Kathryn C. Morrison

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Profile

Outgoing and detail-oriented scientist with theoretical and hands-on experience in research and applications of molecular biology and genetic engineering, including 3+ years of experience in CRISPR plasmid design and cloning. Recently graduated with an M.S. in Biotechnology and concentration in Bioinformatics at Johns Hopkins University. Skilled in computational tools and biological data analysis that complements wet lab expertise. Known for being collaborative, adaptable, and generally palatable in social settings.

Education

M.S. Biotechnology (concentration in Bioinformatics)	Johns Hopkins University	December 2025
B.S. Molecular, Cell & Developmental Biology	University of California, Santa Cruz	June 2022

Skills

Technical & Computational Stack: SQL, R, Python, LLM-Based Protein Modeling, Bioinformatics Databases, DNA Sequencing & Analysis, Data Analysis
Laboratory & Strategic Methodologies: Recombinant Technology, CRISPR Plasmid Design & HDR Cloning, Protocol Development & Optimization, Supervisory Experience, Documentation & Technical Reporting, Laboratory Procedures

Experience

Santa Cruz Biotechnology Research Associate | May 2021 – December 2024

- **Boosted plasmid production success rate by 8%** through the development of high-efficiency competent cells and the optimization of PCR annealing and extension protocols.
- **Designed and cloned homology-directed repair (HDR) plasmids** for CRISPR gene editing and executed validation experiments to ensure high specificity and efficiency.
- **Analyzed complex genomic datasets** using 4Peaks and Excel to interpret sequencing data and maintain rigorous quality control.
- **Collaborated with cross-functional teams** to troubleshoot experimental hurdles and refine laboratory protocols.
- **Authored comprehensive technical reports** and maintained detailed experimental records to support data transparency during team meetings.
- **Led training and mentorship** for junior staff members and streamlined the onboarding process for new hires.

Pacific Edge Climbing Gym Youth Programs Instructor | June 2022 – August 2024

- **Developed original class curricula** and training frameworks tailored for teenage students to enhance skill acquisition.
- **Facilitated instructor feedback sessions** to evaluate student progress and implement strategies for improving climber safety and satisfaction.
- **Instructed students on climbing fundamentals**, safety protocols, and technical maneuvers within a welcoming, high-energy environment.

Back Office People Clerical Assistant | January 2017 – April 2018

- **Managed client relationships** through professional correspondence, resolving inquiries via phone and email to sustain high satisfaction.
- **Spearheaded a new organizational filing system** for physical records, improving the accessibility of client receipts and sensitive documents.
- **Executed data entry and document formatting** within internal databases, ensuring accuracy in client file maintenance and research.

Projects

RYR1 Protein: Structural & Functional Analysis

- Conducted comprehensive homology modeling and structural alignment to predict the secondary and 3D architecture of the RYR1 protein.
- Developed predictive computational tools to determine the impact of mutations and post-translational - modifications on protein-protein interactions.
- Analyzed large-scale biological datasets to quantify how genetic alterations influence molecular function and phenotypic outcomes.

HDR-Fix-Align

- **Engineered a web-based front-end tool** using Python for pairwise sequence alignment visualization, enabling streamlined data interpretation.