

ANFS Scratchings

The Newsletter of the Department of Animal and Food Sciences at the University of Delaware

Issue 2

December 2008

Message from the Chair

2008 has been another very interesting and busy year for our Department and the University. Patrick Harker completed his first year as UD president and set a course for our Path to Prominence. ANFS has for many years been a leading department in teaching, outreach, and research at UD and will continue to be into the future.

In an effort to make our programs more relevant and visible, the department re-evaluated its undergraduate curricula in 2006-07. Effective with the 2008 Fall Semester, ANFS offers three undergraduate majors. The "Food Science" major that has been the foundation of our highly-regarded and accredited program remains unchanged. The Animal Science major with its concentrations, Pre-Veterinary Medicine, Animal Biotechnology, Applied Animal Science, and General Animal Science is now a thing of the past. Given the stature and success of the pre-vet concentration, we decided to elevate it to major status and named it "Pre-Veterinary Medicine and Animal Biosciences". Obviously, the PMAB major curriculum is for pre-vet interest students but also is intended for students seeking admission to graduate or other professional schools. However, the real news on the curriculum front is the development of a new, exciting joint major, "Animal

and Food Sciences". The ANFS major applies principles of biology, chemistry/biochemistry to animal agriculture and food systems. Students may direct their studies towards food animal production systems, food safety, equine and companion animals or molecular biology and genetics. This major was developed to emphasize the importance of integrating animal science and food science disciplines in understanding concepts of "farm to fork". Since the ANFS curriculum also requires basic sciences and calculus, students are well-prepared for graduate school or employment after completing their degree.

Undergraduates continue to be encouraged to incorporate research, on- and off-campus internships, study abroad and/or other experiential learning opportunities in their academic programs.

We continue to offer minors in animal science and in food science.

Please feel free to contact me, or any of the ANFS faculty, professionals or staff if we may be of service to you. We want to stay in touch (email: anfsnewsletter@udel.edu).* Sincerely,



Jack Gelb Jr.

New Milking Parlor and Dairy Manure Recycling and Composting Facilities Completed



New Milking Parlor



Twice a day, UD's cows line up to be relieved of their most prized product, loads of milk. Since January, milking is done in a new double-eight parallel milking parlor. Instead of eight, as in the old parlor, 16 cows can now be milked simultaneously with state-of-the-art equipment. When the udders have been emptied, gates are opened in

front of each cow and the group of eight exits rapidly at the same time rather than one after the other as under the old system. Except for the mooing of the cows being milked or those waiting patiently to be milked, few other noises can be heard in the parlor since most of the loud equipment, such as pumps and pulsators, is now located in a room be-

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Edited by Rolf Joerger and Bill Saylor

* **Giving to the Department of Animal and Food Sciences:** If you would like to donate to the Department of Animal and Food Sciences, please visit the website: <http://www.udel.edu/development/makeagift.htm>. All (100%) of the money you give to the UD reaches the program you wish to support. You may of course give a gift to the University, the College of Agriculture and Natural Resources, or other program. However, if you wish to designate your gift specifically to our department, please be sure to complete the "Other designation - indicate a specific purpose below" section and fill in "Dept. of Animal and Food Sciences". If you have any questions or require assistance when completing any of these forms, please contact Dr. Jack Gelb, Chairperson, Animal and Food Sciences at 302-831-2524 or jgelb@udel.edu.

low. Overall, the new parlor allows for a more efficient and less stressful milking experience for cows and workers. As everyone knows, milk is not the only thing cows like to get rid of more than once a day. Prior to the completion of the new manure recycling system, the cows' bedding material, sand, had to be replaced continuously with new shipments. Now, manure and sand are separated mechanically, and the sand is re-

used as bedding material. The manure fraction is composted and used as fertilizer. Liquid waste, whether directly produced by the cow or during cleaning of the barn and parlor environments, is pumped into an aerated concrete tank capable of holding six-months worth of liquid farm waste. Instead of ending up as undesirable run-off or having to be spread onto fields almost daily, liquid waste disposal can now be limited to a few times a year.



Manure recycling: separation into clean sand, organic solids, and liquid manure



Organic solids to be used in composting – exported from the farm for use by the "green industry"



Cleaned sand suitable for re-use as bedding for our dairy cows

Undergraduate Food Science Program Re-Accredited by Institute of Food Technologists

On October 20, The IFT Higher Education Review Board unanimously re-approved our B. S. program in Food Science as meeting the IFT Undergraduate Education Standards for Degrees in Food Science. Every five years, the Board undertakes a thorough review of the program and the way student learning is assessed. Alumni and Senior Exit Surveys are especially important for program assessment purposes, and the ANFS faculty would like to thank the alumni and graduating seniors for their participation in these surveys. The Board also made special reference to our website (<http://ag.udel.edu/anfs/foodscience/food.html>).

Celebrating the decision of the IFT Board were (from left to right): Dallas Hoover, Rolf Joerger, Changing Wu, Adrienne Shearer, Kali Kniel, Elaine Black, Bob Kewon, and Haiqiang Chen.



Ice Cream Made with Milk from UD Dairy Makes its Debut

Dan Severson (Animal Science Lab coordinator, Animal Science, '94) serves the first scoop of ice cream made from the milk produced at the UD dairy. The ice cream was introduced for the first time at the CANR Distinguished Alumni Awards and Luncheon Reception. The ice cream is currently made at Kilby Cream, Rising Sun, MD, but next year, plans are to produce the frozen treat on-site at the University of Delaware.

ANFS Alumni Erica Spackman, Bill Culp and Tracy Hill Hulse Honored

Dr. Erica Spackman (Ph.D. Animal Science, '01) is the 2008 recipient of the CANR Distinguished Young Alumni award and **Dr. William Culp** (Animal Science, '89, M.S. Animal Science '91) the recipient of the 2008 CANR Distinguished Alumni award. Dr. Spackman was honored as "one of the leading scientists in the world in the area of AI [avian influenza] research and diagnostics". Dr. Culp, a Major in the U.S. Army Veterinary Corps, works at the Armed Forces Institute of Pathology as a Veterinary Pathologist. He is responsible for diagnostic veterinary care of military working dogs and other government agency animals. **Dr. Traci Hill Hulse** (Animal Science, '91), a veterinarian at the Durango Equine Veterinary



Clinic in Arizona, received the UD Presidential Citation Award. The Award honors graduates of the last 20 years who exhibit great promise in the professional careers and/or public service activities.

New Tradition Started: Senior and Freshmen Picnics

The ANFS department initiated new traditions in 2008 as we held our first Senior and Freshman Picnics. In May, Dr. Lesa Griffiths led the ANFS animal production classes in hosting a picnic for seniors and graduate students at the brand new Equine Teaching Barn. Farm Superintendent Scott Hopkins prepared his prize-winning barbecue which included several varieties of meats and delicious baked beans. Graduating seniors shared memories of their time at UD with their peers, faculty, and staff. Dean

Robin Morgan and Dr. Jack Gelb shared their pride in the accomplishments of the graduates. In September, Dan Severson, the ANFS III TA's, and Dr. Tanya Gressley and her graduate students hosted the Freshman Picnic that started in the Townsend Hall Commons and finished with an egg toss on the lawn outside. The picnic featured lunch followed by games and prizes. This was a great way for the incoming students to get to know each other and meet the faculty.

ANFS People, Groups and Events

Co-inventor of "Enviropig" Joins Faculty

When "enviropigs" see food, they produce more than just the usual saliva, they also salivate the enzyme phytase thanks to work by **Dr. Serguei Golovan**. This enzyme allows the pigs to break down phosphate-containing phytate in their feed and utilize the phosphate for bone growth. "Normal" pigs are unable to break down phytate and therefore require phosphate supplements, some of which end up in manure and the environment. Dr. Golovan and his colleagues performed this work at the University of Guelph in Canada. Now at the University of Delaware, he plans on focusing his work on infectious diseases of poultry. Dr. Golovan will work on developing chickens that are genetically resistant to avian influenza.



Food Toxicologist Joins Faculty

Dr. Chiangqing Wu joined ANFS in April 2008. She previously was a post-doctoral researcher at Clemson University studying the preventative effects of diets on obesity and heart disease and analyzing the effects of forage crops on nutraceutical and antioxidant activities of beef products. At UD, Dr. Wu plans to study biologically active compounds and toxins from common foods, and to investigate the efficacy and safety of functional foods and minimally processed foods. Her ultimate goal is to increase understanding of the relationship between diet and health. Another research area she plans to explore is finding natural alternatives to antibiotics for the poultry and cattle industries.



Photos by Danielle Quigley

News from Students and their Organizations

The **ANFS Graduate Student Association** came into existence this year. According to Hudaa Neetoo, the group's goals are to better integrate graduate student activities between the Food Science and Animal Science students and to bring together students scattered across campus for social events.

2008 has been a busy year for the Food Science undergraduate and graduate students. This summer, students gave presentations at the International Association for Food Protection (IAFP) Annual Meeting in Columbus Ohio. **Jie Wei** (Ph.D. student with Dr. Kniel) was awarded 2nd place in the Developing Scientists Competition for her work on the Survival of Norovirus in Biosolids. This work will provide industry with guidance on how noroviruses, the leading cause of human viral gastroenteritis, survive in land applied manures and biosolids. **Sacha Derevianko** (M.S. student with Dr. Kniel) was a finalist in this competition for her presentation on using zero-valent iron to inactivate pathogenic *E. coli* O157:H7 from agricultural waters.

Hudaa Neetoo (Ph.D. student with Dr. Chen) presented a poster at the IFT (Institute for Food Technologists) Annual Meeting 2008 entitled "Application of High Hydrostatic Pressure (HHP) to inactivate *Escherichia coli* O157:H7 on alfalfa sprouting seeds" for the Nonthermal Processing Division and won 3rd prize at the poster competition. Hudaa also won a travel scholarship to the IAFP meeting in Columbus, Ohio. She also received a Graduate Scholarship from the Food Microbiology Division of IFT for the 2008-09 Academic year. **Mu Ye** received 3rd place in the poster competition from Aquatic Food Product Division at the 2008 IFT annual meeting. The **Food Science Club** continued to host a variety of guest speakers from industry this year. Morgan Wallace (DuPont Qualicon), Lisa Sadar (Food Science, '02) (Campbell's), Maureen Akins (TIC Gums), Erica Byerly and Ed Albaugh (David Michael and Co.), Susan Hoffman (Kraft), Leslie Grant (Nutrisystem), and Wendi Clauss (Food Science, '97) (WaWa) talked about their companies and internship possibilities.

The **Food Science College Bowl Team** traveled to Blacksburg, VA, and placed 2nd in a stiff competition against and just barely lost to North Carolina State University.

The **Animal Science Club** has been very active in 2008. Members participated in the North East Student Affiliate competition at Delaware Valley College in February, bringing home several awards: **Lorna Dougherty** (Animal Science, '09) placed 7th in research paper presentations, **Jennifer Puttress** (Animal Science, '08) placed 5th and **Daniel Lantz** (Animal Science, '09) placed 3rd in individual research presentations. Club members volunteered at the farm of Steve Cook, a UD Animal Science alumnus, in March and participated in the American Cancer Society "Relay for Life" at UD in May. This fall, the club participated in Newark Community Day in September and was represented by three teams of members at the Ag Carnival in October. The club sponsored its annual AgrAbility Auction at the Ag Carnival, where nearly \$1000 was raised to support local farmers with disabilities. Throughout the year, the Club hosted a number of guest speakers and arranged field trips to venues such as the Philadelphia Zoo, Harrington Raceway, Cowtown Rodeo and Adventure Aquarium.

Faculty and Staff News

Dr. Bill Saylor was recognized by the Delmarva Poultry Industry, Inc. (DPI) for his nearly 30 years of technical service, research, and outreach to the chicken industry as a poultry nutritionist and educator at the University of Delaware. Bill was also inducted as a Fellow of the Poultry Science Association at its centennial annual meeting in July.

DPI also recognized the University of Delaware poultry diagnostic **Lasher Lab Team** for its work in support of Delmarva's chicken industry. This group of dedicated professionals has contributed greatly to poultry disease diagnostics and applied research over many years. Their individual years of service range from 3 to 22 years. During this time, the lab has grown from a small unit to a full-fledged, world-class poultry diagnostic facility, offering important, technologically advanced poultry diagnostic services.

Dr. Robin Morgan was awarded the 2008 AAAP Phibro Animal Health Excellence in Poultry Research Award. This award is presented to a member of the AAAP for sustained excellence in research in poultry disease and health. **Dr. Conrad Pope** was awarded the 2008 AAAP Lasher-Bottorff Award for his outstanding work in avian diagnostic work and technical service to the poultry industry.

Dr. Kali Kniel, Dr. Sue Snider, and Adrienne Shearer attended the 10th annual exhibition, Nutrition and Health, and reception sponsored by the National Association of State Universities and Land-Grant Colleges (NASULGC) in March in Washington, DC. "From Harvest to Home in Delaware: Food Safety Research Feeds Cooperative Extension Programs" highlighted UD's research in food safety and emerging preservation technologies, and food virology and parasitology, and the link with Cooperative Extension's cutting-edge food safety and nutrition training for industry, consumers and youth.

Alumni News

Dr. F. William "Bill" Pierson, (Animal Science, '78), has been named director of the Veterinary Teaching Hospital in the Virginia-Maryland Regional College of Veterinary Medicine at Virginia Tech. Pierson had been serving as interim director since July 9, 2007.

Dr. Erica Spackman (Ph.D. Animal Science, '01) received the USDA-ARS's Herbert L. Rothbart Outstanding Early Career Research Scientist award for timely development of Rapid Diagnostic Tests for the control of important poultry diseases including avian influenza, Newcastle disease virus and enteric viruses of turkeys.

Jill Stankiewicz (Food Science, '01) was named Regional Marketing Manager for the Mid-Atlantic Dairy Association.

Amanda Duley (Animal Science, '01) is a postdoc at Rocky Mountain Laboratories in Hamilton, MT studying the immune response to retroviral infections.

Dusti Vanderwende (Animal Science, '07) is entering her second year of grad school at NC State studying dairy and nutrition.

Ashley Carter (Animal Science '05) is the newest elephant keeper at Busch Gardens, FL.. She and other trainers are responsible for five female Asian elephants in the habitat of the Nairobi sections of the park.

Val Monroe (Animal Science, '02) joined the Department of Diagnostic Radiology at Yale University School of Medicine as a Lab Manager and is conducting stem cell research in the rat brain.



Photo courtesy of Bush Gardens, FL

Dr. Tanya Gressley traveled to Grenada to meet former ANFS students currently attending St. George's University Veterinary School. Three alumni are in St. George's Fall 2008 entering class, making UD the largest contributing school for the 89 students in that class. **Alex Murphy** (Animal Science, '08), **Brendan Moulder** (Animal Science '06), **Anna Leppien** (Animal Science, '04), and **Katie Doherty** (Animal Science, '03) had very good things to say about both UD and St. George's and will be happy to answer any questions [email: Anna (lepann@sgu.edu), Katie (dohkat@sgu.edu), Alex (alexandermurphy@gmail.com)].

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