



To Whom It May Concern,

I am Dr. Jonathan Waldrop and it is my pleasure to highly recommend Ethan Gruening for employment. I have been working at Ames National Laboratory for the past five years, and have been a staff scientist there for the last year. During most of this time period, I have worked on part of the Department of Energy's Exascale Computing Program developing high-performance software for the new generation of supercomputers, specifically the NWChemEx package. It is as a result of this work that I met and advised Ethan, who has proved to be an outstanding help in expanding the development of this software.

Ethan worked on the development of a graphical user interface for the NWChemEx package, which was a task that had seen a fair number of false starts in the past. Before even diving into the actual development of said interface, Ethan had to come up to speed with the complexity of the process needed to build the NWChemEx package. He was able to quickly pickup how to navigate the CMake based build system that is used by the project, and also showed commendable perseverance with the various issues that arose out of the initial learning curve. Once he had developed a level of comfort with building the application, he was able to reach a minimal viable prototype of the desired interface in record time. Ethan continued to develop and refine this task to its most completed version to date.

In addition to the technical capabilities that he showed, Ethan was also very easy to work with because of how receptive and adaptable he was to critique or changes in requirements. I can't overstate the persistence and problem solving skills he showed in his work on this project, which were traits that I had seen previously lacking in more senior contributors.

Based on the qualities I have observed in Ethan, I believe he will excel in any role offered to him.

If more information about Ethan's performance or qualifications is needed, please feel free to contact me and I will gladly elaborate.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Jonathan Waldrop', with a stylized, flowing script.

Jonathan Waldrop, PhD
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