

CHRISTOPHER J. DUGAW

CONTACT INFORMATION Department of Mathematics
Humboldt State University
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RESEARCH INTERESTS Mathematical modeling, ecological and population models, dynamical systems, stochastic processes, and statistics.

EDUCATION Doctor of Philosophy, **University of California, Davis**, Applied Mathematics
September 2003.
Dissertation Title: *Dynamics of a Soil-Dwelling Parasite and its Insect Host*
Adviser: Alan Hastings
Master of Science, **University of Washington**, Applied Mathematics
August 1999.
Bachelor of Science, **Western Washington University**, Biology/Mathematics
December, 1997 (Magna Cum Laude).

ACADEMIC POSITIONS Assistant Professor August 2005 - present
Humboldt State University. Mathematics Department.
Faculty Fellow July 2003 - July 2005
University of California, Davis. Mathematics Department.
Taught upper and lower division mathematics courses and conducted research.
Teaching Assistant September 2001 - April 2002
University of California, Davis. Mathematics Department.
Led small discussion sections and graded exams for calculus, linear algebra, and upper-division courses.
Associate Instructor July - August 2001
University of California, Davis. Mathematics Department.
Taught a small calculus course.
Research Assistant September 1999 - June 2001
University of California, Davis. Institute of Theoretical Dynamics.
Participated in a multi-disciplinary research group focusing on the role of non-linear dynamics in various areas of biology.

Math Tutor

July - August 1999

Garfield High School. Seattle, Washington.

Tutored an ethnically diverse group of students in basic algebra.

Teaching Assistant

September 1998 - June 1999

University of Washington. Mathematics Department.

Led small discussion sections, and graded exams for calculus courses.

COURSES
TAUGHT

- Graduate Mathematical Modeling Practicum
- Probability and Mathematical Statistics
- Graduate Stochastic Processes
- Mathematical Computing
- Graduate Dynamical Systems
- Probability Theory
- Partial Differential Equations
- Ordinary Differential Equations
- Special Topic Course in Mathematical Ecology
- Math Modeling Graduate Seminar
- Elements of Linear Algebra
- Calculus I & II
- Short Calculus II
- Calculus for the Life Sciences I & II

PUBLICATIONS

Dugaw, C. J., R. Honeyfield, C. M. Taylor, and D. W. Verzi. 2009 *Modeling activity rhythms in fiddler crabs*. **Chronobiology International**, 26(7), 1355-1368.

Melbourne, B. A., H. V. Cornell, K. F. Davies, **C. J. Dugaw**, et. al. 2007 *Invasion in a heterogeneous world: resistance, coexistence or hostile takeover?* **Ecology Letters**, 10(1), 77-94.

Priesser, E. L., **C. J. Dugaw**, D. R. Strong, and B. Dennis. 2006. *Plant facilitation of a below ground predator*, **Ecology**, 87(5), 1116-1123.

Dugaw, C. J., A. Hastings, E. L. Priesser, and D. R. Strong. 2005. *Windows of persistence in seasonal microparasite-host systems*. **Theoretical Population Biology**, 68, 267-276.

Priesser E. L., **C. J. Dugaw**, B. Dennis, and D. R. Strong. 2005. *Long-term survival of the entomopathogenic nematode *Heterorhabditis marelatus**. **Environmental Entomology**, 34(6), 1501-1506.

Hastings A., K. Cuddington, K. Davies, **C. J. Dugaw**, et. al. 2005. *The spatial spread of invasions: new developments in theory and evidence*. **Ecology Letters**, 8, 91-101.

Dugaw, C. J., A. Hastings, E. L. Priesser, and D. R. Strong. 2003. *Seasonally limited host supply generates microparasite population cycles*. **Bulletin of Mathematical Biology**, 66, 583-594.

Haefner, J. W., and **C. J. Dugaw**. 2000. *Individual based models solved using fast Fourier transforms*. **Ecological Modelling**, 125, 159 - 172.

CONFERENCE PRESENTATIONS **Dugaw, C. J.** *Radioactive π ?*, Contributed Talk, **Mathematical Association of America, Mathfest**, 2009.

***Dugaw, C. J.** and E. A. Hobelmann. *Models of road-facilitated biological invasions*, Contributed Talk, **Annual Meeting of the Society for Mathematical Biology Joint with Japan Association of Mathematical Biology**, 2007.

Brown, S. L. and **C. J. Dugaw**. *An approach to population and biological modeling for pre- and post-calculus students*, Minicourse, **Annual Meeting of the Pacific Northwest Section of the MAA**, 2007.

*Marvit, S. and **C. J. Dugaw**. *Stabilizing the population dynamics of a host-parasite system by host immigration*, Student Talk, **Allegheny Mountain Section of MAA**, 2007.

*Walker, S. M., G. B. Crawford, **C. J. Dugaw**, C. Fenton, and F. J. Shaughnessy. *Factors Affecting Turbidity in Humboldt Bay*, Poster, **California Estuarine Research Society Annual Meeting**, 2007.

Dugaw, C. J. *What epidemic models tell us about vaccination policies*. Invited Talk, **State of Jefferson Mathematics Congress**, 2006.

Dugaw, C. J., E. L. Priesser, and D. R. Strong. *Consequences of heterogeneous survival rates of an entomopathogenic nematode*. Contributed Talk, **World Conference on Natural Resource Modeling**, 2005.

Dugaw, C. J., A. Hastings, and D. R. Strong. *A mechanistic model of entomopathogenic nematodes and their hosts*. Poster, **Annual Meeting of the Society for Mathematical Biology Joint with Japan Association of Mathematical Biology**, 2001.

Note: A * indicates research done jointly with a student.

- GRANTS
- NSF REU Site: Role Models in Science, PI, 2009-2010
- FELLOWSHIPS & AWARDS
- University of California Davis Dissertation Year Fellowship, 2002-2003.
 - NSF Training Grant in Non-linear Dynamics and Biology Trainee, 1999-2002.
 - Achievement Awards for College Scientists Fellowship, 1998-1999.
 - Dr. Milton Smith Teaching Scholarship, 1995.
- ACADEMIC SERVICE
- Lamberson Lecture Series Committee, 2009-present.
 - Environmental Systems graduate program coordinator, 2008-present.
 - Environmental Systems graduate program, Mathematical Modeling option coordinator, 2007-2008.
 - Co-organizer of the North Coast Student Research Conference, 2008-2009.
 - Curriculum Committee, HSU Math Dept., 2007 - 2009.
 - University Classroom Priority Scheduling Committee, HSU, 2007 - present.
 - Judge for North Coast Regional Graduate conference, 2007.
 - Ad hoc committee to assess students' ability communicate about mathematics, HSU Math Dept., 2006.
 - Faculty Mentor for Research Experience for Undergraduates at HSU, 2006.
 - Graduate Program Committee, HSU Math Dept., 2005-present.
 - Technology Committee, HSU Math Dept., 2005-present.
 - Referee for *Ecological Modelling*, *Ecology*, *Mathematical Biosciences*, *Theoretical Population Biology*, *Journal of Biological Dynamics*, *Environmetrics* and *Journal of Mathematical Biology*.
 - Member of the MAA and the Society for Mathematical Biology.
- COMMUNITY SERVICE
- Humboldt County Science Fair Judge, 2006, 2007, and 2009.
 - Volunteer for Make-a-Wish Foundation, 2005-2006.
 - Volunteer for Yolo County SPCA, 1999-2004.
- COMPUTER SKILLS
- C/C++, Matlab, Mathematica, SAS, Linux, L^AT_EX, HTML, and TI graphing calculators.
- PERSONAL INTERESTS
- Mountain biking, trail running, rock climbing, hiking, cross-country skiing, snowshoeing, animal welfare, fair trade, and environmental conservation.