

Brett A. Morgan

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Education

MPhil	The University of Hong Kong Ecology & Biodiversity			Expected December 2018
B.S. cum laude	Cornell University Entomology Plant Sciences	Ithaca, NY	GPA: 3.61	May 2014
High School	Conrad Weiser H.S.	Robesonia, PA	GPA: 4.18	June 2010

Professional Training and Relevant Coursework

Insect Biology	Soil Science
Insect Phylogeny and Evolution	Evolutionary Biology and Diversity
Insect Physiology	Population Genetics
Field Ecology	Molecular Evolution
Advanced Mycology	Phylogenetic Systematics

Ant Course Borneo July 2014
This two-week field course organized by the California Academy of Sciences was an immersive experience in ant systematics, field techniques, collection management, ecology, and evolution.

IUCN Red List Course September 2016
"Assessing Species' Extinction Risk Using IUCN Red List Methodology," a seven-part online course.

Research Experience and Employment

Invasive Species Lab, University of Texas at Austin 2016
Research Technician
Investigated ecological interactions and control strategies for the invasive tawny crazy ant, *Nylanderia fulva*. Studied a potential microsporidian biocontrol agent and its effects on *N. fulva*, including experimental design, protocol development, and data management. Fieldwork included monitoring crazy ant abundance in central and eastern Texas with pitfall traps, collecting colonies, and conducting cave arthropod surveys. Constructed and deployed boric acid bait stations around a sensitive cave environment, and maintained lab colonies. Trained coworker on standard procedures.

Economo Lab, Okinawa Institute of Science and Technology Spring 2015
Research Intern
Analyzed phylogeographic patterns in the Malagasy *Pheidole*, a diverse ant genus that likely reached Madagascar through a single colonization event. ArcGIS was used to model climatic, biotic, and edaphic factors across species distributions using GIS data. Phylogenetic and statistical analyses were conducted in R, suitable habitat ranges were predicted in MaxEnt, and a *Pheidole* phylogeny was used to infer patterns of niche differentiation within the genus.

UrbanFarmers AG

Fall 2014

Farm Intern

Operated the company farm in Basel, Switzerland. This aquaponic greenhouse is located in the urban district of Basel on the roof of a fire station. Responsibilities included plant maintenance, vegetable and fish harvesting, troubleshooting the aquaponic system, monitoring for pests and disease, creating fertilizer solutions, composting, and IPM execution. As a personal project, created a plan and a detailed guide for the implementation of an apiculture aspect of the farm for pollination and honey production.

Fisher Lab, California Academy of Sciences

Summer 2013

Summer Systematics Institute Intern

Conducted a morphological analysis of the 24 species of Malagasy Dolichoderine ants. This included dissecting, staining, slide mounting, and imaging the mouthparts of over 100 ants using an auto-montage microscope camera. Morphological characters were used to construct a key to the genera. The Systematics Institute REU included seminars on phylogenetics and related topics.

Cornell University Insect Collection

Summer 2012 – 2014

Curatorial Assistant

Curated Cornell's Membracidae and Formicidae collections, including reorganizing the collections to reflect current nomenclature and compiling a list of all species for online publication. Conducted Tortricid moth genitalia dissections for identification in the Insect Diagnostic Laboratory.

Poveda Lab, Cornell University Entomology Department

Spring 2013

Research Assistant

Assisted with a project investigating the relationship between landscape heterogeneity and the diversity of strawberry plant pollinators. Collected pollinators in the field, identified bees to genus, and grew over 1000 strawberry plants. Designed and attempted to conduct my own project using similar methods in wild strawberries, but unfortunately fruit yield was too low in these plants to obtain sufficient data.

Mohler Lab, Cornell University Department of Crop & Soil Sciences

Summer 2011

Research Assistant

Supported a project on the effects of organic fertilizers on agricultural weed growth. Set up and applied fertilizers to test plot, planted crops and weeds, and quantified growth data. Identified weed seeds and seedlings, assisted with field research on invasive swallowwort by censusing plants, and conducted literature research on fungal plant pathogens.

Pawlowska Lab, Cornell University Department of Plant Pathology

Spring 2011

Research Assistant

Worked on a project concerning the cospeciation of arbuscular mycorrhizal fungi and their bacterial endosymbionts. Typical activities included isolating spores from soil samples, reagent preparation, spore sterilization and DNA extraction, PCR amplification, gel electrophoresis, and sequence editing.

Conferences and Presentations

International Union for the Study of Social Insects Cairns, Australia

July 2014

Poster: "Morphological Analysis of the Dolichoderine Ants of Madagascar"

Service

University of Texas Insect Collection

2016

Volunteer

Curated the ant collection, including identifying unsorted material and organizing holdings to reflect current taxonomy. Participated in the "Insects Unlocked" project, using macrophotography image stacking equipment to create high quality, open-access insect images.

Snodgrass & Wigglesworth Cornell's Undergraduate Entomology Club

2010 – 2014

President

Led weekly meetings where guest speakers gave short presentations about their entomology-related research. Organized and executed a club trip to Texas A&M University to tour the facilities and learn about their graduate program. Planned events including camping trips, collecting trips, and entomophagy potlucks. Played a key role in organizing and volunteering at Insectapalooza, the Entomology Department's annual outreach event.

Hortus Forum Cornell's Undergraduate Horticulture Club

2010 – 2014

Webmaster

Regularly emailed club members with news and upcoming events, recorded minutes and distributed them after meetings, and advertised weekly plant sales to the Cornell community. Maintained the club website and facebook page.

Liaison to the Dean

Cared for the ornamental plants in the College of Agriculture and Life Science Dean's office, and served as a mode of communication between the Dean and our club.

Awards, Grants, and Distinctions

HKU Postgraduate Scholarship (HK\$15,700/month)	2017
Frederick H. Dreer Award (\$4,000) "Hydroponics & Urban Agriculture in Switzerland"	2014
Cornell Department of Entomology Travel Grant (\$1,000) for IUSI and Ant Course	2014
Cornell Academic Excellence Award in Entomology	2014
Dean's List 4 semesters	2010-2014
Pennsylvania Garden Club Steinbright Scholarship (\$1,000)	2012
Seal & Serpent Scholarship	2011

Tools and Skills

Software: Adobe Photoshop, ImageJ, ArcGIS, Microsoft Office, R, Python, MaxEnt,

Hardware: Canon EOS DSLRs, Leica imaging systems, microscopy, Garmin handheld GPS

Skills: insect rearing, lab equipment operation and calibration (autoclave, centrifuge, thermocycler, electrophoresis chamber, micropipette, spectrophotometer)