

Barry L. Williams

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Education

- Ph.D. University of Illinois, Department of Ecology, Ethology, & Evolution. May 2001
Supervisors: Drs. Ken Paige and Jeff Brawn
- B.S. University of North Dakota, Department of Biology. May, 1995.

Positions Held

- Postdoctoral Fellow – Laboratory of Molecular Biology, University of Wisconsin, September 2001 - present. Supervisor: Dr. Sean Carroll.
- Postdoctoral Research Associate - Department of Entomology, University of Illinois, April 2001 - August 2001. Supervisor: Dr. Hugh Robertson.

Awards and Honors

- National Institutes of Health, National Research Service Award. January 2003 - present.
- Proctor & Gamble Company Doctoral Student Research Award. April, 2001.
- University of Illinois Dissertation Completion Fellowship. May, 2000.
- University of Illinois Program in Ecology and Evolution Summer Research Fellowship. April, 2000.
- University of Illinois Graduate Student Symposium. Best Seminar. March, 1999.
- Program for Natural Resources, Ecology and Conservation Fellowship. August, 1998.
- Incomplete List of Teachers Ranked as Excellent: Conservation Biology (EEE 349) and Evolution of Adaptive Systems (EEE 332).
- University of North Dakota Edith Larson Award for Outstanding Biology Student. May, 1995.
- Midcontinent Institute Outstanding Undergraduate Research Award. October, 1994.
- University of North Dakota Alven Kreil Memorial Scholarship. November, 1994.

Publications

Rokas A. *, B.L. Williams B.L.*, N. King, and S.B. Carroll. 2003. Genome-scale Approaches to Resolving Incongruence in Molecular Phylogenies. *Nature*. 425:798-804.

* Co-first Authors

Wittkopp P.J.*, Williams B.L.*, J.E. Selegue, and S.B. Carroll. 2003. Drosophila Pigmentation Evolution: Divergent Genotypes Underlying Convergent Phenotypes. *Proceedings of the National Academy of Sciences of the U.S.A.* 100(4):1808-1813.

* Co-first Authors

Williams B.L., J. Brawn and K. Paige. 2003. Genetic Effects of Recent Habitat Fragmentation on the Wide Ranging, High Gene Flow Butterfly *Speyeria idalia* (Nymphalidae). *Molecular Ecology*. 12(1):11-20.

- Maherali H., B.L. Williams, K.N. Paige and E.H. DeLucia. 2002. Hydraulic and Morphological Differentiation of Ponderosa Pine Populations Along a Climate Gradient is not Associated with Ecotypic Divergence. *Functional Ecology*. 16:510-521.
- Williams B.L., J. Brawn and K. Paige. 2002. Characterization of Microsatellite Loci in the Butterfly *Speyeria idalia* (Lepidoptera: Nymphalidae). *Molecular Ecology Notes* 2:87-88.
- Johnson K.P., B.L. Williams, D.M. Drown, R.J. Adams and D.H. Clayton. 2002. The Population Genetics of Host Specificity: Genetic Differentiation in Dove Lice (Insecta: Phthiraptera). *Molecular Ecology*. 11(1):25-39.
- Williams B.L. 2002. The Role of Extinction in Taxonomy and Conservation: A Case History of the Regal Fritillary. *Conservation Biology*. 16(1):148-157.
- Williams B.L. 2001. Recognition of Eastern and Western Populations of *Speyeria idalia* (Nymphalidae) as Two New Subspecies. *Journal of the Lepidopterists Society*. 55(4): 144-149.
- Williams B.L. 2001. Patterns of Morphological Variation in *Speyeria idalia* (Lepidoptera: Nymphalidae) with Implications for Taxonomy and Conservation. *Annals of the Entomological Society of America*. 94(2):239-243.
- Paige K.N., B. Williams and T. Hickox. 2001. Overcompensation Through the Paternal Component of Fitness. *Oecologia*. 128(1):72-76.
- Williams B., J.F. Elder Jr. and I.J. Schlosser. 1995. Recovery of Mitochondrial and Nuclear DNA From Archived Allozyme Samples. *Biotechniques*. 18(2):219-220.

Non-Refereed Publications

- Williams B.L. 2003. A Peek Into the Evolution of the Sexual Lifestyles of Yeast. *Cell*. 115(4):369-370.
- Williams B. 1999. Regal Fritillaries in a Tailspin: A Story of East and West, DNA, and the Urgent Need for the Conservation of a Flagship Species. *American Butterflies*. 4:16-25.

Professional Research Experience and Workshops

- Postdoctoral Research, University of Wisconsin. September 2001 - present.
Supervisor: Dr. Sean Carroll.
The functional meaning of and evolutionary forces generating protein sequence divergence and conservation through the development of a novel experimental platform in yeast.
Population and quantitative genetic studies to discern the genetic basis of pigmentation and genitalia evolution among closely related species of *Drosophila*.
- Attendee, Cold Spring Harbor Course on Yeast Genetics. July - August 2002.
Course instructors: Drs. David Amberg, Daniel Burke, Orna Cohen-Fix.
Course designed to teach the full repertoire of tools needed to dissect complex problems in the yeast.
- Postdoctoral Research, University of Illinois. April - August 2001.
Supervisor: Dr. Hugh Robertson.
Molecular evolution of the adaptive “domestication” of a human transposable element.
- Graduate Research, University of Illinois. January 1996 – March 2001.
Supervisors: Drs. Ken Paige and Jeff Brawn.
Evolutionary history and conservation status of the Regal Fritillary (*Speyeria idalia*)
Supervisor: Dr. Ken Paige.

Heritability and paternal component of fitness for overcompensation in plants damaged by herbivory.

Supervisor: Dr. Kevin Johnson

Population structure of multiple species of lice, their respective dove hosts, and patterns of dispersal and co-evolution.

Supervisors: Drs. Hafiz Maherali, Ken Paige and Evan DeLucia

Genetic versus phenotypically plastic contributions to variation in drought tolerance among populations of ponderosa pine.

Supervisors: Drs. Matthew Ginzel, Ken Paige and Larry Hanks

The number of invasive events and natal populations of the invasive Asian Longhorn Beetle via population genetics.

Supervisors: Drs. Ken Paige and Jeff Brawn.

Surveys of genetic variation among southwestern populations of several avian and mammalian taxa.

- Undergraduate Research, University of North Dakota. May 1993 - December 1995.

Supervisor: Dr. Colin Hughes.

Developed microsatellite markers for population genetic analysis of *Forpus* and *Mimus* (Class: Aves).

Supervisor: Dr. Isaac Schlosser.

Developed microsatellite markers for the *Phoxinus* hybrid complex of fishes.

Supervisors: Drs. Isaac Schlosser and John F. Elder Jr.

Assessed hybridization events in the *Phoxinus* hybrid complex of fishes using mtDNA control region sequence variation.

Monitored biotic and abiotic attributes of natural beaver ponds in Voyageurs National Park, Minnesota.

Teaching Experience

Teaching Assistant:

- Environmental Biology (EEE 105), University of Illinois. Spring 2000.
- Evolution of Adaptive Systems (EEE 332), University of Illinois. Spring 1998 and 2000.
- Animal Behavior (EEE 346), University of Illinois. Fall 1997 and 1999.
- Behavioral Ecology (EEE 383), University of Illinois. Fall 1998.
- Introduction to Evolution (EEE 301), University of Illinois. Spring 1998.
- Conservation Biology Lab (EEE 349), University of Illinois. Spring 1997.
- General Ecology Lab (EEE 212), University of Illinois. Fall 1996.
- Introductory Biology Lab (Biol. 101), University of North Dakota. Fall 1995.
- Environmental Issues (Paper Grader)(Geol 101), University of North Dakota. Spring 1995

Guest Lectures:

- Conservation Biology (Species and Conservation; Genetics – 3 lectures)(EEE 349).
University of Illinois. Fall 2000.
- Environmental Biology (Populations; Human Population Growth – 2 lectures)(EEE 105).
University of Illinois. Spring 2000.
- Animal Behavior (Hormones and Behavior)(EEE 346). University of Illinois. Fall 1999.
- Behavioral Ecology (Paternity Analysis)(EEE 383). University of Illinois. Fall 1998.

Grants

- Illinois Dept. of Natural Resources Nongame Research Grant. July, 2000 \$1000.
- University of Illinois School of Life Sciences Francis and Harlie Clark Research Support Grant. March, 2000 \$1195.
- University of Illinois Program in Ecology and Evolution Travel Grant. April, 2000 \$250.
- Illinois Natural History Survey Herbert Ross Memorial Grant. April, 2000 \$675.
- University of Illinois Graduate College Conference Travel Grant. October, 1999 \$125.
- University of Illinois On-Campus Dissertation Research Grant. July, 1999 \$750.
- University of Illinois School of Life Sciences Francis and Harlie Clark Summer Support Grant. April, 1999 \$2500.
- University of Illinois Program in Ecology and Evolution Travel Grant. April, 1999 \$250.
- American Museum of Natural History Collection Study Grant. January, 1999 \$1000.
- Cooperative Agreement with U.S. Fish and Wildlife Service. October, 1998 \$12,000.
- Illinois Dept. of Natural Resources Nongame Research Grant. October, 1998 \$927.
- University of Illinois Graduate College Dissertation Travel Grant. May, 1998 \$1400.
- NSF EPSCOR-Research Experience for Undergraduates Award. Summer, 1994 \$3000.
- Grant in Aid of Research, from Sigma Xi, The Research Society. August, 1994 \$400.

Presentations, Posters and Invited Seminars

- Williams B., J.E. Selegue, S.B. Carroll. Understanding the meaning of protein sequence evolution. Poster. Yeast Genetics and Molecular Biology Meeting. July 2004.
- Williams B., J.E. Selegue, S.B. Carroll. Understanding the meaning of protein sequence evolution. Presentation. Genomes and Evolution: Joint Meeting of the Society for Molecular Biology and Evolution and the American Genetic Association. June 2004.
- Williams B., A. Kopp, H. Chen, S. Nuzhdin, S.B. Carroll. Haplotype structure of the Bric-A-Brac locus and its association with intraspecific variation in abdominal pigmentation in *Drosophila melanogaster*. Poster. 44th Annual Drosophila Research Conference. March 2003.
- Williams B., P. Wittkopp, J. Selegue, S.B. Carroll. The Genetic Basis of Pigmentation Differences Between *Drosophila americana* and *D. novamexicana*. Oral Presentation. Joint Meeting SSE & SSB. June 2002.
- Williams B. Effects of Population Extinction on Intraspecific Patterns of Genetic Variation: Insights Provided by DNA From Museum Specimens. Oral Presentation. Joint Meeting SSE, ASN & SSB. June 2001.
- Williams B. ESUs, Insects and Taxonomy: A Case History of *Speyeria idalia* (Lepidoptera). Oral Presentation. Society for Conservation Biology. June 2000. **Finalist for Best Student Presentation.**
- Williams B. Habitat Fragmentation, Species Concepts and Conservation: A Case History of *Speyeria idalia* (Nymphalidae). Oral Presentation. Joint Meeting SSE, ASN & SSB. June 2000.
- Williams B. Population Genetics, Species Concepts, and Conservation of the Regal Fritillary (*Speyeria idalia*) (Lepidoptera: Nymphalidae). Poster. Entomological Society of America. December 1999.
- Williams B. Population Genetics, Species Concepts, and Conservation of the Regal Fritillary (*Speyeria idalia*) (Lepidoptera: Nymphalidae). Oral Presentation - **Invited Symposium**. Annual Midwest Fish & Wildlife Conference. December 1999.

- Williams B. Population Genetics and Conservation Status of *Speyeria idalia* (Regal Fritillary)(Lepidoptera: Nymphalidae). Oral Presentation. Joint Meeting SSE, ASN & SSB. June 1999.
- Williams B. The Conservation Status of Eastern Populations of *Speyeria idalia* (Lepidoptera: Nymphalidae) Inferred From mtDNA Sequences. Oral Presentation. University of Illinois Graduate Student Symposium. March, 1999. - **Awarded Best Presentation.**
- Williams B. Assessing mtDNA Variation in the *Phoxinus* Complex of Cyprinid Fishes in Voyageurs' National Park, Minnesota. Poster. American Society of Ichthyologists and Herpetologists. June, 1995.
- Williams B. Assessing Hybridization Events in the *Phoxinus* Complex of Cyprinid Fishes in Voyageurs' National Park, Minnesota. Poster. Midcontinent Undergraduate Research Conference and Competition. October 1994.

University Service

- Departmental Graduate Programs Committee. 1999 – 2000.
- Organizational Committee, Program in Ecology and Evolution Annual Graduate Student Symposium. 1999 and 2000 (Chair).
- Departmental Graduate Student Representative. 1997 – 1999.
- Organizer, Ecolunch Seminar Series. 1996.

Society Memberships

American Association for the Advancement of Science, Genetics Society of America, Society for the Study of Evolution, Society of Systematic Biologists

Ad-Hoc Reviewer

Biological Journal of the Linnean Society, Cell, Conservation Biology, Conservation Genetics, Genome Biology, Molecular Ecology, PLOS Biology, Systematic Biology

References

Dr. Sean Carroll – postdoctoral supervisor
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Dr. Ken Paige – graduate supervisor
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