept. Physics & Electrical & Computer Engineering, U. of Colorado; Fellow of JILA
  - Rachel Ivey, Research Manager, Statistical Research Center, American Institute of Physics
- Poster Session II: Spotlight on Physics Outreach (11:45am)
- Scientific Citizenship Workshop III: From Researcher to Representative (1:00pm)
  - Mike Fortner, Associate Professor of Physics, N. Illinois University, and Illinois State Representative
  - Louis Lanzerotti, Distinguished Research Prof. of Physics, New Jersey Inst. of Technology; former School Board Member and Mayor of Harding Township, New Jersey
- Scientific Citizenship Workshop IV: Mediating Public Perception, A View from Behind the Camera (3:00pm)
  - Aziza Baccouche, President of AZIZA Productions, Inc.
- Art Contest and Reception (4:15pm)
- Reflections on Scientific Citizenship, Our Way Forward (5:15pm)
  - Neal Lane, Senior Fellow, James Baker III Inst. for Public Policy; Professor of Physics and Astronomy
  - Philip Hammer, Vice President, The Benjamin Franklin Center at the Franklin Institute
- Banquet and Presentation of Awards (7:00pm)
- Plenary Lecture: Enhancing Education for the Masses (8:00pm)
  - Leon Lederman, Physics Nobel Laureate; Director Emeritus, Fermilab; Pritzker Professor of Science, Illinois Inst. of Technology; Resident Scholar, Illinois Mathematics and Science Academy

### Hotel Information

The official Congress hotel is the Holiday Inn Select® in Naperville, IL. Some Congress events will be held here, although the majority will be at Fermilab. The hotel is about 13 miles from Fermilab, and transportation will be provided between the hotel and Fermilab daily.

**Holiday Inn Select®**
- 1801 N. Naper Blvd.
- Naperville, IL 60563
- Phone: 1-630-5054900
- Fax: 1-630-5058239
- [www.naperselect.com](http://www.naperselect.com)

The Congress kicks off Thursday evening at 6:00pm and concludes Saturday night at 10:00pm, so expect to stay three nights.

Room rates for Congress attendees are $109/night for up to quadruple occupancy.

For other lodging options check out: [http://bss.fnal.gov/travel/hotels.html](http://bss.fnal.gov/travel/hotels.html)
Join Us at Fermilab!

Sigma Pi Sigma 2008 Quadrennial Congress
Held at Fermi National Accelerator Laboratory • Batavia, IL • November 6-8, 2008
Online registration is available at: www.sigmapisigma.org/congress/2008/

Registration Information
Registration includes admission to all sessions, all meals, transportation between the Holiday Inn Select and Fermilab, and Fermilab tours. Pre-registration must be postmarked or faxed by 10/19/08. Registrants are responsible for making their own hotel reservations (see hotel information on previous page or on the Congress website).

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Registrant’s Personal Information
Please enter your name and affiliations as you would like them to appear on your name badge.

Dr.  Mr.  Mrs.  Ms.

First Name __________________________ Last Name __________________________
Address ________________________________________________________________

City __________________________ State ___________ Zip ___________

Phone __________________________ Email Address __________________________

Special Needs or Dietary Requests __________________________________________

Occupation ______________________________________________________________

Employer or School Attending ______________________________________________

Are you a Sigma Pi Sigma member?  Yes  No

If Yes, Year of Induction __________ Institution where Inducted __________________________

Payment Information
Payment accepted by Check, Credit Card, or Money Order

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SUBMIT THIS FORM ALONG WITH PAYMENT TO:
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Tel: 301-209-3007 • Fax: 301-209-0839 • Email: sps@aip.org
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