PROJECT TITLE: Method development for extraction and quantification of the estrogenic compounds, nonylphenol and nonylphenol ethoxylates, in wastewater biosolids

FACULTY NAME: Dr. Patrick McNamara

STUDENT NAME: John (Oliver) Haugland

Picture 1: Oliver uses an accelerated solvent extractor (ASE) to extract estrogenic compounds from wastewater biosolids.

Picture 2: Oliver integrates a peak on an LC-MS/MS to determine the abundance of an estrogenic compound in his sludge extract.
TIMEFRAME OF PROJECT: 2014

RESEARCH SUMMARY: Oliver worked at developing a method to extract estrogenic compounds from sludge and analyze them using liquid chromatography tandem mass spectrometry (LC-MS/MS). Oliver got hands-on experience in the lab as well as experience doing analytical chemistry. Oliver plans to continue research after Marquette and attend graduate school.

RESEARCH OUTCOME: Future papers may stem from the preliminary work that Oliver conducted. His work was useful for developing standard operating procedures in the lab, and pending future work, these initial results may contribute to a publication.

LOCATION OF RESEARCH ACTIVITIES: The Marquette University Water Quality Center and Dr. Todd Miller’s Lab at UW-M (for use LC-MS/MS).

COLLEGE RESOURCES: The Water Quality Center on the 4th Floor of Engineering Hall was used to extract and process samples. The ASE instrument is located in this lab.

COMMENTS: This was a very enjoyable and educational experience for Oliver and Dr. McNamara. They developed a good mentoring relationship and had a lot of fun learning about analytical chemistry for the analysis of sludge samples!