

# ANFScratchings

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

Issue 4

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## Message from the Chair

2010 has been another busy and exciting year. Our students, staff, and faculty continue to stand out at the highest levels as you will see in this edition of *ANFScratchings*.

Earlier this year, the department held a day and a half retreat to develop a strategic plan that will guide us in the years to come. The retreat was a time for faculty to reflect on our past; where we have been, what we value and strive for, and where we will go in the changing world we live in. A plan was developed blending the old and the new. Our roots in teaching, research and outreach addressing the sciences of producing food animals and the wholesomeness of foods will continue as these are important roles for a Land Grant University. We will educate and train students, most of whom continue to come from non-farming areas, about animals of all kinds including the companion species that enhance the quality of our lives. Our graduates will need to be prepared to make important contributions in their fields and society. Undergraduate and graduate curricula will combine multidisciplinary, hands-on traditional experiences and virtual learning. Alumni

and friends will be called upon to share their valuable expertise and experiences with students to provide the post-graduation perspective. Our students and faculty will be diverse in their backgrounds and interests and will recognize the importance of critical thinking skills and a more inclusive systems approach to research and learning. We currently have searches underway for four faculty members; three integrative food animal biologists and a veterinary pathologist. New faculty will conduct systems biology research impacting domestic animals and the production, safety and quality of animal food products. Our focus will be on zoonotic medicine, the intersection of human and animal health, and the "farm to fork" concept that directly impacts food borne diseases. We aspire to become *the* National Center of Excellence for discovery-based learning and integrative research in Animal and Food Sciences.

Wishing you Happy Holidays and the best for 2011.



Jack Gelb, Jr.

## UDairy Creamery Construction in Progress

If you have attended any of the University of Delaware women's and men's home basketball games this season, you might have noticed fans enjoying various flavors of ice cream. Vanilla, chocolate marshmallow, butter pecan, orange creamsicle, black raspberry, strawberry, cookies and cream, and mint chocolate chip are available thanks to the UDairy creamery.

This spring, the University and local community will have access to these delicious treats on an almost daily basis as the UDairy Creamery will open near the Fred Rust Arena. Construction of the building housing the creamery began in October and completion is expected early in 2011. The creamery will provide space to mix and store the ice cream and customers will be able to buy ice cream at a storefront.

The creamery is a student-centered, faculty-supported enterprise. **Jacob Hunt** (Pre-veterinary medicine and animal bioscience major) is the Assistant Manager, **Rebecca Sheahan** (Agriculture education and animal and food science double major) is the Business Manager.



Food science major **Amanda Prudente** is the Dairy/Food Science Manager, and **Rachael Dubinsky**, (Agriculture and natural resources and interpersonal communication major) deals with communications/sustainability issues. To find out more about the Creamery, please visit its website (<http://ag.udel.edu/creamery>).

**\* 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](mailto:jgelb@udel.edu).



## Contents

- Message from the Chair
- UDairy Creamery Construction started
- Faculty News—Dr. Robert Dyer
- Reflections by Alumni – Jennifer Cleveland-McEntire
- Awards and Recognitions (N. Durrett Crawford, D. Byrne, S. Troyer)
- Personnel Changes in ANFS
- Food Science Students College Bowl Win
- News from Students and their Organizations
- List of Donors to the Department

Edited by Rolf Joerger and Tanya Gressley

## Faculty News

### Dr. Robert Dyer pioneers new generation of lameness detection in cattle

In the U.S., approximately one in five dairy cattle have a detrimental physical condition called lameness, says **Dr. Robert Dyer**, ANFS associate professor and a large animal veterinarian. Fortunately, Dyer and his colleagues at the University of Maryland Baltimore County are continually updating a computerized system that aids in the early detection of lameness, in hopes of saving the dairy industry billions of dollars each year.

StepMetrix™ is sold by BouMatic and is being used on dairy farms in the U.S. and Europe. First commercially available in 2005, this detection method uses a system of force plates installed on the ground outside the area where the cows are milked. Every time a cow walks over the plates on its way to milking, the plates detect the forces up and down each leg through electronic sensors.

The data collected from the plates is then analyzed by the software to create a lameness index, rating each individual cow as either “sound” or “lame.” If undetected, lameness can cost farmers an average of \$500 per case.

“With the first generation of StepMetrix™, we were limited to only one dimension - the vertical forces,” Dyer said. “We were still missing 35-40% of lame cows and wanted to increase the

efficiency and sensitivity of this technology.”

This system has gained a lot of popularity in Europe, due to concerns about animal welfare. For example, three years ago the King farm in the United Kingdom installed a StepMetrix™ and currently has less than 1% lame cows in its 350 cow herd.

The new second generation of StepMetrix™ not only measures the forces up and down each leg, but also across and back and forth. This three dimensional method will now consider 18 different parameters in determining lameness. These improvements will also demonstrate the value of StepMetrix™ to U.S. dairy farmers.

“The ultimate goal of this technology is to educate dairymen on how much lameness costs them through real world data,” Dyer explained. “This concept is still the premiere technological advance in lameness detection and has set the pace for the rest of the dairy industry.”—Article by Rachael Dubinsky, CANR Communications student intern



## ANFS People, Groups and Events\*

### Reflections by Alumni — Jennifer Cleveland-McEntire (Food Science, '99)

In high school, I knew I wanted to be a scientist even though I wasn't really sure what a scientist did. I remember the day the food science program at UD mailed me information on the major—it was a day that changed my life.

Now I serve as Senior Staff Scientist and Director of Science and Technology Projects for the Institute of Food Technologists (IFT), the not-for profit scientific society for over 18,000 food scientists in over 100 countries. At IFT, I direct the grants and contracts program, working with customers such as the US Food and Drug Administration, and the Micro-nutrient Initiative. I also represent IFT to the media and the federal government on food safety related issues. I work with thousands of food scientists and other food system stakeholders each year, serving as a conduit for scientific expertise with the vision of providing a safe and abundant food supply.

A native Long Islander, I needed a university that had a sense of community, yet provided a robust town with ready access to major cities. UD was perfectly situated. I was confident in the scientific rigor offered by the food science program, and even more assured by being part of the Honors Program. My advisor, Dr. Dallas Hoover, sensing my desire to “jump right in”, facilitated my first research experience in the

Plant and Soil Science Department. I continued as a Science and Engineering Scholar with Dr. Hoover, and fell into the field of food safety.

Because the food science program was small, it was easy to get involved in the food science club. This had three great benefits: I served as club president for two years and gained great leadership experience, the club had graduate students and I got a glimpse into graduate life, and through the club, I became connected with the Philadelphia Section of IFT, and ultimately “national” IFT, my current employer.

After graduation from UD, I joined the graduate program at Rutgers as a USDA National Needs Fellow in Food Safety. Part of the program involved a 7-month internship in Washington, DC, and I realized that while I was initially drawn to labwork, Washington was where I wanted to be.

I am incredibly proud to be a Blue Hen, and give UD, and the food science program in particular, a tremendous amount of credit for creating the environment that allowed me to succeed.



### Awards and Recognitions

**Natalie Durrett Crawford**, (Animal Science, '00), a veterinary pathologist at Covance Laboratories Inc. received the **Presidential Citation for Outstanding Achievement**. Speaking via video from her home in Ashburn, Va., Crawford said it was nice to know that after all this time she has made a lasting impression on the faculty at UD. “I'm very appreciative to receive this award, and it is an honor to know that in some way I have given back to the University,” Crawford said. “I hope to be involved with the University and to give back to UD.”

**Dennis Byrne** (Animal Science, '77) received a 2010 College of Agriculture and Natural Resources **Distinguished Alumni Award**. Mr. Byrne has been manager of Herr Angus Farm at Herr Foods Inc. since 1985, and has maintained a



Dennis Byrne

close relationship with our department. He has provided numerous opportunities for our students to tour the Herr Angus Farm and learn about sustainable cattle production and animal agriculture. He has lectured in various courses, helped students with projects and provided assistance whenever he could, and his generous donations were essential to establishing the UD Angus cattle herd.

**Susan Troyer** (Animal Science, '88) was named to the National Dairy Promotion and Research Board.

\* If you are interested in sending us your reflections or in nominating someone for an award, please contact our department.

## Personnel Changes in ANFS

**Dr. Haiqiang Chen** and **Dr. Kalmia Kniel** were promoted to Associate Professor with tenure, and **Dr. Mark Parcels** to Professor.

**Dr. Kalmia Kniel** has taken over as Assistant Chair from **Dr. Limin Kung** who served in this position since 2005.

**Dr. John Dohms** who joined the department in 1977, retired this year. Dr. Dohms led a nationally recognized research program focused on the pathogenesis, diagnosis, and control of mycoplasma infections in poultry. He also excelled in advisement and teaching and is widely recognized by students and his peers for his dedication in these areas. He served the College of Agriculture and Natural Resources as Interim Associate Dean for Academic Programs in 2002.

Laboratory Manager and Education Coordinator **Dan Severson** (Animal Science, '94), who joined our department in 2002, has left the University to become co-owner of an animal feed company. Dan coordinated most of our animal science

labs, gave lectures and developed the new Honors section of ANFS 101. He was also co-advisor of the Animal Science Club. Dan deserves much of the credit for the idea of the UDairy Creamery which is now a reality in part because of his leadership as its first manager. **Laura Nemec** (M.S. Animal Science, '10) is now our new Laboratory Coordinator.

Enjoying her well-deserved retirement is **Carol Oberlander**. Carol joined the department in 1989 and was Assistant to the Chair in the three years prior to her retirement. Carol was "the voice of the department" and served the department with great professionalism, dedication and good humor. **Cynthia O'Donnell** is the new Assistant to the Chair.



## Food Science Students win 2nd Place at National IFT College Bowl Competition

ANFS's College Bowl Team competed in the Finals at the Institute of Food Technology (IFT) Annual Meeting on July 19 in Chicago. Eight teams competed, each a winner from regional competitions held earlier this year. In the competition, two teams competed at a time buzzing in to answer toss-up questions. The whole competition is one of double elimination with one round held in the afternoon and a second that runs for four hours in the evening. This year, UD was the runner-up to the national champion, the University of Georgia. This was the first year that UD has competed at the national level. UD beat Cornell, followed by a win against Ohio State University, University of Wisconsin-Madison, and University of Arkansas. These teams were all previous College Bowl winners. Our

team was amazing in this tough competition which included questions in the areas of food chemistry, engineering, processing, history and microbiology.



Left to right: Katie Ciasullo, Kirsten Hirneisen, Kate Kingsborough, Hudaa Neetoo, Sarah Markland, Jei Wei.

## News from Students and their Organizations

**Milos Markis** received the Richard B. Rimler Memorial Paper Award at the 2010 American Association of Avian Pathologists and American Veterinary Medical Association Combined Annual Meeting held in Atlanta, GA. The title of Milos' paper was, "Feather tip monitoring of Marek's disease virus in experimental and commercial settings". Co-authors on the paper were J. Rosenberger, S. Rosenberger, G. Isaacs, E. Bernberg, G. Lagasse, A. Anderson, I. Waidner, J. Burnside, and R. Morgan. Robin Morgan served as Milos' academic advisor for this work.

**Upendra Katneni** of Dr. Mark Parcels' lab received the Best Paper Award at the 82<sup>nd</sup> Annual Meeting of the Northeastern Conference on Avian Diseases (NECAD) held at Pennsylvania State University. The title of his presentation was "Analysis of Immune Signaling in Marek's disease Virus (MDV) Vaccinated Chickens". Co-authors on the paper were U. Katneni, A. Beshwor, N. Siano, M. Markis, C. J. Schmidt, C. L. Keeler, S. P. Golovan, S. M. Reddy, and M. S. Parcels.

**IFT 2010-2011 Feeding Tomorrow Scholarship Recipients** are **Samantha Gartley** (Freshman Scholarship) and **Hudaa Neetoo** (Graduate Scholarship).

**Laura Nemec** and **Michelle Der Bedrosian** competed in the 2010 Annual Joint Meetings of the American Dairy Science Association/American Society of Animal Science Northeast Section Graduate Student Paper Competition and won first and second place, respectively. Laura's paper was, "The effect of form of trace mineral supplementation on lactation, neutrophil function, and vaccination response in Holstein cows". Her academic advisor is Dr. Tanya Gressley. Michelle's paper was, "The effects of length of storage on the composition and nutritive value of corn silage". Her academic advisor is Dr. Limin Kung.

**Laura Nemec** also received the UD College of Agriculture and Natural Resources' William J. Benton Graduate Student Award.

The **Animal Science Club** continued to grow this year with over 100 attendees at the first meeting of the semester. The Club participated in Community Day and donated \$150 to Canine Partners for Life. Club members also went to the Cowtown Rodeo at the end of September. The weather was great this time and everyone enjoyed the show. Club members went on a trip to Kilby Cream, an ice cream parlor and dairy farm in Rising Sun, MD, and were able to take a behind the scenes tour of the farm and the bottling facilities.

Among this year's activities of the **Food Science Club** was a joint service activity together with the McNair Scholars Program to bake 70 sweet potato pies using sweet potatoes grown at the CANR garden for the Food Bank of Delaware.



Food Science Club members, from left, Melissa Ehrich, Amanda Hoffman, Katie Ciasullo and Haley Caulfield prepare the sweet potato pies

**We would like to thank the following individuals who have supported our Department through generous donations in 2010**

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## College of Agriculture & Natural Resources

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