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).

Research Presentations

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)

"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)

"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)

"Heat shock proteins and thermal tolerance in *Aphaenogaster rudis*" Aphaenophest 2012, Petersham, MA (Talk)

Conferences Attended

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

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.

Organizational Membership

International Union for the Study of Social Insects (IUSSI)
Ecological Society of America (ESA)
Society of Molecular Biology and Evolution (sMBE)

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

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

External Reviewer
Insect Science