

Gordon Research Conference on Industrial Ecology



A Fantastic 5th

Valerie Thomas (valerie.thomas@isye.gatech.edu) Faye Duchin (duchin@rpi.edu)

The Gordon Research Conference (GRC) on Industrial Ecology was held August 6-11, 2006 at Queens College of Oxford University. This was the fifth Industrial Ecology GRC, and this year there were more participants than ever before, more students, more participants from industry, more participants from Asia. The poster sessions, organized by Faye Duchin, were bigger and better than ever, with a couple of extra poster boards needing to be found at the last minute to make room for them all.

The Gordon Research Conferences are designed as intense, off-the-record meetings for the exchange of new and unpublished ideas. All the participants sign an agreement not to reveal the

Gordon Research Conference participants.

content of the lectures or posters. This makes it difficult to write much about the conference! Nevertheless, by using the titles of the lectures and posters, I can provide a hint of the conversations and discussions, if you read between the lines.

The conference opened with keynote lectures from Reid Lifset (Yale University) on challenges and opportunities in industrial ecology, and Roland *Continued on page 2*

Inside....

René Kleijn offers an IE blog Edgar Hertwich with new IE courses ISIE 2007 - Toronto! Brad Allenby in the President's Corner Web Reviews: Japanese sustainability, DfE, UNEP European patent application

GRC continued

Clift (University of Surrey) on climate change and energy policy – the UK story.

The session on sustainable energy featured a lecture on "extreme energy efficiency" from Marilyn Brown (Oak Ridge National Laboratory), from Jamila Fattah (BP) on enabling "sustainable mobility," and from Jeffrey Siirola (Eastman Chemical Company) on "sustainability, stoichiometry and process systems engineering."

The session on sustainability initiatives in industry included talks from Michael Bertolucci (Interface Research Corporation) on technical challenges of sustainability at Interface, Johan Breukelaar (Shell Chemicals Company) on challenges of sustainability of petrochemicals, and Bill Malloch (Nike) on lessons in applied sustainability.

The session on consumption in industrial ecology included a talk by Carita Niemi and Klaus Hubacek (University of Leeds) on the role of social capital for sustainable consumption, Edgar Hertwich and Glen Peters (Norwegian University of Science and Technology) on household environmental impact assessment, and Annika Carlsson-Kanyama (Royal Institute of Technology), on interactive environmental information for changing pollutant intensities of consumption.

Most of the participants were from western Europe or North America and did not require a visa



GRC attendees enjoy punting. Photo by Soheil Shayegh.

to enter the UK. However, all the participants from China, India, Russia, and Armenia needed visas, and visa applications procedures were long and cumbersome. Special thanks are due to Roland Clift and to James Tansey and Steve Raynor (Oxford University) for writing and faxing and express mailing many letters to support visa applications.

The winner of the student poster competition, organized by the ISIE student chapter, was Monica Vanegas (TU Berlin), with a poster on "Closing the Loop of Non-Returnable Beverage Packages in Mexico's Brewery Industry." As winner of the competition, she presented a short lecture on her work in the final session of the conference. Tied for second place were Troy Hawkins (Carnegie Mellon University) with a poster on "Development of a Mixed-Unit Input-Output Model for Life-Cycle Assessment," and Soumya Chatterjee (Kolkota Government College of Engineering) with a poster

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Scenes from the 2006 GRC in Oxford. Photos by Anthony Chiu.

http://www.is4ie.org

What's New In ISIE?

ISIE 2007—Toronto!

Abstract Deadline 1 October

http://www.isie.ca

Be sure to submit your abstract for the 4th ISIE conference. The University of Toronto will host the meeting, 17-20 June 2007.

Appropriately, the 4th conference will feature four primary themes:

-Sustainable Social Metabolism

-Infrastructure for Sustainable Cities

-IE for Developing Countries

-Transitions to Sustainability in a Complex World

Meeting chairs are especially encouraging participation from industry and from the social sciences as well as more traditional technical perspectives. For more information visit http://www.isie.ca or call 416-978-3481, toll-free: 1-888-233-8638.

ISIE Pursues "Links" with Other Groups

Kristan Cockerill (kristanc10@earthlink.net)

The ISIE Council is currently working on a template for establishing formal relationships between ISIE and other organizations. At the August Council meeting Marian Chertow presented a proposal from the Eco-Industrial Development Council and Edgar Hertwich discussed a proposal from an informal group of sustainable consumption researchers requesting that the Council consider creating "chapters" or "sections" for focused interests within the broader ISIE. ISIE Council members agreed unanimously that creating linkages with both of these organizations is desirable. Over the next several months the details will be reviewed and the exact nature of our new relations finalized. Once the relationships are formalized, there will be a section of the ISIE News dedicated to providing information from our partners!

Assistant, Associate or Full Professor of Sustainable Global Enterprise, Cornell University, USA

Jobs in IE

Corporate Partnerships Project Manager, Wal-Mart, USA

Assistant/Associate Professor of Management at Global Sustainable Enterprise, College of Business, Colorado State University, USA

PostDoc-Position in Social Metabolism, Institute of Social Ecology, Austria

Assistant/Associate Professor in Biomaterials, Bioprocessing and Biofuels, Iowa State University, USA

Sales Executive, Energy Innovations Solutions, USA

Haworth Chair in Integrated Design, University of Calgary, Canada

Ecologist/Restoration Biologist, Great Eastern Ecology, Inc., USA

President's Corner

Industrializing Success

Brad Allenby (Braden.Allenby@asu.edu)

For those fortunate enough to attend it, the latest Gordon Research Conference on Industrial Ecology chaired by Valerie Thomas and recently held in Oxford was quite a success. The presentations covered a wide variety of topics, and, illustrating both the intellectual curiosity and the scope that characterize the field, included some fascinating and pathbreaking work on the social systems behind production and consumption activities - and not just in developed countries. Much of this research will be appearing in the Journal of Industrial Ecology which continues to gain stature both within and beyond the field.

All good news. But it would be a serious mistake to become complacent or set in our ways, for the

Conference also suggested that the field of industrial ecology is still very young and in some ways fragile. For one thing, as a society we remain fairly small, averaging around 350 to 400 members, which makes us (as well as the JIE, which is closely coupled to the state of the Society) vulnerable finan-

cially even if we are not currently at direct risk. This is, however, something that each of us can help address. As individuals and in some cases leaders of research organizations, for example, we can encourage our associates and co-workers to join our Society, and ask not only the libraries and research institutions we work with to become institutional subscribers to the JIE, but also purchase institutional subscriptions through our own research groups. The JIE remains strikingly inexpensive for a scientific journal, making this easy to do. We can discuss our work, and highlight the Society and the JIE, at the conferences and venues we participate in as part of our professional activities. More broadly, we can offer our skills to inform and support policy innovations, such as

the circular economy initiatives in China and South Korea. An outstanding example of this is the work that Ramesh Ramaswamv and Suren Erkman have done on the Resource Optimization Initiative in Bangalore, India (http://www.roi-online.org). And we can be open to, and actively seek out, opportunities to collaborate with informal groups and formal institutions with similar interests.

At the institutional level, for example, we are working on a number of possibilities which we hope can strengthen industrial ecology both at the intellectual and the organizational levels. In one case, Marian Chertow of Yale and Peter Lowitt of the Devens Enterprise Commission have been working with the Eco-Industrial Development Council, a North American group interested in industrial symbiosis which has grown over several years from an informal network to an established

We can discuss our work, and highlight the Society and the JIE, at the conferences and venues we participate in as part of our professional activities.

> organization, and which wishes to explore formal affiliation with the Society. We are now exploring possible arrangements, and hope to be able to come to an agreement shortly. In another instance, we are working with an informal network of researchers on sustainable consumption with the mutual goal of providing them an institutional base, and further integrating issues of consumption into the industrial ecology systems approach. Here, Arnold Tukker (TNO), Edgar Hertwich (NTNU), and Atsushi Inaba (AIST) are to be thanked, for they have been instrumental not only in developing sustainable consumption as an important area of research, but identifying it as a necessary focus for industrial ecology, and cham-

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President's Corner continued

pioning it within our Society (http://www. score-network.org). Such initiatives are welcome, and in these two cases we hope to create templates that make future linkages more convenient.

More generally, it is apparent from a number of initiatives that engineering organizations are very interested in both green and, more broadly, sustainable design issues, an area where industrial ecology obviously has a lot of experience and methodological substance to contribute. Thus, we are exploring opportunities for collaboration with the Center for Sustainable Engineering, a US-based consortium consisting of Arizona State University, Carnegie Mellon University, and the University of Texas and funded by the National Science Foundation and the Environmental Protection Agency (http://www.csengin.org). Similarly, we are exploring the possibility of collaborating with the IEEE Annual International Symposium on Electronics and the Environment which historically has been a major technical resource for DFE practitioners, and currently is expanding its remit to cover issues of sustainability and technological evolution (this is not dissimilar from trends that characterize industrial ecology at this point). A similar (but primarily US) initiative has been recently launched by the American Society of Civil Engineers. In the areas of product regulation and life cycle assessment, the leadership of Europe and Japan is generally recognized, and their strong programs in these fields have obvious links to many of the themes in industrial ecology.

These initiatives and potential collaborations are not without their challenges. Working with other institutions, for example, requires negotiating details, especially if joint conferences or meeting sponsorship, and thus sharing of risks and benefits, are involved. Some organizations have quite strict rules about use of their trademarks, and others, especially the larger ones, are more bureaucratic than the Society. Moreover, substantive expansion of the Society has implications for those who wish to publish, especially in the JIE, which is already at capacity in terms of page limits http://www.is4ie.org

The strength of our Society and the accomplishments of industrial ecology, ultimately rests on each of us.

negotiated with the publisher. It would be somewhat disingenuous to welcome new groups into our Society without ensuring that we can offer them an appropriate level of scholarly infrastructure, specifically the means to communicate their research and interests – especially because their work makes ours stronger. Thus, working with Reid Lifset, the editor of the JIE, the JIE's editorial staff, Yale, and the MIT Press, we are exploring the possibility of expanding the JIE, either by publishing longer issues or increasing the frequency of issues. This, also, raises nontrivial issues, for each option raises important considerations of cost, benefit, and resources available for reviewing articles and managing the overall publication process. More fundamental guestions also arise, including the perennial topic of where the boundaries of industrial ecology actually are. For example, there has been little disagreement that consumption patterns, which are integral to industrial systems, are part of industrial ecology and, conversely, that ecological economics taken as a whole is not. But between those examples lie many others whose relationship to industrial ecoloav is less clear.

I close with a couple of thoughts. First, it is important that we continue to explore new collaborations and options, not just to strengthen the Society organizationally, but also to enable better understanding of the complexities of the economic, environmental, and social systems with which we deal. Second, it is a sign of the vitality of our community that these initiatives have in large measure been sparked by practitioners; as a Society we should remain open to, and welcome, such efforts. Most importantly, however, these activities (and others I haven't mentioned) indicate that the strength of our Society, and the accomplishments of industrial ecology as a unique field, ultimately rests on each of us.

Conference Reports

Product Re-X Conference

Valerie Thomas (valerie.thomas@isye.gatech.edu)

Strategies for product reuse, remanufacturing and recycling were discussed at a 21 June 2006, conference at the Georgia Institute of Technology in Atlanta Georgia. Attended by about 100 representatives from industry, government, and universities, the conference, "Product Re-X: Recovery, Recycling, Remanufacturing, Reuse" was organized by a new collaborative research program at Georgia Tech called ECLIPS (Expanding Closed Loops in Production Systems).

Case studies and industry experiences were presented by representatives from Shaw Industries, Hewlett Packard, Ford Motor Company, the Rechargeable Battery Recycling Corporation, Armstrong Ceiling Systems, Canvas Systems, Home Depot, Cummins, CARE (Carpet America Recovery Effort), Interface, and others. There were sessions on product take-back, capturing value from commercial returns, business strategies for remanufacturing, sustainable global logistics, and material and design innovation for recycling and reuse.

The session on global reverse logistics discussed collaboration between Ford Motor Company and Georgia Tech researchers, resulting in a new process for recycling shipping containers into vehicle parts.

The session on deriving value from commercial returns revealed that commercial returns amount to at least \$100 billion annually in the United States. Returns are much more common in the US than in Canada or Europe because of lenient US returns policies. Case studies from Hewlett Packard and Home Depot demonstrated that, even within the US, commercial returns policies and challenges vary a great deal across industries and between companies.

For more information see http://eclips.gatech.edu

Your turn The ISIE editors hear from readers that they appreciate the Conference Reports section because none of us can possibly attend all the meetings that interest us. To offer these reports, however, someone needs to write summaries and submit them! After your next conference, workshop or symposium take a few

minutes to jot down a summary and send it to H. Scott Matthews (hsm@cmu.edu).

GRC continued

on "Sequestration of Waste Metals in Organs of Nile Cichlid Cultivated in Wastewater-fed Fishponds at East Calcutta Wetlands, a Ramsar Site."

The conference could not have been as big as it was without outside financial support for students and for researchers from developing countries. Special thanks are due to the US EPA and to the National Science Foundation for financial support.

The next Industrial Ecology GRC will be in the summer of 2008 and will be chaired by Faye Duchin. Conference chairs are elected by the participants. This year, the participants elected Reid Lifset to be the Vice-Chair for the next conference, and Chair for the 2010 Conference. The participants also voted for the 2008 Conference locations, with a US site as first choice and a European site as second choice. The final decision about the site will be made by the GRC organization in consultation with the 2008 Chair.

Faye Duchin announced that she welcomes ideas for topics and speakers for the 2008 Industrial Ecology GRC. Please send your ideas to her at duchin@rpi.edu

For more details on the 2006 GRC, see http://www.grc.org/programs/2006/indust.htm



GRC attendees gain a new perspective! Photo by Ilda Mannino.

ISIE Member News

ISIE Member Applies for EU Patent

Helmut Rechberger

(h.rechberger@iwa.tuwien.ac.at)

ISIE member Helmut Rechberger along with colleagues Hans Fellner and Oliver Cencic from Vienna University of Technology have applied for a European Patent (an Austrian Patent has been granted, AT 501 170 B1 2006-07-15) for a method to determine the ratio between primary energy carriers from fossil and biogenic sources as well as the ratio between carbon dioxide emissions from fossil and biogenic sources from waste-to-energy plants (WtE). This is required to determine the contribution of WtE for "green" electricity production and the assignment of certificates in emission trading. The method is based on the mathematical reconciliation of theoretical balance equations (material and energy balance equations) and measured data, derived from routinely measured conventional operating data collected at WtE plants (e.g. flue gas volume, steam production, mass of slag and ashes). The uncertainty of the calculated results is well below 5% and applying the method is straightforward and cost-effective since no additional measurements are required. Meanwhile the method is routinely applied at three Austrian WtE plants.

IE Blog Offers Information Exchange

René Kleijn (Kleijn@cml.leidenuniv.nl)

There is now a blog spot for industrial ecologists. ISIE member **René Kleijn** started the site for his students, but is expanding to the larger IE community. Recent topics have included Al Gore's movie An Inconvenient Truth, Sweden's plans to become "oil free", and China's plans to invest \$100 billion in renewable energy.

Go to http://industrialecology.blogspot.com

Web Reviews

Canadian Design for Environment Guide

http://dfe-sce.nrc-cnrc.gc.ca

Ramsey Wright

The National Research Council of Canada (NRC) has published a Design for Environment (DfE) Guide designed to help businesses incorporate environmental concerns into their product designs. The site gives an introduction to DfE and links it to other sustainable development concepts such as environmental management systems, life cycle analysis, industrial ecology, pollution prevention and occupational health and safety. It also outlines a step-by-step process through which organizations can implement DfE, and provides downloadable worksheets to facilitate learning. Although NRC published the page three years ago and there is no indication of an update, the information retains its relevancy. Most of the information featured is based directly on the United Nations Environmental Programme's PROMISE Manual (though there is no direct link to that manual). NRC meant for this site to be a standalone DfE reference; there are few external links and no designated contact or support person. For organizations interested in what DfE can offer to their operations, however, this site provides a quick and free introduction.

UNEP Division of Technology, Industry, and Economics

http://www.unep.fr/en

Scott Skinner

The United Nations Environment Programme Division of Technology, Industry and Economics addresses the "environmental monitoring, assessment, information and research including early warning; enhanced coordination of environmental conventions and development of environment policy instruments; freshwater; technology transfer and industry; and support to Africa". As would be expected from such a reputable organization, the website provides a comprehensive one stop

Japan for Sustainability

http://www.japanfs.org/index.html

Hiromi Yoshiie

The non-profit organization Japan for Sustainability developed this site to introduce information on sustainability activities in Japan. These initiatives are innovative but not yet known worldwide. All sectors of society, such as business and citizens as well as the national and local governments are covered. For instance, in the Public/Civil Sector segment readers can browse local government approaches to reduce municipal waste. The Business Sector section provides corporate initiatives to reduce their environmental impacts. Examples include zero emissions, eco tax, resource recycling business, and green products. In addition, the Japan Value section introduces unique activities that are modeled on traditional Japanese ideas and manufacturing systems, which would inspire readers outside Japan. The website is frequently updated with recent news and provides links to specific organizations and businesses. The site is available in Japanese and English. The English website is well detailed and of high quality. The site also provides an opportunity to subscribe to a monthly newsletter.

shop for information (publications, press releases, videos, databases and events) under the mandate of the division. The navigation is simple and the content is very current. It features a search function, a staff directory and feedback surveys making contact simple if desired. The only sub-par attribute of the site is that the video links either did not work or were slow to download, even with a high speed internet connection. This site is recommended for those searching for information pertaining to the activities of UNEP or related topics such as renewable energy, industrial estates, cleaner production, climate change, and economics and trade in an environmental context.

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Post-graduate School of Industrial Ecology

Edgar Hertwich (edgar.hertwich@ntnu.no)

A consortium of 12 European universities will offer a set of PhD-level research training courses in industrial ecology. This project, which is funded by the European Union's Marie-Curie program, aims to improve the formal training available to PhD students working on topics of industrial ecology, such as life-cycle assessment; material flow analysis; sustainable consumption and production; and design for sustainability. It does so by bundling the research training of several universities into a single set of courses and by offering opportunities for young researchers with similar research interests to exchange information. Top-level researchers and faculty members serve as course instructors. The 12 universities see this set of courses as a way to streamline their own research training,

complementing each other's strengths and encouraging synergy among faculty members.

Seven courses will be offered in 2007-08. Courses include:

- Industrial Ecology: Theory and Concepts
- Life Cycle Assessment
- Value Chain Modeling
- Ecological Design
- Resource and Recycling Systems
- Sustainable Production
- Sustainable Consumption

Each course includes two weeks of instruction and three weeks of independent work in the form of reading, research and project work. More information is available at:

http://www.indecol.ntnu.no/psie.php

UN Decade for Education for Sustainable Development

Kristan Cockerill (kristanc10@earthlink.net)

Building on ideas and recommendations dating back to the United Nations Conference on the Human Environment in 1972, the international organization declared 2005-2014 to be the Decade for Education for Sustainable Development.

According to the UN website, education for sustainable development will aim to demonstrate the following features:

- Interdisciplinary and holistic
- Values-driven
- Critical thinking and problem solving
- Multi-method
- Participatory decision-making
- Applicability
- Locally relevant

For more information, go to: http://portal.unesco.org/education There is a link on the right hand side for the Decade for Education.

JIE News

JIE Celebrates 10th Anniversary with Expert Panel and Awards

Reid Lifset (reid.lifset@yale.edu)

ISIE News

6/3_2006

In early May, the JIE hosted events to celebrate its 10th anniversary and its inclusion in the ISI's Science Citation Index Expanded (see ISIE News v5n3). Members of the JIE editorial board as well as JIE authors, reviewers and supporters from the northeastern US gathered to hear a distinquished panel on industrial ecology, followed by

a reception. Discussing the future of industrial ecology were ISIE members **Faye Duchin** (Rensselaer Polytechnic Institute), **Ramesh Ramaswamy** (Resource Optimization Initiative), **Charles Powers** (New York Academy of Sciences) and **John Ehrenfeld** (ISIE).

The assembled then adjourned to the nearby Eli Whitney Museum where three people were honored for their service to the JIE.

David Allen (University of Texas at Austin)—Dave is a leader in the US in pollution prevention and industrial ecology. He served as a founding co-editor of the JIE for 6 years and as subject area editor for life-cycle assessment (LCA) for 3 years. He has played a pivotal role developing educational materials that bring environmental issues into the chemical engineering curriculum.

Jesse Ausubel (The Rockefeller University)—As an early pioneer in the intellectual and institutional development of industrial ecology, Jesse co-authored the 1989 paper "Dematerialization" that opened the study of this key topic and led the development of the first research agenda for industrial ecology, published in 1997. He has been a central thinker in the analysis of the role of technological change in environmental management and policy, and of the connection between resource efficiency and saving land and sea for nature. Clair Krizov (AT&T)—Clair is the head of the environment, health and safety (EHS) organization for the newly merged SBC and AT&T. She has been an executive working in EHS for AT&T for over 20 years. In that role, she helped administer the AT&T Industrial Ecology Faculty Fellowships. Since 1993, the AT&T Foundation has been providing

Journal of Industrial Ecology reaches 10 years and is going strong!

grants to stimulate interdisciplinary research and curriculum development in industrial ecology. In addition, the AT&T Environment, Health & Safety organization provided direct support to the Journal of Industrial Ecology during its start-up, including funds for the meeting of experts that launched the JIE.

Support for this event was generously provided by Hamilton Sundstrand, a global supplier of technologically advanced aerospace and industrial products, part of the United Technologies Corporation family of companies.

Editor's Note: Rumor has it that the events also featured a capella singing and a roast of our favorite journal editor! Congratulations to Reid and JIE for reaching this milestone.

Conference/Exhibition Listings

First International Conference on Carbon Management at Urban and Regional Levels 4-8 September 2006, Mexico City, Mexico

Managing Environmental Knowledge: 20th International Conference on Informatics for Environmental Protects 6-8 September 2006, Graz, Australia

32 International Congress on Powertrain and Transport Means

10-13 September 2006 , Warsaw-Lublin-Naleczow, Poland

Environmentally Sound Technology in Water Resources Management

11-13 September 2006, Gaborone, Botswana

HydroEco2006 11-14 September 2006 , Karlovy Vary, Czech Republic

ORBIT 2006: Biological Waste Management-From Global to Local 13-15 September 2006, Weimar, Germany

ConAccount: Dematerialization across scales and policy dialogue "Dematerialization why and how?" 13-15 September 2006, Vienna, Austria

Environmental Markets in China 2005 to 2015 15 September 2006 , New York City, USA

Formalized/Non-Formalized Methods in Resource Management 21-22 September 2006, Osnabrück, Austria

IPSI-2006 MONTENEGRO 23-30 September, Sveti Stefan, Montenegro

BIO Human Resources Conference 25-27 September, 2006, New York City, USA

RecAsh 2nd International Seminar 26-28 September 2006, Karlstad, Sweden

National Hydrogen Association Renewables to Hydrogen Forum 4-5 October 2006, Albuquerque, USA

Environmental Protection Markets in China 2006-2015 6 October 2006 , Beijing, China http://www.is4ie.org EcoHealth ONE: International EcoHealth Association 7-10 October 2006, Madison, USA

Peer Environmental Technology Seminar 11-12 October 2006, Montpellier, France

Solvent Emissions Directive 12-13 October 2006, Nova Gorica, Slovenia

IPSI-2006 VENICE, ITALY 12-15 October 2006, Venice, Italy

Institutional Dimensions of Global Environmental Change: Water, Trade, and the Environment 13-26 October 2006, Chiang Mai, Thailand

4th Asian-Pacific Landfill Symposium in Shanghai 18-20 October 2006, Shanhai, China

2006 Rubber Recycling Symposium 18-20 October 2006, Ottawa, Canada

Multinational Enterprise and Sustainable Development: Strategic Tool for Competitiveness 19-20 October 2006, Atlanta, USA

Environmental Protection Markets in China 2006 to 2015 20 October 2006 , London, UK

National Recycling Coalition's 25th Annual Congress & Exposition 22-25 October 2006, Atlanta, USA

International Conference and Trade Fair on Hydrogen Fuel Cell Technology 25-26 October 2006, Hamburg, Germany

Eco Expo Asia 2006: International Trade Fair on Environmental Protection 27-30 October 2006, Hong Kong

SETAC North America 27th Annual Meeting 5-9 November 2006, Montreal, Canada

Young Scientists' Global Change Conference 7-8 November 2006, Beijing, China

World Science Forum 2006 8-9 November 2006, New York City, USA

ISIE News

Conferences continued

ESSP Open Science Conference 9-12 November 2006, Beijing, China

Respirations: International Clean Air Conference & Exhibition

11 - 12 November 2006 , Enghien Les Bains, France

Material, Minerals, & Metal Ecology 06 14-15 November 2006, Cape Town, South Africa

7th International Conference on EcoBalance 14-16 November 2006, Tsukuba, Japan

Sustainable Consumption and Production: Opportunities and Challenges 23-25 November 2006, Wuppertal, Germany

Life cycle approaches for biofuels 28 November 2006, Berne, USA

China Eco Expo 28-30 November 2006, Beijing, China

IPSI-2006 Slovenia 30 November - 3 December 2006, Bled, Slovenia

Tools for delivering sustainable growth in the EU 6-7 December 2006, Brussels, Belgium

3rd National Conference and Expo on Coastal and Estuarine Habitat Restoration9-3 December 2006 , New Orleans, USA

EcoDesign 2006 Asia Pacific 11-12 December 2006, Tokyo, Japan

The East Asian Seas Congress 2006: One Ocean, One People, One Vision 12-16 December 2006, Haikou City, China

3rd International Conference on Environmental, Cultural, Economic and Social Sustainability 4-7 January 2007, Chennai, India

Arabian Seas International Conference on Science and Technology of Aquaculture, Fisheries and Oceanography 11-14 February 2007, Kuwait, Kuwait

Environment: Survival and Sustainability 2007 19-24 February 2007, Nicosia, Cypress

http://www.is4ie.org

The 22nd International Conference on Solid Waste Technology and Management 18-21 March 2007, Philadelphia, USA

NHA Annual Hydrogen Conference 2007 19-22 March 2007, San Antonia, USA

18TH Global Warming International Conference and EXPO 19-20 April 2007, Miami, USA

2007 Greening Rooftops for Sustainable Communities 29 April-2 May 2007, Minneapolis, USA

Bio International Convention 6-9 May 2007, Boston, USA

2007 International Symposium on Electronics and the Environment 7-10 May 2007, Orlando, USA

Conferences on the Human Dimensions of Global Environmental Change 24-26 May 2007, Amsterdam, Netherlands

Second Environmental Studies Summit 7-9 June 2007, Syracuse, USA

LCE2007 11-13 June 2007, Waseda University, Japan

14th CIRP Life Cycle Engineering 2007 11-13 June 2007, Tokyo, Japan

ISIE 2007 17-20 June 2007, Toronto, Canada

You can post information about your conference on the ISIE website. **ISIE News**

WANTED Your feedback and input

Send comments, ideas, questions to Kristan Cockerill (kristanc10@earthlink.net)

International Society for Industrial Ecology

The International Society of Industrial Ecology (ISIE) promotes industrial ecology as a way of finding innovative solutions to complicated environmental problems and facilitates communication among scientists, engineers, policy makers, managers and others who are interested in how environmental concerns and economic activities can be better integrated.

Officers

President—Braden Allenby President-Elect-Marina Fischer-Kowalski Treasurer-Mak Dehejia Secretary—Kristan Cockerill

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|----------------------------|------------------|--|
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Kristan Cockerill, Editor: kristanc10@earthlink.net H. Scott Matthews, Conference Reports: hsm@cmu.edu Ray Côté, Tools & Websites, rcote@mgmt.dal.ca Edgar Hertwich, Tools & Websites, edgar.hertwich@ntnu.no Amy Landis, Student Information, alandi1@uic.edu

ISIE News Schedule

| Publication Date | Submission Deadline |
|---|---------------------|
| Dec 2006 v6 n4 | 17 November 2006 |
| Send submissions to the appropriate editor. | |

International Society for Industrial Ecology

c/o Yale School of Forestry and Environmental Studies 205 Prospect Street New Haven, CT 06511-2189 USA Tel +1-203-436-4835 Fax +1-203-432-5556 is4ie@yale.edu http://www.is4ie.org