Rachel R. Hiles

Research Assistant/Ph.D. Student
Purdue University
Department of Botany and Plant Pathology
Iyer-Pascuzzi Lab
rhiles@purdue.edu · @rhiles06

EDUCATION

2017-Present
Ph.D. Botany and Plant Pathology
Purdue University, West Lafayette IN

2014-2017
B.S. Degree General Biology
Gannon University, Erie PA

RESEARCH EXPERIENCE

2017- Present
Graduate Research Assistant
Dept of Botany and Plant Pathology, Purdue University
Determining the function of *Ralstonia solanacearum* K60 type III effectors in tomato

2016-2017
Undergraduate Researcher
Gannon University, Erie, PA
Investigation of the effects of the bacterium *Pseudomonas nitroreducens* on rhizoid growth and sex determination the fern gametophytes *Ceratopteris richardii*

PUBLICATION

Michael T Ganger, Rachel Hiles, Haley Hallowell, Lauren Cooper, Nicole McAllister, Doug Youngdahl, Jeremy Alfieri, Sarah J Ewing, A soil bacterium alters sex determination and rhizoid development in gametophytes of the fern *Ceratopteris richardii*, *AoB PLANTS*, Volume 11, Issue 2, April 2019, plz012, https://doi.org/10.1093/aobpla/plz012

ORAL PRESENTATIONS

Hiles, R., D. Caldwell, and A. Iyer-Pascuzzi. 2019. The subcellular localization of *Ralstonia solanacearum* K60 type III effectors. West Virginia University, American Society of Plant Biologist (ASPB) Midwestern Regional Conference, Morgantown, WV.

Hiles, R., M.T. Ganger and S. Ewing. 2017. A *Pseudomonas* strain isolated from fern roots blocks male induction and alters gametophyte development in the fern *Ceratopteris richardii*. Penn State Behrend Sigma Xi Twenty-Sixth Annual

Undergraduate Research and Creative Accomplishment Conference, Erie, PA.

POSTER PRESENTATIONS

Hiles, R., Caldwell, D, and Iyer-Pascuzzi, A. 2019. The Subcellular Localization of *Ralstonia solanacearum* K60 Type III Effectors. Plant Health 2019: American Phytopathology Society. Huntington Convention Center, Cleveland OH.

Hiles, R., Caldwell, D, and Iyer-Pascuzzi, A. 2018. The Subcellular Localization of *Ralstonia solanacearum* K60 Type III Effectors. Research Showcase: Purdue University Department of Botany and Plant Pathology, West Lafayette, IN.

Hiles, R., and Iyer-Pascuzzi A. 2017. A Plan to Locate the Localization of Various Effectors in *Ralstonia solanacearum* K60 Strain in Tomato. Research Showcase: Purdue University Department of Botany and Plant Pathology, West Lafayette, IN.

Hiles, R., M.T. Ganger and S. Ewing. 2016. The soil bacterium *Pseudomonas nitroreducens* alters rhizoid growth in gametophytes of the fern *Ceratoperis richardii*. Penn State Behrend Sigma Xi Twenty-Fifth Annual Undergraduate Research and Creative Accomplishment Conference, Erie, PA.

Hiles, R., M.T. Ganger and S. Ewing. 2016. The Soil Bacterium *Pseudomonas nitroreducens* Affects Rhizoid Development and Blocks Induction in Gametophytes of the Fern *Ceratopteris richardii*. Allegheny Branch of the American Society of Microbiology meeting. Penn State Behrend, Erie, PA.

AWARDS AND GRANTS

2019
Center of Plant Biology Trainee Travel Award ($500.00)
Used to attend the American Phytopathology Society: Plant Health 2019

2019
ASPB Midwest Regional Conference Travel Award ($450.00)
Used to attend the American Society Plant Biology Midwestern Conference 2019

2016
Duratz Undergraduate Student Research Grant $128.80
Changes in gene expression associated with excess rhizoid production in gametophytes of the fern *Ceratopteris richardii*.

2016
Second Best Poster Presentation Award
Penn State Behrend Sigma Xi Twenty-Fifth Annual Undergraduate Research and Creative Accomplishment Conference.

SCIENTIFIC COMMUNITIES

2019-Present
Member of the American Society of Plant Biologists (ASPB)
Midwest Section Member

2019-Present
Member of the American Phytopathology Society (APS)
North Central Section Member

LEADERSHIP POSITIONS

2019-Present
Early Career Representative for ASPB Midwest Section

Summer 2018
Research Mentor

- For undergraduate student from Icesi University Cali, Colombia.
- Developed tomato hairy root system protocol for *R. solanacearum* K60 T3Es.
- Taught basic molecular biology techniques.
- Answered questions pertaining to the plant pathology field and graduate school.

2016-2017
Peer Mentor for ACE Pilot Program
Biology Department at Gannon University

- Assisted students in the Academic and Community Engagement (ACE) pilot program.
- Answered basic research questions and guide students through general questions about the biology major and time management skills.
- Lead students in constructing and completing a community project.
- Encouraged team building.