JOSHUA EARL ARNOLD

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RESEARCH & INTERESTS

Agroecology, Urban Agroecosystems, Entomology, Biological Pest Control, Soil Remediation, Drought Tolerant Agriculture

EMPLOYMENT

Warren Wilson College, Swannanoa NC **2020 - Present**

Professor of Sustainable Agriculture

Concentration: Agroecology, Applied Entomology, Landscape Ecology

EDUCATION

University of California, Berkeley

PhD, Department of Environment, Science, Policy and Management Concentration: Agroecology **2014 - 2022**

Dissertation Title: Biodiversity and Ecosystem Services in Urban Agriculture: Evaluating Local and Landscape Effects on Parasitic Hymenoptera and Biological Control Services

Advisor: Dr. Miguel Altieri

University of California, Berkeley

BS, Conservation and Resource Studies, College of Natural Resources **2014**

Honors' Thesis: The Effects of Mulching and Compost Treatments on Beans Under Simulated Drought Conditions

AWARDS

Chancellor's Public Service Award, UC Berkeley 2017

Outstanding Graduate Student Instructor Award, UC Berkeley 2017

Departmental Honors (GPA 3.79), College of Natural Resources, UC Berkeley 2014

CERTIFICATION

Certificate in Teaching and Learning in Higher Education, UC Berkeley 2018

TEACHING & ADVISING

Teaching

Professor, Introduction to Sustainable Agriculture, Warren Wilson College **2021 - Present**

Professor, Sustainable Farm Management, UC Warren Wilson College **2021 - Present**

Professor, Agroecology, Warren Wilson College **2020 - Present**

Professor, Insects and Agriculture, Warren Wilson College **2020 - Present**

Professor, Community Engagement in Agri-Food Systems **2020**
ESPM 197, UC Berkeley

Agroecology, taught by Dr. Miguel Altieri, and Dr. Timothy Bowles has an average student enrollment of 80 students. Examines in a holistic framework the fundamental biological, technical, socio-political processes that govern agroecosystem productivity and stability. Includes a semester-long student managed field experiment using the principles of agroecology.

Graduate Student Instructor, Agroecology ESPM 118, UC Berkeley **2015 - 2019**

Agroecology, taught by Dr. Miguel Altieri, and Dr. Timothy Bowles has an average student enrollment of 80 students. Examines in a holistic framework the fundamental biological, technical, socio-political processes that govern agroecosystem productivity and stability. Includes a semester-long student managed field experiment using the principles of agroecology.

Graduate Student Instructor, Urban Garden Ecosystems ESPM 117, UC Berkeley **2019**

ESPM 117 studies ecologically based gardening in the context of social, cultural, and political dimensions of the urban environment. We examine the historic and contemporary forces driving urban agriculture based on the principles of environmental, food, and restorative justice. Lab sections focus on experiential learning on urban farms, and cover the ecological management of plants, animals, soils, insects, and water that are essential to the design and planning of urban farms.

Facilitator, Intro to Organic Gardening, UC Berkeley **2013**

Facilitator for a semester long course, Intro to Organic Gardening, with over 20 undergraduate students. Responsible for curriculum planning and research leading an innovative, hands-on, ecologically based course in garden ecosystems.

Guest Lecturer

Student Sustainability Collective, Riverside City College **2019**

Lecture: "Ecological Pest Management in Urban Agroecosystems"

Urban Agriculture ESPM 117, UC Berkeley **2017, 2018**

Lecture: "Tenure Security and Land Use Issues in Urban agriculture"

Student Sustainability Collective, Riverside City College **2016**

Lecture: "Introduction to Urban Agroecology"

Farmer Field School, Urban Tilth **2016**

Lecture: "Earthworm Ecology and Vermicomposting"

Global Food and Hunger, San Francisco State University **2015 - 2018**

Lecture: "Introduction to Agroecology"

Student Organic Gardening DeCal, UC Berkeley **2015, 2016**

Lecture: "Earthworm Ecology and Vermicomposting"

Workshops, Seminars, and Training

Feed Yourself Gardening Workshop, Berkeley Food Institute **2018**

Developed curriculum and delivered the 2018 "Feed Yourself" Gardening Workshop for beginning and intermediate gardeners with an emphasis for growing food with limited space.

Ecological Pest Management in Urban Agriculture, Berkeley CA **2018**

Developed curriculum and delivered a series of interactive field lectures on ecological/integrated pest management in collaboration with twelve urban agriculture organizations in the San Francisco Bay Area.

Urban Agroecology Short Course, UC Berkeley **2018**
Co-instructor for a four-daylong seminar open to the community, academics, and professionals. The course explores in detail the agroecological basis (crop diversifications, organic soil management, ecologically based pest management, water-use efficiency, etc.) of a series of horticultural production systems adapted to city environments.

Mentored Research **2015 - Present**

Jordan O. Johnson 2022
NSURS: Cannabinoid Composition of Cannabis sativa Intercropped with Ipomea batatas

Andre Kushnir, College of Natural Resources 2018
Honors' Thesis: Biological Control of Harlequin Bugs in East-Bay Urban Gardens

Christina Bitten, College of Natural Resources 2017
Capstone Project: Perceptions of and Solutions to Whiteness in University Campus Gardens: Case Study

Elena Ricciardi, College of Natural Resources 2017
Honors' Thesis: Understanding Food Insecurity in Marin's Canal Neighborhood

Dakota Glueck, College of Natural Resources 2016
Honors' Thesis: Weed Suppression Effects of Fava Bean Cover Cropping

RESEARCH

Research Appointments

Graduate Student Researcher, UC Berkeley **2017 - Present**
Lead Researcher for Ecological Pest Management Team, University of California Berkeley. Worked with twelve local community farms to gather data and develop ecological pest management plans. In charge of ten undergraduate researchers

Graduate Student Researcher, UC Berkeley **2013 - 2018**
Working under the direction of Dr. Miguel Altieri. Conducting agroecological research in traditional farming technologies. Currently researching drought tolerant soil treatments for cropping systems experiencing extreme droughts and exploring the effects of biodiversity on common urban garden pests as a means of biological control.

Graduate Student Researcher, UC Berkeley **2012 - 2013**
Urban Agroecology Survey Team Leader. Coordinated research project with twenty urban farms, presented report to Berkeley Food Institute.

Grants & Awards

Robert van Den Bosch Scholarship, $15,000	2019
Robert van Den Bosch Scholarship, $8,000	2018
The Foundation for Food and Agricultural Research (FFAR), (Collaborator) $600,000	2017
Berkeley Food Institute Seed Grant, $19,000	2014 - 2015
Judith Lee Stronach post-Baccalaureate Award, $25,000	2014

Publications

Arnold, J.E., On-Farm Spatial Composition, Management Practices and Estimated Productivity of Urban Farms in the San Francisco Bay Area. *Processes* 2022, 10, 558. https://doi.org/10.3390/pr10030558

Arnold, J. E., Siegner, A. (2021). Multidimensional Challenges in Urban Agriculture Research. In Egerer, M., & Cohen, H. (Ed.). Urban Agroecology: Interdisciplinary Research and Future Directions.

Arnold, Joshua, Egerer Monika, and Daane, Kent M. "Local and Landscape Effects to Biological Controls in Urban Agriculture—A Review." Insects, vol. 10, no.7, July 2019, p.215. doi: 10.3390/insects10070215.

Arnold, Joshua, and Paul Rogé. "Indicators of Land Insecurity for Urban Farms: Institutional Affiliation, Investment, and Location." Sustainability, vol. 10, no. 6, June 2018, p. 1963. doi:10.3390/su10061963.

Altieri, Miguel A., Nicholls, Clara I., Rogé, Paul, and **Arnold, J.E.**. 2017. "Urban Agroecology: Principles and potential." Urban Agriculture Magazine 33:18–20. http://www.ruaf.org/urban-agroecology-principles-and-potential/.

Policy Briefs and Reports

(Contributor): Driscoll L. 2017. Urban Farms: Bringing Innovations in Agriculture and Food Security to the City. Berkeley Food Institute, https://goo.gl/nwRQhB.

Miguel Altieri, Céline Pallud, Joshua Arnold, Courtney Glettner, Sarick Matzen. An Agroecological Survey of Urban Agriculture Sites in the East Bay, California. Berkeley Food Institute, 2015, https://goo.gl/H6gD6b.

Joshua Arnold, Eleanor Lum. Healing From the Ground Up, An Urban Soils Project. Office of Undergraduate Research, Undergraduate Division - College of Letters & Science, University of California, Berkeley, 2014, https://goo.gl/DdDq3F.

Conference Presentations

Arnold, J.E., (2021, March 2-11). *Ecological Pest Management in Urban Agriculture* [Conference presentation]. The Agroecological City: Sovereignty, Resilience, and the Future of Food, Berkeley, CA, United States.

Matzen, S., Arnold, J.E., (2021, March 2-11). *Soil contamination and remediation* [Conference presentation]. The Agroecological City: Sovereignty, Resilience, and the Future of Food, Berkeley, CA, United States.

De Master, K., Sowerwine, J., Arnold, J. (2019, June 26-29). *New Multifunctional Measures of Productivity for Urban Agriculture* [Conference presentation]. Joint Annual Meetings and Conference of the Association for the Study of Food and Society (ASFS) and the Agriculture, Food, and Human Values Society (AFHVS), Anchorage, Alaska, United States.

Testing urban soils for lead: Community-based use of the incremental soil sampling method to increase data quality and accessibility. American Geophysical Union (AGU) 2020 Meeting, Science and Society. Abstract. Poster Session on Community and Citizen Science. Matzen, S.; Arnold, J.; Bennaton, R.; Palud, C.

Arnold, J.E., (2017, August 8-11). *Security-of-Tenure in Urban Farms* [Conference presentation]. Ecology Society of America Annual Meeting, Portland, OR, United States.

Arnold, J.E., (2016, July 29–31). *Can Training Programs Help Urban Farmers Deal with Soil Contamination?* [Conference presentation]. Sustainable Agriculture Education Association (SAEA), University of California, Santa Cruz, CA, United States.

Arnold, J.E., (2016, January 20th). *An Agroecological Survey of Urban Agriculture in the East Bay Area of California* [Conference presentation]. Organic Agriculture Research Symposium, Asilomar, CA, United States.

Academic service

Faculty Hiring Committee Member, ENS, Warren Wilson College **2022**
Committee member in faculty search and hiring for the Professor of Animal Sciences.

Food Systems Minor Committee Member, ESPM, UC Berkeley **2017 - 2019**
Interdisciplinary program of study that explores the role of food within the environment and society. Drawing from diverse fields as far ranging ecology, sociology, the humanities, nutrition, history, and economics, the food systems minor critically examines issues of contemporary food and agriculture from a whole-systems perspective.

Faculty Hiring Committee Member, ESPM, UC Berkeley **2016**
Graduate Student Representative in faculty search and hiring for the Director of the Food Systems Minor at UC Berkeley.

Faculty Hiring Committee Member, ESPM, UC Berkeley **2016**
Graduate Student Representative in faculty search and hiring director for an Assistant Professor in Agroecology and Sustainable Food Systems.

Community Outreach and Education

Soil Advisory Committee Member, Urban Tilth, Richmond CA **2015 - 2019**
Soil Advisory Committee Member for Urban Tilth's North Richmond Farm, worked with farm managers to develop a soil-building program including testing for contamination, fertility improvement, and weed management.

Operations Manager, Oxford Tract Research Station, Berkeley CA Operations **2015 - 2016**
manager for the Student Organic Garden at the Oxford Tract Research Station at UC Berkeley. Responsible for day-to-day activities at the farm including maintenance, irrigation and crop plans. Ensured the location was open and operational for a variety of classes and workshops.

Co-Founder of the Urban Soils Project, Richmond CA **2014**
Developed soil sampling procedures, identified potential urban soil contaminants, assessed results and reported to community.

Vice President, Student Sustainability Collective, Riverside CA **2011**

Helped design, advocate for and organize efforts to affect policy change leading to the establishment of the community garden at Riverside Community College.

Non-academic Service

US Army Veteran **2002 - 2008**

Honorably discharged as a Staff Sergeant. Completed Infantry Basic Training, Airborne School, Primary Leadership Development Course, Military Advisor Academy. Bronze Star Recipient.