

The Nexus

Connecting & Expanding the Green Chemistry and Engineering Community

In This Issue

[12th Annual Green Chemistry & Engineering Conference: Advancing Sustainable Solutions](#)

[2008 Presidential Green Chemistry Challenge Award Winners](#)

[Students Get Up Close With Green Chemistry](#)

[2008 Green Fellows Make Most Out of DC Trip](#)

[Pharma Goes Green](#)

[Latin Chemists Meet in Mexico](#)

[Nike Sets the Pace for GC3](#)

Mark Your Calendars!

ACS GCI is proud to announce that the 13th Annual Green Chemistry & Engineering Conference will be held June 21-26, 2009 at the Marriott Inn and Conference Center in College Park, MD.

Start planning now to be part of the premier conference on sustainable chemistry in the world!



Green Chemistry Supporter,

Welcome to the first of many regular updates on the latest news and information from the ACS Green Chemistry Institute® (ACS GCI). As the new Director of the ACS GCI, I am committed to expanding the breadth and depth of information and outreach we provide to our constituents. This will ensure you are kept up-to-date on relevant future events, opportunities and breaking news in the global green chemistry field.

The Mission of the ACS GCI is to enable and catalyze the implementation of green chemistry and engineering across the global chemical enterprise. A key element to enable our mission will be communications. Facilitating effective communications and connecting practitioners across the globe is the thinking behind the name of our new newsletter - The Nexus. Our goal is to make the headlines informative, provide a short description of content and allow you to "read more" if you have an interest. As you know, communication is a two way endeavor, so it is vital to the success of our mission that we hear back from you. Tell us about your successes, frustrations, ideas and suggestions in your respective areas, be they technical or geographic.

Thanks for your support as we work toward our collective vision.

Best regards,
Dr. Robert Peoples

Director, ACS Green Chemistry Institute®

b_peoples@acs.org

Quick Links

[ACS Green Chemistry Institute®](#)

[ACS Main Page](#)

[ACS GCI Pharmaceutical Roundtable](#)

[U.S. EPA Green Chemistry](#)

[Warner Babcock Institute for Green Chemistry](#)

[Center for Green Chemistry & Green Engineering at Yale](#)

[Green Chemistry at the University of Oregon](#)

[Environmental Health News](#)

[Presentations from the 12th Annual Green Chemistry & Engineering Conference](#)

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12th Annual Green Chemistry & Engineering Conference



Nearly 400 members of the green chemistry and engineering community congregated in Washington, D.C. from June 24-26th for the 12th Annual Green Chemistry and Engineering Conference.

The event continued the long tradition of the ACS Green Chemistry Institute® (ACS GCI) and the U.S. Environmental Protection Agency's (EPA) efforts to offer the premier conference on sustainable sciences and technologies and facilitate communications between the academic world, government, and international corporations.

Nearly 160 technical presentations, covering an array of issues, from Bio-based Materials & Processes to Solvents and Solvent Systems, to green educational ideas and experiences were delivered over the course of the conference, including a student poster session that featured nearly 60 posters. This year's keynote speakers were Dr. Theo Colborn of the The Endocrine Disruption Exchange, Dr. Skip Volante of Merck & Co. Inc., Dr. Steven Chu of the Lawrence Berkeley National Laboratory, Dr. Bill Banholzer of The Dow Chemical Company, and Jonathan Lash of the World Resources Institute. To view the presentations given at this year's conference, please visit this site.

Two students received poster prizes, sponsored by the Royal Society of Chemistry and American Institute for Chemical Engineers – Institute for Sustainability. Those students are David Chavez from the University of Texas, El Paso, and Kyle Lynch, from Rowan University, who shared his prize with student co-authors Anthony Furiato and Tim Moroz.

This year's conference also continued the pairing of the event with the annual Presidential Green Chemistry Challenge Awards, presented by the EPA to universities and businesses that make significant contributions towards pollution prevention with financial benefits. This year's awards were presented at the National Academy of Sciences on June 24th (see below for more).

Planning is already underway for next year's conference. The 2009 Green Chemistry and Engineering Conference will be held June 21-26th at the Marriott Conference Center in College Park, Maryland. Be sure to put it on your calendars now, and if you're interested in helping with the planning or program, please let ACS GCI know.

To view or download presentations from this year's conference, please visit [this site](#).

EPA Honors 2008 Presidential Green Chemistry Challenge Award Winners

For the 13th straight year, the U.S. Environmental Protection Agency recognized chemical technologies developed by leading researchers and industrial innovators that make significant contributions to pollution prevention in the United States.

These prestigious awards were given out on June 24, 2008 at an impressive ceremony at the National Academy of Sciences in Washington, D.C.

The Presidential Green Chemistry Challenge Awards (PGCCA) are given in five categories: Academic, Small Business, Greener Synthetic Pathways, Greener Reaction Conditions and Designing Greener Chemicals. The 2008 award-winner technologies are:

- A novel method to make complex molecules cleanly and efficiently developed by Professors Robert E. Maleczka, Jr. and Milton R. Smith, III of Michigan State University, Lansing, Michigan.
- A safe way to harness the reactivity of alkali metals developed by SiGNa Chemistry, Inc. of New York City.
- Biobased resins for toner ink that are easily removed during paper recycling developed by Battelle of Columbus, Ohio.
- A three-part system to monitor and treat cooling water developed by Nalco Company of Naperville, Illinois.
- A second-generation green chemistry pesticide developed by Dow AgroSciences of Indianapolis, Indiana.

EPA's Presidential Green Chemistry Challenge promotes research and development of less-hazardous alternatives to existing technologies that reduce or eliminate waste, particularly hazardous waste, in industrial production. An independent panel of technical experts convened by the American Chemical Society selected the winners from nearly 100 nominated technologies.

Over the past 13 years, the winners' work has led to the elimination of over 1.1 billion pounds of hazardous chemicals and solvents, over 21 billion gallons of water, and nearly 400 million pounds of carbon dioxide. These benefits are in addition to significant energy and cost savings by the winners and their customers.

Also awarded during the ceremony were the two student winners of the Kenneth G. Hancock Memorial Student Awards, sponsored by the ACS Division of Environmental Chemistry and the National Institute of Standards and Technology. Arsen Simonyan, from the University of New York, College of Environmental Sciences and Forestry, was awarded for his work on linear-dendritic copolymers as nano-reactors for organic reactions in water for pharmaceutically and industrially valuable substances. Lallie McKenzie also received an award for her research on green nanoparticle manufacture via the high-throughput, low-waste synthesis of well-defined nanoparticles in microcapillary flow reactors.

For more information about the PGCC awards, visit [this site](#).

Students Get Up Close With Green Chemistry



Early Monday, June 23, students trickled into the American Chemical Society's D.C. office, still yawning and clutching coffee. A mix of undergraduates, graduates, and post-doctoral fellows, a total of 48 gathered for breakfast and found themselves rubbing shoulders with prominent green chemistry leaders like Dr. John Warner and Dr. Paul

Anastas.

Thus began the Green Chemistry Student Workshop, a day-long event preceding the 2008 Green Chemistry and Engineering Conference. As workshop organizers Dr. Liz Gron and Joyce Kilgore explained, students could not only learn about green chemistry directly from its foremost innovators but also network with similarly passionate peers. Liz Gron, describing the event's significance, said, "Green chemistry and engineering are important for the future of our society, so we must actively recruit the best new minds to this science through education," a philosophy shared by its leaders who generously donated their time to this effort.

These leaders represented the wide range of green applications from academics and industry. Dr. Bob Peoples, Director of the ACS Green Chemistry Institute®, welcomed the students to the conference and to the green chemistry community. The "founders" of green chemistry, Dr. John Warner and Dr. Paul Anastas, respectively opened and closed the workshop, urging students to use green chemistry to solve some of society's most critical issues from health to energy. Other speakers focused on more specific topics, including Dr. Eric Beckman on green innovation and Dr. Amy Cannon on industrial applications. Dr. Jim Hutchison spoke on green nanomaterials, Dr. Berkeley "Buzz" Cue on the pharmaceutical industry, and Dr. Julie Haack on green chemistry education. Between talks and during breaks, students pushed the speakers further by asking engaging, often challenging questions. Indeed, students and speakers lingered well past Dr. Tamara Nameroff's closing remarks.

Student participation at the GC&E conference was significantly encouraged by the National Science Foundation, which supported both workshop speaker travel as well as student travel through the NSF Scholars program.

The workshop's success was undeniable. Students praised the speakers for their accomplishments and passion, describing their talks as "practical and inspirational." They walked away with "enthusiasm for green chemistry" and "the need to take action." As one student said simply, "Green chemistry has more potential than I imagined." The 47 other students would have agreed.

2008 Breen Fellows Make Most Out of DC Trip



Each year, the Joseph Breen Memorial Fellowship, awarded by the ACS Green Chemistry Institute® is given to young international green chemists for travel and participation in a green chemistry technical meeting, conference, or training program. This year's winners were Antonio Osario-Lozada from the University of Iowa and Mageswary

Karpudewan from Universiti Sains Malaysia.

This fellowship is awarded to young international green chemists for travel and participation in a green chemistry technical meeting, conference, or training program. This year's winners were Antonio Osorio-Lozada from the University of Iowa and Mageswary Karpudewan from the Universiti Sains Malaysia.

Antonio, a PhD candidate in medicinal chemistry, used his fellowship to attend the 12th Annual Green Chemistry and Engineering Conference in Washington, D.C. He expressed admiration for the work discussed by keynote and technical session speakers, from successes in the chemical and pharmaceutical industry to new approaches towards reactions. Reflecting on his experience, he observes, "I was in the right place to enrich myself in green chemistry with fresh ideas."

Mageswary, a PhD candidate in chemistry education, began researching green chemistry education, realizing green chemistry could be the key to developing truly sustainable lifestyles in and out of the classroom. She had begun integrating green chemistry experiments in secondary school curricula and teacher education; however, a lack of materials created an obstacle towards further development. The fellowship helped overcome this problem by allowing her to attend the Green Chemistry in Education Workshop at University of Oregon as well as the Green Chemistry and Green Engineering Conference. At both events, she not only learned of new ways to green the chemistry curriculum, she also established new contacts with green chemistry educators in the U.S. and different parts of world, "so that in future we could share knowledge and ideas on green chemistry," she says.

Pharma Goes Green to Cut Costs

The ACS GCI Pharmaceutical Roundtable was cited in a recent article in the RSC's publication Chemistry World. Several members of the Roundtable are quoted in the article including Roundtable chair Peter Dunn of Pfizer.

To read the article, and learn more about the increased greening of the pharmaceutical industry, please visit [this site](#).

Latin American Conference on Green Chemistry



The 1st Latin American Workshop on Green Chemistry (Taller Latinoamericano de Química Verde) was held in Mexico City, July 7-11, 2008 at the Universidad Iberoamericana. This monumental event brought together nearly 35 college professors and laboratory instructors from across Mexico as well as from Panama, Argentina, Peru, Cuba, and Columbia.

The workshop, organized by Prof. Jorge Ibáñez, Prof. Carmen Doria, and the Centro Mexicano de Química en Microescala, was funded in part by the ACS Green Chemistry Institute® through the Developing and Emerging Nations Grant Program. The program focused on college level incorporation of green chemistry into the teaching and laboratory curriculum, with presentations on green chemistry topics in the mornings and laboratory experiments in the afternoons. Lab experiments ranged from solvent-free reactions and liquid CO₂ extraction, to microwave and IR irradiation, with 27 green microscale experiments to choose from.

The workshop kicked off with presentations by Dr. Jennifer Young (ACS Green Chemistry Institute®) and Dr. Ken Doxsee (University of Oregon). Other presenters included professors from the Universidad Nacional Autónoma de México (UNAM), Universidad

Iberoamericana, and industrial perspectives from DOW Química Mexicana, Polioles SA de CV, and Sabic Innovative Plastics. Presentations of green chemistry activities and experiment development by a number of participants also gave a clear sense of a rapidly expanding international community of green educators.

The organizers of this workshop also constitute the Mexico Chapter, one of the most active International Chapters of the ACS Green Chemistry Institute®. They have been conducting similar green chemistry workshops around Mexico for the past several years, and hosted the 2007 PASI on Sustainable and Green Chemistry (summer school). By sharing their knowledge and expertise with other parts of Latin America, they are a model for expanding green chemistry beyond their local and country level into the larger Latin American region.

Thanks to GCI's own Dr. Jennifer Young for reporting on this conference.

Nike Sets the Pace for GC3



On July 9-11, 2008 more than 80 representatives from industry, government (local, state and federal), NGOs and academia gathered at the Nike Headquarters in Beaverton, Oregon for the third Innovator's Roundtable of the Green Chemistry and Commerce Council (GC3), to discuss the role of Standards, Policy and

Retail in the sustainable management of chemicals along supply chains.

The GC3 is a loose business to business network that provides an open forum for businesses from a range of sectors and levels of supply chains to discuss and share information and experiences relating to advancing Green Chemistry and Design for Environment as it pertains to sustainable supply chain management. The mission of the GC3 is to promote and support green chemistry and the design for environment approach to

research and practices nationally and internationally among companies and other governmental and non-governmental entities.

The group's priorities over the coming year include actions to support passage of the federal green chemistry research bill, further engagement with the retail sector on advancing Green Chemistry and Design for Environment, and a survey of how chemical information and discussions on safer chemicals and products flows through supply chains. For a complete list of priorities, presentation slides and meeting notes go to www.greenchemistryandcommerce.org.

ACS Fall National Meeting

Be sure to visit the ACS GCI booth at this 2008 ACS Fall National Meeting & Exposition in Philadelphia, Pennsylvania, August 17-21. Stop by booth #1332 to pick up the latest information on green chemistry, and make sure to attend the special keynote from Dr. Bob Peoples at the Special Events Pavilion on Monday, August 18th at 12:00pm.

See you in Philadelphia!

Upcoming Events

- 2nd International IUPAC Conference on Green Chemistry - Moscow and St. Petersburg, Russia, September 14-20, 2008
- Green Chemistry & Engineering International Conference on Process Intensification & Nanotechnology - Albany, NY, September 15-18, 2008
- 13th Annual Green Chemistry & Engineering Conference - College Park, MD, June 21-26, 2009

This is your newsletter. Please take the opportunity to submit your feedback and suggestion for ways to enhance and improve our new communication vehicle. Additionally, please feel free to submit content or ideas for future issues. We'll be sure to include them in upcoming newsletters.

Thanks!
Sincerely,

Jesse Gallun
ACS GCI

Writer/Editor "The Nexus" Newsletter
j_gallun@acs.org

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ACS Green Chemistry Institute®

American Chemical Society

1155 Sixteenth Street, N.W. • Washington, D.C. 20036

Phone: 202-872-6102 • Fax: 202-872-6206

URL: www.acs.org/greenchemistry • Email: gci@acs.org

