

# Gabrielle M. Myers

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## Education

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

2024

IOWA STATE UNIVERSITY

Ames, Iowa

- GPA: 3.96
- Data-Driven Food, Energy and Water Decision Making Certificate
- Advisors: D. Raj Raman and Daniel S. Andersen

### 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

- Leader of three year, 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 multi-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

## Teaching and Mentoring

### Research Experience for Undergraduates Mentor

Summer 2022

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

ABE 160 (APPROX. 90 STUDENTS)

Fall 2020  
Ames, Iowa

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

## Publications

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### 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. *Accepted*. doi: 10.3389/fnut.2023.1151801

**Myers, G.M.,** Andersen, D.S., & Raman, D.R. 2023. Cost assessment of centralizing swine manure and corn stover co-digestion systems. *In Review*.

### 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

## Work Experience

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### Starbucks Shift Supervisor

August 2018 - June 2020  
Ames, Iowa

HY-VEE

- 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  
Sioux Falls, South Dakota

POET PLANT MANAGEMENT

- 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  
Nevada, Iowa

DOW AGROSCIENCES

- 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

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**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., 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

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

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

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

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

## Honors & Awards

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### Awards

- 2023 **Awardee**, David L. Calderwood Graduate Fellowship
- 2023 **1st Place**, Iowa Pork Congress Student Poster Competition Producers' Choice Award
- 2023 **Awardee**, Harold and Katherine Guy Graduate Fellowship
- 2022 **Student Poster Competition Awardee**, ASABE Annual International Meeting
- 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

## Leadership and Service

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### Volunteer Head Coach Coach

#### GIRLS ON THE RUN OF CENTRAL IOWA

2022

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

#### IOWA STATE UNIVERSITY

2019

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

2019

Ames, Iowa

- Provide student perspective to faculty committee on curriculum decisions

## Professional Development

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

## Skills

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