REBECCA B. SIMMONS
CURRICULUM VITAE

University of North Dakota
Department of Biology
10 Cornell St., Stop 9019
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ACADEMIC DEGREES

Doctor of Philosophy- Dept. of Entomology, University of Minnesota. Dissertation title: Evolution of wasp mimicry in euchromiine tiger moths (Lepidoptera: Arctiidae). March 2001. Advisor: Dr. Susan J. Weller.

Master of Science- Dept. of Biology, Wake Forest University. Thesis title: Chemical and acoustic cues in the courtship of *Euchaetes egle* Drury and *Euchaetes bolteri* Stretch (Lepidoptera: Arctiidae). August 1995. Advisor: Dr. William E. Conner.

Bachelor of Science- Dept. of Biology, Bridgewater College. Graduated Magna cum laude. May 1992.

PROFESSIONAL EXPERIENCE

2004-Current. Assistant Professor of Evolutionary Biology, Dept. of Biology, University of North Dakota, Grand Forks, ND.

2004-Current. Associate Member, Graduate Faculty, University of North Dakota, Grand Forks, ND.

2003-2009. Research Associate, National Museum of Natural History, Smithsonian Institution, Washington, DC.

2001-2004. Post-doctoral Research Associate. Systematic Entomology Laboratory, USDA, Beltsville, MD and Washington, DC.

2001. Graduate Research Assistant. Dept. of Entomology, Univ. of Minnesota, St. Paul, MN.

2000-2001. Curatorial Assistant. Invertebrate Collection, Bell Museum of Natural History, Univ. of Minnesota, St. Paul, MN.

2000. Teaching Assistant for Introduction to Insect Biology. Dept. of Entomology, Univ. of Minnesota, St. Paul, MN.

2000. Consultant for *Copitarsia* Risk Assessment, USDA-APHIS, University of Minnesota, St. Paul, MN.

1999-2000. Graduate Research Assistant. Dept. of Entomology, Univ. of Minnesota, St. Paul, MN.

1999. Teaching Assistant for Introduction to Evolutionary Biology Laboratories. Dept. of General Biology, Univ. of Minnesota, Minneapolis, MN.

1998. Teaching Assistant for Introduction to Systematics. Dept. of Entomology, Univ. of Minnesota, St. Paul, MN.

1997. Teaching Assistant for Introduction to Insect Biology. Dept. of Entomology, Univ. of

Minnesota, St. Paul, MN.
1997- 999. Curatorial Assistant. Invertebrate Collection, Bell Museum of Natural History, Univ. of Minnesota, St. Paul, MN.
1995- 1997. Research Assistant. Dept. of Entomology, Univ. of Minnesota, St. Paul, MN.
1992-1995. Teaching Assistant for Introduction to Comparative Physiology Laboratories. Dept. of Biology, Wake Forest Univ., Winston-Salem, NC.
1992. Research Technician. Dept. of Biology. Wake Forest Univ., Winston-Salem, NC.

RESEARCH GRANTS

SUBMITTED

2007 NSF-Career. The evolution of scent and sound in the courtship of mimetic tiger moths (Lepidoptera: Arctiidae: Arctiinae: Euchromiini). ($849,764 requested).

EXTERNALLY FUNDED

2005 USDA/NRI/CSREES. Robert Venette as senior PI (National Forest Service). Title: Integrating molecular diagnostics and pest risk assessments for improved detection and identification of *Copitarsia decolora* (Noctuidae). (Contract to Simmons: $509,729)
2001 USDA-APHIS. Title: Systematics as a tool for assessing interception and control strategies of *Copitarsia* spp. (Lepidoptera: Noctuidae), advised by Dr. Michael Pogue and Dr. Sonja Scheffer (USDA/ARS/PSI/SEL). ($287,052)
1997 NSF-DIG. Susan Weller as senior PI. Title: Dissertation Improvement Grant: Evolution of wasp mimicry in tiger moths. ($9,601)
1996 Theodore Roosevelt Natural History Award. American Museum of Natural History. Title: A Costa Rican trip to collect Arctiid wasp-mimics (Lepidoptera). ($1,000)
1993 Grant in Aid of Research. Sigma Xi. ($250)

INTERNALLY FUNDED

2006 UND EPSCor SEED Grants Initiative. Title: The evolution of scent and sound in the courtship of mimetic tiger moths (Lepidoptera: Noctuidae: Arctiinae: Arctiini: Euchromiina). ($16,686)
2004 Senate of Scholarly Activities, Univ. of North Dakota. Title: Evolution of Warning Coloration in Two Lineages of Tiger Moths (Lepidoptera: Arctiidae: Arctiinae, Euchromiini & Ctenuchini). ($1,760)
2000 Dayton and Wilkie Award. Bell Museum of Natural History, Univ. of Minnesota Title: A Molecular Phylogeny of Euchromiine Wasp Mimics (Lepidoptera: Arctiidae). ($1,400)
1999 Dayton and Wilkie Award. Bell Museum of Natural History, Univ. of Minnesota Title: A Molecular Study of Wasp Mimicking Tiger Moths. ($900)
1997 Dayton and Wilkie Award. Bell Museum of Natural History, Univ. of Minnesota. Title: A Molecular Study of Mimetic Tiger Moths. ($1,200)
1996 Dayton and Wilkie Award. Bell Museum of Natural History, Univ. of Minnesota. Title: A Costa Rican trip to collect Arctiid wasp-mimics (Lepidoptera). ($1,350)

AWARDS AND HONORS

2005 Program Enhancement Funds for the Symposium: “She blinded me with science: A tribute to the honorable, late Miriam Rothschild,” Entomological Society of America ($730)
2005 Participant in the NSF Case Studies in Science Workshop, University of North Dakota

2005 New Faculty Teaching Workshop, Univ. of North Dakota ($1500)
2005 Research Proposal Writing Fellowship, Univ. of North Dakota ($1000)
2004 Travel Award, Senate of Scholarly Activities Committee, Univ. of North Dakota ($200)
2004 Alice T. Clark Mentoring Program, Univ. of North Dakota ($1000)
2001 Snodgrass Memorial Research Award, Entomological Society of America ($300)
2000 Clench Award for best student presentation, Lepidopterists' Society ($250)
2000 Chiang Travel Fellowship, Dept. of Entomology, Univ. of Minnesota ($550)
2000 Marion Brooks-Wallace award for Ph.D. students, Univ. of Minnesota ($1,200)
1999 Chiang Travel Fellowship, Dept. of Entomology, Univ. of Minnesota ($350)
1999 University of Minnesota. Doctoral Fellowship ($12,000)
1998 Chiang Travel Fellowship, Dept. of Entomology, Univ. of Minnesota ($300)
1997 President's Prize for Best Student Paper, Entomological Society of America ($100)
1996 Agnes Hansen Travel Award. Sigma Delta Epsilon ($400)

PUBLICATIONS (* = student co-author)

PEER REVIEWED

2006. Simmons, R. B. A revision of *Psoloptera* Butler, including a re-description of its species (Arctiidae: Arctiinae: Euchromiini). *Journal of the Lepidopterists' Society* 60: 121-125.

2006. Simmons, R. B. and S. J. Weller. Review of the *Sphecosoma* genus group using adult morphology (Lepidoptera: Arctiidae). *Thomas Say Monograph Series*, 108 pp., 108 figs.

2004. Simmons, R. B. and M. G. Pogue. Redescription of two often confused noctuid pests, *Copitarsia decolora* (Guenée) and *C. incommoda* (Walker) (Lepidoptera: Noctuidae: Cuculliinae). *Annals of Ent. Soc. Amer.* 97: 1159-1164.

2004. Simmons, R. B. and S. J. Scheffer. Evidence of cryptic species within the pest *Copitarsia decolora* (Guenée) (Lepidoptera: Noctuidae). *Annals of Ent. Soc. Amer.* 97: 675-680.

2004. Simmons, R. B. Description of *Sphecosoma pattiannae* Simmons, a new euchromiine species, with comments on novel male androconia (Lepidoptera: Arctiidae: Arctiinae: Euchromiini). *Zootaxa* 519: 1-12.

2004. Weller, S.J., R. B. Simmons, and A. Carlson*. *Empyreuma* species and species limits: Evidence from morphology and molecules (Arctiidae: Arctiinae: Ctenuchini). *Journal of the Lepidopterists' Society* 58: 21-32.

2002. Simmons, R. B. and S. J. Weller. What kind of signals do mimetic tiger moths send? A phylogenetic test in tiger moths (Lepidoptera: Arctiidae: Euchromiini). *Proceedings of the Royal Society of London, series B* 269: 983-990.

2001. Simmons, R.B. and S. J. Weller. Preliminary phylogeny of mimetic tiger moths (Lepidoptera) and evolution of cyt *b* in Insecta. *Molecular Phylogenetics and Evolution* 20: 196-210.

2000. Weller, S. J., R. B. Simmons, R. Boada, and W. E. Conner. Abdominal modifications occurring in wasp mimics of the ctenuchine-euchromiine clade. *Annals of Ent. Soc. Amer.* 93(4): 920-928.

1998. Simmons, R. B., W. E. Conner, and R. B. Davidson. Identification of major components of the female pheromone blend of *Euchaetes egle Drury* (Arctiidae). *Journal of the Lepidopterists' Society* 52(4): 356-363.

1996. Simmons, R. B. and W. E. Conner. Acoustic cues in the defense and courtship of *Euchaetes egle Drury* and *E. bolteri* Stretch (Lepidoptera, Arctiidae). *Journal of Insect Behavior* 9: 909-919.

BOOK CHAPTERS

2007. Simmons, R. B. Chapter 7: Adaptive Coloration and Mimicry. *Tiger Moths and Wooly Bears: Behavior, Ecology, and Natural History of the Arctiidae*, edited by W. E. Conner, Oxford University Press, *in press*.

2007. Weller, S. J., M. A. DaCosta, R. B. Simmons, K. Dittmar, and M. Whiting. Chapter 3: Evolution and Taxonomic Confusion in Arctiidae: A Multitude of Moths. *Behavior, Ecology, and Natural History of the Arctiidae*, edited by W. E. Conner, Oxford University Press, *in press*.

In Preparation

2007. Goldstein, J. A.*, R. B. Simmons, and J. P. Donahue. A morphological revision of the tiger moth genus *Syntomeida* Harris (Lepidoptera: Noctuoidea: Arctiidae: Arctiinae: Euchromiini). Target journal: *Zootaxa*.

2007. Pogue, M. G. and R. B. Simmons. Descriptions of two new species of *Copitarsia* (Hampson) from the Andean region of South America (Lepidoptera: Noctuidae). Target journal: *Annals of the Ent. Soc. Amer.*

2007. Tinerella, P. P., R. B. Simmons, S. J. Johnson, G. Cassis, R. B. Johnson, D. A. Rider. A preliminary phylogeny of the water boatmen based on ribosomal DNA (Heteroptera: Nepomorpha: Corixoidea). Target journal: *Annals of the Ent. Soc. Amer.*

NON-PEER REVIEWED

2006. Invited book review for *Milestones in Systematics* by D. M Williams and P. L. Forey. *Annals of the Ent. Soc. Amer.* 99: 186-187.

PHOTO CREDITS

2007. Sherratt, T. N. Mimics that neither flatter nor deceive (Figure 1. *Parachartergus* sp. and *Myrmecopsis strigosa*). *Nature* 448: 34.

2000. Cover of *Annals of Ent. Soc. Amer.* 93(4): 920-928.

MUSEUM EXHIBIT

Morphin! The Science of Biological Change. Nov. 1998. Bell Museum of Natural History, Univ. of Minnesota, Minneapolis, MN. Prepared exhibit label text.

PRESENTATIONS (* student co-author)

Invited Presentations (last five years)

2007. Michigan State University, Dept. of Entomology Seminar Series. The use of phylogeny to examine warning and courtship signals in Tiger moths (Arctiidae).

2006. North Dakota State University, Dept. of Entomology Seminar Series. Applying molecular data and systematics to lepidopteran pests (Noctuidae).

2005. Entomological Society of America. Symposium: She blinded me with science: A tribute to the honorable, late Miriam Rothschild. The evolution of acoustic cues during courtship (Lepidoptera: Arctiidae), co-authored with Jessica Goldstein*.

2005. Congreso Técnico Flores VIII. Molecular identification of *Copitarsia*.

2005. Informal Conference of Arctiid Workers. The evolution of coloration patterns and communication systems in mimetic tiger moths (Arctiinae: Ctenuchini & Euchromiini).

2004. Entomological Society of America. Symposium: DNA-taxonomy: Good-Bye Microscope? Taxonomic confusion among *Copitarsia decolora*: molecular and morphological resolutions? co-authored with Dr. Michael Pogue and Dr. Sonja Scheffer.

2004. International Congress of Entomology, Symposium: Phylogeny of the Lepidoptera. Preliminary phylogeny of trifine noctuid subfamilies using adult and immature

morphology (Lepidoptera: Noctuidae), co-authored with Dr. Michael Pogue.

2004. International Congress of Entomology, Symposium: Mimicry in the New Millennium. The evolution of wasp and beetle mimicry in tiger moths (Lepidoptera: Arctiidae: Arctiinae: Euchromiini and Ctenuchini).

2004. University of North Dakota. The evolution of defense and courtship behaviors in mimetic tiger moths (Arctiidae: Arctiinae: Euchromiini & Ctenuchini).

2004. Florida Museum of Natural History, University of Florida. The evolution of defense and courtship behaviors in mimetic tiger moths (Arctiidae: Arctiinae: Euchromiini & Ctenuchini).

2004. Sul Ross University, Dept. of Biology. The evolution of mimicry and courtship behavior in tiger moths (Lepidoptera: Arctiidae).

2004. University of the South, Dept. of Biology. The evolution of courtship behavior and mimicry in tiger moths (Lepidoptera: Arctiidae).

2002. University of Maryland, Dept. of Entomology. The evolution of wasp mimicry in euchromiine tiger moths.

2002. Annual Meeting of the Entomological Society of America. Insights into the systematics of a pest genus, *Copitarsia* (Lepidoptera: Noctuidae): morphology, molecules and taxonomy, co-authored with Dr. Michael Pogue and Dr. Sonja Scheffer.

2002. University of Tennessee, Dept. of Entomology and Plant Pathology. Using systematics to answer questions in Lepidoptera.

Meeting Presentations (last five years)

2007. Annual Meeting of the Northern Plains Biological Symposium. The origin and evolution of mimetic type in tiger moths (Arctiidae: Arctiinae: Ctenuchini and Euchromiini), co-authored with Sarah Johnson.

2006. Annual Meeting of the Entomological Society of America. The use of parsimony and nested clade analysis to examine the evolution of the *Copitarsia decolora* pest complex, co-authored with Sarah Johnson.

2006. Annual Meeting of the Lepidopterists' Society. Use of mitochondrial and nuclear DNA to investigate cryptic lineages within the pest *Copitarsia decolora* (Guenée) (Noctuidae), co-authored with Sarah Johnson.

2005. Annual Meeting of the Lepidopterists' Society. The origin and evolution of mimetic type in tiger moths: More species and more data (Arctiidae: Arctiinae: Ctenuchini and Euchromiini), co-authored with Dr. Susan Weller.

2004. Annual Meeting of the Lepidopterists' Society. Preliminary phylogeny of the trifine noctuid subfamilies using adult and immature morphology (Lepidoptera: Noctuidae), co-authored with Dr. Michael Pogue.

2003. Annual Meeting of the Entomological Society of America. What is *Copitarsia* (Noctuidae)? Mistaken identity, misplacement, and other quandaries, co-authored with Dr. Michael Pogue and Dr. Sonja Scheffer.

2003. Annual Meeting of the Lepidopterists' Society. What is *Copitarsia* (Noctuidae)? Mistaken identity, misplacement, and other quandaries, co-authored with Dr. Michael Pogue and Dr. Sonja Scheffer.

2002. Annual Meeting of the Entomological Society of America. What is a noctuid? Review of noctuoid family limits based on morphology, co-authored with Dr. Susan Weller.

2002. Annual Meeting of the Lepidopterists' Society. Systematics of the pest species *Copitarsia incommoda* (Walker) (Lepidoptera: Noctuidae), co-authored with Dr. Michael Pogue and

Dr. Sonja Scheffer.

Submitted Posters

2007. Annual Meeting of the Entomological Society of America. Tracking gene flow of populations of *Copitarsia decolora* using mitochondrial and nuclear DNA (Noctuidae: Noctuinae), co-authored with Sarah Johnson (second author).

2007. Annual Meeting of the Entomological Society of America. A preliminary phylogeny of euchromiine tiger moths and the evolution of androconia (Lepidoptera: Noctuoidea: Arctiidae), co-authored with Sarah Johnson (first author), Susan Weller (third author).

STUDENTS

UNDERGRADUATE

2006-Current. Academic advisor for approximately 70 Biology majors (mostly majors with last name beginning with L or M), University of North Dakota.

LABORATORY STUDENTS

Current. Amy Egbert (since 2006), Mathew Flom (since 2005), Jared Hughes (since 2007), Ryan Zahn (since 2007).

Past. Peter Christensen (2006), Andrea Hewitt (2005-2006), Jessica Ann Goldstein (2003-2004), Sarah Monley Johnson (2004-2005), Josephine Meeker (2006), Eric Steele (2005-2006), Edward Uriell (2006).

GRADUATE COMMITTEE MEMBER

2006-Current. Marron Bingle, Ph. D. student, Dept. of Geology, University of North Dakota.

2006-2007. Inga Foster, M. S. student, Dept. of Earth System Science and Policy, University of North Dakota.

2005. Kelsey Metzger, M. S. student, Dept. of Biology, University of North Dakota.

2007-Current. Anthony Schroeder, M. S. student, Dept. of Biology, University of North Dakota.

2007-Current. Tina Squire, Ph. D. student, Dept. of Biology, University of North Dakota.

COURSES TAUGHT

Biol. 151. University of North Dakota. General Biology II (3 credit hours).

Biol. 312. University of North Dakota. Evolution (3 credit hours).

GUEST LECTURES

2006. Biol. 363. University of North Dakota. Entomology. “Insect defense, mimicry, and crypsis” and “Social Insects.”

2006. Biol. 499. University of North Dakota. Developmental Biology. “Insect development and metamorphosis” (Mini-lecture and lab activity).

2005. Geol. 420. University of North Dakota. The Evolving Earth. “The origin of life on Earth” (Lecture and student lead discussion).

2004. Biol. 499. University of North Dakota. Techniques in Molecular Biology. “Automated DNA sequencing.”

2004. Biol. 363. University of North Dakota. Entomology. “Insect defense, mimicry, and crypsis.”

2003. NATH 2277E-C31. USDA Graduate School. Moths of the Capitol Region. “Perfumes and Serenades: romance in the moth world.”

OUTREACH ACTIVITIES (LAST FIVE YEARS)

2006. Southpoint Elementary School, third grade, “Insect Defenses.”

2006. New Heights Elementary School, second grade, “Insect Mouths.”
2005. New Heights Elementary School, first grade, “Rainforests.”
2003. Guest speaker for Smithsonian Kindergarten Program, "Innovative Minds."
2002. BARC field day. “Hold a bug.”

SERVICE

INTERNATIONAL

2006. Judge for student talk competition, Lepidopterists’ Society Annual Meeting, Gainesville, FL.
2005-Current. Co-leader for the Arctiidae TWIG, Tree of Life Study, Lepidoptera. Funded by the National Science Foundation. Dr. Susan Weller (UMN) & Dr. Charles Mitter (UMD) co-PI’s.
2005. Judge for student talk competition, Lepidopterists’ Society Annual Meeting, Sierra Vista, AZ.
2005. Member of Nominating Committee, Lepidopterists’ Society
2004. Co-organizer for symposium "Mimicry in the new millennium", International Congress of Entomology, Brisbane, Australia.
2004. Judge for student poster competition, Lepidopterists’ Society Annual Meeting, College Park, MD
2003. Judge for student paper competition, Lepidopterists’ Society Annual Meeting, Olds, Canada.
2003-2009. Member of the Awards Committee, Lepidopterists’ Society (Chair 2004-2009).
2002-2005. Member of Executive Council, Lepidopterists’ Society.

NATIONAL

2008-2011. Treasurer, Systematics, Evolution and Biodiversity, Entomological Society of America.
2007. Panel Member, Doctoral Dissertation Improvement grants, National Science Foundation.
2006. Panel Member, Biodiversity Surveys and Inventories grants, National Science Foundation.
2005. Co-organizer for the symposium “She blinded me with science: A tribute to the honorable, late Miriam Rothschild,” National meeting of the Entomological Society of America, Ft. Lauderdale, FL.
2005. Panel Member, Doctoral Dissertation Improvement Grants, National Science Foundation.
2004. Judge for Student Talk Competition, Entomological Society of America.
2003. Moderator for Student Talk Competition, Entomological Society of America.
2002. Moderator for Student Talk Competition, Entomological Society of America.

UNIVERSITY OF NORTH DAKOTA

2007. Welcome Weekend Faculty Facilitator
2007-Current. Faculty Advisor, Pre-Dental Student Association.
2007. Faculty Facilitator, New Student Welcome, Spring semester.
2006-2009. Faculty Representative, Student Relations Committee (University-level committee).
2006-2009. Member of Academic Programs and Student Awards Committee, Department of Biology.

2006. Member of Ornithologist search committee, Department of Biology.
2006. Welcome Weekend Faculty Facilitator
2005-2006. Member of Physiologist search committee, Department of Biology.
2005. Welcome Weekend Faculty Facilitator

UNIVERSITY OF MINNESOTA

1999-2001. Entomology seminar committee.
1998-1999. Treasurer of Frenatae, Entomology Graduate student organization.
1998. Member of Ichthyology search committee, Bell Museum of Natural History. Vice president of Frenatae.
1996-1998. Entomology public relations committee.
1996-1997. Secretary of Frenatae.

REVIEWER

GOVERNMENT AGENCIES

USDA/Agricultural Research Service/Insect Genetics Lab

GRANTING AGENCIES

National Geographic Society
National Science Foundation

JOURNALS

Annals of the Entomological Society of America
Biological Journal of the Linnaean Society
Bulletin of the Allyn Museum
The Canadian Entomologist
The Caribbean Journal of Science
Diversity and Distributions
Entomologia Experimentalis et Applicata
Journal of the Kansas Entomological Society
Journal of the Lepidopterists' Society
Systematic Entomology
The Journal of Insect Science
Zootaxa

TEXTBOOKS

Dugatkin, L. A. "Chapter 7: Evolution and phylogeny", "Chapter 8: How evolutionary biologists gather evidence" & "Chapter 9: The origin and evolution of early life." *Evolution*. W. W. Norton & Company.

Campbell, N. A. and J. B. Reece. "Chapter 26: The tree of life: an introduction to biological diversity." *Biology*. Pearson, Benjamin Cummings.

Raven, P. H., G. B. Johnson, J. Losos, S. Singer. "Chapter 21: The evidence for evolution" and "Chapter 22: The origin of species." *Biology 8/e*. McGraw Hill Publishing.

PROFESSIONAL SOCIETIES

Entomology Collections Network
Entomological Society of America
Lepidopterists' Society
Society of Systematic Biologists
Willi Hennig Society

COLLECTING EXPERIENCE
Central Mexico, May 2007.
Midwest United States, 2006-Current.
Bahamas, June 2005.
Southeast United States, 1993-2004.
Chile, Feb. 2002.
Southern Peru, Sept. 2001.
Costa Rica, June 1996.
Ecuador, July 1994.