THE
BEAN IMPROVEMENT COOPERATIVE

AWARDS PROGRAM

Westin Hotel
Greenville, South Carolina
November 7, 2023

THE BEAN IMPROVEMENT COOPERATIVE

Proudly Presents the

Frazier - Zaumeyer Distinguished Lectureship

to

Karen Cichy
Research Geneticist
USDA-ARS
East Lansing, Michigan
&
Raymond Glahn
Research Physiologist
USDA-ARS
Ithaca, New York

The **Frazier - Zaumeyer Distinguished Lectureship** was established in 2001 to recognize and honor a distinguished colleague who will present the keynote opening address at the biennial BIC meeting. The individual selected will have made outstanding and pioneering contributions to science that led to the advance of bean research. The Lecture will focus on current topics relevant to the BIC membership. The Lectureship is distinct from the other BIC career Awards such as the Distinguished Achievement and Meritorious Service Awards. Holders of these awards are not excluded from being awarded the Frazier-Zaumeyer Distinguished Lectureship. The name for the Lectureship honors the original BIC founder members, the late William A. 'Tex' Frazier, distinguished bean breeder and the late William 'Bill' Zaumeyer an equally distinguished bean pathologist. Dr. Tex Frazier working at Oregon State University is recognized for his pioneering work in developing the famous Bush Blue Lake snap bean and related germplasm. Dr. Bill Zaumeyer, USDA-ARS is recognized for his outstanding efforts in bean pathology.

KAREN CICHY

Dr. Karen Cichy is a USDA-ARS research geneticist in East Lansing, Michigan, working on pulse crop quality and nutrition at Michigan State University. Dr. Cichy received a B.S. degree in Horticulture with a minor in International Agriculture from the Pennsylvania State University in 1998. She received both M.S. and Ph.D. degrees in Plant Breeding and Genetics from Michigan State University in 2002, under the direction of Dr. George Hosfield, working on mineral content in dry beans, and in 2006 studying bean root traits in low phosphorus soils with Drs. Sieg Snapp and James Kelly as co-advisors. She was awarded a Fulbright Scholarship to conduct part of her doctoral studies at CIAT, Colombia under the direction of Dr. Matt Blair. Following graduation, she received a two-year USDA postdoctoral position to study low phytic acid mutants in barley with Dr. Victor Raboy at the USDA lab in Aberdeen, Idaho. She returned to MSU in 2009 to assume her current position as research geneticist in the USDA-ARS Sugarbeet and Bean Research Unit.

Dr. Cichy has established a highly respected research program focusing on genetic enhancement of pulse crop nutritional and processing qualities that is sought by other researchers including: graduate students and postdocs (14), visiting scientists (16), industry partners, international partners, and grantors (~$3M just in the last five years). Her research on characterization and improvement of nutritional quality, consumer acceptance, and utilization of dry beans as a food source is expansive. She has contributed significantly to the genetic characterization and understanding of bean seed nutritional value, seed mineral bioavailability, digestibility, cooking time, flavor, seed coat traits, and canning quality, among other traits. Her characterization of cooking time has revealed faster cooking beans which increases nutritive value and reduces fuel costs. Much of her work involves multi-location trials to determine genotype, environment, and genotype x environment effects on target traits. She has been active in characterizing qualities of bean flours, bean puree, pastas, and other food products. Dr. Cichy has an active dry bean breeding program that is in the process of releasing new fast cooking 'Manteca' and 'Mayocoba' yellow beans that have enhanced iron content and iron bioavailability. Her genetic research also contributes to the characterization and understanding of agronomic traits including biological nitrogen fixation, low soil fertility tolerance, root rot resistance, anthracnose resistance, seed yield, and many others.

Dr. Cichy's collaborative spirit and scientific prowess has resulted in the publication of six book chapters and 87 peer reviewed journal articles. Since 2017 Karen has participated as PI, Co-PI, or collaborator on 20 grants and has received over 20 invitations as an invited speaker. Her vision and expertise are highly sought after at scientific meetings and conferences hosted by the processing industry. She has been active in the W-4150 Multistate Research Project, Bean Improvement Cooperative Coordinating Committee, Phaseolus Crop Germplasm Committee, and

Michigan Dry Bean Commission, as well as serves on steering, oversight, and working groups for various entities, grant review panels, and is an Associate Editor for the Legume Science journal. Karen also works closely with the international community; especially in the East African nations of Tanzania, Zambia, and Uganda, where much of her time and resources are devoted to training young scientists on the agronomic and genetic techniques needed for improving pulse crop quality and nutrition. The Bean Improvement Cooperative recognized her contributions with the Distinguished Achievement award in 2015. The dry bean research community and industry partners have benefitted immensely from Dr. Cichy's collaboration, council, and scientific contributions in the critically important field of nutrition and processing quality, which she has helped to promote and expand in the state of Michigan and beyond.

RAYMOND GLAHN

Dr. Raymond Glahn is a Physiologist with USDA-ARS in Ithaca, New York, working on nutrition physiology including mineral biofortification and bioavailability. Dr. Glahn received his B.S. in 1983, M.S. in 1986, and Ph.D. in 1989 from the Pennsylvania State University. Kidney physiology and health was Dr. Glahn's area of expertise during his formative graduate and post-graduate studies. His dissertation was on 'Causes and treatment of urolithiasis in single comb white leghorns' under Dr. Wideman, Jr. Between B.S. and M.S. degrees, he spent a year at Bethesda Naval Hospital, in Bethesda, Maryland, as a Research Associate in the Department of Critical Care Medicine. After graduation, he was a Research Associate in the Department of Poultry Science at the University of Arkansas in Fayetteville, Arkansas, from 1989 to 1990. He spent two years from 1990 to 1992 as a Research Fellow in the Nephrology Research Unit, Department of Physiology at the Mayo Clinic and Foundation, in Rochester, Minnesota. Dr. Glahn assumed his current position in 1992 with USDA-ARS Plant, Soil, and Nutrition Research Unit at the Robert Holley Center for Agriculture and Health, in Ithaca, New York.

Over the course of his career, Dr. Glahn has established a renowned research program on micronutrient human nutrition. Today, he's one of the world's authorities on iron nutrition and bioavailability in a wide range of foods that include fish, infant formula, maize, raisins, rice, soybean, spinach, wheat, dry bean, and pulses. His most recent efforts have focused on studies involving mineral biofortification and bioavailability in lentils and dry beans, including black, carioca, pinto, slow-darkening pintos, red, white, and yellow beans. His research examines and characterizes which factors influence iron bioavailability of grain legumes, including storage, processing, cooking time, mineral accumulation, seed structure, and many others. Dr. Glahn's research discovered that phenolic compounds in the seed coats of black beans reduce available iron while beans with white seed coats exhibit more available iron than colored beans. Thanks to his research, and in collaboration with other bean scientists, we know today that certain market classes of beans such as yellow, white, and slow-darkening pintos offer the highest levels of iron bioavailability. Dr. Glahn was an important contributor to the HarvestPlus Global Research Initiative to improve and promote biofortified beans in Rwanda and other East African Countries. His research eventually led to a better understanding of the independence between iron biofortification and iron bioavailability, demonstrating that higher seed iron content doesn't necessarily translate into higher iron absorption/utilization in human nutrition, and how bioavailability can be addressed as a potential breeding target. These findings and others are relevant to human nutrition and health in all populations. More importantly, identifying molecular targets breeders can use to

enhance the iron bioavailability of stable food crops such as dry beans can have a profound impact on the health and well-being of subsistence farmers in Africa, Latin America, and elsewhere.

Dr. Glahn is a highly effective and productive scientist as supported by 175 peer-reviewed publications, which also attests to his collaborative spirit and willingness to work with others. Since 1998, Dr. Glahn has served as an affiliate Professor in the Division of Nutritional Sciences and in the Department of Food Science, at Cornell University, where he taught a Current Readings in Iron Bioavailability course, and contributes to undergraduate and graduate research, and as a guest lecturer. He was recognized by his peers with Excellence in Research Awards from Poultry Science Association in 1987 and 1988, and from American Physiology Society in 1992. Dr. Glahn received the Early Career Scientist of the Year award from USDA-ARS, North Atlantic Area, in 1999. He is currently the Research Leader for the Plant, Soil and Nutrition Research Unit in Ithaca, New York. Dr. Glahn is an active and valued participant in the dry bean and pulse research communities through his many collaborations and contributions to nutrition physiology and trace mineral absorption and bioavailability.

THE BEAN IMPROVEMENT COOPERATIVE

Proudly Presents the

Meritorious Service Award

to

Daniel G. Debouck

CIAT
Cali, Colombia

Antonio M. De Ron

Spanish National Research Council (CSIC)
Pontevedra, Spain

Distinguished Achievement Award

to

Emmalea Ernest

University of Delaware
Newark, Delaware

Consuelo Estévez de Jensen

University of Puerto Rico, Mayaguez
Juana Diaz, Puerto Rico

Aldemaro Clara

CENTA
San Salvador, El Salvador

Technical Merit Award

to

Antonia Palkovic

University of California, Davis
Davis, California

in recognition of outstanding accomplishments relating to bean (Phaseolus) improvement

DANIEL G. DEBOUCK

Dr. Daniel Debouck is a CIAT emeritus scientist globally recognized for his efforts in germplasm conservation of Neotropical crop species, but more importantly, for his efforts made in the collection and study of Phaseolus germplasm across almost his entire career. Born in Belgium, Dr. Debouck obtained his Ing. (Ingénieur Agronome, 1976), M.S. (Tropical Plant Sciences, 1979), and Ph.D. (Plant Physiology with a minor in Ethnobotany and Plant Ecology, 1983) degrees from Gembloux Agro-Bio Tech (Université de Liège) in Belgium.

In June 1977, Dr. Debouck arrived at CIAT in Cali, Colombia, as a FAO Associate Expert in the Genetic Resources Unit, with main responsibilities in plant exploration and germplasm management. He conducted multiple germplasm collections mostly in Mexico, while training germplasm curators of national programs. In 1979, he went back to Belgium to finish his Ph.D. After graduation in 1985, Dr. Debouck returned to CIAT as a Post-Doctoral Fellow, where he carried out multiple germplasm collections in ~10 countries in Latin America and the United States. He was later promoted to Senior Research Fellow and chaired important global committees/groups devoted to the conservation of genetic resources (FAO, CGIAR, UNCED, UNEP, among others). By 1992, his outstanding work led to his promotion to Senior Scientist, with notable scientific accomplishments across South and Central America. In 1996, he was given the great responsibility of managing the entire Genetic Resources Unit at CIAT, a germplasm bank with more than 67k accessions of beans, cassava, and tropical forages and a staff of more than 70 people. This is one of the most important and best-managed germplasm banks worldwide, and its impact across the globe and different breeding programs has been demonstrated numerous times. Dr. Debouck's passion for germplasm, his outstanding management skills, and his attention to detail are reflected in the quality of the gene bank materials and their documentation in an online database. He also served as thesis advisor to numerous students from Latin America. He successfully managed this unit until his retirement in 2019. However, retirement is probably not the right term to use, given that Dr. Debouck continues to be actively engaged in research, germplasm exploration, teaching, advocating, and writing, in addition to some advising roles across several countries. In recent years, Dr. Debouck has been one of the main individuals with the vision to upgrade the CIAT germplasm bank to international standards, resulting in the building of Future Seeds (the new CIAT gene bank), which opened in March 2022.

For those who have not had the pleasure to work with Dr. Debouck, here are some accomplishments that illustrate the profound impact of his career: 41 plant explorations in 14 Latin American countries in the period 1977-2019;

collection of ~3,300 samples new to world gene banks; author or co-author of 1 monograph (published in 2002 after 14 years of work, this monograph is the most up-to-date taxonomic catalog of *Phaseolus* species), 25 book chapters, 115 research papers, 12 conference proceedings, and 37 international reports; author of the largest database on *Phaseolus* species in the public domain of the world; 26 awards across the globe; significant field work in Ecuador and NW Peru that led to the identification of an ancestral branch of wild *P. vulgaris*, eventually acknowledged as a sister species of common bean (*P. debouckii* A. Delgado); has described for the first time nine new species of bean in Mexico, five in Costa Rica, and one in Guatemala; made significant contributions to document the presence of seven races in common bean; documented the fifth domesticated species in the genus *Phaseolus* based on field work in Guatemala; has made significant contributions to establish a double domestication in Lima bean because of field work in Central America, Ecuador and Peru; was instrumental in the revision and rebuttal of a patent on a yellow bean; and many more that cannot be fitted into one page.

The Bean Improvement Cooperative acknowledges the accomplishments of Dr. Daniel Debouck, his many contributions to the bean community, and his world-wide impact on germplasm conservation.

ANTONIO M. DE RON

Antonio De Ron was born in Lugo, Spain in 1952 and is an *Ad Honorem* Professor of the Spanish National Research Council (CSIC) at the Misión Biológica de Galicia (MBG) in Pontevedra, Spain. He completed his undergraduate and PhD degrees at the University of Santiago de Compostela (Spain) in 1974 and 1987.

Dr. De Ron began working as an INIA Postgraduate Researcher at the Forestry Center in Pontevedra and as a teacher in a Secondary School in Pontevedra. He started his career in the MBG as a Tenured Scientist in 1988, and was then was promoted to Scientific Researcher in 2004, and Research Professor in 2008. He founded the Genetics and Breeding of Legumes research group in 1988 and later the Biology of Agrosystems group in MBG. In parallel, he was a lecturer at the University of Santiago de Compostela (1990-2004), at the National Open University (1991-2014) and professor of the Master's Degree in Genomics and Genetics at the University of Santiago de Compostela-University of Vigo.

He served as President of the Spanish Association for Legumes (2006-2012), was Coordinator of the CSIC in Galicia, Spain (2019-2021), and was President of the Science Society of Galicia. Internationally, he was active in Europe and America. In Europe, Dr. De Ron coordinated the PHASELIEU project (1998-2002), is a member of the European Association for Research in Plant Breeding (EUCARPIA) as Leader of the Protein Crops Working Group, and organized the Protein Crops Symposium in 1998 and 2015. Currently, he is an active member of the Grain Legumes Working Group of the European Cooperative Programme for Plant Genetic Resources which brings together scientists from different European countries in a joint evaluation initiative for legumes, including common bean. In America, Dr. De Ron belongs to the Bean Improvement Cooperative and was a member of the Coordinating Committee (2001-2015). He cooperated for years with Argentina in bean germplasm and breeding and in the research of the symbiosis bean-rhizobia. He has played an important role in collecting and conserving the MBG's legume germplasm collection.

Dr. De Ron focused his scientific career on plant genetic resources, particularly in legume crops such as common bean, peas, and cowpeas. In these species, he selected cultivars to be transferred to the agri-food and feed sector. The main goal of this research on the interactions of bean-soil symbiotic microbiota is to produce new biofertilizers to improve N fixation in bean production, reduce the emission of greenhouse gases, prevent crop diseases and promote plant growth. He made international and national expeditions to collect legume varieties and thanks to him there is at the MBG an important collection of

legume varieties that includes 800 bean accessions. Thus, he was a pioneer in the collection of legumes, especially beans, in Spain. Dr. De Ron was one of the authors who identified novel genetic variation in beans from the Iberian Peninsula (Spain and Portugal), characterized by morphological traits, phaseolin protein, and allozymes. Obvious signs of introgression between the two gene pools of bean (Mesoamerican and Andean) were observed mainly among white-seeded genotypes. The intermediate forms adapted to the Iberian Peninsula could have emerged from initial recombination between Mesoamerican and Andean gene pools, therefore, the Iberian Peninsula could be considered as a secondary center of genetic diversity of the common bean, especially the large white-seeded genotypes.

He is a co-author of more than 200 papers in both international and national scientific journals and is an editor of some national and international journals such as Frontiers in Plant Science. In 2015, he edited the book Grain Legumes, with 78 co-authors. Dr. De Ron has supervised many MS students and 16 PhD students, some of whom have gone on to successful careers. Finally, an important aspect of Dr. De Ron is his dedicated effort to disseminate scientific and technical knowledge to society, as an example, he has organized “Science Week” in Pontevedra since 2010.

EMMALEA GARVER ERNEST

Dr. Emmalea Ernest grew up in Lancaster County, Pennsylvania with an interest in all kinds of plants from a young age. Her first job at the age of 12 was at a native plants nursery as well as volunteering at the Landis Valley Museum Heirloom Seed Project. Before college, she worked at a number of regional nurseries as well as the Longwood Gardens. She received her B.S. degree from The Pennsylvania State University in 2001 in Horticulture. She then attended Michigan State University where she received an M.S. degree in 2004 in Plant Breeding and Genetics for efforts to improve Ecuadorian bush beans for anthracnose resistance using a farmer participatory approach. She received her Ph.D. in Plant Science from the University of Delaware in 2020 for studies on the "Physiological effects of high temperature and the genetic architecture of heat stress response in lima bean."

She has been in the Cooperative Extension Vegetable and Fruit Program since 2004, first as an Extension Associate, then as an Associate Scientist and Scientist. In July 2023, she was appointed as an assistant professor and Extension Vegetable Specialist. The Bean Improvement Cooperative was responsible for her seeking out her current position in Delaware. While a graduate student attending MSU, she heard Ed Kee speak at the Sacramento BIC meeting, and the rest is history.

Although she is a newly minted assistant professor, Dr. Ernest has served the bean community in many capacities since obtaining her M.S. at MSU. She likely knows more about lima beans than anyone else in the bean community. She works on many different vegetable and fruit crops in the DelMaVa region, but her lima bean research has been the most extensive and impactful. She supports a substantial processed lima bean production acreage in the region. After a lapse of 15 years, she reinitiated one of the few lima bean breeding programs in the U.S. in 2004. This program focuses on genetic improvement of both baby and Fordhook types with an emphasis on heat stress tolerance and various biotic stresses including downy mildew, nematodes, and white mold. Her lines are being trialed in California, the Midwest, Canada and along the eastern seaboard. She has promising baby lima lines to be released in the next two years.

Applied and basic lima bean research has been strengthened by the presence of Dr. Ernest's research program. She has been part of the effort to bring lima bean into the genomics era with the publication of a genome sequence of a baby lima type in 2021. She has several papers on downy mildew in lima beans and its control through genetic and cultural means. Dr. Emmalea Ernest has made many significant service and research contributions to the world common bean community, and the community is distinguished by awarding her the BIC Meritorious Service Award.

CONSUELO ESTEVEZ DE JENSEN

Dr. Consuelo Estevez de Jensen is a Professor and Plant Pathologist at the University of Puerto Rico, Mayaguez and is stationed at the Fortuna Station in Juana Diaz, PR. She was born in Quito, Ecuador and completed her undergraduate degree in Agronomy at Universidad Central del Ecuador in Quito. She is currently one of the few active common bean pathologists worldwide and has contributed extensively to the field.

Dr. Estevez was one of the first Bean/Cowpea Collaborative Research Support Program (CRSP) trainees, completing her M.S. degree at the University of Minnesota in St. Paul, MN with Dr. Peter Graham and subsequently returning to Ecuador to serve as the host country principal investigator from Ecuador on a CRSP project titled "Improving the symbiotic nitrogen fixation of cultivars of Phaseolus vulgaris under low-resource conditions." She served on the Technical Committee of the Bean/Cowpea CRSP and was nominated for the Outstanding Latin American Scientist award in 1993. From 1992 to 1995 she served as the Department Head of the Crop Protection Department in the National Agricultural Research Institute (INIAP) at the Santa Catalina Experimental Station. Dr. Estevez completed her Ph.D. and a Postdoc at the University of Minnesota. Her dissertation research showed that the combination of Rhizobium and Bacillus improves root rot control, nodulation, and nitrogen fixation in common bean.

In 2023, Dr. Estevez joined the Agricultural Research Station at the University of Puerto Rico where she has served as a leader in the study of biological nitrogen fixation (BNF) in common bean. She conducted workshops in several countries including Angola, Dominican Republic, Ecuador, Haiti, Honduras, Puerto Rico, and Mozambique. Her training and institutional capacity development efforts in Haiti resulted in the production of peat-based inoculants for over 20,000 subsistence farmers. Dr. Estevez has published on BNF methodology and the response of common bean to Rhizobium inoculation and continues to generate information needed for the release of improved germplasm and cultivars.

Her contributions to the common bean community include collaborations on diseases such as the root rot disease complex, common bacterial blight, angular leaf spot, and powdery mildew. She has served as a Co-PI in Bean/Cowpea CRSP and Legume Innovation Lab Projects in Central America and Sub-Saharan Africa. Her seminal work on root rots in common bean and her continued collaboration with researchers in this area have led to significant advances in our understanding of common bean resistance and the genetic structure of pathogens such as *Fusarium* spp. and *Macrophomina phaseolina*. In recognition of these achievements, she was awarded a Certificate of Appreciation in 2015 at the Common Bean Disease workshop in South Africa. Her close

collaboration with breeders in the bean community and participation in the W-4150 has strengthened and accelerated the breeding efforts in the U.S. and in the Caribbean and Central American region.

Dr. Estevez established the first Plant Diagnostic Clinic (PRPDC) at the UPR Juana Diaz Experiment Station, a monumental task. The laboratory is fully accredited in the Plant Diagnostics Network and serves numerous crops produced in Puerto Rico, including common bean, and the winter nursery industry. She coordinates closely with the USDA-APHIS in Puerto Rico and the Virgin Islands to provide education on plant diseases in the region and was awarded for these contributions. In addition to common beans, Dr. Estevez conducts research and supervises the thesis research of students dealing with citrus greening and soybean diseases.

ALDEMARO CLARA

Mr. Aldemaro Clara has been the Salvadorian dry bean leader at the National Center for Agricultural and Forestry Technology (CENTA) since 2006. Aldemaro earned his B.Sc. in Agronomy starting at the Universidad Autonoma Antonio Narro (UAAAN) de Saltillo, Coahuila, Mexico, and finalizing his degree at the Universidad Tecnica Latinoamericana de El Salvador in 1996.

From 1996 to 2006, he participated in government and private company projects, providing technical assistance to subsistence farmers in the cultivation of corn, beans, sorghum, and vegetables, living in rural communities, and facilitating the management of crops. He also collaborated as a technician in projects with the FAO and USDA on soil conservation and organic management of basic grain crops and silvopastoral systems.

Aldemaro is a member of the Central American Bean Network (representing El Salvador). He collaborates closely with Zamorano University in conducting trials and nurseries with the goal of common bean improvement. He is also a member of the Latin American network of legumes, LatinRed, based in Bolivia. Aldemaro has effectively coordinated with international collaborators from CIAT Colombia, Zamorano University in Honduras, the University of Puerto Rico, and Michigan State University, where common bean improvement projects have been coordinated with funds such as CIAT Agro Health, Zamorano-UPR Climate Change, and Tortillas on the Roaster- CIAT.

Aldemaro presents his research regularly on genetic improvement in beans at the Programa Cooperativo Centroamericano para el Mejoramiento de Cultivos y Animales (PCCMCA) since 2008. His research includes selection of breeding lines beans with high iron and zinc content, evaluation of common bean germplasm for high yield with tolerance and resistance to diseases, and improvement of beans for drought in the dry corridor of El Salvador.

Aldemaro has a dynamic dry bean breeding program. He has developed new bean varieties formally released by CENTA. Aldemaro directly participated in the improvement of the small red varieties CENTA Ferromás (high in iron and zinc and tolerant to BGYMV), and CENTA Chaparrastique (heat tolerant and BGYMV resistant). Most recently, he released CENTA EAC "Enrique Alvares Córdova" resistant to angular leaf spot, web blight, and BGYMV, and tolerant to high temperatures and low fertility. Other releases are CENTA Drought (tolerant to drought and resistant to BGYMV), CENTA Costeño 2 (resistant to BGYMV), and the black seeded CENTA Tacuba (resistant to BGYMV and tolerant to high temperatures). With the release of these bean varieties, farmers have been assisted in improving their sustainable practices by reducing chemical applications to control pests and diseases, and increasing yields.

ANTONIA PALKOVIC

Antonia Palkovic completed her BS in Political Science at SUNY Purchase College in 2003 and MSc in International Agricultural Development at UC Davis in 2012, with subsequent work as a Junior Specialist in the rangeland watershed and agroecology labs at UC Davis. Antonia has worked with the Dry Bean Breeding Program at UC Davis for more than 10 years, as an Assistant Project Scientist and Associate Project Scientist. Since March 2016, she has also worked part-time on the Student Collaborative Plant Breeding Education (SCOPE) project, which was recently renewed.

Antonia's accomplishments have been both broad and deep with regards to their nature and impact. Antonia has been a co-author on several publications since her appointment in the dry bean program >10 years ago, which is indicative of her expertise in dry bean breeding and her consistent and longstanding contributions to dry bean research at UC Davis. Antonia is also skilled in data analysis and the writing-up of research results in a way that is clear and appropriately targeted for the respective audience. She is also of course consistently maintaining and advancing materials in all stages of the breeding process (from new crosses to advanced breeding lines with use of relevant checks).

She has also taken on a substantial role within a USDA NIFA Specialty Crop Research Initiative project in lima bean that Dr. Paul Gepts is leading, and has been making fantastic use of that opportunity to expand upon our pre-breeding/genetics work in collaboration with other lima bean researchers in the U.S. Antonia is an expert in the agronomy and breeding program field operations of multiple dry bean species, including limas, garbanzos, and common bean. She regularly makes well-attuned and appropriately nuanced recommendations with regards to management based on factors such as weather, goals of a given experiment, and availability of equipment or funding.

Antonia is highly professional and collegial when discussing with growers, field station managers, greenhouse managers, project team members, and students, among others. Antonia's power of observation is strong, and she has independently identified interesting germplasm and interesting phenomena therein. For example, a lima population with potentially helpful end-of-season characteristics that she has developed; a nested design that would complement an existing population; and relationships between pod size and seed size. She and team have also developed interesting lima bean cultivars through SCOPE that are being explored further.

To summarize, Antonia has exhibited tremendous breadth and depth of knowledge and experience with regards to the production and (relatedly) biology of grain legumes. She is generous in sharing her insights and does so in timely fashion even when balancing multiple tasks, often in multiple locations. She is an excellent mentor of students who interface with the breeding program. She has also conducted significant service—e.g., as a long-time member of the field facilities committee.

SPONSORS - 2023

GOLD

ProVita Inc.
Limagrain/Vilmorin

SILVER

Syngenta

COPPER

Pop Vriend Seeds B.V.

BRONZE

Pure Line Seeds

FRIEND

Nebraska Dry Bean Commission

BEAN IMPROVEMENT COOPERATIVE COORDINATING COMMITTEE

Kirstin Bett
Karen Cichy
Simon Chang
Kelvin Kamfwa
Ken Kmiecik
Phil Miklas
Jim Myers
Juan Osorno
Peter Pauls
Timothy Porch (President)

AWARDS COMMITTEE

Carlos Urrea (Chair)
James Myers

LOCAL ORGANIZING COMMITTEE

Dil Thavarajah (Chair)
Summer Chandler (Event Planner)
Tristan Lawrence (Logistics)
Jenna Hershberger (Grad Social)
Sandra Branham (Tours)
Sonia Salaria (Graduate student rep).