

CHRISTINE COSTELLO

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Department of Ecology and Evolutionary Biology
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RESEARCH INTERESTS

- Environmental impacts associated with agricultural systems
- Land use as it relates to food and energy systems
- Life-cycle assessment methods and characterization of uncertainty
- Quantitative methods for assisting decision making
- Incorporation of spatially-referenced data in LCA and systems analysis

EDUCATION

Carnegie Mellon University, Pittsburgh, PA, *Ph.D. Civil and Environmental Engineering*, January 2011

Thesis Title: Relating Land Use and Select Environmental Impacts to U.S. Consumption with a Focus on Agricultural Products

Carnegie Mellon University, Pittsburgh, PA, *M.S., Civil and Environmental Engineering*, May 2007

Temple University, Philadelphia, PA, *B.S. Environmental Engineering Technology*, December 2003

PROFESSIONAL EXPERIENCE

Howarth-Marino Lab, Dept. of Ecology and Evolutionary Biology, Cornell University. Ithaca, NY.
Post-doctoral Research Associate. 2/11-present

- Evaluating mitigation options for reactive nitrogen sources to the environment
- Exploring connections between land and nutrient use in diet choice scenarios

Green Design Institute, Dept. of Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA, *Graduate Research Assistant*, 6/07-present

- Evaluated greenhouse gas emissions associated with agricultural systems
- Quantified nitrogen output and hypoxia-generating potential in the Gulf of Mexico associated with future food and biofuel demands in the Mississippi River Basin
- Conducted an Input-Output Analysis to link land use to consumption
- Developed a multiregional input-output model to assess the land embodied in US trade

Blasland, Bouck & Lee, Inc., now ARCADIS, *Engineer-in-Training*, Syracuse, NY & Pittsburgh, PA
Full-time: 4/04 – 5/06; Part-time: 8/06 – 5/07

- Managed tasks, coordinated with multiple members of design team to develop work plans for various river remediation projects
- Participated in a dredge and cap pilot study, including creation work plans, data management during construction, sample collection
- Conducted environmental field sampling, e.g., soil, sediment, ground/surface water

Environmental Protection Agency – U.S. EPA, Technology Innovation Program, Washington, DC, *NNEMS Fellow*, 5/03 – 8/03

- Researched innovative and passive treatments utilized at abandoned mine sites
- Created a database of technologies employed at abandoned mine sites in western U.S.
- Summarized findings in a published document and presented findings to TIP Office

EPA Region 3, Philadelphia, PA, *Environmental Careers Organization Intern*, 2/02 – 5/03

- Investigated the occurrence of pollution crossing media boundaries and relevant regulations
- Developed a methodology for selecting facilities for inspection and evaluation
- Visited facilities and participated in multimedia inspection

PEER-REVIEWED PUBLICATIONS

Costello, C., Griffin, W. M., Landis, A. E., and Matthews, H. S. Impact of Biofuel Crop Production on the Formation of Hypoxia in the Gulf of Mexico. *Environmental Science & Technology* **2009**.

Costello, C., Griffin, W. M., Matthews, H. S., and Weber, C. L. Inventory Development and Environmental Input-Output Model of U.S. Land Use: Relating Land in Production to Consumption. *Environmental Science & Technology*. **2011**.

REPORTS AND OTHER PUBLICATIONS

Costello, C. 2003. Acid Mine Drainage: Innovative Treatment Technologies. US EPA Office of Solid Waste and Emergency Response Technology Innovation Office. 52 pp.

CONFERENCE PRESENTATIONS

Costello, C, Griffin, W.M., Matthews, H. S., and Weber, C.L. *InLCA 2009*. “Relating Land Use to Consumed Goods using Input-Output Life Cycle Assessment Methods” Platform Presentation. Life Cycle Assessment IX. Boston, MA., USA, October 2009.

TEACHING EXPERIENCE

Guest Lecturer in Life Cycle Assessment Methods, “Introduction to Environmental Input-Output Methods”

Biological Engineering, University of Minnesota

Guest Lecturer in Environmental Hackfest (interdisciplinary course to encourage environmentally-friendly behavior), “Introduction to Life Cycle Assessment”

Human Computer Interaction Institute, Carnegie Mellon University

Guest Lecturer in Advanced Life Cycle Assessment “Input-Output Life Cycle Assessment Modeling”

Dept of Civil and Environmental Engineering, University of Pittsburgh

Teaching Assistant, Introduction to Civil and Environmental Engineering, 9/09-12/09

Dept of Civil and Environmental Engineering, Carnegie Mellon University

Teaching Assistant, Civil and Environmental Engineering Design 9/08 –12/08

Dept of Civil and Environmental Engineering, Carnegie Mellon University

Teaching Assistant, Life Cycle Assessment & Sustainability Case Studies 1/08 – 5/08

Dept of Civil and Environmental Engineering, Carnegie Mellon University

Eberly Center for Teaching Excellence Seminars – attendee

OUTREACH AND LEADERSHIP ACTIVITIES

Cornell New Student Reading Project – 8/11

- Facilitating discussion about a novel assigned as summer reading for incoming freshman

Ithaca Freeskool Class Leader – 5/11 – 8/11

- Leading discussions on Environmental Philosophy essays

Green Design Apprenticeship Volunteer – 9/07 – completion of PhD

- Assist in this CMU-sponsored program to educate high school students about engineering and green design concepts

Student Co-Chair for Land Use Workshop, Boston, MA – October 2009

- Lead discussion of Student Breakout Session and presented outcome from that session to attendees (~150 people)

Summer Engineering Experience for Girls – 2008 & 2009

- Assist in leading workshops for girls

HONORS, AWARDS, FUNDING

- NSF Environmental Sustainability Grant, 2009, \$300,000, P.I.s H. Scott Matthews, W. Michael Griffin, Christopher L. Weber
- Dowd-ICES Fellowship – 2008-2009 – full support for 1 year to develop a metric for land use in life cycle assessment methods.
- Dean's Fellowship Award – CMU 2007-08
- National Science Foundation Graduate Research Fellowship 2007 – Honorable Mention
- U.S. EPA Best Practices Award for Innovative Practices, Team Award for EPA Region 3 project, May 2006
- City of Philadelphia Scholarship 1999-2003
- Anna M. Vincent Scholarship 1999-2003