Troy A. Brier, PhD

COMPUTATIONAL CHEMIST · BIOPHYSICIST

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GEMMA Biotherapeutics Recruitment Team   *March 6, 2025*

GEMMA BIOTHERAPEUTICS

125 S. 31ST ST.

PHILADELPHIA, PA 19104

Job Application for Senior Bioinformatician

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 cells, such as a 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 different environments (HPC, AWS, Docker, Conda) on various operating systems (Linux, MacOS, Windows) leveraging both custom and pre-built software packages 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 GEMMA Biotherapeutics?

My former experience has given me a deep appreciation for scientific innovation and the need for more efficient and accelerated methods to extend innovation beyond the laboratory and into the real world. Therefore, I am inspired by GEMMA Biotherapeutics's mission to speed the research of and global access to life-changing advanced therapies for those living with rare diseases. I am particularly drawn to GEMMA Biotherapeutics's commitment as an emerging therapeutics company towards research and innovation targeted beyond the lab, and I am excited at the opportunity to join the GEMMA Biotherapeutics 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 operating 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 type and size, and I am confident in my capacity to adapt, manage, and utilize new data sets regardless of size for addressing challenging biological questions. Most relevant to the position is my previous experience with sequencing data from varying methodologies (Illumina, PacBio, and ONT), where I integrated various software and algorithms to compared and predict complex relationships within the data sets. My ability to achieve and communicate scientific discovery is exemplified through my publication and presentation record. In summary, I believe my problem-solving abilities, commitment to learning and integrating novel techniques across disciplines, and aptitude for collaboration makes me an ideal candidate for the **Senior Bioinformatician** position at GEMMA Biotherapeutics.

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

Sincerely,

Troy A. Brier, PhD