

Lucas Patzek

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Education

Ph.D. candidate, Crop Science (3.95 Grade Point Average), Aug. 2008 – Graduating Feb. 2012

Washington State University, Mount Vernon, WA. Major advisor: Dr. Stephen Jones. Dissertation title: *Impacts of nitrogen fertility, soilborne disease and socioeconomic factors on diverse small grain production systems of Washington State.*

B.S. in Molecular, Cellular and Developmental Biology, June 2005

University of California at Santa Cruz, Santa Cruz, CA

Internships & Professional Development

Washington State Food Policy Intern, May 2011 – present

State of Washington Inter-Agency Workgroup – Olympia, WA

Working with a state inter-agency workgroup to produce a report to the Governor and State Legislature which provides an assessment of existing data and identifies remaining gaps and opportunities in Washington State food policy to help address food security, nutrition, and health challenges faced by Washington citizens and to support realistic solutions to these issues. This report is mandated by Executive Order signed by Governor Christine Gregoire.

Visiting Researcher, Jan. – Mar. 2011

Newcastle University – Newcastle Upon Tyne, UK

As a participant in the European Union grant KBBE-2007-1-2-15, *Reducing the utilization of mineral fertilizers by improving the efficiency of nutrient use in European crops*, I worked in Professor Carlo Leifert's research group at Newcastle University analyzing the effect of nitrogen fertility and wheat variety on the phenolic acid (antioxidant) levels in whole wheat flour using HPLC methods.

Norman E. Borlaug International Science and Technology Fellowship Program, May 2009

National Agronomic Research Institute of Algeria (INRAA) – Algiers, Algeria

As a representative of the WSU Winter Wheat Breeding Lab, I helped develop an international partnership with INRAA in Algeria to improve farmer participation in cereal crop research and development in North Africa, and to strengthen the region's cereal crop improvement efforts through the transfer of new science and technology.

Graduate Teaching Workshop, Jan. 2009

Washington State University, Pullman, WA

Attended a workshop on teaching online courses, engaging students in the classroom, upholding academic integrity, designing a course and writing exams and developing a teaching persona.

WSU-CIMMYT Research Exchange, Aug. – Sept. 2008

International Maize and Wheat Improvement Center (CIMMYT), Mexico

Worked in El Batan, Mexico as part of an international group representing Mexico, Pakistan, China and the U.S. to learn the methodologies employed by CIMMYT in wheat improvement and in the diffusion of knowledge to farmers in the developing world.

Professions Training Program, 2002

University of California at Santa Cruz, Santa Cruz, CA

A program designed for hands-on learning in the art and science of strategic management in nonprofit organizations through an in-depth course and an internship with a local non-profit.

Student Environmental Center Internship, Sept. 2002 – Dec. 2002

Green Building and LEED Standard research and formulation of future UC Santa Cruz building goals. Grant research and writing.

Environmental Council of Santa Cruz Internship, Dec. 2001 – June 2002

Helped the board develop projects to protect, maintain and restore Santa Cruz County wildlife habitat, particularly in areas of increasing urban development.

Work Experience

Research Assistant, June 2008 – present

Dept. of Crop and Soil Sciences, Washington State University

Conducting research for the wheat improvement program of Dr. Stephen Jones, including (1) a study of the effects organic and mineral nitrogen fertility on the agronomic performance, baking quality and phenolic acid (antioxidant) concentrations of hard red winter wheat in western Washington State; (2) a study of the *Rhizoctonia* stunting disease impacting wheat-onion production systems of the Columbia River Basin; and (3) grower survey concerning the characteristics, marketing strategies, information sources, needs, opinions, and challenges of small grain growers in western Washington. Additionally, worked with Eric Zakarison's Farm, Bluebird Grain Farms, Jubilee Farm and Nash Huber's Farm in on-farm, participatory organic wheat breeding research.

Consultant, June 2011 – Aug. 2011

International Christian University of Japan

Worked with Dr. Kazumi Kondoh in a comparison of the Seattle-area urban food system with that of Kobe, Japan. This research study was commissioned by the government of Japan and involved interviews with farmers, grocery store managers, farmers market directors, non-profit directors and policy-makers in King County.

Consultant, June 2011 – Sept. 2011

Bill & Melinda Gates Foundation

Researched different pest control methods in maize for their potential human health hazards, environmental impacts, and potential benefits to smallholder farmers in sub-Saharan Africa. Summarized public opinion on the pest control methods, and researched pricing and availability information for pesticides and advanced germplasm in Africa.

Co-founder and Education Programming Officer, Sept. 2007 – Aug. 2008

EcoNow

With Kier Garcia I established the non-profit organization to produce free educational events and materials on sustainability-related issues, including biofuels, food systems, solar energy, transportation, product lifecycles and affordable housing. The organization was launched in Marin County, CA, and expanded into Alameda County, CA. The successful event series has drawn support from local government, business, educators, scientists and media. More information at: <http://www.econowusa.org/>.

Project Manager, Oakland Urban Villages, June 2007 – Sept. 2007

Ecocity Builders

Worked to create a preliminary GIS-based Green City Map of Oakland, CA in order to identify existing centers of concentrated social, cultural, and economic activity, and to understand how they are related to topography, water systems, and the transportation network. Helped to organize community education programs and outreach events in under-served neighborhoods

Managing Director, Jan. 2007 – Sept. 2007

Green Century Institute

The non-profit organization based in San Francisco, CA is dedicated to educational programming and research on sustainable communities and green urbanism. I worked with the board of directors to develop and manage the following programs: a green urbanism design competition, the Sustainable Communities Salon Series (an educational community event series), the Ecocity World Summit (the premier conference on ecologically-designed cities), and a wiki-based Sustainable Cities and Design online resource on WiserEarth.org.

Graduate Student Research Assistant II, Sept. 2006 – Nov. 2006

Dept. of Civil and Environmental Engineering at U.C. Berkeley

Researched the environmental and socio-economic impacts of oil palm plantations in Malaysia and Indonesia at U.C. Berkeley. Published the results of the study in the Energy Tribune.

Research Assistant II, Aug. 2005 – Sept. 2006

McLean Hospital at Harvard University

Using molecular biological techniques I studied the role of the APPBP1 (APP binding protein) protein, and additional proteins that may interact with APPBP1, in Alzheimer's disease in the lab of Rachael Neve. Published the results of study in the Journal of Neuroscience.

Teaching Experience

Internship Coordinator and Undergraduate Mentor, May 2011 – present

Northwest Agriculture and Ecosystems Internship

I founded the internship program to provide community college students in northwestern Washington a unique research, education and community service experience in the areas of food, farming and related environmental and social justice issues at the Washington State University, Mount Vernon. I am mentoring a molecular biology undergraduate student in an investigation of the effect of steam treatment on soil microflora using a low-cost soil pasteurizer.

Course Co-instructor, Sept. 2010

Cultivating Success, WSU Skagit County Extension, Mount Vernon

I co-taught the ecological soil management module to a predominantly non-scientist audience, including farmers and food processors, through lectures and soil labs.

Course Co-instructor, Fall Semester 2010

Special Topics in Horticulture: Science in Action (Hort 503), Horticulture, Washington State University, Mount Vernon

I directed presentations and class discussions on contemporary scientific literature that has helped shape American agricultural programs and policy under principal instructor Dr. Carol Miles. Graduate-level course in the Department of Horticulture and Landscape Architecture.

Course Co-instructor, Spring Semester 2009

History of Genetics (CropS 512), Crop Science, Washington State University, Pullman

I directed presentations and class discussions of various topics related to the history of genetics and science under principal instructor Dr. Stephen Jones. Graduate-level course in the Department of Crop and Soil Sciences.

Academic Presentations

“Effects of Nitrogen Environment & Genotype on the Quality & Phenolic Content of Hard Red Winter Wheat in Western Washington.” Crop Science Society of America (CSSA), Soil Science Society of America (SSSA), Agronomy Society of America (ASA) Annual Meeting. Oct. 16, 2011. San Antonio, TX.

“Stunting of Onion Caused by *Rhizoctonia* spp.” National Allium Research Conference. Dec. 9, 2010. Sparks, NV.

“Stunting in Onion Bulb Crops in the Columbia Basin Caused by *Rhizoctonia* spp.” 56th Annual Soil Fungus Conference. Mar. 24, 2010. Washington State University, Northwest Washington Research & Extension Center, Mount Vernon, WA.

“Improving the Nitrogen Efficiency of Small Grains in Diverse Systems.” Agriculture and Northwest Ecosystems Graduate Student Symposium. Nov. 10, 2009. Washington State University, Northwest Washington Research & Extension Center, Mount Vernon, WA.

“Organic and Perennial Wheat Research at Washington State University.” Visiting scientist seminar. May 19, 2009. National Agronomic Research Institute of Algeria (INRAA), Algiers, Algeria..

“Oil Palms – A Case Study in Tropical Biofuels.” Crop Science departmental seminar. Feb. 2, 2009. Washington State University, Pullman, WA.

Publications

Patzek LJ and Patzek TW, The disastrous local and global impacts of tropical biofuel production, *Energy Tribune* Mar. - Apr. 2007: 19-22.

Laifenfeld D, Patzek LJ, McPhie D, Chen Y, Levites Y, Cataldo A and Neve R, Rab5 mediates an amyloid precursor protein signaling pathway that leads to apoptosis, *Journal of Neuroscience* 27: 7141-7153 (2007).

In progress: Patzek LJ, Jones SS and Leifert C, Effects of nitrogen environment and genotype on the agronomic performance, baking quality and grain phenolic acid content of hard red winter wheat in western Washington State. Publication to be submitted in Dec. 2011 to *Journal of Agricultural and Food Chemistry*.

In progress: Patzek LJ, Paulitz TC, Du Toit LJ and Jones SS, Stunting of onion (*Allium cepa*) caused by *Rhizoctonia* species isolated from the Columbia Basin. Publication to be submitted in Dec. 2011 to *Phytopathology*.

In progress: Patzek LJ, Mears K, Paulitz TC, Du Toit LJ and Jones SS, Effect of steam treatment on soil microflora using a low-cost soil pasteurizer. Publication to be submitted in Dec. 2011 to *Plant Disease Management Reports*.

In progress: Patzek LJ, Goldberger J and Jones SS, Marketing strategies and information needs of small grain growers in western Washington State. Publication to be submitted in Jan. 2012 to *Agriculture and Human Values*.

In progress: Kondoh K, Patzek LJ and Goldberger J, Different models of community supported agriculture in the Seattle urban food system. Publication to be submitted in Jan. 2012 to *Agriculture and Human Values*.

Grants & Fundraising

Grant: *Reducing the utilization of mineral fertilizers by improving the efficiency of nutrient use in European crops* (KBBE-2007-1-2-15)

Participant in a multi-nation, \$9-million grant from the European Commission Research Directorate-General studying the effects organic and mineral nitrogen fertility on the agronomic performance, baking quality and antioxidant concentrations of hard red winter wheat in high rainfall regions. Research conducted in Mount Vernon, WA, USA and Newcastle, UK.

Grant: *Improving nitrogen use efficiency of organic cereal-vegetable production systems in high rainfall regions*

Recipient of two years of funding from Organically Grown Company to support the material and equipment costs of conducting field experiments at four locations in Mount Vernon, WA, USA.

Fundraising: *Northwest Agriculture and Ecosystems Internship*

Lead fundraiser for a WSU Mount Vernon-managed fund to support internship stipends and research material costs. Fundraising activities have been directed toward the Rotary Club, Kiwanis Club, gardening clubs, Tribal governments, NOAA and Americorps.

Awards

- 2011 Lindahl Memorial Scholarship
Roscoe and Frances Cox Charitable Scholarship
- 2010 Alexander A. Smick Scholarship in Rural Community Service and Development
Harry E. Goldsworthy Wheat Research Fund Award
Lindahl Memorial Scholarship
Roscoe and Frances Cox Charitable Scholarship
- 2009 Graduate and Professional Student Association Scholarship
Harry E. Goldsworthy Wheat Research Fund Award
Lindahl Memorial Scholarship
Roscoe and Frances Cox Charitable Scholarship

Professional Memberships

WSU Graduate and Professional Student Association - Senator
American Society of Agronomy (ASA) - Graduate Student Member
Crop Science Society of America (CSSA) - Graduate Student Member
Soil Science Society of America (SSSA) - Graduate Student Member
International Society for Horticultural Science (ISHS) - Student Member

Other

U.S. and E.U. (Polish) dual citizenship.

Fluent in English and Polish.

Experience with SAS, R, Minitab, Sigmplot, ArcGIS, Matlab, PHP, Java, HTML, LaTeX, Adobe Creative Suite, and Cubase/Nuendo.

Eagle Scout, June 2000, Troop 206, Oakland, CA, USA.