Curriculum Vitae

Clayton E. Cressler

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1 Contact

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2 Education

Ph.D. Ecology and Evolutionary Biology. University of Michigan, *expected December 2009.*
Ph.D. Ecology and Evolutionary Biology. University of Tennessee (2003-2005, discontinued)
B.S. *cum laude* Mathematics, Hope College, 2003.

3 Honors and Awards

Lotka Prize for Outstanding Theory Poster, ESA 2009.
Rackham Travel Grant, 2008.
NSF IGERT Biology, Mathematics, and Physics Initiative at the University of Arizona, 2003 (refused).
Albert E. Lampen Prize for Outstanding Mathematics Student, Hope College, 2003.
Sigma Xi Senior Research Award, Hope College, 2003.
NSF REU Fellowship, Hope College, 2001, 2002-2003.
Trustees Scholarship to Hope College (6 awarded), 1999-2003.

4 Manuscripts

1. Cressler, C. E., A. A. King, and E. E. Werner. *In review.* The foraging–predation risk tradeoff and the evolution of multiple-defense plasticity. Submitted to *American Naturalist.*

2. Cressler, C. E. *In prep.* The foraging–predation risk tradeoff and the evolution of trait integration. Target: *Evolution.*

3. Cressler, C. E. and S. D. Peacor. *In prep.* Nonlethal predator effects induce dramatic shifts in community composition of zooplankton. Target: *Ecology.*

5 Research Experience

- Dr. Aaron King, University of Michigan and Dr. Marguerite Butler, University of Hawaii, 2008-2009: Development and testing of maximum likelihood methods for phylogenetic comparative hypothesis testing.
- Dr. Aaron King, University of Tennessee, 2004: Mathematical epidemiology of cholera.
- Dr. Lou Gross, University of Tennessee, 2003-2004: Optimal control of tuberculosis spread.
- Dr. Janet Andersen and Dr. K. Greg Murray, Hope College, 2002-2003: Development of an undergraduate mathematical biology course.
- Dr. Tim Pennings, Hope College, 2001: Dynamical systems modeling.

6 Teaching Experience

Graduate Student Instructor, University of Michigan:

- Bio 161 - General Biology, Fall 2006
- Bio 390 - Evolution, Winter 2006.
- Bio 281 - General Ecology, Fall 2005, Winter 2007, Fall 2007, Winter 2008.

Graduate Teaching Assistant, University of Tennessee:

- Bio 250 - Ecology and Evolutionary Biology, Spring 2005.
- Bio 130 - Biodiversity, Fall 2004.

Undergraduate Teaching Assistant, Hope College:

- Bio/Math 380 - Mathematical Biology, Spring 2003.
- Math 131, 132, 231, 232 - Calculus I-IV, Fall 2001- Fall 2002.
- Chem 121 - General Chemistry II, Spring 2001.
- Chem 103 - Intro to Biological Chemistry, Fall 2000.

7 Presentations

- Cressler, C. E., A. A. King, and E. E. Werner. Foraging–predation risk tradeoff governs the evolution of inducible defenses. Ecological Society of America, Milwaukee, WI, August 2008.
- Cressler, C. E. Modeling inducible defenses in zooplankton. University of Michigan Ecology and Evolutionary Biology departmental seminar, October 2006.
- Andersen, J. and C. E. Cressler. An interdisciplinary course for biology and mathematics majors. The Society for Mathematical Biology, Knoxville, TN, July 2002.
- Cressler, C. E. Modeling the population dynamics of wolves, elk, and coyotes in Yellowstone National Park. The American Mathematical Society, San Diego, CA, January 2002.

8 Graduate Coursework

- University of Michigan (coursework with emphasis on math and statistics in bold):
  Agroecosystems, **Analysis and Modeling of Ecological Data**, Biology of Fish, Community Ecology, **Complex Systems Modeling**, **Interrogating Models with Data**, Limnology.
- University of Tennessee:
  Advanced Topics in Community Ecology, **Applied Regression Analysis**, Aquatic Ecology, Bat Ecology, Conservation Biology, **Disease Evolution**, Foundations of Ecology, Foundations of Evolution, Foundations of Mathematical Ecology, **Mathematical Ecology (2 sem)**, **Statistical Methods**

9 Professional Societies

- Ecological Society of America
- Society for Mathematical Biology

10 Professional service

- 2008-2009: President, Graduate Researchers in Ecology and Evolutionary Biology. Responsibilities included representing graduate students in department meetings, helping organize departmental outreach, and serving the primary conduit for graduate student concerns and needs.

- 2007-2008: Graduate student representative on the departmental Seminar committee. Responsibilities included hosting invited speakers and organizing departmental seminars.
- Reviewer for *American Naturalist*, *Proceedings of the Royal Society* **A**, *Nonlinear Dynamics*.

11 Computer Proficiency

- **Programming languages**: Java, R, C, C++
- **Scripting languages**: HTML, Maple, Mathematica, Matlab
- Developer or contributor to the following R packages:
  - *ouch*, an R package for phylogenetic comparative hypothesis testing using maximum likelihood methods.
  - *stent*, an R package for deterministic and stochastic simulation of aquatic microbial communities.
  - *comp_disp*, an R package for stochastic simulation of competition-dispersal tradeoffs in networks of linked aquatic microcosms.
  - *chemostat*, an R package for deterministic and stochastic simulations of algae-rotifer dynamics in a chemostat.

12 References

Dr. Aaron A. King
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