Troy A. Brier, PhD

Computational Chemist · Biophysicist

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Twist Bioscience Recruitment Team

March 6, 2025

Twist Bioscience
681 Gateway Blvd
South San Francisco, CA 94080

Job Application for Senior Bioinformatics Scientist–SynBio

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 Twist Bioscience?

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 motivated by the Twist Bioscience's mission to provide tools within diverse fields ranging from medicine to data storage, for the betterment of lives and the improvement the sustainability of the planet. I am particularly drawn to Twist Bioscience'sinnovative approach of synthesizing DNA in a fully customizable manner towards various applications, but even moreso at multiple scales capable of aiding not only the large industrial setting but also the small academic lab. I am excited at the opportunity to join the Twist Bioscience team and contribute to its (and its customers) vision(s) 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. Specifically, I have worked closely with synthetic biologist and understand the highly complex nature of engineering biological phenomena. 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 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. While my AI/ML experience is currently foundational, I have experience with AI/ML approaches such as AlphaFold2, and I am very eager to learn more 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 makes me an ideal candidate for the **Senior Bioinformatics Scientist–SynBio** position at Twist Bioscience.

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

Sincerely,

Troy A. Brier, PhD