**ORISE Final Report**

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**Summary**

This report is a summarization of my work and efforts at the Environmental Protection Agency (EPA) as an intern of the ORISE program. My initial start date was June 3rd, 2018 and my intended last day of my appointment is August 9th, 2019.

In my summer here, I have focused primarily on improving the code of the graphical interface developed for the GCAM model, also known as GLIMPSE. I worked extensively on refactoring the code so that the structure of the code is more streamlined and follows standard good form coding practices. This increased readability of the code for future edits and for any future developers looking to modify and improve the code. In addition to refactoring and restructuring the existing code, I have implemented version control to allow for proper management of the project and edits to the code.

**Accomplishments**

GLIMPSE is the graphical interface developed for the Global Change Assessment Model (GCAM) which aims to make the GCAM model more intuitive and accessible for both scholars and policymakers. A lot of the code written for this graphical interface was across several different developers and with coders of different backgrounds. As part of refactoring the code, this meant that I was responsible for condensing and restructuring of the code. For instance, the code previously was written all in one single file as opposed to compartmentalized sections of code known as classes. This is generally regarded as bad form for coding practice since it reduces readability and makes editing the code quite onerous. In order to remedy this design issue, my task was to extract parts of the code into smaller more comprehensible classes.

Additionally, I also focused on implementing version control through Bitbucket. Version control is used as a method of controlling how edits and changes to the code are managed. This is something used throughout the industry since it allows developers to track changes made to the code. My goal is that this will aid further development of the code in the future.

Finally, I restructured the organization of the GLIMPSE file to streamline the files provided. This mean renaming folders while also deleting any extraneous and unnecessary files. The goal for this is to help provide a more straightforward downloadable file that isn’t as large.

There were several other goals that I had in mind to finish throughout my time here at the EPA. However, a good portion of my time went towards the effort of refactoring. Since I am still an undergraduate student, I focused on learning how to code. Furthermore, since I was accepted through ORISE as a computer science internship, it was somewhat difficult for me to connect with fellow computer scientists. I had hoped to make the model platform independent but due to extensive amount of refactoring required for this code, I was unable to reach this point.

**Future Plan & Acknowledgements**

I will be returning to Emory University to continue my studies as an undergraduate where I plan to obtain a B.S. in computer science and a B.A in physics and astronomy. At my current point in my career I am still unsure on which way I would like to direct my studies and efforts. However, having this exposure to working with code has been a good insight to what a potential career in computer science may look like.

I would like to thank my two mentors for my guidance here at the EPA, Dr. Chris Nolte and Dr. Dan Loughlin. My appointment here at the EPA has been enlightening and educational for me as a scholar and as someone who is exploring different career paths.