

Serena G. Lotreck

I study applications of information extraction and knowledge graph construction in the plant sciences.

EDUCATION

Michigan State University, East Lansing, MI — *PhD*

AUGUST 2019 - PRESENT

Dual degree in Plant Biology & Computational Math., Sci. and Engineering
Concentrations in molecular (MPS) and computational plant science (IMPACTS)

Cornell University, Ithaca, NY — *Bachelor of Arts*

AUGUST 2015 - MAY 2019

B.A. in Biological Sciences, concentration Biochemistry. *Magna cum laude*.

PUBLICATIONS AND PRESENTATIONS

Peer-reviewed publications

A. E. Bryson et al. (Serena Lotreck author #19 of 36), “Composite modeling of leaf shape across shoots discriminates *Vitis* species better than individual leaves,” bioRxiv, p. 2020.06.22.163899, Jun. 2020. Accepted to *Applications in Plant Sciences*

Science communication

Lotreck, Serena G., “Knowledge Graphs,” MSU SciComm Voices Blog, June 2020

Research talks

2021 GLBRC ASM: “Machine Learning for Plant Biology: what, why and how?”
2020 STEM Village Virtual Sym.: “Domain-specific knowledge graphs in plant biology”
2018 Plant Genomics @ MSU Symposium: Ten-minute talk on REU research

RESEARCH EXPERIENCE

Michigan State U., East Lansing, MI — *Graduate Research Assistant*

AUGUST 2019 - PRESENT

Supervisor: Professor Shinhan Shiu

Research Focus: Knowledge graph construction from plant science literature

Michigan State U., East Lansing, MI — *REU Student*

JUNE 2018 - JULY 2018

Supervisor: Professor Robert VanBuren/Jennifer Wai, PhD

Research Focus: Stomatal control in CAM photosynthesis

Boyce Thompson Institute, Ithaca, NY — *Research Intern*

JANUARY 2017 - MAY 2019

Supervisor: Professor Georg Jander/Kevin Ahern

Research Focus: Neonicotinoid pesticide uptake in maize

Michigan State University

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[Linkedin](#)

SKILLS

Programming languages:

Python, R

Software packages:

Scikit-learn, spaCy, pandas, git

Natural languages:

Spanish (fluent)

FELLOWSHIPS

2020–2021 NSF–NRT IMPACTS
Trainee

2019–2020 MPS Fellow

2019 NSF GRFP Honorable
Mention

SERVICE

2021–present MSU QT–Grad,
President

2020–present Plant Biology Peer
Mentorship Program Committee

2020–present Plant Biology Peer
Mentorship Program, Mentor

Sept. 2020 Out for Undergrad
Engineering Conference, Mentor

HOBBIES AND INTERESTS

2021 Wilderness First Aid
certification (exp. 06/2023)

2020 Fieldston Emerging Leaders,
NY, NY, Climbing/hiking trip leader
(Cancelled due to COVID-19)

2017–2019 Cornell Outdoor
Education, Ithaca, NY, Rock
climbing instructor