Troy A. Brier, PhD

COMPUTATIONAL CHEMIST · BIOPHYSICIST

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Synthesize.Bio Recruitment Team   *February 5, 2025*

SYNTHESIZE.BIO
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SEATTLE, WA 98119

Job Application for Bioinformatics Data Engineer

To whom it may concern,

About Me

I am a physical chemist by training with a background in scientific computing focusing 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 (Linix, MacOS, Windows) leveraging 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, domestically and internationally, and I am well practiced in presenting technical material to audiences of varying subject-matter expertise.

Why Synthesize.Bio?

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 particularly drawn to Synthesize.Bio's mission to fundamentally change life sciences research and accelerate the pace of biomedical discovery. As a start-up in biomedical research, I am inspired by Synthesize.Bio's commitment to improve the accessibility of genomic data by reducing the known difficulties with producing and handling such data. Furthermore, Synthesize.Bio's dedication to empowering scientific exploration with AI/ML tools is appealing to me and aligns with my personal philosophy of wanting to push the boundaries of knowledge using computational innovation. I would welcome the opportunity to join your team to contribute to making the company's vision a reality.

Why Me?

As a computational chemist and biophysicist I would bring a deep understanding of fundamental biological principles, 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 the processing and handling of multiple types of NGS data sets. Throughout my career I have worked with many different types and sizes of data sets, so I am confident in my capacity to adapt, manage, and utilize new data sets regardless of size for addressing challenging biological questions. While my AI/ML experience is limited, I very eager to learn more and employ it towards real world applications. 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 **Bioinformatics Data Engineer** position at Synthesize.Bio.

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

Troy A. Brier, PhD