

SENSING OUR WORLD 2010

SPONSORED BY

THE SIEMENS FOUNDATION



Global Health Summer Science Camp

A week-long, all-day summer science camp at The University of Notre Dame that has been especially designed for students aged 11 to 14.

July 12-16, 2010

Camp Activities

In previous years, students learned about the scientific principles behind many sensors used in everyday life through hands-on activities. They learned how devices such as sound and motion detectors work, and they made electric circuits, built their own detectors and learned about polymers, cryogenics, and electrical generators.

The 2008 program was expanded to **Sensing Our World in Color** and, by incorporating optics, the students analyzed the mechanics we use to perceive color and how this knowledge is used by astrophysicists and engineers alike. We also touched on geological remote sensing, structural damage of earthquakes, as well as topics like understanding the sensory world of other species, sensory aspects of art and music, and cross-cultural/gender-specific sensory perceptions.

The theme for the 2009 program was **Sensing Our World Go GreenND!** Students learned about ecologically sound approaches to urban space, the physics of energy, how chemists are developing biodegradable alternatives to various consumer goods, environmental philosophy, and ecological adaptation.

Sensing Our World 2010 will focus on **Global Health** issues. Students will learn about the potential for large-scale epidemics of infectious diseases like pneumococcal pneumonia, avian flu, malaria, and tuberculosis, and the growing awareness of the importance of addressing the healthcare needs of the developing world.

Classes will be held at the Notre Dame campus Monday through Friday, from 9:00 a.m. to 4:00 p.m. Activities include meeting with ND scientists to learn about their research and visits to several different academic departments and research labs on campus.

We expect a large response to the summer camp. The deadline for applications is **May 15, 2010**. Applications are reviewed by a selection committee, and twenty students will be admitted to the week's hands-on science exploration program. Selection notices will be e-mailed to students by June 1, 2010.

Sensing Our World Instructors

Camp instructors include faculty, staff, and graduate students from Physics, Chemistry, Mathematics, Biological Sciences, and Engineering departments at ND, as well as a certified K-12 teacher who serves as Lead Instructor.

Kevin Johnston is the aforementioned Lead Instructor of the camp. Mr. Johnson, who earned his teaching certification at Purdue, is a high school physical science teacher with the Baugo Community Schools. This is his fifth year as instructor for *Sensing Our World*, and he brings a wealth of classroom experience to the program.

Camp Sponsors

Sensing Our World 2010 – Global Health Summer Science Camp is sponsored by the **Siemens Foundation**, Northern Indiana Science, Mathematics, and Engineering Consortium (**NISMEC**), and the Joint Institute for Astrophysics (**JINA**), with the support of the Department of Physics, the Nuclear Structure Laboratory, the College of Science, and individual faculty members and various research centers at the University of Notre Dame.

APPLICATION DEADLINE
FRIDAY - MAY 15, 2010

DOWNLOAD APPLICATION MATERIALS:

SEND TOGETHER: [Application Form](#) [Parent/Legal Guardian Permission](#)

TO BE SENT SEPARATELY: [Teacher Recommendation Form](#)

The camp fee is **\$200.00**. *Financial assistance is available for those who qualify.* To request financial aid, please write a letter supporting the student's need for assistance and include it with the application. **DO NOT SEND PAYMENT WITH THE APPLICATION FORM.**

GOALS

According to the Third International Mathematics and Science Study (TIMSS) report, U.S. school children start out at the same level as their international peers in elementary grades. However, they fall behind in science and math by the time they reach the middle grades. When they reach high school, they score below the international average. In response to this finding, *Sensing Our World* was designed to expose middle-school students to the exciting world of science, mathematics, and technology in an intensive hands-on environment.

STRUCTURE OF CAMP

The camp operates during five weekdays in summer from 9 a.m. to 4 p.m. with a one-hour lunch break. All students aged 12-14 are eligible to apply.

Selection is based upon the camp application submitted by the student describing the reasons for wanting to attend the camp in conjunction with a recommendation from a science teacher. Grade point average is not used as a criterion.

ACTIVITIES

The lessons of *Sensing Our World* are designed to align with the Federal Education Standards for the middle school level student. Hands-on experiments and lecture demonstrations are employed.

EVALUATION

Each student will receive a camp manual containing explanations and supplementary background information about all labs projects, as well as resource materials.

A pre-test and post-test are administered for each session. The pre-test informs the instructors about each student's scientific background, which assists in tailoring the session content and level. The post-test gives a quantitative evaluation about the student's progress over the course of the week. A concluding open-ended questionnaire is used to assess the student's feelings about the camp.

The camp concludes with a student symposium to which family and friends, ND faculty, and staff are invited.