



NAB *Borlaug Scholars*

2021

Graduate

AJ Ackerman

AJ is a Ph.D. candidate in Plant and Environment Sciences at Clemson University slated to graduate in May 2022. He works with Dr. Richard Boyles in the Small Grains Breeding and Genetics program. After partaking in multiple internships with Bayer, he decided on plant breeding in private industry as an ideal career path. He received a B.S. in Crop Science and Biotechnology with an emphasis in Breeding and Genetics from the University of Wisconsin – Platteville. His Ph.D. focus is on host biochemical mechanisms that play a role in biotic resistance in sorghum. He also works to develop *Fusarium graminearum* inoculums in winter wheat disease nurseries to determine the best methods for phenotyping fusarium damaged grain lots. As President of the Clemson Translational Genomics Association, he brought the Pioneer Plant Sciences Symposium to campus.

Mentor: Dr. Sarah Potts, Corteva



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Pawan Basnet

Pawan is a Ph.D. student in Plant Breeding, Genetics, and Genomics with a Statistics minor at the University of Missouri-Columbia. He earned his B.S. in Agricultural Sciences from the Banaras Hindu University and M.S. in Plant Science from South Dakota State University. He is currently studying novel soybean cyst nematode (SCN) resistance loci. Pawan plans to contribute to the community using statistics in a consulting position in the agricultural and biological sciences. He has served in student organizations as Vice-President of the Society for the Advancement of Plant Pathology and organized plant research symposiums at the University of Missouri. He was President of the Plant Science Graduate Student Organization at South Dakota State University. His hobbies include traveling, hiking, and soccer.

Mentor: Dr. Richard Pratt, New Mexico State University



2021

Graduate

Catherine Danmaigona Clement

Catherine is a Ph.D. candidate in the Plant Breeding program at Texas A&M University working on cotton breeding, genetics, and genomics with Drs. Jane Dever, Libo Shan, and Steve Hague. Catherine's research is focused on breeding for Fov4 resistance in upland cotton by utilizing long-read and short read whole genome sequencing tools and cellular microscopy. She is deploying strategies of comparative and functional genomics of fungal wilt pathogens in cotton to identify Fov4 R-genes and Avr genes using iRenSeq and GWAS. Her M.S. was in Plant Breeding and Genetics from the University of Virginia and the University of Agriculture Makurdi Nigeria. Catherine has a passion for giving back to her community by organizing free training workshops and teaching data analysis to early career researchers that have reached 3600 students in 50+ countries.

Mentor: Dr. Ksenija Gasic, Clemson University



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Nida Ghor

Nida is a Fulbright Ph.D. candidate at Kansas State University studying wheat genetics with Dr. Guihua Bai in the USDA Central Small Grain Genotyping Lab. She earned B.S. and M.S. degrees in Plant Breeding and Genetics from University of Agriculture in Faisalabad, Pakistan. Nida's current research is focused on map-based cloning of the Hessian fly resistance gene H34 and development of precise diagnostic markers that will result in durable resistance and reduce pesticide use. She is using modern genomic tools including GBS, RNA-Seq, and the wheat pan-genome platform to speed up the positional mapping, gene cloning, and its functional validation. Nida was selected to participate in a career development workshop for young scientists at Cornell University and also won the 2020 Don C. Warren Genetics Award at Kansas State University.

Mentor: Dr. Peggy Ozias-Akins, University of Georgia



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Kimberly Gibson

Kimberly is a Ph.D. candidate studying the effects of plant genetic diversity on insect herbivores under Professor Paul Gepts at the University of California, Davis. Her research is focused on characterizing the mechanisms and heritability of biochemical defenses deployed by Lima beans (*Phaseolus lunatus*) against their main insect pest, the Western Tarnished Plant Bug (*Lygus hesperus*). She is also collaborating with entomologist Dr. Emily Bick of the University of Copenhagen to test HTP in beans for insect tolerance with field-based FaunaPhotonics sensor technology. Kimberly earned a B.A. with honors in Urban Studies from Stanford University. During the time between undergraduate and graduate school, she conducted research as an ICRISAT intern in India and taught English at a rural indigenous community literacy program in Mexico. Kimberly enjoys mentoring student interns and serving as a teaching assistant in an undergraduate class on crop evolution.

Mentor: Dr. Mark Sorrells, Cornell University



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Amy Groh

Amy is a Ph.D. candidate in the Horticulture and Agronomy Graduate Group at the University of California, Davis working under the guidance of Dina St. Clair. After receiving her B.S. in Biology from Georgia Tech, she worked at the USDA-ARS in Miami where she performed QTL mapping for important horticultural traits in mango. Amy is currently studying the genetics of water stress tolerance-related traits in wild species of tomato for potential use in breeding. She is fine-mapping *Solanum habrochaites* traits to understand combining ability of introgressions from two different wild species of tomato. Amy is involved in the UC Davis Student Collaborative Organic Plant Breeding Education project where she assists the zinnia breeding team and teaches tomato breeding and domestication to undergraduates. Amy is passionate about building opportunities for women in science through engagement with the Association for Women in Science.

Mentor: Dr. Jennifer Peterson, Bayer



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Thilani Jayakody

Thilani is a Ph.D. student in the Plant Breeding, Genetics and Biotechnology program at Michigan State University. Her research interests led her to join the potato breeding and genetics program of Dr. David S. Douches to address the persistent problems in the fresh and processing potato industry. She is a NSF-NRT-IMPACTS Fellow, and her research seeks to understand the relative specificities of the most popular genome editing tools when applied to complex plant genomes. In addition to being passionate about her research, she cares deeply for people. Thilani has been a mentor to several undergraduates, serves on the curriculum committee for NSF-NRT-IMPACTS, and is the Association of Crop and Soil Sciences Recruitment Chair. She hopes to make an impact on people through her research and by building a workplace with a strong sense of community.

Mentor: Dr. Debora Menicos, Driscolls



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Fabian Leon

Fabian is pursuing a M.S. in Plant Breeding at Texas A&M University where he serves as a research assistant in the sorghum breeding program under Dr. William Rooney. His current projects involve evaluating grain sorghum hybrids and developing genomic prediction tools for the program. Fabian received his B.S. in Agricultural and Medical Biotechnology from the University of Kentucky. Currently, he is a member of NAPB, CSSA, Society for the Advancement of Chicanxs and Native Americans in Science (SACNAS), and Minorities in Agriculture, Natural Resources and Related Sciences (MANRRS). He serves on the organizing committee for the Texas A&M University Plant Breeding Symposium and as Treasurer for the Department of Soil and Crop Science's Graduate Organization.

Mentor: Dr. Jodi Scheffler, USDA-ARS



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Eric Luteyn

Eric is pursuing a M.S. as a NSF Research Traineeship Fellow at the University of Kentucky. He earned his B.S. in Plant and Soil Sciences with an Animal Science minor in Fall, 2019. Eric works under the mentorship of Dr. Timothy Phillips in the grass breeding and genetics lab and is documenting the large diversity of forage and seed traits found in *Eragrostis tef*. He is also working on an interdisciplinary team to solve environmental issues impacting the Appalachian region by testing the use of microalgae as a fertilizer to improve the mine land reclamation process. Prior to obtaining a degree, Eric served in the US Army for over 10 years as a construction supervisor where he planned and executed numerous large-scale projects both in the continental US and abroad.

Mentor: Dr. Donn Cummings, Monsanto (retired)



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Lance Merrick

Lance is a Ph.D. candidate at Washington State University in the winter wheat breeding and genetics program working with Dr. Arron Carter. Lance received his B.S. in Agronomy and M.S. in Plant Sciences at South Dakota State University while working in the spring wheat breeding program. His current research focuses on developing genomic selection models and genome-wide association studies for both seedling emergence and stripe rust in a large winter wheat breeding program. His work aims to increase genetic gains and selection accuracy for complex quantitative traits and provide guidance to implement genomic selection for pleiotropic and difficult to analyze traits within breeding programs. Lance currently serves as the NAPB Graduate Student Working Group Secretary.

Mentor: Dr. Dave Bubeck, Corteva



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Chi Dinh Nguyen

Chi is a Ph.D. candidate at the University of Florida (UF) studying lettuce genetics and breeding under the guidance of Dr. Alfred Huo. She graduated magna cum laude with a B.S. in Chemistry and a minor in Art History from UF. Her research focuses on understanding how microRNAs influence seed dormancy and organ size in lettuce by creating gene-edited mutants and overexpression lines. She is an active member of the American Society for Horticultural Science (ASHS) and the Society for In Vitro Biology (SIVB) and received travel grants to both conferences to present her research. Chi collaborates with Valencia College and developed an interning program to train students in biotechnology and laboratory skills. She has authored two and coauthored five publications and received funding from the Florida Nursery, Growers, and Landscape Association (FNGLA) as a co-PI.

Mentor: Dr. Bo Zhang, Virginia Tech University



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Alex Chukwuka Ogbonna

Alex is a Ph.D. candidate working in the Lab of Professor Lukas Mueller. Upon completing a B.S. in Chemistry and M.S. in Analytical Chemistry from Imo State University and Michael Okpara University of Agriculture respectively, he worked with a cassava molecular breeding team at National Root Crops Research Institute in Nigeria. Alex later moved to Boyce Thompson Institute as a crop database developer. There he developed database tools to assist breeders of cassava, banana, yam, sweet potato, maize, and solanaceous crops. His desire to effectively communicate with breeders led him to the Cornell Plant Breeding and Genetics graduate program. Alex's current research is focused on the impact of modern breeding on the evolution of key trait architecture through domestication and its implication for cassava breeding.

Mentor: Hannah Senior, PBS International



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Jeewan Pandey

Jeewan is a Ph.D. candidate in Horticultural Sciences at Texas A&M University working with Dr. Isabel Vales in the Potato Breeding Program. His current work is focused on genetic diversity, GWAS of tuber traits, and evaluation of chipping performance. He was the recipient of the Potato Leadership, Education and Advancement Foundation (Potato LEAF) academic award for 2020. Jeewan is the CIRTL Associate - Fellow of the Academy for Future Faculty (AFF) recognized from the Center for Teaching Excellence and Office of Graduate and Professional Studies. At Texas A&M he has served in various leadership roles for plant breeding symposia and in graduate student government. Jewan also enjoys teaching undergraduates.

Mentor: Dr. Amanda Hulse Kemp, USDA-ARS



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Erin Pfarr

Erin is a Ph.D. candidate at Rutgers University in the dogwood and hazelnut breeding lab of Dr. Tom Molnar. Her research involves a genetic diversity study of cultivated dogwoods. She is also working to improve the native *Cornus florida*'s resistance to powdery mildew through investigation of resistance QTL and CRISPR knockout of susceptibility genes. Erin is passionate about adapting breeding tools developed in agronomic crops to niche, horticultural crops. She received her B.S. in Horticulture with an emphasis in Plant Breeding and Genetics and minor in Studio Art from the University of Minnesota. Erin is a leader in the American Society for Horticultural Science and CROPS, the Rutgers plant biology student group. She also helped initiate a peer-mentoring program for incoming graduate students and serves as a reviewer for the Rutgers Undergraduate Research Journal.

Mentor: Dr. Stephanie Sjoberg, Syngenta



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Graduate

Karansher Sandhu

Karansher is a Ph.D. candidate at Washington State University working in Dr. Arron Carter's winter wheat breeding group. His research focuses on increasing the genetic gain in the breeding program using genomic selection, phenomics, machine and deep learning algorithms to predict grain yield, grain protein content, and end-use quality attributes. He is currently working as a Phenomics Assisted Soybean Breeder intern at Bayer. During his undergraduate years at Punjab Agricultural University in India, his interest in plant breeding developed while working in wheat and oat breeding programs. Karansher's long-term goals involve using skills learned in his Ph.D. studies to release high yielding, stress-resistant, and high nutritional crop varieties in a sustainable manner.

Mentor: Dr. Kiru Pillay, Bayer



2021

Graduate

Swati Shrestha

Swati is a 2nd year Ph.D. student working with Dr. Geoffrey Meru in his vegetable breeding and genetics lab at the University of Florida. She is currently working on development of high yielding virus resistant squash cultivars using traditional and molecular breeding approaches. Her research interest lies in exploiting the advances in high-throughput genotyping and bioinformatics to understand genetic control of economically important traits and use this information to develop diagnostic markers that would enhance breeding efficiency. Apart from research, Swati has won numerous competitions including 3-minute thesis competitions, flash talks, and both oral and poster presentations.

Mentor: Dr. Virginia Sykes, University of Tennessee



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Renan Silva e Souza

Renan is a Ph.D. student in Plant Breeding, Genetics and Genomics at the University of Georgia under the direction of Dr. Zenglu Li. He has a B.S in Agricultural Engineering from the Federal University of Sao Joao Del-Rei and a M.S. in Genetics and Plant Breeding from the University of Sao Paulo in Brazil. Renan is currently working on the identification of genes for the improvement of nutritional quality of soybeans and genes underlying the resistance to soybean rust using high resolution mapping, genome sequencing and gene expression. During his undergraduate degree he completed internships with Embrapa and Corteva. Renan serves as the Social Media Representative for the NAPB Graduate Students Working Group.

Mentor: Dr. Klaus Koehler, Corteva



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Cleiton Wartha

Cleiton is a Ph.D. candidate studying plant breeding and quantitative genetics under the guidance of Dr. Aaron Lorenz at the University of Minnesota. He is an agronomist and received his M.S. in Plant Science from the Federal University of Vicosa, Brazil. His current dissertation research focuses on the implementation of genomic selection in a public soybean breeding program. In addition to his breeding work, Cleiton has been involved in the organization of the UMN Plant Sciences Symposium and has served as the Vice-President of the Applied Plant Sciences Graduate Club.

***Mentor: Dr. Allen Van Deynze,
University of California - Davis***



2021

Undergraduate

Brianna Cheek

Brianna is an incoming M.S. student at the University of Georgia after graduating magna cum laude from Texas A&M University with her B.S. in Plant and Environmental Soil Science (minor in Plant Breeding). While at Texas A&M she had the opportunity to work on an undergraduate research project developing an assay to screen for cotton leafroll dwarf virus in the lab of Dr. David Stelly. As a 2019 Wallace-Carver Fellow, she interned in Dr. Matthew Rouse's USDA lab searching for molecular markers against stem rust in wheat. Besides her involvement in research, Brianna has participated in leadership organizations as a departmental representative on the COALS Council and as a member of the Texas A&M Agronomy Society.

Mentor: Dr. Sarah Turner-Hissong, Bayer



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Undergraduate

Matt Davis

Matt is pursuing a B.S. at the University of Florida in Biology. He has studied with Dr. Patricio Muñoz in the Blueberry Breeding and Genomics Lab since January 2019. Currently Matt is investigating the use of high resolution melt analysis and adapting the procedure for use in Southern Highbush Blueberry. He has served as the Director of External Affairs for the Center for Undergraduate Research Board of Students where he worked to connect undergraduates with research opportunities. He is interested in continuing his work with polyploids and would like to help address issues faced from climate change. In his free time, Matt enjoys playing lacrosse, learning about coffee, baking, and going on nature walks. In Fall 2021 Matt will be attending the University of California, Davis to pursue a Ph.D. in Plant Biology.

Mentor: Dr. Peng Chee, University of Georgia



2021

Undergraduate

Isabella Fiore

Isabella is pursuing a B.S. in Agronomy at the University of Wisconsin-Madison. She has worked in Dr. Lucia Gutierrez's quantitative genetics lab investigating oat panicles with the goal being able to propose a strategy for evaluating oat panicle architecture and morphology. During the 2021 summer Isabella is working in Dr. William Tracey's Sweet Corn Breeding Program assisting in field work maintenance and production of inbred and hybrid lines. During her undergraduate career she interned for Slow Food UW, an organization dedicated to alleviating food insecurity on college campuses. After graduation, Isabella plans to pursue a Ph.D. in plant breeding and genetics and hopes to work internationally to help ensure food security for all people regardless of geography or socioeconomic background.

Mentor: Dr. Brittney Jones, Bayer



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Undergraduate

Isabelle Gent

Isabelle is pursuing a B.S. at North Carolina State University majoring in Crop and Soil Science with a concentration in Crop Biotechnology. She also plans to double minor in Genetics and Horticultural Science. For future research, her interests revolve around sustainability where she hopes to contribute to its advancement through the latest genetic engineering techniques. Isabelle is currently interning with NCSU's Turfgrass Breeding and Genetics Program under the direction of Dr. Susana Milla-Lewis. She is involved with evaluating the use of St. Augustine grass cultivar mixes as a possible pest management strategy. Isabelle is also an active member of the North Carolina Chapter of Alpha Zeta.

***Mentor: Dr. Chandler Levinson
University of California - Davis***



2021

Undergraduate

Tanner Oyen

Tanner is pursuing a B.S. in Agronomy at the University of Wisconsin and is on target to complete his studies in three years. He has been working in Dr. Lucia Gutierrez's Cereal Breeding & Quantitative Genetics Lab since October 2019 working on the project titled "Oat Panicle Architecture and Its Relationship with Seed Production". Tanner presented results at the 2021 Undergraduate Symposium at UW-Madison. In addition to his work as an undergraduate researcher, he is also involved in many campus organizations in leadership positions such as Badger Crops Club President. Outside of academia, Tanner is completing his second internship with Helena Agri-Enterprises as an Agronomy & Sales Intern.

Mentor: Dr. Don Blackburn, Corteva (retired)



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Undergraduate

Samantha Wegener

Samantha is an undergraduate student at the University of Georgia, Tifton majoring in Agriscience and Environmental Systems with an emphasis in Plant Breeding, Genetics and Genomics. She is currently working in Dr. Peng Chee's Molecular Cotton Breeding Lab. Genetic bottlenecks have created a narrow genetic base for elite upland cotton (*Gossypium hirsutum* L.) germplasm. QTL introgression from *Gossypium barbadense* has been shown to confer positive effects on fiber quality. Samantha is using a transcriptomic and functional genetic approach to identify the casual gene of a QTL that has shown positive effects on fiber length. The introgression of foreign QTL alleles from closely related species by way of marker-aided selection has the potential of making significant genetic gain in relatively few breeding cycles if deployed in cultivar development.

Mentor: Dr. Chris Saski, Clemson University