

# THE FAR-B NEWS

Dedicated to promoting the research and education programs of the Henry A. Wallace Beltsville Agricultural Research Center, Beltsville, MD

Friends of Agricultural Research-Beltsville, Incorporated P.O. Box 1061, Beltsville, MD 20704-1061

JUNE 2020 Editor: Hank Becker

## **President's Message**

As I sit down to write this message, I do so with mixed feelings. The reason being is that I am writing my last message as FAR-B president, since I have resigned and my wife and I are moving to a retirement community in W. Lafayette, Indiana. We are of course looking forward to the move and the new adventures it will bring, but it means that my 55-year association with ARS and the Beltsville Research Center is coming to an end.

My memories of FAR-B date back to its formation in 1985 when it was created primarily to assist with the financial arrangements for the annual Beltsville Symposium and the subsequent publication of the Proceedings. My first direct interaction with FARB was in 1988 when I served as Co-chairman of the Beltsville Symposium XIII "Biotic Diversity and Germplasm Preservation – Global Imperatives". Later, during the last 3 years of my ARS career I served as the Beltsville liaison to the FAR-B Board of Directors. Then after retirement from ARS, I was asked to serve on the FAR-B Board and this culminated in serving as president for 5 years. Thus, I have many positive memories of the organization that has positively impacted the Beltsville programs and staff for 35 years.

In the past, when I have been asked to write a president's message for the Newsletter, I have viewed it as an opportunity to inform our friends and members of the activities that FAR-B was engaged in during the proceedings 6 months. However, as you well know, since March the COVID-19 virus pandemic has resulted in virtually everything being shut-down this year. Except for sponsorship of the January visit of the Maryland Agricultural Science Foundation Mobile Science Laboratory to the nearby Beltsville Academy, all of the other events that FAR-B had

planned and budgeted for have been postponed or cancelled.

However, as the pandemic subsides and things get back to something approaching what we think of as normal, I am confident that FAR-B will be there to continue to support the Beltsville Agriculture Research Center, the Beltsville Human Nutrition Center and the U.S. National Arboretum research programs. I believe that even though the Beltsville organizational structures and the research programs will continue to evolve, for the foreseeable future FAR-B will continue to play an important role for their success.

Alan Stoner, President

## **Area Director's Message**

he BARC community switched to maximizing teleworking due to COVID-19 on March 16, 2020. Only essential research and support activities have continued on a very limited scale. But the health and well-being of our employees have always been the deciding factors as to whether such activities would or would not be pursued. We have been employing various mitigating techniques included in the officially CDC guidance such as social distancing, disinfecting, use of protective equipment such as masks, frequent personal hygiene, etc. As of June 15, the employees on the BARC campus, which also includes BHNRC and USNA scientific staff, have moved to Phase 1 of returning to the office. Also on June 15, the USNA opened its gardens to the public on a limited scale on Mondays, Wednesdays and Fridays.

I have been amazed how well the Beltsville employees have handled this very unusual and unprecedented situation. Again and again they have demonstrated tremendous commitment to the ARS mission and the service to American people. Teleworking have produced spectacular results that showed the great resourcefulness of our employees and their professionalism. And for that I tip my hat to all of them.

The Fiscal Year 2020, has been very favorable for the ARS, Northeast Area and BARC Beltsville campus. The Long Term Agro-Ecosystem Research (LTRA) in BARC has received a \$450,000 Congressional increase which was equally divided between the Sustainable Agricultural Systems Laboratory and Hydrology Research & Remote Sensing Laboratory. The US National Arboretum received the increase in the amount of \$375,000 in support of their turfgrass research and the BARC's worksite in Chatsworth, NJ has received a \$200,000 increase in support of their cranberry improvement research. All these increases are very significant and will greatly improve our research capacity and allow us to better serve the America public and various agricultural industries in the North-East.

I am pleased to announce the appointment of Dr. Julie Long as the Research Leader of the Animal Biosciences and Biotechnology Laboratory (ABBL) in Beltsville, MD effective April 12, 2020. Dr. Long received her Ph.D. in Animal Physiology and M.S. in Animal and Food Industries from Clemson University, with a research emphasis on in vitro fertilization and embryo culture in livestock. She began her career with ARS at Beltsville in 2001 as a Research Physiologist (Poultry) in the Germplasm and Gamete Physiology Laboratory, which following a name change and merger with the Growth Biology Laboratory, became the ABBL. Since joining ARS, Dr. Long has developed a multi-faceted research program dedicated to gamete cryopreservation, reproductive function, and the relationships between genetics and reproductive success in poultry that is internationally recognized. Her notable contributions for the turkey industry include leading international collaborations resulting in the first multi-platform, nextgeneration sequenced genome for an agriculturallyrelevant species, followed by the development of a

high-fidelity SNP array made available for commercial use. She has served details in the Office of National Programs and as Acting Research Leader for three different ARS Management Units in two different Areas. Most recently she served as Chair of the Council of Agricultural Science and Technology taskforce on preserving genetic resources, which published the white paper "The Need for Agricultural Innovation to Sustainably Feed the World by 2050: Protecting Food Animal Gene Pools for Future Generations" that she presented on Capitol Hill. Before joining BARC, Dr. Long was the Research Coordinator at the Riverbanks Zoo (Columbia, SC), where she developed and led the endangered species reproductive research program for five years. Prior to that, she was a Smithsonian Fellow at the National Zoo in Washington, DC, developing gamete cryopreservation and assisted reproductive technologies for wild felids.

I also am pleased to announce the appointment of Dr. Lisa Castlebury as the Research Leader of the Mycology and Nematology Genetic Diversity and Biology Laboratory (MNGDBL) at BARC, Northeast Area, in Beltsville, MD effective May 10, 2020. Dr. Castlebury obtained B.S. and M.S. degrees in Biological Sciences (Microbiology) from Western Illinois University and a Ph.D. in Plant Pathology from the University of Illinois, Champaign-Urbana, where her focus was on fungal systematics. She was a postdoctoral fellow at the FDA National Center for Toxicological Research in Jefferson, AK, before joining ARS as a postdoctoral research associate in the Systematic Botany and Mycology Laboratory (SBML) in 1997. Following a brief stint with USDA-APHIS, Dr. Castlebury returned to ARS in 1999 as a research scientist in SBML to work on the molecular systematics of economically important smut fungi. Since then her research has broadened to include the systematics of agriculturally important ascomycetes and rust fungi, developing numerous international collaborations. Dr. Castlebury has served as Acting Research Leader for the former SBML and the Nematology Laboratory (NL), as well as the Mycology and Nematology Genetic Diversity and Biology Laboratory following the merger of the SMBL and NL. In 2014, she assumed the leadership of the U.S. National Fungus Collections and currently directs the efforts to maintain and expand both the Collections and the information resources associated with the Collections. Dr. Castlebury has also served as the Beltsville Area representative on the ARS Committee for Ethics in Science, continuing in that capacity for the Northeast Area. Dr. Castlebury has recently been appointed to the RPES Advisory Committee.

Please stay safe and healthy.

Dariusz M. Swietlik, Area Director, NEA

## **CFC Update**

The pledges to FAR-B in the 2019 CFC Campaign are down slightly this year to nearly \$4,400. There was a special CFC solicitation to help people through the covid-19 pandemic from March through June, but no pledges were added to FAR-B after January. Of course, the FAR-B Board of Directors is grateful for the donations received that support research and activities of BARC Locations.

Our application for participation in the 2020 Campaign has been accepted by the CFC. The negative impact on the economy due to the pandemic is widely reported by news outlets, and underscores how appreciative the Board is for the faithful support of renewing FAR-B members, and welcome that of new members. We are hopeful that during this time of hardship and uncertainty, your support will help us sustain the fulfillment of our mission and commitment to agricultural research, education, and outreach at the Northeast Area's BARC, BHNRC, and the U.S. National Arboretum. Memberships can be made at any time of the year at <a href="far-b.org">far-b.org</a>, where you can read about all of FAR-B's many activities.

As always, the FAR-B Board of Directors welcomes those who are planning on retiring in 2019 or have already retired to consider becoming a Board member. It is a stimulating and gratifying way to

sustain the ARS mission in the Northeast Area Beltsville Locations after leaving government service. When you know someone considering retirement, please let them know of this opportunity.

Dave Prevar, CFC

## Treasurer's Report

In the first half of 2020 FAR-B had an operating income of \$6,353. This included \$5,378 from dues/donations and \$975 from the Combined Federal Campaign. Among the planned expenses for this calendar year are travel support for visiting scientists and interns at ARS Beltsville laboratories (\$14,000), support for Beltsville diversity taskforce programs (estimated at \$3,000), support for the Agricultural Learning Experience Programs (ARLE) (estimated at \$1500) and partial support for Maryland Agricultural Education Foundation science trailer at the Beltsville Academy (\$600).

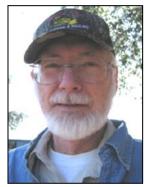
The approved budget plan for 2020 will have a deficit, but sufficient funds are held in reserves that will cover the difference. We have reserves held in mutual funds of around \$100,000 which will continue to support our program needs, when required. The FAR-B Board of Directors strongly believes that we can operate successfully by spending some of our reserves to better support agriculture research and outreach needs at Beltsville.

Walter Mulbry, Treasurer

#### IN MEMORIAM

#### **Dr. John Lewis Maas**

Dr. John Lewis Maas, Research Plant Pathologist retired in 2002 after 34 years with ARS at the BARC. Dr. Maas developed rare and exemplary relationships with a series of five strawberry breeders that led to the



development of strawberry cultivars known for their

natural disease resistance. *The Compendium of Strawberry Diseases* (two editions) he edited, published by the American Phytopathological Society (APS), is still considered a basic resource by strawberry researchers. He stayed active in the strawberry community after retirement, as the President of the Research Foundation for the North American Strawberry Growers Association, passing the torch just this past year, and attending their annual meeting this past January.

Dr. Maas passed away from natural causes, Saturday, April 11, 2020, after a brief stay at the Winchester Medical Center, VA. He was just a few months shy of his 80<sup>th</sup> birthday.

Dr. Maas was born on August 13, 1940, in Detroit, MI, the son of Lewis D. and Marcella S. Maas. He began his college education at the University of Washington but graduated from Michigan State University in 1962 with a foundation in plant pathology, botany, zoology, and engineering. He received his MS degree in 1964 at the University of Washington in mycology, with his thesis on mycoecology of higher fungi in the Cascade Mountains. He then went to Oregon State University where he received his Ph.D. in plant pathology in 1968, with his dissertation on a Botrytis disease of bearded iris. Prior to leaving OSU, John had a brief informal conversation with Dr. Donald H. Scott of the USDA Small Fruit and Nut Investigations at Beltsville, which resulted in his becoming employed in 1968 with the USDA in Beltsville and working with strawberry and other small-fruit crops. Dr. Maas published over 130 research papers, book chapters, and books on diseases and pathogens of strawberry and other crops, and strawberry pollen morphology, secondary metabolites, phytonutrients, genetics, biotechnology, sources of resistant germplasm, and cultivar development and introduction. Pathogens researched included fungi, bacteria, phytoplasmas, and viruses.

During his 34 years with the small fruit improvement program, Dr. Maas developed a close working relationship and friendship with Dr. George Darrow and collaborations with program

breeders Drs. Arlen Draper, Don Scott, Gene Galletta, Stan Hokanson, and, most recently, Kim Lewers. The close association and cooperation between Dr. Mass and breeders have tremendously benefited the overall program. As an early result of these associations, Dr. Maas soon transgressed the bounds of traditional plant pathology, recognizing the necessity to develop skills in several areas of horticulture. Thus, he developed close working associations with horticulturists across North America and abroad. Of particular interest to Dr. Maas was to foster strawberry research of others as well as to form research collaborations. This interest and devotedness to helping other researchers lead to service as Editor of Advances in Strawberry Research for 10 years; Associate Editor for the Journal of the American Society of Horticultural Science (ASHS) for 2 years and of HortScience for 8 years; coeditor of two proceedings of the International Society of Horticultural Science (ISHS) strawberry symposia and two International Horticultural Congress symposia; editor of two editions of the Compendium of Strawberry Diseases published by the American Phytopathological Society (APS); Coorganizer, with Gene Galletta and Pasquale Rosati, of the ISHS Strawberry Working Group, and it's Chair for 6 years; co-organizer, with Gene Galletta, of the 2nd International Strawberry Symposium held in Baltimore, MD and in 1992; and Coorganizer, with Wayne Wilcox and Mike Ellis, and Chair of the Small Fruit Diseases Working Group of the APS. He also sat on several research and advisory committees; NCR-22 (Small Fruit and Grape Research Committee), Crop Germplasm Committee for Small Fruits, Technical Advisory Committee for the National Clonal Plant Repository in Corvallis, ASHS Publications Committee, and Research Committee of the North American Strawberry Growers Association. Dr. Maas also co-organized a 4-day ISHS Symposium, with Peter Hicklenton, titled "Advances in Breeding, Production, and Utilization of Berry Fruits" held during the 25th International Horticultural Congress, 2002, in Toronto, Canada.

Dr. Maas contributed to the introduction of two thornless blackberry cultivars ('Triple Crown' and

'Chester Thornless'), one black raspberry cultivar ('Early Sweet'), and 12 strawberry cultivars ('Delmarvel', 'Northeaster', 'Latestar', 'Mohawk', 'Primetime', 'Lester',' Earliglow', 'Pelican', 'Winona', 'Lateglow', 'Tribute', and 'Tristar'), and released two parental strawberry clones that are highly resistant to bacterial angular leaf spot disease, caused by *Xanthomonas fragariae*. He presented numerous invited talks nationally at grower and scientific meetings, at international symposia in Europe and Asia, and, by invitation in 1986, consulted and lectured on strawberry culture and disease research during two weeks at two institutions in The Peoples' Republic of China.

Dr. Maas was honored several times by the North American Strawberry Growers Association (NASGA) for his work on diseases of strawberry. He was the first recipient of NASGA's Service with Impact Award in 2018 for his dedicated service to the strawberry Industry including his long service of presiding over the North American Strawberry Growers Research Foundation. The American Pomological Society recognized his career accomplishments in small fruit cultivar development by the presentation of the Wilder Medal in 1999. He was recognized in Antwerp, Belgium, for continued work in fostering international cooperation in strawberry research through his efforts in the ISHS Strawberry Working Group to bring strawberry researchers together at ISHS strawberry symposia and at International Horticultural Congress meetings.

Dr. Maas was co-recipient of the 2001 Outstanding Fruit Cultivar Award from the ASHS Fruit Breeding Working Group ('Chester Thornless' blackberry). He also received numerous grants for research on strawberry pathology and physiology.

#### **Dr. Ronald Dean Plowman**

On February 6, 2020 Dr. Ronald Dean Plowman passed away peacefully. He served as ARS Administrator from 1988 to 1995, and is remembered by those who worked with him as a calming influence during many organizational and program changes at ARS.



Dr. Plowman was born on August 25, 1928, in Smithfield, UT, where he grew up on a dairy farm. He obtained a B.S. and M.S. from Utah State University (USU) and a Ph.D. in Animal Genetics and Physiology from the University of Minnesota. In 1956 Dr. Plowman joined

ARS at the Dairy Cattle Research Branch in Beltsville, MD, where his work focused on improving milk production in dairy cows through selective breeding. In 1972 he was transferred to the ARS regional administrative office in Logan, UT, where he served as Area Director until he retired in 1983 and joined USU as the head of the Department of Animal, Dairy and Veterinary Sciences. In 1988 he was recruited back to the ARS as Administrator; in USDA, he also served as Acting REE Under Secretary and Acting Assistant Secretary for Science and Education.

Dr. Plowman was a prolific research scientist and was responsible for the USDA National Program of Sire and Cow Evaluations. He was noted for his "town hall" gatherings of scientists and other employees, and initiated strong outreach to stakeholders and advocacy groups, including Congressional appropriation committees, and liked to do memorable show and tell presentations about ARS accomplishments at the budget hearings featuring popular ARS products. These inspired the original Science in Your Shopping Cart publication. He also promoted international outreach and cooperation, and was among the first Americans to go to China just a few months after the Tiananmen Square uprising in 1988; this visit laid the groundwork for the establishment of the ARS biological control laboratory in China.

Flags at ARS locations were lowered on Tuesday, February 18, 2020 in recognition and memory of Dr. Ronald Dean Plowman and his service to USDA, ARS, and agriculture.

#### **Richard Lee Ridgway**



Richard Lee Ridgway, 84, died on February 13, 2020 in Flower Mound, TX surrounded by his family.

He was the son of the late Allie (Hamilton) and Weldon Ridgway. Richard grew up on his family's cotton farm in Brownfield, TX and

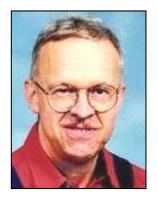
was valedictorian of Brownfield High School's Class of 1953. He was married to Donna (Newsom) Ridgway in 1957, and was married for 62 years.

He received a BS in agronomy from Texas Tech University in 1957 and earned his MS and Ph.D. in entomology from Cornell University in 1959 and 1960. He began his professional career with Texas A&M AgriLife Extension Service and later served on the graduate faculty at Texas A&M University.

He served in research and leadership positions with the USDA's Agricultural Research Service in College Station, TX and Beltsville, MD from 1963 to 1997. He made scientific contributions to biological insect controls, regulation of pesticide, and pest management. He forged USDA's policy that led to the Boll Weevil Eradication Program. Richard was instrumental in the creation of the Charles Valentine Riley Memorial Foundation whose purpose is to enhance agriculture through scientific knowledge. He served the organization for nearly 40 years.

Richard was devoted to his Texas Tech Red Raiders. In 2012, he received the Gerald W. Thomas Outstanding Agriculturalist Award for Public Service. His passion for West Texas led him to create Hamilton Park, named after his grandfather who settled in Terry County in 1902. The educational park explores the rich history and future hope for the Plains of West Texas.

### **Richard William Thimijan**



Richard William Thimijan, 81, of College Park, MD. formerly of Lake City, died Thursday, February 27, 2020 at the VA Hospital in St. Cloud, MN. He was born on October 30, 1938 in Lake City, MN. Son of William and Leota (Prichard) Thimijan, he attended grade

schools in Wabasha, Goodhue County and Sugar Loaf Valley until they consolidated to form Lake City Public Schools.

Following high school, Richard served in the U. S. Army teaching radar repair. He then went on to earn his B.S. and M.S. in agricultural engineering from the University of Minnesota. He joined the USDA in 1966 and spent his career working on various projects involving the use of light to control insects, the effects of light on plant growth and measuring the spectral power distribution of plant life. After 23 years with USDA, he retired in 1989.

After his retirement he assisted teachers at Howard B. Owens Science Center and with the University of Maryland. He also assisted at the Beltsville Agricultural Research Center downloading sunlight data. He was a popular teacher and he inspired "The Red Sock Club," a group of students who mirrored his signature red socks. He was also awarded a certificate of appreciation for his work with children at the Science Center.

He is survived by his brother Ralph's wife Darlene (Steffenhagen) Odden of Frontenac, MN; as well as many nieces, nephews and great-nieces and great-nephews. He was preceded in death by his parents; two brothers, Loyd and Lawrence Thimijan; and three sisters Frances Steffenhagen, Lucille Steffenhagen and Irene Dankers. Richard never married.

#### **Lynda Markley Welsh**



Mrs. Lynda Markley Welsh, 74, of Germantown, passed away unexpectedly at home on May 1, 2020. She was the loving wife of Murray Welsh, her husband of nearly 26 years.

Born June 14, 1945 in Mill Creek, West Virginia, Lynda was the daughter of

the late William J. and Kathleen Markley.

Lynda worked as a printing specialist at the U.S. Department of Agriculture, from which she

retired after 37 years. She loved reading and movies, and enjoyed trap shooting.

In addition to her loving husband, Mrs. Welsh is survived by a daughter, Jessica Chite (Ryan); siblings, Jacqueline Markley (Jackie), Carson Markley, Preston Markley (Patricia), Jessie Markley (Cakie), Richard "Dickie" Markley (Ruth), Karen Sue Karras (Pete), Muzine Derge (Dean), Charles "Butch" Markley, Melanie Lindsay (Harold), and William Timothy Markley (Marcie); stepdaughters, Linda Munday (Michael) and Laura Welsh (John Roundy); a grandson, Owen; stepgrandchildren, Christian, Megan, Kieran, Evan and Quinn; long-time family friend, Donald Bass, and several nieces and nephews.



Plant physiologist Jorge Ferreira stands in an ARS research plot of *Artemisia annua* in West Virginia in 2005. These plants were the precursors for the high-artemisinin clones recently released to the public for further research. (D4356-1)

## Plant Packs More Punch Against Malaria

Plants have been used to treat illness throughout human history. For example, the active ingredient in aspirin, salicylic acid, came from white willow bark; the anticancer drug Taxol was discovered in the Pacific yew tree; and quinine, used for centuries to treat malaria, was made from the bark of the cinchona tree.

Over years of heavy use, however, quinine and its synthetic versions, such as chloroquine, became less effective as the malaria-causing parasite *Plasmodium falciparum* developed resistance. New therapies were needed as malaria incidence increased. More than 220 million cases of malaria were reported worldwide in 2018, according to the

World Health Organization. In the United States, approximately 2,000 cases are diagnosed every year, according to the Centers for Disease Control and Prevention.

Fortunately, Nature provided another plant that can fight malaria: *Artemisia annua*. The plant is the only commercial source of artemisinin, the raw material used to manufacture artemisinin-combination therapies, which today are recommended by the World Health Organization as the first line of defense against malaria.

Agricultural Research Service (ARS) plant physiologist Jorge Ferreira has spent many years studying *Artemisia* and artemisinin. His research with collaborators recently culminated in the release of four new *A. annua* plant clones with twice the amount of artemisinin than current commercial

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Dariusz M. Swietlik

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plants. "This is important because both synthetic and semi-synthetic artemisinin still cost more to make than the natural one extracted from the plant, so plants are the only current viable source of it," said Ferreira. The research team from ARS and Purdue University released the clones for free use by researchers and breeders, and the work was published in *HortScience* in 2019.

Ferreira is currently with ARS's U.S. Salinity Laboratory in Riverside, CA. But before that, he was with the now-closed ARS Appalachian Farming Systems Research Center in WV. There, he selected *A. annua* plants with high levels of artemisinin as potential treatments for livestock parasitic diseases. He sent his best material to collaborators at Purdue University and the University of Georgia for further field selection, which ultimately resulted in the four clones recently released. He also developed a laboratory method (HPLC) that directly quantifies artemisinin and its precursors in plants and in artemisinin-derived drugs, and an ELISA assay further adapted by a British company as a field test kit.

Said Ferreira, "I grew up in northern Brazil in a state then plagued by malaria, so this plant for me was a strong call to develop my Ph.D. research and expand it in other unforeseen directions during my research life at ARS." He is quick to credit his collaborators in the United States and other countries, as well as the Chinese scientist You-You Tu, who blazed the trail for artemisinin research in the late 1960s. She received the 2015 Nobel Prize in Physiology or Medicine for her pioneering work.

Ferreira sees potential for growing *A. annua* in the United States (it is mainly grown in China, and some in Africa). He served as a consultant to the University of Kentucky when it began exploring production of *Artemisia* in fields previously planted to tobacco. If this research is successful, it could open new possibilities for U.S. production of this vital medicinal plant.

Sue Kendall, ARS Office of Communications