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Google Project X
1600 Amphitheatre Parkway
Mountain View, CA 94043

Dear Hiring Committee,

I'm writing to express my strong interest in the Machine Learning Scientist position on the Life Science Project at X. I'm drawn to the team's mission to reinvent computational tools for biology — not just for marginal gains, but to drive real, 10x-scale change. Though my background is in physics and scientific computing, I believe my experience building real-world ML systems and modeling complex data pipelines makes me a strong candidate to contribute at the interface of machine learning and synthetic biology.

At **Atomic Industries**, where I serve as a Senior ML Engineer, I've architected and implemented a platform for optimizing cooling channel designs in plastic injection molds — a system where physics, manufacturability, and geometric constraints collide. I built a thermal simulation engine, a geometric modeling stack, and a distributed evolutionary optimization framework from the ground up. I also developed a reinforcement learning approach for optimizing over the design space. My work has been central to both product delivery and our Series A fundraising efforts, and I lead a sub-team spanning physics, ML, and software engineering.

Previously, at **Berkeley Lab**, I helped launch the FAIR Universe project (NeurIPS 2024), building a public ML benchmark platform for physics using high-performance compute infrastructure. In my academic career, I published research in generative modeling, variational inference, and differentiable simulation — often at scale, often with slow physical models, and often under strong domain constraints. Across these roles, I've worked in fast-moving, cross-functional teams that straddle theory and implementation.

While I haven't yet worked directly with biological data, I have used Bayesian optimization extensively for optimization problems with expensive simulation loops, and Bayesian inference methods have been a core part of my research generally.

X's mission — blending deep science, data, and engineering to solve hard problems that matter — deeply resonates with me. I'd be excited to bring my experience, velocity, and collaborative energy to your team.

Thank you for considering my application. I've attached my CV and would welcome the opportunity to discuss further.

Sincerely,
Ben Thorne