

DENISE A. PIECHNIK

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EDUCATION:

PhD - Ecology, Emphasis: Conservation Biology. UC Davis. Advisor: Sharon P. Lawler, Dept. of Entomology. Title: Experimental Analysis of Spatial Relationships in Food-webs during Community Assembly. Committee: Jay Rosenheim and Rick Karban. **Sept 07**

BS - Biology, Concentration in Ecology. San Francisco State University, San Francisco CA. **Aug 95**

RESEARCH INTERESTS:

Landscape ecology, conservation biology, empirical and theoretical community ecology; community structure; food-web patterns; mechanisms of biodiversity; community assembly mechanisms; species-area relationships

SKILLS: RESEARCH & TEACHING:

- **Experimental design:** hypothesis testing, laboratory and field design, data collection
- **Data analysis:** nonparametric and parametric statistics (ANOVA, mixed model, simple and logistic regression, GAM); multivariate statistics (MANOVA, PCA, RDA, CCA); descriptive statistics (diversity indices), simulation (permutation analysis), managing and analyzing large data sets (R, dBase, MS Access, Libre)
- **Statistical software:** R (data manipulation/statistics/graphing), Minitab, SYSTAT, PC-ORD, SAS, Sigma Plot
- **GIS:** ARC-MAP, spatial analyst, hydrologic analysis, digitizing, field data collection/mapping, cartography
- **Scientific and outreach communication:** technical writing - research articles, reports, abstracts, technical manuals, fact sheets, book reviews; oral and poster presentations
- **Field collection and identification:** arthropods (aquatic and terrestrial), plants, protists, reptiles
- **Computer other:** Web page design and HTML
- **Lecture** (small and large classroom), major and non-major courses, laboratory courses, using computers, assessment, proctoring, syllabus design, grading, course design, course administration
- **Out of classroom:** leading field tours, administrating data collection, teaching non-experts technical identification skills, mentoring junior scientists in the lab and field.

SELECT RESEARCH EXPERIENCE:

Post-doctoral Scholar: Conservation Practices in Northeastern Grazing Lands **Apr 09–Dec 11**
Penn State, PSIEE/USDA-ARS. PI: Sarah Goslee (USDA) & Rob Brooks (PSU). Evaluated watershed-level effects of agricultural land use and Best Management Practices in the Spring Creek watershed (central PA).

Research Associate: Analysis of Arthropod Diversity in Gettysburg National Military Park (NPS) **Apr 07–Jan 09**
Penn State, PSIEE/Entomology. PI: Ke Chung Kim (PSU) and Jason Rohr (USF – Tampa). Examined the potential effects of park restoration activities on arthropods by characterizing diversity and functional groups, and developed a monitoring plan.

Dissertation Research, UC Davis: Experimental Analysis of Spatial Relationships in Food-webs during Community Assembly. **Oct 99–Sep 07**
Researched community assembly by testing for ordered colonization sequence by trophic ranks and breadths, combined with research on the effects of area and enrichment on trophic structure during assembly.

Research Assistant: GIS study of VELB habitat. Dept of Environmental Science and Policy, UC Davis. **Jun 02–Jun 06**
Field based study on host plant management of Valley Elderberry Longhorn Beetles (VELB) in the American River Parkway. PI: Marcel Holyoak and Theresa Talley

PUBLICATIONS:

Piechnik, DA. 2013. Trophic levels colonize sequentially but effects of habitat size and quality are transient. [Acta Oecologica 47: 85 - 94](#)

Piechnik, DA, Goslee, SC, Veith, TL, Bishop, J, Brooks, R. 2012. Topographic placement of management practices in riparian zones to reduce water quality impacts from pastures. [Landscape Ecology 27: 1307 - 1319](#)

Piechnik, DA. 2012. Review: *Agriculture, Biodiversity, and Markets: Livelihoods and agroecology in comparative perspective.* (Eds. Stewart Lockie and David Carpenter), Earthscan, London UK. 2010. [Landscape Ecology 27: 617 - 619](#)

Piechnik, DA, Goslee, SC. 2011. USDA-ARS Fact Sheet: GIS-based approach improves accuracy of placing pasture Best Management Practices ([link](#))

Brooks, R.P. (*many others*), S. Goslee, T. Veith, **D. Piechnik**. 2011. Analysis of BMP implementation performance and maintenance in Spring Creek, an agriculturally-influenced watershed in Pennsylvania. Final report to U.S. Dept of Agriculture, National Institutes of Food and Agriculture, Conservation Effects Assessment Project (CEAP), Washington, DC. 87Pp ([link](#))

Kim, KC and **Piechnik, DA**. 2009. Ecological Analysis of Arthropod Diversity and Development of a Monitoring Plan for Gettysburg National Military Park and Eisenhower National Historic Site. Technical Report NPS/NER/NRTR—2009/143. National Park Service, Philadelphia, PA ([link](#))

Piechnik, DA, Lawler, SP, and Martinez, ND. 2008. Food-web Assembly During a Classic Biogeographic Study: species' "trophic breadth" corresponds to colonization order. *Oikos* 117: 665 - 674.

Piechnik, DA. 2007. Experimental Analysis of Spatial Relationships in Food-webs during Community Assembly. University of California, Davis. Dissertation ([abstract](#))

Talley, TS, Holyoak, M, **Piechnik, DA**. 2006. The effects of dust on the federally threatened Valley Elderberry Longhorn Beetle. *Environmental Management* 37: 647 - 658

PUBLICATIONS SUBMITTED AND IN PREPARATION:

Piechnik, D, The effect of size and productivity on community properties during a natural colonization experiment. Target: *Oecologia*.

Piechnik, D, and **Kim, KC**. Gettysburg National Military Park Arthropod Biodiversity: Inventory and Ecological Analysis. Target: *Journal of Insect Conservation*.

Piechnik, D, and **Kim, KC**. Gettysburg National Military Park Lepidoptera. Target: *Journal of Insect Conservation*.

Piechnik, D, and **Goslee, S**. Technical Bulletin: Using ARC-GIS to place pasture-based Best Management Practices. Target: USDA-NRCS Bulletin.

INVITED PRESENTATIONS:

Presentation: Landscape Characterization & Coarse vs Fine-grained BMP Assessment. May 10
USDA-ARS Pasture & Watershed Management Seminar Series

Presentation: Landscape Characterization & Coarse vs Fine-grained BMP Assessment. May 10
USDA-CEAP/PSU BMP Synthesis Meeting

Presentation: Biodiversity mechanisms and patterns: food-web analysis and monitoring. Nov 08
Penn State – Dept of Entomology Seminar.

Invited Presentation: Biodiversity Mechanisms and Patterns: food-web assembly and monitoring. Aug 08
U Windsor, Dept. of Biol. Sciences, Drs. VanLaerhoven & Gillespie.

Invited Presentation: Experimental Analysis of Spatial Relationships in Food-webs. Dec 06
Penn State, Dept. of Entomology. Drs. K.C. Kim and Jason Rohr.

Presentation: Experimental Analysis of Spatial Relationships in Food-webs. Dec 05
Community Ecology Seminar Series. UCDavis.

Presentation: Food-web Analysis of a Classic Biogeographic Study. Dec 99
Seminar Series. UCDavis.

Presentation: Food-web Analysis of a Classic Biogeographic Study. Nov 99
San Francisco State Univ.

Invited Talk: Food-web Analysis of a Classic Biogeographic Study. Jun 98
Eco-Lunch presentation for researchers. National Center for Ecological Analysis and Synthesis (NCEAS), Santa Barbara, CA.

Invited Talk: Progress report of a Food-web Analysis of a Classical Biogeographical Study. Nov 97
Departmental presentation. U Washington, Dept. of Zoology, and Schindler Lab Meeting.

GRANTS AND FUNDING:

Rohr, J., Johnson, D., **Piechnik, D**. Developing cost-effective monitoring protocols to manage native species biodiversity across spatial and temporal scales (US-DOD: Strategic Environmental Research and Development Program). Submitted Mar 2011; Unfunded (decision Aug 2011). Re-submitted Aug 2012 under LEGACY Program (decision Oct 2012 - unfunded)

TEACHING AND RELATED EXPERIENCE:

Lecture: Community ecology: trophic interactions and food-webs. Sep 09
Penn State – Principles of Ecology Introductory Graduate Survey Seminar.

Lecture: Community ecology: niches and biodiversity. Nov 08
Penn State – Dept. of Entomology

Lecture: Aquatic Insects. Sept 08
Entomology 202: Entomology for non-majors. Penn State Dept. of Entomology. Dr. Kelly Hoover. 110 students.

Head T.A. – Introduction to Plant Biology Laboratory – UC Davis lower division. Administrative post, weekly training and daily supervising of TAs, managed student enrollment. Dr. Thomas Goliber, Dept. of Plant Biology 1 quarter.	Sept 06 – Dec 06
Lecture: Population Biology. Introduction to Plant Biology, lower division. UC Davis Instructor: Dr. Eric Wada. 100 students.	Sept 06
Graduate Seminar Organizer: Insect Conservation – UC Davis co-organized with Sharon Lawler, Janella Loye and Scott Carroll. Topics: habitat fragmentation, invasive species, ecosystem function, disturbance, land-use, global warming, and biological control agents. 1 quarter.	Apr 06 – Jun 06
Grader – Introduction to Plant Biology. – UC Davis lower division, Graded scantrons and analyzed student response data. Dr. Thomas Goliber, Dept. of Plant Biology. 2 quarters	Mar 06 – Jun 06 Jan 05 – Mar 05
Lecture: Experimental Analysis of Spatial Relationships in Food-webs. Honors Biology Course: upper division. UC Davis. Instructor: Dr. Arthur Shapiro.	Dec 05
Lecture: Population Biology. Environmental Science course – upper division. CSU-Sacramento Instructor: Dr. Tasila Banda.	Oct 05
Teaching Assistant – Introduction to Plant Biology Laboratory – UC Davis lower division w/ writing component. Wrote weekly lecture and instruction of lab material, supervise and assisted students during lab meetings, demonstrations, and experiments; writing and grading exams. Grading student reports. Dr. Terrance Murphy, Dr. Alan Stemler /Dr. Thomas Goliber, Dr. Eric Wada, Dept. of . Plant Biology. 5 quarters	Jan 07 – Mar 07 Aug 06 – Sep 06 Jun 06 – July 06 Oct 04 – Dec 04 Jan 04 – Mar 04
Instructional Material Designer – Introduction to Plant Biology – UC Davis lower division. Designed instructional interactive CD for TAs of this course using Dreamweaver (web-design). Supervised by Dr. Tom Goliber, Dept of Plant Biology	May 04 – Sep 05
Teaching Assistant – Aquatic Insects Laboratory – UC Davis upper division. Set-up and tear-down of weekly laboratory exercises. Graded lab practical exams, written exams, student collections. Assisted students with identification, and assisted with organizing field trips. Dr. Sharon P. Lawler, Dept. of Entomology. 3 quarters.	Mar 05 – Jun 05 Mar 03 – Jun 03 Mar 02 – Jun 02
Teaching Assistant - Principles and Applications of Ecological Theory Discussion - UC Davis Ecology Graduate Group Core Course. Led 5 groups of entering Ecology graduate students in discussions of primary literature relating to the material presented in the lecture on general principles of Ecology. Graded two term paper assignments. Critiqued students' seminar presentations. Dr. Marcel Holyoak, Dept. of Environmental Science and Policy. 1 quarter	Oct 00 – Dec 00
Teaching Assistant – Introductory Molecular Biology Discussion – UC Davis lower division. Led four discussion groups covering topics such as biological molecules, cell structure and function, molecular biology, genetics and viruses. Wrote/graded quizzes, answered questions on lecture material, graded midterm and final exams. Dr. Karen Gerhart, Dept. of Microbiology. 1 quarter.	Jan 00 – Mar 00
Teaching Assistant – World of Plants Laboratory – SFSU lower division, non-majors. General principles of plant anatomy, taxonomy, physiology, ecology, and the scientific method. Supervisors: Drs. Patterson & Desjardin. Dept of Biology. 2 semesters	Aug 97 – Dec 97 Jan 97 – May 97

ABSTRACTS AND PRESENTATIONS:

USIALE, Portland OR. Evaluating watershed-scale effects of agricultural land use and Best Management Practices on water quality in Spring Creek. (Poster: Piechnik & Goslee)	Apr 11
Northeastern Pasture Consortium Meetings, State College PA. Best Management Practices in Spring Creek Watershed. (Poster: Piechnik & Goslee)	Feb 11
Meetings of the Ecological Society of America, Pittsburgh PA. Assessing performance of conservation based Best Management Practices: Coarse vs. fine-scale Analysis. (Poster: Piechnik, Goslee & Veith). http://precedings.nature.com/documents/5248/version/1	Aug 10
Penn State & Canaan Valley Institute, State College PA. Best Management Practices in Spring Creek Watershed. (Poster: Piechnik & Goslee)	Jun 10
USIALE, Athens GA. Assessing performance of conservation based Best Management Practices: Coarse vs. fine-scale Analysis. (Poster: Piechnik, Goslee & Veith)	Apr 10
Rural-Urban Interfaces, Atlanta GA. Assessing performance of conservation-based Best Management Practices: Coarse vs. fine-scale Analysis. (Poster: Piechnik, Goslee & Veith)	Apr 10
Northeastern Pasture Consortium Meetings, Fairlee VT. Monitoring pasture best management practices in Spring Creek Watershed of Central Pennsylvania. (Poster: Goslee & Piechnik)	Feb 10

Meetings of the Ecological Society of America, Milwaukee WI. Area effects are more prominent than productivity effects for higher trophic levels. (oral)	Aug 08
Meetings of the Ecological Society of America, San Jose CA. Community assembly yielded sequential dependency patterns and questions about effects of habitat size and quality. (poster)	Aug 07
Meetings of the Ecological Society of America, Montreal, Quebec. CANADA. Do Habitat Area and Nutrient Addition Affect Colonization & Trophic Structure in a Food-chain? (oral)	Aug 05
Meetings of the Ecological Society of America, Portland Oregon. Experimental Analysis of Spatial Relationships in Food-webs. (poster)	Aug 04
Meetings of the Ecological Society of America, Spokane WA. Increase of Food-web Specialists During a Classic Biogeographic Study. (oral)	Aug 99
Meetings of the Western Society of Naturalists, San Diego CA. Food-web Analysis of a Classic Biogeography Study. (oral)	Dec 98
Meetings of the Ecological Society of America, Baltimore Maryland. The Role of Time in Food-web Structure during a Classic Biogeography Experiment: Relative decrease of generalists while specialist's diversity increases during colonization. (poster)	Aug 98

REVIEWER:

Oecologia
Ecology Letters
Oikos
Landscape Ecology

ACADEMIC SERVICE/OUTREACH/VOLUNTEER & COMMUNITY SERVICE:

Organizer and Leader: Watershed Clean-up Day - Clearwater Conservancy (Zion PA)	Apr 12
Affiliate Member of the Commission for Women: Wage-equity subcommittee Penn State, University Park PA.	Sept 10 – Jun 11
Judge, Buell/Braun Awards. Meetings of the Ecological Society of America, Pittsburgh PA	Aug 10
Judge, Graduate Research Exhibition. Penn State, University Park PA.	Mar 10
Speaker/Panelist: Graduate Women in Science “VOICES” Conference. Breakout Session: “What next: A post-doc?”	Feb 10
Presider, Oral Session at Ecological Society of America Meetings, Milwaukee WI.	Aug 08
Board Member, Friends of the Frost Entomological Museum. Penn State. Volunteer run organization to assist in outreach and administrative duties of the Frost Entomological Museum.	July 07 – present
Penn State Post-doc Society. PSU. General Member and Member of Mentoring Committee. PSPS facilitates post-doc lifestyle and transitioning into Penn State and State College PA.	Jan 08 – July 11
Bug Camp For Kids - Lecture – Insects in Food Webs – Penn State. Interactive lecture with children (ages 7-11) on the importance of insects and humans in food webs.	June 08
Awards and Admissions Committee, Graduate Group in Ecology. UCD. 1 of 2 students on a faculty-student committee to review and allocate admissions and award packages to GGE Ecology applicants for 2006-2007. Responsible for organizing funding symposium for 1 st year graduate students.	Oct 05 – Jun 06
Organizer – Host, Center for Population Biol. Workshop – UCD. Speaker: Dr. Anthony Ives, Univ. of Wisconsin. Assisted speaker with seminar design, schedule and accommodations.	Jan 06
Mentor, eight Ecology and Biotechnology Students. UCD. Mentoring included: teaching good practices in research and the laboratory setting; reviewing insect orders and entomological curation; peer review; collecting and sorting insect orders, and diversity analysis.	Jan 03 – Sep 05
Panelist-Presenter, 2003 Northern California Western Nevada Junior Science and Humanities Symposium. UC Davis campus by United States of America Army, Navy & Air Force.	Apr 04
Admissions Committee, Graduate Group in Ecology. UCD. Voting student member for admissions.	Jan 04
Community Ecology Weekly Seminar Organizer – UCD. Created schedule, recruited speakers, AV Co-Chair-Member, Ecology Graduate Student Association – UC Davis. Organized and presided over	Jan 03 – Dec 03 Oct 00 – Oct 01

general meetings concerning 200+ members.

Curriculum Committee for UCD- GGE Core Course – UC Davis. One of two students selected to assist GGE Faculty Committee with re-structuring the graduate core course. **Dec 99 – May 00**

Founding Member- Representative of Graduate Student Council in Biology – San Francisco State University. Primary goals was to gain representation in departmental affairs, and increase cohesion between the faculty and students. Officer: Convener 1997-1998. **Jan 97 –May 98**

MEMBERSHIPS:

Ecological Society of America (ESA)	1996 - present
Frost Entomological Museum (Penn State)	2007 - present
National Post-Doctoral Association (NPA)	2009 - 2011
Penn State Post-doctoral Society, Executive Board member	2008 - 2011
US Regional Association of the International Association of Landscape Ecology	2010 - present

AWARDS/FELLOWSHIPS/GRANTS:

Penn State Women in Science and Engineering Travel Award – PSU WISE (\$250)	2010
Penn State Post-Doctoral Travel Award by PSU Office of Post-Doctoral Affairs (\$250)	2010
NPA Conference Travel Grant awarded by PSU Office of Post-Doctoral Affairs (\$650)	2010
JTG Foundation Grant (\$12,300)	2004 - 2007
UCD Block Grant (Stipend/Tuition/Fees) – 2 years	1999 - 2006
Center for Population Biology Grant (\$3,292) UCD	1999 - 2004
Vansell Scholarship (\$1,000) UCD Entomology	2002
MacBeth Scholarship (\$1,000) UCD Entomology	2002
Jastro Shields Grant (\$6,000) UCD Ecology	2000 - 2002
Western Society of Naturalist Honorarium (\$100) SFSU	1998
San Francisco State University Provost Travel Award (\$500)	1997
Sally Casanova Pre-Doctoral Scholar and Internship – CSU Chancellor (\$6,000) SFSU	1997
Graduate Assistance in Areas of National Need (GAANN) Fellowship (\$30,988) SFSU – 2 yrs support + research funds	1996-1998
California State University Grant (\$1,596) SFSU	1995

OTHER DISTINCTIONS:

1st Dan (Black Belt, first degree) Moo Duk Kwan Tae Kwon Do. Grandmaster Kang, Myung Kyu. [United Arts College](#), Sacramento CA. March 24, 2006. 2001 – present.