Clint McCue

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Summary

Motivated professional with a master's degree in chemistry and three years of research experience. Able to communicate effectively, ready to tackle new challenges, and contribute to the field in a collaborative environment.

Education

*M.S. Chemistry***,** University of Minnesota – Duluth **… 2024**
B.S. Biochemistry | *B.A. Chemistry,* University of Minnesota – Duluth **… 2022**

Skills

Laser Spectroscopy	Project Management	Data Analytics
Laser Microscopy	Process Development	OriginPro
Experimental Design	Technical Writing	RStudio
Protein Purification	Public Speaking	Python
Gel Electrophoresis	Time Management	Microsoft Excel
SDS PAGE	SOP's and GMP's	Microsoft Word

Work Experience

Graduate Researcher, Sheets/Heikal Lab – UMD
September 2022 – July 2024 (1 Year 11 Months) … 30 Hours/Week

- Cultured genetically encoded E. coli and purified protein-based biosensors for the development of novel and cost-saving techniques for investigation of cellular environments, while adhering to GMP standards to ensure quality and consistency.
- Applied principles of experimental design to develop analytical processes and SOPs for DIY laser-induced spectroscopy and microscopy methods for biosensor assessment.
- Leveraged Excel, OriginPro, RStudio, and Python for data analytics and statistical analysis. Improved analysis efficiency by up to 25% with specialized OriginPro scripts.
- Developed proficiency with project management while mentoring 8 researchers. Provided guidance with individual project milestones, day to day operations, experimental design and execution, data analysis methods, and research principles.

Grad/Undergrad Teaching Assistant, Swenson College of Science and Engineering – UMD
September 2021 – June 2024 (2 Years, 10 Months) … 20 Hours/Week

- Developed strong leadership, public speaking, and time management skills while instructing 3 general chemistry labs of 30-40 students per semester.
- Contributed to the development of processes that improved instructional organization and methods to facilitate student engagement and improve learning outcomes.

Undergraduate Researcher, Busta Lab – UMD

June 2021 – June 2022 (1 Year) … 10 Hours/Week

- Collaborated on the development of a bioinformatics tool for computational characterization of 200 plant-derived biologic compounds using RStudio and Excel.
- Conducted large-scale PCR on a family of plant samples and verified DNA presence via gel electrophoresis to prepare samples for experimental characterization.
- Maintained lab environment, including inventory/ordering, making buffers and solutions, and maintenance of laboratory equipment.

Laboratory Processing Tech, Essentia Health

August 2021 – August 2022 (1 Year) … 25 Hours/Week

- Processed clinical lab specimens according to quality control guidelines. Operated and maintained specimen automation systems necessary for lab operation.
- Collaborated on development of maintenance and troubleshooting procedures designed to optimize workflow and minimize downtime.

Volunteering/Service

2022 – 2024 … UMN senate committee on student affairs representative

2022 – 2023 … UMD graduate student association representative

2021 – 2022 … Volunteer at Essentia Health ER

2021 … Volunteer in the Busta research lab at UMD

Publications

McCue, C.; Mersch, S.; Kay, T. M.; Boersma, A. J.; Sheets, E. D.; Heikal, A. A. **2024**. Wavelength-dependent fluorescence fluctuation analysis of an mCerulean3-linker-mCitrine construct for environmental ionic strength sensing at the single-molecule level. *Biophys. Journal.* 123.

Mersch, S.; **McCue, C.**; Aristidou, A.; Sheets, E. D.; Boersma, A. J.; Heikal, A. A. **2024**. Translational Diffusion, Molecular Brightness, and Energy Transfer Analysis of mEGFP–Linker–mScarlet–I Crowding Biosensor using Fluorescence Correlation Spectroscopy. *Phys Chem Chem Phys.*

McCue, C.; Mersch, S.; Bergman, S.; Sheets, E. D.; Heikal, A. A. **2023**. Conformational equilibrium analysis of mCerulean3–linker–mCitrine constructs using time-resolved fluorescence measurements in controlled environments. *Proc. SPIE.* 1268107.