AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)
AMERICAN SOCIETY FOR ENGINEERING EDUCATION (ASEE)
AMERICAN INSTITUTE OF CHEMICAL ENGINEERS (AICHE)
INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)
ASME, INTERNATIONAL **OCTOBER 2006**

ENGINEERS FORUM ON SUSTAINABILITY

Forum Affiliates with American Association of Engineering Societies (AAES)

I'm pleased to announce that the Engineers Forum on Sustainability has become affiliated with the American Association of Engineering Societies. AAES is the umbrella organization for the engineering community, and its member societies represent the mainstream of U.S. engineering, more than one million engineers in industry, government, and academia. This relationship will greatly enhance the information sharing and outreach capability of the Forum. Please visit the AAES website, www.aaes.org, to learn more about its mission and activities.

This issue of the Forum Newsletter summarizes several of the presentations at the last Forum meeting. It also includes a diverse group of sustainability-related articles, touching on such areas as climate change, energy efficiency, sustainable technology, fuel cells, and sustainability in disadvantaged communities. We believe you will find many of them to be of interest.

The next meeting of the Forum is scheduled for Friday, November 10, 2006 in the Lecture Room of the National Academy of Engineering in Washington, D.C. The Forum will meet from 9:00 a.m. to noon, and the AAES International Activities Committee will meet in the same room from 1:00 p.m. to 4:00 p.m.

Please mark your calendars now! Detailed agendas will be mailed out prior to the meetings. We look forward to seeing you in November!

Al Grant, Forum Chair

INSIDE THIS ISSUE

GOVERNMENT

EPA Announces 2007 P3 Sustainability Competition

The U.S. Environmental Protection Agency (EPA) will award $1.25 million in sustainability grants to enable teams of college students to conduct research related to scientific and technical solutions to environmental challenges. The People, Prosperity and the Planet (P3) competition will provide as many as 50 grant awards of up to $10,000 each for research and development of sustainable solutions to environmental challenges in such areas as agriculture, ecosystems, chemicals, energy, information sources, and water. The awards will be for activities to be conducted during the 2007-2008 academic year.

The P3 competition is open to teams of students attending colleges, universities and other post-secondary educational institutions. Interdisciplinary teams are strongly encouraged, including representatives from multiple engineering departments and/or departments of chemistry, architecture, industrial design, economics, policy, social sciences, business, communications, and others. ASME, ASCE, and AIChE are among the partnering organizations of P3, helping to promote the competition to its many student chapters.

In the spring of 2008, the teams will be invited to bring their designs to Washington, D.C., to compete for the EPA's P3 Award, which includes an additional award worth up to $75,000 to further develop and implement their projects in the field. The competition will be judged by the National Academy of Engineering for design innovation and technical merit, along with relevant social, economic and environmental considerations that are the keys to sustainable design.

Information on the P3 program is available at www.epa.gov/p3. The application for the grants competition, as well as information on how to apply, may be found at http://epa.gov/ncer/rfa/2007/2007_p3_4thannual.html. All applications must be received by December 21, 2006.

Congressional Symposium Focuses on Climate Change in the Arctic

In June, 2006, the Environmental and Energy Study Institute (EESI) in cooperation with the Royal Norwegian Embassy conducted a Transatlantic Congressional Symposium on climate change in the Arctic. Key speakers included Kurt Vollebaek, Norwegian Ambassador to the United States, and U.S. Senators Richard Lugar and John McCain.

The Symposium addressed the following topics:

* Transformation in the Arctic, Impacts Beyond the Arctic
* The Arctic as a Bellweather for Climate Change
* How Climate Change in the Arctic Reinforces Global Climate Change
* Costs of Climate Change to the United States

In his keynote remarks, Senator Lugar said that the challenges facing the United States are: radically reducing America's reliance on oil; developing an effective program on carbon constraints and cuts that includes a carbon trading mechanism; actively engaging in international diplomacy to address energy security, economic development and climate change; addressing the adaptation and security ramifications of climate change; and overcoming the skepticism of naysayers, doubters and entrenched interests.

Ambassador Vollebaek noted that even though Norway is a net exporter of oil, Norway is taking massive, innovative and technologically advanced steps to reduce emissions and make sure that

oil exploration does not jeopardize local eco-systems and ocean life in the North Sea. One of the most recent technologies put to use in Norwegian oil fields is the pumping of carbon-dioxide gas back into the sea bed. Instead of releasing the gas into the atmosphere, the CO2 is pumped into the underground void left empty when oil is extracted. This in turn increases the pressure in the large underground reservoirs, so even more oil can be extracted. Carbon capture and storage is a promising opportunity. Norway has almost ten years experience of large-scale carbon dioxide storage from offshore fields.

More information on the symposium, including a full transcript, can be found at www.eesi.org.

EPA Awards Manufacturing Plants for Energy Efficiency

Seventeen U.S. manufacturing plants were the first-time winners of EPA's Energy Star award in recognition of their energy-efficient operations that prevented some 3 billion pounds of greenhouse gas emissions. The manufacturer's efforts not only cut pollution but also lowered energy consumption and reduced costs. The plants represent six percent of cement production capacity; seven percent of wet corn milling capacity; and 23 percent of auto assembly capacity.

The U.S. manufacturing sector consumes about one-third of the energy used in the United States and contributes about 28 percent of U.S. greenhouse gas emissions. Energy is a significant, controllable expense for most manufacturers, and energy efficiency is a direct way to reduce this cost while avoiding emissions of greenhouse gases. EPA's national performance rating system, developed in cooperation with industry, enables companies in the wet corn milling, cement and auto industries to evaluate the energy efficiency of their plants relative to their industries and develop challenging energy improvement goals.

Plant owners are eligible to earn the Energy Star award for a plant if the plant's energy performance score is in the top 25% nationally using EPA's energy performance indicators. The scores are based on actual energy use. EPA is currently working with 10 industries to advance innovative corporate energy management tools.

Energy Star is a voluntary, market-based partnership designed to offer business and consumers effective energy efficiency solutions for saving energy, money and the environment. Americans with the help of Energy Star saved about $12 billion on their energy bills and prevented greenhouse gas emissions equivalent to those produced in powering 11 million single family homes.

For more information about the EPA plant recognition program and energy efficiency rating system, visit http://www.energystar.gov/index.cfm?c=in_focus.bus_industries_focus.

INTERNATIONAL

WBCSD Provides Sustainability Case Studies

The World Business Council for Sustainable Development (WBCSD) seeks to illustrate how companies work independently, or with different stakeholders, to integrate the challenge of sustainable development into their business activities. Over 100 case studies are currently available on-line. The following case study abstracts illustrate their nature.

PROCTER & GAMBLE - PUR WATER PURIFICATION SACHETS

A complementary approach to providing pipe-treated water is through treatment of drinking water directly in people's homes. This point of use (POU) model has the advantages of cost, immediate availability and ease of distribution to reach rural areas. The aim of the PuR product is to create

safe drinking water through the removal of pathogens and the use of disinfectants in turbid waters.

The PuR product uses the same ingredients as those in municipal water systems, acting as a mini-water treatment plant in a sachet. Among other things, a small sachet of powdered product visibly separates the cleaned water from the murky masses and remains stable, providing potential for long-term consumer use as well as providing emergency water. The packaging is an innovation. One small sachet, costing about ten cents in the commercial model, will treat 10 liters of water (enough drinking water for an average family for two days).

REDUCING RAW MATERIAL AND FOSSIL FUEL USE: CASTLE CEMENT

Castle Cement is the UK cement arm of the Heidelberg Cement Group and meets about a quarter of the demand for cement in the United Kingdom, selling more than three million tons of the products. Castle has substantially reduced its use of virgin raw materials and fossil fuels in recent years. In 2003-4, Castle used over 195,000 tons of alternate fuels to replace approximately 160,000 tons of coal in its kilns.

Energy has been recovered from scrap tires, Cemfuel (processed from the residues of recycled waste solvents), and Profuel (paper and plastic wastes not viably recycled in other ways). Now, uniquely in the UK, Castle has introduced a biomass fuel Agricultural Waste Derived Fuel (AWDF), which is meat and bone meal, produced by sterilizing and grinding abattoir waste. Castle continues to use alternative raw materials prolonging the life of the company's quarries. Pulverized fuel ash has been widely used, while other recycled materials include waste plaster moulds from the ceramic industry.

SUSTAINABLE PRODUCTS FOR THE CONSTRUCTION INDUSTRY: SCOTASH

ScotAsh is a joint venture between energy company Scottish Power and Lafarge Cement UK. The company takes the ash output from ScottishPower's coal-fired power stations and re-engineers it into sustainable products for the construction industry. Environmentally friendly products from ScotAsh are used in the construction of roads, buildings, windfarms, harbors and other major projects throughout the UK, and demand for specialized materials, such as environmental binders and concrete enhancers, continues to grow.

Scottish Power’s coal-fired power stations produce around 600,000 tons of ash each year. Until recently, much of this was disposed of to ash lagoons. Now, the majority of ScottishPower's ash output is recycled in ScotAsh products. Using pulverized fuel as (PFA) in cement and concrete enhances their long-term strength, durability and resistance to chemical attack. PFA is also used as a simple fill material, as a grout to repair or stabilize buildings or structures, and as a lightweight aggregate. Eventually, ScotAsh aims to recycle ScottishPower's entire ash output. With over 80% achieved in the last year, that target is now within reach.

For more information on these and other case studies, visit www.wbcsd.org and click on "Case Studies."

ACADEMIA

Texas A & M Implements Sustainability in Disadvantaged Communities

The Center for Housing and Urban Development (CHUD) of the College of Architecture at Texas A & M University (TAMU) has historically focused on the management of the CHUD Colonias Program, which was created in 1991 to meet some of the pressing needs of the residents of the Colonias along the Texas/Mexico Rio Grande border. The CHUD Colonias Program offers a wide range of education, workforce development, health and human services, and programs for children, youth, women, and the elderly, aimed at improving the quality of their lives and

furthering their self sufficiency. The programs and services delivered through CHUD are targeted for an isolated, 98% Hispanic population of over 500,000 residents living in approximately 2000 colonias, including as many as 170,000-200,000 children.

Poor economic conditions, limited economic opportunities, and low income, combined with limited transportation, limited literacy, and limited understanding of, information about, and accessibility to, basic services and programs of town, school, and agency office systems, have contributed to perpetuate the current isolation of colonia residents. In addition, the quality of life of colonia residents is often reduced to mere statistics that do not capture the human dimensions of their plight, making the reality of life in the colonias mostly unknown to anyone outside their boundaries. To overcome this situation, the CHUD Colonias Program has worked in partnership with over 400 local government, state and federal agencies, and non-profit organizations.

The current strategic planning goals of the CHUD Program are:

* Socially, economically, and environmentally sustainable development of the built environment, for both facilities and civil infrastructure systems.

* Innovative and integrated policy, planning, and design strategies and approaches for sustainable urbanism.

* Innovative and integrated design/construction strategies and technologies for residential and non-residential facilities and civil infrastructure systems for disadvantaged communities.

* Revitalization and recovery of deteriorated or damaged rural, semi-urban, and urban environment.

For more information, contact CHUD-Director@tamu.edu.

PROFESSIONAL ORGANIZATIONS

IEEE Conducts Technology Discourses Initiative

The “Technology Discourses” Initiative was funded by the IEEE to expose IEEE members, IEEE constituents and the general public to IEEE technical activities that address critical social, environmental, and economic issues. This initiative will supplement selected IEEE technical meetings and publications with targeted audio, video, web, and print products developed for lay audiences.

In 2006, this initiative has resulted in the development of the following videos that will be made available to the general public through IEEE.TV (www.ieee.org/ieeetv) These include programs on engineering ethics, electronic recycling, wind power energy, and earth observation. :

This initiative will help members of the general public understand the likely trajectories of new technologies and also their social, environmental, and economic implications. For example, the project will highlight the relationship of earth observation technologies to the issue of global warming, as exemplified by the involvement of the Committee of Earth Observation in GEOSS. How do IEEE technologies (remote sensing, signal process, etc.) contribute to the understanding of climate change and to the management of earth’s resources? Another illustrative topic is non-fossil energy, which is gaining renewed attention worldwide as a way to reduce carbon dioxide emissions, local air pollution, and supply constraints on some fossil fuels. Which renewables are viable today? Can next generation nuclear power plant designs reduce proliferation risks? Still another new technology topic is the heralded convergence among nano-bio-info-comm (NBIC) technologies, which promise remarkable changes in economic, social, and environmental conditions in coming years. What is the likely shape and pace of convergence, and what unintended consequences might occur?

For selected IEEE -sponsored workshop or conference events, this project will perform a series of tasks that are not typically done within IEEE. Whereas standard practice is to publish a conference proceedings or special journal issue, this project will invest effort in packaging the results for broader public consumption. It supports the development of multimedia products, including the those which capture workshop presentations in audio and video, for use as streaming video, audio podcasts, and Powerpoint-style presentations that will be presented through a website with streaming video, tutorial materials, virtual community access, and pointers to IEEE Xplore resources. This proposed project will develop a process for connecting IEEE technical activities to public outreach for use by IEEE organizations if they deem public outreach appropriate.

By testing this process on distinct topics in several contexts, we expect to learn much about what works in practical terms for IEEE as it seeks to elevate the discourse on new technologies. We see the proposed activity as a way for IEEE to learn how to act more constructively in areas of popular concern, to contribute a serious technological perspective to difficult issues facing humanity, and to attract young people to technological careers

This initiative will enable the IEEE to develop a long-term strategy for aligning public outreach with technical activities. It will support the use of technology to globalize public discourse. It will result in the development of financial resources, including grants as well as individual and corporate donations, which will enable the IEEE to host events that become an important part of IEEE's public imperative to inform the public about technology.

For more information, contact Peter Wiesner p.wiesner@ieee.org 732 562 -5500

ASCE, CSCE and ICE Sign Sustainability Protocol

On July 4, 2006, the Presidents of the American Society of Civil Engineers (ASCE), the Canadian Society of Civil Engineers (CSCE), and the Institute of Civil Engineers (ICE) signed a charter for "A Sustainable Future for the Planet." It states in part:

"ASCE, CSCE and ICE believe that sustainable development is at the core of professional practice. We recognize that the needs of all people must be met within the environmental and resource capacities of the planet, without compromising the ability of future generations to meet their own needs."

"Sustainable development can only be achieved under transparent systems of government and informed citizenship at all levels, and through the use of appropriate social, technical and economic tools. There is a continuing need for the development and refinement of these systems and tools and of the ways in which they are implemented."

"Civil engineering has a vital role in bridging the gap between having sustainability aspirations and putting them into practice. This role is shared between professional bodies, their members, the wider civil engineering profession and other people and organizations with whom we can work and influence. The provision and maintenance of civil engineering infrastructure and the built environment as a whole will continue to play a crucial role in maintaining and improving quality of life and protecting the environment in all parts of the world."

The charter calls for the following outcomes:

" ASCE, CSCE and ICE will each develop, monitor and implement an action plan to help articulate and deliver their contribution to sustainable development, both nationally and internationally, including addressing the Millennium Development Goals. This will build on work already carried out by the three organizations."

"The plan will include the definitions of sustainability and sustainable development, guiding principles and recommended actions that we can take as individual professionals and as professional bodies. We will seek acceptance of these principles and actions by the world community of civil engineers and all others engaged in the planning, design, construction and operation of the built environment."

"We will identify and collaborate with local, national and international organizations, as appropriate, in implementing the principles and actions of the plan. By committing to this undertaking, we will seek to turn our commitment to sustainable development into practical and beneficial outcomes in civil engineering practice."

AIChE Center for Sustainable Technology Practices: Industry Framework for Sustainability

Phase I of the EPA grant to the Center for Sustainable Technology Practices was discussed by Beth Beloff on June 30, 2006, at June meeting of the Engineers Forum on Sustainability. The project explored "Use of Sustainability Decision-Support Tools in the Chemical Industry" and resulted in a number of outcomes. Some of the outcomes include:

- 4 sustainability evaluation tools reviewed and summarized, representing industry "best practices" in evaluating product and process alternatives from the perspectives of sustainability and green chemistry/engineering;
- 3 case studies on the incorporation of sustainability tools and considerations for decision-making in the chemical industry;
- over 15 industry professionals from 8 companies involved in the review of use of sustainability tools and development of case studies; and
- Approximately 125 people reached so far through presentations at conferences, workshops, and other activities organized by AIChE, ASME, and ACS on the use and value of sustainability decision-support tools.

The project was executed through the Center of Sustainable Technology Practices (CSTP), part of the Institute for Sustainability at AIChE. CSTP is organization of companies that conducts technically and societal important, pre-competitive projects identified by its industry representatives. Case studies and tools highlighted in the effort have led to as much as 70% reduction in emissions and resource use. Project results will be further disseminated through presentations, journal publications, and web resources.

More importantly, the effort resulted in valuable insights for the development of a more effective framework for integrating sustainability into decision-making. A preliminary sustainability evaluation framework has been developed by CSTP members as part of the project. Termed the "Sustainability Roadmap," it integrates sustainability considerations into the lifecycle of technology development (from strategic planning to ideation to development to commercialization to use and end-of-life of a process or chemical product) into a standard business process flow, including suggestions as to how to involve many corporate functions into the decision making regarding sustainability. When completed, the Roadmap will provide guidance on how to utilize sustainability considerations, a related screening and scoring method and related tools and resource materials to support decision-making at each stage of the technology development process. Best practice and other ideas from CSTP member companies will be incorporated into the Roadmap.

For additional information, contact Darlene Schuster at darls@aiche.org.

OTHER ORGANIZATIONS AND DEVELOPMENTS

Report Published on Sustainability in the Chemical Industry

A committee of experts in chemistry, chemical engineering, environmental science, industrial research management, chemical manufacturing, economics, industrial ecology, and sustainable science were convened by the National Academies' Board on Chemical Sciences and Technology to address the issue of sustainability in the chemical industry. Their report identifies the following set of Grand Challenges for Sustainability:

1. Green and Sustainable Chemistry and Engineering - Discover ways to carry out fundamentally new chemical transformations utilizing green and sustainable chemistry and engineering, based on the ultimate premise that it is better to prevent waste than to clean it up after it is formed.

2. Life Cycle Analysis - Develop tools to compare the total environmental impact of products generated from different operating conditions through the full life cycle.

3. Toxicology - Understand the toxicological fate and effect of all chemical inputs and outputs of chemical bond forming steps and processes.

4. Renewable Chemical Feedbacks - Derive chemicals from biomass - including any plant derived organic matter available on a renewable basis, dedicated energy crops and trees, agricultural food and feed crops, agricultural crop wastes and residues, aquatic plants, animal wastes, municipal wastes, and other waste materials.

5. Renewable Fuels - Develop future fuel alternatives derived from renewable sources such as biomass as well as landfill gas, wind, solar heating, and photovoltaic technology.

6. Energy Intensity of Chemical Processing - Continue to develop more energy efficient technologies for current and future sources of energy used in chemical processing.

7. Separation, Sequestration, and Utilization of Carbon Dioxide - Develop more effective technology and strategies to manage the carbon dioxide (CO2) resulting from current and future human activity.

8. Sustainability Science Education - Improve sustainability science literacy of consumers, citizens and future scientists, practitioners of the field, and the businesses that use and sell products. Improve the overall understanding of earth systems science and engineering, ecology, biogeochemistry, life cycle analysis, and toxicology.

For each Grand Challenge, the report identifies the research needed to address the challenge. For more information, visit the Board on Chemical Sciences and Technology (BCST) website at http://www.nationalacademies.org/bcst.

U.S. Fuel Cell Council and EESI join to Hold Fuel Cell Expo

The U.S. Fuel Cell Council, the trade association of the fuel cell industry, and the Environmental and Energy Study Institute (EESI) joined together to hold the 6th Annual Fuel Cell Expo on Thursday, July 20 in the Cannon House Office Building of the U.S. Congress. The event, which was cosponsored by both Democratic and Republican members of the House, featured displays by 31 of the nation's leading fuel cell producers, suppliers and research institutions, plus a "Ride and Drive" Vehicle Display.

A fuel cell is an electrochemical device that uses a fuel containing hydrogen and an oxidant, usually oxygen from the air, to produce electricity without combustion. Fuels for fuel cells include, among others, natural gas and many other hydrocarbons, including renewable fuels. Water may also be used once it is separated into hydrogen and oxygen. A fuel cell is similar in structure to a battery in that both have anodes and cathodes, but a fuel cell does not run down or require recharging, as long as fuel and oxidant are supplied. The conversion of the fuel (hydrogen or hydrogen-rich liquid fuel) to energy takes place without combustion in a sold-state device. The bipolar plates on either side of the cell help distribute the gases and serve as current collectors. Individual cells are "stacked" to generate useful quantities of power. The process is highly efficient, clean and quiet. Water and heat are the typical by-products.

In addition to "micro" fuel cell applications, including more efficient small generators and battery replacements for portable electronic devices, a major application of current interest is in transportation, ranging from cars, trucks, and buses, to industrial equipment, off-road utility vehicles, airport ground service equipment, golf carts, even boats and locomotives. The world's leading automakers are currently competing to bring fuel cell vehicles to market. The goal is to offer an alterative to the internal combustion engine that provides the performance consumers demand, is more efficient and cleaner, and may be less expensive to manufacture, maintain, and operate. Fuel cell vehicles will be 2 to 3 times more efficient than a gasoline internal combustion engine and will be able to use hydrogen from a variety of fuels.

While there are several different types of fuel cells, proton exchange membrane (PEM) fuel cells are now found in most prototype fuel cell cars and buses. To date, more than 50 vehicles have been demonstrated using fuel cell technology. Every major automaker is looking at fuel cells either for powering vehicle propulsion, or for supplying electricity for non-propulsion power needs such as lights and air-conditioning. The first commercial fuel cell vehicle sales are expected soon and full commercialization will probably come by the end of the decade. Automotive industry leaders have speculated that fuel cell vehicles could account for 20 to 25 percent of new car sales within the next 20 to 25 years, a potential market of 12 million to 15 million vehicles each year.

While fuel cells are commercially available today in some markets, such as telecommunications and backup power systems, in most cases these early products require government incentives to make them affordable. Full commercialization on an accelerated timetable will require collaboration between government and private industry, including a substantial public investment in research and development, demonstration and pilot programs, early commercial purchases, incentives for early adopters, and removal of market barriers. According to the Fuel Cell Council, public investment in fuel cells needs to be no larger than traditional levels of support for other domestic energy technologies, and may be more cost effective. But the public benefit, in the view of the Fuel Cell Council, will far outweigh the cost.

Contact: For information regarding the U.S. Fuel Cell Council, contact Tony Androsky at 202-293-5500, ext. 15 or visit the USFCC's web site at www.usfcc.com

Forum Briefed on Engineers for a Sustainable World

At the last Forum meeting, Regina Clewlow, Co-Founder and Executive Director of Engineers for a Sustainable World (ESW), briefed the participants on the organization's goals and activities. ESW is a non-profit organization dedicated to building collaborative partnerships to meet the needs of current and future generations.

ESW's core activities include: 1) public outreach about poverty and global sustainability and the critical role of engineers; 2) engineering curriculum change; and 3) sustainable development projects in the US and overseas.

Through a nationwide collegiate chapter network, ESW members coordinate seminars, film series, and other events to raise public awareness of sustainability, and take practical action. At the University of Iowa, the ESW collegiate chapter worked with its campus facilities unit through a "Turn off the Lights" campaign, which saved the University over $750,000 in energy costs in its first year, and nearly $1 million in its second year. In 2005-06, ESW collegiate chapters organized over 50 public outreach activities to engage local community members in learning about sustainable development.

In 2003, the first "Engineers for a Sustainable World" course was piloted at Cornell University. Through the class, undergraduate and graduate students were exposed to critical issues related to global sustainability, community development, and the role of engineering. Through the course lab, students are also provided the opportunity to utilize their skills through hands-on, design-based sustainable development projects. Working with a local Honduran engineering nonprofit organization, ESW-Cornell has designed water treatment tanks and gravity-fed distribution systems for several communities that did not have access to water. ESW's impact has been widespread. Since 2003, ESW members and chapters have initiated 13 credit-bearing courses through which students learn about sustainability, and are engaged in real-world projects.

In addition to its campus, course-based projects, ESW offers an opportunity for individual professional and student engineers to gain field experience through its Summer Engineering Experience in Development (SEED) Program. Through three-month assignments, volunteers increase access to clean water, design sanitation solutions, and develop clean energy alternatives, to increase the quality of life in some of the poorest communities in the world. Past and current project locations include Nicaragua, Bosnia-Herzegovina, South Africa, India, and Uganda.

For more information, visit www.esustainableworld.org, and info@esustainableworld.org

Upcoming Sustainability Events

The ASCE 2006 Conference in Chicago, October 20-22, will address a number of global sustainability issues at a Sustainability Symposium and an International Roundtable. Please visit www.asce.org for more information on these events.

The AIChE 2006 Annual Meeting in San Francisco, November 12-17, will hold a special Topical on Sustainability with over 50 sustainability related sessions. Co-sponsored with the Society of Chemical Engineers, Japan, one of the keynote speakers on environmental is Conrad C. Luatenbaucher, Undersecretary of Commerce for Oceans and Atmosphere and Administrator of NOAA. Visit www.aiche.org/conferences/annual meeting/index.aspx for additional information.

Call for abstracts for Engineering Sustainability 2007: Innovations that Span Boundaries to be held April 15-18, 2007, Pittsburgh, PA. For additional conference information: http://www.engr.pitt.edu/msi/2007conference/confmain.htm Hosted by the Mascaro Sustainability Initiative, University of Pittsburgh

Call for abstracts for Practical Approaches to Sustainability. Houston, TX, April 22-26, 2007. Hosted by the Sustainable Engineering Forum, AIChE. Contact hesketh@rowan.edu for additional information. Submit abstracts at Http://aiche.confex.com/aiche/s07/cfp.cgi

For more information on this newsletter
Please contact:
Darlene Schuster
Institute for Sustainability
An AIChE Technological Community
3 Park Avenue
New York, NY 10016
Phone: 410-458-5870
E-mail: darls@aiche.org

For more information on societies
Sponsoring this newsletter
Please visit their web sites:
ASCE: www.asce.org
American Society of Civil Engineers
ASEE: www.asee.org
American Society for
Engineering Education
AIChE: www.aiche.org
American Institute of Chemical Engineers
IEEE: www.ieee.org
Institute of Electrical and Electronics Engineers
AMSE,Int. : www.asme.org