

## **COPUS and Year of Science 2009**

### **Executive Summary**

**Sheri Potter,**

**May 11, 2008**

COPUS, a grassroots initiative to unite diverse scientific stakeholders in an effort to improve the general scientific literacy and engagement among the public, has continued to grow rapidly through early 2008. At the AIBS Council Meeting May 2007, there were 46 participating organizations, by the December board meeting there were 141, and today there are 222, demonstrating exceptional growth and continued interest in the project's endeavors. The participation base is becoming more diverse and inclusive, with representation from numerous scientific disciplines and types of organizations interested in promoting public understanding of science. AIBS member societies and organizations continue to be active participants in the growing network.

The COPUS participants and organizers remain focused on developing the three foundational components according to the strategic outlook for the project:

- I. The COPUS Network,
- II. The celebration of 2009 as the Year of Science, and
- III. Integration with the Understanding Science Web site.

**COPUS and Year of Science 2009**  
**Full Report to the Board**  
**Sheri Potter,**  
**May 11, 2008**

**I. The COPUS Network**

The most recent list of the 222 network participants is included with this report.

COPUS leadership has been further defined and diagrammed to help participants understand how the network initiatives are catalyzed.

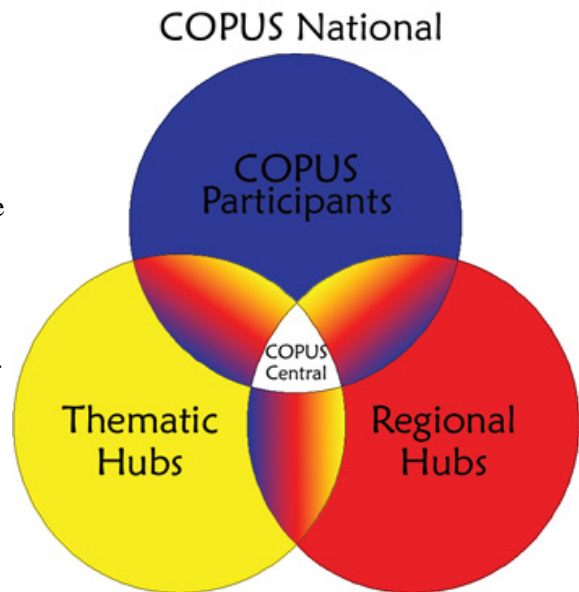
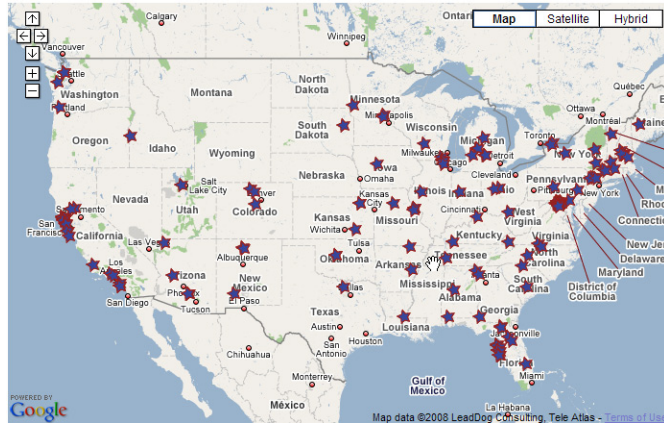
**COPUS National** is an active set of interacting networks and hubs that operate locally, regionally, and nationally. At the national level, the Coalition is represented and guided by **COPUS Central** composed of

- the **Steering Committee** that provides overall direction for COPUS, approves inductees onto the Action Team, and makes all decisions related to expenditures
- the **Action Team** responsible for COPUS promotion and expansion
- a set of **Advisors**, who offer guidance to the Steering Committee relevant to their areas of expertise
- the **COPUS Network Project Manager**, who is responsible for COPUS communications and the daily operations of the Coalition

**COPUS Regional and Thematic hubs** provide not only the local connections relevant to a particular regional audience or to a group sharing common interests, but they also provide the potential for a higher level of sustainability for the COPUS effort.

- **COPUS Regional Hubs**, are locally-based communities of COPUS participants and science stakeholders that work together within a designated geographic region to promote the public understanding of science.

- **COPUS Thematic Hubs**, represent nationally distributed peer communities that are interested in building bridges between their members, COPUS national, and the regional hubs to increase the public understanding of and engagement in science.



**Steering Committee Members**

**Lee Allison**, Director, Arizona Geological Survey

**Jack Hehn**, Director of Education, American Institute of Physics

**Jack Hess**, Executive Director, Geological Society of America

**Jay Labov**, Senior Advisor for Education and Communications, National Academy of Sciences

**Richard O'Grady**, Executive Director, American Institute of Biological Sciences

**Judy Scotchmoor**, Assistant Director, University of California, Museum of Paleontology, Education and Public Programs

**Action Team Members**

**Melissa Anley-Mills**, News Director, Office of Research and Development, United States Environmental Protection Agency

**Jennifer Collins**, Science Teacher (7th Grade), South County Secondary School, Lorton, VA

**Roger Harris**, Director, Emerging Technologies and Research Analysis at Sigma Xi, The Scientific Research Society

**Chris McLelland**, Teacher (K-12) Programs, in Geological Society of America's Education and Outreach Department

**Holly Menninger**, AIBS COPUS Activities Manager, Senior Public Affairs Associate, American Institute of Biological Sciences

**Richard O'Grady**, Executive Director, American Institute of Biological Sciences

**Sheri Potter**, COPUS Network Project Manager, Senior Associate, Executive Office, American Institute of Biological Sciences

**Judy Scotchmoor**, Assistant Director, Education and Public Programs, Coalition on the Public Understanding of Science, Museum of Paleontology, University of California, Berkeley

**Aimee Stern**, President, Stern Communications

**Ben Wiehe**, Outreach Coordinator at WGBH Educational Foundation

**Advisors**

**Kent E. Holsinger**, 2006 President, American Institute of Biological Sciences, University of Connecticut

**Richard Stucky**, Curator, Denver Museum of Nature and Science

**Gerald F. Wheeler**, Executive Director, National Science Teachers Association

**Network Project Manager**

**Sheri Potter**, COPUS Network Project Manager, Senior Associate, Executive Office, American Institute of Biological Sciences



proposed as a dynamic and interactive Web site utilizing the latest technologies to engage a public that will visit frequently to see what is new and interesting.

## II. Year of Science 2009

Anticipation for the Year of Science 2009 is actively building. While the underlying thread of Year of Science 2009 is to celebrate "how we know what we know." Its purpose is to engage the public in science and improve public understanding about how science works, why it matters, and who scientists are.

As a response to concerns about the scope and responsibilities of building programs or activities for an entire year, COPUS Central and the hub leaders worked together to break down the Year into focused months that could be used to guide participants in a themed approach:

- **January** - Process and Nature of Science; Communicating Science
- **February** - Evolution
- **March** - Physics and Technology
- **April** - Energy resources
- **May** - Sustainability and the Environment
- **June** - Oceans and Water
- **July** - Astronomy
- **August** - Weather and Climate
- **September** - Biodiversity and Conservation
- **October** - Geosciences and Planet Earth
- **November** - Chemistry
- **December** - Science & health

The hope being that by following a thematic approach, an organization can:

- Focus YoS09 activities in the month(s) that best reflect the organization's interests and expertise.
- Take the challenge of weaving a specific science interest or specialty through all the themes to demonstrate how interconnected science is!
- Seek an expert in one of the themes with whom they have never worked before and design an activity combining their interests.
- Volunteer to be on a team to build public-friendly resources for the community to share!

Nationally coordinated activities are being organized by the COPUS community during the celebration of Year of Science 2009:

- A kick off event is being planned in conjunction with the Society of Integrative and Comparative Biology at their annual meeting in Boston, January 3-6, 2009. Through this collaboration, meeting attendees will be able to learn more about informal outreach activities and strategies for communicating science to the general public.

- Existing resources are being leveraged and new resources developed by COPUS participants for electronic distribution among the COPUS network and through the Year of Science 2009 Web site .
  - o In January, a new resource demonstrating the *real* process of science will be released to the COPUS Network as a part of the launch of the Understanding Science Web site.
  - o Collaboration is occurring with Sloan Career Cornerstone Center to weave a career strand through Year of Science 2009.
  - o Funding is being sought in collaboration with the North Carolina Museum of Natural Science to develop Webinars—Web based seminars—where interested community members will learn ways to engage the public and strategies for improving communicating science to the general public.
  
- Toolkits will be available to guide COPUS participants in engaging with national and international projects at the community level.
  - o The Encyclopedia of Life is working with COPUS to build a toolkit for researchers to work with community groups and schools to build interest in their local flora and fauna while simultaneously contributing to the collective database of knowledge about the biodiversity on our planet.
  - o Sigma Xi is planning to release their guide to Science Café development to COPUS network participants in 2009. This guide provides everything someone needs to start a Science Café in their community.
  - o The Elementary Science Coalition is working with COPUS on the “The National Refrigerator Door Project,” an effort to broaden the conversation about science and science education to include children and families and to collect data about children’s perceptions of their experiences with science.

We will continue to use social networking resources as a mechanism for communication about YoS activities in 2009 and have added an action team member with special expertise in this area to help guide these activities.

### III. Understanding Science Web site – [www.understandingscience.org](http://www.understandingscience.org)

Scheduled to launch along with the Year of Science 2009, this new, NSF-funded resource is being developed by the University of California, Berkeley and the Museum of Paleontology (UCMP), in collaboration with an impressive set of expert advisors. Web development is underway and several components of this new resource are currently being field-tested with students and teachers K-16, as well with members of the scientific research community. The rationale behind this project was the recognition that science research indicates that students and teachers at all levels have poor understandings of the nature of science. Many think that science amounts to learning facts from a textbook, following the simple steps of “the scientific method,” and working in an isolated lab. Of course, the true nature of science is much more complex—and exciting! Regretfully, this perspective is often reinforced within our science textbooks.

*Understanding Science* is a freely accessible web-based resource that provides a new approach for teaching the nature of science, one that includes the dynamic, iterative, and creative process that relies on interactions among scientists around the world who apply a variety of methods to help unravel the mysteries of the universe. The goals of the *Understanding Science* project are to (1) improve teacher understanding of the scientific enterprise and (2) provide materials and tools that enable K–16 teachers to incorporate the true nature and process of science throughout their teaching.

Highlights of this new resource include:

- A dynamic representation of the *real* process of science
- Science stories from multiple disciplines
- Inspiring scientist profiles
- Cartoons illustrating key concepts
- Regularly updated stories on science in the news
- Activities for direct use by students
- A database of vetted lesson plans
- Teaching tips and strategies
- Friendly but comprehensive background material
- Clarification of misconceptions

Richard O'Grady serves on the Advisory Board to this project and the UCMP welcomes additional collaborations with AIBS and its members on the project development.



## Participants List May 2008

4Frontiers Corporation  
Abbott Laboratories  
Alaska Division of Geological & Geophysical Surveys  
Alaska EPSCoR (Experimental Program to Stimulate Competitive Research)  
Alliance for Science  
American Association for the Advancement of Science  
American Association of Physics Teachers  
American Astronomical Society  
American Fisheries Society  
American Geological Institute  
American Geophysical Union  
American Institute of Biological Sciences  
American Microscopical Society, Inc.  
American Physical Society  
American Physiological Society  
American Phytopathological Society  
American Psychological Association  
American Society for Microbiology  
American Society of Human Genetics  
American Society of Naturalists  
American Society of Plant Biologists  
American Sociological Association  
Arizona Geological Survey  
Arkansas State University, Department of Biological Sciences  
Arkansas State University, Department of Chemistry and Physics  
Ask A Biologist  
Association for Astronomy Education  
Association for Science Teacher Education  
Association for the Advancement of Sustainability in Higher Education (AASHE)  
Association of American State Geologists  
Association of Science-Technology Centers  
Astronomical Society of the Pacific  
Ballston Science and Technology Alliance  
Baltimore Ecosystem Study, Long-Term Ecological Research  
Banana Slug String Band  
Berkeley Natural History Museums  
Biological Sciences Curriculum Study (BSCS)  
BioOne  
Biotechnology Institute  
Botanical Society of America  
Boyce Thompson Institute for Plant Research  
Burke Museum of Natural History and Culture  
California Academy of Sciences  
California Science Teachers Association  
California Sea Grant  
California State Parks Foundation  
Camp Bayou Outdoor Learning Center  
Center for Excellence in Education  
Center for Precollegiate Education and Training, University of Florida  
Center for Science Education @ Space Science Laboratory, UC Berkeley  
Center of Integrated Nanomechanical Systems (COINS)  
Cephalopodcast - The Ocean Podcast  
Chicago Council for Science and Technology  
Clergy Letter Project  
Coalition for Science After School  
Colorado Science Forum  
Coolidge Corner Theatre Foundation  
Darwin Day Celebration  
Denison University Biology Society  
Denver Museum of Nature and Science  
Diversity in the Biological Sciences  
DoctorSlime's Science Shows  
Earth, Life & Time Program, College Park Scholars  
Ecological Society of America  
Elementary Science Coalition  
Emory College Center for Science Education  
Encyclopedia of Life  
Entomological Society of America  
Environmental Information Coalition  
EPSCoR/IDeA Foundation  
Eversole Associates  
Florida Academy of Sciences  
Florida Citizens for Science  
Florida Museum of Natural History  
Florida State University  
Forum on Science Ethics and Policy  
Freethought Society at Tufts  
Galileo Players -- the science of sketch comedy  
Geological Society of America  
Gordon A. Cain Center for Scientific, Technological, Engineering and Mathematical Literacy  
Grand Canyon Association  
Heartland Area Education Agency  
Herpetologists' League  
HMS Beagle Project  
Human Anatomy & Physiology Society  
Illinois Science Council  
Illinois State Museum  
Immersion Presents  
Initiative for Science Literacy  
Insight Lab for Science Outreach and Learning Research  
Inspiration Software  
Institute of Biological Engineering  
Institute of Food Technologists  
International Society of Protistologists  
Journal of Irreproducible Results  
Kansas Citizens for Science  
Keane Biological Consulting  
Kennesaw State University, College of Science and Mathematics  
KQED Public Broadcasting  
Lansing Community College Science Department  
Lawrence Berkeley National Laboratory  
Lawrence Hall of Science  
Light in Winter Festival  
Liz Lerman Dance Exchange  
Louisiana State University: Museum of Natural Science  
Lyme Regis Development Trust - Fossil Festival - Rising Seas  
Maine Mathematics and Science Alliance  
Marian Koshland Science Museum  
Massachusetts Society for Medical Research  
Michigan State University Museum  
Minnesota Science Teachers Association, Inc.  
MIT Edgerton Center Outreach Program  
MIT Museum  
MIT, Department of Biological Engineering  
Montgomery County Public Schools DNA Resource Center  
Museum of Nature and Science  
Museum of the Rockies  
Mycological Society of America  
Nanoscale Informal Science Education Network (NISE Net)  
National Academy of Sciences  
National Association of Biology Teachers  
National Center for Ecological Analysis and Synthesis

National Center for Science Education  
 National Earth Science Teachers Association (NESTA)  
 National Evolutionary Synthesis Center (NESCent)  
 National Institute for Student Access to Space  
 National Institute of General Medical Science, National Institutes of Health  
 National Middle Level Science Teachers Association  
 National Museum of Natural History  
 National Science Resources Center  
 National Science Teachers Association  
 Nehru Centre  
 New Hampshire AAUW (American Association of University Women)  
 New Mexico Department of Cultural Affairs  
 New Mexico State University Center for Natural History Collections  
 New Mexico State University: Department of Entomology, Plant Pathology and Weed Science  
 New York Botanical Garden  
 New York Hall of Science  
 New York State Museum  
 NOAA Education  
 NOAA Ocean Exploration  
 NOAA Office of National Marine Sanctuaries  
 North American Lake Management Society (NALMS)  
 North Carolina Museum of Natural Sciences  
 Northwest Association for Biomedical Research  
 Northwest School  
 Ohio Academy of Science  
 Oklahomans for Excellence in Science Education (OESE)  
 Open Knowledge and the Public Interest  
 Pacific Grove Museum of Natural History  
 Pacific Science Center  
 Paleobio.org  
 PaleoStrat  
 Palm Beach Zoo  
 Pennsylvania Citizens for Science  
 Pennsylvania Science Teachers Association  
 Pharyngula  
 Pier Aquarium, Inc.  
 Pinellas County Environmental Lands Division  
 Project Exploration  
 Projects for a New Millennium DBA Projects2k  
 Public Productions  
 Sally Ride Science  
 San Diego Science Festival  
 Santa Fe Alliance for Science

Science Cabaret  
 Science Center of Pinellas County  
 Science Communication Consortium  
 Science Education for Students with Disabilities (SESD)  
 Self Reliance Foundation  
 Seymour Marine Discovery Center at Long Marine Laboratory, UC Santa Cruz  
 Show Me Science Alliance  
 Sigma Xi - Chapter 301 - University of California, Santa Cruz  
 Sigma Xi, The Scientific Research Society  
 Sloan Career Cornerstone Center  
 SoCal Science Cafe, University of California Irvine  
 Society for Developmental Biology  
 Society for in Vitro Biology  
 Society for Industrial Microbiology  
 Society for Integrative and Comparative Biology  
 Society for Northwestern Vertebrate Biology  
 Society for Neuroscience  
 Society for the Study of Amphibians and Reptiles (SSAR)  
 Society for the Study of Evolution  
 Society of Environmental Toxicology and Chemistry of North America  
 Society of Physics Students  
 Society of Systematic Biologists  
 Society of Vertebrate Paleontology  
 Society of Wetland Scientists  
 Soundprint Media Center, Inc.  
 South Carolina Science Council  
 South Dakota State University  
 Southern Appalachian Botanical Society  
 SouthWest Florida Water Management District  
 Speaking Science 2.0  
 St. Louis Astronomical Society  
 Stanford University's School of Earth Sciences  
 Stern Communications  
 Student Pugwash USA  
 Synthetic Biology Engineering Research Center, University of California at Berkeley  
 The Florida Aquarium  
 This Week in Science  
 Tofino Botanical Gardens  
 UC Davis Arboretum (University of California, Davis)  
 United States Environmental Protection Agency  
 University Corporation for Atmospheric Research (UCAR)  
 University of California Museum of Paleontology  
 University of California Press

University of California, Berkeley, Office of the Vice Chancellor for Research  
 University of Connecticut  
 University of Maryland Biotechnology Institute (UMBI)  
 University of Michigan: UM Exhibit Museum of Natural History  
 University of Michigan: UM Museum of Zoology  
 University of Oklahoma Sam Noble Oklahoma Museum of Natural History  
 Vanderbilt Center for Science Outreach  
 Visionlearning  
 Wellesley College Botanic Gardens  
 West Virginia Higher Education Policy Commission, Division of Science and Research  
 WGBH Educational Foundation  
 Willow Canyon High School  
 Wonderfest, the San Francisco Bay Area Festival of Science  
 Yale Peabody Museum of Natural History  
 Yale Peabody Museum of Natural History's EVOLUTIONS After School Program



### **A Celebration of How We Know What We Know.**

The **Coalition on the Public Understanding of Science** (COPUS) is making plans now to celebrate the **Year of Science 2009** (YoS09). The goal of this national, year-long celebration of science is to engage the public and improve public understanding about how science works, why it matters, and who scientists are.

COPUS is a growing grassroots network of universities, scientific societies, science centers and museums, government agencies, advocacy groups, media, schools, educators, businesses, and industry, formed in response to concerns about national scientific literacy. In concert with the formation of the national coalition, regionally based hubs are forming in communities from coast to coast. COPUS participants cross traditional scientific disciplinary boundaries and join with others within their communities to coordinate activities, programs, and special events in support of the Year of Science 2009.

We invite you to join this celebration of science and to work with others in your community to engage the general public in dynamic ways that will make science more accessible, personally meaningful, and locally relevant.

By participating in COPUS, your organization contributes to a national effort and in return, your organization may:

- Gain new opportunities to communicate and collaborate on national and local levels
- Increase audience participation and improve visibility of science programs and resources nationally and locally via the COPUS program and resource directory and the YoS09 website
- Enhance partnership opportunities by forming a communication network among peers with common passions and concerns, but different perspectives and areas of expertise
- Leverage existing resources by sharing best practices, tools, and content for improving public engagement in science
- Combine limited resources to expand efforts to new audiences
- Facilitate local awareness of and participation in national initiatives

To participate, simply [register your organization](#) and your YoS09 events in the [COPUS Program and Resource Directory](#) where members of the public will be able to access the information through the Year of Science public portal (coming soon) to search for resources and activities in their areas. For more information about the Year of Science 2009, visit [www.yearofscience2009.org](http://www.yearofscience2009.org)

# The COPUS Clarion

A Monthly Newsletter of the COPUS Network Volume 2 Issue 1 January 2008

*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.*

## University Wide Celebration of the Year of Science 2009

Contributed by: Kent Holsinger, University of Connecticut ([kent@darwin.eeb.uconn.edu](mailto:kent@darwin.eeb.uconn.edu))

With 350 days and counting to Year of Science 2009, the University of Connecticut has begun its planning for celebratory activities. Excited about the opportunity to participate in a community wide effort, the University is seeking ways to engage diverse departments in the celebration. Universities are uniquely positioned to emphasize the theme of YoS'09 "How We Know What We Know" in an exploration of the role science plays in human health and well-being across all disciplines of study.

For more than a millennium, universities have been centers of teaching, learning and scholarship. Modern universities and colleges are home to scientists whose discoveries help us to understand the world, and they are home to artists, historians, and philosophers whose work helps us to understand the meaning of those discoveries. Yet science is increasingly under attack, whether from those who promote the teaching of intelligent design creationism or from those who deny that human activities are warming the global climate.

*This is ... a time when a US senator proclaims that "the greatest climate threat we face may be coming from alarmist computer models," when a state superintendent of public instruction concludes that "there is no evidence yet to claim how the earth was created and no evidence to connect the family of apes with the family of man," and when a congressman feels compelled to write to the head of a federal agency complaining that "good science cannot long persist in an atmosphere of intimidation." (Holsinger, BioScience 56:955; 2006)*

As centers of teaching, learning and scholarship, universities and colleges have an opportunity to support the outstanding science that is done within their own walls and to show cohesive support of scientific discovery. Year of Science 2009 provides a great unifying force for doing so.

Plans for the celebration at the University of Connecticut are only beginning to form, but our activities are likely to include a special lecture series for the lay public and the campus community about the nature of science and its meaning for our lives; student arts competitions for writing, drama, visual, or performance that illustrate or exemplify scientific principles; science "jams" in which scientists, poets, musicians, actors, visual artists, or performance artists demonstrate the impact of a scientific research project in a 3-minute performance; and a day-long symposium focused on exploring what science does or does not reveal about human nature and human potential.

In 2009 we celebrate many diverse seminal events in science, the 200th anniversary of Darwin's birth, the 150th anniversary of his publication of *On the Origin of Species*, the 400th anniversary of Galileo's first look to the skies, the publication of Kepler's first two laws of planetary motion – and a Year of Science. Universities have an opportunity to play a significant leadership role in celebrations of the Year of Science 2009, and by doing so, will lay the groundwork to ensure that 2009 marks the start of a new era in public understanding of science.

## COPUS Web site Updates

The COPUS Web site underwent significant changes in December. By logging into "My COPUS home page" at <http://copusproject.org/participate/index.php>, COPUS participants are now able to invite colleagues from their organization to set up a user account on the COPUS Web site. By doing so, key people in your organization will be able to add programs and resources to the directory, download COPUS and Year of Science logos, and will receive the COPUS newsletter. If your organization inducted new officers with the new year, this is a great opportunity to add them to the list of contacts so that they can keep up to date with COPUS progress and initiatives.

Other new/ updated pages:

» Year of Science 2009 page:  
[www.yearofscience2009.org](http://www.yearofscience2009.org)

» Support COPUS page:  
[www.copusproject.org/support.php](http://www.copusproject.org/support.php)

» COPUS participant map:  
[www.copusproject.org/participants/participants\\_map.php](http://www.copusproject.org/participants/participants_map.php)

» COPUS regional hub map:  
[http://copusproject.org/regional\\_hubs.php](http://copusproject.org/regional_hubs.php)

# Featured Program: Life@UCF

Contributed by: Edward A. Haddad, Executive Director, Florida Academy of Sciences;  
Past-president and current director of LIFE@UCF  
(FloridaAcademyofSciences@osc.org)

## SCIENCE NEVER GROWS OLD!

One of the major functions of COPUS is raising the level of scientific literacy among the general public. The nation, and Florida, in particular, is experiencing a growing population of retired and elder citizens. Today's elder generation is vastly different from previous older populations in that they are well-educated, affluent, and vitally interested in learning about and contributing to the world around them. As such, this population is an ideal outlet for science programs, activities, and outreach.

In Orlando, Florida, the University of Central Florida is home to the Learning Institute for Elders (LIFE@UCF). This is a group of more than 450 students aged 50 and older who are pursuing knowledge for the sake and joy of learning. These students meet weekly on the UCF campus, taking 12 courses throughout the academic year, two each month. For the most part these courses are taught by UCF faculty members, and the courses cover a range of subjects from physics to English. A recent sampling of courses offered include robotics, simulation, microbiology, and forensics.

LIFE@UCF faculty have been amazed to walk into the classroom and find hundreds of wide-awake, eager students taking notes and asking challenging questions. They quickly warm to their attentive elder students — so much so that LIFE now enjoys a lengthy waiting list of professors who would like to teach the group. A good number of LIFE courses are offered in the sciences. In fact, the College of Sciences at UCF is the principal host and University liaison to the LIFE program. LIFE@UCF gives back to the University through its scholarships and grants program which each year awards substantial funds to UCF departments, individual professors, and student-centered organizations and study programs. The LIFE students serve as ready research subjects to the University for studies where segments of the elder population are needed.

In planning events and outreach to the public under the auspices of the COPUS network, I urge my fellow COPUS participants to consider focusing on the population of elders in their area. These citizens are interested and eager to learn about science! To learn more, visit the LIFE@UCF Web site at: <http://life.org.cos.ucf.edu/>



## Welcome New COPUS Participants!

- Alaska EPSCoR
- American Association for the Advancement of Science
- American Microscopical Society, Inc.
- American Society of Naturalists
- Ask A Biologist
- Banana Slug String Band
- California Academy of Sciences
- Center for Excellence in Education
- Denison University Biology Society
- DoctorSlime's Science Shows
- Earth, Life & Time Program, College Park Scholars
- The Encyclopedia of Life
- Entomological Society of America
- Environmental Information Coalition
- Freethought Society at Tufts
- Galileo Players
- Gordon A. Cain Center for Scientific, Technological, Engineering and Mathematical Literacy
- Immersion Presents
- Lawrence Berkeley National Laboratory
- Lawrence Hall of Science
- Maine Mathematics and Science Alliance
- Museum of Nature and Science
- National Institute for Student Access to Space
- New Mexico Department of Cultural Affairs
- NOAA Education
- PaleoStrat
- Pennsylvania Citizens for Science
- Pennsylvania Science Teachers Association
- Projects for a New Millennium DBA Projects2k
- Santa Fe Alliance for Science
- Sigma Xi - Chapter 301 - University of California, Santa Cruz
- South Carolina Science Council
- UC Davis Arboretum (Univ. of California, Davis)
- Vanderbilt Center for Science Outreach

**Questions? Comments? Ideas?** Contact Sheri Potter at [spotter@copusproject.org](mailto:spotter@copusproject.org).

Support for COPUS planning workshops was provided by the National Science Foundation under Grant Nos. EAR-0606600 and EAR-0628790 to the University of California Museum of Paleontology. The cognizant fiduciary body for COPUS and the Year of Science 2009 project is the American Institute of Biological Sciences Inc., a 501(c)(3) nonprofit organization, which is providing staffing support, IT, and other resources. The Geological Society of America, the University of California Museum of Paleontology, and the National Science Teachers Association are also contributing funds for COPUS and Year of Science 2009. The Steering Committee welcomes support from additional scientific organizations and is also pursuing funding from federal agencies and private foundations.



# The COPUS Clarion

A monthly newsletter of the COPUS network Volume 2 Issue 2 February 2008

*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.*

## National meets regional, COPUS Hubs gear up for inaugural Hub meeting

Now with 189 participating organizations, the national network of COPUS continues to grow. Concurrently, the energetic expansion of regionally based activities is helping to buoy our communities' investment in the public understanding of science. Connecting the two networks—the national and the local—is key to the success of COPUS initiatives. Just like the COPUS national network, Regional Hubs forge partnerships and build collaboration networks for regionally based activities in support of education and community outreach for science. By leveraging resources locally and nationally, we can coordinate our activities and become more effective at outreach efforts. The first meeting of Hub leaders from across the nation will take place March 7–8 in Tampa/St. Petersburg, Florida, hosted by the University of South Florida St. Petersburg and funded by the National Science Foundation (Award Id : EAR-0814048). The goals of this meeting are to share successes and best practices, focus on critical needs for a successful Hub, and discuss strategies for long-term networking.

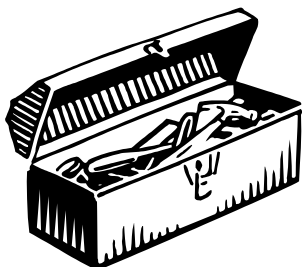
One of the Hubs attending this meeting is based in Chicago, IL, and is hosted by the Chicago Council on Science and Technology (C<sup>2</sup>ST). Founded in November of 2006, C<sup>2</sup>ST was already established as a community coalition committed to promoting science and technology when it decided to serve as liaison for the Chicago area in the COPUS Hub network. C<sup>2</sup>ST sponsors programs and discussions on scientific topics important to the local community, and advocates for regional science policy. It is a leading source of information on policy issues relating to science and technology.

C<sup>2</sup>ST was formed to meet needs that are common to communities across the country:

- to bring together academic, civic, and corporate scientific resources to address key issues of scientific literacy and knowledge;
- to frame these issues for the public in a compelling and comprehensive way; and
- to advocate for these important issues on the local, state, and national levels.

To achieve these goals, C<sup>2</sup>ST hosts forums for its members and the scientific community, supports research and colloquia, fosters collaborations, maintains a working relationship with the science journalism community, and seeks opportunities for science and technology in the Chicago Public Schools system. As a COPUS Hub, C<sup>2</sup>ST connects their regional efforts with the national network of COPUS participants, sharing what has worked in their community, encouraging others to form similar community coalitions, and seeking collaboration with others working toward the same important goals. In summary, C<sup>2</sup>ST builds consensus for science education, technology innovation, and robust growth of the knowledge economy in Chicago and the Midwest.

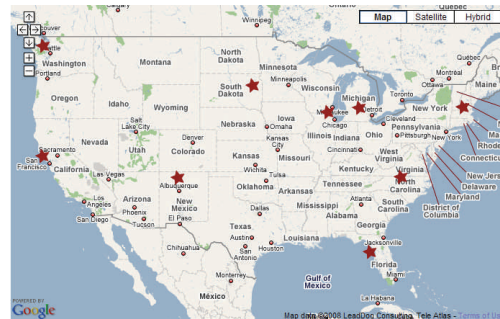
As the Chicago Hub representative, Erin Dragotto of C<sup>2</sup>ST will bring valuable information and expertise to the first national meeting of Hub leaders. She will be joined by six other Hub representatives, who each bring their own expertise and experiences to share in building an effective COPUS infrastructure for coordination at the local and national levels.



A key outcome of the national meeting will be a “**Hub Toolkit**” — an online resource that will provide detailed guidelines for others who want to develop a Regional Hub. Reflecting the recommendations from workshop participants, these guidelines will address responsibilities, expectations, and opportunities of a Hub; the selection of a host institution or organization; and the registration process for a new Hub. The Hub Toolkit will also include tips for expanding the collaboration to key partners, a suggested list of core activities around which to engage the community in science, COPUS resources available in support of Hub activities, suggested activities for Year of Science 2009, and procedures for highlighting Hub activities on the COPUS Web site. Stay tuned! The Hub Toolkit will be available on the COPUS Web site and as a PDF for distribution in early April.

Members of the COPUS network are encouraged to identify ways to support budding Regional Hub efforts:

- » Encourage individuals and organizations to participate in Hubs in their region, or to start their own Hubs;
- » Offer financial assistance or in-kind resources (e.g. printed supplies, Web site development, or extra hands) to help Hubs get their programs off the ground.



*More information about regional hubs, including their location, is available at [http://copusproject.org/regional\\_hubs.php](http://copusproject.org/regional_hubs.php)*

# Featured Program

## Communicating Science:

### Tools for Scientists and Engineers

Contributed by: Tiffany Lohwater, AAAS, [tlohwater@aaas.org](mailto:tlohwater@aaas.org)

#### Communicating Science tools for scientists and engineers



Scientists and engineers -- who foster information-sharing and respect between science and the public -- are essential for the public communication of and engagement with science. Although traditional scientific training typically does not prepare scientists and engineers to be effective communicators outside of academia, funding agencies are increasingly encouraging researchers to extend beyond peer-reviewed publishing and communicate their results directly to the greater public.

The AAAS Center for Public Engagement with Science and Technology, in partnership with the National Science Foundation, has developed a new resource Web site and workshops for scientists and engineers who communicate science with public audiences. "Communicating Science: Tools for Scientists and Engineers" seeks to provide resources, through freely accessible materials online, and through in-person workshops held in regional locations.

The Communicating Science Web site – [www.aaas.org/communicatingscience](http://www.aaas.org/communicatingscience) – was introduced during a workshop at the AAAS Annual Meeting in Boston on February 15, 2008. The new Web site provides free online access to resources for improving communication skills and discovering public outreach opportunities, and encourages broader engagement of scientists and engineers with the public and news media. Online content includes webinars, how-to tips for media interviews and public presentations, and more.

The first full-day Communicating Science workshops for scientists and engineers will be held at San Jose State University in San Jose, California, on March 14 and North Carolina State University in Raleigh, North Carolina, on April 3. Area university faculty and Ph.D. students will be invited to attend. The communications skill-building workshops will include: why science communication is important; defining audience and message in communication with public audiences; media interview practice; public outreach opportunities; interactive panel discussions; and more. Future workshops are in development. For additional information, visit [www.aaas.org/communicatingscience](http://www.aaas.org/communicatingscience).

# How are you celebrating?

[www.yearofscience2009.org](http://www.yearofscience2009.org)

## International Celebrations of Science in 2009

While COPUS is, at this time, localized to the US, we are excited to hear about and share what others in the world are doing to celebrate and promote the public understanding of science. To support our international colleagues, COPUS has launched a new page featuring international organizations engaged in the celebration of science in 2009. Through this page, COPUS links to peers around the world who are showing their support for Year of Science 2009. <http://www.copusproject.org/yearofscience2009/international.php>

### Welcome New Members

American Psychological Association  
Ballston Science and Technology Alliance  
EPSCoR/IDeA Foundation  
Grand Canyon Association  
Initiative for Science Literacy  
Marian Koshland Science Museum  
Michigan State University Museum  
Nanoscale Informal Science Education Network (NISE Net)  
NOAA Ocean Exploration  
NOAA Office of National Marine Sanctuaries  
The Pier Aquarium, Inc.  
Sally Ride Science  
Sloan Career Cornerstone Center  
Society for Industrial Microbiology  
Society for In Vitro Biology  
University of Maryland Biotechnology Institute

**Questions? Comments? Ideas?** Contact Sheri Potter at [spotter@copusproject.org](mailto:spotter@copusproject.org).

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# The COPUS Clarion

A monthly newsletter of the COPUS network Volume 2 Issue 3 March 2008

*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.*

## Who Says Science Can't be Fun-ny?

Contributed by Ronnie Feldman, Producer, Galileo Players – Scientists of Comedy

The world is a funny, funny place. How else can you explain helium's ability to improve your singing voice, the Vatican's planetarium, and the innate joys of bubble wrap? But oddly, science, our best tool to explain the world around us, is often considered boring, complicated, and intimidating. Well, we don't think it has to be! We are the Galileo

*But oddly — science— our best tool to explain the world around us, is often considered boring, complicated and intimidating. Well, we don't think it has to be!*

Players, a professional sketch comedy and improv troupe that focuses on making audiences laugh, using scientific characters and events as inspiration. We tour our theatrical comedy shows around the country performing at colleges, festivals, scientific conferences, and corporate events. Our focus is entertainment, but we try to engage people with ideas and let the science creep in when they're not looking.



*Galileo Player Founders, Ronnie, Tom and Matt work on comedy in the lab.*

We use the history of science for much of our material, as it is filled with drama and irony, great successes and failures, memorable moments, and colorful characters. We write about famous (and sometimes infamous) scientists and statesmen that were extraordinary yet tragically flawed. We improvise about contemporary events and discoveries that have had an effect on our understanding of the world. We poke fun at these characters and moments in history to enlighten the audience about our worlds' rich and varied existence, while sharing a laugh at the same time. And as long as television makes stars out of psychics, and presidential candidates brag about not believing in evolution, there's no shortage of material for relevant social satire that can be used to help bridge the gap between science and society.

We are fortunate to have been a part of lots of creative programming through our travels. The Chicago Field Museum engaged us to write and perform a live theatrical show about dinosaur extinction theories to help promote their Evolving Planet exhibit. The Cleveland Technical Societies had us perform a comedy show on Mole Day\* to help generate interest amongst the scientific community. Case Western University's show was to celebrate Geek Week, Virginia Tech wanted something for their graduate student community, and Buena Vista University wanted to draw attention to their new science building on campus. And we've performed for many scientific conferences for researchers, chemists, genetic engineers, and more, all of whom were looking for something bold and different to celebrate and entertain their members. Turns out PhD's like to laugh too (although they're self-conscious about it).



*Fruit Flies rant about life in the jar*

These are just a few examples of some programming we've been a part of, but the COPUS project and the Year of Science is a great excuse to reach out to the community to discuss and explore how each of our organizations is connected to the world. But let's not take ourselves too seriously, because it's a spoon full of sugar that helps the medicine go down, not a spoon full of  $C_{12}H_{22}O_{11}$ . [www.galileoplayers.com](http://www.galileoplayers.com).

*\*(Yup, you guessed it, Mole Day is celebrated every year on October 23 for Avogadro's number  $6.02 \times 10^{23}$ . Oh and don't forget Pi day on March 14<sup>th</sup>, people!).*

## Welcome New Participants!

- 4Frontiers Corporation
- Baltimore Ecosystem Study, Long-Term Ecological Research
- Camp Bayou Outdoor Learning Center
- Cephalopodcast - The Ocean Podcast
- Coolidge Corner Theatre Foundation
- Elementary Science Coalition
- The Florida Aquarium
- Illinois Science Council
- Inspiration Software
- Keane Biological Consulting
- KQED Public Broadcasting
- National Middle Level Science Teachers Association
- New Hampshire American Association of University Women
- New Mexico State University: Department of Entomology, Plant Pathology and Weed Science
- New York Hall of Science
- Self Reliance Foundation
- Society of Environmental Toxicology and Chemistry of North America

## International Colleagues

- Davidson Institute of Science Education at the Weizmann Institute of Science
- Nehru Planetarium

# Featured Programs

## Science and Art: partners or polarities?

Contributed by Elizabeth Johnson, Liz Lerman Dance Exchange

The past five years prove to the Liz Lerman Dance Exchange that scientists and artists together are excellent partners -- by working together, both benefit by broadening participation and engagement in their craft. Since its inception in 1976 Liz Lerman Dance Exchange has been deeply committed to concert performance, community engagement, and innovative partnerships.



"Ferocious Beauty: Genome," an evening-length performance choreographed by Liz Lerman leads audiences to say "Wow!" as scientists share their knowledge, creativity and passion for discovery via video while dancers translate research on genetic mutations on stage as the "scientist becomes choreographer." Through humor and story (and characters like Ms. TATA, a dominant transcription promoter who "turns the gene on"), act one humanizes science and scientists, and helps audiences connect to the wonder of the world inside of them. The second act makes audiences say "Whoa!" as the implications of genetic research unfold in the light of aging and imperfection, and the conclusion celebrates individual genetic diversity and ancestral commonalities. "Ferocious Beauty: Genome" engages the audience to want to know more about the genetic thread of life.

In addition to the performance work, Dance Exchange collaborates with scientists, educators, artists and community partners to develop a diverse array of related public programming customized to the particular needs of each community. Exemplar programs include science curriculum development using kinesthetic learning structures; artist facilitated, participatory, public forums addressing the legal and ethical implications of genetic research; and teen focused science/ art projects including "Slam Science" where hip hop meets genetics.

As an artist who had never previously connected with science, these experiences have changed my perspective. I now know that science is a creative act. Science is not just about facts; it is about inquiry and the investigation of ideas. I have seen how, when we embody something, we realize the gaps in our knowledge, and that we can be fueled by our ignorance towards understanding. Art helps us feel — as well as think about science; it is a rigorous process, and the best way to understand something, is to make something. I now know that science is beautiful, and our bodies are amazing. For further information visit [www.danceexchange.org](http://www.danceexchange.org).

## Gastropods Teach Science, the Fun Way!

Contributed by Monica Woelfel, Banana Slug String Band

What does a grown man singing and dancing around in a "water droplet" costume have to do with science? Everything, it turns out.

*"Using music to teach science grabs the kids' attention ... they don't even know they are learning; they are having so much fun!"*

Especially if you're one of the thousands of schoolchildren, teachers, and parents who get funky each year to the tunes of the award-winning Banana Slug String Band. As *Parenting Magazine* put it, "With zany, eminently singable songs, the Banana Slugs succeed where many conventional instructors have failed." Based in Santa Cruz, California, the band's four members came together more

than 20 years ago as naturalists at outdoor education camps. They shared a love of music and a passion for teaching young people to be good stewards of the earth. One of them (Steve Van Zandt) also had a knack for writing catchy tunes and whimsical lyrics.

One thing that sets the Banana Slugs apart from other children's bands is a dedication to scientific accuracy in its lyrics. Over the years, this has led them into collaborations with science educators who recognize the band's music as an effective tool. In 1991, for example, the Slugs partnered with MARE (Lawrence Hall of Science's Marine Activities, Resources and Education program) for MARE's K-8 curriculum. A 1999 project used input from biologists and rangers to produce the Band's sixth CD, "Goin' Wild," a musical exploration of the ecology of Grand Teton and Yellowstone National parks.

"Using music to teach science grabs the kids' attention," explains band member Larry Graff. "They don't even know they are learning; they are having so much fun!" The Banana Slugs' performances nationwide have included appearances at Shedd Aquarium in Chicago and at the American Museum of Natural History in New York City. In May 2008, the Slugs will step on stage at Bioblitz, a National Geographic celebration of biodiversity.

This year marks the Slugs' release of their 10th recording, "We All Live Downstream," initiated by an Ohio Environmental Protection Agency grant that launched the Slugs on a series of watershed concerts, workshops, and interactive family performances. Now the Band is dancing with excitement—water-droplet costume and all—at the chance to help children across the country learn watershed ecology. More information can be found on the Slugs Web site at [www.bananaslugstringband.com](http://www.bananaslugstringband.com).



**Questions? Comments? Ideas?** Contact Sheri Potter at [spotter@copusproject.org](mailto:spotter@copusproject.org).

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# The COPUS Clarion

A monthly newsletter of the COPUS network Volume 2 Issue 4 April 2008

*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.*

## COPUS South Florida Meeting Tremendous Success

*Coalition participants inform structure and function of regional hubs and suggest thematic approach for celebrating the Year of Science 2009.*

The first COPUS Regional Hub meeting, held March 7-8 at the University of South Florida St. Petersburg, was an energetic sharing of ideas among 17 participants, all of whom are working either regionally or nationally to support the public understanding of science. Conversations focused on opportunities, advantages and challenges, of forming, expanding, and sustaining COPUS regional and thematic hubs and on ways to promote the Year of Science 2009. The COPUS Hub Toolkit [http://copusproject.org/resources/hub\\_toolkit.pdf](http://copusproject.org/resources/hub_toolkit.pdf) captures recommendations from this meeting and will help guide others in the development of hubs across the country.

Meeting participants also recommended that Year of Science 2009 (YoS09) activities be subdivided into 12 themes, one for each month in 2009, all focusing on how science works, why it matters, and who scientists are. By following this thematic approach, COPUS participants, hubs, and individuals may

- Focus YoS09 activities in the month or months that best reflect their interests and expertise.
- Take the challenge of weaving specific science interests or specialties through all the themes to demonstrate the interconnectedness of science.
- Seek out an expert in the subject area of one of the themes and work with him or her to design an activity that combines his or her interests and yours.
- Host a Science Café each month and use the themes as a guide for planning.
- Coordinate local activities with national resources and events guided by COPUS thematic organizers.

**January-** Process and Nature of Science;  
Communicating Science  
**February-** Evolution  
**March-** Physics and Technology  
**April-** Energy Resources  
**May-** Sustainability and the Environment  
**June-** Oceans and Water  
**July-** Astronomy  
**August-** Weather and Climate  
**September-** Biodiversity and Conservation  
**October-** Geosciences and Planet Earth  
**November-** Chemistry  
**December-** Science and Health

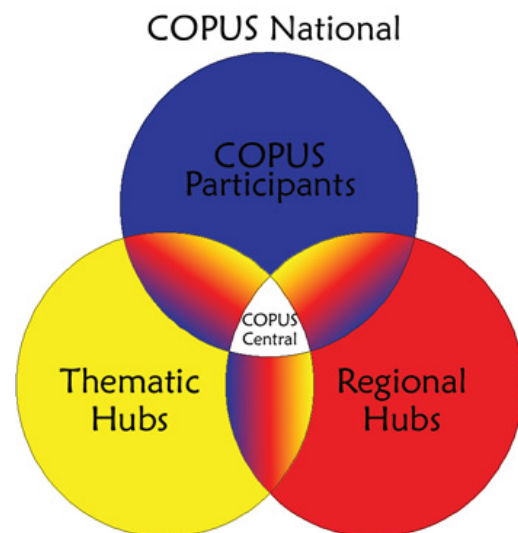
*COPUS participants trying the “thematic approach” in Year of Science 2009 may want to try these recommendations.*

### What are COPUS hubs?

COPUS Hubs determine their own membership, structure, focus, and activities, but whether regional or thematic, they promote the public understanding of and engagement in science with a current focus toward participation in the Year of Science 2009 (YoS09).

**COPUS regional hubs** are *locally based* communities of COPUS participants and science stakeholders that work together within a designated geographic region to promote the public understanding of science. Regional hubs are forming in cities nationwide, see the map at [http://copusproject.org/regional\\_hubs.php](http://copusproject.org/regional_hubs.php)

**COPUS thematic hubs** represent *nationally distributed peer communities* that build bridges between their members, the national coalition, and the regional hubs to advance the public’s understanding of and engagement in science. These hubs cross geographic boundaries and enlist members to offer support to COPUS activities at the national and regional levels. Thematic hubs include organizations and communities such as the Association of Science-Technology Centers, Society of Physics Students, Sigma Xi’s chapter network, state geologists, and Science Cafés. More information is available online at [http://copusproject.org/thematic\\_hubs.php](http://copusproject.org/thematic_hubs.php)



*This diagram demonstrates how the various participatory bodies of the COPUS network interact with one another.*



# Featured Program: Center for Precollegiate Education and Training at UF

## Engaging University Research in the Community

Contributed by: Sara Day, UF-CPET, [saraday@CPET.ufl.edu](mailto:saraday@CPET.ufl.edu)

The University of Florida Center for Precollegiate Education and Training (UF-CPET) promotes and supports the use of the facilities and faculty of the research university in the preparation and enhancement of science and technology teaching at the secondary education level. As the University of Florida's umbrella organization for the articulation and transfer of science and technology to public school and community college teachers, students, and the public-at-large, UF-CPET combines many outreach activities, providing access to university research disciplines and faculty members and fostering life-long relationships between researchers, teachers, and students. UF-CPET science education programs enable individualized and team-centered direct public dissemination of research and knowledge through enhanced teaching.



Now in its 50th year of outreach programming, UF-CPET collaborates annually with approximately 300 faculty volunteers, as well as with hundreds of educators from around the state. Program participants enjoy great benefits: with the support of UF-CPET staff, volunteer researchers learn how to communicate their science effectively and plant seeds for future students while meeting the broader-impact requirements of their research; teachers enjoy learning about cutting-edge science being carried out in their state, and they learn best practices for improving the quality of their science instruction; and students gain hands-on experience with cutting-edge research, stimulating a life long appreciation of science and its process while sparking an interest in the exciting world of careers in science.

Volunteers dedicate their time, resources, and laboratories to assist CPET staff members with programs such as the Summer Science Institute for teachers, the annual Mini Medical School, and Special Explorations for Teachers and Students, to name a few. A detailed list is available on the CPET Web site [www.cpet.ufl.edu/default.html](http://www.cpet.ufl.edu/default.html). These programs allow teachers, students, graduate students, researchers, and industry stakeholders to be at the forefront of science and technology literacy, educational vision, and workforce development by uniting them in laboratory-based investigations and technology-driven solutions in science and mathematics.

Other universities, such as the Baylor College of Medicine in Houston, Texas, are building similar programs to help connect research scientists on campus to the community. The Center for Educational Outreach [www.ccitonline.org/ceo/](http://www.ccitonline.org/ceo/) at Baylor aims "to advance quality teaching and learning in science and health, and to promote access to careers in medicine and science-related fields." Baylor's center, like UF-CPET, has expanded its collaborations beyond university walls to include many of the state's key stakeholders in development and implementation of programming.

"Not all scientists are naturally gifted at communicating and engaging broad audiences in the exciting research they conduct in their labs and in the field—but [they] understand the critical need to do so," says UF-CPET Director Mary Jo Koroly. "Programs like CPET enable them to team up with staff who are gifted as science communicators, so that the university can effectively support and engage educators, students, and the public in our state and community in learning about the value and nature of science."

### Welcome New Participants!

- American Astronomical Society
- New Mexico State University Center for Natural History Collections
- Ohio Academy of Science
- Pacific Grove Museum of Natural History
  - Paleobio.org
  - Palm Beach Zoo
- Seymour Marine Discovery Center at Long Marine Laboratory, UC Santa Cruz
- University of California, Berkeley, Office of the Vice Chancellor for Research

### International Registrant

-IBscientific

**Questions? Comments? Ideas?** Contact Sheri Potter at [spotter@copusproject.org](mailto:spotter@copusproject.org).

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## Strategic outlook: Coalition on the Public Understanding of Science

*History suggests that a nation that relinquishes the torch of science puts its future prosperity at risk and jeopardizes its place in the history of civilization. The [National Science] Board believes that we must not let this fate befall our country.*

National Science Board (NSB) 2020 Vision for the National Science Foundation, December 28, 2005

### I. Rationale and Goals

#### Brief Description:

The Coalition on the Public Understanding of Science (COPUS) is a grassroots effort linking universities, scientific societies, science centers and museums, government agencies, advocacy groups, media, educators, 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. A key objective of COPUS is to build bridges among its participants, creating new forums for communication, and developing new partnerships for engaging the public with science.

#### Rationale for COPUS:

Disturbing downward trends in science education, low levels of general scientific literacy, and increasing alarms about US competitiveness necessitate coordinated action by science stakeholders. Specific examples of these concerns include:

- A recent National Science Board poll reports that two-thirds of Americans do not understand what science is, how it is conducted, and what one can expect from it.
- A recent Gallup poll reports widespread and increasingly prevalent belief in pseudoscience.
- There is a growing public complacency about and disengagement from science at the very moment when the impact of science on public life is greater than ever.
- The Business Roundtable of major US companies notes that the scientific and technical building blocks of our economic leadership are eroding at a time when many other nations are gathering strength.

#### The goals of COPUS are to:

- Develop a shared appreciation of science, its contributions to the quality of life, and its underlying role in technology and engineering.
- Inform and engage the public in and about science, its process and products—how it is done, what roles science and scientists play in society, and the benefits of using the process of science to make informed decisions and address challenges.
- Make science more accessible to everyone.

#### To support its goals, COPUS is:

- Building a long-term network among all stakeholders, including the scientific, education, policy, media, government, and business communities, and the general public;
- Providing a national online searchable directory of its participating organizations' events and programs in the public understanding of science to share information with each other as well as increase public awareness of science activities in their communities;
- Sponsoring and coordinating the Year of Science 2009 ([www.yearofscience2009.org](http://www.yearofscience2009.org)) as a COPUS activity.
- Integrating with other key national resources such as the Understanding Science Web site currently under development ([www.understandingscience.org](http://www.understandingscience.org)).
- Creating forums and building bridges—on the COPUS Web site as well as face-to-face—for sharing ideas, best practices, and resources.



## **II. Organizational Background and Overview**

### COPUS History:

COPUS originated from a workshop funded by the National Science Foundation (NSF) and convened by the University of California Museum of Paleontology, in Berkeley, CA, 25-27 January 2006. This was followed by a series of additional workshops, also funded by NSF, to further define the goals and objectives of the Coalition.

### COPUS Operational Structure:

There are multiple leadership tiers within COPUS including 1) Steering Committee, 2) Action Team, and 3) Regional Hub leaders. Updated information is available online at <http://copusproject.org/leadership.php>

#### *1) Steering Committee*

A multi-disciplinary Steering Committee directs COPUS initiatives. Steering Committee members are:

- Lee Allison, Director, Arizona Geological Survey
- Jack Hehn, Director of Education, American Institute of Physics
- Jack Hess, Executive Director, Geological Society of America
- Jay Labov, Senior Advisor for Education and Communications, National Academy of Sciences
- Richard O'Grady, Executive Director, American Institute of Biological Sciences
- Judy Scotchmoor, Assistant Director, University of California, Museum of Paleontology, Education and Public Programs

These members represent diverse sectors of the scientific research community responsible for establishing the COPUS network. They meet via teleconference on a regular basis and are the decision-making body for all fiduciary and program resolutions. They provide guidance to the COPUS Action Team.

#### *2) Action Team*

Many of the day-to-day activities required for the national development of COPUS programs are carried out by a group of individuals, the COPUS "Action (A) team." The A Team is composed of two Steering Committee members (noted by the \* below) and a handful of enthusiastic individuals nominated by the COPUS Steering Committee to work together in shaping and developing COPUS initiatives. The primary functions of the A Team are to inform and engage their representative communities in COPUS; promote and represent COPUS locally, regionally, and nationally; seek potential funding resources for COPUS; and communicate on a regular basis to identify and implement COPUS projects and activities. Members of the Action Team can be found online at <http://copusproject.org/leadership.php>

#### *3) Regional Hub Leaders*

COPUS Regional Hub leaders serve a vital role in the day-to-day development of geographically localized COPUS initiatives. Hub leaders facilitate the organization and development of regional activities to celebrate Year of Science 2009 and promote Coalition initiatives.



## **II. Organizational Background and Overview (Continued)**

### COPUS Participants:

The Coalition invites the participation of any organization that has an interest in promoting the public understanding of science as an intellectual and social endeavor by which humans learn about the world through empirically-based observations, testing, and prediction. The Coalition has a broad and diverse membership including large scientific societies, museums, and educational organizations as well as dance troupes and local government agencies. Applying to join COPUS is completed via an online registration form.

### Funding and Support:

Support for COPUS planning workshops was provided by the National Science Foundation under Grant Nos. EAR-0606600 and EAR-0628790 to the University of California Museum of Paleontology. Initial contributions of funds and services have been provided by: the American Institute of Biological Sciences, the Geological Society of America, the University of California Museum of Paleontology, and the National Science Teachers Association. The cognizant fiduciary body for COPUS and the Year of Science 2009 project is the American Institute of Biological Sciences Inc., a 501(c)(3) nonprofit organization, which is providing staffing and IT support, and other resources.



### **III. COPUS Activities Overview**

#### COPUS Clarion

The *COPUS Clarion* newsletter is the monthly internal communication of the COPUS network, where innovative program ideas, and COPUS news developments are shared.

#### Program and Resource Directory

The public understanding of science Program and Resource Directory is a searchable database that aggregates information about programs, events, and resources in science. This directory is freely accessible to the general public, education, and scientific communities. The directory raises awareness of the diversity of programs being offered by the science community. It encourages sharing of resources between network participants and highlights exemplary programs. It serves as a central repository for programs and resources that encourage science engagement and learning.

#### Regional Hubs of activity

A COPUS Regional Hub is a locally-based community of COPUS participants and science stakeholders that work together within a designated geographic region to promote the public understanding of science. Its members are self-determined and can include scientists, universities, K-12 educators, informal science education centers, business leaders, and other professionals who work together to develop or coordinate activities that engage community members in science. Its activities are self-determined, but have as their focus the public understanding of and engagement in science. A single COPUS participating organization serves as the "host" of the Hub and as the liaison to the COPUS network.

#### Understanding Science Web site

Understanding Science is a new content-rich Web site being developed at the University of California Museum of Paleontology in concert with several partners. Set to launch in 2008, this freely accessible resource will provide an accurate portrayal of science - what it is and how it works - as well as tools for teaching associated concepts. Several features are being developed in support of the COPUS and Year of Science 2009 efforts including a Gallery of Scientists and an Amateur Hall of Fame, both of which will highlight how scientific research is conducted.

#### Year of Science 2009

1 January 2009 - 31 December 2009: Year of Science 2009 is a nationwide celebration of science focusing on the theme, "How We Know What We Know." Led by members of the COPUS community, activities are being coordinated that will stimulate interest in and appreciation of the process and nature of science.

As they plan for 2009, participating organizations will share program ideas that focus on how science plays a vital role in the future of humanity and inspires the best qualities of the human spirit. These may include: hosting free public lectures or programs at museums and science centers; providing citizen science opportunities; connecting COPUS participants with the K-12 community; participating in roundtable discussions; producing radio spots, editorials, or online resources; starting a local Science Café; or adopting the theme of public understanding of science at annual meetings held in 2009.

**YEAR** 2009  
*of* **SCIENCE**  
Explore. Empower. Engage...

## **IV. Focus and Objectives for 2007**

COPUS will work to build and strengthen the COPUS network; identify and implement core COPUS services.

### **1. Build the network:**

- At least one COPUS participant in every state.
- A minimum of 150 total participants.
- Diversity in participation from all scientific stakeholders. Invitations to participate to be sent to no less than:
  - 10 members from businesses and industry community.
  - 10 representatives from media/communications community.
  - 10 representatives from organizations that represent traditionally underrepresented communities in science.
  - 10 representatives from groups that celebrate science through arts and humanities activities.

### **2. Strengthen the network**

- Assemble an "Action Team" of five enthusiastic Coalition members, representing various stakeholders, to facilitate communication and collaboration across the scientific spectrum.
- Establish a minimum of five regional COPUS Hubs, which are locally organized communities of COPUS participants and science stakeholders. For a more in depth description visit the COPUS Web site at [http://copusproject.org/regional\\_hubs.php](http://copusproject.org/regional_hubs.php).
- Articulate concept of "thematic hubs" to build bridges between the research and science education and outreach communities.

### **3. Initiation and development of resources**

- Develop the COPUS Registry -- an online database in which COPUS organizations and individual researchers can register their programs, resources, and events that promote the public understanding of science.
- Develop the COPUS Program and Resource Directory -- an online searchable listing of registered COPUS participants and their programs, resources, and events that promote the public understanding of science, including lectures, Web sites, publications, field trips, volunteer programs, science cafes, and speakers bureaus. The Directory will help all members of the public become aware of activities and resources in their communities and across the country.
- Develop and distribute a monthly newsletter – the *COPUS Clarion* – to facilitate communication with participants.
- Promote events that showcase and celebrate science, with a focus toward the Year of Science 2009.

### **4. Support and Promote Year of Science 2009**

- Encourage professional societies to include the public understanding of science and Year of Science 2009 as a thematic strand within their annual meetings in 2009.
- Encourage participant registration of all activities in the COPUS registry.
- Highlight participant activities on the COPUS Web site.
- Build awareness and support for Year of Science 2009 among members of the science policy community, including members of Congress, federal agencies and officials, and state decision-makers.

### **NOTE:**

For Summary of progress in 2007, see Addendum A.

## **V. Focus and Objectives for 2008**

COPUS will continue building and strengthening the network; implement new resources as dictated by Coalition members; focus on supporting and promoting participant activities for Year of Science 2009.

### **1. Build and strengthen the network**

- Host two meetings of COPUS and Hub liaisons.
  - The first meeting (March 2008) to promote a high level of discourse to inform our efforts and produce a procedural plan and set of tools for implementing a Hub network structure.
  - The second meeting (late in 2008) to include discussions about Hub activities and best practices; strategies for community support; needs to be met by COPUS headquarters; dissemination of resources; and expanding the Hub system.
- Increase the number of Regional Hubs to a minimum of 12.
- Increase the COPUS participant list to a minimum of 250.
- Work with Sigma Xi and WGBH to increase the number of registered Science Cafes to a minimum of 100, with distribution in every state.

### **2. Resource development**

- Develop a modifiable evaluation instrument for use by COPUS participants in order to capture baseline data on effectiveness of Year of Science 2009 activities.
- Introduce Web-based resources to facilitate collaboration among participants.
- Provide communication resources for COPUS participants:
  - Develop COPUS Commons, an online communication tool to serve the needs of the COPUS Hubs and participants.
  - Develop and distribute tool-kits for promoting activities and understanding of science to the public and the media.
  - Encourage workshops to train scientists on effective communication with the general public and the media.
- Expand the COPUS database to include:
  - Registration of broader impact activities dealing with the public understanding of science to include overview of activity and results.
  - Access to online program evaluations.

### **3. Support and promote Year of Science 2009**

- Develop public-friendly Web site to include:
  - Searchable database and Google map of 2009 activities.
  - Downloadable promotional materials.
  - Ideas and tool kits for 2009 activities.
- Seek corporate sponsorship at the local, regional, and national levels for promotional items and activities
- Continue dialogue with science policy community about Year of Science 2009, including the pursuit of Congressional and state resolutions supporting Year of Science 2009 efforts.

## **VI. Focus and Objectives for 2009**

COPUS will continue building and strengthening the network; implement new services as dictated by Coalition members; focus on supporting and promoting participant activities for Year of Science 2009.

### 1. Build and strengthen the network

- Coordinate a meeting of the Hubs to continue to build the network and share best practices, develop strategies, and discuss partnerships.
- Increase the number of Regional Hubs as guided by the meeting.
- Increase the COPUS participant list to a minimum of 500.

### 2. Support and promote Year of Science 2009

- Distribute the evaluation instrument and encourage its use.
- Expand the COPUS database to include results from evaluation.
- Promote Year of Science 2009 activities.
- Promote and distribute communication resources.

### 3. Initiate plans for COPUS 2.0

- Hold regional workshops to evaluate the impact of the Year of Science 2009 activities, as well as the collaborations formed through COPUS, with a focus on what was achieved and how to sustain the momentum of these activities.
- Recommend next steps.

## **VII. Addendum A**

### **Summary of progress for 2007**

COPUS successfully worked to build and strengthen the COPUS network; and identify and implement core COPUS services in 2007.

#### **1. Summary of progress with respect to network development:**

- At least one COPUS participant in every state. *Participation was achieved in 34 states by the end of 2007. States which remained unrepresented at the conclusion of 2007 were: Delaware, Hawaii, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Dakota, Ohio, Oregon, Rhode Island, South Carolina, Texas, Vermont, and Wisconsin. We anticipate meeting this objective by June 30, 2008.*
- A minimum of 150 total participants. *This goal was surpassed with the registration of 157 participants in 2007.*
- Ensure diversity in participation from all scientific stakeholders. Invitations to participate to be sent to no less than:
  - 10 members from businesses and industry community.
  - 10 representatives from media/communications community.
  - 10 representatives from organizations that represent traditionally underrepresented communities in science.
  - 10 representatives from groups that celebrate science through arts and humanities activities.

*Diversity in participation was achieved including representation from each of these invited group types.*

#### **2. Strengthen the network**

- Assemble an "Action Team" of five enthusiastic Coalition members, representing various stakeholders, to facilitate communication and collaboration across the scientific spectrum. *This goal was surpassed, and an action team was built with 7 members. Team members include: Melissa Anley- Mills, Jennifer Collins, Chris McLelland, Holly Menninger, Richard O'Grady, Sheri Potter, and Judy Scotchmoor.*
- Establish a minimum of five regional COPUS Hubs, which are locally organized communities of COPUS participants and science stakeholders. For a more in depth description visit the COPUS Web site at [http://copusproject.org/regional\\_hubs.php](http://copusproject.org/regional_hubs.php). *This goal was surpassed and eight locations for regional hubs were identified, Ann Arbor, MI; Cambridge, MA; Chicago, IL; Research Triangle, NC; San Francisco Bay area, CA; Seattle, WA; South Dakota; Tampa Bay, FL.*
- Articulate concept of "thematic hubs" to build bridges between the research and science education and outreach communities. *This general concept was articulated and will be further developed in 2008.*

#### **3. Initiation and development of resources**

- Develop the COPUS Registry -- an online database in which COPUS organizations and individual researchers can register their programs, resources, and events that promote the public understanding of science. *This resource was developed and utilized by network participants. In response to COPUS members, further modifications to the Registry were made to allow multiple individuals within each registered organization to add their organizations programs and resources.*
- Develop the COPUS Program and Resource Directory -- an online searchable listing of registered COPUS participants and their programs, resources, and events that promote the public understanding of science, including lectures, Web sites, publications, field trips, volunteer programs, science cafes, and speakers bureaus. The Directory will help all members of the public become aware of activities and resources in their communities and across the country. *This directory was developed and at the conclusion of 2007 included more than 100 resources, programs, and events.*

## **VII. Addendum A, p.2.**

### **3. Initiation and development of resources, cont.**

- Develop and distribute a monthly newsletter – the *COPUS Clarion* – to facilitate communication with participants. The *COPUS Clarion* was first published and distributed to participants in September 2007, and was followed by additional editions in October and November. Articles covered featured programs of participants, and network updates. Archives of the *Clarion* are available on the COPUS Web site.
- Promote events that showcase and celebrate science, with a focus toward the Year of Science 2009.
- Participant activities were highlighted on the COPUS Web site home page, on the Year of Science entry page, and in the *COPUS Clarion*. Regionally specific events were promoted to invite participation of individuals who would benefit from the programs or services.

### **4. Support and Promote Year of Science 2009**

- Encourage professional societies to include the public understanding of science and Year of Science 2009 as a thematic strand within their annual meetings in 2009. *This goal was met, some exemplar societies that expressed their commitment to celebrating Year of Science 2009 at their annual meeting include: the Association of Science and Technology Centers, the American Institute of Biological Sciences, and the National Science Teachers Association. Other organizations expressed their intent, in 2007, but formal plans were not finalized. This goal will be further developed in 2008.*
- Encourage participant registration of all activities in the COPUS registry. *This goal was achieved by encouraging participants to register their programs and events upon their email welcome to the Coalition. In addition, groups were encouraged monthly through the COPUS Clarion, and through personal email correspondence and conversation with COPUS Action Team members.*
- Highlight participant activities on the COPUS Web site. *This goal was met. Additionally, Web site enhancements were made to improve the functionality of featuring programs on the COPUS Web site home page. Programs were also highlighted on the Year of Science 2009 page within the COPUS Web site.*
- Build awareness and support for Year of Science 2009 among members of the science policy community, including members of Congress, federal agencies and officials, and state decision-makers. *COPUS secured support and participation from a number of federal agencies, including the National Institutes of Health, the National Oceanic and Atmospheric Administration, and the EPA, as well as key organizations within the science policy community. Team members will continue to build awareness throughout 2008, with a special focus on state decision-makers.*

**A REPORT ON COPUS REGIONAL AND THEMATIC HUBS:  
A STRATEGIC WORKSHOP TO SUPPORT  
THE PUBLIC UNDERSTANDING OF SCIENCE  
March 7-8, 2008, St. Petersburg, Florida**

**RATIONALE**

There continues to be concern among the scientific, education, and business communities that science and our participation and leadership in science are at risk. Perhaps to the science research community, the most critical aspect of this concern is a growing public disengagement from and lack of clarity about science. The 2006 Science and Engineering Indicators published by the National Science Board indicate that “most Americans do not understand the scientific process and therefore may lack a valuable tool for assessing the validity of various claims they encounter in daily life” and that belief in pseudoscience is relatively widespread.

It was these concerns that led to a “meeting of the minds” that was held in Berkeley, January 2006 on the topic of the public understanding of science (NSF Grant No. EAR-0606600). A set of interlinked needs emerged from that initial workshop – the formation of a sustained national effort, a long-term coalition or network of participants, and a coordinated national campaign or set of programs to celebrate science – all of which, in the long term, would lead to an increased public engagement in and understanding of science. These needs are now being met through the recent formation of the **Coalition on the Public Understanding of Science (COPUS)** and its **Year of Science 2009 (YoS09)**.

COPUS emerged from the science research community and now exists as a grassroots effort linking universities, scientific societies, science centers and museums, government agencies, advocacy groups, media, educators, businesses, and industry in a peer network. COPUS has as its goal a greater public engagement with and understanding of the nature and process of science and recognizes the need for commitment from all science stakeholders to work together toward achieving this goal.

While COPUS has been growing as a national initiative, energetic hubs of activity have begun to coalesce around common regional interests and concerns about science literacy and public engagement in science. These groups are now formally part of the COPUS network and registered as COPUS Hubs, which provide not only the local connection relevant to a particular regional audience, but also the potential for a higher level of sustainability for the COPUS effort. The purpose of this workshop was to bring together hub leaders to share experiences, identify common needs and challenges, and articulate recommendations for others and to lay the foundation for a sustainable COPUS network.

**WORKSHOP GOALS AND PARTICIPANTS**

The COPUS Regional Hub Meeting was held in March 7-8, 2008, hosted by the University of South Florida St. Petersburg, in Tampa Bay, Florida, and funded by NSF

(Grant No. EAR-0814048). Members of the workshop organizing committee (see list page 10) met one day prior to and immediately following the close of the meeting. The meeting was convened by Judy Scotchmoor, COPUS Steering Committee and UC Museum of Paleontology and Sheri Potter, COPUS Network Project Manager and American Institute of Biological Sciences (AIBS) with assistance from Holly Menninger, COPUS Action Team and AIBS.

The seventeen participants included representatives from seven regional hubs (Ann Arbor, MI; Boston, MA; Chicago, IL; Raleigh-Durham-Chapel Hill, NC; San Francisco Bay Area, CA; Seattle region, WA; Tampa Bay, FL; and Ballston, VA) and from the Association of Science and Technology Centers (ASTC), PBS affiliates, Sigma Xi, Society of Physics Students (SPS), and the State Geological Surveys. (See Participant List page 10)

The primary goals of the workshop were to:

- Examine different hub models
- Identify and articulate motivations opportunities, advantages, and challenges of developing and maintaining a regional or thematic hub
- Share successes and best practices
- Focus on critical needs for a successful hub, including those that can best be met by COPUS
- Discuss needs and strategies for long-term networking



## WORKSHOP FORMAT AND DISCUSSIONS

The workshop was designed to promote a high level of discourse among COPUS participants to inform the COPUS efforts, develop guidelines for the expansion of the hub system within the COPUS network, discuss plans for the Year of Science 2009, and prioritize activities and support services to be provided by COPUS. The original agenda was modified slightly during the course of the meeting. A copy is provided within the Attachments (see page 12).

Following brief introductions and an overview of the goals of the meeting, representatives from each of the regions provided information about their hubs, focusing on motivations for forming a hub; the current hub structure, goals, and achievements thus far; funding sources; target audiences; and needs and challenges. Written summaries of these were provided in advance of the meeting and are included in the Attachments (see pages 14-24). This was followed by presentations about participation in COPUS from the perspectives of ASTC, SPS, PBS affiliates, Sigma Xi, the State Surveys, and AIBS.

These exchanges prompted a discussion on what COPUS is, what it is not, and what it can and should be. The following four points summarize these discussions:

- *COPUS is all about facilitating and networking scientists and science advocates to share resources and ideas – to learn from one another.*
- *COPUS is a “one for all and all for one” coalition. Its member organizations leverage resources and support each other to help the public understand the role of science in society – to convey to the public why science is critical to the economy, the environment, and their health and everyday lives.*
- *The purpose of COPUS is to help the general public – of all ages and levels of education – understand more about what’s happening in science, how it works, why science matters, and who scientists are.*
- *COPUS connects the science research and education communities with other stakeholders to enable them to communicate clearly, effectively, and with a common voice about the fundamental nature and value of science – and to draw broad national attention to the effort through a coordinated series of communications and events.*

Dialogue continued, focusing on the goals of the meeting, identifying key components for the proposed Hub Toolkit, and prioritizing activities and services to support the hub structure. These took place in both large and small group settings over the course of two days. Ultimately the depth and breadth of discussions of the meeting enabled the group to better describe characteristics and responsibilities of regional and thematic hubs, identify “key ingredients” for establishing a successful hub, articulate the benefits of participating in COPUS, and focus on common needs and challenges and strategies for addressing these. Additionally, participants previewed tools and resources that will be available to them through COPUS Commons, an online communications tool supported by COPUS Central, and through the Understanding Science website under development at the University of California Berkeley ([www.understandingscience.org](http://www.understandingscience.org)). The group also discussed the Year of Science 2009 initiative and the opportunities it provides. These discussions are summarized below.

## **1. Characteristics of Regional and Thematic Hubs**

COPUS Hubs remain independent, with self-determined membership, structure, focus, and activities, but whether regional or thematic, they focus on the public understanding of and engagement in science and share common goals with COPUS:

- To develop a shared appreciation of science and its contributions to the quality of life
- To inform and engage the public in and about science, its process and nature
- To make science more accessible to everyone

COPUS Hubs interact with the national Coalition by encouraging their members to register with COPUS and by sharing national resources and services with its members. **COPUS regional hubs** are locally-based communities of COPUS participants and science stakeholders that work together within a designated geographic region to promote the public understanding of science. **COPUS thematic hubs** represent nationally distributed peer communities that are interested in building bridges between their members, the national Coalition, and the regional hubs to increase the public understanding of and engagement in science. These hubs cross geographic boundaries and enlist members to offer support to COPUS activities at the national and regional levels.

## **2. Hub responsibilities:**

- To identify and recruit others to participate in the hub and to facilitate networking among its members
- To encourage/facilitate its participants to develop collaborative activities that promote the public understanding of and engagement in science with a current focus toward participation in the Year of Science 2009 (YoS09)
- To coordinate promotion, national registration, and branding of YoS09 activities of the hub membership
- To identify a hub representative to interact with COPUS Central in order to share ideas, resources, and best practices

## **3. Key Ingredients for a Successful Hub**

Though each registered COPUS Hub remains unique in structure and operation, participants emphasized several recommendations for developing a successful and sustainable COPUS Regional Hub, many of which are applicable to the development of new Thematic Hubs. Recommendations included:

- Retain the grassroots nature
- Determine a suitable hub structure
- Build on what is already there
- Create a clear sense of purpose; articulate goals, objectives, and expectations of partnering organizations
- Establish communication and marketing tools
- Identify a hub facilitator or coordinator
- Develop appropriate funding strategies
- Take advantage of the initiatives, services, and resources offered at the national level

#### **4. Benefits of Participating in COPUS**

COPUS provides new opportunities to communicate and collaborate on national and local levels. Through participation in COPUS, individual organizations and hubs may:

- Increase audience participation and improve visibility of science programs and resources nationally and locally via the COPUS program and resource directory and the YoS09 website
- Enhance partnership opportunities by forming a communication network among peers with common passions and concerns, but different perspectives and areas of expertise
- Leverage existing resources by sharing best practices, tools, and content for improving public engagement in science
- Combine limited resources to expand efforts to new audiences
- Facilitate local awareness of and participation in national initiatives

#### **5. Common Needs and Challenges**

Sharing regional experiences brought a fresh perspective to the needs and challenges faced by COPUS Hubs. Participants focused on three key areas, recommending strategies and solutions:

##### **a. How to build strong partnerships and overcome territoriality**

Participants recognized the benefits and opportunities provided by COPUS and the YoS09, but they also recognized that in many communities, there are already efforts in place to increase the public understanding of science. Therefore, concerns arose about territoriality, interpreting COPUS as in competition with existing organizations, or the expression of lack of need. To address these concerns, the group made the following recommendations:

- Emphasize the collaborative benefits of networking with others, stressing the potential large group impact and opportunities to build audience and leverage resources
- Retain the grassroots nature of the Hub. The hub should not be identified with any single institution, but rather be guided by a core group of individuals representing multiple stakeholders. Create a rotating, distributed leadership.
- Value what groups are already doing – highlight current contributions and build on partner strengths
- Focus on bringing people from different sectors together, providing a diversity of partnerships and not just “the usual players.”
- Provide different levels of engagement for hub members
- Leverage the Year of Science 2009 as an opportunity for new collaborations and involvement in a national initiative

##### **b. How to target the audience**

Discussions focused on identifying and marketing activities toward different target audiences. Currently, it is the science-minded individuals that take advantage of community resources and engage in science. Hubs need to consider strategies for popularizing science, bringing science to the audience, and framing messages to meet the interests of each targeted audience. Science centers have marketing expertise and can lend that expertise to hub activities. As there is already a strong emphasis on improving

science education for K-12 students, participants suggested that COPUS Hubs be encouraged to examine ways to engage the adult (20+ years) and non-traditional audiences. The latter includes: rural communities, senior citizens, and at-risk populations. Science cafés are proving to be a successful strategy for reaching the adult audience and perhaps could be modified to reach other sectors of the general public.

### **c. How COPUS Central can support the hubs**

Although each hub should determine its own structure and be responsible for its own operation, participants identified several services and resources that could best be provided by COPUS Central and made available for all COPUS Hubs and/or participants. These included:

- A “one-minute elevator speech” on the benefits of participating in COPUS
- User-friendly instructions for forming a hub
- A list of potential stakeholders along with contact information to connect regional and thematic hubs
- Assistance with hub website development
- Easy access to branding materials, logos, press releases, and other trade modular items
- A simplified form for populating the COPUS and YoS09 database. The need for duplicate entries into multiple calendars is inefficient and reduces the incentive to enter information.
- Evaluation tools to assist hubs in measuring the impact of their activities in 2009
- Suggested activities and timelines for participating in Year of Science 2009
- Assistance with communication tools, common messages, and framing

### **6. Year of Science 2009**

The Year of Science 2009 (YoS09) is a national year-long celebration to engage the public in science and improve public understanding about the nature and processes of science. As the celebration crosses all scientific disciplines, there are ample opportunities for involvement by all COPUS participants at a variety of levels and for engaging all sectors of the public. In order to facilitate participation with effective results, the participants made several recommendations.

#### ***For COPUS Central:***

- Provide a thematic framework or calendar for 2009 so that each month focuses on a particular discipline or field of study. Although only serving as a guideline, this can provide an organizational scheme around which to engage segments of the scientific community and to identify and promote public activities and events. Where possible, themes should be aligned with already occurring events, anniversaries, and national meetings.
- Expand and promote the list of ideas for celebrating YoS09 on the COPUS website, indicating how to initiate them and providing contact information for those already underway by others.
- Encourage professional organizations to focus on the public understanding of science at their national meetings in 2009.
- Provide branding and marketing tools to COPUS hubs and participants.

- Develop an engaging and interactive public website on the Year of Science 2009.
- Coordinate with professional societies and other strategic partners associated with each theme to provide resources for the community and the YoS09 website.

***For COPUS Hubs:***

- Hold a hub meeting focusing on activities for YoS09.
- Develop a timeline for planning and implementation of YoS09 activities. This will encourage a sense of urgency and move toward action.
- Encourage all members to list their activities on the COPUS website.
- Brand and promote all hub activities as contributing to the national initiative.



From upper left to right: Amy Harris, Holly Menninger, Kendra Rand, Wendy Pollock, Kimberly Kandros, Lee Allison, Roger Harris

From lower left to right: Ben Wiehe, Sheri Potter, Mark Terry, Kaye Breen

**WORKSHOP RECOMMENDATIONS AND NEXT STEPS**

The following section summarizes the discussion and resulting recommendations from the meeting in four key areas: expanding the Hub Model, services and resources from COPUS Central, the Year of Science 2009, measuring the impact.

**1. Expanding the Hub Model:**

It was agreed that the long term success of COPUS lies in two factors: (1) its ability to connect the science research and science education communities (both formal and informal) with other stakeholders with whom they can interact in order to more effectively communicate science and (2) on its ability to sustain efforts beyond the 2009 Year of Science. The newly developed COPUS regional and thematic hubs provide not only the local connections relevant to a particular regional audience or to a group sharing common interests, but they also provide the potential for a higher level of sustainability for the COPUS effort. The hub model should be encouraged and expanded. Strategies for effective networking among the hubs are essential.

**Recommendations for COPUS Central:** Based upon discussions at this meeting, COPUS Central should develop clear roles and expectations of hubs and their interactions with other members of the national coalition; expand the COPUS website to include information on hub development (e.g. the Hub Toolkit – see draft in Attachments pages 25-29); highlight different hub models and their activities on the website and in the COPUS newsletter.

**Recommendations for COPUS Hubs:** Hub liaisons need to share information from this meeting with current hub members; work to strengthen and expand hub memberships; encourage all hub members to register with COPUS to facilitate participation in national initiatives; share best practices with COPUS Central; encourage colleagues in other areas to initiate their own hubs.

## **2. Services and Resources from COPUS Central:**

Participants recognized the benefits and opportunities of focusing their efforts locally while taking advantage of services and resources best offered nationally. COPUS Central can provide important support for hubs in two key areas: (a) networking and communication and (b) marketing and promotion.

**Recommendations for COPUS Central:** COPUS Central is utilizing an online project management tool (COPUS Commons) for facilitating communication with and among hub liaisons. This will increase networking capabilities. In addition, COPUS Central can facilitate connections between regional and thematic hubs, provide access to marketing and promotional materials, provide recommendations for setting up a web presence for hub activities, and distribute information on common messages and framing as they are developed.

## **3. Year of Science 2009:**

Participants agreed that the Year of Science 2009 provided an enormous opportunity for the entire science community. It is unique in that it is cross-disciplinary, inclusive, and flexible both in its potential and its participation and focuses on a single purpose: celebrate science, and a single overarching theme: how we know what we know. To facilitate involvement, participants recommended a thematic calendar approach so that each month focuses on a particular discipline, field of study, or application (e.g. astronomy, evolution, oceans, or sustainability). There should be nationally recognized events and activities as well as local and regional. YoS09 provides an excellent opportunity for corporate involvement and support. Participants also expressed a sense of urgency and the need for a planning timeline.

**Recommendations for COPUS Central:** With approval from the participants, COPUS Central will develop the thematic calendar for 2009, publicize the themes in the April COPUS Clarion, and advertise them on the website. In order to broaden involvement, COPUS Central will provide a list of ideas for celebrating YoS09 on its website, provide branding and marketing resources, simplify the online form for registering YoS09 activities, and encourage professional societies to include YoS09 in their annual meetings. A public website on the Year of Science 2009 will debut this summer.

**Recommendations for COPUS Hubs:** Each hub needs to begin their YoS09 planning and encourage all members to register their activities on the COPUS website and brand them with the YoS09 logo.

#### **4. Measuring the impact:**

Although individual institutions and projects may well have evaluation tools and strategies in place to determine the effectiveness of their programs, the participants were not aware of any evaluation instruments that would be directly applicable to COPUS and the Year of Science 2009. Participants agreed that for both scalability and sustainability, a method of measuring the impact of these two initiatives would be valuable. Several potential contacts were suggested, including the Division of Research, Evaluation, and Communication at the National Science Foundation.

***Recommendations for COPUS Central:*** COPUS Central should work with others to develop and make available online an evaluation instrument to assist hubs in measuring the impact of their activities in 2009.

#### **CONCLUSIONS**

Participants felt that this workshop helped to clarify the structure of COPUS and its interactions with regional and thematic hubs and to clarify their roles as both COPUS participants and hub liaisons. There is a need for continued encouragement and dialogue and the opportunity to share ideas, needs, and achievements. These will be facilitated through COPUS Commons, an online communications tool supported by COPUS Central. There is a sense of urgency regarding preparation for the Year of Science 2009 and all participants need to encourage planning and action by holding Hub meetings, developing appropriate timelines, and getting involved in promotional activities.

There was strong agreement that

- The science community needs to work together to increase public engagement with and understanding of the nature and process of science
- This is a long-term commitment that is facilitated by the presence of a national network – COPUS – and regional and thematic hubs
- The Year of Science 2009 provides an extraordinary opportunity for the science community to promote and celebrate science,
- COPUS Central has a critical role to play in supporting hub efforts and facilitating communication and interactions.

The most notable outcome of the workshop was the enthusiastic dedication of those attending toward efforts of COPUS and the Yos09. Each committed themselves to specific tasks to support the national coalition and to strengthening the connections between their hubs and COPUS. There was a great deal of energy and enthusiasm among those present and the participants in this workshop serve as a nucleus upon which the broader effort will be built.

**PARTICIPANTS:****Organizing Committee:**

Holly Menninger, AIBS  
Richard O'Grady, AIBS  
Sheri Potter, AIBS  
Judy Scotchmoor, UCMP

**Conveners:**

Judy Scotchmoor, UCMP  
Sheri Potter, AIBS

**Attendees:**

Lee Allison, Arizona Geological Survey, Tucson, AZ  
Kaye Breen, Ballston Science & Technology Alliance, Arlington, VA  
Chris D'Elia, University of South Florida, St. Petersburg, FL  
Erin Dragotto, Chicago Council for Science and Technology (by phone)  
Edward Haddad, Florida Academy of Sciences, Orlando, FL  
Amy Harris, University of Michigan Exhibit Museum of Natural History, Ann Arbor, MI  
Roger Harris, Sigma Xi, Research Triangle Park, NC  
Kimberly Kandros, North Carolina Museum of Natural Sciences, Raleigh, NC  
Maddy McNaughton, Science Center Pinellas County, St. Petersburg, FL  
Wit Ostrenko, Museum of Science and Industry, Tampa, FL  
Wendy Pollock, Association of Science – Technology Centers, Washington DC  
Kendra Rand, Society of Physics Students, College Park, MD  
Mark Terry, Northwest School, Seattle, WA  
Ben Wiehe, WGBH Educational Foundation, Boston, MA

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**Special thanks to:**

Sheri Potter for all of her energy, organizational skills, and logistical support  
American Institute of Biological Sciences and the University of California Museum of Paleontology for providing staff time and other resources in support of this meeting  
Members of the Tampa Bay Regional Hub  
Our hosts, the University of South Florida

## ATTACHMENTS

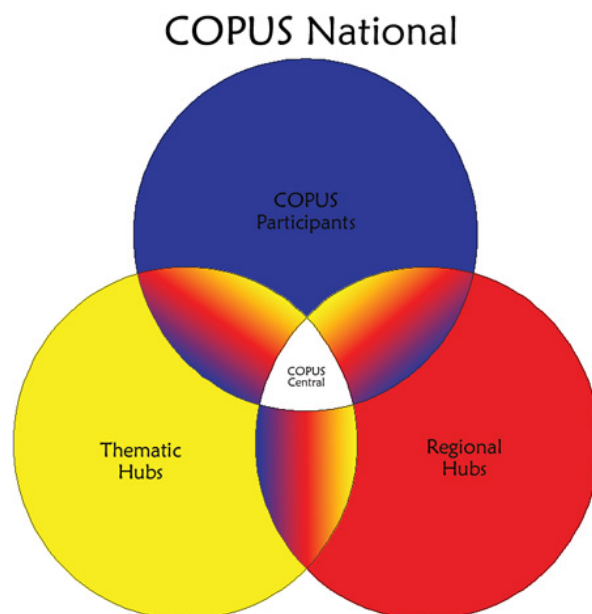
### A. COPUS Structure and leadership

**COPUS National** is an active set of interacting networks and hubs that operate locally, regionally, and nationally. At the national level, the Coalition is represented and guided by **COPUS Central** composed of

- the **Steering Committee** that provides overall direction for COPUS, approves inductees onto the Action Team, and makes all decisions related to expenditures;
- the **Action Team** responsible for COPUS promotion and expansion; and
- a set of **Advisors** who offer guidance to the Steering Committee as relevant to their areas of expertise
- the **COPUS Network Manager**, who is responsible for COPUS communications and the daily operations of the Coalition.

**COPUS Regional and Thematic hubs** provide not only the local connections relevant to a particular regional audience or to a group sharing common interests, but they also provide the potential for a higher level of sustainability for the COPUS effort.

- **COPUS Regional Hubs** are locally-based communities of COPUS participants and science stakeholders that work together within a designated geographic region to promote the public understanding of science.
- **COPUS Thematic Hubs** represent nationally distributed peer communities that are interested in building bridges between their members, COPUS national, and the regional hubs to increase the public understanding of and engagement in science.





## **Tentative Agenda for First Hub meeting University of South Florida St. Petersburg**

March 7- 8, 2008

The workshop is designed to promote a high level of discourse that will inform our efforts and to incorporate those discussions into a procedural plan and set of tools for implementing a regional and thematic hub network structure to support COPUS efforts.

### ***March 7:***

8:00 Meet at hotel, walk to meeting location.

8:15 Breakfast.

|      |                                 |                 |
|------|---------------------------------|-----------------|
| 8:30 | Welcome and brief introductions | Richard O'Grady |
|      | Logistics for the meeting       | Sheri Potter    |
|      | Overview and goals of meeting   | Judy Scotchmoor |

9:00 Hub Presentations All

Each hub will be given 10-15 minutes to provide information about their individual hubs. Information should focus on:

- Motivation for forming a hub
- Community partners – number and types of organizations
- Plans to expand?
- Achievements/meetings thus far?
- Communication strategies
- Articulation of goals/strategies?
- Description of hub structure – e.g. single point person/coordinator; loose collaboration, formal structure
- Funding sources?
- Target audience(s)
- Needs/challenges (to be discussed more fully after lunch)
- Plans for Year of Science 2009 (to be discussed in greater detail later)

11:00 Summarizing what we have learned - Group discussion – can we articulate common characteristics?

12:15 Lunch

1:00 Brief presentations (10 minutes each) from ASTC, Sigma Xi, and Society of Physics Students focusing on possible interactions with COPUS Regional Hubs

- 1:30 Focusing on the challenges and finding solutions – Group discussion
- 3:00 Break
- 3:15 Small group work: Articulate common “key ingredients for a successful hub” and a list of needs and challenges to be addressed.
- 4:00 Set goals for tomorrow Judy  
Demonstration of COPUS Commons and discuss other services available Sheri
- 5:00 Whew! Put your feet up and meet us at the restaurant at 6:30!
- 6:30 Dinner at the Pier- casual outdoor dining.

***March 8:***

- 8:00 Meet at hotel, walk to meeting location.
- 8:15 Breakfast.
- 8:30 Review group work from yesterday
- 9:00 Discussion on the interactions between the hubs and COPUS in order to identify how to leverage local and regional energies and resources, expand and strengthen partnerships, and share best practices with others.
- 10:15 Break
- 10:30 Resume discussions and move toward greater detail regarding expectations of hubs and expectations of and services from COPUS.
- 11:00 Share ideas for Year of Science 2009
- 12:00 Working lunch to continue YoS09 discussions
- 1:00 Outline the components necessary to create a Hub Toolkit
- 1:45 Strategies for sustainability and next steps
- 2:45 Closing comments
- 3:00 Departure for airport

## **HUB: North Carolina** *Kimberly Kandros, NC Museum of Natural Sciences*

### **1. Motivations for forming a regional hub:**

The North Carolina Museum of Natural Sciences is building an innovative new wing, the Nature Research Center (NRC), which will showcase the latest advances in current science research. The NRC will be open in 2011 and groundbreaking is scheduled for April 22, 2008.

The mission of the NRC is to engage the public in understanding the scientific research that affects their daily lives. In order to make the public aware of the most breaking scientific research, the Museum is partnering with leaders in academia, government, private industry and non-profit organizations. These NRC partners will work with the Museum to share the latest advancements in research and also help to develop experiential programming in which the public can participate (Citizen Science projects, actual lab exercises, lecture series, etc.)

### **2. Community Partners: Please provide a list of participating organizations.**

SEE ATTACHMENT.

### **3. Any plans to expand? If so, please describe.**

The Museum currently welcomes 600,000 annual visitors with an additional 53,000 served through off-site outreach. When the NRC opens, the Museum expects attendance to increase by an additional 200,000 visitors. The new facility will be 80,000 square-feet.

### **4. Achievements/Activities/Meetings thus far?**

\$22 million has been raised for this project and ground breaking for the NRC is scheduled for April 22, 2008.

### **5. Strategies for communication among partners.**

Quarterly planning meetings are scheduled that allow project partners to interface, meet with architects and exhibit designers to collectively develop an environment that will maximize educational opportunities.

### **6. Goals/Strategies for your hub?**

One of the most innovative features of this project is the diversity of partners. As plans for the NRC progress, the Museum will continue partnering with other institutions in order to reflect greater expertise in the NRC's offerings.

### **7. Description of hub structure.**

### **8. Funding sources?**

The Museum is an agency of the North Carolina Department of Environment and Natural Resources. As a state agency, it receives all of its operating support from the state. Fundraising efforts help pay for outreach, special events, traveling exhibits and the capital campaign for the NRC. These funds are received from private foundations, government agencies and private philanthropic gifts.

### **9. Target audience(s):**

The Museum is a state agency charged with making inspiring the public to become better environmental stewards. As such, the Museum offers a continuum of programming that appeals to audiences of all ages, socioeconomic backgrounds and learning aptitudes.

### **10. Needs/Challenges:**

The NRC will cost approximately \$53 million dollars. At this point, \$22 million has been raised.

### **11. Plans for Year of Science 2009:**

The Museum is always interested in partnering with other organizations on projects that promote the public understanding of science. Plans for 2009 include Polarpalooza.

**HUB: Chicagoland Area** *Erin Dragotto, Chicago Council for Science and Technology*

**1. Motivations for forming a regional hub:**

Our mission: The Chicago Council for Science and Technology (C<sup>2</sup>ST) is an independent, nonprofit organization committed to promoting science and technology by sponsoring discussions, programs, and leadership dialogue among scientists, institutions and the public. We feel our mission to create dialogue within the science and technology industries are central to C<sup>2</sup>ST in the Chicagoland area thus, a perfect motivation for being the regional hub for Chicago and the COPUS network.

**2. Community Partners: Please provide a list of participating organizations.**

**C<sup>2</sup>ST Board Organizations/Partners:** Adler Planetarium, Argonne National Lab., Baxter International, Illinois Institute of Technology, University of Illinois at Chicago, University of Chicago at Illinois/Urbana Champaign, Northwestern University, Children's Memorial Research Center, The Field Museum, Chicago Community Trust, City of Chicago, Mayor Brown Rowe LLC, Fermilab, Gas Technology Institute, Michigan State, Querrey Enterprises, Chicago Biomedical Consortium, SlackBarshinger PR, Torshen Capital, Motorola, Museum of Science and Industry.

**Chicago Regional Hub Members:** Abbott Laboratories, Illinois Science Council, Illinois State Museum, Project Exploration, Science of Vertebrate Paleontology

3. Any plans to expand? If so, please describe. Yes, we as Chicago regional hub lead hope to continue to expand through partnerships and programs as well as other city-wide initiatives.

**4. Achievements/Activities/Meetings thus far?** No COPUS regional meetings thus far.

**5. Strategies for communication among partners.** Remain proactive about communication between local area partners on projects, programs and overall goals.

**6. Goals/Strategies for your hub?** No goals as of yet for regional hub. Waiting for March Meeting in FL.

However, C<sup>2</sup>ST's goals are to:

- a. Enhance and enrich Chicago's reputation as a premier region for science and technology.
  - b. Foster communication and interaction between academic research and business communities.
  - c. Foster public understanding of critical issues concerning science and technology that have societal implications, including quality of science and mathematics education.
  - d. Provide diverse perspectives on scientific and technological issues for the public and political decision-makers.
- Be an important link in the generation of a healthy climate for attracting new science and engineering based industries, companies and institutions.

**7. Description of hub structure.** At present there is no structure. Hope to have guidance from meeting in FL.

**8. Funding sources?** C(2)ST is currently funded by its board of directors.

**9. Target audience(s):** Science/Technology minded, general public,

**10. Needs/Challenges:** Challenges for C2ST in the near future relate to organizational development, program implementation, creation of a membership database.

**11. Plans for Year of Science 2009:** C2ST has partnered with a city-wide initiative called Science Chicago. Spearheaded by the Museum of Science and Industry, and in partnership with Chicago's leading civic, academic, scientific, corporate, and non-profit institutions, Science Chicago is a year-long collaborative regional initiative beginning in September 2008 and concluding in August 2009 to highlight science and technology achievements, increase access to science learning experiences, and promote dialogue about science and technology.

## **HUB: San Francisco Bay Area** *Judy Scotchmoor*

### **1. Motivations for forming a regional hub:**

There is a wealth of science resources for various audiences within the SF Bay Area. They range from large research universities (e.g. U. of California, State Universities, Stanford) to large museums and science centers, some of which are research-based (California Academy of Sciences) and others such as the Exploratorium, Lawrence Hall of Science, the Tech Museum of San Jose, and Chabot Space and Science Center. There are also numerous smaller museums and science centers, local organizations that are science focused, and the state and regional park systems. We have a tendency to collaborate on some projects or to work completely independently. COPUS and YoS09 provides an opportunity to initiate discussions on long-term collaborations, an examination of which audiences have access to what resources, and what we might do together to reach audiences that do not yet engage with any of the resources available. We also have the opportunity to promote common “messages” about science that can have a more lasting impact on our current audiences and hopefully engage other sectors of the community to support our efforts.

### **2. Community Partners**

Still forming, but for now:

Several science units/departments at the U. of California and Stanford University; California Academy of Sciences; KQED and its QUEST project (which in itself is a collaborative of 12 partners); California State Parks Foundation, National Center for Science Education; Lawrence Berkeley Laboratory, Lawrence Hall of Science, Exploratorium (not yet a member of COPUS); Center for Sciences Education and Space Sciences Laboratory, Wonderfest

### **3. Plans for expansion**

Yes – we are working on two levels to expand: (1) to coordinate efforts at UC Berkeley under a project called Science @ Cal which has the backing of the Chancellor and the Vice Chancellor for Research – this project will encourage science units on campus to register on a website how their science contributes to science AND to offer at least one public event/activity during 2009 to be registered on the web calendar AND to try at least one new activity in collaboration with another unit on campus. (2) to coordinate efforts of institutions currently part of the KQED QUEST program to identify common messages and projects to reach new audiences and then to encourage other institutions within the area to join with us in these efforts

### **4. Achievements/Activities/Meetings thus far?**

See above. Several campus meetings and two meetings with the QUEST group.

### **5. Strategies for communication among partners.**

Thus far, we are only using email.

### **6. Goals/Strategies for your hub?**

See #1 – our goal is really to encourage collaboration and not competition for audiences. This is tough because so many of the institutions (in particular the larger, successful ones) rely on both gate and grants for survival and that is a very competitive arena. We are hoping that through collaboration we can continue to work as individuals, but with some common messages and to also work collaboratively to find ways to reach audiences currently “unengaged” with science.

### **7. Description of Hub structure**

Still forming. Tends to be a single point person at Stanford, myself and a representative for coordinating things at UCB, and the QUEST group for coordinating the informal science folk in the Bay Area. We recognize that it would be best if we could hire someone for the latter position. Right now, all volunteering of time within our own jobs.

### **8. Funding Sources**

At the moment, all in-kind services. Trying to resolve this – primarily for promotional materials and for staff position as described above.

### **9. Target audience(s)**

General public, parents and we would like to reach out to some of our ethnic communities in some fashion. Considering a Science Café for kids at community centers.

### **10. Needs/challenges:**

See #6 and the fact that all efforts are currently through volunteering time within our own jobs to get us started.

### **11. Plans for Year of Science 2009**

Still in the formative stages.

**HUB: Boston**    *Ben Wiehe*

**1. Motivations for forming a regional hub:**

OUR INSTITUTIONS ALREADY HAVE A ROBUST SET OF EXISTING RELATIONSHIPS WITH MANY COMMUNITIES THROUGHOUT THE BOSTON AREA. HOWEVER, THIS COULD BE AN OPPORTUNITY TO FIND NEW WAYS TO BRING THE MANY ORGANIZATIONS WE REGULARLY WORK WITH TOGETHER AROUND MORE THAN JUST A ONE-ON-ONE, OR ONE-OFF PROGRAM.

**2. Community Partners: Please provide a list of participating organizations.**

SO FAR WE'VE HAD ONE HUB MEETING BETWEEN ME AND NATALIE KULDELL AT MIT. WE DISCUSSED FOCUSING ON ADULT PUBLIC OUTREACH. SOME SPECIFIC PARTNERS WE ARE ALREADY WORKING WITH INCLUDE:

WGBH/NOVA

MIT

MIT MUSEUM

THE ZING (HARVARD STUDENT GROUP)

HARVARD MUSEUM OF NATURAL HISTORY

SCIENCE ON SCREEN (LECTURE AND FILM PROGRAM AT LOCAL THEATER)

**3. Any plans to expand? If so, please describe.**

NOWHERE TO GO BUT UP. SINCE OUR HUB IS JUST IN THE BEGINNING. THE EASIEST THING TO DO IS CO-PROMOTE AND PACKAGE OUR EXISTING OFFERINGS, AND THIS IS WHERE WE ARE STARTING.

**4. Achievements/Activities/Meetings thus far?**

SEE ABOVE

**5. Strategies for communication among partners.**

AS THE NUMBER OF PARTNERS GROWS WE WILL FIGURE OUT AN APPROPRIATE STRATEGY. AT THE MOMENT A SIMPLE EMAIL LIST SEEMS THE MOST APPROPRIATE.

**6. Goals/Strategies for your hub?**

THE HUB IDEA COULD BENEFIT THE REGION BY DRAWING TOGETHER PEOPLE THAT ARE ALREADY WORKING TOWARD THE SAME GOALS. NETWORKING EVENTS THAT GET THESE PEOPLE INTO THE SAME ROOM WILL BE IMPORTANT. WE MAY EMPHASIZE THE IMPORTANCE OF ATTENDING EACH OTHER'S OFFERINGS SO THAT EACH OF US IS FAMILIAR WITH THE PROGRAMS OF THE OTHERS. SOME GOALS COULD INCLUDE BUILDING AUDIENCES FOR ONGOING PROGRAMS, REACHING NEW AUDIENCES, AND LEVERAGING PARTNERSHIPS FOR GREATER MEDIA EXPOSURE.

**7. Description of hub structure.**

NATALIE IS THE MAIN POINT PERSON FOR THE HUB NETWORK.

**8. Funding sources?**

AT THE MOMENT OUR FUNDING IS DEPENDENT ON FOLDING HUB ACTIVITIES INTO EXISTING ONGOING PROJECTS

**9. Target audience(s):**

GENERAL PUBLIC, ADULTS

**10. Needs/Challenges:**

**11. Plans for Year of Science 2009:**

NOT YET...

**HUB: Upper Midwest**     *Amy Harris*

**1. Motivations for forming a regional hub:**

The intersection of academic and informal science resources on campus provides a nexus for activities and information.

**2. Community Partners: Please provide a list of participating organizations.**

University of Michigan Exhibit Museum of Natural History, U-M Museum Zoology, and the Society for Biology Students.

**3. Any plans to expand? If so, please describe.**

Yes. A letter will go out to community partners in nearby universities and informal science museums in Southeast Michigan soliciting new or existing event plans to publicize via COPUS and to stimulate possible collaborations.

**4. Achievements/Activities/Meetings thus far?**

Website up. Several events have maintained focus on public interaction with scientists, e.g. science cafés, lectures, undergraduate lunch, upcoming teacher workshop.

**5. Strategies for communication among partners.**

Quarterly email with partner events and contacts.

**6. Goals/Strategies for your hub?**

As a hub we hope to be a clearinghouse for information on Public Understanding of Science events for the public, K-12 teachers, and university students.

**7. Description of hub structure.**

Content invited and coordinated by Exhibit Museum, Web upkeep done by Museum of Zoology. Both provide support to the Society for Biology Students' activities.

**8. Funding sources?**

None so far

**9. Target audience(s):**

General public/families, K-12 teachers, university students

**10. Needs/Challenges:**

Staff time -- Need some funding to hire a graduate student to help with communication/coordination.

**11. Plans for Year of Science 2009:**

Lecture series, Darwin Day Celebration, Reverse Science Fair, science café series, Astronomy theme semester, Museums in the Academy theme semester, collaboration with local chapter of Sigma Xi.

**HUB: Greater Washington DC area (especially Northern VA)** *Kaye Sloan Breen*

- 1. Motivations for forming a regional hub:** Networking and collaboration of efforts to foster better understanding, appreciation, involvement in science and technology; develop a sense of identity, networking opportunities, collaboration and recognition of contributions of science and technology to knowledge base, economic vitality of the region and protection and security of the country.
- 2. Community Partners:** Please provide a list of participating organizations. BSTA is still in process of formation. Board or Committee member organizations include the following:  
CACI International, Inc  
Monsanto Company  
Virginia Tech University  
NVCC  
George Mason University  
Arlington County Board  
Potomac Institute for Policy Studies  
Arlington Economic Development  
Strategic Analysis, Inc.  
Infosys Technologies Ltd  
Systems Planning Corporation  
Cisco Systems, Inc.  
National Science Foundation  
Georgetown University  
Arlingtonians for a Clean Environment
- 3. Any plans to expand? If so, please describe.** Yes, we plan to be an umbrella linkage organization and offer a physical venue to eat drink and talk science and showcase technology
- 4. Achievements/Activities/Meetings thus far?** Café Scientifique on the first Tuesday of every month since April 2006.
- 5. Strategies for communication among partners.** Lots of meetings, emails, phone calls and networking while we determine formal structure for communications and cooperation.
- 6. Goals/Strategies for your hub?** Designing a purpose-built venue that would serve as the permanent and virtual hub for the exchange of information, dialogue and programs and a showcase for technology to be seen, experienced and talked about.
- 7. Description of hub structure.** Collaboration on programs and under development of others. BSTA is a non-profit organization.
- 8. Funding sources?** Searching for funding
- 9. Target audience(s):** culturally active adults, science and tech workforce, companies & organizations in science- and tech-related activities
- 10. Needs/Challenges:** money, finding and reaching all organizations, individuals, and institutions and developing mutually beneficial cooperation
- 11. Plans for Year of Science 2009:** Maintain, develop and expand three programs:
  1. Café Scientifique, 2. Workforce programs and 3. TrendlinesHave venue designed and funded.

**HUB: Seattle (WA, OR, ID, BC)** *Mark Terry*

**1. Motivations for forming a regional hub:** To do a better job of sharing notice of and access to existing programs that fit the COPUS goal; to use the common ground of COPUS meetings and communications to develop new, integrated programs.

**2. Community Partners:** Please provide a list of participating organizations. (Attached)

**3. Any plans to expand? If so, please describe.** A number of interested parties/organizations are not yet COPUS members. Most seem to be interested, but haven't yet taken action. Membership could easily double or triple in a short time.

**4. Achievements/Activities/Meetings thus far?** Only one small meeting in November, held at Northwest School, with a half dozen participants.

**5. Strategies for communication among partners.** So far, just by e-mail.

**6. Goals/Strategies for your hub?**

Walt Snyder suggests COPUS and PaleoStrat share links.

Laurie Hassell suggests provide us all with COPUS and Year of Sci 2009 logos, electronically, so we can wave the flag on all our e-mails; and streamline the website, making it easier to grasp what's going on in a region, cutting the number of steps required to get to organizations and announcements; and develop high profile HUB pages, again for easy access to what's going on in a region. (She finds the whole site cumbersome and non-intuitive...)

Karen Peterson suggests COPUS/YofS2009 join the call for a science debate as part of the presidential election campaign.

**7. Description of hub structure.** None, really. I drew the short straw to come to the Tampa meeting.

**8. Funding sources?** Northwest School was glad to host the first meeting, including providing refreshments. VERY low budget. No established budget for the HUB.

**9. Target audience(s):** General public, local educators K-16.

**10. Needs/Challenges:** We need to set up regular e-mail communication, and we need to focus on Year of Science 2009 (this is MT speaking). We could easily float YofS events, or attach YofS to already scheduled events, and create a consistent message/theme in the local community. Some of our members have contacts with the local Science on Tap group, which should be tapped.

I don't see why we shouldn't also promote in whatever venues we can the release of the Understanding Science website in fall '08, including at the Portland Western Regional NSTA conference in October.

**11. Plans for Year of Science 2009: (See 10)**

**HUB: Tampa Bay, FL** *Chris D'Elia, Ed Haddad, Maddy McNaughton, Wit Ostrenko, Sheri*

**1. Motivations for forming a regional hub:**

To improve the visibility of science activities in Florida; celebrate Year of Science 2009; facilitate communication and collaboration among community partners

**2. Community Partners: Please provide a list of participating organizations.**

Museum of Science and Industry, Tampa  
 University of South Florida St Petersburg  
 Mote Marine Laboratory  
*Registered COPUS participants in the hub:*  
 4Frontiers Corporation  
 Camp Bayou Outdoor Learning Center  
 Cephalopodcast - The Ocean Podcast  
 Elementary Science Coalition  
 Florida Academy of Sciences  
 Florida Citizens for Science  
 Florida Museum of Natural History  
 Pier Aquarium, Inc.  
 Pinellas County Environmental Lands Division  
 Science Center of Pinellas County  
 SouthWest Florida Water Management District  
 The Florida Aquarium

*Other Organizations that have expressed intent to join:*

City of Clearwater  
 City of Largo Nature Parks  
 City of St. Petersburg Water Resources Department  
 Clearwater Community Sailing Center  
 Clearwater Marine Aquarium  
 Florida Institute of Oceanography (FIO)  
 Florida Fish and Wildlife Conservation Commission –  
 Fish and Wildlife Research Institute  
 Honeymoon Island Nature Center  
 NOAA Habitat Restoration Office  
 Pinellas County Extension  
 Pinellas County Watershed Management  
 Sierra Club Suncoast Chapter  
 Tampa Bay Estuary Program  
 Tampa Baywatch  
 USGS Florida Integrated Science Center  
 USF College of Education  
 USF College of Marine Science  
 USF College of Marine Science Ocean Monitoring &  
 Prediction Lab  
 USF Department of Geography

**3. Any plans to expand? If so, please describe.**

Yes, possibly to become a statewide Hub!

**4. Achievements/Activities/Meetings thus far?**

We have had one meeting of hub leaders in February 2008. It was determined from the meeting that the first outcome would be to set up a Web page to show community collaborators, coalesce group activities into one calendar, and to consider ways to coordinate for Year of Science 2009.

**5. Strategies for communication among partners.**

We have set up a communication zone on Basecamp which enables members of the groups to communicate with all or a few easily and provides a record of communications for newcomers to see.

**6. Goals/Strategies for your hub?**

- To promote science activities in Florida, and show that there is an abundance of resources to support science learning and engagement here.
- To change the public perception to present the state of Florida as a state where science happens
- To establish a concise and regularly issued bulletin of science events and news for distribution to media across the state development of a Support Science bumper sticker (done)

**7. Description of hub structure.**

Nothing clearly articulated at this time.

**8. Funding sources?**

None, as of yet.

**9. Target audience(s):**

General public at large.  
 Science Teachers (K-16)

**10. Needs/Challenges:**

Funds!

**11. Plans for Year of Science 2009:**

None yet!



**ORGANIZATION: Association of Science-Technology Centers**     *Wendy Pollock*

**1. Description of your current network structure**

ASTC is an international association of science centers and museums dedicated to furthering the public understanding of and engagement with science among increasingly diverse audiences.

ASTC's 447 museum members, located in 43 countries, include not only science centers and museums, but also nature centers, aquariums, planetariums, zoos, botanical gardens, space theaters, and natural history and children's museums.

ASTC holds an annual conference at a location in North America, which is attended by approximately 2,000 science center professionals and others working in the informal science education field. Among ASTC's networking tools are the bimonthly news journal ASTC Dimensions; ASTC's online learning center, ASTC Connect, which hosts discussion forums and workshops; a listserv with 1,400 subscribers; and several emailed newsletters.

ASTC is affiliated with science center networks located in other regions and participates in planning of the World Congress of Science Centres, which convenes every three years. The forthcoming World Congress will be in Toronto in June.

ASTC is also home to the Center for Advancement of Informal Science Education, founded in 2007 with support from the National Science Foundation. CAISE is devoted to advancing and improving the informal science education field, with a focus on work funded by NSF. CAISE will be organizing meetings for NSF ISE PIs and issuing a monthly newsletter.

**2. Motivations for your group interacting with COPUS and its regional hubs – what are the anticipated benefits to your organization; what can you bring to the coalition and its hubs?**

ASTC's goals are closely aligned with those of COPUS. Our primary contribution is likely to be through networking and communication among science centers and affiliated groups.

**3. Target audience(s) that you serve**

ASTC audiences are principally science center and museum professionals.

**4. Plans for Year of Science 2009**

ASTC does not yet have plans, but possibilities include featured speakers and sessions at the ASTC Annual Conference, Forth Worth, October 31–November 3, 2009; online forums; and articles and/or a special themed issue of ASTC Dimensions.



## **ORGANIZATION: Sigma Xi, The Scientific Research Society** *Roger Harris*

### **1. Description of your current network structure**

Sigma Xi has circa 60K dues paying members, mostly based in the US. 50K are affiliated with chapters that vary in size from 20 members to 1500. Most chapters are based at R&D universities, while others are at colleges, industrial or government labs or based around geographic areas.

Chapters connect directly with members and to some extent with the central office. Each chapter has one to four chapter officers responsible for chapter management. Little networking occurs between chapters.

Members themselves are networked depending on their chapter, prior or present institutional affiliation and specific discipline.

The central office communicates with members through email newsletters, our website and through our flagship magazine, *American Scientist*.

The central office is beginning to experiment with social networking functions, initially through commercial platforms such as Facebook and LinkedIn. We plan to transition to a custom social networking platform.

### **2. Motivations for your group interacting with COPUS and its regional hubs – what are the anticipated benefits to your organization; what can you bring to the coalition and its hubs?**

COPUS's mission overlaps with Sigma Xi's in the desire to communicate science to the public. In doing so, we raise our visibility to the public, thereby helping to achieve one of our primary strategic goals. Also, by increasing visibility, we add value to membership since the organization is perceived as influential and viable.

The hub concept is of interest because our regional model for chapter organization has met with limited success. We believe that the hubs could provide an alternative model for chapters to engage in multi-chapter activities that would offer synergistic outcomes unlikely with the present structure.

### **3. Target audience(s) that you serve**

We primarily serve our members, who are mostly mid- to late-career scientific researchers. However, our audience for public outreach includes anyone interested in science, and even those not interested!

To focus our communication efforts, our primary non-member audience comprises health professionals, publishers, postdocs, graduate, undergraduate and high-school students, science educators, science librarians, science writers/journalists and science bloggers/readers.

### **4. Plans for Year of Science 2009**

We plan to have a theme for the year (TBD). For 2008 our theme is water. Right now we have not made firm plans. However, we are planning on encouraging our 500+ chapters to become members of COPUS. My hope is that the COPUS hubs will help bring us to some focus on where we want to go with this.



## **ORGANIZATION: Society of Physics Students** Kendra Rand

### **1. Description of your current network structure**

SPS is the Society of Physics Students, the professional society for physics students and their mentors. With over 4000 members in over 700 chapters on college campuses, SPS provides opportunities for physics students across the nation, including research awards, regional physics meeting support, outreach programs, scholarships, and travel awards. The SPS website (at [www.spsnational.org](http://www.spsnational.org)) provides information and applications for these opportunities, as well as other physics contacts, society news, hot science, physics career information, and the lighter side of physics. Undergraduate members have the opportunity to become part of one of 10 other physics professional societies through the joint membership program, as well. About 500 of the 700 SPS chapters also have a chapter of Sigma Pi Sigma, the physics honor society, on campus ([www.sigmapisigma.org](http://www.sigmapisigma.org)).

These two organizations are housed within, and supported by, the American Institute of Physics (AIP), within the Education Division, as a service to physics students and to the 10 member societies of AIP. AIP is a 501(c)(3) membership corporation chartered in New York State in 1931 for the purpose of promoting the advancement and diffusion of the knowledge of physics and its application to human welfare.

SPS and Sigma Pi Sigma are governed by a National Council made of one student and one faculty representative from each of 18 regional zones. Each representative is elected by his or her zone. The Council meets every fall for a kick-off meeting to discuss plans for the year and SPS and Sigma Pi Sigma business. This year the Council will meet in conjunction with the Sigma Pi Sigma Quadrennial meeting at Fermilab Nov. 6-8<sup>th</sup>.

### **2. Motivations for your group interacting with COPUS and its regional hubs – what are the anticipated benefits to your organization; what can you bring to the coalition and its hubs?**

SPS is engaged in activities and events ranging from regional student meetings to national conferences. Many of our chapters host events for their local communities as well, such as pumpkin drops, observing nights, and Saturday science days. The COPUS program and resource directory is an effective way for us to let people interested in science but outside of our normal channels of communication know about SPS and these activities. In addition, we see COPUS as a potential rich source of information for science journalists and would like to feed many of our news stories through this channel, such as those featured on the American Institute of Physics (AIP) website, [www.aip.org](http://www.aip.org).

Through AIP, SPS is closely related to the 10 member societies of AIP and its partners (see [www.aip.org/aip/societies.html](http://www.aip.org/aip/societies.html) for a complete list). We also have good relationships with the student program offices in many other science, technology, engineering and math (STEM) societies, such as the American Chemical Society, the Mathematical Association of America, and the American Society for Microbiology. In recognition of the fact that undergraduate science students are often exploring many career paths, we would like to see the creation of a list or database of societies with student programs. This database could include membership information, scholarship and awards available, and outreach materials, for example. This is a potential project that SPS could organize as a COPUS hub for post-secondary STEM majors. This project could be supported through The Nucleus, the student section of the physics digital library, similar to the summer research clearinghouse, [www.the-nucleus.org/research](http://www.the-nucleus.org/research), or perhaps through the existing COPUS site.

SPS exists to help students transform themselves into contributing members of the professional community. Course work develops only one range of skills. Other skills needed to flourish professionally include effective communication and personal interactions, leadership experience, establishing a personal network of contacts, presenting scholarly work in professional meetings and journals, and outreach services to the campus and local communities. Locally, regionally, nationally, and internationally, the SPS offers the opportunity for these important enrichments to the student's experience. We recognize that many other organizations offer similar opportunities for STEM students, and a COPUS hub might help bring them together and cross the discipline boundaries.

In addition, we are excited about the potential of the "Understanding Science" website and plan to actively distribute information about the site to our members when it comes online.

### **3. Target audience(s) that you serve**

The Society of Physics Students is a professional association explicitly designed for undergraduate students and their mentors. Membership, through collegiate chapters, is open to anyone interested in physics. The only requirement for membership is that you be interested in physics. Besides physics majors, our members include majors in chemistry, computer science, engineering, geology, mathematics, medicine, and other fields.

### **4. Plans for Year of Science 2009**

Every year SPS designs its materials (calendar, website, etc.) around a theme (see [www.spsnational.org](http://www.spsnational.org) for evidence of the current theme, *Future Faces of Physics*). SPS plans to use the Year of Science 2009 as a thematic element for our 2009 materials. We will kick off the Year of Science theme at our upcoming 2008 Sigma Pi Sigma Quadrennial Congress, which will bring together physics students, faculty, and alumni to discuss scientific citizenship. We also plan to encourage our local chapters to enter their events into the COPUS events database. SPS was an active participant in the successful World Year of Physics 2005. To see the types of activities and collaborations that took place in the United States during the World Year, see [www.physics2005.com](http://www.physics2005.com).

**YEAR** **2009**  
**of SCIENCE**  
Explore. Empower. Engage...

## D. Draft of Hub Toolkit for the COPUS website

### **THE COPUS HUB TOOLKIT: A simple guide for starting your own COPUS Hub**

#### **WHAT IS COPUS?**

The **Coalition on the Public Understanding of Science** (COPUS) is a grassroots network formed in response to concerns about an apparent decline in the public understanding of and engagement in science. Composed of universities, scientific societies, science centers and museums, government agencies, advocacy groups, media, schools, educators, businesses, and industry, COPUS recognizes the need for commitment from all science stakeholders to work together to address this concern. Real change can occur if we, as the scientific community, share, teach, and communicate the science that we are so passionately committed to and demystify the process and nature of science so that the public has the opportunity to engage along with us in the joy of our discoveries.

COPUS facilitates relationships at the national and local levels to support this change. COPUS is building a communication network that allows organizations to share best practices, form new partnerships, and coordinate their efforts in increasing the public understanding of and engagement in science. Much of the current focus of this network is in preparation for the **Year of Science 2009** (YoS09). The goal of this national, year-long celebration of science is to engage the public and improve public understanding about the nature and process of science. {[Link to COPUS Structure and Leadership](#)}

The long term success of COPUS lies in two factors: (1) its ability to connect the science research and science education communities (both formal and informal) with other stakeholders with whom they can interact in order to more effectively communicate science and (2) on its ability to sustain efforts beyond the 2009 Year of Science. The newly developed COPUS regional and thematic hubs provide not only the local connections relevant to a particular regional audience or to a group sharing common interests, but they also provide the potential for a higher level of sustainability for the COPUS effort.

#### **WHAT IS A COPUS HUB?**

While COPUS has been growing as a national initiative, energetic hubs of activity have begun to coalesce around common regional or professional interests and expertise. These groups provide a natural and sustainable set of associations that can interact with one another and participate effectively in the national COPUS network.

**COPUS regional hubs** are locally-based communities of COPUS participants and science stakeholders that work together within a designated geographic region to promote the public understanding of science. Regional hubs now [include: {link to listing}](#)

**COPUS thematic hubs** represent nationally distributed peer communities that are interested in building bridges between their members, COPUS national, and the regional hubs to increase the public understanding of and engagement in science. These hubs cross geographic boundaries and enlist their membership to focus on their areas of expertise to support COPUS national and activities at the regional level. Thematic hubs now [include: {link to listing}](#)

### **Hub Structure and Operations**

COPUS Hubs remain independent, with self-determined membership, structure, focus, and activities. Whether regional or thematic, registered COPUS Hubs share certain common goals:

- To develop a shared appreciation of science and its contributions to the quality of life
- To inform and engage the public in and about science, its process and nature
- To make science more accessible to everyone

Each hub selects a representative to interact with COPUS Central in order to share ideas, resources, and best practices and to facilitate local participation in national initiatives. COPUS Hubs interact with the national Coalition by encouraging their members to register with COPUS and by sharing national resources and services with its members. In support of these efforts, COPUS Central provides an online communication tool (COPUS Commons) for its hub liaisons.

### **WHAT DOES A COPUS HUB DO?**

Each hub determines its own action plan, but has certain responsibilities to support the COPUS network and has mutually beneficial interactions with the national Coalition.

### **Hub Responsibilities**

Each COPUS Hub is expected to:

- Identify and recruit participants in the hub and facilitate networking among its members in support of the public understanding of science
- Encourage/facilitate its participants to develop collaborative activities that promote the public understanding of and engagement in science with a current focus toward participation in the Year of Science 2009 (YoS09)
- Encourage their organizational members to register with COPUS
- Coordinate promotion, national registration, and branding of YoS09 activities of the hub membership
- Identify a hub representative to interact with COPUS Central in order to take advantage of national resources and services and to share ideas, resources, and best practices

### **Interactions with COPUS Central: services and resources**

Nationally, COPUS is networking scientists, business leaders, and educators to share ideas, leverage resources, and learn from each other. COPUS is able to provide resources and services to participating hubs and organizations. COPUS Central can:

- Highlight science programs and activities of participants on the COPUS website and in the monthly newsletter, the COPUS Clarion

- Provide access to others through the COPUS program and resource directory
- Provide access to marketing resources
- Facilitate communication among all COPUS Hubs and COPUS Central through COPUS Commons – an online communication tool that supports file-sharing, tracks project achievements, highlights milestones, encourages threaded conversations, and archives document development
- Assist regional hubs in developing their own online communication tools to interact with COPUS Commons
- Assist regional hubs in developing their own websites
- Connect regional hubs with local representatives of national organizations and thematic hubs
- Guide hubs in identifying and implementing activities, programs, and resources for the Year of Science 2009

### **WHY START A COPUS HUB?**

COPUS provides new opportunities to communicate and collaborate on national and local levels. Through participation in COPUS, organizations may:

- Increase audience participation and improve visibility of science programs and resources nationally via the COPUS program and resource directory
- Enhance partnership opportunities by forming a communication network among peers with common passions, issues, and concerns
- Leverage existing resources by sharing best practices, tools, and content for improving public engagement in science
- Combine limited resources to expand efforts to new audiences
- Facilitate local awareness of and participation in national initiatives

Developing a COPUS Hub provides the opportunity to create a regional “community for science” and to build bridges between professional organizations and regional science communities. Members of a science community work together to elevate the profile of locally based resources and provide easily accessible and coordinated communication among scientists, science communicators and educators, the media, and community groups and institutions.

### **HOW DO YOU START A COPUS HUB?**

Though each COPUS Regional Hub remains unique in character, purpose, structure, and function, there are important recommendations to consider for developing a successful and sustainable COPUS Regional Hub. These include:

- 1. Build on what is already there** – That means identifying the stakeholders and who is doing what. There are some obvious starting points: local museums and science centers, universities, and government agencies, but be willing to look beyond the obvious.
  - A quick Internet search “Science in (name of city or region) may give you some unexpected results.
  - Connect with your local public broadcasting stations.

- Consider connecting with science reporters associated with local media, park systems, local libraries, state and local science teachers associations, the state science supervisor, Sigma Xi chapter, university and college student groups.

**2. Maintain the grassroots character** – Start with a face-to-face meeting of a core group of interested parties and grow naturally. Within that core group:

- Discuss how to coordinate and support current activities and resources in order to engage your local audiences in the Year of Science 2009.
- Distribute responsibilities among the core members according to interest and expertise. This shares the load and creates a sense of collaboration while the hub is evolving in character and structure.
- Invite others to join in the effort.

**3. Find a champion or two** – Even with distributed responsibilities, you will need a hub facilitator or coordinator. Initially, this can be a shared task, fulfilled by donated staff time or volunteers. Eventually, you may want to consider support for a part-time or full-time position.

**4. Create a clear sense of purpose** – Begin by focusing on preparing for the Year of Science 2009. Efforts and activities should reflect local interests and needs, targeted audiences, and the participating organizations.

- Set reasonable goals and objectives, e.g. offer one public event each month; start a science café; develop a coordinated activity calendar
- Articulate expectations of and benefits to the partnering organizations. The value gained through a coordinated effort should be greater than the investment of individuals.

**5. Establish communication and marketing tools** – Email and face-to-face meetings can get you started. In addition, consider these tips:

- Develop an online discussion space for your regional hub. COPUS Central will assist with this effort.
- Create a regional hub website to serve as gateway to hub activities. COPUS Central can provide some recommendations for getting started.
- Encourage all participants to use the Year of Science 2009 branding on events and activities
- Take advantage of the marketing expertise of your local museums and informal science centers for naming and publicizing your activities and events
- Develop and implement ways to measure impact and promote your success. COPUS Central will provide an evaluation instrument for your modification and use.

**6. Develop appropriate funding strategies** – By leveraging existing resources, hub expenses should be minimal. Identify and approach local stakeholders (business, industry, foundations, and individuals) that may want to support your efforts.

**7. Stay connected with COPUS Central** – Identify a Hub liaison to interact directly with the national effort; take advantage of COPUS resources; and participate in national activities that will be highlighted each month on the Year of Science 2009 website.

- Register all participants on the COPUS website in order to access additional marketing tools and strategies
- Register all Year of Science 2009 activities on the national calendar which can then be downloaded to your hub calendar

### **THEN WHAT?**

**Registering your hub with COPUS** – Contact the COPUS Network Project Manager, Sheri Potter, [spotter@copusproject.org](mailto:spotter@copusproject.org) to register your hub and have it listed on the COPUS website.

**Expanding your hub** – As your presence grows, hub members will identify others within the community who may be interested in joining you. The expansion of your hub is determined by you, but we encourage you to be inclusive of all stakeholders who share the COPUS mission of engaging the public with science and increasing their understanding of the nature and process of science. These [sample invites \(link\)](#) can be modified for your use.