Troy A. Brier, PhD

COMPUTATIONAL CHEMIST · BIOPHYSICIST

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Rajant Health Inc Recruitment Team   *March 31, 2025*

RAJANT HEALTH INC

200 CHESTERFIELD PARKWAY

MALVERN, PA 19355

Job Application for Computational Biologist

To whom it may concern,

About Me

I am a physical chemist by training with a background in scientific computing, specializing on biological systems. Specifically, I have integrated principles from chemistry, physics, and statistics to investigate diverse phenomena within bacterial life, such as regulatory mechanisms for stress response and the interplay between the transcriptome and proteome. In my career, I have achieved proficiency in a wide array of computational tools to design and implement analytical pipelines within multiple computing environments (HPC, AWS, Docker, Conda) on various operating systems (Linux, MacOS, Windows) leveraging both custom and pre-built software with standard coding languages (Python, R, Bash, etc). Additionally, I have developed skills in designing, managing, and contributing to exploratory multi-year projects that require flexibility, self-assessment, reproducibility, and publication-level documentation. I have extensive experience working in highly collaborative environments, both domestically and internationally, and I am well practiced in presenting technical material to audiences of varying subject-matter expertise.

Why Rajant Health Inc?

My former experience has given me a deep appreciation for scientific innovation and the need for more efficient and accelerated methods to translate innovation from the laboratory into real-world impact. I am motivated by the Rajant Health Inc's mission to revolutionize health discovery on a global scale. I am particularly drawn to Rajant Health Inc's perspective that health should be proactive and personalized through innovation in diagnostics, therapeutics, and communication. I appreciate the stress on the emphasis on deciphering complex relationships within data, and the insights that can emerge from such analysis. I am excited at the opportunity to join the Rajant Health Inc team and contribute to its vision with my computational skills.

Why Me?

As a computational chemist and biophysicist, I would bring a deep understanding of biological research complemented by hands-on experience in scientific computing across diverse computing systems and environments. I have significant knowledge of Python and am proficient in R as tools to solve complex scientific questions including developing custom code for simulation and data analysis. Throughout my career I have worked with many data sets of varying types and sizes, and I am confident in my capacity to adapt, manage, and utilize new data sets to address challenging questions, regardless of data size. Most relevant to the position is my previous experience with NGS sequencing data from varying methodologies (Illumina, PacBio, and ONT), where I integrated various software and algorithms to compare and predict complex relationships between the data sets. This included comparing proteomic data to the results to better understand transcriptome-proteome relationships. Of the job-listing requirements my AI/ML experience is currently foundational. I have experience applying pre-built AI/ML approaches such as AlphaFold2 to aid in discovery. While I have no appreciable experience in constructing AI/ML solutions, I am very eager to learn and employ them towards real world applications. In summary, I believe my problem-solving abilities, commitment to learning and integrating novel techniques across disciplines, and aptitude for collaboration make me an ideal candidate for the **Computational Biologist** position at Rajant Health Inc.

Thank you for considering my application. I would welcome the opportunity to discuss my qualifications further.

Sincerely,

Troy A. Brier, PhD