

# Garrett M. Nunn

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## Education

- Current      Ph.D., Biology, McMaster University  
Thesis:      Investigating the tangled and intertwined defense pathways of Age-Related Resistance and Systemic Acquired Resistance in the *Arabidopsis thaliana*-*Pseudomonas syringae* pv. *tomato* interaction (tentative title). Supervised by Dr. Robin K. Cameron.
- 2020      M.Sc., Biology, McMaster University  
Thesis:      Investigating Bacterial Growth/Biofilm Formation and the Plant Transcriptional Landscape in the *Arabidopsis*-*Pseudomonas syringae* pv. *tomato* Interaction. Supervised by Dr. Robin K. Cameron.
- 2018      B.Sc., Honours Molecular Biology and Genetics, McMaster University.

## Journal Articles

- In prep      **Nunn G.M.**, Belu N., Xiao W.N., Golding G.B., and Cameron R.K. Systemic Acquired Resistance signaling molecule N-hydroxypipicolinic acid is involved in Age-Related Resistance in *Arabidopsis*.
- 2024      Xiao W.N., **Nunn G.M.**, Fufeng A.B., Belu N., Brookman R.K., Halim A., Krysmanski E.C., and Cameron R.K. Exploring *Pseudomonas syringae* pv. *tomato* biofilm-like aggregate formation in susceptible and PTI-responding *Arabidopsis thaliana*. *Molecular Plant Pathology*, 2024, 25(1): e13403. Cover article. doi: 10.1111/mpp.13403.
- 2021      Belu N., Fufeng A.B., **Nunn G.M.**, Spelman R.M., Hirjikaka D., Martin M.B., Xiao N.X., Dhaliwal M., Dan-Dobre M., Summers H., Poleatewich A., and Cameron R.K. Systemic acquired resistance (SAR)-associated molecules induce resistance in lab- and greenhouse-grown cucumber. *Physiological and Molecular Plant Pathology*, 2021, 113: 101592. doi: 10.1016/j.pmpp.2020.101592.

## Conference Contributions (\*presenter)

- 2023      \*Belu N., Carella P., **Nunn G.M.**, Brookman R.K., and Cameron R.K. Validation of an estrogen-inducible Systemic Acquired Resistance (SAR) system for identifying proteins that interact with DIR1 during SAR. Canadian Society of Plant Biologists Eastern Regional Meeting 2023. Montreal, QC, Canada. Oral presentation.
- 2022      \***Nunn G.M.**, Belu N., and Cameron R.K. Bringing us together: Recent connections between Age-Related Resistance and Systemic Acquired Resistance. Canadian Society of Plant Biologists Eastern Regional Meeting 2022. Scarborough, ON, Canada. Oral Presentation.
- 2022      \*Belu N., Carella P., **Nunn G.M.**, Brookman R.K., and Cameron R.K. Identifying proteins that interact with DIR1 during Systemic Acquired Resistance (SAR)

using an estrogen-inducible SAR system and LC-MS/MS-based detection methods. Canadian Society of Plant Biologists Eastern Regional Meeting 2022. Scarborough, ON, Canada. Poster presentation.

- 2022 \*Cameron R.K., **Nunn G.M.**, and Belu N. Surprising links between Age-Related Resistance and Systemic Acquired Resistance. Plant Biology 2022. Portland, OR, USA. Plenary talk.
- 2022 \***Nunn G.M.**, Belu N., and Cameron R.K. New connections between Systemic Acquired Resistance and Age-Related Resistance. Plant Biology 2022. Portland, OR, USA. Poster presentation.
- 2022 \***Nunn G.M.**, Belu N., and Cameron R.K. Surprise! Systemic Acquired Resistance and Age-Related Resistance are not so different after all. McMaster Biology Graduate Research Day 2022. Virtual. Oral presentation.
- 2021 \***Nunn G.M.**, and Cameron R.K. Investigating common signaling components of Systemic Acquired Resistance and Age-Related Resistance in *Arabidopsis thaliana*. McMaster Biology Graduate Research Day 2021. Virtual. Oral presentation.
- 2020 \*Belu N., Fufeng A.B., **Nunn G.M.**, Xiao W.N., Martin M.B., and Cameron R.K. Weekly treatment with pipecolic acid induces Systemic Acquired Resistance in chamber-grown cucumber plants. Canadian Phytopathological Society Annual Meeting 2020. Virtual. Poster presentation.
- 2020 \***Nunn G.M.**, and Cameron R.K. Exploring the plant transcriptional landscape during Age-Related Resistance in the *Arabidopsis-Pseudomonas syringae* pv. *tomato* interaction. Canadian Society of Plant Biologists Virtual Meeting 2020. Virtual. Oral presentation.
- 2019 \*Belu N., Fufeng A.B., **Nunn G.M.**, Xiao W.N., Martin M.B., and Cameron R.K. Weekly treatment with pipecolic acid induces resistance in treated and untreated neighbouring cucumber plants. Canadian Society of Plant Biologists Eastern Regional Meeting 2019. St. Catherines, ON, Canada. Poster presentation.
- 2019 \***Nunn G.M.**, Fufeng A.B., Xiao W.N., Halim A., and Cameron R.K. Biofilm formation contributes to *Pseudomonas syringae* pv. *tomato* success and suppression of biofilm formation is important for PAMP-Triggered Immunity in *Arabidopsis*. Plant Canada 2019. Guelph, ON, Canada. Oral presentation.
- 2019 \***Nunn G.M.**, and Cameron R.K. Exploring the role of alginate in protecting *Pseudomonas syringae* from plant defense. McMaster Biology Graduate Research Day 2019. Hamilton, ON, Canada. Three-minute thesis.
- 2018 \*Fufeng A., Xiao N.W., **Nunn G.M.**, Halim A., Philip H.M., and Cameron R.K. Biofilm formation by *Pseudomonas syringae* pv. *tomato* is correlated with bacterial success and is reduced in *Arabidopsis* plants undergoing PAMP-Triggered Immunity. Canadian Society of Plant Biologists Eastern Regional Meeting 2018. London, ON, Canada. Oral presentation.

## Invited Talks

- 2024 “Investigating the tangled and intertwined defense signaling pathways of Systemic Acquired Resistance and Age-Related Resistance”. Hosted by the Biology Seminar Series, Department of Biology, McMaster University. March 21, 2024.
- 2023 “Exploring the role of salicylic acid during infection of *Arabidopsis* with the bacterial pathogen *Pseudomonas syringae*”. Hosted by the BEAP (Bioinformatics, Evolution, Anthropology and Population Genetics) seminar series, Department of Biology, McMaster University. September 20, 2023.
- 2023 “Exploring the role of the NPR protein family in Age-Related Resistance”. Hosted by the BEAP (Bioinformatics, Evolution, Anthropology and Population Genetics) seminar series, Department of Biology, McMaster University. March 1, 2023.
- 2022 “The intricacies of plant defense”. Hosted by the Oakville Horticultural Society. October 17, 2022.
- 2021 “New insights into the Age-Related Resistance signaling pathways of *Arabidopsis thaliana*”. Hosted by the BEAP (Bioinformatics, Evolution, Anthropology and Population Genetics) seminar series, Department of Biology, McMaster University. October 8, 2021.

### Teaching Experience

- 2018-Present **Teaching assistant, Department of Biology, McMaster University**  
 Plant Biology and Biotechnology. Biology 2D03. Lab instructor. (Fall 2018, Fall 2021, Fall 2022, Fall 2023).  
 Plant Physiology. Biology 3B03. Lab instructor. (Winter 2019, Winter 2020, Winter 2022, Winter 2023).  
 Introduction to Microbiology and Biotechnology. Biology 2EE3. Lab instructor. (Fall 2019, Winter 2021)  
 Plant Metabolism and Molecular Biology. Molecular Biology 4BB3. Tutorial instructor. (Fall 2020)  
 Biodiversity, Evolution and Humanity. Biology 1M03. Virtual lab and tutorial instructor. (Spring/summer 2021)

### Community Involvement & Volunteer Experience

- 2020-Present Member, Equity Diversity Inclusivity Indigeneity Committee, Department of Biology, McMaster University.
- 2018-2023 Lab instructor, Let’s Talk Science Plant Molecular Workshop.
- 2019 Graduate student representative, Biology Undergraduate Curriculum Committee, Department of Biology, McMaster University.

### Honours & Awards

- 2024 McMaster Department of Biology Graduate Student Achievement Award. Outstanding Teaching Assistant Award. \$350.
- 2022 McMaster Department of Biology Travel Scholarship. \$750.

- 2022 CSPB-SCBV Duff Travel Award. \$100.
- 2022 McMaster Biology Graduate Research Day Plant Biology and Microbiology Talk Award. \$250.
- 2021 Oakville Horticultural Society Scholarship. \$1,000.