

Curriculum Vita

Melissa S. Bowlin

Lund University
Department of Theoretical Ecology
Ecology Building
223 62 Lund, Sweden
Telephone: +46 (0)46 222 1785 Fax: +46 (0)46 222 4716
E-mail: melissabowlin@gmail.com

Research interests:

I study the ecology, evolution and physiology of migratory behavior in birds. I am especially fascinated by individual variation in behavior and morphology—particularly how that variation came to be and what its consequences are.

Professional experience:

Current Marie Curie International Post-doctoral Fellow, Lund University, Sweden
2007-2008 Post-doctoral Fellow in Avian Biology, University of Montana

Education:

2002 B.S., Biol. Sci., Cornell University, Ithaca, NY.
2004 M.A., Ecol. and Evol. Biol., Princeton University, Princeton, NJ.
2007 Ph.D., Ecol. and Evol. Biol., Princeton University. Advisor: Martin Wikelski
Dissertation title: “Going the distance: Morphological adaptations to migration and the energetics of migratory flight in *Catharus* thrushes”

Grants/Fellowships:

2008 Marie Curie Incoming International Fellowship (approximately \$250,000, which includes stipend, travel allowance, overhead and research money)
2006 NSF Doctoral Dissertation Improvement Grant (\$12,000)
2003 American Ornithologists’ Union Student Research Award (\$1800)
2003 Cooper Ornithological Society Joseph Grinnell Student Research Award (\$1000)
2003 SICB Grant in Aid of Research (\$1000)
2002 Centennial Fellowship, Princeton University
2002 NSF Graduate Research Fellowship

Teaching experience:

2007 BIOL 340 & 341, Ecology Lecture and Laboratory, University of Montana
2007 BIOL 595, Essential Concepts in Microbiology, Ecology, Genetics and Evolution (team-taught graduate course), University of Montana
2007 EEB Statistics Tutorials, Princeton University
2005, 2003 Head TA, Animal Behavior, Princeton University
2002 Undergraduate TA, Ornithology, Cornell University
2001 Undergraduate TA, Vertebrates, Cornell University

Publications:

- Robinson, D. W., Bowlin, M. S., Bisson, I., Shamoun-Baranes, J., Thorup, K., Diehl, R., Kunz, T., Mabey, S., and D. W. Winkler. Integrating concepts and technologies at the frontiers of bird migration. *Submitted to Frontiers in Ecology and the Environment*.
- Bowlin, M. S. and D. W. Winkler. Is wingtip shape related to fitness in migratory swallows? *Submitted to the Journal of Avian Biology*.
- Bowlin, M. S., and M. Wikelski. 2008. Pointed wings, low wingloading and calm air reduce the cost of migratory flight in songbirds. *PLoS ONE* 3:e2154.
- Cochran, W. W., Bowlin, M. S., and M. Wikelski. 2008. Wingbeat frequency and flap-pause ratio during natural migratory flight in thrushes. *Integrative and Comparative Biology*. 48:134-151.
- Thorup, K., Bisson, I., Bowlin, M. S., Holland, R. A., Wingfield, J. C., Ramenofsky, M., and M. Wikelski. 2007. Evidence for a navigational map stretching across the continental U.S. in a migratory songbird. *PNAS* 104:18115-18119. Times cited: 1
- Bowlin, M. S. 2007. Sex, wingtip shape and wing-loading predict arrival date at a stopover site in the Swainson's Thrush (*Catharus ustulatus*). *Auk* 124:1388-1396. Times cited: 1
- Bowlin, M. S., Wikelski, M. C. and W. W. Cochran. 2005. Biotelemetry of New World thrushes during migration: Physiology, energetics and orientation in the wild. *Integrative and Comparative Biology* 45:295-304. Times cited: 12
- Bowlin, M. S. and D. W. Winkler. 2004. Natural variation in flight performance is related to timing of breeding in the tree swallow *Tachycineta bicolor* in New York. *Auk* 121:345-353. Times cited: 8

Citation numbers are from the ISI Web of Science database and are current as of 10/14/08.

Referee work:

Auk, Behavioral Ecology and Sociobiology, Caribbean Journal of Science, Ecology, Ibis, Journal of Field Ornithology

Professional societies:

Society for Integrative and Comparative Biology, MIGRATE, American Ornithologists' Union, Association of Field Ornithologists

Conference symposia invitations:

- 2006 Symposium on the Challenges of Intercontinental Migration: Eastern and Western Perspectives, IV North American Ornithological Congress, Veracruz, Mexico.

Invited seminars:

- 2006 Cornell University

Symposia organized:

- 2008 American Ornithologists' Union, Portland, OR: "Blazing the trail in integrative avian biology: Case studies by young investigators"
- 2010 Society for Integrative and Comparative Biology, Seattle, WA: "Integrative Migration Biology"

Papers presented at scientific meetings:

- Bowlin, M. S., Németh, Z., Moore, F. R., and K. A. Hobson. 2008. *The early bird breeds in the north: Spring arrival timing in Swainson's Thrushes*. American Ornithologists' Union: 126th Stated Meeting, Portland, OR.
- Bowlin, M. S. 2007. *Migrants have more pointed and less convex wingtips in the genus Catharus*. American Ornithologists' Union: 125th Stated Meeting, Laramie, WY.
- Bowlin, M. S. and M. C. Wikelski. 2007. *Calibration of heart rate and energy expenditure during flight and at rest in a passerine*. Society for Integrative and Comparative Biology annual meeting, Phoenix, AZ.
- Bowlin, M. S., Wikelski, M. C. and W. W. Cochran. 2006. *Determinants of energy expenditure during migratory flight*. IV North American Ornithological Congress, Veracruz, Mexico.
- Bowlin, M. S. and M. C. Wikelski. 2005. *Do morphological characteristics correlated with in-flight heart rate and wingbeat frequency vary with arrival date in the Swainson's thrush?* American Ornithologists' Union: 123rd Stated Meeting, Santa Barbara, CA.
- Bowlin, M. S., Wikelski, M. C. and W. W. Cochran. 2005. *The relationship between individual morphology, atmospheric conditions, and variation in heart rate and wingbeat frequency during natural migration in the Swainson's Thrush (Catharus ustulatus)*. Society for Integrative and Comparative Biology annual meeting, San Diego, CA.
- Bowlin, M. S., Wikelski, M. C. and W. W. Cochran. 2004. *Physiological telemetry of nocturnal migration in the Swainson's thrush*. American Ornithologists' Union: 122nd Stated Meeting, Québec, QC.
- Bowlin, M. S. and D. W. Winkler. 2003. *Natural variation in flight performance is related to timing of breeding in the Tree Swallow*. American Ornithologists' Union: 121st Stated Meeting, Urbana-Champaign, Illinois.

Educational outreach:

Mentoring: As a post-doctoral fellow, I advised Richelle Stillwagon, a senior in the University of Montana's Davidson Honors College, during her honors thesis research. Her thesis was titled, "The effects of global warming on human health."

Science Buddies (2006-present): As a Science Buddies Expert, I answer students' questions about science fair projects once a week on a web forum at www.sciencebuddies.org. Since 2007, I have also helped moderate the discussion board.

Judging science fairs: I have twice judged middle and high school science fairs, and would love to continue this form of outreach. I am continually amazed by how creative young scientists are and wish to encourage their efforts as much as I can.

Scholarships and honors:

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| 2007 | Science Buddies Outstanding Expert Award |
| 2006 | Honorable Mention Student Presentation Award, North American Ornithological Congress (470 students competing) |
| 2005 | Marcia-Brady Tucker Travel Award, American Ornithologists' Union |
| 2002 | Highest Honors and Distinction in Research, Cornell University |
| 2002 | Merrill Presidential Scholar, Cornell University |
| 2000-2001 | Hughes Research Scholar, Cornell University |

Service:

American Ornithologists' Union Early Professionals Committee (2007-present)

MIGRATE Training Committee (2007-present)

American Ornithologists' Union Student Affairs Committee (2005-2007)

American Ornithologists' Union Website Committee (2005-2006)

Graduate student representative for the Ecology and Evolutionary Biology Department,
Princeton University (2004-2005)

Current collaborations:

Creagh Breuner: Wingtip shape, stress, and post-migration settlement patterns in White-Crowned Sparrows

Creagh Breuner, Erick Greene, Kate Davis, Brandon Jackson, Jonathan Sprague, Rachel Sprague, and Ken Dial: Physiological changes associated with risk assessment in House Sparrows

David Winkler, Judy Shamoun-Barnes, Jim Smith, Kasper Thorup, Martin Wikelski, Tom Kunz, Isabelle Bisson, Robb Diehl, Doug Robinson, and Sarah Mabey: Integrating concepts and technology in the study of animal movement

David Winkler: Wingtip shape in Tree Swallows

Frank Moore, Zoltán Németh, Len Wassenaar and Keith Hobson: Arrival date and breeding location in Swainson's Thrushes in Louisiana

Kevin Winker: Wingtip shape in *Catharus* thrushes

Martin Wikelski, Herbert Biebach, Carola Schmidt-Wellenburg, and the late G. Henk Visser: Energetics during flight in Swainson's Thrushes

Anders Hedenström, Florian Muijres, Christoffer Johansson: Various projects