Dr. Tyler Reddy

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Dr. Tyler Reddy is a research scientist in the applied computer science program at Los Alamos National Laboratory. His work primarily involves software engineering, analyzing dynamic molecular simulations, studying physical processes related to cancer, and maintaining build systems. His work has led him to do collaborations with partnering institutions such as Lawrence Livermore National Laboratory, National Cancer Institute, and more.

He began his academic career at Dalhousie University studying molecular biology in the biochemistry program. His honours project involved using synthetic techniques to create enzyme inhibitors. He continued his research doing summer work under the supervision of Boris Kablar in the field of anatomy and neurobiology. There he gained hands on experience preforming surgery on mice and studying mice bones. Dr. Reddy was very successful in his summer research and published several publications. However, he was not passionate towards this field of work. When he enrolled in his PhD program, he changed gears and worked with Dr. Jan Rainey in the field of biochemistry at Dalhousie University. His new research work involved synthetic chemistry and processing data using NMR (Nuclear Magnetic Resonance) techniques. This position worked out well for him since he was able to apply his synthetic skills in FMOC (fluorenylmethoxycarbonyl) chemistry creating polypeptides. After getting the NMR results of his products, he had to do a lot of processing work on the NMR data. With doing the processing work, Dr. Reddy realized he enjoyed data analysis much more than the wet synthetic chemistry. From there, his passion for computer science led him to take computer simulation courses. During his PhD, he eventually applied to a NSERC program that allowed him to do research overseas at the University of Oxford working with Prof Mark Sansom, where he was tasked with doing computational work

studying human dwarfism. When his term ended at Oxford, he came back to Dalhousie to complete his PhD.

Afterwards, Dr. Reddy then applied to do a postdoctoral fellowship back at Oxford working with Prof Mark Sansom again. There he spent several years studying influenza A (the flu virus). More specifically, he would simulate entire virus particles and create animations demonstrating how the virus interacts and moves. Dr. Tyler Reddy was very passionate about this research. The work he did at Oxford was important for the career path he was so passionate about, because he spent a lot of time writing codes and gaining lots of software engineering experience. During his postdoc studies, Dr. Reddy gave a lot of talks on his work in different parts of Europe and North America. Within his tour, he gave a talk in Dijon (France) about his flu virus research. After his presentation, there was interest in recruiting him to do a second postdoc at the University of New Mexico, but he ultimately ended up doing his second postdoc at Los Alamos National Laboratory. At Los Alamos he did a lot of work on open-source programming with SciPy and NumPy. He then worked at UC Berkley (California) to develop the NumPy library fulltime for a year, and then came back to the Los Alamos Laboratory as a full-time scientist. He was originally hired as a biophysicist working on HIV and influenza projects but was then switched into the applied computer science group due to the demand for his computer science skills. Dr. Tyler Reddy has been working in the applied computer science group at Los Alamos ever since.

Dr. Reddy highly encourages aspiring students looking to work for government/industry related jobs to participate in conferences, specifically presenting their work and networking. From his experience, Dr. Reddy believes that this is one of the best ways to expose yourself and get noticed by potential recruiters.

*Dr. Tyler Reddy's responses to this interview does not reflect the views of Los Alamos National Laboratory.