

Abby E. Schaefer

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EDUCATION

Iowa State University, Ames, IA | *Master of Science*

Expected 2021

- Biological Systems Engineering, advised by Dr. Adina Howe and Dr. Michelle Soupir

Iowa State University, Ames, IA | *Bachelor of Science*

Expected May 2020

- Biological Systems Engineering Major, Chemistry Minor
- Spring 2019 GPA: 3.87 / 4.00
- Cumulative GPA: 3.62 / 4.00

ENGINEERING EXPERIENCE

Municipal Engineering Intern

MSA Professional Services, Inc., Saint Paul, MN

May 2019 – August 2019

- Contributed to 24 engineering design projects including sanitary sewer and watermain extensions, stormwater infrastructure design, and wastewater effluent limit investigation while providing a client-based focus
- Calculated cost estimations for 3 engineering projects totaling \$10.1 million of design and construction costs
- Created exhibits for city council meetings relating to engineering projects using Civil 3D, ArcGIS, and PowerPoint
- Performed construction observation for 2 utility projects, including SWPPP inspection

Bioprocess Engineering Intern

May 2018 – August 2018

Gross- Wen Technologies, Ames, IA

- Developed and evaluated a bench process to increase phosphorous removal from wastewater by 100% (Patent-Pending)
- Analyzed experimental results daily to define future experimental strategy and direction
- Calculated total phosphorous and total nitrogen mass balances throughout wastewater process

WORK EXPERIENCE

Undergraduate Teaching Assistant

January 2019 – Present

ABE 316: Applied Numerical Methods for Agricultural and Biosystems Engineering

- Facilitate classroom instruction of computer methods for engineering problem solving for 36 students
- Grade course assignments and hold weekly office hours

Laboratory Technician

August 2018 – Present

Water Quality Research Laboratory | *Agricultural and Biosystems Engineering Department, Iowa State University Ames, IA*

- Prepare water samples for chemical nutrient analysis
- Process soil and water samples for microbial quantification and DNA extraction

Undergraduate Research Assistant

January 2018 – August 2018

Advisor: Dr. Zhiyou Wen | *Food Science Department, Iowa State University, Ames, IA*

- Studied induction of phosphorous release from *C. vulgaris* for wastewater treatment applications
- Optimized the growth of *R. salina* for protein extraction by varying light intensity and media composition

CERTIFICATIONS, ACTIVITIES, & HONORS

Alpha Epsilon Agricultural Engineering Honor Society

Spring 2019 – Present

College of Engineering Dean's Leadership Scholar

Fall 2018

Certified Iowa Stormwater Pollution Prevention Plan Designer

February 2018 – Present

American Society of Agricultural and Biological Engineers; Iowa State Student Chapter

August 2017 – Present

- International Student Branch 1st Vice President | 2019 – 2020
- Secretary | 2018 – 2019
- College of Agriculture and Life Sciences Student Council Representative | 2018

The Engineering Ambassador and Mentor Program

August 2017 – May 2019

- Tour Information Chair | 2018 – 2019
- Social Chair | 2018

Lima, Peru Study Abroad Experience

May – June 2016

- Service-learning experience in an under-served and minority district in Lima, Peru

Pi Beta Phi Fraternity for Women

January 2016 – May 2019

- Academic Chair | 2017

Girl Scouts of the USA Gold Award

2015

SKILLS

Computer Skills: Civil 3D | ArcGIS | R Programming Language | MatLab | Autodesk Inventor | Microsoft Office | VBA