

# Elizabeth M Wolkovich

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## EDUCATION

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### **Dartmouth College, Ph.D.** 2009

Thesis: Linking community and ecosystem dynamics in invasion biology: An experimental approach in coastal sage scrub.

Advisors: Douglas T. Bolger & Kathryn L. Cottingham

Committee: Matthew P. Ayres, Ross A. Virginia, John C. Moore (outside member from NREL)

### **Wellesley College, B. A.** 2002

Major in Biological Sciences. Minor in Russian. Study-abroad in Oaxaca, Mexico

## APPOINTMENTS

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University of British Columbia (Biodiversity Research Centre Fellow - *accepted*) 2012-2014

University of California - San Diego (NSF Postdoctoral Fellow in Bioinformatics) 2010 - present

National Center for Ecological Analysis & Synthesis (6-mo, Postdoctoral Associate) 2009

Dartmouth College, Environmental Studies Program (Lecturer) *winter term - 2009*

## GRANTS, FELLOWSHIPS & AWARDS

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**NCEAS Working Group** (co-PI with Benjamin I. Cook, \$70,250) *May 2010 - 2011*  
Forecasting phenology: Integrating ecology, climatology, and phylogeny to understand plant responses to climate change

**NSF Postdoctoral Research Fellowship in Biology (Bioinformatics, \$123,000)** *2010 - 2011*  
Phenology of plant invasions: How changing seasons and temporal niches assemble plant communities

**EPA Science to Achieve Results (STAR) Fellowship** (\$111,000) *2006 - 2009*  
Impact of invasive plants on detrital food webs

**Graduate Student Filene Teaching Award**, Dartmouth College *May 2009*

**Murray F. Buell Award for best student oral presentation (ESA)** *August 2009*

**SERDP & Southwest Chapter Travel Awards, ESA** *August 2009*

**ESA Applied Section Student Travel Grant** *June 2008*

**Jenks Prize, Dartmouth College** (\$2,000) *June 2008*  
Funding to attend UC-Davis Advanced Entomology (Taxonomy & Field Ecology) course

**Gilman Fellowship, Dartmouth College** (\$1,500) *July 2007*  
Funding to participate in global collaborative fertilization/exclosure study (Nutrient Network)

**Exotic/Invasive Pests and Diseases Research (UC-IPM, \$23,990)** *September 2006 - August 2008*  
Title: Impact of exotic Mediterranean annual grasses on detrital food webs  
Co-PI (PI: Douglas Bolger, co-PI: Kathryn Cottingham)

**Parkinson Travel Award, Soil Ecology Society** *April 2007*

**GAANN Fellowship, Dartmouth College** (\$30,000) *September 2005 - August 2006*

**Center for Invasive Plant Management Seed Money Grant** (\$4,939) *April 2005 - May 2006*  
The Impact of invasive plants on detrital food webs

PUBLICATIONS

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1. Davies, T.J., Kraft, N.B.J., Salamin, N. & **E. M. Wolkovich**. *In press, Ecology*. Incompletely resolved phylogenetic trees inflate estimates of phylogenetic conservatism.
2. Wainwright, C. E., **Wolkovich, E. M.** & E. E. Cleland. *In press at Journal of Applied Ecology*. Seasonal priority effects: implications for invasion and restoration in a semi-arid system.
3. Craine, J. M., **Wolkovich, E. M.**, Towne, E. G. & S. W. Kembel. *In press at New Phytologist*. Flowering phenology as a functional trait. doi: 10.1111/j.1469-8137.2011.03953.x
4. **Wolkovich, E. M.** & E. E. Cleland. 2011. The phenology of plant invasions: A community ecology perspective. *Frontiers in Ecology & the Environment*. 9(5): 287-294. (Recommended by Faculty of 1000)
5. \*Pau, S., \***Wolkovich, E.M.**, Cook, B. I., Davies, T.J., Kraft, N.J.B., Bolmgren, K., Betancourt, J. & E.E. Cleland. 2011. Predicting phenology by integrating ecology, evolution and climate science *Global Change Biology*. 17: 3633–3643. \*Both authors contributed equally to work.
6. \*Wilson, E. E. & & \***E. M. Wolkovich**. 2011. Scavenging: How carnivores and carrion structure communities. *Trends in Ecology & Evolution*. 26(3): 129-135. \*Both authors contributed equally to work.
7. Firn, J. & 32 co-authors (**Wolkovich, E. M.** co-author) 2011. Abundance of introduced species at home predicts abundance away in herbaceous communities. *Ecology Letters*. 14(3): 274-281. (Publication from Nutrient Network. Assisted with writing, editing and statistical analyses.)
8. **Wolkovich E. M.**, Lipson, D. A., Virginia, R. A., Bolger, D. T., & K. L. Cottingham. 2010. Grass invasion causes rapid increases in ecosystem carbon and nitrogen storage in a semi-arid shrubland. *Global Change Biology* 16(4): 1352-1365.
9. **Wolkovich E. M.** 2010. Non-native plant litter enhances grazing arthropod assemblages by increasing native shrub growth. *Ecology* 91(3): 756-766.
10. **Wolkovich, E. M.** 2010. Defining and re-defining invasion biology (book review). *Journal of Vegetation Science* 21(4): 804-806.
11. **Wolkovich E. M.**, D. T. Bolger & D. A. Holway. 2009. Complex responses to invasive grass litter by ground arthropods in a Mediterranean shrub ecosystem. *Oecologia* 161(4): 697-708.
12. **Wolkovich, E. M.**, D. T. Bolger & K. L. Cottingham. 2009. Invasive grass litter facilitates native shrubs through abiotic effects. *Journal of Vegetation Science* 20(6): 1121-1132.
13. Buchholtz, E. A., **Wolkovich E. M.** & R. J. Cleary. 2005. Vertebral osteology and complexity in *Lagenorhynchus acutus* (Delphinidae) with comparison to other Delphinoid genera. *Marine Mammal Science* 21:411-428.

PUBLICATIONS – IN REVISION, REVIEW OR FINAL PREPARATION

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14. **Wolkovich, E. M.** & 17 co-authors. *In review, Nature*. Warming experiments underpredict plant phenological responses to climate change.
15. \*Cook, B. I., \***Wolkovich, E. M.** & C. Parmesan. *In review, PNAS*. Divergent responses to spring and winter warming explain community level flowering trends. \*Both authors contributed equally to work.
16. **Wolkovich, E. M.**, Allesina, S., Cottingham, K. L., Moore, J. C. & C. de Mazancourt. *In requested revision for American Naturalist*. Linking the green and brown worlds: The prevalence and effect of multi-channel feeding in food webs.
17. Cook, B. I., **Wolkovich, E. M.** & 17 co-authors. *In revision*. Sensitivity of spring phenology to temperature and precipitation cues in natural communities and observational networks.

PUBLICATIONS – IN REVISION, REVIEW OR FINAL PREPARATION CONT.

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18. Pau, S, Gillespie, T. W., & **E. M. Wolkovich**. *In requested revision for Journal of Biogeography*. Dissecting NDVI-species richness relationships in Hawaiian dry forests.
19. Craine, J. M., **E. M. Wolkovich**, & E. G. Towne. *In review at Journal of Ecology*. Comparison of flowering phenology among three grasslands.
20. Cleland, E. E., J. M. Allen, T. M. Crimmins, J. A. Dunne, S. Pau, S. E. Travers, E. S. Zavaleta & **E. M. Wolkovich**. *In review at Ecology*. Phenological tracking enables positive species responses to climate change.
21. \***Wolkovich, E. M.**, \*Francis, T., Scheuerell, M. D., Katz, S., Holmes, E. & S. E. Hampton. *In final preparation for Ecological Applications*. Shifting drivers and changing interactions: Detecting regime, driver and interaction changes using moving-window autoregressive models. \*Both authors contributed equally to work.

TEACHING

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- Lecturer**, with full course responsibilities, Dartmouth College *Winter 2009*  
Wilderness & Society, Environmental Studies 7
- Teaching Assistant**, Dartmouth College *Fall 2003-2007*  
Ecological Research in the Tropics I & II (study abroad in Costa Rica)  
Ecological Research on Coral Reefs (study abroad, two years: Jamaica and Little Cayman)  
Methods in Ecology (2006, Guest-taught Nutrient Network section in 2007-2009)  
Introduction to Ecology & Evolution  
Vertebrate Biology  
Conservation Biology (Environmental Studies Program)  
Introduction to Environmental Studies (Environmental Studies Program)
- Mentoring**, University of California - San Diego *Fall 2010-present*  
Working with one student on phenology bioinformatics and field bird exclosure project.
- Mentoring**, Dartmouth College *2006-2008*  
Worked with 10 undergraduate students in the lab and field, especially with two women for two years: both are accepted into graduate school for ecology.

RECENT PRESENTATIONS

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- Wolkovich, E. M., Cleland, E. E. 2010. Future questions in citizen science: Including phenology in community ecology theory. Invited talk at symposium at Ecological Society of America annual meeting.
- Wolkovich, E. M., Cleland, E. E. 2009. The phenology of plant invasions: How temporal niches assemble plant communities. Phenology 2010 (Dublin).
- Wolkovich, E. M. 2010. Combining ecosystem and food web theory to predict top-down and bottom-up effects on non-native plant detritus on arthropod assemblages (poster). Gordon Conference on plant-herbivore interactions.
- Wolkovich, E. M., Cleland, E. E. 2009. The phenology of plant invasions: How temporal niches assemble plant communities. Talk at American Geophysical Union fall meeting.
- Wolkovich, E. M. 2008. Invasive annual grasses enhance native shrubs and their arthropod communities through abiotic soil effects. Ecological Society of America (ESA) annual meeting. \*Won Buell award.
- Wolkovich, E. M., K. L. Cottingham, C. de Mazancourt, S. Sandin & J. C. Moore. 2007. How coupling between green and brown food webs alters trophic structure. Invited talk at organized oral session "Trophic Structure Across Systems." Ecological Society of America annual meeting.

## PROFESSIONAL ACTIVITIES & AFFILIATIONS

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- USA National Phenology Network RCN participant *September 2009 - present*
- Nutrient Network RCN participant (global collaborative experiment) *June 2007 - present*  
Lead organizer for arthropod sampling, in collaboration with E. T. Borer & A. D. Kay  
Site Organizer for Etna, New Hampshire site, with K. L. Cottingham
- Cyberinfrastructure for Collaborative Science, workshop participant *May 2011*
- National Center for Ecological Analysis & Synthesis working group participant *Fall 2008*  
Working group title: Detritus and dynamics of populations, food webs and communities  
Book chapter completed: Dynamic properties of detritus, with K. L. Cottingham, J. C. Moore, P. de Ruiter and A. Hastings
- NCEAS 'Trophic structure across ecosystems' working group participant *Fall 2005 - Fall 2008*
- Graduate student Journal Club organizer (and started club), Dartmouth *January 2004 - 2008*
- Reviewer for: *Agricultural & Forest Entomology, Applied Vegetation Science, Biogeochemistry, Diversity & Distributions, Ecological Applications, Ecology, Ecology Letters, Environmental Research, Global Change Biology, Journal of Animal Ecology, Journal of Applied Ecology, Journal of Ecology, Marine Ecology Progress Series, New Phytologist, Oikos, Philosophical Transactions of the Royal Society, Proceedings of the National Academy, Soil Biology & Biogeochemistry, Trends in Ecology & Evolution*
- Society Memberships: American Geophysical Union, Ecological Society of America, Soil Ecology Society

## SKILLS

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Quantitative techniques: Mixed-effects including Bayesian approaches, structural equations, time-series methods (multivariate autoregressive, wavelets, breakpoints), meta-analysis statistics

Computer languages: LaTeX, Maxima, R, Subversion, Sweave

Languages: Spanish, French (B1), basic knowledge of Russian

Miscellaneous: AAUS scientific diving (Scripps), NAUI Advanced, Rescue and Nitrox diver. Vertebrate exclosures.