

Gavin John Svenson

Department of Integrative Biology
401 Widtsoe Building
Brigham Young University
Provo, Utah 84042 USA

Office Phone: (801) 422-4735

Email: svenson@byu.edu

EDUCATION

- Brigham Young University- Doctoral student. 2002-present
- Cornell University- Bachelor of Science with distinction in research. 1999 – 2002,
- New York State University at Geneseo, Geneseo NY
Attendance for two semesters, 1998-1999

RELEVANT COURSEWORK

- Entomology: Insect Physiology, Insect Morphology, Invertebrate Pathology, Freshwater Invertebrates, Insect Biology, and Spider Biology.

EMPLOYMENT

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| <i>Cornell University Insect Museum</i> | Dr. E.R. Hoebeke | 2000 |
| Organization, classification and integration of the Dr. Franclemont insect collection.
General collection maintenance and organization. | | |
| <i>Research Lab Assistant,</i> | Dr. Rayor | 2000 |
| Laboratory maintenance, experimental construction and operation, as well as data recording using Psion workabouts. Experimental observations on predatory wasp behavior during timed trials. Analyses of data collected including the calculations of handling time, predation rate, prey choice, and organization of individual wasp records using Microsoft Excel. | | |
| <i>Professional Ski Instructor,</i> | Hollimont Ski Resort | 1994-1998 |
| Ski instructor for the children's program. Working with children aged 6 to 13.
Developed child skill level over time and reported progress to parent weekly. | | |
| | Bristol Mountain Ski Resort | 1998-1999 |
| Ski instructor for adult, group and private lessons on weekends and nights. | | |

AWARDS, HONORS and INTERESTS

- Hennig Society Travel Award- Marie Stopes Award
- Tipton Family Scholarship for Entomological Research, Brigham Young University
- Boy Scouts of America- Eagle Scout Award with a Bronze Palm
National Venturing Leadership Award
Regional Venturing Leadership Award
BSA/Venturing Youth National Cabinet Member
Northeast Region Executive Board Member
Northeast Region Venturing/Explorer Representative
J.W. Phillians Memorial Award for distinguished Boy Scouts
- Deans List: Cornell University, 2001, 2002
- Level 1 Professional Ski Instructors of America Certification
- Cross Country- 5 Varsity Letters, Team Captain 3 years, County All Star Team, 1997 and 1998 Junior Olympic National Cross Country contestant.
- Interests: Entomology, insect collecting trips, Backpacking/Mountaineering- high adventure, Long distance road bicycling, alpine skiing, sailing- racing and pleasure, sea kayaking, astronomy, photography, hiking, camping and travel.

COMPUTER SKILLS

- Windows 95, 98, 00, and Macintosh OS 9 and 10.
- Microsoft Works, Microsoft Office 2000, Adobe Photoshop 5.0, Adobe Illustrator 10.
- Phylogenetics Software: PAUP, TreeRot, Treeveiw, ClustalX.

RESEARCH

- Doctoral Dissertation Project, Brigham Young University May, 2002- present
Phylogenetic systematics of the insect order Mantodea. Parsimony analysis of DNA sequence data of five genes (16S + 18S + 28S ribosomal DNA + Cytochrome Oxidase II + Histone 3) using optimization alignment (POY) is used to infer the phylogenetic relationships among the families of praying mantids. This information is used to interpret evolutionary trends in morphology, visual systems, and behavior.
- Field Insect Collector, Cornell University Insect Museum August-December, 2001
Collection and preservation of insects in tropical north Queensland and outback Northern Territory, Australia, for the Cornell University Insect Museum and researchers. I also collected specimens from Carabidae and Staphylinidae for two research professors at Cornell University to increase their Australian representative collections for ongoing phylogenetic analysis. Carabids will serve as an important outgroup for Dr. James Liebherr's work on Hawaiian platynine beetles, while the Staphylinids will be used in constructing a world wide phylogeny of that group by Dr. R. Hoebeke.
- NSF REU funded research assistant, Dr. M.F. Whiting July, 2001
Insect collecting expedition to the Crater Mountain Wildlife Management Area in Papua New Guinea led by Dr. Michael F. Whiting of Brigham Young University. Focus of research in PNG was to obtain critical insect taxa for reconstructing phylogenies at the ordinal level. My specific role in this expedition was to collect, preserve, and rough sort insects. In addition, the expedition focused on collecting skink lizards, and I assisted in processing specimens, including dissection of liver samples for DNA work and mounting specimens for future morphological work. We focused on three specific insect taxa in the field: Phasmida (walking sticks), Dermaptera (earwigs), and Mantodea. We had great success and collected ~40 spp. of phasmids, including 6 undescribed species. These taxa are being used in a project to decipher phylogenetic relationships among stick insects as part of an ongoing collaborative project with the University of Gottingen in Germany. We also collected the largest diversity of Dermaptera know for PNG (somewhere around 25 taxa) for another project on dermapteran phylogeny underway at Brigham Young University.
- Senior Honors Thesis Research Dr. Peckarsky Start Fall, 2000-ongoing
Research presently taking place pertaining to the alpine macroinvertebrate fauna in three lakes of the Presidential Range, White Mountain National Forest, N.H. Topics of the project include population structure, macroinvertebrate diversity and winter survival. Contrast and comparison between the three lakes will be important due to the differing chemistry and freeze patterns over winter. Analysis of samples from two collection trips is currently taking place.
- Research Assistant, Cornell University Insect Museum, Dr. J. Liebherr Spring 2000
Processing and analyzing insect diversity from samples taken in 1998 and 1999 from a plot of old growth forests in Newfield, NY. Classification of Formicidae and species counts both temporally and spatially provided data that was analyzed with regard to the formicid population structure and distributions both by habitat construct and seasonal time scale.
- Independent Research Dr. L. Rayor Summer, 2000
Independent Research on *Polistes dominulus* predation on Bt infected Monarch larvae showing variable levels of non-lethal affects. Involved infection of larvae by a self-establish Bt non-lethal dosage assay and repeated presentations of healthy and infected larvae to foraging *P. dominulus* in timed trials. Preliminary results pointed to a non-significant preference for infected Monarch larvae.

MEETINGS AND LECTURES:

- Entomological Society of America annual meeting (November 2003). Title of talk presented in 10-minute student competition- "The phylogeny of Mantodea based on molecular evidence: evolution of a charismatic predator".
- The Phylogenetic Relationships within the Insect Orders. (September 2003) Dresden, Germany. Invited Lecturer- title "The phylogeny of Mantodea based on molecular evidence: evolution of a charismatic predator".
- Hennig Society annual meeting (July 2003). Title of talk presented in student competition- "The phylogeny of Mantodea based on molecular evidence: evolution of a charismatic predator".
- Entomological Society of America annual meeting (November 2002). Title of talk presented in 10-minute student competition- "Molecular Phylogeny of Mantodea: Preliminary molecular

evidence”.

- Department of Entomology Jugatae Series Lecture (May 2002), Cornell University. Title of talk- “Fieldwork in Papua New Guinea”.

FIELDWORK:

Field expeditions were focused on the collection of targeted insect taxa for phylogenetic research. Specifically, Mantodea (the focus of my research) were collected, preserved, and exported after intensive field collecting periods. Field expedition planning is accomplished with assistance of local collaboration and governmental approval. Locations recently sampled include:

- Papua New Guinea- 2001
- Australia (northern Queensland, Northern Territory)- 2001
- Southeast USA- 2002
- Pacific Northwest- 2002
- Australia (Tasmania and Northern Territory)- 2002
- India (central and southern regions)- 2003
- Malaysia (peninsular and Borneo)- 2003
- Peru- 2003
- Argentina, Chile- 2003
- Bolivia- 2004

Publications:

Svenson, G.J., and M.F. Whiting. 2004. Phylogeny of Mantodea based on molecular data: evolution of a charismatic predator. *Systematic Entomology* **29** (in press).