

Mabel Campos

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SUMMARY

Early career neurobiology researcher with more than two years of supervised academic laboratory experience focused on **neuronal metabolism**, **neuronal activity**, fluorescent biosensors, molecular biology, and experimental imaging. Hands on work includes **plasmid DNA preparation**, PCR, subcloning, expression vectors, bacterial protein expression, **fluorescence analysis**, biochemical assays, sterile technique, mammalian cell culture, and transfection. Research practice includes mouse colony support, genotyping, experimental documentation, sample tracking, and preparation for stereotactic viral vector procedures under trained supervision. Careful notebook maintenance and control comparison support reproducible results. Coursework and capstone research developed practical problem solving within established protocols, plus growing independence in biosensor development and imaging studies. Collaborative laboratory work has strengthened organization, responsibility, and reliable follow through in support of supervised neurobiology research.

EDUCATION

Bachelor's Degree in Biology, Neurobiology Concentration

2026

University of Wisconsin-Madison GPA: 3.8

Madison, WI

Coursework: Molecular Biology, Neurobiology, Cell Biology, Biochemistry, Experimental Methods

TECHNICAL SKILLS

- **Molecular Biology:** Plasmid DNA preparation, PCR, subcloning
- **Expression Systems:** Expression vectors, bacterial expression, fluorescent proteins
- **Fluorescence Methods:** Fluorescence analysis, fluorescent imaging, signal comparison
- **Cell Culture:** Mammalian cell lines, sterile technique, transfection
- **Animal Research:** Mouse colony support, mouse genotyping, animal care procedures
- **Neurobiology Research:** Neuronal metabolism, neuronal activity, neuronal excitability
- **Biosensor Research:** Fluorescent biosensors, biosensor development, metabolic dynamics
- **Laboratory Practices:** Good laboratory practices, documentation, sample tracking
- **Biochemical Methods:** Biochemical assays, protein analysis, control comparison
- **Research Analysis:** Experimental imaging, basic statistics, graphical comparisons

SKILLS

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|-----------------------|----------------------|-------------------------|-------------------------|
| • Neurobiology | • PCR | • Fluorescence analysis | • Transfection |
| • Neuronal metabolism | • Subcloning | • Biochemical assays | • Mouse genotyping |
| • Molecular biology | • Expression vectors | • Sterile technique | • Biosensor development |
| • Plasmid preparation | • Protein expression | • Cell culture | |

EXPERIENCE

Undergraduate Research Assistant, Neurobiology

September 2025 - Present

University Research Lab

Madison, WI

Supports supervised neurobiology research examining neuronal activity, cellular metabolism, and fluorescent signals. Maintains molecular workflows, cell culture, mouse records, and research documentation while preparing for advanced imaging and animal procedures.

- Examined **neuronal activity**, cellular metabolism, and fluorescence signals through supervised experiments and detailed research records.
- Prepared plasmid DNA, PCR products, and gel checks for fluorescent biosensor construct workflows under faculty guidance.
- Expressed **fluorescent proteins** in bacteria, compared readings with controls, and documented findings for weekly discussions.
- Maintained mammalian **cell lines** with **sterile technique**, then completed supervised transfection studies for construct localization.
- Updated **mouse colony** records and **genotyping** logs, matching identifiers with breeding plans and institutional procedures.
- Prepared materials and observed trained staff during stereotactic viral vector procedures, recording biosafety and recovery details.

Student Researcher, Fluorescent Biosensor Development

January 2025 - May 2026

Capstone Project

Madison, WI

Completed a supervised capstone investigation of fluorescent metabolism biosensors in controlled cellular conditions. Defined test questions, controls, measurement procedures, and follow up analysis while communicating methods and limitations to academic audiences.

- Evaluated a fluorescent metabolism biosensor under controlled cellular conditions with defined controls and repeatable measurements.
- Prepared plasmid DNA, **PCR** products, and subcloned constructs under faculty guidance before expression experiments.
- Expressed **fluorescent proteins** in bacterial cultures and compared signals across conditions to identify inconsistent runs.
- Maintained cell lines with **sterile technique** and **transfection**, recording culture conditions and imaging observations.
- Summarized experimental data with basic statistics and graphs, separating technical variation from follow up patterns.
- Presented methods, limitations, and results, connecting **biosensor development** with future **neuronal metabolism** studies.

Molecular Biology Laboratory Researcher

September 2024 - December 2024

Academic Research

Madison, WI

Completed supervised molecular biology laboratory research centered on plasmids, expression vectors, PCR, sterile technique, protein analysis, **biochemical assays**, and fluorescence measurements. Applied careful labeling, contamination control, notebook review, and repeat testing within established guidance.

- Completed **molecular biology** experiments involving plasmids, **expression vectors**, PCR, sterile technique, and protein analysis.
- Prepared bacterial cultures and plasmid DNA with contamination control, accurate labeling, and supervised laboratory procedures.
- Used PCR to evaluate DNA targets, then interpreted controls and samples in formal laboratory reports.
- Practiced restriction based **subcloning** concepts and construct verification, linking design choices with protein expression outcomes.
- Performed biochemical and fluorescence assays, organizing measurements and calculating values required by laboratory protocols.
- Investigated unexpected results through notebook review, control comparison, and repeat testing within provided guidance.

PROJECTS

Neuronal Metabolism Biosensor Study 📅 2026

Built a supervised study around fluorescent metabolism biosensor behavior in cellular conditions. Defined controls, recorded imaging observations, compared signals, and identified follow up questions relevant to neuronal activity research.

Fluorescent Protein Expression Analysis 📅 2025

Compared bacterial expression results and fluorescence measurements across controlled conditions. Organized raw observations, reviewed inconsistent runs, and presented practical conclusions about biosensor signal behavior.

LEADERSHIP & AWARDS

- Dean's List, University of Wisconsin-Madison, 2025
- Undergraduate Research Presentation Recognition, 2026
- Biological Sciences Academic Scholarship, 2024

CERTIFICATIONS

- Laboratory Safety and Biosafety Training 📅 2026
- Responsible Conduct of Research Foundations 📅 2025

PROFESSIONAL AFFILIATIONS

- Peer Mentor, Undergraduate Biology Learning Community, 2025 to 2026
- Student Member, Campus Undergraduate Research Network, 2024 to 2026
- Volunteer, Science Outreach Program, 2025 to 2026

LANGUAGES

- English (Native)
- Spanish (Proficient)

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST