Remember to regularly check:

- www.igert.org and
- www.udel.edu/igert/

HIGHLIGHTS of October 2009

- Erik and Cory travel to ASU to participate in the Conference for Sustainability IGERTs
- Beth, Kai, John B and Dan E present at the CCST Review on the 8th October
- John Clinger and the IGERT to feature in Campus Sustainability Day on 21st October, 2009
- IGERT students participate in year long outreach event called ‘What in the world...’

CHEMICAL ENGINEERING STUDENTS EXCEL AT CCST REVIEW ON 8TH OCTOBER, 2009.

It was wonderful to see such an IGERT student presence at the 2009 Center for Catalytic Science & Technology (CCST) Review at Clayton Hall on the 8th October, 2010.

Dan Esposito was invited to present his work on Tungsten Carbide and Pt-modified Tungsten Carbide Hydrogen Evolution Catalysts. In his presentation, Dan discussed his recent work which has investigated using low-cost tungsten carbide as a hydrogen evolution reaction (HER) electrode material for use in photoelectrochemical solar cells (PECs) and electrolyzers.

Kai Mayeda, Beth Cheney and John Bedenbaugh were also present at the CCST Research Review and had their own posters at the 3.30pm poster session. This session was well attended by members of the Center as well as members of the local community.

This event enables the IGERT students to network with a range of individuals and share their research endeavors.

Congrats to all participating students—remember to keep track of your poster and oral presentations for the Annual Newsletter!

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PI PIT-STOP

I am writing the PI Pit from Antalya, Turkey, where I just helped judge the poster session. The best posters, as usual, were interdisciplinary and international. There were posters on Fe contamination of CIGS solar cells—a mixture of PV and analytical chemistry. Another excellent poster was by a Turkish student studying in Germany. The Solar Hydrogen program has its own international and interdisciplinary examples. Keith Douglas is studying CIGS electrical properties in Korea (where he will finally meet Bill Shafarman, a researcher at IEC). Keith will bring his chemistry expertise to bear on those electrical problems. Last summer, Megan Schulz did her international internship in China, and Dan Esposito is getting ready to go to Hawaii (is that really a foreign country?).

Two of the best examples of interdisciplinary activity in the IGERT are the journal club and the student interaction. The students are writing software for other students’ experiments and running analyses in each other’s labs; don’t tell anyone, but they are making a list of one another’s formal expertise.

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...answering any questions that they might have.

This interactive and exciting two hour program gives school-aged students the opportunity to find out more about new developments in the Science field and to get them interested in a potential career path in the Sciences. Students move from table to table and interact with a range of different activities and are prompted to ask a wide range of questions about the objects in front of them.

It’s a wonderful opportunity for both the Elementary and Middle schools students and the IGERTers. We’ve been invited to attend as many of these events as possible and there are about 4 a month until June 2010. We hope that we can participate in at least one a month and are truly appreciative of the IGERT students who give of their time and effort in order to make this a success.

The first event took place on the 13th and 14th October at the Bayard School in Wilmington. Lead by Cory Budischak and accompanied by Sarah Mastroianni, Kai Mayeda, Beth Cheney (on the 13th) and Erik Koepf, Tim Miller and Dan Kaspe (on the 14th), the students learnt about solar energy and solar hydrogen cars.

A massive thank you needs to go to everyone who participated in this event and will be participating over the next year. It is wonderful to see such a desire to educate the up and coming Scientists, Technologists, Engineers and Mathematicians of tomorrow!

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Simple Ways to be Sustainable - 1:30 p.m.

This session will present numerous ways to live a more sustainable life by reducing energy consumption, avoiding the use of harmful chemicals and reducing contributions to the waste stream. Being sustainable does not always require a significant lifestyle change -- many areas can be tackled without spending significant amounts of time and money. Practical ideas and their significance will be presented. Several energy and waste related topics will be discussed and example calculations will be done showing how small contributions can make a very large impact when adopted campus-wide.

Presenters: John Clinger, student, and Janet Johnson, associate professor of political science and international relations.

The Conference for Sustainability IGERTs (C4SI2) is a graduate student led conference focused on the challenges and opportunities of IGERT Fellows conducting sustainability research and the substantive intellectual issues associated with a transition to sustainability. Over 40 IGERT Fellows from more than 20 IGERT programs throughout the country have been accepted to attend. And two of these Fellows were Erik Koepf and Cory Budischak...

On their return I asked Erik for some feedback about their experiences at the conference and he commented on the following...

“Four days at Arizona State University’s Global Institute for Sustainability would not be complete without a thorough examination of the following question:

In complex systems displaying multiple stable states and sometimes intractable adaptation, and in the face of the ever diversifying spectrum of epistemological
cognition, is resilience robust enough to dissolve our stale and heuristic framework of seemingly pluralistic socio-ecological systems, or could the specter-ethic of sustainability emerge, coupled to the temporal boundaries, from the patterns of self-organization that co-produce reflexivity on the part of the actor, and at the same time demand bounded rationality and normative values to be deconstructed at every turn? On another note, the food was excellent and the weather superb!”

 IGERT Fellows Erik and Cory invited to attend the Conference for Sustainability IGERTs at ASU, Phoenix!

Erik and Cory representing the IGERT at the C4SI2 at ASU
I had several ideas of topics but I didn’t have enough time to flesh them out so I’m going with biofuels, a topic we haven’t really discussed. This will be slightly more technical in nature than the passed several weeks. Hopefully this article will give you a broad overview of what’s going on with biofuels. There’s a lot of algae work going on recently in San Diego and I’m sure you can find information online if you’d like to bring that to our discussion...

Read the article here: http://www.udel.edu/igert/JournalClub/JC6.pdf

Keith Keeps us updated about his Experiences in Korea...

Last week was a major holiday and I’ve mostly just been meeting people and reading up on my research topic. I should be getting more hands on training this week on all the equipment in the labs.

So far I’ve been reading journal articles on sections of books on different aspects of Copper Indium Gallium Diselenide (CIGS) solar films. I’ve toured the different labs to see all the different equipment they have for making the solar films and different equipment they have for testing and analyzing the solar cells.

I should start doing X-ray Photo-electron Spectroscopy (XPS) on some of the films this week to look at the different elemental composition of the different growth techniques used for the CIGS material.

Other than that I have been touring a bit around Korea and learning a lot about the differences in the cultures.

I have also been told by a few men and woman that I look like different famous actors. The latest being Christian Bale. I guess not seeing many white people in person will make them all look fairly similar. I sometimes do feel like I’m an exhibit at the local zoo.

Besides adjusting to the strange food and the lack of good beer I am having a great time.

Remember that Journal Club takes place once a month.

Last month’s journal club was hosted by Kai Mayeda and took place on 2nd October in 204 Evan’s Hall. His article titled ‘Biofuels: A Survey on Pros and Cons’ looked at issues related to the pros and cons of using biofuels to substitute conventional fuels, namely, fossil fuels. Once again Freddy’s catered the event and the students munched on Chicken Wings whilst debating the future of Biofuels. Thanks Kai for a well chosen article!

Happy Halloween IGERTers!

Please contact Mo Bremner if you’ve published any papers, presented at any conferences and collaborated in any way... OR if there is a newsworthy article that we need to have in the next newsletter. Let her know by October 30th! mbremner@ee.udel.edu