

PRESS RELEASE 20 August 2020
NATIONAL ASSOCIATION OF PLANT BREEDERS AWARDS

National Association of Plant Breeders Honors Five Scientists

At its 2020 annual meeting, the National Association of Plant Breeders (NAPB) announced its awardees for their outstanding accomplishments in five categories: Early Career Scientist, Lifetime Achievement, Public Sector Plant Breeding Impact, Private Sector Plant Breeding Impact, and Friends of Plant Breeding. Hosted by the University of Nebraska-Lincoln, 17-20 August, the meeting was held virtually with an on-line format and attracted over 320 participants, including more than 140 students.

The 2020 NAPB awardees exemplify the very best in plant breeding research, education, outreach and leadership. They model persistent dedication and a passionate devotion to applying their plant breeding skills and technical excellence to promote food security, quality of life, and a sustainable future. They are committed to supporting the next generation of the plant breeding discipline. These outstanding professionals inspire plant breeders and scientists everywhere. The awardees are as follows:

Early Career Scientist Award: Dr. Diego Jarquin

Lifetime Achievement Award: Dr. Fredrick A. Bliss

Public Sector Plant Breeding Impact Award: Dr. Kendall R. Lamkey

Private Sector Plant Breeding Impact Award: Dr. Thomas C. Osborn

Friends of Plant Breeding Award: Dr. Donn Cummings

All five awardees will present invited talks at the next NAPB annual meeting, to be hosted by Cornell University, Ithaca NY 15-19 August 2021.

About the NAPB and PBCC

The NAPB [<http://www.plantbreeding.org>] is unique organization in the U.S., bringing together public and private sector plant breeders to share technical information, improve the efficiency and effectiveness of their programs, develop the next generation of scientists, disseminate information about plant breeding, and advocate for a cohesive national plant breeding agenda. The PBCC provides a forum to discuss and educate the public about Plant Breeding. Plant breeders develop new crop varieties that promote food security, quality of life, and a sustainable future.

For more information:

Jim McFerson

Chair, NAPB Award Committee

Wenatchee WA 98801

jim.mcferson@gmail.com

509-669-3900



2020 NAPB Early Career Scientist Award

Dr. Diego Jarquin

This award recognizes a scientist in early stages of their plant breeding career who exhibits the ability to establish strong research foundations, to interact with multi-disciplinary teams, and to participate in relevant professional societies. The 2020 recipient of the NAPB Early Career Scientist Award is Diego Jarquin, a Research Assistant Professor in the Department of Agronomy and Horticulture at the University of Nebraska-Lincoln since 2017. As his nomination letter stated: “Diego’s excellent work in genomic prediction, along with his cutting-edge prediction software, his multidisciplinary knowledge, talent for teaching and experience make him one of the top scientists in the area of genomic prediction. He has already contributed greatly to the plant breeding research, and I have no doubt he will continue to lead new areas of crosscutting research.”

Further, as another colleague noted: “He has worked with plant breeders of different crops in the USA, Mexico, Japan, Australia, and from many other countries. Diego has also developed extensive genomic pipelines sorting out important bioinformatics and computational issues.”

Jarquin received a Ph.D. in Statistics from the University of Postgraduate Education in Mexico in 2012 and had postdoctoral training at the University of Alabama-Birmingham and at the University of Nebraska-Lincoln. In his program, Dr. Jarquin merges statistical methodology, quantitative genetics, computer algorithm development, data science and collaborative work with plant sciences. He seeks to advance prediction models for forecasting the plant performance while accounting for several sources of information and by taking genotype-by-environment interaction (G×E) into consideration. Dr. Jarquin has already established an excellent publication record on the development of prediction models and applications. As one colleague observed: “His methodological work in genomic selection, G×E, and plant breeding design is highly impactful because it enables a wide range of plant breeders in private and publication sectors to develop improved varieties that in turn are the key to satisfy the increasing demand of food production.”

Dr. Jarquin routinely seeks opportunities for collaborating with scientists who can benefit from applications and models that account for the effects of weather and biotic stressors and their interactions to better understand plant development. He is leading several projects related to the development of statistical models to perform predictions of crop performance. These models are flexible enough to handle the high dimensional nature of genomic and environmental factors as well as all interactions that might arise between each molecular marker and other type of covariates. His developments have led to the improvement of predictive ability of conventional models by 30-70% (depending on the crop-trait combination).

Dr. Jarquin is actively engaged with scientists on several projects where he provides expertise for understanding the crop performance via high dimensional interactions between genotypes and biotic and abiotic factors. For example, he is involved in the Genomes to Fields (G2F) and the SoyNAM (SoyGEN) projects which includes 30 states in the US and two provinces in Canada, and in both projects a large amount of environmental and soil information is utilized for analysis. He is also collaborating with the public (University of Tokyo, ICRISAT, CIMMYT, IRRI, EMBRAPA, CENICANA) and the private (Advanta Seeds) sectors on the development of new theories and models for understanding the genotype-phenotype relationship. Further, Dr. Jarquin is active in many professional organizations and is

currently section leader in Bioinformatics in Crops and Soils Community in the American Society of Agronomy, thereby enhancing communication among scientists in different divisions. In summary, as one colleague concluded: “Diverse detailed information on genomes, environments, and phenotypes is increasingly available, and the use of this information will enable plant breeding and genetics to evolve considerably. The methods and models developed by Dr. Jarquin will be indispensable in this evolution and will greatly accelerate the genetic improvement of plants.”



Diego Jarquin exploring genotype-phenotype relationships in a soybean field with his trusty laptop.



2020 NABP Lifetime Achievement Award Fredrick A. Bliss, Ph.D.

The 2020 recipient of the National Association of Plant Breeders (NAPB) Lifetime Achievement Award, given for distinguished long-term service to the plant breeding discipline through research, teaching, outreach, and leadership, is Dr. Fredrick A. Bliss, Professor Emeritus, Department of Plant Sciences, UC-Davis and retired from Seminis Vegetable Seeds. As his nomination letter concisely summarized: “It is one thing for a person to have worked in such a diversity of areas, but it is entirely unexpected for one person to make so many meaningful and lasting contributions across such diverse areas.”

Dr. Bliss received the B.S. degree from the University of Nebraska and Ph.D. degree from University of Wisconsin-Madison, joining the Department of Horticulture faculty at UW-Madison in 1966. In addition to teaching, public service and breeding self-pollinated vegetables, he worked as part of a UW-USAID Team building the new University of Ife in Nigeria. Subsequently he engaged in research and development projects globally, including consulting work in Nigeria, Somalia, Honduras and Brazil. In 1988, he left Wisconsin to join the UC-Davis faculty as Professor and Lester Endowed Chair in the Pomology Department, where he taught and mentored graduate students along with research on genetic improvement of fruit crops, including kiwifruit, apricot and *Prunus* rootstocks. He served as Department Chair (1991-1994) and Chair of the Plant Biology Graduate Group (1990-1992) and on numerous departmental and state-wide committees, while continuing international work.

Describing Dr. Bliss’s lifelong commitment to international collaborative activities, a Brazilian colleague and former graduate student noted: “I have no doubt that Fred Bliss is one of the most outstanding plant breeders the world has seen. This award recognizes his competence and also sends a message to many like myself who had the chance to get to know him – life can be beautiful for people who are able to put together both soft and hard skills in benefit of humanity.”

At UW-Madison and UC-Davis Bliss was active in classroom instruction and was major professor for 33 Ph.D. and M.S. students and nine postdocs from the U.S. and 11 other countries. Over his career he led breeding programs for cowpea, common bean, tomato, stone fruits and tree fruit rootstocks. He is author or co-author of more than 100 journal articles and twenty book chapters and review articles. Topics include: Breeding dry and snap beans for disease resistance, enhanced seed protein and increased nitrogen fixation; domestication and evolution of common bean; molecular genetic maps for *Prunus* (stone fruits); breeding improved rootstocks for peach and sweet cherry; and education of plant breeding students. He and colleagues released bean germplasm, a cultivar with enhanced nitrogen fixation, four patented peach rootstock cultivars and he recently released two named apricots. As one colleague observed: “I would refer to Dr. Bliss as the plant breeder’s plant breeder in that he always brought new ideas and approaches to old problems and encouraged innovative and broad thinking among his students.”

Dr. Bliss began the third phase of his professional career in 1998, when he joined Seminis Vegetable Seeds as Director of Worldwide Breeding responsible for leading 115 vegetable breeders. He also held Senior Director positions including R&D Strategic Support; R&D Special Projects & Commercial Research

Coordinator and a member of the Strategic Planning committee before retiring in early 2010, although he continued consulting work for the Washington Tree Fruit Research Commission, several companies and professional advisory panels. He was a member of the Scientific Advisory Panel for the RosBREED2 program, of the Scientific and Management Advisory Committee for the Integrated Breeding Platform and a consultant with FAO on the Global Initiative for Plant Breeding.

In addition to such activities, Dr. Bliss completed a comprehensive survey on preparation of future plant breeders, which led to a course he co-taught at UC-Davis on Plant Breeding Program Management. The impact of such work is still evident, as one colleague observed: "Fred developed a team for a national study of plant breeding education. This effort was widely successful and, I maintain, was a major contributor to the resurgence of professional plant breeding on a global scale, including the formation of the National Association of Plant Breeders."

Among others, Fred received the ASSINSEL Award for "outstanding work in the field of plant genetics and plant breeding" in 1986 and Honor Horticulturist 2010 at the International Horticulture Congress. In addition to the NAPB, he is a member and Fellow of the Crop Science Society of America, American Association Advancement of Science and American Society for Horticultural Science, where he was President, 1998-99. Regarding the NAPB Lifetime Achievement Award, another colleague observed: "This award recognizes Fred's leadership and advocacy for public plant breeding. His deep experience in academia and industry, along with his perceptiveness, intelligence, and passion for public planting breeding were critical in the work he did in organizing conferences and developing surveys and white papers on the dire straits of public breeding education. He then actively advocated for solutions, including formation of the NAPB."

Finally, another colleague offered this assessment of Dr. Bliss' character: "There is a magic about Fred, somewhat like the magic of plant breeding. Friendly, intriguing, exciting, inspiring, peaceful, satisfying, all describe interactions with Fred. How is that like plant breeding? Time spent with Fred is much like leaving a seedling field after making some very nice selections, knowing the world, and one's self, is better off than before you saw him or arrived at the seedling field."



Fred Bliss and Ken Kmiecik evaluating snap bean trials at the Hancock, WI Experiment Station.



2020 NAPB PUBLIC SECTOR PLANT BREEDING IMPACT AWARD

Dr. Kendall R. Lamkey

The 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. The 2020 recipient is Dr. Kendall R. Lamkey, Chair, Department of Agronomy, Iowa State University. Dr. Lamkey earned his B.S. and M.S. degrees from the University of Illinois and his Ph.D. from Iowa State University in plant breeding and genetics. Dr. Lamkey provides leadership and direction to the department in the areas of education, research and extension. As

one of his support letters noted: “Under Dr. Lamkey, the department has maintained its reputation for excellence and has added new initiatives in teaching and research that are helping it evolve in the future as a center of learning, knowledge and service.” Another added: “As a professor, mentor, scientist, and administrator he has had an immeasurable impact on many lives and careers related to plant breeding and other agricultural spaces over his tenure.”

Dr. Lamkey advocates for and sets priorities for the academic and research portfolio of the department through shared governance with the faculty. In cooperation with Associate Dean for Extension and Outreach in the College of Agriculture and Life Sciences, he sets priorities for extension and outreach in crops, soils and climatology. Dr. Lamkey represents the department as he interacts with the public in Iowa and at the national and international level. He is responsible for understanding and articulating the broad education, research, and extension capabilities of faculty in the department. Dr. Lamkey is responsible for overseeing the departmental budget, evaluating faculty, setting salaries, hiring faculty, and providing faculty, staff and students with the support they need to be successful. He provides leadership in the expenditure of earnings from endowments, which total around \$2.5 million per year.

Dr. Lamkey’s research program focuses mainly on corn breeding with an emphasis on the quantitative genetics of selection response, inbreeding depression and heterosis. His impact in this area is profound. According to one of his support letters: “Without Kendall’s work, there would be gaping holes in the plant breeding literature, especially in our general understanding of recurrent selection, results from selection, breeding program design and inbreeding and heterosis.” Dr. Lamkey has served on the advisory board for Makerere University Regional Center of Excellence in Crop Improvement (MaRCCI), Kampala, Uganda since 2018 and been involved in the Gates-funded project Plant Breeding Education for Africa (PBEA). One of Dr. Lamkey’s current interests is cropping systems models such as APSIM and how to account for genetic changes in cultivars over time in these models.

Dr. Lamkey has been major advisor for 18 Ph.D. students and 10 M.S. students and has served on the program of study committee for more than 80 M.S. and Ph.D. students, one of whom states: “He has directly trained or served on the committee for countless students who now serve in many capacities of our plant breeding industry and academia.” Dr. Lamkey has authored or co-authored 81 refereed journal articles and numerous papers in conference proceedings, book chapters, published abstracts and technical research reports. He is a fellow of the American Society of Agronomy and the Crop Science Society of America and has served as an associate editor, technical editor and editor for *Crop Science*. Summing up Dr. Lamkey’s impact on plant breeding, another former student concludes: “As I look back

upon my graduate school days with Kendall, three things stand out in my mind: his encouragement of me as a scientist, his emphasis on foundational knowledge and his proclivity for vision.”



Kendall Lamkey evaluating corn trials with graduate student Brandon Wardyn.



2020 NAPB Private Sector Plant Breeding Impact Award

Dr. Thomas C. Osborn

The Private Sector Plant Breeding Award, first established in 2020, 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. The 2020 recipient is Dr. Thomas C. Osborn.

Dr. Osborn is currently the Head of Global Analytics and Pipeline Design for Vegetable R&D at Bayer Crop Science in St. Louis, where he leads a team of scientists and engineers that brings new insights and capabilities to the vegetable breeding pipeline using predictive analytics, accelerated breeding methods and advanced genomic and plant phenotyping technologies. As one of his supporting letters attested: “Dr. Osborn’s work has impacted Bayer’s global portfolio of seed products across diverse crops. The advances in breeding methodologies and introduction of novel traits have had a significant impact and delivered new vegetable varieties that provided much-needed solutions for growers and innovative products for consumers.”

Prior to his work in the private sector, Dr. Osborn was a faculty member for nearly 20 years at the University of Wisconsin-Madison, where one colleague noted: “Tom played a major role in the development of molecular breeding in the public sector, in particular for canola breeding. He also provided key insights into genome instability in polyploids, genetics of flowering time in Brassicas and was one of the first to do RFLP mapping in plants.” Dr. Osborn’s combination of experiences in the academic and private sector, according to one colleague, has been “...integral to his success in that he has been able to find and develop key innovations and demonstrate the economic impact of such innovations across breeding pipelines and technology functions.”

Tom received a B.S. in Horticulture and a Ph.D. in Plant Breeding and Plant Genetics from the University of Wisconsin-Madison and was a postdoctoral researcher at the ARCO PCRI in Dublin, CA. From 1985-2004 Dr. Osborn was at the University of Wisconsin-Madison, where he held the Bascom Chair in Agronomy, chaired the Plant Breeding and Plant Genetics Graduate Program and taught and conducted research in molecular plant breeding and polyploidy. As stated by a colleague: “Tom’s research and publication record at point of hire was already outstanding, and gained momentum as he quickly passed through the ranks to full professor in 1993. During that time, and by the time he was hired away by Seminis, he trained more grad students and postdocs, published more papers, and obtained more grants than anyone in the department. His research on using DNA technology for crop improvement was not just at the cutting edge, it was the cutting edge of new technology. To top this off, he also taught undergrad and grad courses.” Another colleague pointed out: “The 40 graduate students and postdocs he helped trained continue to advance the science of plant breeding through key positions in academia and industry, including five former students currently in Bayer Crop Science.

Tom moved to the private sector as Director of Breeding Technology at Seminis Vegetable Seeds/Monsanto from 2004 to 2010 in Woodland, CA, where he led initiatives in molecular breeding, cell biology, pathology and analytics to accelerate the development of new, high value vegetable traits. Subsequently he served as Director of Molecular Breeding Technology/Precision Genomics at Monsanto/Bayer from 2010 to 2018, leading a global team that developed and applied genotyping and

genomic technologies for all crops in the R&D pipeline. This team developed and implemented a novel genotyping-by-sequencing technology for genomic selection that enabled a four-fold expansion of the corn breeding pipeline and established the St. Louis Production Genotyping lab as the company's largest corn yield testing location. He is the recipient of Monsanto's Edgar M. Queeny Award and the Monsanto Science & Technology Career Award and Fellow, Crop Science Society of America.

In addition to his scientific insights and accomplishments, Dr. Osborn's career is distinguished by his personality and approach. One colleague put it this way: "The success of the project was in no small part due to Tom's leadership in the scientific as well as collaborative realms. He was very adept at bringing out the best in everyone and getting them to work together." Another agreed: "As a leader, Tom inspires, empowers and develops his team for passionate execution. Tom is motivated by achieving collective understanding and a sense of mission."



Tom Osborn, planting test plots with graduate student Kimberlee Kidwell.



2020 NAPB Friends of Plant Breeding Award

Dr. Donn Cummings

The National Association for Plant Breeders (NAPB) 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. The 2020 recipient is Dr. Donn Cummings.

During a 30-year career with Pfizer Genetics, DeKalb and Monsanto, Dr. Donn Cummings was a highly successful corn breeder, Station Manager and Area Research Director. Donn became Monsanto's Global Breeder Sourcing Lead in 2007, where he provided overall leadership and global strategic planning to build and maintain a Ph.D. and M.S. level plant breeder talent pipeline for Monsanto until his retirement in 2015. In addition to his prowess as a commercial plant breeder and industry executive, Donn has regularly participated in agriculture-related panels and advisory committees.

Dr. Cummings has been exceptionally active in a wide range of professional organizations, including the Crop Science Society of America, the National Council of Commercial Plant Breeders (Past President), the American Seed Trade Association (ASTA) and the Plant Breeding Coordinating Committee. In 2003 Donn was named a Monsanto Scientific Fellow, that organization's highest honor. Donn is founding member of the NAPB, has served as NAPB Membership Committee Chair, initiated and serves as a mentor in NAPB's Borlaug Scholars Program, spearheaded development of the current NAPB Strategic Plan and seeded its largest financial donation to date. As Peggy Ozias-Akins, current NAPB President and University of Georgia Professor notes: "Donn's dedication to nurturing the next generation of plant breeders is truly admirable. His example of 'giving back' is influencing the culture of a generation."

Donn received his B.S. in Biology Education from Purdue University in 1971, an M.S. in Plant Breeding and Genetics from Purdue in 1973 and a Ph.D. in Plant Breeding and Genetics from the University of Minnesota in 1977, after which he began his plant breeding career as Research Station Manager for Pfizer Genetics in Mason City, IL. Within DeKalb-Pfizer Donn served as Eastern Area Director from 1981-84, before becoming Station Manager and then Eastern Area Research Director for DEKALB Genetics in Windfall, IN from 1985-99. Donn worked within Monsanto as Eastern Area Product Lead from 2000-03 before relocating to Lebanon, IN as Line Development Corn Breeder in 2004. Donn continued with Monsanto as a Commercial Corn Breeder until 2007, when he became Monsanto's Global Breeder Sourcing Lead.

One of Donn's early contributions to plant breeding was the first report of successful technology for routinely regenerating whole plants from tissue culture in oats. Subsequently, as a corn breeder and research manager he obtained 22 inbred and hybrid patents, with

significant commercial impact. Building on his skills and experiences as a successful corn breeder, Donn moved into research administration and outreach, as Global Breeder Sourcing Lead with Monsanto, where he was actively engaged in strategic planning, scientist recruitment and networking across public and private sector educational organizations and industry associations.

Throughout his career as a commercial plant breeder, research administrator and active citizen in the plant breeding community, Donn has been a tireless and articulate advocate for the plant breeding profession. He not only initiated the NAPB Borlaug Scholar's Program, but continues to serve as a reliable, insightful, and devoted mentor for dozens of students and aspiring plant breeders globally. As stated by Todd Campbell, Past President of NAPB and Research Geneticist with USDA-ARS: "Donn is one of the most passionate plant breeders in our profession. Donn's dedication to NAPB and the next generation of plant breeders is teaching students and young professionals (and even seasoned plant breeders) keys to success in plant breeding and life and something that is not part of the curriculum in a plant breeding course – passion, service, and enthusiasm for your profession." Within the NAPB, Donn has been a driving force from its inception and is currently a Liaison between NAPB and ASTA, continuing to share his passion and enthusiasm for the plant breeding profession. Dave Bubeck, current NAPB Vice-President and Research Director at Corteva stated, "I have known and interacted with Donn as a competitor for many years. He has been an incredible advocate for plant breeding and relentless about his efforts to find the best career path for students."

In conclusion, as current Borlaug Committee Chair Dr. Don Jones, says: "Donn Cummings is passionate about providing a path for our young plant breeding stars to further build upon the foundation first established by Dr. Borlaug regarding a sustainable food supply for an ever-growing population. Donn personally provided the largest donation to the program, has invested more time than anyone else even though he is retired, and provides insights and guidance that are highly valued by committee members and scholars alike. He is truly a friend of current and future plant breeders and highly deserving of this award."