

# DOTUN OLAOYE

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## SUMMARY

A solution driven scientist with more than 3 years of professional experience in disease trait discovery and evaluation within the academic, international research institute and industry setting. I combine skills in plant breeding, genetics/genomics, pathology and data analytics in delivering results to achieve goals towards food security.

## EDUCATION

- ✚ **Master of Science** – Plant Breeding, Genetics and Pathology.  
University of Arkansas, Fayetteville. USA **May 2021**
- ✚ **Bachelor of Agriculture** (Honor's: Crop Protection/Pathology)  
Federal University of Agriculture, Abeokuta. Nigeria. **2017**

## SELECTED AWARD/HONORS

- ✚ **Society Conference Travel Grant Award (\$350)** – Annual International Meeting (**American Society for Horticultural Science, ASHS**), Orlando, Florida. U.S.A **2020**
- ✚ **Two times Graduate School Travel Grant Award (\$600)** – Annual International Crop Science Meeting (**ASA, CSSA, SSSA**), San Antonio, Texas. U.S.A **2019**; Annual International Meeting (**American Society for Horticultural Science, ASHS**) **2020**
- ✚ **Plant Health and Quality Summer School Scholarship (€1200)** – Campus Vegetal of Angers, Université Angers, France **24/06/2019 – 12/07/2019**
- ✚ **Graduate Research Assistantship** (USDA-funded) for Master of Science degree **2019**

## LABORATORY/BENCH SKILLS

Microscopic investigation, serial dilution, isolation and purification of pathogens; (bacteria, fungi, virus and nematodes), maintenance of pathogen isolate/culture, Mycotoxin (Aflatoxin and Fumonisin) extraction and quantification, ELISA, Nucleic Acid (DNA and RNA) extraction and purification, Spectrophotometry, PCR, Gel electrophoresis,

## FIELD/GREENHOUSE/LABORATORY EXPERIENCE

- ✚ Production of high-quality inoculum for disease assays including those for soybean and snap bean
- ✚ Experience conducting disease assays and phenotyping for resistance to major diseases of field corn, sweetcorn, soybean and snap bean in the field and greenhouse within Syngenta.
- ✚ Standardization of disease assay protocols
- ✚ Experience with crop (soybean, maize, hemp, spinach, cowpea, common bean and arugula) breeding efforts in the greenhouse/field.
- ✚ Phenotypic (disease) data collection and analysis

- ✚ Genetic analysis (marker-trait association analysis) including QTL mapping and genomic prediction
- ✚ Report writing on funded projects

## PROFESSIONAL EXPERIENCE (within Syngenta)

- ✚ Experience with planning and implementation of pathology research trials on field corn within Trait Assessment, North America. Syngenta
- ✚ Contributes to disease trait evaluation efforts on field corn, sweetcorn, soybean and snap bean for product advancement within Syngenta
- ✚ Moderate user of **SPIRIT** platform within Syngenta
- ✚ Experience with the adoption of **data collection tool (EZCapture)** for research trials within Syngenta
- ✚ Familiar with sourcing and managing seed materials via **MINT** platform within Syngenta
- ✚ Experience with **Benchling** platform for trial record keeping purposes
- ✚ Serves as member on **Market Segment Teams** for Field Corn pathology traits in North America.
- ✚ Provide support/technical expertise for teams (Crop Protection) on pathology efforts.
- ✚ Work in compliance with HSE and/or stewardship policies of the company

## WORK/RESEARCH EXPERIENCE

- ✚ **Pathology Research Specialist:** Pathology Unit.  
Trait Assessment, North America. Syngenta **May 2021 - Present**
- ✚ **Program Technician:** Vegetable Breeding and Genetic Laboratory. Department of Horticulture.  
University of Arkansas, Fayetteville. Arkansas. USA. **April 2021 – May 2021**
- ✚ **Graduate Research Assistant:** Spinach breeding and genetics for downy mildew resistance. University of  
Arkansas, Fayetteville. Arkansas. USA. **January 2019 – April 2021**
- ✚ **Laboratory Assistant:** (Plant Pathology unit under Dr. Ortega-Beltran Alejandro) International Institute of  
Tropical Agriculture, IITA-CGIAR. Ibadan. Nigeria. **November 2018 – 18<sup>th</sup> January 2019**
- ✚ **Graduate Research Unpaid Internship:** (Plant Pathology Laboratory under Dr. Ortega-Beltran Alejandro),  
**International Institute of Tropical Agriculture, IITA.** Ibadan. Nigeria. **June 2018 – November 2018**
- ✚ **Undergraduate Research Assistantship:** Breeding and Evaluation of Tomato genotypes against Fusarium  
Wilt – British Research Council (DfID)-funded – investigated by my undergraduate thesis advisor,  
**June 2015 – October 2016**

## JOURNAL PUBLICATION (or in preparation)

- ✚ **First author:** Association analysis of resistance to the downy mildew pathogen race 5 in spinach  
worldwide germplasm (manuscript under preparation for journal submission to *Frontiers in Plant Science*)
- ✚ **First author:** Resistance characterization to races of the downy mildew pathogen of spinach (manuscript  
under preparation for journal submission to *Euphytica*)
- ✚ **First author:** Transcript and proteome profiling for drought tolerance in common bean (manuscript under  
preparation for journal submission to *Horticulture Research*)

- ✚ **MS Thesis:** Olaoye, D. (2021). Resistance Screening and Association Mapping for Resistance to the Downy Mildew Pathogen of Spinach. Graduate Theses and Dissertations Retrieved from <https://scholarworks.uark.edu/etd/4107>
- ✚ Bhattarai, G., D. Olaoye, B. Mou, J. C. Correll, A. Shi. 2022. Mapping and selection of downy mildew resistance locus RPF3 in spinach by low coverage whole genome sequencing. *Front. Plant Sci.* (under review).
- ✚ Zia, B, A. Shi, D. Olaoye, H. Xiong, W. Ravelombola, P. Gepts, H.F. Schwartz, M.A. Brick, K. Otto, B. Ogg, and S. Chen. 2022. Genome-wide association study and genomic prediction for bacterial wilt resistance in common bean (*Phaseolus vulgaris*) core collection. *Front. Genet.* <https://doi.org/10.3389/fgene.2022.853114>
- ✚ Ravelombola, W., Shi, A., Huynh, B.L., Qin, J., Xiong, H., Manley, A., Dong, L., Olaoye, D., Bhattarai, G., Zia, B. and Alshaya, H., 2022. Genetic architecture of salt tolerance in a Multi-Parent Advanced Generation Inter-Cross (MAGIC) cowpea population. *BMC genomics*, 23(1), pp.1-22.
- ✚ Ravelombola, W., Dong, L., Barickman, T.C., Xiong, H., Olaoye, D., Bhattarai, G., Zia, B., Alshaya, H., Alatawi, I. and Shi, A., 2021. Evaluation of salt tolerance in cowpea at seedling stage. *Euphytica*, 217(6), pp.1-20.
- ✚ Ravelombola, W., Shi, A., Chen, S., Xiong, H., Yang, Y., Cui, Q., Olaoye, D. and Mou, B., (2020). Evaluation of cowpea for drought tolerance at seedling stage. *Euphytica*, 216(8), pp.1-19.
- ✚ Yang, Y., Shi, D., Wang, Y., Zhang, L., Chen, X., Yang, X. ... & Yang, G. (2020). Transcript profiling for regulation of sweet potato skin color in Sushu8 and its mutant Zhengshu20. *Plant Physiology and Biochemistry*, 148, 1-9.

## CONFERENCE ARTICLES/PRESENTATION

- ✚ **Presenter:** Olaoye, D., Bhattarai, G., Feng, C., Correll, J. C., & Shi, A. (2020, August). Evaluation of Resistance to *Pfs* race 5 in Worldwide Spinach Collection. In *2020 ASHS Annual Conference*. ASHS.
- ✚ **Presenter:** Olaoye, D., Shi, A., Ravelombola, W. S., Bhattarai, G., & Xiong, H. (2020, August). Drought Tolerance Characterization in two Contrasting Common Bean Genotypes. In *2020 ASHS Annual Conference*. ASHS.
- ✚ **Presenter:** Olaoye, D., Bhattarai, G., Feng, C., Shi, A., & Correll, J. (2019, November). Evaluation of Incomplete Dominance in a Spinach Downy Mildew Resistance Locus. In *ASA, CSSA and SSSA International Annual Meetings (2019)*. ASA-CSSA-SSSA.
- ✚ **Co-author** - Yang, Y., Cui, Q., Qin, J., Ravelombola, W., Bhattarai, G., Zia, B., ... & Shi, A. (2019, November). Evaluation of Drought Tolerance in Common Bean at Seedling Stage. In *ASA, CSSA and SSSA International Annual Meetings (2019)*. ASA, CSSA, and SSSA.
- ✚ **Co-author** - Effect of Exogenous Application of Plant Growth Regulator in the Control of *Fusarium oxysporum*. F. sp. *lycopersici* using two Tomato Genotypes - International conference of the Biotechnology Society of Nigeria, 2018

- ✚ **Co-author** - CAPS Marker *TAOI* and Endonuclease *FOK1* in the Selection of Tomato Genotypes with Homozygous *I2* Resistance Gene to *Fusarium* Wilt - International conference of the Biotechnology Society of Nigeria, 2018

## WORKSHOP/TRAINING ATTENDED

- ✚ **5<sup>th</sup> Annual Meeting of the Arkansas Bioinformatics Consortium** (AR-BIC 2019) Bioinformatics in Food and Agriculture - UAMS, Little Rock, AR **February 25 – 26, 2019**
- ✚ **Molecular biology workshop**, Inqaba Biotec West Africa, University of Ibadan. **April 2018**

## PROFESSIONAL EXPERIENCE AND MEMBERSHIP

- ✚ **Former Graduate student member:** American Society of Horticultural Science; American Society of Agronomy; Crop Science Society of America; Soil Science Society of America
- ✚ **Adhoc reviewer:** *Agrosystems, Geosciences & Environment; Nigerian Journal of Biotechnology*
- ✚ **Provided preliminary reviews** (as a graduate student lab member with Dr. Jim Correll – Editor-in-Chief) on three papers for the journal, *Crop Protection*.
- ✚ **Provided reviews on three articles** (*Nigerian Journal of Biotechnology*)
- ✚ **Served as Ad-hoc Secretary for the Vigna spp USDA's CGC** at the Annual international Crop Science Meeting held at Texas, USA. **11/12/19**
- ✚ **Mentored a bachelor's student on manuscript preparation and publication** (See comment in acknowledgement section via this link <https://doi.org/10.1080/03235408.2020.1715756>)

## GENOMIC/STATISTICAL ANALYTICAL PROFICIENCY

- ✚ **Experience working with sequence data**
- ✚ **Moderate skills in bioinformatics/genomic tools and database mining**  
Tools includes: R, Python, SAS, JMP, GATK Packages, JOINMAP, QTL analytical softwares, sequence analytical software/tools (TASSEL, MEGA, FARMCPU, GAPIT & BLINK), genomic selection models implemented in R.

## SELECTED LEADERSHIP ROLE/VOLUNTEERING

- ✚ **Judge – Agronomy and Horticulture 4-H program. University of Minnesota.** **July, 2022**
- ✚ **Member and volunteer**, African Student Organization, University of Arkansas, Fayetteville. U.S.A **2019-21**
- ✚ **Volunteer member**, Volunteer Action Center, Fayetteville, Arkansas **2019 – 2021**

## REFEREES

Available upon request