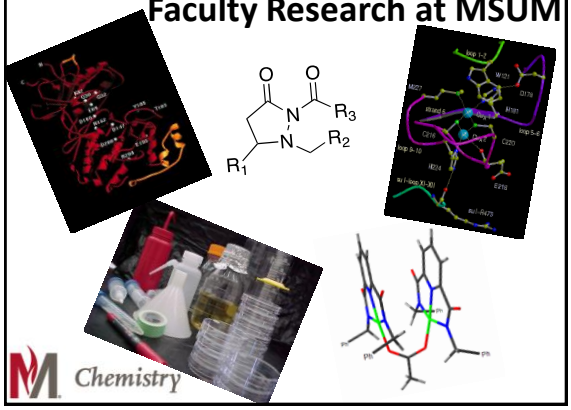
Faculty Research at MSUM



Chemistry

Types of Chemistry Research

Synthetic

Organic, Inorganic, Biochemistry

Physical

Analytical, Physical, Biochemistry

Chemistry

MSUM Faculty Disciplines

Bodwin – Synthetic, Inorganic, Pedagogy
Edvenson – Synthetic, Inorganic, Materials
Garrett – Physical, Biochemistry, Pedagogy
Jasperse – Synthetic, Organic, Analytical
Lahti – Physical, Science Education, Analytical
Marasinghe – Physical, Analytical, Materials
Pezeshk – Physical, Biophysical, Analytical
Provost – Physical, Biochemistry, Pedagogy

Chemistry

Faculty Research – Bodwin

Inorganic Materials

Synthesis of copper coordination complexes, characterization of electronic properties of free ligands and complexes, screening for oxidative

Displays and Demonstrations

Development and exploration of chemical processes and demonstrations suitable to long term reaction in display cases or safe and effective for in-class demonstrations

Chemistry

Faculty Research – Edvenson

Inorganic Materials

Development of boron-nitrogen compounds for hydrogen storage applications, evaluation of stability and storage capacity

Inorganic/Organic Reactivity

New borohydride reducing agents for use in organic synthesis, screening for substrate activity/selectivity

Chemistry

Faculty Research – Garrett

Biochemistry

Protein/enzyme interactions in biological systems

Forensic science (pedagogy)

Development of experiments and activity protocols for teaching introductory forensic science courses

Chemistry

Faculty Research – Jasperse

Organic synthesis
- Exploration of various routes to acyl pyrazolidinones, evaluation of reactions related to pharmaceutical production

Instrumentation (pedagogy)
- Development of experiments and activities that utilize instrumentation (especially NMR and GC-MS) in organic lab courses

Chemistry

Faculty Research – Lahti

Chemical Education
- Exploring the relationship between cognitive development and misconceptions in science education, development of classroom tools and teacher development to address current challenges to student success

Analytical/Agricultural/Food
- Analysis and evaluation of grapes and other aspects of the wine-making art and industry

Chemistry

Faculty Research – Marasinghe

Materials/Energy
- Exploration and screening of new dyes for use in solar energy conversion

Analytical
- Method development using a variety of instruments

Chemistry

Faculty Research – Pezeshk

Biophysical
- Exploration of the effects of diet and supplements on hypertension

Analytical
- Application of Electron Paramagnetic Resonance (EPR) spectroscopy to chemical and biological systems

Chemistry

Faculty Research – Provost

Cellular Biochemistry
- Understanding the regulation of protein interactions which control transport and cell movement

Cancer Research
- Inhibition and migratory limitation in breast and non-small-cell lung cancers

Chemistry

How to talk to faculty about research

Be prepared
- Look up information in advance,
- Demonstrates your interest and work ethic, shows respect for the faculty member's time (and your time!)

Be reflective
- Think about why you want to do research
- Indicates maturity, helps faculty member understand you

Ask questions
- Always have a couple questions handy
- Shows curiosity – essential in research

Chemistry