

MISSOURI JUNIOR SCIENCE, ENGINEERING AND HUMANITIES SYMPOSIUM

JSEHS

For thirty-six years, the Missouri Regional Junior Science, Engineering and Humanities Symposium has provided Missouri students and teachers with a unique academic experience. The Missouri Symposium is one of forty-eight regional symposia held at universities nation wide.

On March 25, 2010, three hundred high school science students and sixty teachers will begin a stimulating, challenging three-day symposium at the University of Missouri-St. Louis. The Symposium will begin at noon March 25 and will run through noon on Saturday, March 27.

The major theme of the 2010 program is "Missouri JSEHS - Science Is Fun."

The Symposium

For three days, attendees will enjoy student research paper presentations, a stimulating debate, fascinating field trips, hear challenging presentations by renowned experts and discuss topics of mutual interest with working scientific professionals. Career discussions, mixers and banquets provide time for students and teachers to exchange ideas and form new friendships and scientific networks.

Student Papers

Highlighting the symposium are the presentation of research results by student finalists. Presenting original research before a team of judges, as well as peers and teachers, challenges students to defend their reasoning and articulate specific findings and provides an excellent learning experience. Students submitting papers will have their work judged by scientists on the quality and originality of their research.

There is no limit to the size of the paper submitted. Students selected from the invited participants to present their papers will be permitted twelve minutes to do so.

The deadline for applying to the Junior Science, Engineering and Humanities Symposium is **December 1, 2009**. The final research paper must be received at the University of Missouri-St. Louis by **February 10, 2010**.

Awards and Recognition

Students: The top Missouri winner will receive a \$2,000 scholarship. Second and third place winners receive \$1,500 and \$1,000 scholarships, respectively. The top six students will receive an expense-paid trip to the National Symposium and seniors will receive a partial scholarship to the University of Missouri-St. Louis. There is a total possible \$150,000 in prizes, awards and scholarships.

National: At the National Symposium, students will have the chance to compete with students from all regions for an expense-paid trip to the prestigious London International Youth Science Forum, a scientific and cultural exchange program that attracts over four hundred students from more than sixty nations and more than \$150,000 in scholarship awards.

Lopata Creativity Award: At the regional level, participants will be able to compete for the Stanley and Lucy Lopata Excellence in Creativity Award. This award provides \$6,000 in cash and recognition plaques to the authors of the top four creative papers at the Missouri Symposium.

Science Debate: The Missouri State Great Science Debate provides an opportunity for teams of four students to challenge each other in a formal, parliamentary-style format, arguing scientifically-based issues of current interest.

A traveling trophy is awarded to the best argument and presentation as judged by peers and professionals. The winning team is given a \$1,000 cash award for their science department.

Missouri American Water Award: The top paper, as judged by Missouri American's Water's Quality staff, will be recognized with a plaque, a \$500 award for the student and a \$500 award for the sponsoring teacher. Students may also apply for grants, up to \$100, to fund materials and supplies needed to conduct their research.

Trips and Tours

Participants will see research facilities and visit informally with employees of major firms such as Afton Chemical Corp., Alberici, Donald Danforth Plant Science Center, Emerson Motor Company, Genome Sequencing Center, Missouri Botanical Garden, Monsanto Life Sciences Company, Innoventor, Inc., Sigma-Aldrich, Solutia Inc., St. Louis Science Center, St. Louis Zoo, and U. S. Army Corps of Engineers. Open houses will be sponsored by departments such as Anthropology, Biology, Chemistry, Computing and Networking Services, Mathematics and Computer Science, Physics, and Psychology at the University of Missouri-St. Louis campus. These will give students a look at the nature and scope of university research and academic programs.

Lectures

Students and teachers will be challenged by a wide variety of speakers. Past lectures have included the Nobel Laureates Polykarp Kusch (Physics), George W. Beadle (Medicine and Physiology), George Wald (Medicine and Physiology), Lars Onsager (Chemistry), Herbert Brown (Chemistry), Melvin Calvin (Biochemistry), Leon Cooper (Physics), Rosalyn S. Yalow (Medicine and Physiology), Leon Lederman (Physics), Henry Kendall (Physics), Richard Roberts (Medicine and Physiology), Sheldon Glashow (Physics), Phillip Sharp (Physiology and Medicine),

Joseph E. Murray (Medicine and Physiology), William S. Knowles (Chemistry), Ivar Giaever (Physics), and Jerome Friedman (Physics).

Challenge presentation topics have included acupuncture, space travel, UFO's, plant emotions, the Bermuda Triangle, biofeedback, psychological research, medical examiner procedures and the search for the Loch Ness Monster.

How You Can Be Part of the Symposium

Students: Any Missouri high school student who has conducted or is currently conducting a scientific study is eligible to apply for the symposium.

Selection of participants will be made on the basis of their past, current or planned research, school science activities, career interest and scholastic average. **First priority will be given to senior students who submit completed research papers.**

Expenses (room, meals, symposium activities) will be paid for students selected to attend the Symposium. Students who are interested in science as a career, but who do not meet all of the criteria may apply to attend on a self-paid basis.

Teachers: Teacher participation will be based on the number of students selected. As a general rule, one teacher will be invited for every five students who attend from each applying school.

Teaching Award

Teachers: The Junior Science, Engineering and Humanities Symposium provides a cash award to teachers for their exceptional individual efforts in encouraging student participation in independent experimental research.

Additionally, the Monsanto Science Teaching Award recognizes teachers who have fostered students' knowledge, interest and skills in the sciences with a \$1,000 honorarium and recognition plaque.



HELPING MISSOURI STUDENTS, TEACHERS AND SCHOOLS MEET THE GOALS OF THE SHOW-ME STANDARDS



Objectives

1. To **foster** the attainment and mastery of state and national performance and process skill standards in the sciences, mathematics and language arts.
2. To **promote** research and experimentation in the sciences, mathematics and engineering at the high school level.
3. To **recognize** the significance of research in human affairs, and the importance of humane and ethical principles in the application of research results.
4. To **search out** talented youth and their teachers, recognize their accomplishments at symposia and encourage their continued interest in participation in the sciences, mathematics, and engineering.
5. To **expand** the horizons of research-oriented students by exposing them to opportunities in the academic, industrial, and governmental communities.
6. To **enlarge** the number of future adults capable of conducting research and development.

The Missouri Junior Science, Engineering and Humanities Symposium does not discriminate on the basis of race, color, religion, sex, sexual orientation, national origin, age, or disability in admission to, access to, treatment in or employment in its program and activities. The following contact has been designated to handle inquiries regarding the non-discrimination policies. Director, Office of Equal Opportunity, University of Missouri-St. Louis, One University Boulevard, St. Louis Missouri 63121-4400, Telephone: (314) 516-5695.

Sponsors

The following sponsors, in cooperation with the Missouri State Department of Elementary and Secondary Education, support the Missouri Regional Junior Science, Engineering and Humanities Symposium.

- Academy of Applied Science
- Air Force Office of Scientific Research
- Lucy Lopata
- Missouri American Water Company
- Monsanto Company
- Office of Naval Research
- United States Army Research Office
- University of Missouri Continuing Education and Outreach
- University of Missouri-St. Louis



How to Apply

Complete the enclosed application and mail it to:

Dr. Charles R. Granger, Director or
Ms. Nancy K. Diley, Co-director
Junior Science, Engineering and
Humanities Symposium
Departments of Biology and Education
University of Missouri-St. Louis
One University Boulevard
St. Louis, MO 63121-4400

Telephone: (314) 516-6226
E-mail: granger@umsl.edu or
diley@umsl.edu
Website: <http://www.umsl.edu/~sep/>

The Monsanto Science Teaching Award

Recipient Honor Roll



Bill M. Brent, M.S.T. (1992)
Hugh Brewer Jr., M.S. (2003)
Michele Grant, M.S. (2001)
Donald J. Hawk, M.S. (1993)
Edward C. Haynie, Ed.S. (2000)
Kenna Heitman, B.A. (2007)
Anthony Kardis, M.S. (1994)
R. Kent Kavanaugh, M.S. (1995)
Eva C. Kirkpatrick, M.A.T. (1989)
Linda M. Kralina, M.S. (1998)
Gary McCollough, M.S. (1991)
Charles W. McLaughlin, Ph.D. (1987)
Jay L. Meyers, M.S.Ed. (2005)
William H. Nelson, M.S.T. (1988)
Dennis D. Nickelson, Ph.D. (1997)
Margaret E. Patterson, M.S. (1986)
Vallys Pilliod, M.S. (2004)
Pamela S. Probert, M.S.Ed. (1999)
Christopher Reeves, M.S. (2008)
Dennis Reule, M.S. (1996)
Marie C. Sherman, M.S.T. (1989)
Greg Thurman, M.S. (1990)
Joan Twillman M.S.Ed. (2009)
John David Walls, M.S.Ed. (2006)
Constance Wyrick (2002)



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JSEHS



UNIVERSITY OF MISSOURI-ST. LOUIS
SCIENCE EDUCATION PROGRAMS

PROVIDING AUTHENTIC SCIENCE
ENRICHMENT FOR MISSOURI SCHOOLS
SINCE 1973

37th Annual MISSOURI JUNIOR SCIENCE, ENGINEERING AND HUMANITIES SYMPOSIUM

"SCIENCE IS FUN"

March 25-27, 2010

<http://www.umsl.edu/~sep/programs/jsehs.html>