Chem 638: Introduction to Mass Spectrometry

Spring 2017: Thursday 9:55 – 10:45 am, room B357, Chemistry
Instructor: Dr. Martha M. Vestling, Director of the Paul Bender Chemistry Instrumentation Center
Mass Spectrometry Facility

Class Schedule:

Week	Date	Topic
1	January 19	Mass Spectra and Ions
2	January 26	EI and CI
3	February 2	MALDI
4	February 9	ESI
5	February 16	Ambient Ionization
6	February 23	MSMS
7	March 2	GCMS
8	March 9	LCMS
9	March 16	Bottom Up
March 23 = Spring Break		
10	March 30	Top Down (topic due)
11	April 6	Analyzers
12	April 13	Quantifying
13	April 20	Surfaces and Imaging
14	April 27	Lab Tour (paper due)
15	May 4	UW mass spectrometers

Requirements for 1 credit:
1. Class attendance and participation. If you must miss one class, make sure you attend a mass spectrometry seminar. Missing more than one class will affect your grade.
2. Short paper (3-5 pages) that discusses the mass spectrometry of a particular group of compounds of interest to you (for example: phosphopeptides, disulfides, ruthenium compounds, yeast proteins, carbohydrates, polymers, drug metabolites). This assignment is NOT a research proposal. Subsets of large general areas are needed. For example, proteins, peptides, polymers, metabolites are all too large. Cite at least four papers making sure that three have recent dates (2015-2017). Do not count review articles as part of the four. Each citation should include: authors, journal title, volume, pages, year, and title of the article. Generally mass spectrometry is a technique that is used to support a research project, so the mass spec information you need to discuss may be only in a paper's experimental section. The challenge is to read experimental sections and figure out what was used to obtain mass spectra for your particular group of compounds. Look at ionization methods, analyzers, solvents, calibrants, sensitivity, resolution, clean up and sample handling details. Your choice of a topic is due March 30, 2017 at 9:55 am. The paper is due April 27, 2017 at 9:55 am.

Mass Spectrometry Seminars – Spring 2017

As the semester unfolds.