

The Green Product Design Network

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Celebrating Big Ideas

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Welcome to the second newsletter for the Green Product Design Network! The GPDN is composed of faculty, staff, students, industry people, and community members who are interested in creating innovative products and accelerating their acceptance in the market place. We're a team of chemists, designers, communicators, business strategists, and marketers who are interested in working together to make a difference in the world.

The highlight of this term was the Graduate School's second annual Graduate Research Forum, this year with the theme "Thinking Big: Celebrating Big

Ideas." The GPDN is one of the five Big Ideas that will shape the future of the UO.

The GPDN was pleased to sponsor several posters presented at the Noon Poster Session, highlighting a range of topics including solar energy, green building, and Life Cycle Assessment tools.

Supporting research into Green Product Design is just one of our goals. Sharing this information--through conferences, papers, talks, and collaborations--is essential to our work. We're pleased to update you on our efforts in these areas.

Students and Faculty Get Their Hands...Green

GPDN members were involved in many innovative classes focusing on green products, sustainability, communication, and more. These classes gave faculty and students alike the opportunity to get hands-on experience in sustainability issues. Some of the highlights:

-John Arndt taught Sustainable Streetlights Studio with SCY-Salem.

-Jason Germany taught Streetlighting with Renewable Energy Studio with EWEB Greenpower Grant.

-Deborah Morrison taught Communicating Sustainability, featuring speakers including Tom Osdoba.

-Jennifer Howard-Grenville taught Sustainable Business; Kim Sheehan joined the class to talk about the Greenwashing Index.

-Tom Osdoba taught the Seminar in Sustainable Business Strategy.

GPDN at the JSMA

Join Kiersten Muenchinger and Kim Sheehan to discuss "Green Design and Green Marketing" at the JSMA at 5:30 on March 30. More info:
<http://bit.ly/eOm>

Green Lights

Kiersten Muenchinger traveled to Rome to present “The Green Product Design Network: Focusing on the Role of Materials in Product Design” at the Design Principles and Practices conference.

Jim Hutchison gave an invited presentation at the Oregon BEST Sustainable Built Environment Research Consortium launch meeting in Portland. The proposed consortium is to be a regional group of member firms, organizations, and researchers collaborating on applied research, development, and commercialization of sustainable technologies and services for the sustainable built environment.

The GPDN will partner with UO Campus Operations to create a Green Cleaning Policy under the LEED Green Building rating system for Existing Buildings. This program supports performance standards for certifying the sustainability of ongoing operations and maintenance of existing buildings and to reduce the environmental impact of a building over its functional life cycle.

Big Ideas Focus: Matthew Metzger and Jesse King

Matthew and Jesse, both MBA students at the Lundquist College of Business, presented a study entitled ***From Effectuation to Market Driven: The Maturation of Solar Technologies***. They studied the influences on new product development in the solar energy industry.

Marketing theory traditionally assumes that firms apply causal logic and action towards pre-set commercialization goals. However, empirical findings suggest that entrepreneurs in uncertain environments stray from these causal processes and instead experiment with

different combinations of means to produce novel outcomes. The predominance of these iterative periods of experimentation, defined as effectual processes, accompanies and may explain the “historic nascence” of the solar industry.

However, recent increases in both social and government support for solar energy may be changing the market dynamic, effectively creating a ‘problem’ to which the solution of solar energy technologies is now adapted to solve.

Matthew and Jesse are currently exploring data that indicate a transition in the solar industry from effectual to causal processes.

Big Ideas Focus: Allison Wilson

Alli Wilson, graduate student in Architecture and Allied Arts, designed a ***Food Wall Unit*** for city dwellers to grow their own food. With a constantly shrinking availability of open gardening space in urban areas, it is vitally important for food production to find efficient new ways of producing for local urban consumers. The lack of access to food is a concern for those who do not have the means to buy fresh and nutritionally sufficient produce.

Alli’s research focuses on incorporating food growth into housing. Walls are common features among affordable housing projects and are the connection between inside and outside, leaving a potential to incorporate and harness natural resources such as sunlight and water. By looking at possible pre-fabricated installation options, it will be possible to create a unit that can be installed universally as a food producing system.

A pre-fabricated wall unit would replace conventional building materials making up the wall. By looking at current food growth methods and combining that technology with living walls, it should be possible to find a way to efficiently and affordably incorporate food production into buildings.

Big Idea Focus: Eva Peterson

Eva's research project, co-authored with Professor Erin Moore, explores how a holistic lifecycle analysis approach can be applied at the building scale ***A Case Study in the Comparative Use of Lifecycle Analysis Software: Portola Valley Town Center*** examines the Town Center, which was designed by Siegel & Strain Architects and completed in 2007. The Center was designed to accommodate the use of certain site and building materials reclaimed from a school that previously

existed on the site. This paper describes the application of a number of lifecycle analysis (LCA) software tools, including Athena Impact Estimator and SimaPro, to PVTC in order to identify the limitations and opportunities for conducting such a study within each tool. To the degree possible within each tool, we are modeling production, use, and waste processes using the material databases within each program.

Big Idea Focus: Jonathan Chesley

In his study ***Demountable: The Ecology of Building Permanence***, Jonathan asks important questions, including "what does it mean for architecture to be "sustainable", "green" or "eco" when studies show that "70% of buildings [are] only 51-100 years old at demolition and that 30% ... [are] less than 50 years [old]?" Furthermore, a report from Minnesota attributed 57% of demolition to area redevelopment and the unsuitability of buildings to be re-used. In contrast, only 38% was a result of degrading physical conditions. A complex set of processes influence the unsustainable building culture in which the design of a building is but a fraction.

Working with Erin Moore, Jonathan compiled contemporary examples of design innovation that conscientiously confront these realities. He organized projects by the context of their spatial use: office building/space, temporary zoning, material sensibility, event, prefabrication/de-fabrication, site fluctuation, and end of live nutrient connection. The work begins to describe the ways in which the design process can influence building use and construction.

Green Lights

Kim Sheehan and Kati Berg (Marquette) co-authored a piece on the new FTC Green Guides for "Media Ethics" magazine: <http://bit.ly/huHLI1>

Julie Haack and Kiersten Muenchinger participated in a Nike workshop on Environmentally Preferred Rubber at Nike on 1/11 and Jim Hutchison attended a GreenXchange partners collaboratory on 1/23. Both events focused on open innovation of greener products including Nike's Environmentally Preferred Rubber, available to footwear and other companies via the GreenXchange.

The UO recently received "Silver" status in the STARS certification. John Arndt and Kiersten Muenchinger were involved in the Passive Solar Lumber Kiln Project which reuses local wood resources, which are typically wasted, and converts them into valuable commodities that enrich the local community. This project received a STARS innovation credit.

Looking Ahead with the GPDN

In Spring Erin Moore's ARCH 607 class will welcome:

- Jordan Palmer from the DEQ, speaking on Residential Home LCA
- Lauren McEwan from Earthshift, speaking on LCA practice and issues
- Steve Baer, PE Americas, on LCA related to product and green building certification
- Sean Penrith, Earth Advantage, on issues in measuring carbon in the building industry

For more info on these visits and other events, please visit our Facebook site: <http://on.fb.me/dYcf5Q>

or our Ning site: <http://uo-gpdn.ning.com>

New on Facebook: our picture gallery from the Big Ideas Conference

We look forward to Spring term with great classes, visits and events involving sustainability and green thinking.

Classes include:

- ARCH 607 "Introduction to Lifecycle Assessment," will be taught by Erin Moore. The class is an outgrowth of Erin's work with the LCA Working Group.
- ARCH 4/507 "Ecology of Building Materials," also taught by Erin Moore, will track the ecological context of lifecycle environmental impacts of structural and enclosure materials.
- CH 113 "Chemistry of Sustainability", taught by Julie Haack, will illustrate how basic chemical concepts including atomic structure, bonding, molecular shape, intermolecular forces and reactivity are being applied to address important issues such as renewable energy and global warming and to create innovative materials and chemical processes important for the development of consumer products.
- J4/560 "Sustainability Leadership", taught by Kim Sheehan, will use concepts of eco-literacy to guide students in the development of business and communications strategies for a new green business.

Studios include:

- * Kiersten Muenchinger's Biomimicry seminar and studio;
- *Sponsored Studio with Arcimoto electric vehicle company of Eugene, facilitated by Trygve Faste
- *Sponsored Studio with Green Lite Motors electric vehicle company of Portland, facilitated by Avik Maitra

And wait! There's more!

- Kiersten Muenchinger will attend *The Shape of Sustainability is...Flat?: Exhibition at International Contemporary Furniture Fair, May 14-17. Her presentation will include flat pack furniture and LCA analyses of furniture designed by PD students; photos included, chairs by Brittney Rekate and Jake Fromer.
- Kim Sheehan will speak on Greenwashing at the international Clean Med conference in Phoenix on March 6.