**ALEX BURNHAM**

Biology Department, Marsh Life Sciences, University of Vermont, Burlington, VT 05405

**PROFESSIONAL PREPARATION**

2014-2017 BS, Zoology; Minor in Statistics, University of Vermont

2017-2018 Accelerated M.S. Biology Department, University of Vermont

**SYNERGISTIC ACTIVITIES**

**Field assistant, lab technician and data analysist:** Assisted Samantha Alger (UVM Ph.D. Candidate) in bumble bee field surveys and sample collections for two field seasons at 35 sites.Assisted in bumblebee rearing and summer field experiment design and maintenance. Conducted RNA isolations and ran assays for RNA viruses in bumble bee samples (RT-qPCR).Conducted data analysis for surveys and experiments (R computing language). 2014-current.

**Undergraduate Research in Bumblebee Parasitology:** Dissected over 300 bumblebee specimens (documenting parasite loads), counted *Nosema* (fungal) spores and tracheal mites in specimens. Looked at correlations between parasite abundance and floral composition. Modeled *Nosema* load as a function of time based on parameters collected in a 2014 field survey. 2014-2016.

**Graduate Research in Bumblebee Pathology:** Mathematical modeling of *Nosema* prevalence in response to floral density. Designed parasite competition experiments and will model the system. Conducted a*Bombu*s survey to look at viral and parasite loads throughout the year.*Bombus* pathogen survivability experiments due to overwintering stressors.RNA virus and parasite coinfection experiments and models in bumble bee hosts. 2016-current.

**Honeybee Research Collaborations with Hamilton College:** Conducted the statistical analysis and mathematical models for research conducted at Hamilton College with Herman Lehman and Andre Burnham looking at the differential success of local and imported honeybee stocks. 2016-current.

**National Honeybee Survey (APHIS):** Collected samples from 48 of Vermont apiaries (over 200 colonies) for USDA APHIS labs. Identified and documented hive maladies and parasites during hive inspections. Given talks at the Vermont state house as well as beekeeping clubs and organizations pertaining to the results. 2015-current.

**Collaborators and Co-Editors**

Samantha Alger (UVM), Andre Burnham (Hamilton College), Leif Richardson (UVM), Brandon Ogbungafor (UVM), Herman Lehman(Hamilton College).

**Graduate Advisor**

Alison K. Brody (MS Advisor).