Student Preparation and Motivation

By enforcing my ability to think broadly about ecological interactions and the importance of human- pollinator relationships, this project will allow me to advance as a biologist. Increasingly, working with honey bees has influenced my career path toward pollinator conservation. I hope to eventually construct native pollinator habitat using my background in design and my knowledge of ecology. Not only will this project benefit the management and restoration of GVSU's Sustainable Agriculture Project, it aligns with my professional goals.

The interdisciplinary tactics that I plan to apply to my future career will guide me through this project. Conservation ecology, design, computer information systems, and nutrition are among the multiple disciplines that will be integrated into its framework. My training in design has shown me the importance of balancing aesthetics and function, a skill that I hope to practice in the visualization of research data and in my subsequent design project of a pollinator garden for the SAP.

My academic background will also help me fulfill the objectives of this study. I am currently taking Plant-Animal Interactions (BIO 473), which has already bolstered my knowledge of the natural history of pollinators and their coevolution with flowering plants. Organic Chemistry for Life Sciences has strengthened my ability to identify complex patterns. This, with the field experience I gained in General Ecology, will allow me to better understand the natural relationship between honey bees and their forage.

The knowledge I have gained in the classroom, combined with my research and beekeeping experience, provides me the optimal background for this project. During Fall 2015, I participated in research with bold jumping spider behavior under Dr. [redacted]. The participating students were given freedom to develop experimental methods, which required intense problem solving and observational skills. We plan to present our scientific poster at

Student Scholars Day this April, giving me valuable dissemination experience. My involvement in GVSU Beekeepers has also thoroughly prepared me to complete this project. While attending lectures at the Heartland Apicultural Society Conference last July, I was immersed in both basic and advanced beekeeping and honey bee biology. This event reinforced my ability to think critically while working in the hives.

With the guidance of Professor [redacted], my role has been to review literature, evaluate the scope of the project, and identify a clear research question. With my increasing independence throughout the summer blooming season, I will facilitate pollen handling weekly and collect hive scale data daily. Although I have worked with bees for over a year, Professor [redacted] plans to enhance my beekeeping skills in preparation for the project. This will involve additional extensive background research and hands on learning alongside other local beekeepers. As the summer semester continues and enough pollen samples and hive scale data have been analyzed, I will work with Professor [redacted] to construct a timeline of the blooming season including honey weight fluctuations and pollen species diversity/crude protein content. We will search the literature for recommendations for adequate colony nutrition and draw comparisons. In order to further my experience in species habitat conservation, I will construct a supplemental bee forage plan for the SAP using the knowledge gained from our seasonal timeline. By applying our conclusions to this concrete goal, I hope to learn how conservationists consider people, place, and environment when envisioning a management plan for a particular site. The opportunity to conduct research with Professor [redacted]'s mentorship while integrating my relevant academic and extracurricular disciplines would help to define my future in conservation.