

NATHAN MOREHOUSE

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PROFESSIONAL HISTORY

Assistant Professor September 2011 – Present
Department of Biological Sciences
University of Pittsburgh, Pittsburgh, PA

European Union Marie Curie International Incoming Fellow June 2009 – June 2011
Institut de Recherche sur la Biologie de l'Insecte
Université de Tours
Project Title: *Nutritional Ecology and Seasonal Color Polyphenism in a Butterfly*
Major Collaborator: Jérôme Casas

Arizona State University August 2002 – May 2009
School of Life Sciences, Tempe, AZ
Ph.D., Biology
Dissertation Title: *Limiting Nutrients, Female Choice, and Male Color*
Major Advisor: Ronald L. Rutowski
Committee: John Alcock, J. Marty Anderies, Jon Harrison, Kevin J. McGraw

Cornell University August 1996 – May 2000
College of Agriculture and Life Sciences, Ithaca, NY
Bachelor of Sciences, Biological Sciences, Distinction in Research
Research Thesis Title: *Sexual Dimorphism and Visual Tracking in Sarcophagid Flies*
Research Thesis Advisor: Cole Gilbert

RESEARCH INTERESTS

Evolution of sexual dimorphism and polyphenism, visual and behavioral ecology, evolution of sensory systems, color vision and learning, evolution of bright coloration, biophotonics, optical physics of animal coloration, pigment biochemistry, nutritional ecology and physiology, hormonal and genetic regulation of nutrient allocation, quantitative genetics, plant-herbivore co-evolution, life history evolution, sexual selection theory, selective heterogeneity at landscape and geographic scales

AWARDS AND DISTINCTIONS

Warner Clyde Allee Award, Animal Behavior Society, 2010
Council of Graduate Schools/University Microfilms International Distinguished
Dissertation Award Nominee, 2009
Frank Alois Pitelka Prize, International Society for Behavioral Ecology, 2008
Best Oral Presentation, Graduates in Earth Life and Social Sciences Annual Symposium,
ASU, 2008

AWARDS AND DISTINCTIONS (CONT.)

Mentorship Award, Graduate and Professional Students Association, ASU, 2006
Teaching Excellence Award Nominee, Graduate and Professional Students Association, ASU, 2006
Teaching Excellence Award Nominee, Graduate and Professional Students Association, ASU, 2005
NSTA Partners Paving Pathways Honoree, 2003
Distinction in Research, Cornell University, 2000
Dean's List, Cornell University, 1997-2000
National Merit Scholarship, 1996
Xerox Award for Excellence in the Humanities and Social Sciences, 1996
Valedictorian, C.G. Finney High School, 1996

RESEARCH FUNDING AND FELLOWSHIPS

PERT Postdoctoral Fellowship, Center for Insect Science, University of Arizona, funding offered but declined, 2011
Gaylord Donnelly Postdoctoral Environmental Fellowship, Yale Institute for Biospheric Studies, Yale University, nominated, 2010
Miller Research Fellowship, Miller Institute for Basic Research in Science, University of California, Berkeley, nominated, 2010
Marie Curie International Incoming Fellowship, European Union Seventh Research Framework Programme, 2009-2011
International Research Fellowship, National Science Foundation, funding offered but declined, 2009
Division of Graduate Studies Dissertation Fellowship, ASU, \$19,000, 2007-2008
Student Research Grant, Animal Behavior Society, \$1,000, 2007
Grant in Aid of Research, Sigma Xi, ASU Chapter, \$400, 2007
University Graduate Fellowship, Arizona State University, 2007
Doctoral Dissertation Improvement Grant, National Science Foundation, \$12,000, 2007
Division of Graduate Studies Workshop Grant, ASU, \$2,000, 2007
Frontiers in Life Sciences Workshop Grant, School of Life Sciences, ASU, \$30,000, 2007
Graduate and Professional Students Association Research Grant, ASU, \$2,000, 2006
Faculty Emeriti Fellowship, Preparing Future Faculty Program, ASU, \$1,500, 2006
University Graduate Fellowship, Arizona State University, 2006
Grant In Aid of Research Award, Sigma Xi, \$500, 2006
NSF GK-12 Fellowship, Arizona State University, \$15,000, 2005-2006
NSF Graduate Research Fellowship, Honorable Mention, 2004
NSF GK-12 Fellowship, Arizona State University, \$27,500, 2003-2004
Grant in Aid of Research, Vision Research Award, Sigma Xi, \$2,000, 2003
University Graduate Scholarship, Arizona State University, 2002-2005
Howard Hughes Undergraduate Research Fellowship, Cornell University, 1999

PUBLICATIONS (*undergraduate authors)

Taylor, L.A., Amin, Z.*, Maier, E.B.*, Byrne, K.J.*, and **Morehouse, N.I.** In review. *Flexible color-learning in an invertebrate predator: Habronattus jumping spiders can learn to prefer or avoid the color red when foraging.*

Plakke, M.S., Deutsch, A.B.*, Meslin, C., Clark, N.L. and **Morehouse, N.I.** In review. *Dynamic digestive physiology of a female reproductive organ in a polyandrous butterfly.*

Snell-Rood, E., Cothran, R., Espeset, A., Jeyasingh, P., Hobbie, S. and **Morehouse, N.I.** In review. *Life history evolution in the anthropocene: Effects of increasing nutrients on traits and tradeoffs.*

Zurek, D.B., Cronin, T.W., Taylor, L.A., Byrne, K.*, Sullivan, M., and **Morehouse, N.I.** In revision, *Spectral filtering enables trichromatic vision in colorful jumping spiders.*

PUBLICATIONS (CONT., *undergraduate authors)

Meslin, C., Plakke, M.S, Deutsch, A.B.*, Small, B.S.*, **Morehouse, N.I.**, and Clark, N.L. 2015. *Digestive organ in the female reproductive tract borrows genes from multiple organ systems to adopt critical functions*. Molecular Biology and Evolution. *In press*.

Morehouse, N.I. 2014. *Condition-dependent ornaments, life histories, and the evolving architecture of resource-use*. Integrative and Comparative Biology, **54**(4), 591-600. doi:10.1093/icv/icu103

Limeri, L.B. and **Morehouse, N.I.** 2014. *Sensory biases and the maintenance of color polymorphisms: Viewing the Colias 'alba' polymorphism through the male visual system*. Functional Ecology, **28**(5), 1197-1207. doi: 10.1111/1365-2435.12244

Ligon, R.A., Dolezal, A.G., Hicks, M.R., Butler, M.W., **Morehouse, N.I.** and Ganesh, T.G. 2014. *Using ants, animal behavior, and the learning cycle to investigate scientific processes*. American Biology Teacher, **76**, 52-534.

Taylor, L.A., Maier, E.B.*, Byrne, K.J.*, Amin, Z.* and **Morehouse, N.I.** 2014. *Colour use by tiny predators: Jumping spiders show colour biases during foraging*. Animal Behaviour, **90**, 149-157. doi: 10.1016/j.anbehav.2014.01.025

Hua, J., **Morehouse, N.I.** and Relyea, R. 2013. *Pesticide resistance in amphibians: Induced resistance in susceptible populations, constitutive tolerance in tolerant populations*. Evolutionary Applications, **6**(7), 1028-1040. doi: 10.1111/eva.12083

Morehouse, N.I., Mandon, N., Christides, J.P., Body, M., Bimbard, G. and Casas, J. 2013. *Seasonal selection and resource dynamics in a seasonally polyphenic butterfly*. Journal of Evolutionary Biology, **26**, 175-185. doi: 10.1111/jeb.12051

Meadows, M.G., **Morehouse, N.I.**, Rutowski, R.L., Douglas, J.M. and McGraw, K.J. 2011. *Quantifying iridescent coloration in animals: A method for improving repeatability*. Behavioral Ecology and Sociobiology. **65**(6), 1317-1327. doi: 10.1007/s00265-010-1135-5

Van Gossum, H., Bots, J, Van Heusden, J, Hammers, M., Katleen, H. and **Morehouse, N.I.** 2011. *Reflectance spectra and morph mating frequencies support intraspecific mimicry in the female colour polymorphic damselfly Ischnura elegans*. Evolutionary Ecology. **25**(1), 139-154. doi: 10.1007/s10682-010-9388-z

Morehouse, N.I. and Rutowski, R.L. 2010. *In the eyes of the beholders: Female choice and avian predation risk associated with an exaggerated male butterfly color*. American Naturalist, **176**(6), 768-784. doi:10.1086/657043

**Press coverage: [Science News](#)

Morehouse, N.I., Nakazawa, T., Booher, C.M., Jeyasingh, P.D. and Hall, M.D. 2010. *Sex in a material world: Why the study of sexual reproduction and sex-specific traits should become more nutritionally-explicit*. Oikos, **119**(5), 766-778. doi:10.1111/j.1600-0706.2009.18569.x

**Invited article

Morehouse, N.I. and Rutowski, R.L. 2010. *Developmental responses to variable diet composition in the cabbage white butterfly, Pieris rapae: the role of nitrogen, carbohydrates and genotype*. Oikos, **119**(4), 636-645. doi:10.1111/j.1600-0706.2009.17866.x

Lindstedt, C., **Morehouse, N.I.**, Pakkanen, H., Casas, J., Christides, J.P., Kempainen, K., Lindström, L. and Mappes, J. 2010. *Characterizing the pigment composition of a variable warning signal of Parasemia plantaginis larvae*. Functional Ecology, **24**(4): 759-766. doi: 10.1111/j.1365-2435.2010.01686.x

Morehouse, N.I. and Rutowski, R.L. 2009. *Comment on "Floral iridescence, produced by diffraction optics, acts as a cue for animal pollinators."* Science, **325**, 1072-d. doi:10.1126/science.1173324

PUBLICATIONS (CONT., *undergraduate authors)

Meadows, M.G., Butler, M.W., **Morehouse, N.I.**, Taylor, L.A., Toomey, M.B., McGraw, K.J. and Rutowski, R.L. 2009. *Iridescence: views from many angles*. Journal of the Royal Society Interface, **6**, S107-113. doi:10.1098/rsif.2009.0013.focus

**Introduction to thematic journal issue organized by authors (including publication below)

Shawkey, M.D., **Morehouse, N.I.** and Vukusic, P. 2009. *A protean palette: colour materials and mixing in birds and butterflies*. Journal of the Royal Society Interface, **6**, S221-S231. doi:10.1098/rsif.2008.0459.focus

Morehouse, N.I., Vukusic, P. and Rutowski, R.L. 2007. *Pterin pigment granules are responsible for both broadband light scattering and wavelength selective absorption in the wing scales of pierid butterflies*. Proceedings of the Royal Society of London B, **274**, 359-366. doi:10.1098/rspb.2006.3730
**Featured article, press coverage: [Chemistry World](#)

McGraw, K.J., Toomey, M.B., Nolan, P.M., **Morehouse, N.I.**, Massaro, M. and Jouventin, P. 2007. *A description of unique fluorescent yellow pigments in penguin feathers*. Pigment Cell Research, **20**, 301-304. doi:10.1111/j.1600-0749.2007.00386.x

Rutowski, R.L., Macedonia, J., Merry, J., **Morehouse, N.I.**, Yturralde, K., Taylor-Taft, L., Gaalema, D.* Kemp, D.J. and Papke, R.S., 2007. *Iridescent ultraviolet signaling in the Orange Sulphur butterfly (Colias eurytheme): Spatial, temporal and spectral properties*. Biological Journal of the Linnean Society, **90**, 349-364. doi:10.1111/j.1095-8312.2007.00749.x

Merry, J., **Morehouse, N.I.**, Yturralde, K., and Rutowski, R.L., 2006. *Eyes of a patrolling butterfly: Visual field and eye structure in the Orange Sulphur, Colias eurytheme (Lepidoptera, Pieridae)*. Journal of Insect Physiology, 52(3), 240-248. doi:10.1016/j.jinsphys.2005.11.002

Rutowski, R.L., Macedonia, J., **Morehouse, N.I.** and Taylor-Taft, L., 2005. *Pterin pigments amplify iridescent ultraviolet signal in males of the orange sulphur butterfly, Colias eurytheme*. Proceedings of the Royal Society of London B, **272**, 2329-2335. doi:10.1098/rspb.2005.3216
**Cover article

INVITED PRESENTATIONS

Morehouse, N.I. *Colors, choices and conflict: Evolutionary insights from the reproductive biology of butterflies*. Department Seminar, Department of Biological Sciences, Duquesne University, Pittsburgh, PA, November, 2014.

Morehouse, N.I. *Colors, choices and conflict: Linking pre- and post-copulatory sexual selection in a butterfly*. Department seminar, Department of Entomology, Pennsylvania State University, State College, PA, October, 2014.

Morehouse, N.I. *Male ejaculates and female reproductive adaptations in the polyandrous butterfly, Pieris rapae*. Oral presentation, *Integrating Pre- and Post-Copulatory Sexual Selection in the Lepidoptera: New Insights and Future Directions Symposium*, 7th International Conference on the Biology of Butterflies, Türku, Finland, August 2014.

Morehouse, N.I., Taylor, L.A. and Zurek, D.B. *Visual ecology of terrestrial invertebrates: A discussion*. Oral presentation. *Color Signals in Terrestrial Invertebrates: Integrating Senders and Receivers Symposium*, 15th International Behavioral Ecology Congress, International Society for Behavioral Ecology, New York City, New York, August 2014.

Morehouse, N.I. *Colors, choices and conflict: Linking pre- and post-copula sexual selection in a butterfly*. Department seminar, Department of Biological Sciences, Mississippi State University, Mississippi State, MS, April, 2014.

INVITED PRESENTATIONS (CONT.)

Morehouse, N.I. *Colors, choices and conflict: Pre- and post-copula sexual selection in a butterfly.* Keynote address, 30th Annual Graduate Association of Biological Sciences Symposium, University of Maryland, Baltimore County, Baltimore, MD, March, 2014.

Morehouse, N.I. *Nutritional stress and the evolution of sexual ornamentation: A life history perspective.* Invited presentation. *Stress, Condition and Ornamentation Symposium*, Annual meeting, Society for Integrative and Comparative Biology, Austin, TX, January 2014.

Morehouse, N.I. *Colors, gifts and conflict: Evolutionary insights from the weird, wonderful world of butterfly sex.* Department seminar, Biology Department, Slippery Rock University of Pennsylvania, Slippery Rock, PA, November 2013.

Morehouse, N.I. *Good genes, limiting nutrients and female choice: Evolution of exaggerated male coloration in the cabbage white butterfly, Pieris rapae.* Invited presentation, *New Insights into the Evolution of Insect Coloration Symposium*, Annual meeting, Entomological Society of America, Austin, TX, November, 2013.

Morehouse, N.I. *Two to tango: Conflict, cooperation and choice in butterfly reproduction.* Science 2013, University of Pittsburgh, Pittsburgh, PA, October, 2013.

Morehouse, N.I. *Flying colors: Innovation and evolution in butterfly coloration.* University-wide lecture, Science and Mathematics Department, Mount Aloysius College, Cresson, PA, October, 2013.

Morehouse, N.I. *Colors, gifts and conflict: Evolutionary dynamics in butterfly reproductive biology.* Department seminar, Department of Zoology, Oklahoma State University, Stillwater, OK, September, 2013.

Morehouse, N.I. *Color sense: Color vision and coloration in animal decision making.* Keynote speaker, Psi Chi Induction Ceremony, University of Pittsburgh, Pittsburgh, PA, March 2013.

Morehouse, N.I. *Flying colors: New insights into the evolution of butterfly coloration.* Summer research seminar, Pymatuning Laboratory of Ecology, University of Pittsburgh, Linesville, PA, June, 2012.

Morehouse, N.I. *Resource dynamics and the evolution of bright colors: Insights from butterflies.* Department seminar, Department of Ecology, Evolution and Behavior, University of Minnesota, Saint Paul, MN, March, 2012.

Morehouse, N.I. *Resource dynamics and the evolution of bright colors: Insights from butterflies.* Jugatae Seminar Series, Department of Entomology, Cornell University, Ithaca, NY, February, 2012.

Morehouse, N.I. *Linking color evolution and nutritional ecology: New insights from butterflies.* Department seminar, Biology Department, University of Akron, Akron, OH, November, 2011.

Morehouse, N.I. *Ecological resource dynamics and color evolution in butterflies.* Department seminar, Université catholique de Louvain, Louvain-la-Neuve, Belgium, October 2011.

Morehouse, N.I. *Dynamiques ecologique et évolutif dans une polyphénisme saisonniers de couleur.* Kikikose Seminar Series, Université de Tours, Tours, France, October, 2011.

Morehouse, N.I. *Nutritional ecology and the evolution of bright coloration: Insights from butterflies.* Department seminar, Department of Biological Sciences, University of Pittsburgh, Pittsburgh, PA, February 2011.

Morehouse, N.I. *Trip the light fantastic: Evolution and innovation in butterfly color optics.* 17th Annual “Blodbad”, Stockholm University, Tovetorp, Sweden, November, 2010.

INVITED PRESENTATIONS (CONT.)

Morehouse, N.I. and Rutowski, R.L. *Genic capture by a nitrogen-rich color ornament in a nitrogen-limited butterfly*. Oral presentation, *Integrating Nutritional and Behavioral Ecology: Recent Insights and Future Directions Symposium*, 13th International Behavioral Ecology Congress, International Society for Behavioral Ecology, Perth, Australia, October, 2010.

Morehouse, N.I. *Co-évolution entre la coloration des mâles et le choix des femelles chez un papillon*. Kikikose Seminar Series, Université de Tours, Tours, France, September, 2010.

Morehouse, N.I. and Rutowski, R.L. *Limiting nutrients, bright colors and male genetic quality: Why female Pieris rapae prefer colorful mates*. Oral presentation, *Color Signals and Cues in the Lives of Butterflies: Perception, Learning and Function Symposium*, 6th International Conference on the Biology of Butterflies, Edmonton, Canada, June, 2010.

Morehouse, N.I. *L'écologie de la nutrition et l'évolution de la couleur polyphénisme saisonniers dans un papillon*. Journée IRBI, Université de Tours, Tours, France, June 2010.

Morehouse, N.I. *Nature: the illustrative past and bright future of design*. Oral presentation representing Autodesk and the Biomimicry Institute, *Design and Sustainability Symposium*, Congress on the Future of Engineering Software 2009, Scottsdale, AZ, April, 2009.

Morehouse, N.I. *The nutrient ecology of bright butterfly colors: Currencies, costs and evolutionary considerations*. Oral presentation, *Evolution and Development of Colour Patterns Symposium*, 5th International Conference on the Biology of Butterflies, Rome, Italy, July, 2007.

Morehouse, N.I. *Flying colors: Towards an evolutionary understanding of bright wing coloration in pierid butterflies*. Kikikose Seminar Series, Université de Tours, Tours, France, May, 2007.

Morehouse, N.I. *Innovation on the wing: The fascinating world of butterfly colors*. Seminar Series, Department of Neurobiophysics, Rijksuniversiteit Groningen, Groningen, The Netherlands, August, 2006.

Morehouse, N.I. and Ramakrishna, B. *Sustainable partnerships between graduate and K-12 education: Science mentoring outreach as a case study*. Oral presentation, *Partnerships Between STEM Research and K-12 Classrooms Symposium*, AAAS-SWARM 81st Annual Meeting, Tulsa, OK, April, 2006.

Morehouse, N.I. *Ephemeral beauty: Age-related degradation of butterfly coloration*. Oral presentation, *Hexapodium*, Center for Insect Science, University of Arizona, Tucson, AZ, November, 2004.

Morehouse, N.I. *Inquiry-based approaches to local insect populations*. Invited poster presentation, Annual meeting, Western Association of Graduate Schools, Phoenix, AZ, April, 2004.

CONTRIBUTED PRESENTATIONS

Morehouse, N.I., Bartoch, C.M., Luna, E.N., Roberts, N.S. and Saleh, N.W. *Gifts, colors and the vagina dentata: Phenotypic plasticity, honest signaling and sexual conflict in a gift-giving butterfly*. 14th Congress of the European Society for Evolutionary Biology, Lisbon, Portugal, August, 2013.

Morehouse, N.I., Bartoch, C.M., Luna, E.N., Roberts, N.S. and Saleh, N.W. *Food, nuptial gifts and vaginae dentatae: Phenotypic plasticity and sexual conflict in a gift-giving butterfly*. Oral presentation, Annual Meeting, Society for Integrative and Comparative Biology, San Francisco, CA, January, 2013.

Morehouse, N.I. and Casas, J. *Ecological resource dynamics of a seasonal color polyphenism*. Oral presentation, Evolution 2012, First Joint Congress on Evolutionary Biology, Ottawa, Canada, July, 2012.

CONTRIBUTED PRESENTATIONS (CONT.)

Morehouse, N.I. and Casas, J. *Ecological resource dynamics of a seasonal color polyphenism*. Oral presentation, Annual meeting, Animal Behavior Society, Albuquerque, NM, June 2012.

Morehouse, N.I., Giraldo, M., Rutowski, R.L. and Vukusic, P. *Diverse photonics underlie mimetic convergence of blue butterfly coloration*. Oral presentation, Behavior 2011, joint meeting of the Animal Behavior Society and the International Ethological Conference, Bloomington, IA, July, 2011.

Morehouse, N.I. and Rutowski, R.L. *The risks and rewards of resplendence: Viewing male butterfly color ornaments through the eyes of females and predators*. Oral presentation, 13th International Behavioral Ecology Congress, International Society for Behavioral Ecology, Perth, Australia, October, 2010.

Morehouse, N.I. *Female choice, limiting nutrients, genic capture and male butterfly colors*. Oral presentation, Warner Clyde Allee Session, Annual meeting, Animal Behavior Society, Williamsburg, VA, July, 2010.

**Awarded the Warner Clyde Allee Award

Morehouse, N.I. and Rutowski, R.L. *Female choice for a nitrogen-rich color ornament in a nitrogen limited butterfly*. Oral presentation, 12th International Behavioral Ecology Congress, International Society for Behavioral Ecology, Ithaca, NY, August, 2008.

**Awarded the Frank Alois Pitelka Prize for Best Student Spoken Paper.

Morehouse, N.I., Butler, M.W. and Webber, A. *Community outreach as a core training experience in graduate education*. Poster presentation, Center for the Integration of Research, Teaching, and Learning Forum 2008, University of Wisconsin, Madison, June, 2008.

Morehouse, N.I., Giraldo, M.A., Rutowski, R.L. and Stavenga, D.G. *Diverse color production mechanisms are responsible for convergent blue structural coloration in a butterfly mimicry complex*. Oral presentation, Iridescence: More Than Meets the Eye, International conference, Tempe, AZ, February, 2008.

Morehouse, N.I., Giraldo, M.A., Rutowski, R.L. and Stavenga, D.G. *Convergent evolution of blue structural coloration in a butterfly mimicry complex*. Oral presentation, 9th Annual Symposium, Graduates in Earth, Life and Social Sciences, Tempe, AZ, February, 2008.

**Awarded Best Oral Presentation Prize.

Morehouse, N.I., Rutowski, R.L. and Vukusic, P. *Innovative optics of bright wing colors in pierid butterflies: morphological determinants and implications for use as visual signals*. Oral presentation, Annual Meeting, Society for Integrative and Comparative Biology, Phoenix, AZ, January, 2007.

Morehouse, N.I., and Davis, J.R. *A science mentoring model for partnerships between graduate research communities and public school classrooms*. Poster presentation, Annual Meeting, Society for Integrative and Comparative Biology, Phoenix, AZ, January, 2007.

Morehouse, N.I., Rutowski, R.L. and Vukusic, P. *Pigments as structural colors: Optical properties and evolutionary implications of pterin deposition in pierid butterflies*. Oral presentation, 11th International Behavioral Ecology Congress, International Society for Behavioral Ecology, Tours, France, July, 2006.

Morehouse, N.I., Rutowski, R.L. and Vukusic, P. *Pigments as structural colors: Optical properties and evolutionary implications of pterin deposition in pierid butterflies*. Oral presentation, 7th Annual Symposium, Graduates in Earth Life and Social Sciences, Tempe, AZ, February, 2006.

Morehouse, N.I., Davis, J.R. and Ramakrishna, B. *Sustainable partnerships between graduate and K-12 education: Science mentoring outreach as a case study*. Oral presentation, 7th Annual Symposium, Graduates in Earth Life and Social Sciences, Tempe, AZ, February, 2006.

CONTRIBUTED PRESENTATIONS (CONT.)

Morehouse, N.I., Rutowski, R.L. and Vukusic, P. *Pigments as structural colors: Optical properties and evolutionary implications of pterin deposition in pierid butterflies*. Oral presentation, Annual meeting, Animal Behavior Society, Snowbird, UT, August 2005.

Morehouse, N.I. and Rutowski, R.L. *Age-related degradation of butterfly coloration*. Poster session, Annual conference, Arizona Imaging and Microanalysis Society, Tempe, AZ, March, 2005.

Morehouse, N.I. and Rutowski, R.L. *Age-related degradation of butterfly coloration: Causes and implications*, Oral presentation, 6th Annual Symposium, Graduates in Earth Life and Social Sciences, Tempe, AZ, February, 2005.

Morehouse, N.I. and Rutowski, R.L. *Age-related degradation of butterfly coloration*. General poster session, 10th International Behavioral Ecology Congress, International Society for Behavioral Ecology, Jyväskylä, Finland, July 2004.

Morehouse, N.I. *Local buggers: An inquiry-based approach to local insect populations*. Education poster session, Annual meeting, American Association for the Advancement of Science, Seattle, WA, February 2004.

Morehouse, N.I. and Rutowski, R.L. *Age-related degradation of visual signals in the Alfalfa Butterfly (Colias eurytheme)*. General poster session, Annual meeting, Animal Behavior Society, Boise, ID, July 2003.

PRESENTATIONS TO LAY AUDIENCES

Morehouse, N.I. *In the eyes of a tiger: Color vision and color signaling in jumping spiders*. Pitt Biology Club, University of Pittsburgh, Pittsburgh, PA, October, 2014.

Morehouse, N.I. *Colors, choices and conflict: The weird, wonderful world of butterfly reproduction*. Outside the Classroom Curriculum, University of Pittsburgh, Pittsburgh, PA, April 2014.

Morehouse, N.I. *Light play: New insights from the colorful world of butterflies and spiders*. Cloverwood Senior Living, Rochester, NY, December 2013.

Morehouse, N.I. *Flying colors: Innovation and evolution in butterfly coloration*. Café Scientifique, Carnegie Science Center, Pittsburgh, PA, May 2013.

Morehouse, N.I. *Evolution on the wing*. Pitt Ecology Club, University of Pittsburgh, Pittsburgh, PA, March 2013.

Morehouse, N.I. *Evolution on the wing*. Pitt Biology Club, University of Pittsburgh, Pittsburgh, PA, February 2013.

Morehouse, N.I. *Flying colors*. The Children's School, Carnegie Mellon University, Pittsburgh, PA, May, 2012.

Morehouse, N.I. *Bling on the wing: The colorful world of butterflies*. Valley View School, Phoenix, AZ, March, 2007.

Morehouse, N.I. *Flying colors: New insights in to the world of bright butterfly coloration*. Emeritus College Colloquia Series, Arizona State University, February, 2007.

Morehouse, N.I. *Innovation on the wing: the fascinating world of butterfly wing colors*. Ecology Explorers seminar, Global Institute of Sustainability, Arizona State University, July, 2006.

PRESENTATIONS TO LAY AUDIENCES (CONT.)

Morehouse, N.I. *Insects in the classroom*. Oral presentation, Ecology Explorers seminar, Center for Environmental Studies, Arizona State University, Tempe, AZ, July, 2004.

RESEARCH TRAINING EXPERIENCE

European Union Marie Curie International Incoming Fellow June 2009 – June 2011
Institut de Recherche sur la Biologie de l'Insecte, Université de Tours, France

Division of Graduate Studies Dissertation Fellow August 2007 – May 2008
School of Life Sciences, Arizona State University, Tempe, AZ

Graduate Research Assistant January – August 2006
School of Life Sciences, Arizona State University, Tempe, AZ

Graduate Research Assistant Summers, 2003-2005
University Graduate Scholarship
School of Life Sciences, Arizona State University, Tempe, AZ

Independent Research/ Honors Thesis May 1999 – May 2000
Professor Cole Gilbert
Dept. of Entomology, Cornell University, Ithaca, NY

Field Assistant July 1999, January 2000
Research Assistant October 1998 – June 1999
Professor Alison Power
Dept. of Ecology, Cornell University, Ithaca, NY

TEACHING EXPERIENCE

Courses Taught as Faculty at Undergraduate Level
BIOSC 1445 – Animal Communication Spring 2013, 2014, 2015

Courses Taught as Faculty at Graduate Level
BIOSC 2450 – Seminar in Ecology Spring 2015
BIOSC 2351 – Advanced Evolution Fall 2012

Guest Lectures
Sexual Selection I & II, Advanced Evolution, University of Pittsburgh 2014
Research Ethics, A&S Research Seminar, University of Pittsburgh 2013, 2014
Visual Signaling in Butterflies, Animal Communication, University of Puerto Rico 2013
Sexual Selection in Butterflies, Insect Behavior, Cornell University 2012

Graduate Teaching Assistant August – December 2008
IND 464: Collaborative Design and Development I
Innovation Space, College of Design, Arizona State University, Tempe, AZ
innovationspace.asu.edu

Graduate Teaching Assistant May – August 2008
School of Life Sciences Undergraduate Research Program May – August 2007
Arizona State University, Tempe, AZ

Faculty Associate August 2006 – May 2007
Center for Research on Education in Science, Mathematics, Engineering and Technology
Arizona State University, Tempe, AZ

TEACHING EXPERIENCE (CONT.)

NSF GK-12 Fellow

Graduate Partners in Science Education, Program Coordinator August 2005 – May 2006
Phoenix Preparatory Academy, Phoenix, AZ
Desert Eagle Secondary School, 7th and 8th Grade Science June 2003 – May 2004
Salt River Pima Maricopa Indian Community, AZ
gk12.asu.edu

Graduate Teaching Assistant

Bio 100: Introductory Biology for Non-Majors January – May 2005
Bio 415: Biometry August 2002 – May 2003
School of Life Sciences, Arizona State University, Tempe, AZ August – December 2004

Substitute Science Teacher

Wilson Magnet High School January – June 2001
Rochester City School District, Rochester, NY

MENTORSHIP

Postdoctoral Fellows (*part of career and/or teaching mentorship support)

Daniel Zurek, University of Pittsburgh, 2014-present
Camille Meslin*, University of Pittsburgh, 2012-present
Alison Hale*, University of Pittsburgh, 2013
Lisa Taylor, University of Pittsburgh, 2012-2013

Doctoral Students

Sebastian Echeverri, *Dissertation Advisor*, University of Pittsburgh, 2014-present
Melissa Plakke, *Dissertation Advisor*, University of Pittsburgh, 2013-present
Lisa Limeri, *Dissertation Advisor*, University of Pittsburgh, 2012-present
RJ Bendis, *Dissertation Committee Chair*, University of Pittsburgh, 2011-present
Sara Berk, *Dissertation Committee Member*, University of Montana, 2014-present
Paul Crawford, *Dissertation Committee Member*, University of Pittsburgh, 2014-present
Alannie-Grace Grant, *Dissertation Committee Member*, University of Pittsburgh, 2014-present
Nana Zhang, *Dissertation Committee Member*, University of Pittsburgh, 2014-present
Andrew Lariviere, *Dissertation Committee Member*, University of Pittsburgh, 2012-present
Nathan Brouwer, *Dissertation Committee Member*, University of Pittsburgh, 2011-present
Matthew Koski, *Dissertation Committee Member*, University of Pittsburgh, 2011-present
Eden Odhner, *Research Rotation Advisor*, University of Pittsburgh, 2014
Katherine LeCroy, *Research Rotation Advisor*, University of Pittsburgh, 2012-2013
Primož Pirih, *Zeegeleerde Opponent*, Promotie, Academiegebouw, Rijksuniversiteit Groningen, The Netherlands, March, 2011

Masters Students

Sarah Hansen, *Masters Committee Member*, University of Maryland, Baltimore County, 2014-present
Alexandre Depoilly, *Project Mentor*, Université de Tours, Tours, France, 2011
Elise Gilliard, *Project Mentor*, Université de Tours, Tours, France, 2010
Corentin Paillusson, *Project Mentor*, Université de Tours, Tours, France, 2010

Postgraduate Research Technicians

Nicholas Saleh, *Research Technician/Lab Manager*, University of Pittsburgh, 2012-present

Undergraduate Students

Sinjon Bartel, *Undergraduate Research Assistant*, University of Pittsburgh, 2014-present
Kaylee Beckinger, *Undergraduate Research Assistant*, University of Pittsburgh, 2014-present
Patrick Butler, *Continuing Education Research Assistant*, University of Pittsburgh, 2014-present
Matthew Huff, *Undergraduate Research Assistant*, University of Pittsburgh, 2014-present
Caroline Kirkby, *Undergraduate Research Assistant*, University of Pittsburgh, 2014-present

MENTORSHIP (CONT.)

Undergraduate Students (cont.)

Alex Jordan, *Undergraduate Research Assistant*, Westminster College, 2014-present
Margaret Mass, *Undergraduate Research Assistant*, University of Pittsburgh, 2014-present
Erin Moss, *Undergraduate Research Assistant*, University of Pittsburgh, 2014-present
Emma Schanzenbach, *Undergraduate Research Assistant*, University of Pittsburgh, 2014-present
Riley Timbs, *Undergraduate Research Assistant*, University of Pittsburgh, 2014-present
Tamara Cherwin, *Undergraduate Research Assistant*, University of Pittsburgh, 2013-present
Breanna Goetz, *Undergraduate Research Assistant*, University of Pittsburgh, 2013-present
Kristen Tobin, *Undergraduate Research Assistant*, University of Pittsburgh, 2013-present
Zarreen Amin, *Undergraduate Research Assistant*, University of Pittsburgh, 2012-2014
Molly Silverman, *Undergraduate Research Assistant*, University of Pittsburgh, 2013-2014
Abigail Riley, *Undergraduate Research Assistant*, University of Pittsburgh, 2014
Nishant Singh, *Undergraduate Teaching Assistant*, University of Pittsburgh, 2014
Irtaza Asar, *Undergraduate Research Assistant*, University of Pittsburgh, 2011-2014
Kevin Byrne, *Undergraduate Research Assistant*, University of Pittsburgh, 2012-2014
Emily Maier, *Undergraduate Research Assistant*, University of Pittsburgh, 2012-2014
Aaron Deutsch, *Undergraduate Research Assistant*, University of Pittsburgh, 2013-2014
Celia Hanss, *Undergraduate Research Assistant*, University of Pittsburgh, 2013-2014
Ashley O'Connor, *Undergraduate Research Assistant*, University of Pittsburgh, 2011-2014
Abel Amare, *Undergraduate Research Assistant*, University of Pittsburgh, 2013
Cassandra Bartoch, *Undergraduate Research Assistant*, University of Pittsburgh, 2011-2013
Elizabeth Luna, *Undergraduate Research Assistant*, University of Pittsburgh, 2012-2013
Natalie Roberts, *Undergraduate Research Assistant*, University of Pittsburgh, 2011-2012
Swetha Patel, *Undergraduate Research Assistant*, Arizona State University, 2006-2009
Sumaya Sidique, *Undergraduate Research Assistant*, Arizona State University, 2008-2009
Kiran Thaker, *Undergraduate Research Assistant*, Arizona State University, 2008-2009
Joseph Nuñez, *Undergraduate Research Assistant*, Arizona State University, 2008-2009
Ian Sandoe, *Undergraduate Research Assistant*, Arizona State University, 2006-2007
Adam Scow, *Undergraduate Research Assistant*, Arizona State University, 2004-2005
Christina Murillo, *Undergraduate Research Assistant*, Arizona State University, 2003-2004

SERVICE

Graduate Curriculum Committee 2014 – present
Department of Biological Sciences, University of Pittsburgh, Pittsburgh, PA

Department Advisory Committee 2013 – present
Junior Faculty Member, Department of Biological Sciences, University of Pittsburgh,
Pittsburgh, PA

Colleges Against Cancer 2014 – present
Faculty Advisor, University of Pittsburgh Chapter, Pittsburgh, PA

Symposium Coordinator November 2013 – August 2014
Color Signals in Terrestrial Invertebrates: Integrating Senders and Receivers
15th International Behavioral Ecology Congress, New York City, USA, August, 2014

Symposium Coordinator September 2013 – August 2014
Integrating Pre- and Post-Copulatory Sexual Selection in the Lepidoptera: New Insights and
Future Directions
7th International Conference on the Biology of Butterflies, Türku, Finland, August, 2014

Department Annual Retreat Committee 2011 – 2013
Department of Biological Sciences, University of Pittsburgh, Pittsburgh, PA

Research Presenter/Display 2012 – 2013
SciTech Festival, Carnegie Science Center, Pittsburgh, PA, November, 2012

SERVICE (CONT.)

- Grand Awards Judge** May 2012
Intel International Science and Engineering Fair, Pittsburgh, PA, May, 2012
- Symposium Coordinator** November 2009 – October 2010
Integrating Nutritional and Behavioral Ecology: Recent Insights and Future Directions
13th International Behavioral Ecology Congress, ISBE, Perth, Australia, October, 2010
- Steering Committee Member** August 2008 – August 2009
WoodStoich 2009
Tohoku University, Sendai, Japan
meme.biology.tohoku.ac.jp/woodstoich/
- Program Consultant** August 2007 – May 2009
Program Co-Founder/Director October 2004 – August 2007
Graduate Partners in Science Education (GPSE)
School of Life Sciences, Arizona State University, Tempe, AZ
gpse.asu.edu
- Entomology Correspondent** August 2003 – May 2009
“Ask a Biologist” Science Outreach Program
School of Life Sciences, Arizona State University, Tempe, AZ
askbiologist.asu.edu
- Webmaster** January 2003 – May 2009
Rutowski Lab
School of Life Sciences, Arizona State University, Tempe, AZ
www.public.asu.edu/~atrlr
- Committee Member**
Web Advisory Committee
School of Life Sciences, Arizona State University, Tempe, AZ
- Conference Organizer** February 2007 – February 2008
Iridescence: More Than Meets the Eye, February 6-9, 2008
Frontiers in Life Sciences Conference Series
School of Life Sciences, Arizona State University, Tempe, AZ
sols.asu.edu/frontiers/2008/
- Grant Reviewer** September 2007
Graduate and Professional Students Association Research Grant Competition
Arizona State University, Tempe, AZ
- Committee Member** July 2006 – August 2007
Campus Health Services Advisory Committee
Arizona State University, Tempe, AZ
- Committee Member** July 2006 – August 2007
Health and Counseling Student Action Committee
Arizona State University, Tempe, AZ
- Graduate Student Body President** May 2006 – May 2007
Graduate Scholars in the School of Life Sciences
School of Life Sciences, Arizona State University, Tempe, AZ
- Committee Member** January – May 2007
Undergraduate Programs Committee
School of Life Sciences, Arizona State University, Tempe, AZ

SERVICE (CONT.)

- Committee Chair** January – May 2007
Campus Health Advisory Board, Graduate and Professional Students Association
Arizona State University, Tempe, AZ
- Committee Member** August 2006 – May 2007
Graduate Programs Committee
School of Life Sciences, Arizona State University, Tempe, AZ
- Student Mentor/Event Judge** January 2004 – April 2007
Central Arizona Regional Science and Engineering Fair
Phoenix Public Schools, Phoenix, AZ
- Founder and Coordinator** January 2005 – May 2006
Sexual Selection Reading Group
School of Life Sciences, Arizona State University, Tempe, AZ
- Symposium Coordinator** October 2005 – April 2006
Partnerships between STEM Research and K-12 Classrooms
AAAS-SWARM 81st Annual Meeting, Tulsa, OK, April, 2006
- Committee Member** August 2002 – August 2006
Graduates in Earth, Life and Social Sciences Annual Symposium
School of Life Sciences, Arizona State University, Tempe, AZ
- Coordinator/Webmaster** August 2003 – May 2004
Graduate Student Seminar Series
School of Life Sciences, Arizona State University, Tempe, AZ
- Curriculum/Professional Development** June – August 2003
NSTA Partners Paving Pathways Program
Life Cycle of the Butterfly Curriculum Development
Gilbert Elementary School District, Gilbert, AZ

CAREER DEVELOPMENT

- Selected Participant** June 2008
Aligning the Preparation of Graduate Students for STEM Early Faculty Careers
Center for Integration of Research, Teaching and Learning Forum 2008, University of
Wisconsin, Madison
- Selected Participant** August 2005 – May 2007
Preparing Future Faculty Program
Division of Graduate Studies, Arizona State University, Tempe, AZ

PEER REVIEW SERVICE

Advances in Insect Physiology
Advances in the Study of Behavior
American Naturalist
Biology Letters
Behavioral Ecology
Behavioral Ecology and Sociobiology
Evolution
Evolutionary Biology
Ecological Entomology
Functional Ecology

PEER REVIEW SERVICE (CONT.)

Insect Science
Journal of Comparative Physiology A – Neuroethology, Sensory, Neural, and Behavioral Physiology
Journal of Ecology
Journal of Evolutionary Biology
Journal of Experimental Biology
Journal of Insect Behavior
Journal of Insect Physiology
Journal of the Royal Society Interface
Naturwissenschaften
New Phytologist
Oecologia
Physiological and Biochemical Zoology
Physiological Entomology
PLoS One
Proceedings of the Royal Society of London B – Biological Sciences
Science

Animal Behavior Society
Ad hoc grant review for student research grants 2013
Biotechnology and Biological Sciences Research Council, UK
Ad hoc grant review 2013
National Science Foundation
Ad hoc full proposal grant review 2012
Doctoral Dissertation Improvement Grant panelist (IOS) 2015
University of Pittsburgh
McKinley/Pape/Darbaker grant review 2015

PROFESSIONAL SOCIETY MEMBERSHIPS

American Society of Naturalists
Animal Behavior Society
International Society for Behavioral Ecology
Lepidopterists' Society
Sigma Xi, The Scientific Research Society
Society for Science & the Public
Society for the Study of Evolution