



DEPARTMENT OF
**ANIMAL &
AVIAN SCIENCES**

WINTER 2019



Dr. Stahl and Dr. Telugu awarded \$1.6 Million Grant



RESEARCH

Drs. Chad Stahl and Bhanu Telugu have been awarded a \$1.6 million grant from the Eunice Kennedy Shriver National Institute of Child Health and Human Development of the NIH for their proposal, “A porcine model for investigating the role of an insulin signaling regulator in development and disease”.

Nutritional insufficiency during fetal development results in humans and other animals being born small for gestational age. This alters metabolic programming, and has severe negative consequences throughout life. This project will examine a regulator of insulin signalling and the role it plays in metabolic programming during fetal development and subsequent growth.

2018 Shorb Lecture



The 2018 Shorb Lecture, co-sponsored by ANSC and NFSC, was given on October 23 by Dr. David Mangelsdorf, Professor and Chair of the Department of Pharmacology at the University of Texas Southwestern Medical Center.

Dr. Mangelsdorf is an Investigator of the Howard Hughes Medical Institute and holds the Alfred G. Gilman Distinguished Chair in Pharmacology and the Raymond and Ellen Willie Distinguished Chair in Molecular Neuropharmacology. His talk was entitled, “FGF21 and metabolism: Eat, drink, and be merry”

and was well attended at the Stamp Student Union. Dr. Kasey Moyes chaired the Shorb Committee. Dr. Mangelsdorf runs a joint laboratory with his long-time collaborator, Dr. Steven Kliewer. Their research focuses on understanding the molecular and physiologic components of signaling pathways that control carbohydrate and lipid metabolism. Most recently, their work has revealed the existence of two endocrine factors, FGF19 and FGF21, which respectively play distinct roles in enterohepatic control of bile acid physiology and neuroendocrine control of stresses. Their lab has discovered several therapeutic targets that are being developed to treat diverse diseases such as cholestasis, obesity, diabetes, fatty liver disease, and nematode parasitism. The Shorb Lecture series, honoring Dr. Mary Shorb was made possible by funds donated in 1970 by Merck & Company.



2018 Faculty/Staff

Cookoff!



Sixteen cooks faced off to win the coveted Cookoff ribbons this year on September 20, 2018. They made all sorts of exceptionally delicious dishes and the competition was fierce, but when the marbles were weighed, these were the results:

Main Dish

First Place:

"Lasagna Soup Supreme"

Carol Keefer

Second Place:

"Special Mac"

Sarah Balcom

Third Place:

"Kimchi Rice"

John Song

Side Dish

First Place:

"Scallion Pancakes"

Byung-Eun Kim

Second Place:

"Elote (Mexican Street Corn)"

Dip - it's a fiesta in your mouth!"

Libby Dufour

Third Place:

"Red beans and rice"

Ronique Beckford

Dessert

First Place:

"Pigs in the Mud"

Monica VanKlompberg

Second Place:

"Tammy's When Life Gives You Lemons Scones"

Tammy Korolnek

Third Place:

"Pumpkin Chocolate Chip Cookies"

Megan McLean

Winners of the bobbleheads for Best of...

Best of Beef: **Carol Keefer**

Best of Dairy: **Carol Keefer**

Best of Poultry: **Ronique Beckford**

Best of Pork: **Monica VanKlompberg**

Huge thanks goes to the Social Events Committee and all the volunteers that worked on the sidelines to make this happen and of course, to all the students who came to judge!





Dr. Richard Erdman Retires

Dr. Richard Erdman had been a faculty member at the University of Maryland for almost 40 years when he retired on December 31, 2018.

Throughout his career he made substantial contributions to the field of Dairy nutrition, the Society of Dairy Science, and both undergraduate and graduate education. Dr. Erdman taught courses in Applied Animal Nutrition, Dairy Cattle Management, and Dairy Cattle Evaluation and a graduate course in Energy Nutrition. He has mentored 17 Masters and 13 Ph.D. students. Dr. Erdman earned his B.S. from University of Wisconsin-River Falls in Animal Sciences and Agronomy in 1974. He earned his M.S. and his Ph.D. from University of Kentucky in Animal Nutrition in 1975 and 1979 respectively. After joining the faculty of the University of Maryland in the Dairy Science Department in 1979 as an Assistant Professor, he was promoted to Associate Professor in the Department of Animal Sciences in 1985 and Professor in 1991. Dr. Erdman served as the Chair of the Department of Animal and Avian Sciences from 1999-2007. He served as chair of the editorial committee from 2014-2017 for the National Research Council's Nutritional Requirements of Dairy Cattle. Dr. Erdman's research in animal nutrition emphasizes nutrition of the lactating dairy cow related to improving animal productivity and economic viability by studying nutrient metabolism that changes milk composition to meet consumer demands, improves nutrient utilization, and reduces nutrient excretion.



Dr. L. Curry Woods Retires

After 28 years at the University of Maryland, Dr. L. Curry Woods III retired on July 31, 2018. Dr. Woods was an Associate Professor whose research focused on the reproductive physiology of fish, cryobiology, gamete quality and endeavored to improve fertility of the striped bass *Morone saxatilis*. Dr. Woods taught courses in Sustainable Aquaculture and Introduction to Aquaculture, and had supervised the Aquaculture Laboratory facility since 1996.

Dr. Woods earned his B.S. from Murray State University in 1975, his M.S. from The Ohio State in 1977 and his Ph.D. from North Carolina State University in 1983. He was with the Crane Aquaculture Facility for 36 years, beginning in 1982 as a Senior Biologist, when it was a part of Baltimore Gas and Electric (BGE.) Then becoming the Aquaculture Director of the Crane Aquaculture Facility for BGE from 1986-1991. He served as the Director of the research facility when it officially became part of the University of Maryland at College Park, as part of Maryland Agricultural Experiment Station from 1991-1994, and continued as the Director when it became a part of the Department of Animal and Avian Sciences in 1995. Dr. Woods became an Assistant Professor in 1998 and an Associate Professor in 2004. He continued to serve as the Director of the facility and member of the faculty of the Department of Animal and Avian Sciences until his retirement.

Dr. Woods was a member of the University of Maryland, College Park Institutional Animal Care and Use Committee (IACUC) from 1995-2012. He was on the Aquaculture Advisory Committee of the USDA National Animal Germplasm Program from 2000-2016 and on the National Advisory and Oversight Committee of the USDA as the National Coordinator for Aquaculture New Animal Drug Approvals from 1996-2013. He served on the Federal Joint Subcommittee on Aquaculture from 2001-2006, developing Aquaculture Effluent Standards. He was the Vice- President of the United States Aquaculture Society 2001-2002 and was elected President of the American Fisheries Society's Fish Culture Section in 2007. Dr. Woods was the Research Coordinator for the National Breeding Program for the Genetic Improvement of the Striped Bass Aquaculture Industry, working on Cryopreservation and Germplasm Repository from 2003-2016.



On June 30, 2018 the public was invited to learn about the importance of local agriculture and the journey of food from the farm to the table at the Department of Animal and Avian Sciences' and University of Maryland Extension's (UME) first-ever Breakfast on the Farm event.





Hosted by Teabow Farms in Walkersville, MD and organized by ANSC professor, Dr. Robert Peters and Racheal Slattery, Coordinator of Dairy-Beef Extension Activities, this was a free, open to the public, educational event encouraging people to visit a working farm and meet a family of local dairy farmers.

After a hearty breakfast, the visitors were given a tour of the farm's facilities with experts from UME, Teabow Farms, and the industry on-site to discuss cattle health and veterinary care, breeding and reproduction, and provide a demonstration of milking equipment.

Owned by the Stup family, Frederick County's 2014 Farm Family of the Year for outstanding agricultural achievement, Teabow Farms is a modern dairy operation with a history stretching back three generations. Their progressive enterprise is indicative of the Stup family's dedication to environmental stewardship and modern farming practices. Breakfast on the Farm participants will learn about the Stup family's efforts in property management, reforestation and fencing to protect local waterways, as well as modern cropping and nutrient management practices, helping to improve water quality in the Chesapeake Bay watershed.

The Stup's state-of-the-art farm provides modern milking and housing facilities, and detailed nutritional testing and computer formulation of ration for diets of cattle of all ages. They administer a veterinary and vaccination program for continual monitoring of animal health, and their system also allows for recording and reporting data on milk yield and quality.



GENOMIC TESTING HELPS DEFINE MANAGEMENT STRATEGIES FOR FARMERS



The University of Maryland Department of Animal and Avian Sciences hosted a Dairy Field Day and Tour for local farmers on Oct. 10 at the Central Maryland Research and Education Center (CMREC) to discuss results of genomic testing in the University's dairy herd.

A genetic audit of 70 CMREC heifers used biological samples from Zoetis, a global animal health company, to capture data for a host of physical and health-related characteristics, as well as parentage.

"Those traits have an impact on economics," said Victoria Baker, regional representative for Zoetis who presented on the herd results during the Field Day. "Having the right cows in those stalls can hopefully make you profitable."

Zoetis has completed genomics on over 500,000 Holstein heifers across the country and determined genetic markers for a host of traits including health and proclivity to disease, milk production, and even physical characteristics desirable in show animals, said Baker.

Breeding using genetics is not a new practice—farmers and ranchers have historically planned reproduction strategies based on those same traits, breeding their healthiest and best-producing heifers to procure productive offspring, said Baker. Identifying those traits through genomics allows farmers to make those decisions with a higher probability of success, and helps them identify animals that may have health problems in the future.

"[Genomics] help you make decisions to best manage your herd," Baker said.

The audit of the University cattle by Zoetis was performed before the animals' first lactation, and generated data to

analyze milk production, breeding, fat yield, and various genetic health traits including mastitis, lameness, and respiratory problems.

While a genetic audit can assist farmers in developing management strategies for a more profitable herd, genetics are a constant that farmers are unable to change or control, said Dr. Li Ma, Assistant Professor in the Department of Animal and Avian Sciences. Developing a healthy environment is the other half of the equation, and has many factors including living conditions, climate, and nutrition.

"The environment is something that farmers can change," said Ma.

Populations of Holsteins across the U.S. have shown improvement over the last 60 years, said Ma, due in part to better environmental management and improvement in genetic selection capabilities. "Genetic gains are cumulative," he said. There is no threshold for improvement in genetic potential, said Baker, but gathering genetic data on more populations locally will provide better efficiency in breeding strategies and allow farmers to make better predictions with higher accuracy, helping them to design a strategy for economically sound management.

The Dairy Field Day was sponsored by Kathy L. Johnson, Agricultural Development Manager, Howard County Economic Development Authority; Bob Enfield, Southern States Frederick Cooperative; Paul Goering, Agriculture Law Educational Initiative; and David Whitlock, Select Sire Power. For more information on the CMREC herd or the genomics program at UMD, contact Rachael Slattery at rslatt@umd.edu or go to extension.umd.edu.

Dr. Jourdeuil Awarded Fellowship

Dr. Karyn Jourdeuil was awarded a \$20,000 Postdoctoral Fellowship from the American Association of Anatomists for her proposal, “Investigating the role of gap junctions and connexin proteins in chick trigeminal ganglion formation”.

As defects in the peripheral nervous system, such as peripheral neuropathies are widespread and can be caused by a variety of diseases and cancers; understanding how the cranial ganglia are formed is an important step in developing future treatments. This project will examine the role of gap junctions, intercellular channels that allow for the rapid diffusion of ions and small molecules, between neural crest cells and the different cells with which they interact during the formation of the trigeminal ganglion.



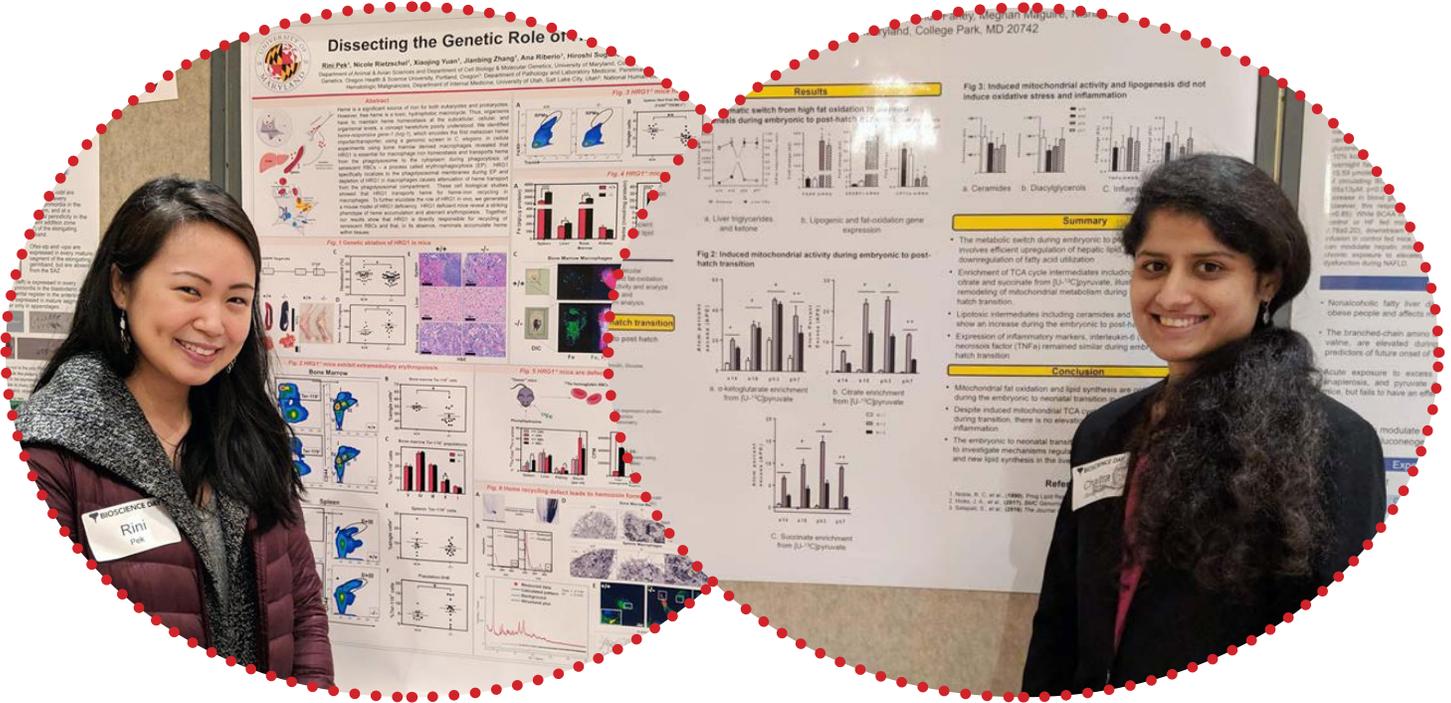
Welcome Dr. Shawna Weimer

In December, the Department of Animal and Avian Sciences welcomed Dr. Shawna Weimer to the faculty as an Assistant Professor, specializing in Poultry Extension.

Dr. Weimer is originally from Iowa. She attended Iowa State University where she earned a B.S. in Animal Science/Animal Ecology and M.S. in Animal Physiology with a specialization in swine ethology. After that she worked in the swine industry for two years in quality assurance and procurement at swine processing facilities in Iowa and Minnesota. Dr. Weimer received her Ph.D. from the University of Arkansas in 2017 and her dissertation research was on validating noninvasive measures of stress and lameness in broilers. She also ran broiler nutrition trials for allied industry sponsors during her time in Arkansas. Her post-doc at Purdue involved research on laying hens, turkeys and broilers in the areas of physiology, health, management, nutrition, egg quality, meat quality, behavior and welfare.

Dr. Weimer is PAACO (Professional Animal Auditor Certification Organization) certified in poultry and offers her services to shadow audit poultry operations seeking animal welfare certification. Under the same umbrella, she is weaving her extension and applied research efforts to foster the sustainability of the poultry industry. Her current research objectives are to improve the health, performance and welfare of poultry through 1) developing environmental and nutritional management strategies, 2) investigating the utility of noninvasive technologies, and 3) validating audit criteria for animal welfare audits and assessments.

BIOSCIENCE DAY 2018 POSTER WINNERS



On November 13, graduate students, Chaitra Surugihalli from Dr. Sunny’s lab and Rini Pek from Dr. Hamza’s lab, were winners in the poster competition for Bioscience Day 2018 in the Stamp Student Union. Chaitra’s poster was entitled, “Adaptation of hepatic mitochondrial metabolism and lipogenesis during embryonic to post-hatch transition in chicken.” Rini’s poster was entitled, “Dissecting the Genetic Role of HRG1 in Mammalian Heme Transport.” Bioscience Day is held annually by the College of Computer, Mathematical, and Natural Sciences.

CAMPUS FARM SHEEP ARE BID HIGH AT NATIONAL SALE

The Campus Farm successfully debuted its Katahdin sheep flock at a national sale when two spring 2018 ewe lambs brought premium bids at the 14th Annual National Katahdin Sale in Fishersville, VA on July 21, 2018. The winning bid for one of the ewes was one of the top five bids for a February ewe lamb at the auction. Crystal Caldwell, the Campus Farm Manager, has managed the breeding and care of this flock since 2010 and has made significant improvements to its genetic quality. These lambs were two of the thirty Katahdin lambs born in this spring’s ANSC 235 Applied Small Ruminant Parturition (aka “Lamb Watch”) class.





Congratulations to the ANSC December 2018 Graduates

The College of Agricultural and Natural Resources ceremony was held on December 19th, 2018 at the Clarice Smith Performing Arts Center. The University ceremony was held on December 18, 2018 at the Xfinity Center.

ANSC Graduate Students

Jicai Jiang, Ph.D.
Latisha Judd, Ph.D.

ANSC Undergraduates

Bell, Joanna Renee
Blake, Peter Manning
Carlson, Courtney
Clements, Jake Michael
Coburn, Mitchell Drew
Doherty, Alaina
Gum, Kelsea Paige
Kaloss, Alexandra Marie
Mann, Ashley Marie
McKahan, Alexandra
Mullineaux, Thomas Christopher
Resnicow, Audrey Elaine
Tillis, Katie Rose
Wilson, Patrick
Zweig, Aaron Edward



In Memory
~ **Dr. William Ray Stricklin** ~
(1946-2018)

Dr. William Ray Stricklin, long time member of the faculty of Animal and Avian Sciences passed away on September 5, 2018 in Munfordville, Kentucky at the age of 72. Dr. Stricklin had retired from the department in July 2018.

Dr. Stricklin earned his Bachelor of Science in Animal Husbandry in 1968 and Master of Science in 1972 from the University of Tennessee. He received his Ph.D. in 1975 at The Pennsylvania State University. He was an Assistant Professor in the Department of Animal and Poultry Science at the University of Saskatchewan from 1976-1980 before joining the faculty of the Department of Animal Science at the University of Maryland in 1980. In 1981 he received tenure and a promotion to Associate Professor.

Dr. Stricklin taught courses in Cognitive and Applied Ethology and in Animal Welfare and Bioethics. He was the department's Undergraduate Program Coordinator from 2002-2005. Dr. Stricklin served as the Assistant Dean of Academic Programs for the College of Agriculture and Natural Resources from 2008-2011.

Dr. Stricklin's research was in Animal Behavior, focusing on defining the role of animal behavior in food animal production systems and its importance as an indicator of animal welfare. He investigated basic social behavioral relationships among cattle, including the role of kinship. He researched and defined "space requirements" using principles from ethology and computer simulations and determined basic geometric relationships between shape of pens and animal spacing behavior. His work mapped periodicity of diurnal and seasonal patterns of eating, resting activity among feedlot cattle, performance tested bulls, and lactating and gestating beef cows.

Dr. Stricklin was the Chair of the University of Maryland's Animal Care and Use Committee (IACUC) from 2009-2014. He helped write original guidelines for the care and use of agricultural animals used in teaching and research and was a site visitor with the Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC) International since 1988.