

T. Heath Ogden

Current Position: Assistant Professor

Address: Utah Valley University
Biology Department
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EDUCATION:

Jan 2005 - June 2006 Postdoctoral research in computational genomics and bioinformatics, with Michael Rosenberg, Arizona State University, Tempe, Arizona.

December 2004 Ph.D. in Integrative Biology with emphasis in molecular systematics, Brigham Young University, Provo, Utah. Michael F. Whiting advisor

April 2000 M.S. with mention in Zoology, Universidad de Concepción, Concepción, Chile. Luis E. Parra advisor

December 1996 B.S. in Zoology, Brigham Young University, Provo, Utah

RESEARCH EXPERIENCE:

- Computational genomics and bioinformatics, specifically researching the effect of alignment in phylogenetic reconstruction, the treatment of gaps (indels) in phylogenetics, and comparative aspects of alignment programs and simultaneous analysis (direct optimization) vs. traditional two-step phylogenetics. (2005-present)
- Genome Annotation Jamboree of *Acidophilium cryptum*. Held at ISU in the Plant Sciences Lecture Hall. (2006)
- Molecular and morphological insect systematic research in the Michael Whiting Lab at BYU (collaborations are still active). (2000 - present)
 - World Ephemeroptera phylogeny
 - World Odonata phylogeny
 - Basal pterygote phylogeny
- Discovery and investigation on the first terrestrial nemertean for continental South America. (1999 – 2000)
- Biological and taxonomic research of microlepidoptera fauna of a relict native forest in southern Chile. (1997 – 2000)

TEACHING EXPERIENCE:

- Assistant Professor: Evolution, Molecular Evolution and Bioinformatics. Utah Valley University, Orem, UT (2009-Present).
- Visiting Assistant Professor: General Biology for Non-Biology Majors, Organic Evolution, Entomology, Bioinformatics, Invertebrate Zoology. Idaho State University, Pocatello, Idaho (2006-2009).
- Adjunct Faculty: Biology and Human Biology. Riosalado Community College, Tempe, AZ (2005-2006).
- Lecturer: Upper division Evolution. Brigham Young University, Provo, UT (2004)
- Teaching Assistant: Biology, Zoology, Entomology, Arthropod Anatomy, Evolution, Systematics, and Phylogenetics. Brigham Young University and Universidad de Concepción (1997-2003)

PUBLICATIONS

Published

- Ogden, T. H., J. Osborne, L. Jacobus, and M. F. Whiting. 2009. Combined morphological and molecular phylogeny of Ephemeroidea (Ephemeroptera). *Zootaxa* 1991:28-42.
- Bybee, S., T. H. Ogden, M. Brahm, and M. F. Whiting. Molecules, Morphology and Fossils: A Comprehensive Approach to Odonate phylogeny and the evolution of the Odonate Wing. *Cladistics*. 24(4): 477-514.
- Ogden, T. H., M. Sartori, M. F. Whiting. 2008. Pisciforma, Setisura, and Furcatergalia (Order: Ephemeroptera) are not monophyletic based on 18S rDNA sequences: A Reply to Sun et al. (2006). *Annals of the Entomological Society of America*. 101(1):1-6
- Ogden, T. H., and M. S. Rosenberg. 2007. Does direct optimization produce more accurate alignments and topologies? POY vs. ClustalW+PAUP*. *Systematic Biology*. 52(2): 182-193.
- Ogden, T. H., and M. S. Rosenberg. 2007. How should gaps be treated in parsimony? A comparison of approaches using simulation. *Molecular Phylogenetics and Evolution*. 42: 817-826.
- Ogden, T. H., and M. S. Rosenberg. 2006. Multiple sequence alignment accuracy and phylogenetic inference. *Systematic Biology*. 55(2): 314-328.
- Ogden, T. H. and M. F. Whiting. 2005. Phylogeny of Ephemeroptera (mayflies) based on molecular evidence. *Molecular Phylogenetics and Evolution*. 37(3): 625-643.
- Ogden, T. H., M. F. Whiting, and W. C. Wheeler. 2005. Poor taxon sampling, poor character sampling, and non-repeatable analyses of a contrived dataset do not provide a more credible estimate of insect phylogeny: a reply to Kjer. *Cladistics*. 21(3): 295-302.
- Ogden, T. H. and M. F. Whiting. 2003. The problem with the Paleoptera problem: sense and sensitivity. *Cladistics* 19(5): 432-442.
- Ogden, T. H. and M. F. Whiting. 2003. Phylogeny of Ephemeroptera: Molecular Evidence. *Entomologische Abhandlungen*. 61(2): 126-127.

- Ogden, T. H. and M. F. Whiting. 2003. Genomic tissue library of Odonata: a call for specimens. *Argia*.
- Ogden, T. H., W. P. McCafferty and M. F. Whiting. 2002. Phylogeny of the Ephemeroptera of the world: a call for specimens. *Mayfly Newsletter*. pp. 5-6.
- Ogden, T. H. and L. E. Parra. 2001. Taxonomy and biology of a new Oecophoridae (Lepidoptera) from central Chile. *Revista Chilena de Historia Natural*. 74: 533-538.

Accepted

- Rosenberg, M. S. and T. H. Ogden. Simulation Approaches to Evaluating Alignment Error and Its Consequences. Chapter book on alignment.
- Ogden, T. H., M. Sartori, J. L. Gattolliat, A. Staniczek, T. Soldan, and M. F. Whiting. Combined morphological and molecular phylogeny of Mayflies (Ephemeroptera). *Systematic Entomology*.

Submitted or in Review

In Preparation

- Ogden, T. H. and M. S. Rosenberg. Reevaluation of POY vs. Clustal + PAUP*.
- Houston, D., T. H. Ogden, M. F. Whiting, and D. Shiozawa. Phylogenetic Relationships of the Genus *Ptychocheilus* (Teleostei: Cyprinidae) Inferred Using Mitochondrial DNA Sequences. *Transactions of the American Fisheries Society*. In Prep.

SCHOLARSHIPS, FELLOWSHIPS & AWARDS:

- BYU mentoring undergraduates grant, \$6000 (2004)
- Booth Scholarship of Entomology, Brigham Young University, \$1000 (2004)
- Brigham Young University Graduate Fellowship, \$6000 (2003-2004)
- Marie Stopes travel award from the Hennig Society (2003)
- BYU mentoring undergraduates grant, \$6000 (2003)
- Booth Scholarship of Entomology, Brigham Young University, \$1000 (2003)
- Doctoral Dissertation Improvement Grant (DDIG) National Science Foundation, \$10,000 (2002)
- Graduate Studies Travel Grant, Brigham Young University, \$400 (2002)
- President's Prize for the student Competition, Honorable Mention, Entomological Society of America (2002)
- Booth Scholarship of Entomology, Brigham Young University, \$1000 (2000)
- Zoology department scholarship for outstanding graduate students, Universidad de Concepcion, \$3000 (1997 – 2000)

ORAL PRESENTATIONS:

- Ogden, T. H. The Evolution of Flight in Insects: Insights from Mayflies and DNA. Brigham Young University Idaho. Rexburg, ID. 2009.

- Ogden, T. H. The Importance of Accurate DNA Sequence Alignment. Idaho State University Bioinformatics Workshop. Lava Hot Springs, ID. 2007.
- Ogden, T. H. Work-flow via simulation to test accuracy. Idaho State University Bioinformatics Workshop. Lava Hot Springs, ID. 2007.
- Ogden, T. H. Phylogenomics and Bioinformatics: Mayflies and Molecules: Evolution and Phylogeny of Basal Winged Insects. Invited Seminar Speaker. University of Arkansas, 2007.
- Ogden, T. H. Phylogenomics and Bioinformatics: From Insect Evolution to Computational Biology. Invited Seminar Speaker. Idaho State University, 2006.
- Ogden, T. H. and M. S. Rosenberg. Direct Optimization vs. Traditional Phylogenetics: Alignment and Topological Accuracy. SMBE 2006.
- Ogden, T. H. and M. S. Rosenberg. The use of simulation to study the role of alignment accuracy in phylogenetic inference. *Evolution*, 2005, finalist in Ernst Mayr Award competition.
- Ogden, T. H. and M. F. Whiting. Phylogeny of Ephemeroptera based on molecular evidence. XI International Conference on Ephemeroptera and XV International Symposium on Plecoptera, 2004 Joint Meeting - August 22-29, 2004.
- Ogden, T. H. and M. F. Whiting. Phylogeny and evolution of mayflies (Ephemeroptera). *Evolution*, 2004, finalist in Ernst Mayr Award competition.
- Ogden, T. H. and M. F. Whiting. Phylogeny and evolution of mayflies (Ephemeroptera). International Meeting of the Entomological Society of America, 2004.
- J. T. Osborne, T. H. Ogden, L.M. Jacobus, W.P. McCafferty, M.F. Whiting. Phylogeny of Ephemerellidae (Ephemeroptera): Combined Approach Based on Morphological and Molecular Data. International Meeting of the Entomological Society of America, 2004.
- Ogden, T. H. and M. F. Whiting. The Paleoptera Problem: Sense and Sensitivity. Willi Hennig Society Meeting, 2003.
- Ogden, T. H. and M. F. Whiting. Phylogeny of Ephemeroptera: molecular evidence. The Phylogenetic Relationships within the Insect Orders, Dresden, Germany, 2003 (Invited symposium speaker).
- Ogden, T. H. and M. F. Whiting. Evolution of the delicate ones: phylogeny of Ephemeroptera based on molecular evidence. International Meeting of the Entomological Society of America, 2003.
- Ogden, T. H. and M. F. Whiting. The Paleoptera Problem: Sense and Sensitivity. Pacific Branch of the Entomological Society of America, 2003 (Invited symposium speaker).
- Ogden, T. H. and M. F. Whiting. Odonata Genomics. DSA, 2003 (invited speaker).
- Ogden, T. H. and M. F. Whiting. The Paleoptera Problem: Sense and Sensitivity. *Evolution*, 2002
- Ogden, T. H. and M. F. Whiting. You gotta know when to fold `em: Is Paleoptera Monophyletic? International Meeting of the Entomological Society of America, 2002.
- Ogden, T. H. and M. F. Whiting. Higher-Level Phylogeny of Ephemeroptera: Molecular Evidence. International Meeting of the Entomological Society of America, 2001.

- Ogden, T. H. and M. F. Whiting. Higher-Level Phylogeny of Ephemeroptera: Preliminary Molecular Evidence. Willi Hennig Society Meeting, 2001.

PROFESSIONAL SOCIETIES:

- Society for Molecular Biology and Evolution (SMBE) (2005-present)
- Entomological Society of America (ESA) (2000 - present)
- Society of Systematic Biologists (2002 - present)
- Willi Hennig Society (2003 - present)
- Dragonfly Society of America (DSA) (2003-present)
- Chilean Entomological Society (CES) (1997 - 2000)

SERVICE

- Reviewer for the journal BMC Evolutionary Biology
- Reviewer for the journal Systematic Biology
- Reviewer for the journal Molecular Phylogenetics and Evolution
- Reviewer for the journal Cladistics
- Reviewer for the journal Bioinformatics
- Reviewer for the journal Systematic Entomology
- Reviewer for the journal Zoological Science
- Reviewer for the journal Zootaxa
- Co-organizer of the Idaho State University Bioinformatics Seminar and Workshop held Oct. 12-13, 2007, in Lava Hot Springs, Idaho.
- ISU Saturday School for children with disabilities guest lecturer.
- Lectures and presentations at local schools (K-12) (2007-present), Pocatello Zoo (2008), Blackfoot library (2008)
- Chilean Entomological Society 1997-1999 (organizing committee in 1998)