COPUS
coalition on the public understanding of science

Welcome to the Celebration!
Year of Science 2009

The COPUS Clarion

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The Coalition on the Public Understanding of Science (COPUS) is a grassroots effort linking universities, scientific societies, science centers and museums, advocacy groups, media, educators, government agencies, businesses, and industry in a peer network having as its goal a greater public understanding of the nature of science and its value to society.

Broadening the Participation of Students with Disabilities in Science

Laureen Summers, Education and Human Resources, AAAS

I never imagined I could do science. I have cerebral palsy, which affects my speech and fine motor coordination movements. Throughout my education in the late 1950s and early '60s, no one encouraged me to explore scientific theories, methods, chemical reactions, or frameworks for knowing. My lack of fine motor skills prevented me from dissecting a frog, diagramming a hibiscus flower, and mixing chemicals in test tubes. Teachers did not appear to know what to do with me and I struggled to participate in hands-on experiments that seemed easy for so many others.

A teacher suggested I prepare to work in a sheltered workshop. An advisor warned me against having big dreams. I was curious, creative, and determined. I knew I deserved more…

Today, I work at the American Association for the Advancement of Science (AAAS), as a program associate in the Project of Science, Technology, and Disability. I am one of the managers of ENTRY POINT!, a summer internship program for undergraduate and graduate students with disabilities (www.entrypoint.org). As a result of building ongoing corporate and governmental relationships, companies and agencies such as IBM, Lockheed Martin, Merck, NASA and NOAA have partnered with AAAS to offer 10-week, paid internships that match needed skills and interests to jobs that challenge students, build confidence, and often lead to successive internships, coops, and offers of employment.

The stories of many ENTRY POINT! interns reveal a host of positive educational experiences. For some students, the entry into science was welcoming. With few mishaps, the path to successful achievement was encouraged and supported. Yet, many other students replicated my story: they were discouraged by teachers and counselors and told that a significant disability would limit their options.

When we talk about diversity in science, we must include everyone in the conversation. Too often, "diversity" and "minority" refer to race and gender. "Disability" still evokes images of dependence, slowness, mental retardation, and non-productivity. Non-disabled people often associate people like me with the cognitively impaired aunt; the institutionalized cousin, or the bedridden mom. Students with disabilities are still seen as non-competitive and deserving of not much more than special programs and environments that keep us separate from our peers.

Though the Individuals with Disabilities Education Act and technology have opened up new opportunities for students with disabilities in the classroom setting, out-of-school activities, field trips, and special science events are often not inclusive of everyone. Many students with disabilities are referred to special programs developed to guarantee a good experience. However, in science there are no guarantees, and many of these same students seek interactions about science with their non-disabled peers.

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There are resources, strategies, and recommendations that can help you to address out-of-science classroom activities for students with disabilities:

- **Examine the language you use to advertise science-related activities**. Does a brochure, an announcement, or a fact sheet encourage students with disabilities to participate? Any announcement of a class, field trip, summer internship, camping experience, or other event can easily include the sentence, "Please contact . . . for information regarding accommodations for a participant with a disability." While this does not ensure that every request for accommodation can be granted, it does convey the message that students with disabilities are welcome and accommodations, such as wheelchair accessibility or sign language interpreting, will be considered.

- **Learn more about accommodation strategies.** It is important that expectations for successful achievement in science remain high for every student. No curriculum or

activity should be modified or "watered down" for a student with a disability. The best accommodation strategies result from a conversation between the student and the instructor. Every student has different needs, even when the disabilities are similar. A Special Education teacher can augment the conversation, if needed, and suggest accommodations that might not be familiar to the student. Resource: AccessSTEM Website: http://www.uwashington.edu/doit/stem

✦ **Consider Universal Design.** "Universal Design" is an approach being taken by more and more educators. It means that products and environments are designed to be used by all people, to the greatest extent possible, without the need for adaptation or specialization. Many science laboratories are now designed with consideration for user's possible accommodation needs and the probability that needs can change over time. Resource: AccessSTEM Website: www.uwashington.edu/doit/stem

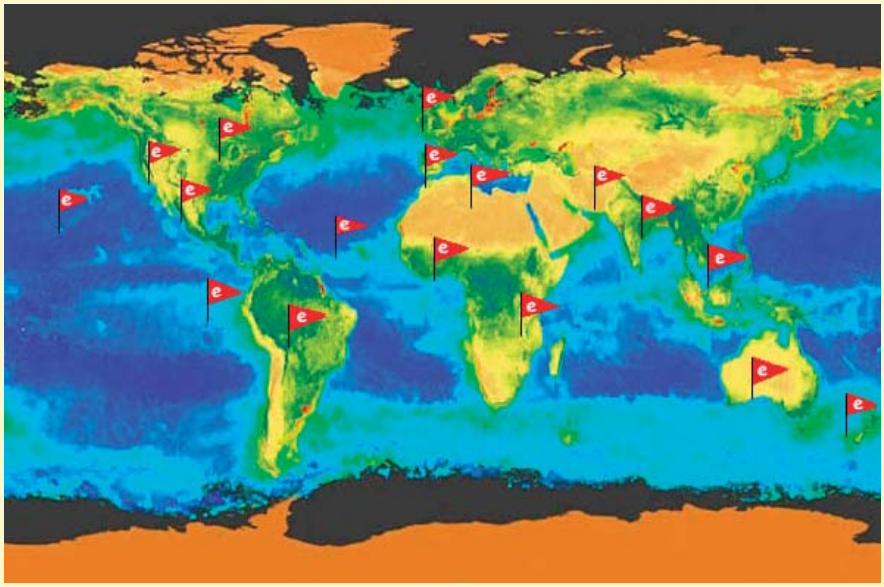
✦ **DOIT (Disabilities, Opportunities, Internetworking, and Technology)** at the University of Washington, http://www.washington.edu/doit/, supports the application of universal design to physical spaces, instruction, technology, and services.

✦ **Science Education for Students with Disabilities (SESD)**, an affiliate of the National Science Teachers Association (NSTA), http://www.sesd.info/ promotes the teaching of science and curriculum development for every student.

Excitement and achievement in science must begin at an early age. Every child deserves the opportunity to achieve beyond expectation. It is time in this new millennium for science to welcome everybody.

Laureen Summers is a program associate at the American Association for the Advancement of Science. She works with the ENTRY POINT! program, a summer internship program for undergraduate and graduate students with disabilities. Summers is also President (until March 2009) of Science Education for Students with Disabilities (SESD), an affiliate of NSTA.

Images: the American Association for the Advancement of Science, June 2002; http://ehrweb.aaas.org/entrypoint/paths/index.html



Map image credit: NASA/Goddard Space Flight Center, The SeaWiFS Project and GeoEye, Scientific Visualization Studio

YEAR of SCIENCE 2009
Explore. Empower. Engage…

Exploring Evolution: To many, evolution is a thing of the past - an idea that Darwin developed, or an explanation of fossils and things that lived long ago. But evolution is not only alive and well in 2009, it is a global phenomenon and critical to our understanding of many aspects that influence our lives. Visit our evolution map (http://www.yearofscience2009.org/themes_evolution/explore/) to see a sampling of recent news stories focusing on research that is deeply intertwined with evolutionary concepts and enjoy the profiles of practicing evolutionary scientists, who have contributed brief stories about their research and the importance of evolution.

Questions? Comments? Ideas? Contact Sheri Potter at spotter@copusproject.org.

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American Institute of Biological Sciences
THE GEOLOGICAL SOCIETY OF AMERICA
NSTA National Science Teachers Association
University of California Museum of Paleontology