

# Emma Molburg

3320 Peridot Ave #212  
Ames, IA 50010  
(309) 574-0426  
emolburg@iastate.edu

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## Education

*August 2020 – Present*

### **Iowa State University, Ames, IA – Master of Science – Soil Science**

- Project: “The Effects of Soil Erosion on Soil Health”
- Current GPA: 4.0/4.0

*August 2018 – May 2020*

### **Iowa State University, Ames, IA – Bachelor of Science – Agronomy**

- Taken a variety of relevant classes in the areas of crop physiology, soil fertility, soil conservation, plant breeding, and organic chemistry
- GPA: 3.55/4.0

*August 2016 – May 2018*

### **Drake University, Des Moines, IA – Bachelor of Science – Biology**

- Studied biology for 2 years before transferring to Iowa State University
- Transfer GPA: 3.0/4.0

## Research Experience

*August 2020 – Present*

### **Soil-Plant Interactions Lab & Geospatial Laboratory for Soil Informatics – Graduate Research Assistant**

*Created an erosional index as a way to quantify soil erosion in agricultural fields. Study is to create links between soil erosion and soil health, while understanding and identifying the implications of different management practices in fields.*

- Co-advised by Dr. Marshall McDaniel and Dr. Bradley Miller
- Created digital soil maps using ArcGIS Pro
- Collected soil samples at research fields
- Analyzed and interpreted samples with different soil fertility methods

*October 2018 – July 2020*

### **Sustainable Agroecosystems Group – Undergraduate Research Assistant**

*Assisted in the management of the daily research operations of a 32-acre water quality research site. Study is to evaluate how differences in land and nitrogen use practices used during the last three decades impact tile and surface water quality within Iowa.*

- Supervised by Dr. Michael Castellano
- Collected water, soil, and plant tissue samples as a field worker
- Analyzed and interpreted samples with light spectrophotometry
- Assisted faculty, staff, and graduate students with research as a lab assistant

## Awards

Kiley and Marie Powers Scholarship – *Recipient, 2019*

- Awarded to students with interest in plant sciences demonstrating high scholastic achievement and strong record of participation on school and community activities

Verl I. Brooks Scholarship – *Recipient, 2016-2021*

- Awarded to students who reside in Rivoli Township on the basis of need, citizenship, scholastic achievement, moral character, and attitude

Iowa State University Dean's List – *Spring 2019, Spring 2020*

Drake University Dean's List – *Spring 2018*

## **Skills/Training**

- Capable of operating and maintaining Precision SX robotic pipette machine
- Proficient in data analysis using Epoch BioTek Gen5 software and equipment
- Assisted with the construction of multiple research plots across central Iowa
- Can perform a variety of different soil fertility analyses in a laboratory setting
- Can produce digital soil maps using AcrGIS Pro

## **References**

**Dr. Marshall  
McDaniel**

Iowa State University  
*Academic Advisor*  
(515) 294-7947  
marsh@iastate.edu

**Dr. Bradley Miller**

Iowa State University  
*Academic Advisor*  
(515) 294-8077  
millerba@iastate.edu

**Dr. Michael  
Castellano**

Iowa State University  
*Director, Soil Nitrogen Lab*  
(515) 294-3963  
castelmj@iastate.edu