



# CHEMISTRY 744

## Organic Spectroscopy, Spring 2019

### Spectroscopy Reports Term Paper

**TERM PAPER:** A term paper based on the current literature will be due toward the end of the spring semester. May 1 will be the last day term papers will be accepted. Your term paper should be at least 4-5 pages and not more than 10 pages. The important thing is that it is long enough to adequately describe your subject in terms that the others in this course would understand. Term papers should be on a topic not discussed in class, or go into more detail than what was discussed in class. The papers will be compiled and distributed to the class, so you should make some effort to produce a good “camera ready” document. I would prefer an electronic format (word or PDF) for your paper. Please cite your references.

The following are potential topics for your paper. If you are interested in writing on a topic that is not listed here, that is fine. Please check with me to see if it is suitable.

### Potential Topics

#### The use of NMR

- Applications of Pulsed field gradients
- Multinuclear NMR
- Solid State NMR
  - Magic Angle Spinning
- Advanced 2D NMR techniques
- 3D NMR techniques
- NMR Imaging (MRI)
- Determining Stereochemistry by NMR
  - New pulse techniques
  - New chiral shift reagents
  - New chiral derivitizing reagents
- Other current NMR techniques

#### The use of IR Spectroscopy

- Raman Spectroscopy
- High Resolution IR Spectroscopy
- Other topics

#### Applications of Mass Spec.

- FAB Mass Spec.
- Electrospray Mass Spec.
- FT Ion Cyclotron Resonance Mass Spec.
- 2D MS imaging
- MS for proteomics or related fields
- Other MS techniques

#### Other spectroscopy related topics

- EPR/ESR
- Circular Dichroism Spectroscopy
- Spectroscopic characterization of organic materials (polymers, biomolecules, etc).