

Estefania Tavares Flores, Ph.D. Student

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English: proficient • Spanish: proficient

Education

- **Ph.D. degree** in Plant Breeding (August 2021 – present)
Advisor: Dr. Patricio Muñoz
Blueberry Breeding Program & Horticulture Sciences Dept., IFAS
University of Florida | Gainesville, FL 32611
- **Master's degree** in Genetics and Developmental Biology (January 2019 – July 2021)
Thesis: Traditional and modern breeding strategies towards developing resilient crops: Two case studies in tomato
Advisor: Dr. Vagner A. Benedito
Division of Plant and Soil Sciences
West Virginia University | Morgantown, WV 26506 USA
- **Bachelor's degree** in Biochemical Engineering (2013 – 2018)
Thesis: From an immune system to a genome editing tool: CRISPR-Cas9
Advisor: Dr. Nagamani Balagurusamy.
Faculty of Biological Sciences
Autonomous University of Coahuila | Torreon, Coah. Mexico.

Professional Experience

- Graduate Research Assistant (August 2021 – present)
University of Florida
Plant Breeding Program | Horticulture Sciences Dept. | IFAS
2211 Fifield Hall
Gainesville, FL 32607 USA.
- *Graduate Research Assistant* (January 2019 – July 2021)
West Virginia University
Division of Plant and Soil Sciences
3425 New Agricultural Sciences Building, Evansdale Campus
Morgantown, WV 26506 USA.
Application of CRISPR/Cas9 genome editing in tomato for crop breeding and crop improvement.
- *Research Assistant in Genetic Human Traits* (January 2017 – January 2019)
Institute of Medicine and Genomics Sciences
Department of Bioinformatics
1822 Juarez Av. Torreon, Coahuila. 27000 Mexico.
Analysis of human genomic data for developing of a bioinformatic tool focused on precision medicine.
- *Head of Food Biotechnology Laboratory* (August 2015 – January 2017)
HAGO Molecular Laboratory
Division of Biotechnology
1755 Juarez Av. Torreon, Coahuila. 27000 Mexico.
Pipeline design for molecular detection of pathogens in food using molecular biology strategies.
- *Research Assistant at a Molecular Diagnosis Laboratory* (August 2015 – January 2017)
HAGO Molecular Laboratory
Department of Molecular Diagnostics
Laboratory assistant in molecular diagnosis of human diseases.
- *Undergraduate Research Assistant* (October 2014 – May 2015)
Department of Molecular Biology and Genetics
Biomedical Research Center, School of Medicine.
Autonomous University of Coahuila
900 Morelos Av. Torreon, Coahuila, 27000 Mexico.
Undergraduate research and teacher assistant supporting graduate research focused on breast cancer.

Professional Training

- Introduction to Probability and Data. *Duke University*, 2020. (online, 5 weeks)
- Basic Python Workshop. *West Virginia University*, 2020. (16 hours)

- Basic R Workshop. *West Virginia University*, 2019. (16 hours)
- Plant Biochemistry. *Autonomous University of Coahuila*, 2017. (45 hours)
- Summer of Science, *National Autonomous University of Mexico*, 2016. (1-month training)
- 48th Theoretical-Practical Course on Human Genetics. *National Autonomous University of Mexico*, 2016. (60 hours)
- Dynamic Analysis of Kinetic Reactions for Biology Systems. *Autonomous University of Coahuila*, 2015. (45 hours)
- Frontiers in Biotechnology. *Autonomous University of Coahuila*, 2015. (50 hours)
- Genes and the Human Condition (From Behavior to Biotechnology). *University of Maryland*, 2014. (online, 6 weeks)

Oral Presentations

- **Estefania Tavares Flores**, Renan T. Pinto, Dharshini S. Kandan, Lazaro E. P. Peres, Vagner A. Benedito. *De novo* domestication of *Solanum cheesmaniae* via CRISPR/Cas9 gene editing: Alleviating the water demands for tomato breeding. Presented at: Corteva-PBGB Symposium - Gene Editing To Advance Plant Breeding - Short Talk Competition; December 10 - 11th, 2020; Michigan State University; online.
- **Estefania Tavares Flores**, Renan T. Pinto, Dharshini S. Kandan, Lazaro E. P. Peres, Vagner A. Benedito. Genome editing of *Solanum cheesmaniae* via CRISPR/Cas9: *De novo* domestication to harness salinity resistance. Presented at: the 9th Annual Cornell University Graduate Student Plant Breeding Symposium: Bringing Back Biodiversity; April 17th, 2020; Cornell University; online.
- **Estefania Tavares Flores**, M. M. Rahman, M. E. Gallegly, Vagner A. Benedito. Introgression of *Septoria* leaf spot resistance from wild species into local WV tomato cultivars by embryo rescue. Presented at: Potomac Division Annual Meeting of American Phytopathological Society; March 12 – 13th, 2020; online.

Poster Presentations

- **Estefania Tavares Flores**, Renan T. Pinto, Dharshini S. Kandan, Lazaro E. P. Peres, Vagner A. Benedito. Harnessing salinity tolerance from a wild tomato species via CRISPR-Cas9 genome editing: *De novo* domestication of *Solanum cheesmaniae*. Poster presented at: Plant Biology meeting by ASPB; 2021 July 19th - 23th; online.
- **Estefania Tavares Flores**, Renan T. Pinto, Dharshini S. Kandan, Lazaro E. P. Peres, Vagner A. Benedito. *De novo* domestication of *Solanum cheesmaniae* via CRISPR/Cas9 gene editing: A *proof-of-concept* study to alleviate water demands of the tomato crop. Poster presented at: *Solenaceae* International meeting; 2020 November 9th – 11th; online.
- **Estefania Tavares Flores**, Renan T. Pinto, Dharshini S. Kandan, Lazaro E. P. Peres, Vagner A. Benedito. *De novo* domestication of *Solanum cheesmaniae* via CRISPR-Cas9: Harnessing abiotic resistance from the wild. Poster presented at: The 2020 Annual Meeting of the National Association of Plant Breeders; 2020 August 16 - 20; online.
- **Estefania Tavares Flores**, Renan T. Pinto, Dharshini S. Kandan, Lazaro E. P. Peres, Vagner A. Benedito. Harnessing salinity resistance from a wild tomato species via CRISPR-Cas9: *De novo* domestication of *Solanum cheesmaniae*. Poster presented at: Plant Biology 2020. Annual Meeting of the American Society of Plant Biologists; 2020 July 27 – 31; online.
- **Estefania Tavares Flores**, Renan T. Pinto, Lazaro E. P. Peres, Vagner A. Benedito. *De novo* domestication of *Solanum cheesmaniae* by genome editing via CRISPR/Cas9: Harnessing salinity tolerance from a wild tomato species. 2019; Poster presented at: International *Solanaceae* Conference; 2019 November 9th – 11th; Jerusalem, Israel.
- **Estefania Tavares Flores**, Renan T. Pinto, Lazaro E. P. Peres, Vagner A. Benedito. *De novo* domestication of *Solanum cheesmaniae* by genome editing via CRISPR/Cas9: Harnessing tolerance from a wild tomato species. Poster presented at: Annual Meeting of the American Society of Plant Biologists - Midwestern Section; 2019, March 16 – 17. Morgantown, West Virginia.
- **Estefania Tavares Flores**, M. M. Rahman, M. E. Gallegly, Vagner A. Benedito. Introgression of *Septoria* leaf spot resistance from wild species into local WV tomato cultivars by embryo rescue. Poster presented at: Davis College Graduate Research and Creative Scholarship Day; 2019, March 26th. Morgantown, West Virginia.
- **Estefania Tavares Flores**, Isaac Montenegro-Nares. From CRISPR immunity to the new age of genome editing: CRISPR/Cas9 technology. Poster presented at: International Conference of Medicine: Century 21st; 2017, March 2 – 4th. Torreon, Coahuila, Mexico.

Awards/Honors/Fellowships

- 2nd place at the Graduate Student Short-Talk Competition from the PBGB Research Symposium, *Michigan State University*. December 11th, 2020
- Summer Studentship - Global Burden of Crop Loss. *Commonwealth Agricultural Bureaux International*, 2020.
- Travel Grant for Plant Biology 2020. *American Society of Plant Biologists*. 2020.
- *Carl del Signore* Foundation Graduate Scholarship. *West Virginia University*. Spring 2020.
- Farm Credit Graduate Credit Student Travel Fund. *West Virginia University*. 2019-2020.

Professional Affiliations

- Active member of *American Society of Plant Biologists*. 2019-2020.
- Active member of *National Association of Plant Breeders*. 2019-2020.

Mentoring

Undergraduate students:

- Rachel Deery (Fall 2019 – Spring 2021)
- Emily Duckworth (Fall 2020 – Summer 2021)

References

Dr. Patricio Muñoz
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Dr. Vagner A. Benedito
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Division of Plant and Soil Sciences
West Virginia University
Morgantown, WV, US.
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Dr. Nagamani Balagurusamy
Professor
Bioremediation Lab
Autonomous University of Coahuila
Torreon, Coahuila, Mexico.
bnagas@gmail.com