



THE FAR-B NEWS

Dedicated to promoting the research and education programs of the BELTSVILLE AREA, Beltsville, MD

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

JANUARY 2015

Editor: Hank Becker

President's Message

Dear Friends and Colleagues,

The year 2014 was a year for change at the Henry A. Wallace Beltsville Agricultural Research Center. As you may recall, ARS reorganized at the beginning of this fiscal year and BARC and the North Atlantic Area were combined into one Area (Northeast Area) with the Area Office being retained in Beltsville. Beltsville is now referred to as the Henry A. Wallace Beltsville Agricultural Research Center (HACBARC) and is comprised of BARC and the Beltsville Human Nutrition Research Center. FAR-B will continue to support all aspects of the research efforts located at HACBARC.

FAR-B's draft budget for 2015 was approved at the December 10, 2014 meeting. Again, FAR-B is funding four summer high school interns (\$4,600 each) for the Beltsville Area. The Area office will develop a protocol for awarding these interns. It is FAR-B's intension that these internships provide meaningful research experiences for high school or college students so that they will consider science or an agriculturally-related career when they complete their formal education as well as provide high quality support to the SY.

The 2015 budget is a negative one again, i.e., we will be spending more than we take in. We anticipate an operating income of \$13,800 with operating expenses of \$32,800. The difference will come out of our reserve funds. We are always hopeful that we will get more retired employees joining and just as importantly getting actively working employee members (Associate member) and donations so that we can limit the use of our reserves. FAR-B is again a member of the CFC (40122).

I am proud to say, FAR-B co-sponsored numerous major events at BARC this past year. This included the support of the Beltsville Area Diversity Taskforce that included seven meeting throughout the year (see their report below). Also, we supported the Student Discovery Garden that had over 500 visitors this past year.



Science in Action!



FAR-B President, Jim Anderson, observes younger students at the Beltsville Academy. Our youngest students heard a story about cows, talked about dairy foods, made butter from heavy cream, and then taste-tested their experiment on graham crackers. Older students assumed the role of chemists . . . producing glue from milk and then testing its strength against a commercial variety using several objective tests. Problem, hypothesis, procedure, results, conclusion—the scientific method in action!

For the fourth year, FAR-B helped sponsor the Beltsville – University of Maryland Fall Symposium Trends in Agriculture held at the National Agricultural Library. This years symposium was Organic Production: Food, health and Ecosystems and was held November 13, 2014; 95 attended this event.

FAR-B members will again be judging Middle School Science Fair projects in Montgomery (March 14, 2015), and Prince George's Counties (March 21, 2015). Darwin Murrell handles the Montgomery County Fair

and John Teasdale handles the Prince George's Area County Fair which includes students from Calvert, Prince George's and Saint Mary's Counties. Judging Middle School County Science Fairs has been one of our outreach activities for the past eight years. There are lots of very bright young women and men at these science fairs, and we believe our small cash awards and our certificates help keep them interested in science. We give awards in five areas; Environmental Science, Plant Science, Animal Science, Microbiology/Health and Computer Science/Engineering. Each category has a first, second and third place gift card and a certificate. If you're interested in judging these young developing scientists, send Darwin (kdmurrell@comcast.net) or John (john.teasdale2@verizon.net) an email. We can use your help. And I guarantee you will enjoy visiting with these youngsters as they talk about their projects.

In April, FAR-B will again be hosting the luncheon for the BARC Poster Day and presenting awards to the top three posters presented by the High School Interns who are working in various BARC laboratories. The top prize is the **Vernon G. Pursel Student Scientific Achievement Award**.

The science trailer from the Maryland Agricultural Education Foundation returned to the Beltsville Academy under the joint sponsorship of FAR-B. FAR-B, along with the school and its PTA sponsored the trailer in the fall of 2014 (see story below).

In closing, please remember that it's time to send in your FAR-B membership dues. They are essential for FAR-B to continue our support of various activities at HACBARC. FAR-B participates in the Combined Federal Campaign (CFC # 40122)--our biggest single source of income for FAR-B.

FAR-B submitted application for participating in the 2015 drive, but will not know for several months about acceptance.

Wishing you all a Healthy, Happy and Prosperous New Year!

James Anderson, President

Area Director's Message

The Beltsville Area is well positioned to take advantage of the opportunities that I know will be coming this year.

On October 1, 2014 the former Beltsville Area (BA) and North Atlantic Area (NAA) have merged creating the Northeast Area (NEA). The NEA now includes Beltsville Agricultural Research Center (BARC), Beltsville Human Nutrition Research Center (BHNRC), US National Arboretum (USNA) and the former NAA, which encompasses 12 northeastern and Mid-Atlantic States from Maine to West Virginia, Virginia and Maryland. On October 6, I was joined in the Area Office by Dr. Allison Yates and Dr. Charles Onwulata, the two Associate Area Directors for NEA. After Allison's retirement in the end November 2014, I asked Dr. Ramon Jordan of USNA to serve as the Acting Associate Area Director (AAD). After his detail was completed, we were joined by Dr. Michael (Mickey) McGuire as the new Acting AAD on January 26. Mickey's detail will extend till July 17, 2015. In his permanent assignment, Dr. McGuire is an Associate Area Director for the Plain Area, Fort Collins, Colorado.

I firmly believe that our joint programs will attain new heights of excellence and impact. My optimism is rooted in the excellence of our employees both scientists and support staff. Regardless of our job titles, we are all involved in scientific research, albeit contributions we make may differ. However, they are all important and indispensable for our success. An organization is only as strong as its weakest link, so it is imperative that all parts of NEA, all the links, are as strong as they can be. The other source of my optimism is derived from the spirit of cooperation permeating our organization; I saw it displayed in various locations across the former BA and NAA. The culture of asking for help and providing help when asked is the key to conquering seemingly insurmountable obstacles. Finally, my optimism is rooted in the fact that the research programs of the former BA and NAA are highly complementary providing plenty of opportunities for synergy, leveraging resources, and building even more powerful research teams.

The last four months have been very demanding and challenging to all our employees. Not only did we deal with merging the cultures of the former Beltsville and North Atlantic Areas, but also we implemented far reaching changes in the performance appraisal and performance plan preparation processes. Moreover, due to new Departmental regula-

tions, the latter two had to be accomplished in 6 instead of normal 10 weeks. In addition, we completed biological and hazardous material stand downs, and some of our locations were subjected to demanding OIG audits concerned with dissemination of scientific information. BARC, the largest agricultural center in the world, underwent a safety assessment. We passed these and many other challenges with flying colors despite incomplete staffing in many locations including the Area Office. During this challenging time, the NEA scientists continued producing transformational discoveries and excelled in technology transfer for which they were recognized on multiple occasions by ARS, USDA and other domestic and international organizations. ARS is very fortunate to benefit from the excellence and professionalism of the NEA employees.

During the referenced time, we recruited Dr. Naomi Fukagawa as the new Director of BHNRC. She will be joining the Center on April 5. Dr. Robert Moreau was appointed the Research Leader of the Eastern Regional Research Center in Wyndmoor, PA. Prior to that appointment he served as one of the Lead Scientists in that Unit. We are in advanced stages of recruiting a new Director for USNA and Assistant Director for BARC, two Executive Secretaries and Program Analysts in the Area Office.

By the year 2055, the world agriculture will have to double production to meet the demand for food and fiber partly because of population growth and partly because of the growth of standard of living caused by globalization. Technology created globalization and it is technology that will enable the U.S. agriculture to feed the Nation and contribute significantly to the world's food security, while successfully compete globally. This will have to be accomplished taking into account that American society is increasingly concerned with diet and health, organic foods, petroleum dependency, depletion of natural fisheries, soil, clean water and air. Food safety remains a defining issue in all aspects of the food system. Cost of agriculture production will be raising with inevitable increases in the cost of energy, and water availability for irrigation is an issue. I feel very strongly that the NEA will play a critical role and will make critical contributions to meeting these challenges.

Dariusz M. Swietlik, Area Director, NEA

NEA Director



Dr. Dariusz M. Swietlik is the new Director for the Northeast Area (NEA), Agricultural Research Service (ARS), U.S. Department of Agriculture (USDA) in Beltsville, Maryland. Prior to his current position, he served as the Director of North Atlantic Area and Director and Research Leader of the

USDA-ARS Appalachian Fruit Research Station in Kearneysville, WV. Before joining the USDA-ARS, Dr. Swietlik was a Full Professor of Plant Physiology with the Texas A&M University-Kingsville where he was involved in research, academic teaching and extension work on citrus crops. He also was the Assistant Director of the Citrus Center as well as the Texas A&M University Agricultural Research and Extension Center in Weslaco, TX.

Originally from Poland, he came to the United States in 1980 as a Senior Fulbright Scholar and conducted research on fruit crops at the USDA, ARS, Beltsville Agricultural Research Center in Beltsville, Maryland followed by a Research Associate (Post-Doctoral) position with the West Virginia University.

Dr. Swietlik holds a PhD degree in Pomology and an MS degree in Soil Chemistry and Plant Nutrition. During his scientific career, Dr. Swietlik strived to obtain a balance between basic and applied research on mineral nutrition, water relations, salinity, growth regulation, weed control, and freeze protection of deciduous fruit trees and citrus using whole plant physiology and molecular biology research tools. He published the results of his research in nearly 60 scientific technical papers and gave numerous invited scientific presentations nationally and internationally.

Dr. Swietlik is a recipient of the Faculty Award of Excellence from the Texas A&M University-Kingsville. He currently serves as a member of the Executive Steering Committee of the National Inter-agency Confederation for Biological Research comprised of 8 agencies of the U.S. Government. He

served as a Chairman of the Research Advisory Committee and a Board member of the International Arid Lands Consortium, Associate Editor of the *Journal American Society for Horticultural Science* (ASHS) and *HortScience*, member of the Executive Steering Committee of the National Rosaceae Genomic, Genetic, and Breeding Initiative, member of the Board of the American Pomological Society, and a Chairperson of Mineral Nutrition, Water Management, Plant Growth Regulation, and Citrus Crops Working Groups of the American Society for Horticultural Science. He is a member of the International Society for Horticultural Science and American Society for Horticultural Science.

Financial Report

In 2014, FAR-B had operating income of \$18,481 and expenses of \$31,352 with \$30,309 in reserve funds to cover the net loss, which was approved by the Board. In addition the investment income of \$2,594 was earned and reinvested. Operating income comprised of dues (\$4,450), registration fees for the Fourth Annual Northeast Area – University of Maryland Symposium (\$3,465), donations (\$6,624), and Combined Federal Campaign (\$3,942). Dues receipts declined slightly but the receipts from CFC contributions were restarted in 2014. Expenditures by category were research 68%, education 23%, outreach 5% and administrative 4%.

FAR-B funded four high school student interns at Beltsville in 2014. Other programs supported were activities of the Beltsville Diversity Task Force, the science enrichment program at the Beltsville Academy, the Beltsville Poster Day and awards at the middle school science fairs in Montgomery and Prince Georges counties. FAR-B also assisted with the Fourth Annual NEA-UMD Symposium that was held at the National Agriculture Library.

Richard Parry, Treasurer

Diversity Task Force

Dear FAR-B membership,

The Beltsville Area (BA) Diversity Taskforce once again extends a “Thank you” for your organization’s support of our endeavors. Since 2008, our group has had the mission to provide support and leadership to the BA administration to ensure that the

research mission of the Agricultural Research Service is performed at the highest scientific level possible.

As you may know, employee organized and ran taskforce and committees are a part of the Department and Agency’s initiatives associated with accountability, program delivery, and employment of minorities, which includes outreach, collaborations, special emphasis programs/observances and cultural transformation in support of ARS’ civil rights goals.

In October 2014, the BA was reorganized and placed into the newly named Northeast Area. Our name is now NEA Diversity Taskforce Beltsville Area. The NEA is currently in the process of recruiting employees from the other locations to reignite or start diversity taskforces. We anticipate a meeting in the near future where we determine as a group how we can integrate and develop our programs and activities.

This was accomplished in no small part because of the support of FAR-B and its membership. We have recently had great success in the implementations of such outreach programs as:

- Cultural Heritage Month celebrations
- A flourishing Student Discovery Garden that had 350 visitors in 2014 and donated over 350 pounds of produce to a local food pantry.
- The BA put together last summer a learning experience for Hispanic Serving Institutions (HSI) students in cooperation with Dr. Lawrence (National Program Leader of the Hispanic-Serving Institutions Education). The BA Diversity Taskforce Leadership Advisory subcommittee and the ODEO Program Manager organized and provided Hispanic students with a two month learning experience that will prepare them for future USDA careers. Mentors were identified for 30 undergraduate and graduate, students from several HSIs, which included universities located in Puerto Rico, Florida, and Texas. The learning experience contributed to the students’ knowledge, preparation and expertise leading to their future agricultural related careers. This program included an overview of our research programs, hands-on learning experiences, and group activities to enhance the interns’ knowledge of research as it relates to ARS programs and future careers in agricultural research. This was a phenomenal learning experience for both students and mentors which contributed to the Area’s goal of increasing Hispanic participation in the BA workforce.

FAR-B members have helped make all of these endeavors successful with their constant support. We anticipate that our efforts will inspire a diverse community of future scientists to see the wealth of possibilities in Agricultural Sciences and FAR-B will be an integral part of that achievement. We applaud your dedication to promoting the importance of Agricultural Science through outreach.

2015 will be another year with new Special Emphasis programs, enlarging the number of students doing their internships in the BA from HSI institutions, and continuing tours of the Student Discovery Garden. The new administration for the NEA has expressed a willingness and eagerness to continue all our programs. We hope FAR-B can continue to support our future initiatives and endeavors.

Verneta Gaskins, Diversity Task Force

IN MEMORIAM

Phillip C. Kearney



Phillip C Kearney, 81, a biochemist, became a USDA research scientist specializing in the chemistry of pesticide behavior in soils, died June 8 at an assisted living facility in Melbourne, FL. Phil was a past President of FAR-B from 1996 until 1998. He was responsible for getting FAR-B into the CFC program. His death

was caused by complications from Alzheimer's disease diagnosed in 2007 said his wife Rita B. Kearney.

Phil was a resident of Laurel, MD and was born in Baltimore and worked for ARS from 1962 to 1995. He headed the ARS Pesticide Degradation Laboratory from 1965 to 1988 doing pioneering studies on how pesticides broke down in agro-ecosystems that contained various organisms and plants. He and/ or his lab discovered that microbes can be used to degrade oil spills.

From 1988 until his retirement in 1995 he served as director of the ARS Natural Resources Institute in Beltsville and in 1986 he was named the ARS scientist of the year. He was adjunct professor of chemistry and biochemistry at the University of Maryland from 1995 to 2010 and wrote more than 200 scientific pub-

lications and several books on pesticide chemistry and degradation.

Phil received his B.S. from U of MD, College Park. He was in Alpha Gamma Rho Fraternity. He received Ph. D from Penn State.

Joanne Holden

Joanne Holden, MS passed away on October 2, 2014. Joanne received her BS in Foods and Nutrition from the University of Delaware, Newark, DE. She worked for the University of Maryland Cooperative Extension Service in Frederick County before enrolling in the UMD Graduate School. She joined the ARS Beltsville Human Nutrition Research Center, in 1969 as a Support Scientist in the Carbohydrate Metabolism Laboratory where she conducted research on the effects of carbohydrate intake and metabolism while completing her MS degree in Human Nutrition Research.

Ms. Holden assisted in conducting some of the first (BHNRC) human feeding studies and the analysis of human biological samples. She then worked as a Research Nutritionist in the Food Composition Laboratory (now FCMDL), BHNRC for 20 years. She worked with Dr. Wayne Wolf and others to sample and analyze various types of foods for nutrient content, the results of which were included in the Human Nutrition Information Service (HNIS) National Nutrient Databank. Joanne developed food sampling plans for use in various FCL research projects as well as expert systems for evaluating the quality of analytical data for both inorganic and organic components in foods. This led to her interest in assessing data quality for newly recognized bioactive compounds such as flavonoids in foods.

Joanne joined the Nutrient Data Laboratory (NDL) as Research Leader in 1995, providing leadership and coordination in the acquisition, evaluation, compilation and dissemination of food composition data and related research efforts. This included the National Nutrient Database for Standard Reference (SR), the authoritative source of U.S. food composition data. Her research interests in food sampling, bioactive compounds and the evaluation of data quality led to the development and coordination of the National Food and Nutrient Analysis Program (NFNAP), which has supported the generation of current, accurate original analytical data for ~2000 foods targeted as the most significant contributors of nutrients in the

US diet. She authored many publications and presentations on USDA food composition research.

Joanne served as the Co-Director of the International Postgraduate Course for the Production, Management, and Use of Food Composition Data between 1994 and 2005, which is coordinated and supported by the Food and Agriculture Organization (INFOODS), Rome, Italy, the Wageningen Agricultural University, Wageningen, The Netherlands and the European Food Information Research Program (EuroFIR), Norwich, U.K. This international course has trained more than 400 scientists from 85 countries since 1992; she taught in Europe, Asia, Latin America, and Africa to groups of analytical chemists, data compilers, and users of food composition data on the topics of food sampling, data quality evaluation, and the development of food composition databases and will be remembered all around the world.

She retired from ARS-USDA June 30, 2012

Russell Paul Kaniuka



He was born on September 17, 1925 in Philadelphia, PA to William and Katherine Kaniuka. The oldest of four siblings, Russell was raised in Philadelphia and educated in local public schools.

From 1936 to 1943 Russ spent his summers on his Aunt Annie's farm in Birchrunville, PA. These summers were among the happiest times of his life. He often said that his life-long love of agriculture and the natural world was a direct result of his time on the farm.

Russell was drafted into the U.S. Army on April 1, 1944. He was in the Army Corps of Engineers and saw combat in the European theatre. He then served as a member of the occupation forces until 1946. After returning to the states he enrolled at Penn State University and received a BS in Agriculture in 1952.

In 1958 he began his graduate studies in the School of Journalism at Iowa State University. It was there that he met his future wife, Mary Jane ("M. J.") Corliss. They were married on August 13, 1959 in Belmont, MA. She died on September 27, 2009, one

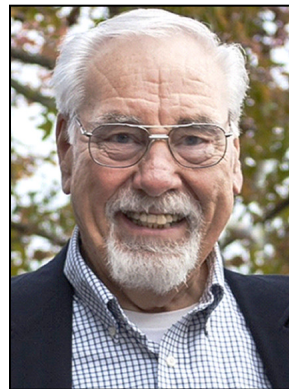
month after their 50th anniversary. Their only child, William Piers Kaniuka, was born on July 23, 1963.

Russ received an MA in Journalism in 1961. The following year he took a job in Washington D.C. at the Department of Agriculture as the editor of *Agricultural Research* magazine. He held this job from 1962 to 1976 and again from 1982 until his retirement in 1988. A highly competent editor, he freely shared his time and skills with many students, aspiring writers and journalists.

Russ dedicated much of his time to charitable activities. He was a board member of the Farmington Public Library and a tutor for the local chapter of Literacy Volunteers. He was also a great friend to the elderly and infirm. A more recent interest was the South Africa Partnership sponsored by the Mission at the Eastward. The Partnership fosters the development of home gardens and small-scale agriculture. His greatest passions were reading and gardening. He could often be found either with a book on the patio or working the soil under the watchful supervision of one or more of his beloved cats.

Russ Kaniuka died at home in the company of his family on March 31, 2014 after a long illness.

Robert Winfield "Bob" Norton



Robert Winfield "Bob" Norton died peacefully in his sleep Tuesday, September 23, 2014, with his wife at his side. He was born October 16, 1936 in Petaluma, CA to the late Margaret and Pappy Norton. Bob had two sisters, Margaret Jean Woll (husband John Woll); and Mary Anne Greenlund (deceased).

After high school, Bob enrolled at California Polytechnic State University (Cal Poly) in San Luis Obispo. He interrupted his studies by enlisting in the United States Army and honorably served for four years. He returned to Cal Poly, completed his degree in journalism and soon began his career in public relations.

Bob was a lifetime member of the Association for Communication Excellence in Agriculture, Natural

Resources, and Life and Human Sciences (ACE). He retired from the USDA in 1997 after 39 years of federal service. His last post was director of the ARS Information staff. Earlier positions included speech-writer to three Secretaries of Agriculture, director of information for what is now the Food Safety and Inspection Service and, prior to that, the Animal and Plant Health Inspection Service, and deputy director of Information for the Agricultural Marketing Service.

He received ACE's Pioneer Award in 1967 and USDA's Superior Service award three times. He also served as the ACE D.C. region's treasurer and coordinated the onsite ACE awards ceremony at the 1988 United States Agricultural Communicators' Congress (USACC).

John Moore Ruth, Ph.D.

John Moore Ruth, Ph.D. was very active in the Chemical Society of Washington (CSW) and at the national level of the American Chemical Society (ACS). In the 1960s he was a pioneer in the emerging field of mass spectrometry and its application in organic chemistry. Dr. Ruth passed away at 90 years of age in the early morning of Saturday, June 7, 2014, at Washington Adventist Hospital in Tacoma Park, MD. He was born to the late Thomas Cook Ruth and Lorena Moore Ruth on May 26, 1924 in Chatham County, NC. He received his Ph.D. in Chemistry from the University of North Carolina, Chapel Hill, NC. Dr. Ruth spent the early part of his career working on nuclear weapons projects at Oakridge, TN and Los Alamos, NM National Laboratories. Eventually, he settled in College Park, MD working for ARS at Beltsville, MD, until his retirement.

Dr. Ruth pioneered the application of mass spectrometry in the analysis of organic compounds before the advent of hyphenated analytical methods, which combine chromatography with mass spectrometry. He operated and refined a high resolution mass spectrometer in the 1960s and assisted and advised in the use of this new analytical technique to scientists not only in USDA laboratories at Beltsville but also others at neighboring universities and federal research laboratories. He was a contributor to several research papers involving the application of mass spectrometry and chromatography for structural elucidation of agricultural chemicals, including insect and plant growth

regulators among others. He was a scholar who authored numerous scientific publications in the field of agricultural chemicals.

For many years Dr. Ruth actively served the CSW. He was President in 1981 and served as Councilor for more than 25 years. He also served on several CSW Committees. He was a strong advocate for employment protection of chemical professionals and advocated against layoffs in industry and government. While Assistant Editor for *The Capital Chemist*, Dr. Ruth was the first CSW member to speak openly in support of the local area chemists when government laboratories were victims of cutbacks about three decades ago. He received the Charles Gordon Award in 1985 for his contributions to CSW.

At the national level of ACS, Dr. Ruth joined the movement initiated by Alan Nixon, William Bailey, and Attila Pavlath in the 1970s to transform the ACS to a more member-oriented society. As Dennis Chamot, a close colleague, has summarized this new movement directed at benefiting members. "John was an early and active supporter of the professional movement in ACS that has transformed the ACS from a narrowly focused scientific society into a professional organization that offers a wide range of services to chemists and other chemical professionals throughout their professional lives." Dr. Ruth served on the ACS Committee on Public Relations and on the Committee on Economic Status which has been renamed the Committee on Economic and Professional Activities (CEPA). He was an active member of the Division of Professional Relations (DPR) in its formative years and served as its Chair in 1992. DPR presented him with the Henry Hill Award in 2000 for his tireless efforts to uplift the professional lives of chemists and chemical engineers. Another important contribution from Dr. Ruth was his active support through the petition process of worthy candidates who were not chosen by the ACS nomination process for national office. He campaigned for the election of petition candidates that included Attila Pavlath, Ann Nalley, and Dianne Schmidt, who were elected to the office of ACS President.

Dr. Ruth was also active in the American Institute of Chemists (AIC) and served on the Board of Directors and as Chairman of its local section known as the District of Columbia Institute of Chemists (DCIC).

Ben Hill Stroud

On Saturday September 7, 2014 Dr. Ben Stroud DVM, passed away at a Front Royal, VA Nursing Home. Dr. Stroud was the Veterinarian at BARC for 25 years until his retirement in 2001. Dr. Stroud had been in poor health for the last 6 months.

Dt. Stroud was born April 29, 1928 in Baldwin County, GA. Son of the late Arthur John and Roslyn Stroud , he served in the US Marine Corp in China during the Korean War.

He was a member of the American Veterinarian Association , he graduted from the University of Florida and Auburn University . He most recently served as the Chief Veterinary for USDA ARS in Beltsville, MD.

Paul Hatheway Terry

Paul passed away suddenly at his home in Beltsville, MD on November 18, 2013. Paul was employed as an organic chemist for 25 years Beltsville, MD. For many decades he was an active member of the American Chemical Society, the Chemical Society of Washington, and Toastmasters International.

His funeral was held on November 23, 2013 in Fall River, MA.

Shiow Wang



Shiow Ying (Shyr) Wang, 73, passed away on Monday, August 11, 2014, at her daughter's home in Saint Louis, MO, from brain cancer. She died peacefully, surrounded by her loving family.

Shiow Ying was born in Taiwan on September 21, 1940. She was the eldest of six sisters and two brothers. She attended National Taiwan University, where she met her husband-to-be, Chien Yi.

She traveled to the United States in 1964 to further her education, receiving a Masters Degree from the University of California, Davis, and a Ph.D. in plant physiology at Oregon State University.

Shiow Ying began her research career in plant biochemistry and physiology at the Mid-Columbia Agricultural Experiment Station in Hood River, OR, and later worked as a plant biochemist and physiologist for USDA in Beltsville. Her research on the antioxidant content in fruits was recognized internationally.



Left to right: Jim Anderson, Essex Finney, Withers Horner, Dick Zimmerman, Jim Butcher, Dave Chitwood, Phyllis Martin, Lew Smith, K. Darwin Murrell, Allan Stoner, Dick Parry and Hank Becker.

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