Anna L. W. Sears

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Population Biology Graduate Group
Section of Evolution and Ecology
University of California
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EDUCATION

Ph.D. Population Biology, University of California, Davis. Degree expected Spring 2004

Master of Science, Population Biology. University of California, Davis. June 2001

Bachelor of Science, Biology (Ecology) summa cum laude with distinction, Sonoma State University, Rohnert Park. June 1998

DISSERTATION

Title: "How environmental variation moderates species interactions in natural plant communities: tests of the spatial storage effect."
Dissertation Advisor: Dr. Peter Chesson

MAJOR FELLOWSHIPS AND DISTINCTIONS

National Science Foundation Graduate Research Fellowship, 1998-2001
University of California Dissertation Year Fellowship, 2003-2004
Summer Research Fellowship, UC Davis, 2002
Professors for the Future Fellowship, UC Davis, 2001-2002
Casanova Pre-Doctoral Fellowship, California State University, 1997
Presidential Scholar, Sonoma State University 1997
Deans List, Sonoma State University, 1997-1998
Exchange Bank Scholarship, Sonoma State University, 1996-1997, 1997-1998
Deans Highest Honors, Santa Rosa Junior College 1993-1996
Doyle Academic Scholarship, Santa Rosa Junior College, 1994-1996

RESEARCH EXPERIENCE

Doctoral research, UC Davis, October 1998 – present

Designed, conducted and analyzed data of field experiments to test whether spatial variation in the environment contributes to species coexistence in plant communities, in accordance with theoretical spatial storage effect population models. Used stable carbon and nitrogen isotopes to test whether populations of lizards and invertebrate on islands in the Bahamas are subsidized by marine detritus. Reviewed ecological literature to synthesize current knowledge on the effects of temporal resource variation on food webs. Surveyed UC Davis math and science graduate students for gender difference in career goals; evaluated the causes and consequences of these differences.

Undergraduate research, Sonoma State University, 1997-1998

Designed and conducted experiments testing for the differential effects of mammalian herbivore browsing and scat deposition on dune plant communities. Field studies of nesting habit and prey use differences in two populations of predatory wasp *Symmorphus cristatus*. Dr. Hall Cushman and Dr. Nathan Rank, Department of Biology.

Research assistant,

Sonoma State University, 1997-1998: Collected and assisted in statistical evaluation of field data on the separate effects of deer and rabbit herbivory on dune plant communities. Dr. Hall Cushman, Department of Biology.

Sonoma Cutrer Winery, 1996-1997: Collected and processed field data for crop yield estimates, in vineyard and laboratory. Department of Research and Development.

PUBLICATIONS

Sears, A. L. W. 2003. Image problems deplete the number of women in academic applicant pools. Journal for Women and Minorities in Science and Engineering 9:169-181.

Sears, A. L. W., Holt, R. D. and G. A. Polis. 2003. Feast and famine in food webs: the effects of pulsed productivity. *In*: Food webs at the landscape level. G. A. Polis, M. E. Power and G. R. Huxel, editors. University of Chicago Press. Chicago, USA.

Sears, A. L. W., Smiley, J. T., Hilker, M., Muller, F. and N. E. Rank. 2001. Nesting behavior and prey use in two geographically separated populations of the specialist wasp *Symmorphus cristatus* (Vespidae: Eumeninae). American Midland Naturalist 145:233-246.

Polis, G. A., Sears, A. L. W., Huxel, G. R., Strong, D. R. and J. Maron. 2000. What makes a trophic cascade a trophic cascade? Trends in Ecology and Evolution 15:473-475.

PAPERS PRESENTED

A. L. W. Sears and P. Chesson. 2003. Spatial storage effect moderates species interactions in diverse ecosystems. Ecological Society of America Annual Meeting, Savannah, GA.

A. L. W. Sears. 2002. Women's career aspirations and academia: a survey of gender differences in career goals among UCD science and math graduate students. Women's Resources and Research Center. University of California, Davis.

A. L. W. Sears. 2002. Quantifying coexistence processes in the Arizona Desert. Department of Biological Sciences Annual Retreat. University of California, Davis.

A. L. W. Sears and P. Chesson. 2002. Quantifying the contribution of coexistence processes in the Arizona desert. Ecological Society of America Annual Meeting, Tucson, AZ.

Chesson, P.(presenter), and A.L.W. Sears. 2001. Testing hypotheses in spatio-temporal plant competition using measures of interaction strength. Ecological Society of America Annual Meeting, Madison, WI.

PUBLICATIONS IN PROGRESS

Sears, A. L. W., and P. Chesson. (In preparation for submission to Ecology). Quantifying contributions to competitive coexistence in desert annuals: the role of the spatial storage effect.

Sears, A. L. W., and D. A. Spiller. (In preparation for submission to Oecologia). Evidence of marine subsidies in Bahamian island food webs.

Chesson, P., Melbourne, B., Sears, A. L. W., and M. J. Donahue. (in review) Scale transition theory for understanding mechanisms in metacommunities. *In*: The metacommunity concept: a framework for large scale community ecology? M. Holyoak, R. D. Holt, and M. A. Leibold, editors. University of Chicago Press. Chicago, U.S.A.

Melbourne, B., Sears, A. L. W., Chesson, P., and M. J. Donahue. (in review). Applying scale transition theory to metacommunities in the field. *In*: The metacommunity concept: a framework for large scale community ecology? M. Holyoak, R. D. Holt, and M. A. Leibold, editors. University of Chicago Press. Chicago, U.S.A.

Sears, A. L. W. and P. Chesson. (In prep.) The prevalence and implications of covariance between plant response to the environment and competition: a survey of experiments in diverse ecosystems.

Sears, A. L. W., Davis, H. G., and P. Chesson. (In prep.) Changes in density dependence with changes in the environment: tests of the spatial storage effect in an annual plant community on the California coast.

Sears, A. L. W., Cushman, J. H., and C. Lortie. (In prep.) The differential effects of mammalian herbivores through browsing and scat deposition: consequences for members of a dune plant community.

TEACHING EXPERIENCE

Teaching Assistant – Introduction to Environmental Studies. Fall 2003
Department of Environmental Science and Policy, University of California, Davis. Responsible for laboratory lectures, exam preparation and grading, weekly office hours with students.

Teaching Assistant – Introduction to Ecology. Fall 1997
Department of Biology, Sonoma State University. Assisted with labs, lectures and exam preparation and grading, held weekly office hours with students.

Tutor – Biology, Chemistry and Mathematics 1993-1996
Santa Rosa Junior College. Weekly meetings with individual students needing extra assistance with course work.

Reader – General Chemistry. 1995
Santa Rosa Junior College. Responsible for grading Chemistry exams.

ACADEMIC SERVICE

Coordinator of Center for Population Biology Ecology Workshop, Winter 2002
—Hosted Dr. Mary Power of UC Berkeley for one week of lectures and events

Graduate student representative to the Center for Population Biology Steering Committee, UC Davis 2000-2002

Graduate Student Mentor, Population Biology Graduate Group, UC Davis 2000-2002

PROFESSIONAL AFFILIATIONS

UC Davis Center for Population Biology 1998-current
Fellow of the Leadership Institute for Ecology and the Economy 2003
Ecological Society of America 1997-current
Society for Conservation Biology 2002-current

JOURNALS REFEREED

Journal of Insect Behavior
The American Naturalist

SELECTED RESEARCH GRANTS

Center for Population Biology Travel Award, 2003
Hardman Research Award, 2002
Center for Population Biology Research Grant, UC Davis, 1999, 2000, 2001
Jastro-Shields Research Grant, UC Davis, 1999, 2002
Natural Sciences Student Opportunities Grant, Sonoma State University, 1998
Sigma Xi Research Grant, Sonoma State University, 1997

References available on request