

Welcome to the first issue of the ISIE student newsletter for 2012! It is an exciting year, not only because of optimism for Rio +20, the anticipated landing of a new Mars rover, or the summer Olympics in London, but also because of the long awaited Armageddon, just in time to save us from those dreaded end of term deadlines.



Even if all the world's matter doesn't turn into a blinding ball of energy – which would make that material flow accounting oh so simple – we as industrial ecologists can take some interesting perspectives from all the 'end of the world' and 'time of transition' discourse. For example, if we aspire to transition toward more flourishing futures, a key ingredient will be visualizing these desirable futures. The department of Industrial Ecology at KTH in Stockholm has put out a call for images of just such futures and we would like to encourage you to make a submission at www.manyfutures.net (May 1 deadline)!

In addition to visions, networking and communication should support our transitions - so have a look at the list of IE related events in this newsletter. Read up on what our colleagues are doing in the "Around the World" section – and why not submit something on your work for the next issue. Also, have a look at some of the wonderful moments we captured with you during our events and meetings last year, in the "Blast from the Past" segment. If you have ideas or would like to contribute to our next newsletter please contact us at isiestudentchapter@gmail.com.

As the Mesoamerican Long Count calendar is completing a really long cycle – let's hope that we can give support to the beginning of what may be a very long cycle of improvements to our production and environmental systems.



To see an extended list of Industrial Ecology related events please refer to our student chapter page at <http://www.is4ie.org/students> and follow us online at <http://www.linkedin.com/groups?gid=734507>

ISIE Preparing Future Faculty Forum; May 16th, 2012; Boston, MA (USA):

At the upcoming International Symposium Sustainable Systems and Technology (ISSST) conference, your student chapter board will be hosting a professional development session. The session features a diverse panel of young faculty members that will speak about their experience transitioning from being a graduate student to a becoming a professional faculty member. Panelists include Dr. Michael Chester, Dr. Matthew Eckelman, Dr. Gabrielle Gaustad, Dr. Amy Landis, and Dr. Thaddeus Miller. There will be time for students to ask panel members questions about their experiences and /or for advice on student challenges. It will also be an opportunity to disseminate information about the ISIE student chapter to potential new members. The event will be free to students attending the ISSST conference (<http://www.ieee-issst.org/>). We hope to see you there!

Gordon Research Seminar (GRS) on Industrial Ecology; June 16-17, 2012; Les Diablerets, Switzerland:

This GRS is held in conjunction with the GRC on Industrial Ecology. The focus of this meeting is on industrial ecology as it relates to the challenges of sustainable development - namely the efficacy of current tools and methodologies at reliably disclosing and assessing the interplay between environmental impacts and economic activities. The application deadline is May 19, 2012. For more information or to apply:

http://www.grc.org/programs.aspx?year=2012&program=grs_indust

Rio +20 United Nations Conference on Sustainable Development; June 20 – 22, 2012; Re de Janeiro, Brazil: The United Nations Conference on Sustainable Development (UNCSD) will take place in Brazil this June to mark the 20th anniversary of the 1992 United Nations Conference on Environment and Development (UNCED), in Rio de Janeiro, and the 10th anniversary of the 2002 World Summit on Sustainable Development (WSSD) in Johannesburg. The objective of the Conference is to secure renewed political commitment for sustainable development, assess the progress to date and the

remaining gaps in the implementation of the outcomes of the major summits on sustainable development, and address new and emerging challenges. The Conference will focus on two themes: (a) a green economy in the context of sustainable development and poverty eradication; and (b) the institutional framework for sustainable development. ISIE has recently applied for accreditation to participate in this important event. There is a plethora of information on how you can get involved at <http://www.uncsd2012.org/rio20/index.html>.



This section of the newsletter is where we hear from our members who are based all over the world. We highlight their overall research, focus on a particular aspect of their work, or provide general interests or ideas they would like to share. If you would like to feature a short piece in the next newsletter please email the ISIE Student Chapter Group at: isiestudentchapter@gmail.com



UK – Nancy Bocken, Cambridge University

Reducing the Impact of Consumer Goods

Nancy Bocken currently works for the EPSRC Centre for Innovative Manufacturing in Industrial Sustainability at the University of Cambridge. She submitted her PhD in 2011 with the Low Carbon Materials Processing Group in Cambridge, which was sponsored by Unilever. She investigated how consumer goods manufacturers can negotiate their future carbon targets and developed and tested tools to support a low carbon future. In particular, she developed corporate innovation tools to help expand and evaluate portfolios of eco-innovative ideas, and developed eco-innovative strategies for future action for the consumer goods industry.

Previously, Nancy worked as a research assistant on the project: "Well Dressed - The present and future sustainability of clothing and textiles in the United Kingdom" which can be seen at this link here: (http://www.ifm.eng.cam.ac.uk/sustainability/projects/mass/uk_textiles.pdf). The report proposed a range of future opportunities to improve the sustainability of the textiles and clothing industry. In addition, she has worked for companies such as DHL, Accenture and ING. For the Centre for Industrial Sustainability she is working in close contact with other academic institutes, industry, NGOs and policy makers to find ways to help the industrial system become more sustainable on the short and longer-term.

Her current research interests include, but are not limited to: Sustainable business (model) development, systemic sustainable industry change, eco-ideation, and sustainable consumption. You may contact Nancy at nmpb2@cam.ac.uk.



Pakistan – Adnan Khan,

Arsenic Contamination in Ground Water of District Sheikhpura Tehsil Ferozwala, Pakistan.

Adnan's study is focused on the assessment of arsenic contamination in four Union Councils (UCs) of Tehsil Ferozwala District Sheikhpura (i.e., Burj Attari, Kot Abdul Malik, Shamkey and Wandala Dial Shah). These four UCs were reported contaminated with arsenic above WHO standards, according to the UNICEF report on the arsenic survey in Sheikhpura in year 2004 (Phase-II). In total, 10140 drinking water sources were tested from all the villages & basties from September to November 2008. Door to door sampling was carried out. All the water samples were tested by using arsenic field-testing kits, following the procedure and protocol. Data was evaluated on the basis of 50 ppb, as high-risk areas.

Overall arsenic testing found that 32% of drinking water sources contain arsenic above 50 ppb and 86% of the total tested sources were ruled unsafe according to the WHO guideline value (i.e., 10ppb arsenic). Out of the four UCs, Wandala Dial Shah-II & Burj Attari are highly contaminated whereas Kot Abdul Malik & Shamkey are relatively less contaminated. Overall, 30 out of 52 (58%) villages/basties are at risk. The study acknowledged that the early signs of arsenic poisoning (such as colour changes on the skin and hard patches on the palms and soles of the feet) were

observed in the studied area by a medical camp organized in Burj Attari. It was suggested that a technique involving deep drilling in the ground be adopted as an alternative for safe drinking water. Contact Adnan at ak_env@yahoo.com.



Sweden - Dilip Khatiwada, Royal Institute of Technology

Assessing the sustainability of bioethanol production: Key criteria and methodological improvements

There is a large potential for increased bioethanol production throughout the world. However, it is important that bioethanol production and use evolve in a sustainable manner, contributing to the reduction of greenhouse gas emissions and socio-economic development. As a result of these concerns, efforts are evolving to develop sustainability assessment criteria and GHG accounting methodologies for biofuels. These efforts are both at national and regional levels. Benchmarking biofuels production and use aims at avoiding inefficiencies and bottlenecks.

Dilip's research investigates the net energy balance, GHG emissions from the life cycle perspective of bioethanol, and prospects for sustainable development. His research focuses on (1) sustainability assessment of the sugarcane bioenergy systems in the least developed countries (LDCs) where potentiality has not been realized yet and countries are more dependent in imported fossil fuels and are facing a huge resource crunch and energy security problem, besides their vicious dilemma of underdevelopment, and (2) establishing methodological coherences in bioethanol production and use at the global level.

The first case study was developed in Nepal, assessing sustainability criteria for sugarcane-derived molasses-ethanol. Results of the evaluation show that the net energy and GHG balances are favourable compared to conventional gasoline. To allow a comparative sustainability assessment of bioethanol production from sugarcane, methodological coherence and unification should be established and benchmarked globally in the context of evaluation of sustainable bioenergy systems for product certification, and international trade from a life cycle perspective. Contact Dilip at dilip.khatiwada@energy.kth.se.



USA – Erinn Ryen, Rochester Institute of Technology

Assessing environmental impacts of community consumptions: The application of community-based models

Industrial Ecology's focus on the ecosystem metaphor has inspired the development of new models and tools that mimic industrial systems after sustainable natural ones. However, the field as a whole has been criticized for not being sufficiently grounded in its scientific roots and has had difficulty translating ecosystem-based models into practical, sustainable industrial systems. The goal of Erinn's research is to pioneer new metaphors and models for industrial ecology based on the fundamental principles of community ecology borrowed from biological systems. She seeks to adapt ecologist's methods that measure biodiversity to understand the rapidly changing diversity of products (such as consumer electronics) produced and consumed by modern society. Consumers don't just buy a single laptop computer – they buy a whole set of related electronics – like printers, mobile phones, and digital cameras. New community-based models seek to link consumption trends with environmental impacts.

Erinn's PhD work is funded by a three-year fellowship from the U.S. EPA Science to Achieve Results (STAR) program at The Rochester Institute of Technology (RIT)'s Golisano Institute for Sustainability under the guidance of Dr. Callie Babbitt. Please contact Erinn at ehr8906@rit.edu if you have any questions or feedback to share!

"Blast from the Past"..... Glimpses from 2011.



Symposium on Industrial Ecology for Young Professionals (SIEYP) at University of California, Berkeley, 2011



ISIE student Poster Competition: 6th ISIE Conference "Science, Systems, and Sustainability", Berkeley, 2011

*We would love to hear from you!!
Where are you in the world and what are you working on?*

This is an opportunity for you to tell the student chapter about your work, gain feedback, or establish a network with others working in a similar field. Please send us your short piece and we will try to feature it in the next newsletter.



Created and edited by your ISIE Student Chapter board members: Susan Spierre (President), Ankit Aggarwal, Graham Aid, Emma Keller, Simone Souza, and Yu Li. Contact us at isiestudentchapter@gmail.com