

Andrew D. Nguyen, PhD candidate

Department of Biology
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Research Interests

I am broadly interested in the evolution of insect physiology and how well we can predict future species responses to climate change.

Education

- 2012 University of Vermont, Burlington, Vermont
Ph.D. in Biology
Expected Graduation: Spring 2017
Co-Mentors: Dr. Sara Helms Cahan, Dr. Nicholas J. Gotelli
Concentration in Ecology and Evolutionary Biology
- 2004-2009 Drexel University, Philadelphia, Pennsylvania, B.S. Major: Biology

Publications: Refereed Journal Articles

- Nguyen AD, Gotelli NJ, Cahan SH. 2016. The evolution of heat shock protein sequences, cis-regulatory elements, and expression profiles in the eusocial Hymenoptera. BMC Evolutionary Biology 16:15.
- Stanton-Geddes J, Nguyen A, Chick L, Vincent J, Vangala M, Dunn RR, Ellison AM, Sanders NJ, Gotelli NJ, Cahan SH. 2016. Thermal reactionomes reveal divergent responses to thermal extremes in warm and cool-climate ant species. BMC Genomics 17:171.

Research Experience

- 2012-Present **Ph.D. candidate**, University of Vermont.
Uncovering evolutionary innovations in temperature adaptations in forest ants.
- 2014 **Research Associate**, University of Vermont
Determined infection frequency of Trypanosome parasites in Kissing bugs that cause Chagas disease.
- 2010-2011 **Technician**, Reaction Biology Corp
High through put screening of potentially therapeutic small compounds.
- 2009-2010 **Technician**, Morphotek Inc.
Developed therapeutic antibodies against Acute Myeloid Leukemia (AML).
- 2007-2008 **Intern**, GlaxoSmithKline
Studied red blood cell differentiation from mouse embryonic stem cells.
- 2006-2007 **Intern**, Morphotek Inc.

Developed neutralizing antibodies against Staphylococcal enterotoxin B (SEB).

Skills

Computing: Unix, R, python, Github, Phylogenetics (RAxML, MrBayes), Geneious, HTML, Microsoft excel/word

Lab: General molecular biology techniques (RNA/DNA isolation, PCR, qPCR, gel electrophoresis(PAGE and agarose), Western Blots), Cell culture (primary and established lines), Flow Cytometry

Research Presentations

- 2016 “Implementing strategies to achieve reproducible research” BioLunch, University of Vermont, Department of Biology, Burlington Vt (talk)
- 2015 “Temperature adaptations in common woodland ants” BioLunch, University of Vermont, Department of Biology, Burlington Vt (talk)
- 2014 “Surviving in a warming world: thermal adaptation in ants” BioLunch, University of Vermont, Department of Biology, Burlington, Vt (talk)
- 2013 “Impact of environmental stress on thermal tolerance in *Aphaenogaster picea*” EcoLunch, University of Vermont Department of Biology, Burlington, Vt (Talk)
- 2012 “Physiological response to climate change in *Aphaenogaster picea*” Northeast Natural History- Ant Ecology session, Springfield, MA (Talk)
- 2012 “Heat shock proteins and thermal tolerance in *Aphaenogaster picea*” EcoLunch, University of Vermont Department of Biology, Burlington, Vt (Talk)
- 2012 “Sequence and Cis-regulatory Evolution of Heat Shock Protein *hsp83*, in Social Hymenoptera” International Union for the Study of Social Insects- North American Section Meeting (IUSSI-NAS), Greensboro, NC (Poster)
- 2012 “Heat shock proteins and thermal tolerance in *Aphaenogaster rudis*” Aphaenophest 2012, Petersham, MA (Talk)

Conferences Attended

- 2016 Evolution, Austin, Texas
- 2014 Evolution, Raleigh, North Carolina
- 2014 Molecular Biology and Evolution, Old San Juan, Puerto Rico
- 2013 Northeast Natural History - Ant Ecology session, Springfield, Massachusetts.
- 2012 International Union for the Study of Social Insects - North American Section Meeting (IUSSI-NAS), Greensboro, North Carolina.

Teaching Experience

- 2015 Invited Lecture, Evolutionary Biology, University of Vermont, Burlington, VT
- 2014 Invited Lecture, Evolution, University of Vermont, Burlington, VT
- 2014 Exploring Biology Laboratory, University of Vermont, Burlington, VT

2013	Cell and Molecular Biology Laboratory, University of Vermont, Burlington, VT
2012-2014	Ecology and Evolution Laboratory, University of Vermont, Burlington, VT
2012	Principles of Biology Laboratory, University of Vermont, Burlington, VT

Organizational Membership

Society for Integrative & Comparative Biology (SICB)

American Society of Naturalists (ASN)

Society of Molecular Biology and Evolution (sMBE)

International Union for the Study of Social Insects (IUSI)

Ecological Society of America (ESA)

External Reviewer

Insect Science

Mentoring

Undergraduates:

Ariana Maleki and John Matthew Fisher worked on developing microsatellites for population genetic work on common woodland ants.

Kerri Pinder, Skyler Resendez, and Jeremy Pustilnik worked on how previous exposures to starvation and desiccation impact thermal tolerance and underlying stress responses (using heat shock proteins as a proxy).

Teddy Herriman and Austin Sherburne worked on identifying potential morphological innovations that may temper and/or mitigate the effects of heat stress.

Curtis A. Provencher worked on how experimental warming affects the stress levels of common woodland ants.

Outreach

2015 Helper, Software Carpentry, University of Vermont

2012 Graduate Mentor, Ant Camp, University of Vermont Department of Biology

Aided in communicating and demonstrating ant collecting to high school students