ISSUE
Fall
2021

National Association of Plant Breeders Quarterly Newsletter

This Issue

YOUR NAPB NEWSLETTER

Greetings fellow plant breeders! You will notice this newsletter looks a little different than ones from the past. We in the communications committee, along with encouragement from our new president, reached out to the various committees and working groups associated with NAPB to learn how we can be more effective with our newsletters. After several listening sessions and careful consideration, this is the result. We hope you enjoy this new format and would love to hear from you for comments regarding content or constructive criticism to help improve our newsletter!

VOLUNTEER OPPORTUNITY

Are you interested in improving the newsletter and communications emails? We are still looking for a communications secretary. Please contact Alison Thompson alison.thompson@usda.gov or Brian Gardunia brian.gardunia@bayer.com If you are interested!

Connect with us on Facebook, LinkedIn, or Twitter to keep up to date on all things plant breeding!

Welcome Letter: NAPB President – Ksenija Gasic

The National Association of Plant Breeders is a young, vibrant, enthusiastic, and fully volunteer based society with a mission "**to strengthen plant breeding to promote food security, quality of life and a sustainable future".** A decade has passed since the establishment of the NAPB, and our first annual meeting hosted by Texas A&M University in 2011. Within this decade, we have experienced challenges not only related to nurturing and growing a new society or strengthening our mission and promoting the importance and success of plant breeding; but also, a global pandemic and the rapid need to adjust to a virtual world. NAPB has done great thanks to all of you!

We have successfully completed our second annual virtual meeting, organized by Cornell University with close to 300 attendees registered. Armed with experience from the previous year and timely decision to meet virtually, Cornell University and Seed World did an excellent job with meeting organization, virtual field tours, and plenty of opportunities for attendees to engage. Almost half of the attendees were graduate students and early career scientists who did an amazing job in organizing poster sessions and presenting cutting-edge science, the **future of plant breeding in the U.S. is bright and in good hands.**

The review of 2019-2023 NAPB Strategic Plan, presented by the past-president Dr. Todd Campbell, confirmed we are progressing towards meeting the goals identified in the six objectives. The **membership** numbers are increasing, and diverse educational and professional development opportunities that are provided throught the year increase both the value and prestige of NAPB membership. Our dedication to expanding existing **collaborations** with organizations and associations such as PBCC, ASTA, the Tri-Societies, and Seed World; while building on newly formed ones with APBA and ASHS, continue to be extremely important as NAPB moves forward. These strong collaborations are vital to promoting the profession, educating the public and policy makers on the importance of plant breeding, while also advocating for strong, long-term support for plant breeding activities for the benefit of mankind. The NAPB's youngest committee, Commercial Plant Breeders has made excellent progress with expanding their membership, creating engaging activities and internship opportunities to provide experiential learning opportunities for NAPB members. If you want to make a difference the time to do it is now! Opportunities such as congressional visits provide an empowering experience to NAPB student members to advocate on behalf of the society and plant breeding.

The more I think of the great accomplishment and strides our young society has made, the more I am excited for what lies ahead, I enter my term as a President with dedication to continue to build on a foundation built under the leadership of past

NAPB 2021 Virtual Meeting Highlights:

This meeting marked the second successful virtual meeting for NAPB, hosted by Cornell University. The meeting kicked off with a fantastic pre-conference seminar on professional development in a virtual environment hosted by Corteva and Bayer. The meeting sessions included talks on High throughput phenotyping, CRISPR technologies, and genomic selection. The detailed program can be found using this Link. Virtual luncheons and happy hours provided opportunities to re-connect with colleagues and meet new members of NAPB! The meeting adjourned with talks given by our 2020 award recipients and presentation of their awards. They included Diego Jarquin, Fredrick A. Bliss, Thomas C. Osborn, Kendall K. Lamkey, and Donn Cummings. Don Jones from Cotton Incorporated presented the Borlaug Scholar Awards to our 24 recipients! For more information on the Borlaug Scholars follow this Link and look to the right-hand side of the page. To see short video clips featuring the 2021 Borlaug scholars follow this Link.

Be sure to join us next year in Iowa! Information will be forthcoming on the NAPB website and future NAPB newsletters.

president David Bubeck. Some of the notable accomplishments I hope to continue are partnerships with ASTA and other agencies to positively influence congressional legislation on the use of genetic modifications in plant breeding, as well as increase awareness of the importance of genetic resources for plant breeding through ongoing alliances with the PBCC to support and advise NGRAC. The 2021 Borlaug Scholar Fellowship class features a record number of scholars (24) from both graduate (18) and undergraduate (6) students; whose amazing stories are featured in short video clips that were presented at the annual meeting and are available on the NAPB and Cornell University websites.

In the upcoming year, one of my main goals is to facilitate the development and launch of a new NAPB website that is as engaging, energetic, and captivating as NAPB members and plant breeding. With your support, the Executive Committee and I will work diligently on 1) increasing the membership body by retaining and recruiting new members and providing and advertising the unique opportunities NAPB membership provides. 2) Ensuring and promoting diversity and inclusion through NAPB activities. 3) Continue advancing awareness of the importance of plant breeding for sustainability and success of our great country and the betterment of mankind. With your support there is no limit to what we can achieve.

It is a privilege to be in a position to lead this great society and I am humbled and grateful for the opportunity to serve as your president for the next year.

Kseenja Jastc

NAPB 2021 AWARD WINNERS

Early Career Scientist Award: Dr. Patricio R. Munoz, University of Florida

Lifetime Achievement Award: Dr. Don Blackburn, Corteva Agrisciences

Public Sector Impact Award: Dr. Gina Brown-Guedira, USDA-ARS Raleigh

Private Sector Impact Award: Dr. Mario Carlone, Corteva Agrisciences

Friends of Plant Breeding Award: Andy LaVigne, American Seed Trade Association.

Dr. **Patricio R. Munoz**, University of Florida, recipient of the 2021 **Early Career Scientist Award**.

Dr. Munoz's research consists in improvement of cultivars with a local focus but a global impact, and in developing and implementing genomic tools to accelerate the breeding process with focus in outcrossing polyploid species. Currently he is working to develop low chilling requirement blueberries with better flavor, sensorial, and nutraceutical traits to enhance the consumption of blueberries, while still working on traditional crop traits that help producers stay competitive.

"In addition to his remarkable contributions to the field of statistical genomics and quantitative genetics applied to plant breeding, Patricio manages a remarkably prosperous applied plant breeding program that has systematically released improved cultivars to meet market needs and production modalities."

He also has led the development of a phone app to help growers scout blueberry pest and diseases. For more information about this app check out this link.

NAPB Award Descriptions

Early Career Scientist Award:

Recognizes an individual pursuing a career in the plant breeding field. Applicant should exhibit the ability to establish strong research foundations, interact with multidisciplinary teams, demonstrate leadership, and participate in relevant professional societies. The nominees must have obtained their PhD after December 31, 2011.

Lifetime Achievement Award:

Recognizes an individual who has given distinguished long-term service to the plant breeding discipline in areas such as breeding/genetics research and publication, education, extension outreach, and regional, national, and/or international leadership.

Public Sector Plant Breeding Impact Award:

Recognizes an individual whose accomplishments as a scientist in the public sector have had extraordinary impact in the field of plant breeding in areas such as research, technological innovation, germplasm development, cultivar release, education, and leadership.

Do you know someone who exemplifies the very best in plant breeding? If so, please contact the NAPB Awards Committee Chair, Jim McFerson jim.mcferson@gmail.com

Dr. **Don Blackburn**, Corteva Agrisciences (ret.), recipient of the 2021 **Lifetime Achievement Award**.

"First and foremost, Don is a plant breeder, but his engagement and influence go beyond. He directly influenced successful trait introgression and technology development and application for new crop integration, seed quality and more. This work, combined with his engaging and sincere personality, have enabled him to be successful in leading, staffing, and influencing across a broad range of venues."

Dr. Blackburn began his career at Dow AgroSciences (DAS) as a successful corn breeder and station manager in Arlington WI, relocating in 2001 to DAS headquarters in Indianapolis, where he held numerous scientific and management leadership roles: Germplasm IP & Elite Genetics Licensing Leader, North America Breeding Leader, Seed Technology Center Director, and Global Breeding Leader of field and labs for all crops and geographies.

Dr. **Gina Brown-Guedira**, USDA-ARS/North Carolina State University, recipient of the 2021 **Public Sector Plant Breeding Impact Award**.

Dr. Brown-Guedira's lab has developed suites of molecular markers for genes affecting wheat growth and development, end-use quality, and pest resistance that can cost-effectively assay thousands of individuals in breeding programs. Her lab also routinely applies these markers to assess diverse germplasm for the presence of the associated genes and makes this valuable data available to wheat breeders and other collaborators.

"Gina has taken on the responsibility of bringing small grains breeders into the 21st century, first, with respect to use of molecular markers and more recently, with respect to genomic selection."

She has collaborated with the Durable Rust Resistance in Wheat project to provide programs in east Africa and Asia with marker information about genes conferring resistance to devastating new races of stem rust. For more information check out this link.

NAPB Award Descriptions Cont'd

Private Sector Plant Breeding Impact Award:

Recognizes an individual whose accomplishments as a scientist in the private sector have had extraordinary impact in the field of plant breeding in areas such as germplasm development, cultivar release, technological innovation, and leadership.

Friends of Plant Breeding Award:

Honors individuals whose career may or may not have been involved in plant breeding, but who, through their professional activities and passion, have contributed significantly to the advancement of the plant breeding discipline.

Don't forget to nominate your fellow plant breeders for being outstanding in their field!

Contact the NAPB Awards Committee Chair, Jim McFerson for nominations. jim.mcferson@gmail.com

iStock by Getty Images

Dr. **Mario Carlone,** Corteva Agrisciences, recipient of the 2021 **Private Sector Plant Breeding Impact Award**.

In 1995, Dr. Carlone was selected to conduct a corn breeding role in Princeton IL for Pioneer Hi-Bred, where he ran an extremely productive program and had a tremendous influence on the other corn breeders and breeding leadership within the organization. In recognition of his exceptional corn breeding accomplishments, he was promoted to Pioneer Research Fellow in 2003. Today he continues as Distinguished Corteva Agriscience Laureate, Corteva's highest level science position.

"Perhaps Dr. Carlone's biggest contribution to our organization has been the mentoring role he has played. I have watched in amazement at how Mario has taken young scientists under his wing, and then seen them flourish. A significant number of our plant breeding leaders all went through the Mario Carlone School of Breeding."

Andrew (Andy) LaVigne, CEO, American Seed Trade Association, recipient of the 2021 **Friends of Plant Breeding Award.**

"This is a timely moment to recognize Andy for his persistent and relentless commitments to the success of plant breeding. He fully recognizes and enables great partnerships between public and private sectors of plant breeding. As the NAPB Executive Committee reviews and identifies recipients of the Friends of Plant Breeding award, there is no more deserving individual to receive the 2021 Friends of Plant Breeding award than Andy LaVigne."

LaVigne has been directly and energetically involved as an advocate for plant breeding and agriculture throughout his career, first as a legislative assistant in Florida, and subsequently as a special assistant to the chief of staff for the U.S. Office of Secretary of Agriculture, CEO of the Florida Fertilizer and Agrichemical Association, and CEO at Florida Citrus Mutual. Since 2006 he has led ASTA, one of the oldest trade organizations in the United States, with a membership consisting of over 650 companies involved in seed production and distribution, plant breeding, and related industries in North America. As an authority on plant germplasm and breeding, ASTA advocates for science and policy issues of industry-wide importance. For more information about ASTA check out this link.

Be sure to check out the full press release for this year's recipients by following this link.

Plant Breeding Coordinating Committee Video Contest

Help spread the word about plant breeding and pursuing a graduate degree in the field of plant breeding! We are seeking videos that address two key topics: 1) utilization and preservation of germplasm and resources and 2) documenting a day-in-the-life of a plant breeding graduate student.

First topic: demonstrate how germplasm collections are being utilized in individual research projects being carried out by graduate students (the ones doing the real work!) to solve critical problems facing society. Submissions should highlight how genetic diversity contained in germplasm collections are being used to breed the crops of tomorrow.

Second topic: document a day-in-the-life of a graduate student at any stage of their career. Submission should highlight the diverse nature of plant breeding field research and course work that graduate students undertake. We know you work hard and have fun doing it, show perspective students what that looks like!

For both topics, submissions should range in length from 3 to 5 minutes and grab our attention! The PBCC is offering $200 for the 1st place video, $150 for 2nd place, $100 for 3rd place, and $50 for honorable mention.

Check out the 2021 winners' videos at the following links:
1st place, Adam D'Angelo: Link
2nd place, Renan Souza: Link

If you have questions, please feel free to contact Duke Pauli dukepauli@arizona.edu Barbara Liedl liedlbe@wvstateu.edu, or Richard Pratt ricpratt@nmsu.edu.
Videos must be submitted to Duke Pauli or Barbara Liedl by **November 30th, 2021 in an MP4 format**.

Early Career Spotlight: Dennis Lozada

Learn about Dennis and his new chile pepper breeding program, some of the challenges he has encountered, and which chile peppers are his favorite.

Dr. Dennis Lozada was hired as an Assistant Professor at the Department of Plant and Environmental Sciences, New Mexico State University, Las Cruces, NM to work on chile pepper breeding in July 2020. He then began the somewhat daunting task of developing his breeding program during one of the worst pandemics in American history. During his interview I asked Dennis about his journey to becoming a plant breeder in the academic sector, what some of his biggest challenges have been (other than COVID-19), the best advice he has received along the way, and of course, which chile peppers he recommends.

Like many of us, Dennis didn't start his educational journey with the idea of becoming a plant breeder. Instead, Dennis wanted to go into the field of medicine but later realized this path was not for him. He was influenced to "come over to the plant side" during his undergraduate research experience at the International Rice Research Institute (IRRI) in the Philippines. While at IRRI, Dennis worked on SSR marker genotyping and became interested in the applications of molecular biology for plant breeding and how to use those tools for cultivar development and crop improvement.

Dennis received his BS in Biology (Cell and Molecular Biology) at University of the Philippines Los Baños, then his PhD in Cell and Molecular Biology from the University of Arkansas under the supervision of Dr. Esten Mason.

After graduating he took a postdoctoral research associate position in the winter wheat breeding program at Washington State University (WSU) with Dr. Arron Carter. It was during his time at WSU that he realized he wanted to go into academia and work in specialized crops.

When I asked Dennis what it was about academia that so appealed to him, his response was immediate, interacting with students.

"I like the working environment in academia, there are always new people and students coming in and going out, it is very dynamic, and you can learn a lot from them."

It became very evident that Dennis has a real passion for mentoring and teaching students. In his new teaching position, he enjoys using the Chile Pepper Institute Teaching Garden to bring awareness and appreciation of chile peppers. He teaches his students that there is more to the chile plant than its fruits; for instance, the leaves can also be used as a fresh herb in soups.

To learn more about the teaching garden follow this link.

Dennis' research focus is on integrating new genetic and genomics tools, as well as high-throughput phenotyping, for the chile breeding pipeline to accelerate chile pepper improvement for cultivar release. When I asked him, what challenges he has encountered while developing his program, he responded with procuring funding and managing people.

As Dennis pointed out, getting grants is difficult and highly competitive. To make this process more difficult, grant writing skills are not necessarily taught in graduate school. He highly recommends that any students thinking about going into academia get training on how to write grants and secure funding.

Skills in managing people are also not necessarily taught in graduate school. Some resources he discovered that were very helpful for him include, "The Professor Is In: The Essential Guide to Turning Your Ph.D. Into a Job" by Karen Kelsky and "A PhD Is Not Enough! A Guide to Survival in Science" by Peter J. Feibelman. He also asked fellow professors for advice on how to overcome these challenges. The best advice he got was to "Be yourself. Establish your identity and always be open to learning. Stay hungry. Stay foolish".

I hope you enjoyed this Early Career Spotlight with Dr. Dennis Lozada. If you would like to learn more about Dennis, his program, or chile peppers feel free to contact him at dlozada@nmsu.edu.

Lastly, he highly recommends the "NuMex Joe E. Parker" and "Charger" chile varieties. They are best roasted and served with tacos or burritos! And he likes "Christmas"[1]

[1] In New Mexico, the official state question is "Red or Green?", referring to red or green chile peppers. When you like both, you may say "Christmas!"

Department of Agriculture 2021 Climate Adaptation Plan

By: Robin Groose, NAPB Advocacy Committee Chair

In April, the NAPB Advocacy Committee took the lead in responding to the USDA Request for Comments on President Biden's January Executive Order on Tackling the Climate Crisis at Home and Abroad. The Executive Order laid out a series of actions for Federal Agencies to take regarding climate change mitigation and resilience, including directing Secretary of Agriculture Tom Vilsack to collect stakeholder input on a climate-smart agriculture and forestry strategy.

NAPB comments can be found here: Link

Secretary Vilsack recently released the USDA "Action Plan for Climate Adaptation and Resilience."

The Plan can be found here: Link

You won't find the phrase "Plant Breeding" in the plan, but we certainly fit into these items:

"The Agricultural Research Service (ARS) and the National Institute of Food and Agriculture (NIFA) support research on adaptation strategies, including adapted cultivars and crops, enhanced water and input-use efficiency, optimal production efficiency, and improved resistance to diseases and pests."

"APHIS will also evaluate its regulatory framework for biotechnology and genome editing as use of these technologies increases to support the development of climate-adapted crops and livestock."

"Other key topics for climate research include improved fertilizer technologies, genetic studies to identify climate resilient plants and trees, and studies of the impacts of climate change on pollinator communities and vector-borne livestock diseases."

"Cover crops" also receive considerable attention in the Plan, such as in this item: "A variety of conservation management practices to restore soil structure and hydrologic function of agricultural landscapes can be adopted to improve resilience, including no till and reduced till, cover crops and crop rotations, improved nutrient management, agroforestry practices such as windbreaks and buffers, and prescribed grazing."

Congressional Visits Day with ASA in March

We have the pleasure of identifying a couple of NAPB students for Congressional Visits Day with the American Society of Agronomy in Washington D.C. This had originally been announced as an on-site visit but has just been changed to a virtual event. Details are pending due to some very recent staff changes in ASA, CSSA, SSSA Science Policy Office. I will meet with Science Policy Office and attend their events in Salt Lake City at ASA Annual Meeting first full week of November.

Current NAPB Favorites

Hey fellow NAPBer's, are you wondering what to read or listen to next? We did a small survey to learn what everyone is in to, read on to see what made our top five…

…BOOKS

"The Secret of Life: Rosalind Franklin, James Watson, Francis Crick, and the Discovery of DNA's Double Helix" by Howard Markel

"Tomorrow's Table: Organic Farming, Genetics and the Future of Food" by Pamela C. Ronald and R. W. Adamchack

"The Wizard and the Prophet: Two Remarkable Scientists and Their Dueling Visions to Shape Tomorrow's World" by Charles C. Mann

"A Feeling for the Organism: The Life and World of Barbara McClintock" by Evelyn Fox Keller

"The Garden of Invention: Luther Burbank and the Business of Plant Breeding" by Jane S. Smith

…and PODCASTS

"Field Work Talk"

"Off the Husk"

"Ag + Bio + Science"

"FarmBits"

"Seed World"

Do you have suggestions for the next newsletter? If so, please contact Alison Thompson

alison.thompson@usda.gov

Professional Development

Ongoing professional development is an important part of being an effective plant breeder. Self-paced, online courses have become a popular way for professionals to continue to learn important new skills within a timeframe that works for them. The LinkedIn Learning platform has thousands of options available to explore. We have listed a few popular courses below that could work for you. Don't have a LinkedIn account? You should get one and join the more than 900 NAPB members already online!

Project Management Foundations: Link

Communication within Teams: Link

Improving Your Listening Skills: Link

Coaching Yourself and Your Team from Uncertainty to Action: Link

#NAPB, National Association of Plant Breeders

#NAPB Graduate Students

Upcoming Events

- **Global Plant Breeding Careers Webinar Panel November 15, 2021 9am PST**

This webinar is held for students interested in learning more about international plant breeding careers and collaboration. During the webinar, panelists will discuss their experiences, and thoughts on international collaboration and agriculture. You will have the opportunity to ask panelists about their experiences during the panel, but we have also prepared a google form to submit questions ahead of time which can be found here: Link. The panelists range from private to public and will be announced and highlighted in the coming weeks. **Please register at the link provided: Link**

- **North American Plant Phenotyping Meeting February 22-25, 2022 Athens, GA**

The 2022 NAPPN Annual Conference is a **hybrid event**, with in-person scientific sessions, hands-on workshops, science cafés, networking events, and more. This conference can also be streamed live through Whova for virtual attendance across the world. All registered attendees can access all conference materials and activities through Whova. If you are using a Desktop, you can use the Whova Portal. Mobile Users can use the Whova app. **For more information, please use the link provided: Link**

Job Postings

- **Cornell College of Agriculture and Life Sciences Faculty Cohort Hire**

Cornell University's College of Agriculture and Life Sciences (CALS) is leading a new cluster hire initiative that leverages our existing strengths and transdisciplinary leadership in solution-based physical and/or social sciences to explicitly address systemic challenges facing historically and habitually marginalized and disadvantaged communities. We seek to establish a network of scholars committed to pursuing research, teaching, extension and outreach on race, racism, ethnicity, social justice, power, and equality structures in their various fields of specialization. **Please use the link provided to learn more: Link**

- **University of New Hampshire, Assistant Professor of Horticultural Plant Breeding**

We seek a tenure-track faculty member with demonstrated expertise in plant genetic improvement to join an interdisciplinary department of colleagues committed to enhancing the sustainability of the farm-to-fork-to-human wellness continuum through teaching and engaged research activities. The appointee is expected to develop an externally funded, nationally recognized research program focused on the applied genetic improvement of horticultural crops relevant to our agroecoregion and beyond. **To learn more please use the link provided: Link**

- **USDA-ARS Postdoctoral Fellowship in Genomic Selection of Horticultural Crops**

The primary research project focus will be to evaluate the potential of blueberry genetic markers for implementing genomic prediction and selection for fruit quality and ripening season in the USDA-ARS-HCRU blueberry breeding program. The postdoctoral participant will be co-advised by Dr. Claire Luby, and by Dr. Michael Hardigan and have further opportunities to develop skills in applied breeding, genetics, and bioinformatics by participating in or designing other studies, publishing peer-reviewed papers, collaborating with other scientists at the USDA-ARS, Oregon State University, and other institutions nationally and internationally, and attending and presenting research at professional meetings. **To learn more please use the link provided: Link**

- **USDA-ARS Postdoctoral Position, Research Plant Geneticist**

The postdoctoral research associate is expected to take a key position in the Genetics Laboratory of the National Clonal Germplasm Repository to develop and apply modern DNA-based markers for germplasm characterization. The research associate will conduct genetic research in DNA test development and evaluation in pear, blackberry, raspberry, and strawberry. **For more information, please contact Dr. Nahla Bassil at nahla.bassil@usda.ars.gov.**

Be sure to watch for emails from the NAPB communications committee to get all the latest information or check out the NAPB website. If you have something you would like sent out on the NAPB list serve, please contact Alison Thompson alison.thompson@usda.gov or Brian Gardunia brian.gardunia@bayer.com