Section 2: a. Mentorship: My goals for [redacted] center around her desire to work with infectious disease and providing her with the opportunity to explore this. These can be described as, to: **1/**Gain experience studying a trait associated with disease. **2/**Gain understanding of the mechanisms by which a pathogen may cause disease. **3/**Develop new knowledge of disease causing mechanisms. **4/**Develop the critical thinking skills required to use this knowledge to re-model the mechanisms of disease. **5/**Develop the critical thinking skills needed to design experiments to extend the knowledge gained from previous experiments and to understand the limitations of experiments and their results. **6/**To gain independence in terms of both design and execution of experiments.

My mentorship of [redacted] will take several approaches. I have already begun giving [redacted] reading assignments and will continue to do so as she establishes herself in the lab. During the MS3 my interactions with her will be frequent and on a daily basis as I will be there to guide her the whole time. But we will have daily and weekly formalized meetings. Each morning we will meet briefly to discuss her plan for the day. She will lay out her intended experiementation and I will ask questions to facilitate her learning and planning and provide any additional input. I will also be there for support and input throughtout each day. In addition, we will have two types of weekly meetings. **1/** a formal weekly 1 on 1 meeting to discuss her progress and to discuss the following week with a questioning based approach. These meetings will allow us to collaboratively plan each week allowing for the progress of the previous week. I will be asking her to discuss her successes and failures and listening to her suggestions for her following work and asking questions to facilitate my input. **2/** I will also require her to be part of our weekly lab meetings where we discuss both the progress of members of the lab and research articles. As she gathers data she will present her experiments and experimental problems to the group. This will

help her truly understand her work and give her experience presenting it to others. Between the lab meeting articles and her own personal reading assignments we will cover both bigger picture review articles and focused primary research papers which are related to both *Candida* filamentation and protein degradation. This will help her have context to the experiments and provide her with the background to explain her experiments and discuss their results. As a whole the experience will allow her to learn to undertake research which she understands and train her in the process of designing research. By the end she will be prepared to present her work at local meetings which we will use to prepare her to present at larger more high-powered meetings.

b. Preparation: [redacted] joined my lab early in the Fall of 2016. She will complete safety training before the end of the semester. She has been undertaking readings as part of a literature review for this project. She has received training in basic microbiology techniques from me and has been involved in the design of our experiments. She is just beginning a period of shadowing with my Master's student who is currently using similar protein techniques to those we are proposing. In conjuction with the shadowing, I will spend the remainder of the Winter semester training [redacted] in protein techniques. We have begun the production of the modified *Candida* with the tagged proteins and will complete it by the end of the semester. Her exposure to relevant literature will continue as we approach the summer and she will begin attending lab meetings where we discuss published research and troubleshoot experiments as a group.

c. Scholarly Development: [redacted] is successful student with a [redacted] GPA. She gained exposure to medicine and infectious disease whilst working at hospitals and during her trip to Ghana and is now perfectly primed to get involved in research. She is has begun to develop some independent thought and is ready to expand on this. Her ongoing interest in infectious disease makes her the ideal student for my lab and this project.

Immediately after [redacted] asked to join my lab (Fall 2016) we began a literature review as part of deciding to address this research question and then deciding how we would address it. [redacted] and I have met several times to discuss the literature she has been reading and design experiments together. So we have already been developing her understanding of the organism and the problem we are addressing. We are beginning the work right now and introducing [redacted] to various techiques in an incremental manner. As we do this she is being exposed to further literature and lab meetings. This is all part of her scholarly development and helps prepare her to disseminate her findings. The Thomas lab considers dissemination to me an integral part of research and has been successful in sharing our research at multiple venues.

Supporting this application will allow [redacted] to experience important research over the summer and allow her to present the preliminary work at a range of relevant meetings. This will minimally include the annual GVSU Student Scholarship Day at GVSU, the Van Andel Undergraduate research day and a branch meeting of the Michigan chapter of the ASM (American Society for Microbiology). However, my intention is for [redacted] to present this work at the (large regional) Midwest Microbial Pathogenesis Conference in 2017 and if she continues the work after the summer at the (national) ASM (American Society for Microbiology) Conference on Candida and Candidiasis in [redacted] (runs even years and a student will be presenting work with me this year [redacted]). Attending several meeting as we complete and expand the work is will prepare [redacted] for the ASM Conference which is an international meeting attended by most of the significant researchers in Candida research. This is great exposure for [redacted], GVSU and myself and will enable [redacted] to network with other researchers in a field full of infectious disease physicians. We also intend to publish this work when complete in the peer reviewed journal "FEMS Yeast Research", which has an impact factor of 2.818.