

Troy A. Brier, PhD

COMPUTATIONAL CHEMIST · BIOPHYSICIST

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Natera Recruitment Team

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NATERA

201 INDUSTRIAL RD

SAN CARLOS, CA 94070

Job Application for Senior Bioinformatics Engineer

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 Natera?

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 Natera's mission to make personalized genetic testing and diagnostics part of the standard of care to protect health and enable earlier and more targeted interventions that lead to longer, healthier lives. Human biology is complex, and the treatment for one is not guaranteed to be the treatment for another. I am inspired by Natera's commitment as a global leader in medical testing working to fundamentally change the management of disease worldwide by implementing relatively simple testing to detect disease early and proactively inform treatment. I am excited at the opportunity to join the Natera 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, where I integrated various software and algorithms to compare and predict complex relationships within the data sets. While my AI/ML experience is currently foundational, I have experience with AI/ML approaches such as AlphaFold2 and ChatGPT, 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 a position at Natera.

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

Sincerely,

Troy A. Brier, PhD