

# Gabrielle M. Myers

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## Education

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

Anticipated 2024

IOWA STATE UNIVERSITY

Ames, Iowa

- Working Dissertation 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 project 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. <https://www.iastatedigitalpress.com/farmreports/article/id/16218/>

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

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### Instructor of Record

*Fall 2023*

**TSM 115: SOLVING TECHNOLOGY PROBLEMS; 38 STUDENTS; 3 CREDITS**

*Ames, Iowa*

- Planned and developed coursework for 15-weeks of instruction in problem solving, technology tools, and effective communication
- Designed engaging hands-on learning activities that received positive feedback from students
- Demonstrated commitment to student success by providing timely and constructive feedback
- Cultivated positive relationships with students, creating an inclusive and supportive learning environment

### 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

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### Awards

- 2024 Harold and Katherine Guy Graduate Fellowship
- 2023 Iowa State University Research Excellence Award
- 2023 ASABE Annual International Meeting Presentation Excellence Award
- 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

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

## Conference Presentations

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Bradford, I., Andersen, D., **Myers, G.M.,** Rockson, P. 2023. "Comparison and Evaluation of SLAKes and Cornell Aggregate Stability Test." American Society of Agricultural and Biological Engineers Annual International Meeting." Omaha, Nebraska. July 9-12, 2023. Poster.

**Myers, G.M.,** Raman, D.R., Andersen D.S., Moore, K.J., Peckinovsky, K.T. 2023. "Yield, soil, and water quality implications of conventional, cover-cropped, and perennial groundcover corn production systems in tile-drained Iowa cropland." American Society of Agricultural and Biological Engineers Annual International Meeting." Omaha, Nebraska. July 9-12, 2023. Oral Presentation. *Presentation Excellence Award.*

**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. *Producers' Choice Award.*

**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. *Student Poster Award.*

**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." 2022 DataFEWSion Symposium. 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.

## Work Experience

### Starbucks Shift Supervisor

HY-VEE

*August 2018 - June 2020*

*Ames, Iowa*

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

### Environmental Engineering Intern

POET PLANT MANAGEMENT

*May 2018 - August 2018*

*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

DOW AGROSCIENCES

*May 2017 - December 2017*

*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

## 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**

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**Volunteer Head Coach** 2022-2023  
**GIRLS ON THE RUN OF CENTRAL IOWA** Ames, Iowa

- Lead two seasons of 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** 2019  
**IOWA STATE UNIVERSITY** Ames, Iowa

- Provide student prospective to faculty committee on curriculum decisions

**Professional Development**

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- 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**

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**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