**Ronald Suiter Prize Application**

P. Alexander Burnham

I am a junior in the College of Arts and Sciences majoring in zoology. My research focuses on the prevalence of two parasites in native bumblebee species, a trachea mite (*Locustacarus buchneri*) and a microsporidian or fungal parasite (*Nosema bombi*). I am specifically interested in patterns of co-infection between these two organisms across different species of bumblebee and across different geographic locations. As an undergraduate researcher, I believe that gaining experience from outside sources such as conferences and seminars is critical to achieving success in my work. In attending **The American Beekeeping Conference (January 5th-January 9th)** if awarded the Ronald Suiter Prize, I will have the opportunity to learn from the most influential people in the field of bee research, and increase my understanding on the current state of this important branch of agricultural biology.

I began working with Ph.D. candidate, Samantha Alger at the beginning of the summer of 2015, assisting in her research on viral spillover from honeybees to wild bumblebee populations. I participated in the National Honeybee Survey, a nationwide effort to empirically study honeybee health across the United States, and I am currently assisting Samantha in the lab where we are using qPCR to test bumblebees for three viruses (deformed wing virus, black queen cell virus and Israeli acute paralysis). In addition, I am conducting my own research on parasites in Vermont’s bumblebee populations and will be continuing the National Honeybee Survey in Vermont with Samantha in upcoming years. My interest in bee research has compelled me to continue my work at UVM by applying to the biology department’s Accelerated Master’s Program. I plan to continue my research in bumblebee parasites and viruses for the next three years, the results of which will become my master’s thesis.

The 2016 American Beekeeping Conference will be hosting many very influential people in the world of bee research as well as important figures in commercial beekeeping. Attending this conference will provide me with an opportunity to interface directly with, and ask questions of the people whose research has been very influential on my own. Members will be present from the USDA bee research lab in Beltsville, MD where the samples Samantha and I collected from over 200 commercial hives in Vermont are currently being analyzed. Members from all three USDA bee research labs as well as The Bee Informed Partnership will be giving talks. Presentations such as “Pests, Predators and Diseases,” by Don Schramm, “Medical Issues in the Apiary: How to Prevent, Recognize, and Address,” presented by Dr. Michael Misko, and a presentation by Texas’ state bee inspector will address many of the parasites and pathogens that I am either studying in the lab, or will be looking for as I reprise my role as an inspector in the National Honeybee Survey.

Samantha Alger and I work together closely in Dr. Alison Brody’s lab, and actively collaborate with each other in our research. We are both applying for the Ronald Suiter Prize with the understanding that in attending the event jointly, traveling costs such as hotel room and car rental will be reduced. We hope that by attending this event together, we can increase our collective knowledge in the field of bee research, which will benefit our individual projects, and as advising members of the University of Vermont’s fledgling bee club, we will be able to relay the valuable information gained from our attendance to the other current and future members. The club is in its infancy and is currently in the process of being recognized by the Student Government Association. In addition to raising awareness in the community and giving students and opportunity to raise and study bees, we envision this organization focusing on rectifying problems in Vermont’s bee-related policies. The future lack of a full time bee inspector and the current lack of a maintained apiary database are examples of problems that we hope will be addressed by the club in the future Many of the practical beekeeping presentations will supplement our current knowledge of beekeeping, and allow us to better advise the less experienced members of the club in achieving these goals. By attending this conference, we can interface and network with experts in the field of bee research, improve our inspection and pest recognition skills for the 2016 National Honeybee Survey, and gain important beekeeping knowledge from world-class experts to aid in the building of UVM’s new bee club.