MAXWELL ECKELBARGER

Bioengineer | Cell Culture | Molecular Biology | Data Analysis | Prototype Design

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SUMMARY

- B.S. in Bioengineering from Stanford University with interdisciplinary expertise in molecular biology, environmental systems, and biomedical technologies
- Independently led a national science outreach project from concept to execution, demonstrating strong initiative, research skills, and cross-functional leadership
- Experienced in laboratory research, equipment maintenance, and scientific communication with a focus on real-world impact
- Adept at synthesizing complex biological data into actionable insights through CAD, PCR, and data visualization tools
- Proven ability to work autonomously or in collaborative settings, delivering educational and scientific solutions for diverse stakeholders

EDUCATION

Bachelor of Science - BS, Bioengineering

Stanford University

09/2019 - 06/2024

EXPERIENCE

Project Assistant – Environmental Bioengineering Applications

Allen County Soil and Water Conservation District (SWCD)

08/2024 - 01/2025 Fort Wayne, Indiana, United States

Supported environmental outreach and conservation activities for land and water management.

- **Field Data Collection:** Conducted field and laboratory sampling of soil and water to evaluate biological and chemical health parameters.
- **Data Analysis:** Assessed microbial and nutrient levels for ecological insights and conservation planning.
- **Education & Outreach:** Developed materials that introduced bioengineering principles to community and school audiences.
- **Equipment Handling:** Used lab and field equipment following safety standards for environmental sampling.
- **Team Collaboration:** Coordinated with staff on logistics and materials for workshops and education programs.

Project Intern, Plant Molecular Biology / Bioengineering Focus

Observatories of The Carnegie Institution for Science

10/2020 - 10/2022 Stanford, California, United States

Led the design and rollout of a traveling science exhibit combining molecular biology with educational art.

- **Project Leadership:** Directed a multi-phase bioengineering outreach initiative, delivering a traveling exhibit that reached over **1,200+ students** at four academic institutions.
- **CAD & Visualization Tools:** Developed molecular diagrams and **CAD-based 3D models** of cellular structures including nucleic acids, proteins, and metabolites.
- **Molecular Accuracy:** Validated biological illustrations through consultation with plant scientists, ensuring alignment with PCA's molecular datasets.
- **Cross-functional Collaboration:** Worked with biologists, engineers, and stakeholders to integrate accurate molecular data into accessible educational tools.
- **Program Management:** Oversaw full project lifecycle including budgeting, scheduling, and academic presentation of results at national conferences.

Biomedical Equipment Technician

MOBILE MEDICAL MAINTENANCE CO.

06/2019 - 09/2020 Leo, Indiana, United States

Maintained medical devices used in mobile clinical and home health settings.

- **Device Maintenance:** Calibrated and repaired biomedical equipment to ensure compliance with safety and performance standards.
- **Service Documentation:** Maintained service logs and performed regulatory checks for audit and compliance readiness.
- **Technical Diagnostics:** Diagnosed equipment failures using engineering troubleshooting protocols and tools.
- **Clinical Engineering Exposure:** Gained hands-on understanding of device-patient interactions and clinical workflow integration.
- **Team Communication:** Coordinated with healthcare teams to ensure appropriate functionality and application of biomedical devices.

PROJECTS

Plant Cell Atlas Artistic Science Outreach Program

10/2020 - 10/2022 Stanford

Led the creation and management of a traveling art exhibit for the Plant Cell Atlas (PCA) initiative, showcased at Historically Black Colleges and Universities. Oversaw research, budgeting, coordination, and planning, and designed all artwork.

- **Bioengineering Innovation:** Served as technical lead for a nationwide outreach exhibit translating complex molecular data into educational artwork.
- **Technical Design:** Created scientifically accurate illustrations and educational posters based on microscopy images and molecular data, helping students visualize nucleic acids, proteins, and plant cell systems.
- **Budget & Logistics:** Managed **$4,000+ in project funds**, coordinated with 5+ institutions, and led exhibit transportation and setup.
- **Instructional Design:** Designed educational tools that supported deeper learning of molecular biology concepts; received **95% positive feedback**.
- **Data Visualization:** Showcased novel strategies for visualizing protein and nucleic acid interactions, enhancing STEM access and engagement.

PUBLICATIONS

Recognizing pioneering Black plant scientists in our schools and society

Trends in Plant Science

Maxwell Eckelbarger, Selena L Rice, Anne Osano, Jiangnan Peng, Hemayet Ullah, Seung Y Rhee

09/2021 - Present https://pubmed.ncbi.nlm.nih.gov/34507887/

Collaborative Research & Writing: Co-authored a multidisciplinary review article combining historical research and molecular biology to enhance representation in science education.
Publication Impact: Contributed to a peer-reviewed, high-impact journal publication used as a resource in university outreach and curriculum development.
Mission-Driven Science: Leveraged communication and research skills to support broader awareness of historically underrepresented contributors in the life sciences.

TRAINING / COURSES

3D Bioprinting Laboratory
Biochemistry and Molecular Biology
Bioengineering Systems Prototyping Lab
Protein Engineering
Cell Biology
Fundamentals for Engineering Biology Lab
Physics & Engineering of Molecular Imaging
Genetics
Diagnostic Devices Lab

SKILLS

Molecular & Cellular Techniques

PCR, Western Blot, Microscopy, Flow Cytometry, Cell Culture, Sample Preparation, Sterile Technique, Biochemical Assays, DNA/RNA Handling,

Laboratory and Engineering Software

CAD, Python, MATLAB, Excel, Microsoft Suite, SnapGene, Benchling, SolidWorks, Zotero, Adobe Illustrator, Photoshop, ImageJ, Canva, BLAST, Asana

Data Analysis and Interpretation

Statistical Analysis, Experimental Design, Data Visualization, R, non-linear regression, Matplotlib, Simulink

Soft Skills

Independent Work, Scientific Communication, Cross-Functional Team Collaboration, Creative Problem Solving, Public Speaking, Presentations, Project Coordination, Learning Agility, Adaptability

Lab Instrumentation and Regulation

Good Laboratory Practice (GLP), Technical SOP Development, Multichannel Pipettes, Soldering and Basic Electronics, Lab Safety Protocols