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Curriculum Vitae  
**Matthew Richard Helmus**  
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## EDUCATION

- PhD in Zoology Dec. 2008  
University of Wisconsin, Madison, WI  
Thesis title: *Phylogenetic signal in ecological community responses to environmental variability*. Anthony R. Ives, advisor
- BS cum laude in Biology and Sociology, minor Interdisciplinary Studies Dec. 2001  
University of Central Arkansas, Conway, AR  
Thesis title: *Do milkweed glues or poisons trigger vein severance by monarch caterpillars?* David E. Dussourd, advisor

## ACADEMIC POSITIONS

- Postdoctoral USNSF Bioinformatic Fellow, Timothy Wootton 2010-present  
University of Chicago, U.S.A.
- Postdoctoral Chinese Academy of Sciences Fellow, Charles Cannon 2009-2010  
Xishuangbanna Tropical Botanical Garden (XTBG), China
- Graduate research and teaching assistant, Anthony Ives 2002-2008  
University of Wisconsin, Madison, U.S.A.
- Research technician and teaching assistant, David Dussourd 2002  
University of Central Arkansas, Conway, U.S.A.

## AWARDS AND RECOGNITIONS

- *Invited Speaker for the Ecology and Evolutionary Biology Early Career Scientists Symposium* (2009), University of Michigan, Ann Arbor, MI, U.S.A.
- *Honorable Mention Murray F. Buell Award* (2007) for an outstanding oral presentation at the Ecological Society of America 92<sup>nd</sup> annual conference
- *Outstanding Paper Award* (2006) at the Pioneering Studies of Young Scientists on Chemical Pollution and Environmental Changes Symposia, Center for Marine Environmental Studies, Ehime University, Japan
- *University of Central Arkansas Outstanding Student* (2001) University-wide award for excellence in academics and service based on nominations from the faculty and staff

## TEACHING EXPERIENCE (In total: TA for 8 Semesters, lecturer for 3 class periods)

- *Advanced Field Ecology and Conservation*, XTBG (lecturer 2 classes, stats advisor 5 weeks)
- *Introduction to Ecology and Evolution*, University of Wisconsin (lecturer 1 class)
- *Introduction to Biology II*, University of Wisconsin (laboratory/discussion TA 4 semesters)
- *Introduction to Ecology and Evolution*, University of Wisconsin (discussion TA 2 semesters)
- *Introduction to Biology I*, University of Wisconsin (laboratory TA 1 semester)
- *Principles of Biology II*, University of Central Arkansas (laboratory TA 1 semester)

## PUBLICATIONS (\* indicates mentored student)

### Primary author

1. *Helmus, M.R.* & D.E. Dussourd. (2005) Glues or poisons: which triggers vein cutting by monarch caterpillars? **Chemoecology** 15:45-49
2. *Helmus, M.R.*, \*T.J. Bland, C.K. Williams & A.R. Ives. (2007) Phylogenetic measures of biodiversity. **The American Naturalist** 169: E68-E83
3. *Helmus, M.R.*, \*K. Savage, M.W. Diebel, J.T. Maxted & A.R. Ives. (2007) Separating the determinants of phylogenetic community structure. **Ecology Letters** 10: 917-925
4. *Helmus, M.R.* & G.G. Sass. (2008) The rapid effects of a whole-lake reduction of coarse woody debris on fish and benthic macroinvertebrates. **Freshwater Biology** 53:1423-1433
5. *Helmus, M.R.*, \*L. Allen, O. Dominguez-Dominguez, E. Díaz Pardo, P. Gesundheit, J. Lyons & N. Mercado Silva. (2009) Threatened fishes of the world: *Allotoca goslinei* Smith and Miller, 1987 (Goodeidae). **Environmental Biology of Fishes** 84:197-198
6. *Helmus, M.R.*, W. Keller, M.J. Paterson, N.D. Yan, C.H. Cannon & J.A. Rusak. (2010) Communities contain closely related species during ecosystem disturbance. **Ecology Letters** 13:162-174

### Coauthor

7. Newton, R.J., S.E. Jones, *M.R. Helmus* & K.D. McMahon. (2007) Phylogenetic ecology of the freshwater acI lineage. **Applied and Environmental Microbiology** 73:7169-7176
8. \*Ahrenstorff, T.D., G.G. Sass & *M.R. Helmus*. (2009) The influence of littoral zone coarse woody habitat on the home range size, spatial distribution and feeding ecology of largemouth bass (*Micropterus salmoides*). **Hydrobiologia** 623:223-233
9. Mercado Silva, N., *M.R. Helmus* & M.J. Vander Zanden. (2009) Food web structure of an impacted semi-desertic river in Mexico's central plateau. **River Research and Applications** 25:1090-1108
10. Kembel, S.W., P.D. Cowan, *M.R. Helmus*, W.K. Cornwell, H. Morlon, D.D. Ackerly, S.P. Blomberg & C.O. Webb (2010). Picante: R tools for integrating phylogenies and ecology. **Bioinformatics** 26:1463-1464.
11. Ives, A.R. & *M.R. Helmus*. (2010) Phylogenetic metrics of community similarity. **The American Naturalist**. 176:E128-E142
12. Rodríguez-Álvarez, Z., M. Medina-Nava, E. Solorio-Ornelas, J.P. Ramírez-Herrejón, *M.R. Helmus*, and F. Cruz-Martínez. (accepted) Current state of the viviparous fish species of the Cuitzeo basin in Michoacan, Mexico. In: **Viviparous fishes II**. New Life Publications (edited book)
13. Scheiner, S.M., A. Chiarucci, G.A. Fox, *M.R. Helmus*, D.J. McGlenn and M.R. Willig. (accepted) The underpinnings of the relationship between space, time, and species richness. **Ecological Monographs**.
14. Ives, A.R. & *M.R. Helmus*. (accepted) Generalized linear mixed models for phylogenetic analyses of community structure. **Ecological Monographs**.

## COMPETITIVE RESEARCH FUNDING

### Extramural

1. *U.S. National Science Foundation*, Postdoctoral Research Fellowship in Biological Informatics, \$120,000 (2010)
2. *National Science Foundation of China*, International Young Researchers, \$44,000 (2009)

3. *Chinese Academy of Sciences*, Postdoctoral Research Fellowship, \$15,000 (2009)
4. *National Evolutionary Synthesis Center*, Google Summer of Code, \$5,000 (2008)
5. *UC MEXUS-CONACYT, University of California - El Consejo Nacional de Ciencia y Tecnología*, Collaborative Grant, \$25,000 (2006)
6. *Sigma Xi*, Grants-in-Aid of Research, \$600 (2001)

*Intramural*

1. *UW Madison Department of Zoology*, Graduate Research Grant, \$1750 (2007)
2. *UW Madison Department of Zoology*, Graduate Research Grant, \$1500 (2006)
3. *UW Madison Latin American Caribbean & Iberian Studies*, Research Grant, \$550 (2004)
4. *UW Madison Department of Zoology*, Graduate Research Grant, \$1400 (2003)
5. *UW Madison Latin American Caribbean & Iberian Studies*, Research Grant, \$950 (2003)
6. *UW Madison Center for Limnology*, Anna Grant Birge Research Grant, \$650 (2003)
7. *U of Central Arkansas Department of Biology*, Undergraduate Research Grant, \$1000 (2001)

## **WORKSHOP PARTICIPATION**

- *Linking phylogenetic history, plant traits, and ecological processes at multiple scales* (2008-2010) National Center for Ecological Analysis and Synthesis (NCEAS). Jeannine Cavender-Bares (organizer)
- *Evolutionary and ecological sorting in space* (2008) NCEAS. Mark Urban and Mathew Leibold (organizers)
- *International Long Term Ecological Research strategic planning meeting* (2005) Colima, Mexico. Steve Hamburg and ILTER executive committee (organizers)
- *Littoral zone structural complexity workshop* (2003) North Temperate Lakes Long Term Ecological Research Station. Greg Sass (organizer)

## **RESEARCH PRESENTATIONS** (only those where I was first author are listed)

### **invited**

- Michigan State University Kellogg Biological Station, MI, U.S.A. (2010)
- University of Michigan Ann Arbor, MI, U.S.A. Ecology and Evolutionary Biology Early Career Scientists Symposium (2009)
- Instituto de Ecología (INECOL), Xalapa, Veracruz, México (2007)
- University of California Santa Barbara, Department of Ecology, Evolution and Marine Biology, CA, U.S.A. (2007)
- Ehime University, Matsuyama, Japan, Center for Marine Environmental Studies, Pioneering Studies of Young Scientists on Chemical Pollution and Environmental Changes (2007)

### **submitted**

- The American Genetics Association. Conservation genomics conference, HI, USA (2010)
- Association for Tropical Biology and Conservation, Asian-Pacific Chapter 3rd annual conference, Chaing Mai, Thailand (2009)
- Ecological Society of America 92<sup>nd</sup> annual conference, San Jose, CA, U.S.A. (2007)
- Ecological Society of America international conference, Ecology in an Era of Globalization, Mérida, Yuc., México (2006)
- Ecological Society of America 90<sup>th</sup> annual conference, Montréal, QC, Canada (2005)
- Ecological Society of America 89<sup>th</sup> annual conference, Portland, OR, U.S.A. (2004)
- Ecological Society of America 88<sup>th</sup> annual conference, Savannah, GA, U.S.A. (2003)

- Entomological Society of America 49<sup>th</sup> annual conference, San Diego, CA, U.S.A. (2001)

### **SERVICES, AFFILIATIONS & SYNERGISTIC ACTIVITIES**

UW Graduate Mentor for Ways of Knowing Biology, promotes the biological sciences to freshmen

Science is Fun with Dr. Bassam Shakhshiri, promotes science to elementary-school children

Software developer for the *picante* R package

Member of the *Ecological Society of America*, *Association for Tropical Biology and Conservation*

Ad hoc reviewer for *American Naturalist*, *Ecology*, *Ecology Letters*, *Ecological Monographs*, *Oikos*, *Hydrobiologia*, *Environmental Biology of Fishes*

### **STUDENTS MENTORED**

Alaina Valenzuela – undergraduate, University of Chicago

Project: *Phylogenetic signal in the Caribbean food web* (currently working)

Lauren Allen – undergraduate, University of Wisconsin, Madison

Thesis: *The locations of remnant fish biodiversity hotspots in central Mexico* (currently working)

Kristina Savage – undergraduate, University of Wisconsin, Madison

Thesis: *Community phylogenetic structure in Centrarchids* (published)

Tom Bland – undergraduate, University of Wisconsin, Madison

Thesis: *Environmental drivers of phylogenetic distributions in northern Wisconsin freshwater fishes* (published)

Tyler Ahrenstorff - undergraduate, University of Wisconsin, Madison

Thesis: *Effects of littoral zone coarse woody habitat on the home range of largemouth bass (*Micropterus salmoides*)* (published)

Adrienne Tandberg – undergraduate, University of Wisconsin, Madison

Thesis: *Measuring cohesiveness in lake groups and its relation to ecological variables* (project complete)

Lindsay Focht – undergraduate, University of Wisconsin, Madison

Project: *The colonization of coarse woody habitat by macroinvertebrate communities* (project complete)