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October 2, 2007

Welcome to Portland State University! International Life Cycle Assessment and Management 2007

'from measurement to investment'

Jennifer H. Allen, Ph.D.
Associate Director
Center for Sustainable Processes and Practices

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Why LCA is important to sustainability

- Sustainable development means meeting the needs of the present without compromising the ability of future generations to meet their own needs
- 20 years working in this field….
- Desperate need for rigorous tools to identify environmental and social impacts and *especially* to help think about long term impacts

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PSU Motto

Doctrina Urbi Serviat

"Let Knowledge Serve the City"

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PSU Sustainability Vision

To be an **internationally** recognized university known for excellence in student learning, innovative research, and community engagement that simultaneously advance **economic vitality, environmental health, and quality of life.**

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PSU Sustainability Mission

Serve as a **leading academic laboratory** for developing **sustainable processes and practices** using multi-disciplinary approaches in partnership with business, government, and other organizations.

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Sustainability Declaration (2005)

- Infuse sustainability into **all colleges, schools and programs.**
- Develop a sustainable **physical campus** that is an example to other institutions.
- Make Portland State University a **demonstration model** of sustainable processes and practices.
- Develop core **multidisciplinary research competencies** in key sustainability areas related to pressing real world problems.

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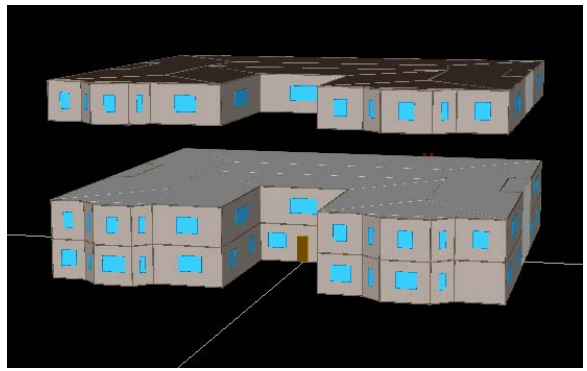
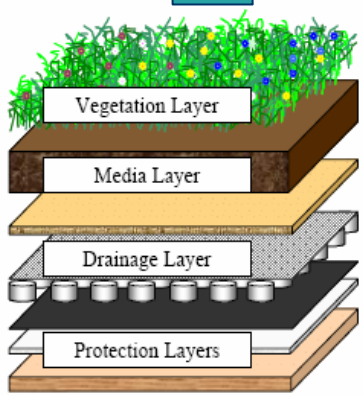
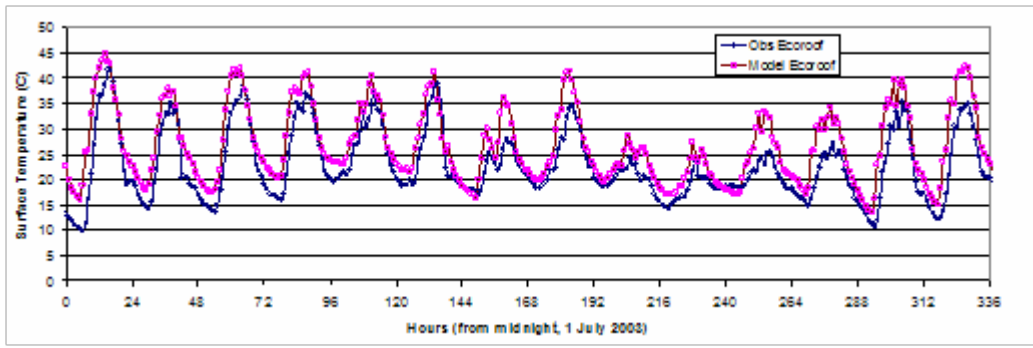
Green Roof Energy Module Development

- A physically-based green roof energy balance module has been incorporated into a building energy simulation program (*EnergyPlus*).





- The model performs well against observations from green roofs in Florida and Pennsylvania.



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Reducing extractive resource use

- Alternative Energy
  - Energy efficiency and conservation
  - Micro wind turbine demonstration
  - Solar PV array on Cramer Hall
  - 100% renewable electricity by 2010

- Green Buildings
- Local, organic and sustainable food
  - Food service includes sustainability criteria
  - Performance-based standards

Reducing extractive resource use

- Recycling
  - Significantly expanded recycling capacity since 2001 to current rate ~ 30 %
  - Waste hauling RFP incents more recycling
  - Construction waste > 95%
  - Food waste
  - PSU Reuses
  - Green printing

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Center for Sustainable Processes and Practices (CSP2)

- Place for rigorous, cross-disciplinary research with integrated environmental, social and economic components
- Locus for collaborative research and dialogue with academic and community participants
- Institutional support for building a resource base
- PSU link to new Bioeconomy and Sustainable Technologies (BEST) Signature Research Center

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Oregon Bio-Economy and Sustainable Technologies Research Center (BEST)

- Commercializable research on green building, bio-based products, and clean energy
- Commitment to give **“360 degree”** look at product/process impacts
- Partners: PSU, Oregon State, University of Oregon, Oregon Institute of Technology, Pacific NW National Labs
- $2.75 million in funding

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Coming up! PSU's "Sustainability in the Supply Chain" Conference

- **November 1-2, 2007**
- **Tracks:**
  - Recovery and Reuse
  - Innovation in Product and Service
  - Building Green Markets
  - Trust and Accountability
- **Who:** Nike, Boeing, Kettle Foods, Wal-Mart, ReBuilding Center, Toyota, Intel, Green Electronics Council, Green Building Services, Nau, Keen, Tillamook Dairy, Columbia Forest Products, Sustainable Harvest

www.bizandsustainability.org

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Some observations on Life Cycle Assessment of Food Systems

- **“Values-Added”** products - take environmental, social impacts into “account”
- Certification systems help provide information about environmental, social impacts of production process
- Don’t have comprehensive information about impacts across entire life cycle (waste products, etc) or about **landscape level** or **long term** impacts
- Energy usage? Food versus fuels?

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Example: **Food Alliance** Certified Farms and Ranches

Farms and ranches must meet the following standards:

- Provide safe and fair working conditions
- Ensure healthy and humane care for livestock
- No hormones or non-therapeutic antibiotics
- No genetically modified crops or livestock
- Reduce pesticide use and toxicity
- Conserve soil and water resources
- Protect wildlife habitat
- Plan for continual improvement

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Example: **Food Alliance** Certified Handlers

Food processors and manufacturers must meet the following standards:

- Use Food Alliance Certified ingredients
- Ensure quality control & food safety
- Avoid artificial flavors, colors & preservatives
- Provide safe & fair working conditions
- Reduce use of toxic and hazardous materials
- Conserve energy and water
- Manage solid waste responsibly
- Plan for continual improvement

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Landscape – “life support” systems

- Ecosystem services provided by well-managed working landscapes
- Maintaining integrity of landscape over time to ensure services provided in perpetuity
- Basin level - need incentives to protect region, not just isolated parcels
- **Development pressures on farmland pose serious challenges**
- *How do we recognize long term, intergenerational value of ecosystem services???*

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Thanks for being here…

… to take on these challenges, and expand the use of life cycle assessment as a tool for a sustainable future!

Jennifer H. Allen, Ph.D., jhallen@pdx.edu