

Mark Novak

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APPOINTMENTS

Assistant Professor, *Zoology*, Oregon State University, *starting Fall 2012*.
Courtesy Faculty, *Zoology*, Oregon State University, *2011-present*.
Postdoctoral Researcher, *Ecology and Evolutionary Biology*,
University of California, Santa Cruz, *2009-present*.

EDUCATION

University of Chicago, *Ph.D. Ecology and Evolution*, 2008.
Advisor: J. Timothy Wootton.
Cornell University, *B.A. Biology*, 2000.
Magna Cum Laude in Research, and Distinction in All Subjects.
Atlanta International School, *International Baccalaureate*, 1996.
Bilingual Diploma, German.

FELLOWSHIPS AND RESEARCH GRANTS

- NSF/NOAA Comparative Analysis of Marine Ecosystem Organization, 2010, \$590,000.
PIs: Carr, Estes, Tinker, Levin, Caselle (*ghostwriter; UCSC prohibits postdoctoral researchers from being PIs on major funding proposals*).
- Biological Sciences Division Travel Grant, University of Chicago, 2008, \$500.
- NSF Doctoral Dissertation Improvement Grant, 2006, \$12,000.
- Environmental Protection Agency STAR Fellowship, 2005, \$136,000.
- U.S. Department of Energy GAANN Fellowship, 2004, \$30,000.
- National Sciences and Engineering Council of Canada
Postgraduate Scholarship, 2004 (*declined*).
- NSF Graduate Research Fellowship Honorable Mention, 2004 & 2005.
- Hinds Fund Grant Recipient, University of Chicago, 2004 & 2005, \$1,800 & \$1,800.
- Sigma Xi Grants-In-Aid Recipient, 2004, \$500.
- Howard Hughes Research Fellowship, 1999, \$1,200.
- Mellon Student Research Grant Recipient, 1999, \$750.
- Cornell Undergraduate Research Grant Recipient, 1999, \$600.
- Sigma Xi Grants-In-Aid Recipient, 1999, \$500.

HONORS AND AWARDS

- São Paulo School on Ecological Networks Participant, 2011.
- Buell Award for Outstanding Oral Presentation Honorable Mention,
Ecological Society of America, 2009.
- National Science Foundation Faculty Institutes for Reforming Science Teaching IV
Postdoctoral Scholar, 2009.
- Cornell Honors Program Scholar, 1999.
- The Park Foundation Scholar, 1998.

PAPERS PUBLISHED OR IN REVIEW

- Novak**, Wootton, Doak, Emmerson, Estes Jacob, Tinker & Yeakel (*in revision*). Predicting species responses to perturbations: What is the community matrix?
- Twardochleb, **Novak** & Moore (*in review*). Using the functional response of a consumer to predict biotic resistance to invasive prey. *Ecological Applications*.
- Novak** & Tinker (*in revision*). The temporal consistency of intraspecific diet specialization. *Journal of Animal Ecology*.
- Novak** (*invited to revise*). Trophic omnivory across a productivity gradient: intraguild predation theory and the structure and strength of species interactions. *Ecological Monographs*.
- Novak**, Moore & Leidy (2011). Nestedness patterns and the dual nature of community disassembly in California streams: a multivariate permutation-based approach. *Global Change Biology* 17: 3714-3723.
- Yeakel, **Novak**, Guimarães Jr., Fox-Dobbs, Koch, Moore & Semmens (2011). Merging resource availability with isotope mixing models: the role of neutral interaction assumptions. *PLoS ONE* 6(7): e22015
- DeAngelis, Wolkowicz, Lou, Jiang, **Novak**, Svanbäck, Araújo, Jo & Cleary (2011). The effect of travel loss on evolutionary stable distributions of populations in space. *American Naturalist* 178(1): 15-29.
- Novak**, Wootton, Doak, Emmerson, Estes & Tinker (2011). Predicting community responses to perturbations in the face of imperfect knowledge and network complexity. *Ecology* 92(4): 836-846 (*Concepts & Synthesis*). *****Highlighted by Faculty of 1000*****
- Yeakel, Stiefs, **Novak** & Gross (2011). Generalized modeling of ecological population dynamics. *Journal of Theoretical Ecology* 4(2): 179-194.
- Bolnick, Amarasekare, Araújo, Bürger, Levine, **Novak**, Schreiber, Urban & Vasseur (2011). Why intraspecific trait variation matters in community ecology. *Trends in Ecology & Evolution* 26(4): 183-192.
- Novak** (2010). Estimating interaction strengths in nature: experimental support for an observational approach. *Ecology* 91(8): 2394-2405.
- Novak** & Wootton (2010). Using experimental indices to quantify the strength of species interactions. *Oikos* 119: 1057-1063 (*Forum*).
- Novak** & Wootton (2008). Estimating nonlinear interaction strengths: an observational method for species-rich food webs. *Ecology* 89(8): 2083-2089 (*Report*).
- Doak, Estes, Halpern, Jacob, Lindberg, Lovvorn, Monson, Tinker, Williams, Wootton, Carroll, Emmerson, Micheli & **Novak** (2008). Understanding and predicting ecological dynamics: are major surprises inevitable? *Ecology* 89 (4): 952-961 (*Concepts & Synthesis*).
- Novak** (2004). Diurnal activity in a group of Gulf of Maine decapods. *Crustaceana* 77 (5): 603-620.

SELECTED PRESENTATIONS

- Novak**, Wootton, Doak, Emmerson, Estes & Tinker (2011). Predicting community responses to perturbations in the face of imperfect knowledge and network complexity. *Mote Symposium, Species Interactions: The Invisible Fabric of Nature*.
- Novak** & Tinker (2010). Prey-switching and the temporal dynamics of intraspecific diet specialization. *Evolution, OR*.

- Novak, Moore & Leidy (2010).** Nestedness patterns reveal the dual nature of community disassembly in California streams. *North Am. Benthological Soc., Santa Fe, NM.*
- Novak (2009).** Linear responses from nonlinear interactions: why linear measures of species interaction strengths do and do not suffice. *Western Society of Naturalists, Monterey, CA.*
- Tinker, Guimarães Jr., Novak, Staedler, Bentall, Bodkin & Estes. (2009).** Using network analysis to assess individual patterns of resource use: sea otters exhibit modularity at high density sites, providing evidence for a facultative diet polymorphism. *Society of Marine Mammalogy, Quebec City, QC.*
- Novak (2009).** The empirical nonlinearity of multispecies functional responses and the stability of generalist predator-prey interactions. *Annual Meeting of the Ecological Society of America, Albuquerque, NM.*
- Novak (2008).** Trophic omnivory and the structure, strength, and nonlinear nature of species interactions across a productivity gradient. *Annual Meeting of the Ecological Society of America, Milwaukee, WI. (Buell Award Honorable Mention).*
- Novak (2008).** Trophic omnivory across a productivity gradient: The structure and strength of species interactions. *Evolution, Minneapolis, MN.*
- Novak (2007).** Species responses to food web perturbations: The use and accuracy of qualitative and quantitative predictions. *Western Society of Naturalists, Ventura, CA.*
- Novak (2007).** Estimating the nonlinear strength of per capita species interactions: a new observational method for species rich food webs. *Annual Meeting of the Ecological Society of America, San Jose, CA.*
- Novak (2007).** The strength and linearity of species interaction in a New Zealand food web. *Evolution, Christchurch, New Zealand.*
- Novak & Wootton (2006).** Estimating the per capita strength of species interactions in an omnivorous food web of the New Zealand intertidal. *Western Society of Naturalists meeting, Redmond, WA.*

INVITED PRESENTATIONS

- Novak (2011).** *University of Cincinnati, OH.*
- Novak (2011).** *Oregon State University, OR.*
- Novak (2010).** *Queen's University, Belfast, Ireland.*
- Novak (2010).** *University of Utah, Salt Lake City, UT.*
- Novak (2010).** *National Center for Ecological Analysis and Synthesis, Santa Barbara, CA.*
- Novak (2010).** *Cal. Polytechnic University, San Luis Obispo, CA.*
- Novak (2009).** *University of California, Santa Cruz, CA.*

GUEST LECTURES

- *BIOE107 Ecology - Density-dependent population growth, UC Santa Cruz, 2010.*
- *Trophic Cascades, California Polytechnic University, San Luis Obispo, 2010.*

TEACHING EXPERIENCE

- *Instructor, BIOE148 Quantitative Ecology, UC Santa Cruz, 2010.*
- *Faculty Institutes for Reforming Science Teaching workshop participant, 2009-10.*
- *Workshop Leader, An Introduction to the R Statistical Framework, UC Santa Cruz, 2008.*

- Teaching Assistant, *Ecological Applications to Conservation Biology*, Univ. of Chicago, 2007.
- Teaching Assistant, *Biological Diversity*, Univ. of Chicago, 2006.
- Teaching Assistant, *Marine Ecology*, Univ. of Chicago, 2005.
- Teaching Assistant Training Course, Univ. of Chicago, 2004.
- REU Teaching Assistant, Shoals Marine Laboratory/Cornell University, 2003.
- REU Teaching Assistant, Shoals Marine Laboratory/Cornell University, 2001.
- SCUBA Divemaster, Professional Association of Diving Instructors, 1998.

GRADUATE THESIS COMMITTEE SERVICE

Rodrigo Beas, *Pending*, UC Santa Cruz, *Development and application of an ecosystem model for kelp forests in central California.*

WORKING GROUP MEMBERSHIP

National Institute for Mathematical and Biological Synthesis, 2009-11.
Population and community consequences of intraspecific niche variation.
 Organizers: Dan Bolnick, Volker Rudolf & Kevin McCann.

National Center for Ecological Analysis and Synthesis, 2006-9.
Conservation planning for ecosystem functioning: Testing predications of ecological effectiveness for marine predators.
 Organizers: Dan Doak, Jim Estes, Tim Wootton & Terrie Williams.

OTHER RESEARCH EXPERIENCE

Field Assistant for Dr. Rebecca Terry, Stanford University; Smoke Creek Desert, Nevada, 2006-7.
Conducted small-mammal surveys using victor, museum special, and Sherman live-traps.

Research Technician for Prof. David Schiel, University of Canterbury, New Zealand
 Edward Percival Field Station, Kaikoura, 2002-3.
Organized and conducted biodiversity sampling of intertidal communities; database design.

Field Technician for Prof. Mark Hixon, Oregon State University
 Caribbean Marine Research Center, Bahamas, 2002.
SCUBA monitoring of Bicolor Damselfish populations to test the importance of recruitment and post-recruitment processes to open-population demographics.

Research Assistant to Profs. Tim Wootton and Cathy Pfister, University of Chicago
 Tatoosh Island and Olympic Peninsula, Washington, 2002.
Monitored the demography of sculpin, kelp and limpet populations; established experiments to test the importance of riparian zones to insect movement.

Field Assistant to Prof. Alex Flecker, Cornell University; Venezuela, 2001.
Assisted in the design, set-up, and monitored experiments to test the effects of fish grazing on algal production and nitrogen fixation in neo-tropical streams.

NMFS Groundfish Fisheries Observer, Saltwater Inc., Alaska, 2000.
Collected data on commercial catches necessary to support inseason catch monitoring and stock assessment of the National Marine Fisheries Service.

Research Assistant to Prof. Alex Flecker, Cornell University, NY., 1998-2000.
Analyzed sediment samples to determine the indirect effects of fish-grazing on invertebrate diversity; spatial data-analysis; web-page design.

PROFESSIONAL & OUTREACH ACTIVITIES

Reviewer: *The American Naturalist*, *Ecological Modelling*, *Ecology*, *Ecology Letters*, *Journal of Animal Ecology*, *Journal of Molluscan Studies*, *Oecologia*, *Oikos*, *Proceedings of the Royal Society B*.

Symposium Organizer, The Ecological Consequences of Individual Variation, w/ Dan Bolnick, *Ecological Society of America*, 2011.

5th grade “Science Expert”, *Heidelberg International School, Germany*, 2009-present.

Moderator, *Ecological Society of America*, 2009.

Student Presentation Judge, *Western Society of Naturalists*, 2008.

PROFESSIONAL AFFILIATIONS

American Society of Limnology and Oceanography, American Society of Naturalists, Ecological Society of America, National Center for Science Education, Western Society of Naturalists.

COLLABORATORS

Ph.D. committee:

Priyanga Amarasekare, *University of California, Los Angeles*
Greg Dwyer, *University of Chicago*
Michael Foote, *University of Chicago*
Cathy A. Pfister, *University of Chicago*
David R. Schiel, *University of Christchurch, New Zealand*
J. Timothy Wootton, *University of Chicago* (Graduate advisor)

Postdoctoral sponsors:

Mark Carr, *University of California, Santa Cruz*
Jim Estes, *University of California, Santa Cruz*
Jonathan W. Moore, *Simon Fraser, Canada* (previously UCSC)
M. Tim Tinker, *U.S. Geological Survey & University of California, Santa Cruz*

Recent collaborators:

Dan Bolnick, *University of Texas, Austin*; Don DeAngelis, *USGS*; Dan Doak, *University of Wyoming*; Mark Emmerson, *Queen's University, Ireland*; Paulo Guimarães Jr., *Universidade Estadual de Campinas, Brazil*; Robert Leidy, *EPA*; Justin Yeakel, *UC Santa Cruz*.

REFERENCES

Mark Carr (Postdoctoral co-advisor)
Professor, Department of Ecology and Evolutionary Biology
University of California, Santa Cruz, CA 95060
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Dan F. Doak (Collaborator)
Professor of Zoology and Physiology
University of Wyoming, Laramie, WY 82071
(307) 766-5470
ddoak@uwyo.edu

Jim A. Estes (Postdoctoral co-advisor)
Professor of Ecology and Evolutionary Biology
University of California, Santa Cruz, CA 95060
(831) 459-2820
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Jonathan W. Moore (Postdoctoral co-advisor, previously at UCSC)
Assistant Professor of Biology
Simon Fraser University, Burnaby, BC V5A 1S6
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M. Tim Tinker (Postdoctoral co-advisor)
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J. Timothy Wootton (Ph.D. advisor)
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