

# Gabrielle M. Myers

☎ (712) 355-0805 | ✉ gmmyersbailey@gmail.com | 🌐 gabrielle-myers-562188144

## Education

### Ph.D. Agricultural and Biological Systems Engineering

Anticipated 2024

IOWA STATE UNIVERSITY

Ames, Iowa

- Working Title: Analysis and Assessment of Novel Food, Bioenergy, and Cropping Systems: Cultured Meat, Anaerobic Digestion, and Perennial Groundcover
- Data-Driven Food, Energy and Water Decision Making Certificate
- GPA: 3.95

### B.S. Biological Systems Engineering

2020

IOWA STATE UNIVERSITY

Ames, Iowa

- GPA: 3.69

## Research

### Graduate Research Assistant

June 2020-Present

IOWA STATE UNIVERSITY

Ames, Iowa

- Manage 3-yr, 36-acre farm trial in Nashua, IA studying subsurface drainage water quality and soil impacts of perennial, annual interseeded, and annual winter cover cropping in corn-soybean rotations
- Analyze, organize, and summarize data from field trial, including: water quality (nitrate and total reactive phosphorus), soils (aggregate stability, moisture, cotton decomposition, erosion pads, and late spring nitrate test), cover crop biomass (harvest and nutrient composition), and corn and soybean yields
- Supervise and coordinate work of undergraduate research assistants to complete essential project tasks, such as sample collection, lab processing, and trips to field site
- Developed a technoeconomic model to analyze the viability of corn stover and swine manure anaerobic digestion systems
- Collaborated with PIs and graduate students in the trans-disciplinary and multi-institutional research group RegenPGC
- Present research findings at academic conferences and farmer-focused field days as oral presentations, posters, and infographics
- Completed two-year, fully-funded National Science Foundation research traineeship with DataFEWSion by attending weekly learning community meetings with graduate students across the university studying food, energy, and water systems, completing the graduate certificate courses, attending monthly professional development workshops, and participating in the special events planning committee

### Undergraduate Research Assistant

Jan 2018 - May 2020

IOWA STATE UNIVERSITY

Ames, Iowa

- Responsible for conducting literature reviews, assembling information, and performing technoeconomic analysis in organized spreadsheets for cell-cultured meat production

## Publications

### Peer Reviewed

**Myers, G.M.,** Jaros, K.A., Andersen, D.S., & Raman, D.R. 2023. Nutrient recovery in cultured meat systems: Impacts on cost and sustainability metrics. *Frontiers in Nutrition*, 10. <https://doi.org/10.3389/fnut.2023.1151801>

**Myers, G.M.,** Andersen, D.S., Martens, B.J., & Raman, D.R. 2023. Cost assessment of centralizing swine manure and corn stover co-digestion systems. *Energies*, 16(11), 4315. <https://doi.org/10.3390/en16114315>

### Reports

**Myers, G.,** Dougherty, B., Pedersen, C., Andersen, D., Peckinovsky, K., Raman, D., Moore, K., & Helmers, M. 2021 and 2022 Drainage Water Quality Impacts of Agricultural Management Practices. 2023. Farm Progress Report.

Dougherty, B., **Myers, G.,** Pedersen, C., Andersen, D., Helmers, M., Raman, D. R., & Moore, K. Effect of Annual and Perennial Cover Crops and Manure Application Timing on Yields in 2021. 2022. Farm Progress Report. <https://www.iastatedigitalpress.com/farmreports/article/id/15562/>

### Conference Proceedings

Myers, G.M., Andersen, D.S., & Raman, D.R. 2022. Cost assessment of centralizing a swine manure and corn stover co-digestion system for biogas production. 2021 ASABE Annual International Virtual Meeting, July 12-16, 2021. Conference Paper. doi:10.13031/aim.202100888

## Teaching and Mentoring

---

### Research Experience for Undergraduates Mentor

Summer 2022, 2023

REGEN PGC, IOWA STATE UNIVERSITY

Ames, Iowa

- Developed small summer project for STEM education-track undergraduate student to complete.
- Provided supervision and mentoring to student in lab work and data analysis
- Guided preparation of end-of-program presentation and poster

### Graduate Teaching Assistant

Fall 2020

ABE 160 (APPROX. 40 STUDENTS) AND ABE 316 (APPROX. 30 STUDENTS)

Ames, Iowa

- Effectively addressed students' questions and identified areas of difficulty
- Efficiently graded student assignments and provided constructive feedback
- Led weekly help sessions to guide students through questions or concerns

### Undergraduate Teaching Assistant

Fall 2020

ABE 160 (APPROX. 90 STUDENTS)

Ames, Iowa

- Provided prompt grading and feedback of student assignments and exams
- Communicated with instructor to address areas of student difficulty

## Honors & Awards

---

### Awards

- 2023 ASABE Iowa Section PhD Student of the Year
- 2023 David L. Calderwood Graduate Fellowship
- 2023 Iowa Pork Congress Student Poster Competition Producers' Choice Award
- 2023 Harold and Katherine Guy Graduate Fellowship
- 2022 ASABE Annual International Meeting Student Poster Competition Awardee
- 2021-23 NSF Funded Certificate, DataFEWSion Research Traineeship

### Honor Societies

- Gamma Sigma Delta, Agriculture Honor Society
- Alpha Epsilon, Agricultural and Biological Systems Engineering Honor Society

## Work Experience

---

### Starbucks Shift Supervisor

August 2018 - June 2020

HY-VEE

Ames, Iowa

- Trained employees, delegated tasks, and ensured smooth store operations
- Developed and maintained positive relationships with management, coworkers, and customers

### Environmental Engineering Intern

May 2018 - August 2018

POET PLANT MANAGEMENT

Sioux Falls, South Dakota

- Gathered, analyzed, and presented data related to air emissions compliance
- Prepared system improvement projects related to environmental compliance and plant safety
- Assisted in the development of Toxic Release Inventory training and served as point of communication for plant questions
- Completed environmental compliance reviews, assisted in stack test oversight, and participated in communication meetings at seven biorefineries

### Field and Lab Technician

May 2017 - December 2017

DOW AGROSCIENCES

Nevada, Iowa

- Prepared and organized for month-long planting process
- Communicated with team members to delegate project tasks
- Assisted in outdoor work, such as cross pollination, tissue sampling, and stand counts

## Conference Presentations

---

**Myers, G.M.,** Raman, D.R., Andersen D.S., Moore, K.J., Dougherty, B.W., Pedersen, C.H., Hintz, R.L., Peckinovsky, K.T. 2022. "Can perennial groundcover (PGC) decrease nutrient export through subsurface drainage without negatively impacting corn yields?" Iowa State College of Engineering Advisory Board Meeting. Ames, Iowa. May 10, 2023. Poster.

**Myers, G.M.,** Andersen, D.S., Martens, B.J., Raman, D.R. 2023. "Cost Assessment of Centralizing a Swine Manure and Corn Stover Co-Digestion System." Iowa State Agricultural Engineering In-Service. Ames, Iowa. May 9, 2023. Oral Presentation.

**Myers, G.M.,** Raman, D.R., Andersen D.S., Moore, K.J. 2023. "Yield and Drainage Water Quality Impacts of Agricultural Management Practices." Iowa Pork Congress. Des Moines, Iowa. January 25-26, 2023. Poster.

**Myers, G.M.,** Raman, D.R., Andersen D.S., Moore, K.J., Dougherty, B.W., Pedersen, C.H., Hintz, R.L., Peckinovsky, K.T. 2022. "Can perennial groundcover (PGC) decrease nutrient export through subsurface drainage without negatively impacting corn yields?" 2023 DataFEWSion Symposium. Ames, Iowa. January 10, 2023. Poster.

**Myers, G.M.,** Raman, D.R., Andersen D.S., 2022. "Can we improve soil and water quality in the Corn Belt with Perennial Groundcover?" Integrated Crop Management Conference. Ames, Iowa. November 30-December 1, 2022. Infographic.

**Myers, G.M.,** Raman, D.R., Andersen D.S., Moore, K.J., Dougherty, B.W., Pedersen, C.H., Hintz, R.L., Peckinovsky, K.T. 2022. "First year outcomes of field trials to evaluate N export from perennial groundcover corn systems." Iowa Water Conference. Dubuque, Iowa. September 28-29, 2022. Poster.

**Myers, G.M.,** Andersen, D.S., Raman, D.R. 2022. "Cost Assessment of Centralizing a Swine Manure and Corn Stover Co-Digestion System." American Society of Agricultural and Biological Engineers Annual International Meeting. Houston, Texas. July 17-20, 2022. Poster.

**Myers, G.M.,** Raman, D.R., Andersen D.S., Moore, K.J., Dougherty, B.W., Pedersen, C.H., Hintz, R.L., Peckinovsky, K.T. 2022. "First year outcomes of a perennial groundcover corn system." American Society of Agricultural and Biological Engineers Annual International Meeting. Houston, Texas. July 17-20, 2022. Oral Presentation.

**Myers, G.M.,** Raman, D.R., Andersen D.S. 2022. "Technoeconomic analysis finds centralized swine manure and corn stover co-digestion systems have an economic advantage over distributed Systems." January 11, 2022. Poster.

**Myers, G.M.,** Raman, D.R., Andersen D.S. 2021. "Carbon Balance for Conventional and Cell-Cultured Meat Production." American Society of Agricultural and Biological Engineers Annual International Meeting. Virtual Meeting. July 12-16, 2021. Oral Presentation.

**Myers, G.M.,** Andersen D.S., Raman, D.R. 2021. "A Cost Assessment of Centralizing a Co-Digestion System for Biogas Production." American Society of Agricultural and Biological Engineers Annual International Meeting. Virtual Meeting. July 12-16, 2021. Oral Presentation.

**Myers, G.M.,** Andersen, D.S., Raman D.R. 2020. Biogas Production Cost Model. C-Change Conference: Why are we missing the boat on biogas? Virtual meeting, Oct. 19, 2020. Oral Presentation.

## Extension Activities

---

Perennial Groundcover Field Day. Sorensen Research Farm. Boone, Iowa. September 15. 2022. In-field talk. Est. 25 attendees.

Annual Fall Field Day. Iowa State University Northeast Research and Demonstration Farm. Nashua, Iowa. August 24, 2022. In-field talk. Est. 50 attendees.

Perennial Cover Crop Field Day. Iowa State University Northeast Research and Demonstration Farm. Nashua, Iowa. May 23, 2022. Oral Presentation. Est 20 attendees.

Perennial Cover Crop Field Day. Corteva York Research Center. York, Nebraska. May 26, 2022. Poster Presentation. Est. 50 attendees.

## Leadership and Service

---

### Volunteer Head Coach

2022

#### GIRLS ON THE RUN OF CENTRAL IOWA

Ames, Iowa

- Lead 20 girls in grades 3-5 through 10-week curriculum encouraging the development of confidence, conflict resolution skills, and wellness
- Motivate participants to complete workouts to prepare for 5k
- Communicate with guardians to outline activities and coordinate participation in special events

### ABE Peer Mentor

2019

#### IOWA STATE UNIVERSITY

Ames, Iowa

- Form relationships with first-year students in the ABE department to foster a sense of belonging

## ABE Curriculum Committee Biosystems Engineering Student Rep

IOWA STATE UNIVERSITY

- Provide student perspective to faculty committee on curriculum decisions

2019

Ames, Iowa

### Professional Development

---

- 2022 Midwest Big Data Summer School
- 2022 Strategies for Antiracist Action in STEM, Dr. Bala Chaudhary
- 2022 The Inclusive STEM Teaching Project
- 2020 Iowa Engineer in Training Certification

### Skills

---

- Software** R, Python, SAS, VBA, Matlab, Simulink
- Data Analysis** Complex Dataset Cleaning and Organization, Statistical Analysis of Field Data
- Soil Analysis** Aggregate Stability, Penetration Resistance, Infiltration Rate, Moisture Content
- Soft Skills** Multi-disciplinary Communication and Collaboration, One-On-One Mentoring, Study Session Leading, Group Mentoring, Communication in Extension and Outreach