

**ALEXANDRA CRUM**  
Plant and Microbial Biology Department • University of Minnesota  
St. Paul, MN 55108 • [crumx045@umn.edu](mailto:crumx045@umn.edu)

#### EDUCATION

- 2019–present **Ph.D** candidate – Plant and Microbial Biology (PMB), University of Minnesota-Twin Cities, St. Paul, Minnesota. Advisor: Ya Yang
- 2019 **M.S.** – Biology, Grand Valley State University, Allendale, Michigan. Advisor: Tim Evans
- 2017 **B.S.** – Biochemistry and Biology, Minor: English, The College of Saint Scholastica, Duluth, Minnesota.

#### FIELD EXPERIENCE

- 2020 Tropical Field Botany Course in Ecuador, Missouri Botanical Garden (3 weeks).
  - Instructors: Peter Lowry, Greg Plunkett, and David Neill
- 2019 Floristic Survey of Mississippi headwaters, central Minnesota (3.5 weeks).
  - Supervisors: Timothy Whitfield and George Weiblen, University of Minnesota Herbarium (MIN)

#### CURATORIAL EXPERIENCE

- 2021-present Conservatory assistant, College of Biological Sciences (CBS) Conservatory, University of Minnesota
- 2019-2020 Curatorial assistant, University of Minnesota Herbarium (MIN)

#### PUBLICATIONS

- In revision* Pucker, B. N. Walker-Hale, J. Cushman, WC Yim, **A. Crum**, Y. Yang, S. Brockington. Evolutionary blocks to anthocyanin accumulation and the loss of an anthocyanin carrier protein in betalain-pigmented Caryophyllales. In revision for *New Phytologist*
- In prep* Radford Z, **A. Crum**, A. Lee, B. Frederickson, M. Schaut, H. Maeda, Y. Yang. Multi-omic investigation of stress responses in sea beet (*Beta vulgaris* ssp. *Maritima*, Amaranthaceae). In prep for *New Phytologist*
- In prep* **Crum, A.**, L. Philander, Y. Yang. Patterns of traditional medicinal use in selected families of Caryophyllales, an order with tyrosine- or phenylalanine-dominant specialized metabolism lineages. In prep for *Economic Botany*
- In prep* **Crum, A.**, RB. Faden, G. Zuiderveen, TM. Evans. Phylogenetic relationships in the plant genus *Palisota* based on chloroplast and nuclear data. In prep for *Systematic Botany* (Master's thesis, Tim Evans Lab, Grand Valley State University.)

#### RESEARCH EXPERIENCE

- 2019-present Ph.D Dissertation Research: The Evolution of Anthocyanin Synthesis and Other Phenylalanine-Derived Metabolites in the Order Caryophyllales.

- 2016 Transcriptome data as a source of nuclear genes for phylogenetics in the plant genus *Aneilema* (Commelinaceae). NSF REU intern, Annis Water Resources Institute (Grand Valley State University), June-August
- 2014–2015 Westholm, D., Bacteriophage Discovery/Genomics class.

<b>PRESENTATIONS</b>
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**Oral Presentations:**

- 2020 **Crum, A.**, Y. Yang. Botany 2020, Lightning Talk, Virtual, “Evolution of the Anthocyanin Synthesis Pathway in Caryophyllales.”
- 2016 **Crum, A.**, T. Evans. Symposium for National Science Foundation Research Experience for Undergraduates Interns, Annis Water Resources Institute (Grand Valley State University), “Transcriptome Data as a Source of Nuclear Genes for Phylogenetics in the Plant Genus *Aneilema*”
- 2015 **Crum, A.**, T. Nguyen. SEA-Phages symposium, HHMI Janelia Research Campus, “Genomic Analysis and Comparative Proteomics of Temperate Mycobacteriophages”

**Poster Presentations:**

- 2021 **Crum, A.**, Y. Yang. Botany 2021, Virtual, “Phylogenetic Distribution of Traditional Medicinal Use in Caryophyllales.”
- 2018 **Crum, A.**, T. Evans, and R. Faden. Botany 2018, Rochester, MN, “Phylogenetic analysis of the genus *Palisota* (Commelinaceae) using chloroplast and nuclear regions.”
- 2015 **Crum, A.**, Nguyen, T. SEA-Phages symposium, HHMI Janelia Research Campus, “Genomic Analysis and Comparative Proteomics of Temperate Mycobacteriophages”

<b>GRANTS/AWARDS</b>
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- 2019 Recruitment Fellowship, PMB Graduate Program, University of Minnesota (\$3,000)
- 2017 Presidential Research Grant, Grand Valley State University (\$1,500)
- 2016 National Science Foundation Research Experience for Undergraduates Intern, Annis Water Resources Institute, Grand Valley State University

<b>TEACHING EXPERIENCE</b>
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- 2022-present Graduate Teaching Assistant, PMB 2022-General Botany Lab Instructor, 35 students, PMB, University of Minnesota
- 2021 Guest Lecture, BIO 315-Plants, Food, and Medicine, 20 students, Biology Department, University of Saint Thomas
- 2020 Graduate Teaching Assistant, PMB 4321-Minnesota Flora, 46 students, PMB, University of Minnesota
- 2017-2019 Graduate Teaching Assistant, BIO 104 Lab – Biology for the 21<sup>st</sup> Century Lab Instructor, Biology Department, Grand Valley State University
- 2016-2017 Teaching Assistant, General, Organic, & Biochemistry and General Chemistry I Chemistry Department, The College of Saint Scholastica
- 2014-2017 Chemistry, Biology, and Physics Tutor, TRIO Student Support Services, The College of Saint Scholastica (Lead Tutor, 2016-2017)

<b>MENTORING EXPERIENCE</b>	
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| 2022-present | Annika Smeenck, Undergraduate student, University of Minnesota                                     |
| 2022         | Adiel Andino-Acevedo, Undergraduate student through SOAR-REEU, University of Puerto Rico at Utuado |
| 2020-present | Mentor, Field Guides Mentoring, University of Minnesota  |

<b>SERVICE AND OUTREACH</b>	
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| 2022-present | Science Communication Fellow, College of Biological Sciences, University of Minnesota (10 hours/month)  |
| 2022         | Session Leader, Market Science, Midtown Farmer's Market   |
| 2021-present | President, Phytograds Executive Board (8-10 hours/month) PMB Biology Graduate Program, University of Minnesota  |
| 2021         | Botany Bus Activity Leader, Webster Elementary, Minneapolis   |
| 2021         | Session Leader, Market Science, Richfield Farmer's Market   |
| 2021         | <b>Crum, A.</b> Breaking the Ice by Plunging Into a Puddle: How I learned to embrace embarrassment in science. CBS Bioline. <a href="https://cbs.umn.edu/blogs/bioline">https://cbs.umn.edu/blogs/bioline</a> . |
| 2020         | Inclusive Science Education Fellow, CBS, University of Minnesota  |
| 2019         | Advisor to senior capstone students at Upper Mississippi Academy, St. Paul MN   |

<b>PROFESSIONAL MEMBERSHIPS</b>	
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| 2019-present | Botanical Society of America |
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