Gregory J. Ragland

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EDUCATION

2007	Ph.D., Biology, University of North Carolina at Chapel Hill *Advisor*: Joel Kingsolver *Thesis*: Life history evolution in seasonal environments: phenological and environmental determinants of thermal adaptation in *Wyeomyia smithii*
2001	M.S., Biology, Washington State University *Advisor*: Patrick Carter *Thesis*: Quantitative genetic analysis of growth trajectories and metamorphic traits in *Ambystoma macrodactylum columbianum*
1997	B.A., Marine Science, University of San Diego, *magna cum laude*

ACADEMIC POSITIONS

2016 –	Assistant Professor, Department of Integrative Biology, University of Colorado, Denver
2014 – 2016	Assistant Professor, Department of Entomology, Kansas State University
2011 – 2014	Research Assistant Professor, Department of Biology & Environmental Change Initiative, University of Notre Dame
2007 – 2011	Postdoctoral Associate, Department of Entomology and Nematology, University of Florida

AWARDS AND FUNDING

2016	$14K, NSF IOS: Meeting: Evolutionary Impacts of Seasonality; a Symposium for the Annual Meeting of SICB, New Orleans, LA, Jan 4-8 2017. PIs **Ragland** and Williams.
2016	$2 million total, $471K to GJR. NSF DEB: Dimensions: Collaborative Research: Time after Time: Adaptive Seasonal Timing Drives the Sequential Origin of Community Biodiversity. PIs Feder, **Ragland**, and Hahn.
2014	$460K, USDA NIFA: Rapid Diagnostics for Cryptic Insect Pests: An Integrative Test Case using the Apple Maggot Fly. **Ragland** Co-PI with Feder, Egan, Linn and Schwarz .

2014	**€**345K, Austrian Science Fund (FWF): Diapause behaviour of the eight spined spruce bark beetle. **Ragland** international collaborator with Christian Stauffer (BOKU, Vienna) PI.
2013	$900K total, $536K to GJR. NSF IOS: Collaborative research: testing for functional and genetic independence of rapidly evolving lifecycle components. **Ragland** lead PI, with Egan, Feder and Hahn.
2013	$100K, Notre Dame Environmental Change Initiative: Development and deployment of genotyping by sequencing approaches in ecology and conservation biology. **Ragland** Co-PI with Feder and Egan.
2012	Notre Dame Office of Research FRSP: Testing the effects of warming winters on *Colias* overwintering physiology and fitness, $9,910
2012	Rocky Mountain Biological Laboratory Research Fellowship, $800.
2006	Wilson Award, UNC Biology, $500
2004	Sigma Xi Grant-in-Aid of Research, $1000
2004	Graduate Mentor Grant, UNC Office of Undergraduate Research, $1000
1998	Abelson Fellowship, Washington State University, $3,000
1993 – 1997	Presidential Scholarship, University of San Diego, (tuition)

PUBLICATIONS

21. Meyers PJ, THQ Powell, KKO Walden, AJ Schieferecke, JL Feder, DA Hahn, HM Robertson, SH Berlocher, and **GJ Ragland**. 2016. Divergence of the diapause transcriptome in apple maggot flies: winter regulation and post-winter transcriptional repression. *Journal of Experimental Biology* 219.17: 2613-2622.
20. Egan, SP[*], **GJ Ragland**[*], L Assour, THQ. Powell, GR Hood, S Emrich, P Nosil and JL Feder. 2015. Experimental evidence of genome-wide impact of ecological selection during early stages of speciation-with-gene-flow. Ecology Letters 18: 817-825.
    [*] *Equal contribution* **Faculty of 1000 recommended read**
19. **Ragland, GJ**, K Almskaar, KL Vertacnik, HM Gough, JL Feder, DA Hahn and D Schwarz. 2015. Differences in performance and transcriptome-wide gene expression associated with *Rhagoletis* (Diptera: Tephritidae) larvae feeding in alternate host fruit environments. Molecular Ecology, 24: 2759-2776.
18. Reidenbach, K, D Neafsey, C Costantini, N Sagnon, F Simard, **G Ragland**, S Egan, J Feder, M Muskavitch, and N Besansky. 2012. Patterns of genomic differentiation between ecologically differentiated M and S forms of *Anopheles gambiae* in West and Central Africa. Genome Biology and Evolution 4: 1202-1212.
17. **Ragland, GJ**, S Goudarzi, S Sim, JL Feder, and DA Hahn. 2012. Environmental interactions during host race formation: host fruit environment moderates a seasonal shift in phenology in host races of *Rhagoletis pomonella*. Functional Ecology 26: 921–931.
16. Teets, NM, JT Peyton, **GJ Ragland**, H Colinet, D Renault, DA Hahn, and DL Denlinger. 2012. Combined transcriptomic and metabolomic approach uncovers molecular mechanisms of cold tolerance in a temperate flesh fly. Physiological Genomics 44: 764–777. **Faculty of 1000 recommended read**

15. **Ragland, GJ**, SP Egan, JL Feder, SH Berlocher, and DA Hahn. 2011. Developmental trajectories of gene expression reveal candidates for diapause termination, a key life history transition in the apple maggot fly, *Rhagoletis pomonella*. Journal of Experimental Biology 214: 3948-3960. **in InsideJEB: http://jeb.biologists.org/content/214/23/ii **
14. **Ragland, GJ**, DL Denlinger, and DA Hahn. 2010. Mechanisms of suspended animation are revealed by transcript profiling of diapause in the flesh fly. Proceedings of the National Academy of Sciences 107: 14909-14.
13. D. Schwarz, HR Robertson, JL Feder, M Hudson, **GJ Ragland**, DA Hahn, and SH Berlocher. 2009. Sympatric ecological speciation meets pyrosequencing: sampling the transcriptome of the apple maggot *Rhagoletis pomonella*. BMC Genomics 10:633.
12. Hahn, DA, **GJ Ragland**, DD Shoemaker and DL Denlinger. 2009. Gene discovery using massively parallel pyrosequencing to develop ESTs for the flesh fly *Sarcophaga crassipalpis*. BMC Genomics 10: 234.
11. **Ragland, GJ**, J Fuller, JL Feder, and DA Hahn. 2009. Biphasic metabolic rate trajectory of pupal diapause termination and post-diapause development in a tephritid fly. Journal of Insect Physiology 55: 344–350.
10. Kingsolver, JG, **GJ Ragland**, and SE Diamond. 2009. Evolution in a constant environment: thermal fluctuations and thermal sensitivity of laboratory and field populations of *Manduca sexta*. Evolution 63: 537-541.
9. **Ragland, GJ** and JG Kingsolver. 2008. Evolution of thermotolerance in seasonal environments: the effects of annual temperature variation and life history timing in *Wyeomyia smithii*. Evolution 62: 1345-1357. **Faculty of 1000 recommended read***
8. **Ragland, GJ** and JG Kingsolver. 2008. The effect of fluctuating temperatures on ectotherm life history traits: comparisons among geographic populations of *Wyeomyia smithii*. Evolutionary Ecology Research 10: 29 – 44.
7. **Ragland, GJ** and JG Kingsolver. 2007. Influence of seasonal timing on thermal ecology and thermal reaction norm evolution in *Wyeomyia smithii*. Journal of Evolutionary Biology 20: 2144–2153.
6. Kingsolver, JG, KR Massie, **GJ Ragland**, and MH Smith. 2007. Rapid population divergence in thermal reaction norms for an invading species: breaking the temperature-size rule. Journal of Evolutionary Biology 20: 892-900.
5. Kingsolver, JG, KR Massie, JG Shlichta, MH Smith, **GJ. Ragland**, and R Gomulkiewicz. 2007. Relating environmental variation to selection on reaction norms: an experimental test. American Naturalist 169: 163 – 174.
4. Kingsolver, JG, JG Shlichta, **GJ Ragland**, and KR Massie. 2006. Thermal reaction norms for caterpillar growth depend on diet. Evolutionary Ecology Research 8: 703-715.
3. **Ragland, GJ** and PA Carter. 2004. Genetic covariance structure of growth in the salamander *Ambystoma macrodactylum*. Heredity 92: 569-578.
2. Kingsolver, JG, **GJ Ragland**, and JG Shlichta. 2004. Quantitative genetics of continuous reaction norms: thermal sensitivity of caterpillar growth rates. Evolution 58: 1521-1529.
1. Kingsolver, JG, R Izem, and **GJ Ragland**. 2004. Plasticity of Size and Growth in Fluctuating Thermal Environments: Comparing Reaction Norms and Performance Curves. Integrative and Comparative Biology 44: 450–460.

RECENT INVITED TALKS

2016	ICE Symposium, Orlando Florida: Photoperiodic Induction of Diapause and Seasonal Morphs
2015	Arthropod Genomics Symposium, Manhattan, KS
2014	ESA Symposium: PBT SS: Highlighting a Career of Defining and Meeting Grand Challenges in Entomology: A Symposium in Honor of David L. Denlinger
2014	University of Kansas, Dept. of Biology
2013	Utah State University, Dept. of Biology
2012	Dartmouth College, Dept. of Biology
2011	Oregon State University, Dept. of Zoology
2011	University of Notre Dame, Dept. of Biology
2010	Oklahoma State University, Dept. of Zoology
2010	Kansas State University, Dept. of Biology
2009	University of Florida, Dept. of Entomology
2009	University of Central Florida, Dept. of Biology

RECENT MEETING PRESENTATIONS

2014	Society for the Study of Evolution, Raleigh, NC: *Genomic signatures of life history divergence during speciation: diapause as a complex target of selection in Rhagoletis fruit flies.*
2013	Fifth International Symposium on the Environmental Physiology of Ectotherms and Plants, London, ON: *In Synch: genomic change associated with the evolution of seasonal synchrony via adaptation across the life cycle*
2013	Society for Integrative and Comparative Biology, San Francisco, CA: *Relaxed, but ready: dormancy responses are the opposite of stress responses at the transcriptional level*
2012	First Joint Congress on Evolutionary Biology, Ottawa, Ontario. *Common physiological themes across arthropod stress and dormancy responses revealed through comparative functional genomics*.
2012	Society for Integrative and Comparative Biology, Charleston, SC: *Comparative functional genomics of diapause: common physiological pathways and their connections with stress responses*.
2010	Ecological Genomics Symposium, Kansas City, MO: *Evolution at a life history transition.*
2010	Society for Integrative and Comparative Biology, Seattle, WA: *Waking the beast: the transcriptional profile of dormancy termination.*

TEACHING EXPERIENCE

2016	Principles of Biological Research (UCD)
2016	Ecological Genomics (KSU)
2014	Molecular Entomology (team-taught practical methods course), KSU
2010	Cells, Organisms and Genetics (co-instructor), UF
2009-10	FIRST IV (NSF) Postdoctoral Scholar (https://www.msu.edu/~first4/)
2009	Thermal Biology, Hnrs (primary instructor for ½ semester), UF
2008	Insect Physiological Ecology (co-instructor), UF

MENTORING

Postdoctoral

2015 -	Edwina Dowle, KSU

Graduate

2014 -	Phillip Freda, PhD student, KSU
2014 -	Martin Schebeck and Vid Bakovic, BOKU Vienna (Co-advisor with Christian Stauffer)
2013-	Peter Meyers, PhD student (Co-advisor with Jeff Feder, U. Notre Dame)

Recent Undergraduates

(14 total since 2005, 6 women, 5 minorities)

2015 -	Adam Shieferecke, Mariah Brown
2014 - 2015	KSU Entomology: Colin Bailey, Saadia Cleve
2012 – 2013	Notre Dame Biology: Lauren Schmitt, Joe Decker, Charles Cong Xu
2009 – 2010	Genevieve Ochs, John Fuller, Kristina Kim, Serra Goudarzi

PROFESSIONAL SERVICE

Panelist, NSF IOS.

Observer and invited speaker for the IAEA working group: *Dormancy management to enable mass-rearing and increase efficacy of sterile insects and natural enemies.* (2014, Vienna, Austria).

Participant in EU-US Task Force on Biotechnology Research, Animal Biotechnology working group (http://ec.europa.eu/research/biotechnology/eu-us-task-force/index_en.cfm) for development of data sharing and cyberinfrastructure for animal genomic analyses.

Ad hoc reviewer for many journals including *Evolution, Ecology, Functional Ecology, Molecular Ecology, Oecologia, Oikos*, *Ecography, Evolutionary Applications, Insect Molecular Biology, Journal of Insect Physiology, European Journal of Entomology*, *Insect Science*, *Ecological Entomology, etc.*

External reviewer for various NSF divisions.