NAB Borlaug Scholars

2020

Graduate

Clayton Carley

Clayton Carley is a member of the Singh Soynomics & Breeding group and a Ph.D. graduate research assistant at Iowa State University in Ames, IA. Clayton received B.S. Degrees in Plant Biotechnology and Ag Science Education from the University of Illinois in Urbana, IL. As an NSF Predictive Plant Phenomics Trainee, Clayton is investigating predictive root-shoot relationships with innovative methods of combining machine learning and high throughput phenotyping while exploring the underlying genetic components involved. He is passionate about outreach and education as he has developed hands-on "Plant Breeding Games" to educate high school and undergraduate students. Clayton is serving in leadership roles through several student organizations including the Agronomy Graduate Student Club, Student rep to the Agronomy Faculty, and co-chair of the Plant Breeding Symposium planning committee, as well as community mentoring groups in his local church such as "Seed Co", and youth group "Roots."

Mentor: Dr. Klaus Koehler, Corteva

NAB
Borlaug Scholars

2020

Graduate

Tia Dunbar

Tia Dunbar is obtaining her MS degree in Plant Breeding at Texas A&M University in College Station, TX. Originally hailing from the San Francisco Bay Area, she received her BS degree in Biological Sciences from the University of California, Davis. Her research focuses on gene editing for crop improvement, specifically with rice. She is currently optimizing *in planta* gene editing techniques involving novel nanotechnologies. Outside of the lab, Tia is an officer of the nationally recognized Texas A&M SACNAS chapter as well as the university's Women in Science and Engineering organization. She is also an active member of Texas A&M's Minorities in Agriculture, Natural Resources, and Related Sciences (MANRRS) chapter, Graduate and Professional Student Government, and Women in Ag Sciences program. Through her involvement in these extracurricular activities, she seeks to integrate an agricultural science perspective into broader scientific discussion.

Mentor: Dr. Ksenija Gasic, Clemson University

NAPB Borlaug Scholars

2020

Graduate

Christina Finegan

Christina Finegan is a third-year Ph.D. candidate in the Plant Molecular and Cellular Biology program at the University of Florida (UF). Christina received her B.S. from UF where she worked as an undergraduate research assistant developing molecular markers for molecular breeding of tomatoes. Currently, under the guidance of Dr. Marcio Resende and Dr. Matias Kirst, Christina uses quantitative genetics to study nitrogen use efficiency of corn in the UF Sweet Corn Breeding Program to develop more resource-efficient varieties. She is also involved in a project focused on symbiotic nitrogen fixation. She uses phylogenomics to elucidate the evolution of key pathways, ultimately identifying candidate genes to engineer traits into crops. Her work brings quantitative genetics, molecular biology, and bioinformatics into plant breeding. In addition to her work, she is President of the UF Plant Science Council, a student led club for individuals interested in plant science and agricultural research.

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

![NAPB Borlaug Scholars logo]

2020

Graduate

Jenna Hershberger

Jenna Hershberger is a Ph.D. candidate and USDA NIFA AFRI EWD predoctoral fellow at Cornell University, where she studies plant breeding and genetics with Dr. Michael Gore. Jenna received a B.S. in Horticulture with a minor in African Studies from the University of Wisconsin-Madison. Her research focuses on near-infrared spectroscopy-based phenotyping, cassava quality trait improvement, data management, digital analysis tool development, and the application of RNA-seq and statistical genetics and genomics to uncover the genetic architecture of nutritional quality traits in fresh sweet corn kernels. In addition to her research, Jenna has taught three international workshops on the use of PhenoApps, smartphone applications for plant phenotyping, and has served as the vice president and historian of Synapsis, the Cornell Plant Breeding graduate student organization.

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

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Borlaug Scholars

2020

Graduate

Brittney Jones

Brittney Jones is a Ph.D. candidate at Montana State University working with the spring wheat breeding program. Her research focuses on dissecting grain yield and yield component traits in spring wheat through trait introgression, QTL analysis, high resolution mapping, population development and field experiments. Specifically, she studies the interaction between yield component traits and resource availability. Through this work she has identified alleles that will benefit the MSU spring wheat breeding program for improved genetic variation and enhanced climate resilience. It is her goal as a plant breeder to help meet the rising global food demand by breeding for climate resilient crops, and improving quality and nutrition. In addition to her research, Brittney has sought many professional development opportunities to grow as a team player and leader including soft-skill coaching and involvement with the NAPB GSWG as the current acting vice-chair.

Mentor: Dr. Duke Pauli, University of Arizona

2020

Graduate

Natalie Kaiser

Natalie Kaiser is a Ph.D. candidate in the Douches Potato Breeding and Genetics Program at Michigan State University. Natalie received an Honors Bachelor of Technology in Plant Science from SUNY Cobleskill in NY. She is employing molecular and genomic tools to understand the genetic architecture of host plant insect resistance and to develop Colorado potato beetle (CPB) resistant diploid potato breeding lines. She also studies the genetic components of self-compatibility in diploid potato to facilitate diploid potato breeding efforts. She aspires to convert potato into a diploid inbred/F1 crop propagated by true seed as a breeder in the private sector. Natalie serves as the CSS graduate student faculty representative for the MSU Plant Breeding, Genetics and Biotechnology graduate program and co-organizes the program's annual research symposium. She is a USDA NIFA Predoctoral Fellow and enjoys leading science communication outreach to community members of all ages.

Mentor: Dr. Sarah Potts, Corteva

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Borlaug Scholars

2020

Graduate

Saarah Kuzay

Saarah Kuzay is a Ph.D. candidate studying wheat genetics and breeding under Professor Jorge Dubcovsky at the University of California Davis. During her Ph.D., Saarah discovered WAPO1 – a gene that can raise wheat yield potential in a wide range of environments. Currently, she is deploying and testing novel alleles for WAPO1 in wheat breeding lines at UC Davis and CIMMYT (International Maize and Wheat Improvement Center). Beyond her genetics research, Saarah is a passionate educator and mentor of undergraduate students. For the last 5 years, she taught a variety of classes about plant genetics, breeding, and the cultural origins and culinary properties of food crops. Saarah conducts most of her teaching in the student-led plant breeding program SCOPE (Student Collaborative Organic Plant Breeding and Education) where she works as a wheat breeder.

Mentor: Dr. Roy Cantrell, Borlaug Training Foundation

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Borlaug Scholars

2020

Graduate

Ammani Kyanam

Ammani Kyanam is a Ph.D. student at Texas A&M University and works in the sorghum breeding program for Dr. Bill Rooney. She has a B.S. in Agricultural Sciences from ANGRAU India, and a M.S. degree in Plant Breeding from Texas A&M. She is currently working on QTL mapping for sugarcane aphid tolerance in sorghum, and evaluation of a chemical male gametocide, Trifluoromethanesulfonamide. She is involved in national level leadership roles as a founding member of the Corteva Plant Science Series' Student Advisory Council, and graduate student liaison for NAPB's Communication Committee. At Texas A&M, she has chaired several plant breeding symposia, and was a founding officer of the Soil and Crop Sciences Graduate Organization. In recognition of her service, she has received the Buck Weirus Spirit Award, and the Montgomery Award. She is also an active member of the Crop Science Society of America, and has presented her research at several national and international conferences.

Mentor: Dr. Jodi Scheffler, USDA-ARS

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Borlaug Scholars

2020

Graduate

Chandler Levinson

Chandler Levinson is a Ph.D. student studying Plant Breeding, Genetics, and Genomics under Dr. Peggy Ozias-Akins at the University of Georgia in Tifton, GA. She received a B.S. from Berry College, where she worked in the chestnut breeding program and longleaf pine restoration program. Chandler currently works with collaborators in the U.S., Argentina, and Senegal to use wild peanut relatives to increase resistance in cultivated peanut to improve and protect peanut yields and contribute to global food security. She has authored/coauthored three peer-reviewed articles and has two more in preparation. She provides leadership in several organizations, serving as chair for the NAPB GSWG, president of the APRES GSA, and vice president of the UGA PBGG GSA. Her main passions are mentorship, journal and grant writing, professional development, rock climbing, helping others, and rescuing animals.

Mentor: Ms. Hannah Senior, PBS International

2020

Graduate

Kathryn Michel

Kathryn Michel is a Ph.D. candidate at the University of Wisconsin under the direction of Drs. Shawn Kaeppler and Natalia de Leon. She graduated summa cum laude with a B.S. in Agronomy and a B.S. in Genetics from Iowa State University. There, she worked in the lab of Dr. Maria Salas and interned for DuPont Pioneer, Monsanto, and Dow Agrosciences. For her graduate work, she deploys cutting-edge computational tools to characterize the genetic architecture of maize yield components in multiparent QTL mapping populations using high throughput imaging of maize ears, cobs, and kernels. Kathryn is a founder and organizer of a plant science computational community of practice and taught part of a workshop series on programming in R. She has received several awards, including the 2020-2021 D.C. Smith Wisconsin Distinguished Graduate Fellowship and 2020 UW Outstanding Agronomy Graduate Student award. At Iowa State, she was a National Merit Scholar and was elected the 2016 Outstanding Agronomy Senior.

Mentor: Dr. Amy Lezzoni, Michigan State University

NAB Borlaug Scholars

2020

Graduate

William Singer

William Singer is a Ph.D. student at Virginia Polytechnic Institute and State University in the School of Plant and Environmental Sciences. He obtained his Bachelor of Science in Agriculture from the University of Tennessee at Martin in 2018. He works in the Virginia Tech soybean breeding program to develop varieties and germplasm for the Mid-Atlantic region. His research focuses on protein quality and amino acid profiles in soybean for livestock feed. He has published two open-access textbook chapters about soybean amino acids and production. William also serves as the president for the Translational Plant Sciences Graduate Student Organization at Virginia Tech.

Mentor: Dr. Richard Pratt, New Mexico State University

![NAB Borlaug Scholars logo]

2020

Graduate

Nikayla Strauss

Nikayla Strauss is a Ph.D. candidate in Crop and Soil Science at Washington State University in Pullman, Washington. Nikayla received a B.S. from Colorado State University. Her Ph.D. work focuses on identifying novel traits in a synthetic wheat population, specifically disease resistance and drought tolerance traits. She was recently awarded a USDA-NIFA Predoctoral Fellowship to investigate and characterize cereal cyst nematode resistance found in a synthetic wheat population. During her time at WSU, she has served as a student leader at the department and university levels. She has participated as a mentor in the Upward Bound program for high school students and the CAHNRs Undergraduate Internship program. Nikayla holds membership in the American Society of Agronomy and the Crop Science Society of America since 2012.

Mentor: Dr. Jennifer Yates, Bayer

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Borlaug Scholars

2020

Graduate

Ella Taagen

Ella Taagen is a Ph.D. candidate studying with Dr. Mark Sorrells' Small Grains Breeding and Genetics lab at Cornell University. As a geneticist, she loves exploring the relationships between multi-omics data and phenotypic variation, and she is driven by their potential to enhance plant health and productivity. Ella is committed to connecting the central themes of molecular biology and genetics to the needs of plant breeders via open-source and interdisciplinary initiatives. Her dissertation research focuses on fine-mapping and characterization of a grain morphology gene in wheat and exploring the biological constraints of meiotic recombination in a plant breeding context. Ella also contributes to the scientific community by advocating for diversity, equity, and inclusion in STEM with student leadership roles. She has served as chair of online communications for Cornell Graduate Women in Science and is currently the President of Synapsis, the Cornell Plant Breeding graduate student association.

Mentor: Dr. Dave Bubeck, Corteva

2020

Graduate

David Tork

David Tork is a second-year M.S. student at the University of Minnesota-Twin Cities. After gaining initial plant breeding experience as an intern at Dow AgroSciences (now Corteva), and later, at the University of Minnesota grape breeding program, David decided to pursue a full-time career in plant breeding. He received a B.S. in Plant Science with honors from the University of Minnesota in 2018, and then joined the Applied Plant Science graduate program to study perennial flax breeding under advisors Dr. Neil O. Anderson and Dr. Donald Wyse. David has worked to increase the pace of perennial flax domestication by expanding breeding nurseries and integrating his published ideotype framework for pursuing multiple breeding objectives simultaneously. In addition to this breeding work, David has conducted research on the vase life and cold tolerance of perennial flax, which he presented at the ASHS 2019 and ASA-CSSA-SSSA 2019 conferences.

Mentor: Dr. Donn Cummings, Bayer (retired)

NAPB Borlaug Scholars

2020

Graduate

Cassandra Anne Winn

Cassandra Winn is a Ph.D. candidate in plant breeding and predictive plant phenomics at Iowa State University in Ames, IA, studying under Dr. Jode Edwards. Her research focuses on evaluating the use of crop growth models in maize breeding for simulating genotype by environment interactions. Cassandra received a B.S. in Genetics & Biotechnology from Brigham Young University in Provo, UT. She has been actively involved in the organization of both the RF Baker Plant Breeding Symposium and Predictive Plant Phenomics (P3) Symposium at Iowa State University for the past four years, and has held multiple leadership positions within Iowa State University's Agronomy Department Graduate Student Club.

Mentor: Dr. Amanda Hulse-Kemp, USDA-ARS

NAB Borlaug Scholars

2020

Graduate

Zara York

Zara York is a Ph.D. student in Dr. Kate Evans's pome fruit breeding program at Washington State University Tree Fruit Research and Extension Center in Wenatchee, WA. Her research focuses on phenotypic and genetic characterization of dwarfing-related traits in pear rootstock breeding populations. This project works with dwarfing-indicative traits, generation of linkage maps, and subsequent marker-trait association studies for informed pear rootstock breeding. Zara received her B.S. and M.S. from Washington State University; she respectively worked on the effect of direct root-zone irrigation in grapes with Dr. Jacoby, and performed identification and characterization of genes that regulate root-growth in Brachypodium with Dr. Sanguinet. She serves in university and departmental leadership roles at WSU and is actively involved in the NAPB Graduate Student Working Group, serving as Chair during 2020-21 and helped initiate a graduate research competition as Vice-Chair.

Mentor: Dr. Julie Dawson, University of Wisconsin

NAB Borlaug Scholars

2020

Undergraduate

Abelina Amores Jackson

Abelina Jackson is an undergraduate student double majoring in International Agricultural Development and Spanish with a Plant Biology minor at the University of California, Davis. Her primary research interests revolve around biotechnology and bioinformatics for crop improvement, with the intent to use these technologies in order to improve food security in Latin America and the Caribbean. Currently, she is focusing on functional genetics research in *Arabidopsis thaliana* and maize and is specifically examining the effects of overexpression of drought tolerance genes on plant physiological development and seed nutritive quality. In addition to her work as an undergraduate researcher, she has participated in several leadership organizations, including the sorority Delta Delta Delta, as well as an officer position for the UCD Aggie Ambassadors program.

Mentor: Dr. Bo Zhang, Virginia Tech University

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Borlaug Scholars

2020

Undergraduate

Hallie Longest

Hallie Longest is an undergraduate at Iowa State University pursuing a Bachelor of Science degree in Agronomy, focusing on plant breeding and genetics. She has been interning in Dr. Jianming Yu's maize breeding and quantitative genetics lab since November 2018 and will return in the fall after working at the Center for Urban Agriculture at the Knoxville Botanical Gardens this summer. In Dr. Yu's lab, she is working on an undergraduate research project on the genetics of sorghum germination. Hallie received a first place award for undergraduate research presentation at the 2020 R.F. Baker Plant Breeding Symposium, where she presented a poster on her sorghum germination project. After graduation she plans to earn her Ph.D. in crop genetics and work nationally and internationally with other scientists to alleviate food insecurity.

Mentor: Dr. Virginia Sikes, University of Tennessee