Team Name: Linnaea Borealis

Title: Real-Time Mass Spectrometry Data Processing and Analysis System

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Client: Cousins Photosynthesis Lab in the School of Biological Sciences at Washington State University

Abstract: This project aims to enhance the analysis and integration of mass spectrometer data by developing a modular system tailored for different data perspectives and transformations. The system consists of four modules: three dedicated to visualizing and logging data from a primary mass spectrometer and one for reformatting data from a secondary mass spectrometer. The approach focuses on efficient data processing, structured storage, and intuitive visualization. Key constraints include maintaining compatibility across instruments, achieving near real-time processing, and ensuring usability for both technical and non-technical users. While the current implementation streamlines data analysis and integration, future work may involve optimizing system initialization time, expanding instrument compatibility, and introducing more data exporting options.