

Nicholas Morffy
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CURRENT POSITION

2018 – Postdoctoral Scientist. Mentor: Lucia C. Strader. Department of Biology.
Duke University, Durham, NC.

EDUCATION

2013 – 2018 Ph.D. in Genetics. Major Professor: David C. Nelson. Department of Genetics.
University of Georgia, Athens, GA.
2007 – 2011 B.S. in Biology. University of Florida, Gainesville, FL.

CURRENT FUNDING

2019 NSF Postdoctoral Research Fellowship in Biology (4 years)

AWARDS AND HONORS

2019 Danforth Seed Grant – Washington University in St. Louis
2017 Department of Genetics Travel Award – University of Georgia
2016 Mote Fellowship – Department of Genetics, University of Georgia
2016 Poster Award – International Plant Growth Substances Association Conference
2015 NIH T32 Training Grant – Department of Genetics, University of Georgia
2015 Honorable Mention – NSF Graduate Research Fellowship Program
2015 Honorable Mention – National Academies Ford Fellowship Program
2014 Graduate Research Opportunity Fellowship – University of Georgia

PUBLICATIONS

Mahatma S, Van den Broeck L, **Morffy N**, Staller MV, Strader LC, Sozzani R. Prediction and functional characterization of transcriptional activation domains. *2023 57th Annual Conference on Information Sciences and Systems (CISS)*. 2023; 2023 57th Annual Conference on Information Sciences and Systems(CISS) 1-6.
doi:10.1109/ciss56502.2023.10089768.

Kuan C, Strader LC, **Morffy N**. ARF19 Condensation in the Arabidopsis Stomatal Lineage. *MicroPubl Biol*. 2023; 2023 doi:10.17912/micropub.biology.000708. PubMed PMID: 36814574. PMCID: PMC9939949.

Jing H, Korasick DA, Emenecker RJ et al. Regulation of AUXIN RESPONSE FACTOR condensation and nucleo-cytoplasmic partitioning. *Nat Commun*. 2022; 13(1) 4015.
doi:10.1038/s41467-022-31628-2. PubMed PMID: 35817767. PMCID: PMC9273615.

Morffy N, Strader LC. Structural Aspects of Auxin Signaling. *Cold Spring Harb Perspect Biol*. 2022; 14(1) a039883. doi:10.1101/cshperspect.a039883. PubMed PMID: 34001533. PMCID: PMC8725629.

Yoo CY, He J, Sang Q et al. Direct photoresponsive inhibition of a p53-like transcription activation domain in PIF3 by Arabidopsis phytochrome B. *Nat Commun*. 2021; 12(1) 5614. doi:10.1038/s41467-021-25909-5. PubMed PMID: 34556672. PMCID: PMC8460787.

- Morffy N**, Strader LC. Plant promoter-proximal pausing. *Nat Plants*. 2021; 7(7) 862-863. doi:10.1038/s41477-021-00970-6. PubMed PMID: 34211133.
- Morffy N**, Strader LC. Structural Aspects of Auxin Signaling. *Cold Spring Harb Perspect Biol*. 2021; a039883. doi:10.1101/cshperspect.a039883.
- Khosla A, **Morffy N**, Li Q et al. Structure-Function Analysis of SMAX1 Reveals Domains That Mediate Its Karrikin-Induced Proteolysis and Interaction with the Receptor KAI2. *Plant Cell*. 2020; 32(8) 2639-2659. doi:10.1105/tpc.19.00752.
- Morffy N**, Strader LC. Old Town Roads: routes of auxin biosynthesis across kingdoms. *Curr Opin Plant Biol*. 2020; 55 21-27. doi:10.1016/j.pbi.2020.02.002.
- Morffy NJ**, Strader LC. Locally Sourced: Auxin Biosynthesis and Transport in the Root Meristem. *Developmental Cell*. 2018; 47(3) 262-264. doi:10.1016/j.devcel.2018.10.018.
- Morffy N**, Faure L, Nelson DC. Smoke and Hormone Mirrors: Action and Evolution of Karrikin and Strigolactone Signaling. *Trends Genet*. 2016; 32(3) 176-188. doi:10.1016/j.tig.2016.01.002.
- Stanga JP, **Morffy N**, Nelson DC. Functional redundancy in the control of seedling growth by the karrikin signaling pathway. *Planta*. 2016; 243(6) 1397-1406. doi:10.1007/s00425-015-2458-2.
- Soundappan I, Bennett T, **Morffy N** et al. SMAX1-LIKE/D53 Family Members Enable Distinct MAX2-Dependent Responses to Strigolactones and Karrikins in Arabidopsis. *Plant Cell*. 2015; 27(11) 3143-3159. doi:10.1105/tpc.15.00562.
- Cukras S, **Morffy N**, Ohn T, Kee Y. Inactivating UBE2M impacts the DNA damage response and genome integrity involving multiple cullin ligases. *PLoS One*. 2014; 9(7) e101844. doi:10.1371/journal.pone.0101844.
- Washington PM, **Morffy N**, Parsadanian M, Zapple DN, Burns MP. Experimental traumatic brain injury induces rapid aggregation and oligomerization of amyloid-beta in an Alzheimer's disease mouse model. *J Neurotrauma*. 2014; 31(1) 125-134. doi:10.1089/neu.2013.3017.

ORAL PRESENTATIONS

- 2023 – Identifying and Characterizing Transcriptional Activation Domains in *Arabidopsis thaliana*. Plant and Animal Genome Conference 2023. San Diego, CA.
- 2022 – Identifying Transcriptional Activation Domains in the AUXIN RESPONSE FACTORS. Auxin 2022. Cavtat, Croatia.
- 2021 – A High-Throughput Screen for Identifying ARF Transcriptional Activation Domains. National Plant Genome Initiative Postdoctoral Award Meeting. Washington, DC.
- 2021 – A High-Throughput Screen for Identifying ARF Transcriptional Activation Domains. IDPSIG and Friends Seminar Series.
- 2021 – A High-Throughput Screen for Identifying ARF Transcriptional Activation Domains. Washington University in St. Louis Department of Biochemistry and Biophysics Science Friday Seminar Series.

- 2020 – The Effects of ARF Stability and Localization on Auxin Signaling. Max Planck Institute of Molecular Plant Physiology Summer Series.
- 2019 – The Contribution of AUXIN RESPONSE FACTOR Dimerization to DNA-Binding. National Plant Genome Initiative Award Meeting. Washington, DC.
- 2019 – The Effects of ARF Stability and Localization on Auxin Signaling. Washington University in St. Louis Plant and Microbial Bioscience Seminar.
- 2018 – Investigating the Contribution of the ARF PB1 Domain to DNA-binding Specificity. Washington University in St. Louis Bioforum.
- 2017 – Understanding the Function of SMAX1 in Karrikin Signaling. Washington University in St. Louis Postdoctoral Interview Seminar.
- 2017 – Investigating Karrikin Signaling Specificity. University of Georgia Plant Functional Genomics Group. February

POSTER PRESENTATIONS

- Morffy N.**, Staller M., & Strader L. A high-throughput screen identifies conserved transcriptional activation domains in a family of plant transcription factors. Systems Biology: Global Regulation of Gene Expression. Cold Spring Harbor, NY. March 2022.
- Morffy N** & Strader L. The Contribution of AUXIN RESPONSE FACTOR Dimerization to DNA-Binding. National Plant Genome Initiative Award Meeting. Washington, DC. September 2019
- Morffy N.**, Jing H., Korasick D. & Strader L. A Mutant Screen for Identifying Factors that Regulate AUXIN RESPONSE FACTOR 19 Stability. International Plant Growth Substances Conference. Paris, France. June 2019
- Morffy N.**, Faure L., Khosala A., Kapoor S. & Nelson D. C. Investigating SMAX1 Degradation in the Karrikin Signaling Pathway. International Conference of Arabidopsis Research. St. Louis, MO. June 2017.
- Morffy N.**, Kapoor S. & Nelson D. C. Investigating Signal Transduction Specificity in Karrikin and Strigolactone Signaling. International Plant Growth Substances Conference. Toronto, Canada. June 2016.
- Morffy N.**, Stanga J. P. & Nelson D. C. Investigating the Role of TOPLESS Protein Interactions in Karrikin Signaling and Seed Germination in Arabidopsis thaliana. American Society of Plant Biologists National Meeting. Portland, OR. July 2014.

TEACHING

- 2021 Guest Lecture on Applied Technologies in Genetic Research – Berry College BIO304 (Genetics)
- 2019 Guest Lecture on Protein Structure for Protein Function in Model Cellular System – WUSTL
- 2018 Guest Lecture on Plant Tissue Mechanics for Integrative Plant and Animal Mechanobiology – WUSTL
- 2017 Teaching Assistant for GENE3200 (Genetics) – UGA

MENTORING

- 2021 – 2023 Grace Chow – Duke Undergraduate Research Mentor

- 2021 Mrunmayee Ramteke – Científico Latino GSMI Scholar program
- 2019 Cydne Ratliff – NSF Center for Engineering and Mechanobiology REU Mentor, WUSL
- 2017 – 2018 Tiffany Yee – Undergraduate Research Mentor, UGA Genetics
- 2017 Kitra Cates – Undergraduate Thesis Mentor, UGA Genetics
- 2016 Suraj Kapoor – Undergraduate Research Mentor, UGA Genetics
- 2016 Aakash Patel – Undergraduate Plant Center Retreat Poster Mentor, UGA
- 2014 Jeremy Ray – Undergraduate Plant Center Retreat Poster Mentor, UGA

SERVICE AND OUTREACH

- 2020 – 2021 Duke Post-doctoral Biology Department Seminar Series Founding Committee Member
- 2013 – 2016 UGA LSAMP Board Member for careers in STEM (Research Representative)
- 2013 – 2016 UGA LSAMP Student Mentor UGA
- 2014 – 2015 UGA Genetics Graduate Student Association Co-President

OTHER RESEARCH EXPERIENCE

- 2012 – 2013 Laboratory Technician. PI: Dr. Younghoon Kee. Department of Cell Biology, Microbiology, and Molecular Biology. University of South Florida. Tampa, FL.
- 2011 – 2012 Laboratory Technician. PI: Dr. Mark P. Burns. Department of Neuroscience. Georgetown University. Washington, DC.

FURTHER TRAINING

- 2021 Best Practices in Mentoring – Duke Winter Graduate Academy
- 2014 Confocal Microscopy Training – UGA Biomedical Microscopy Core
- 2014 Galaxy Workshop – UGA Institute of Bioinformatics
- 2014 Biostatistics – UGA Department of Epidemiology and Biostatistics
- 2013 Introduction to Bioinformatics – UGA Institute of Bioinformatics
- 2012 Flow Cytometry Training – USF Medical Core Facility