Serena G. Lotreck

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

Michigan State University
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Linkedin

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

Cusack, S. A., Wang, P., **Lotreck, S. G.**, Moore, B. M., Meng, F., Conner, J. K., ... & Shiu, S. H. (2021). *Predictive models of genetic redundancy in Arabidopsis thaliana.* Molecular Biology and Evolution.

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," Applications in plant sciences 8.12 (2020): e11404.

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: Applications of machine learning to plant biology questions

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

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*