A message from the Chair

Dear colleagues and friends, another academic year has come to an end and a new group of animal science graduates will prepare for a future of opportunities. On behalf of our faculty, staff and graduate students, we wish our new graduates (see pages 4) all the best as they take on the world.

In Departmental news, congratulations to Dr. Feng-Qi Zhao, who was recently promoted to full Professor. Congratulations also to Ms. Marcia Purvis for receiving the 2014 Award for Excellence in Staff Support in the College of Agriculture and Life Sciences (Page 3). This award was established in 2004 to recognize our talented staff, and Marcia has the distinction of being only the 10th recipient. Congratulations also go to Xiaozheng Song (Dr. Zhongzong Pan, Advisor) for successfully defending his PhD, and to our Animal Science students who won awards at Honor’s Day (see pages 2-3).

The Spring Semester may be over, but the Department is offering five courses over the summer period. In addition to our popular summer course “You to the Zoo” (with Dr. Pat Erickson), we are offering our “Introductory Animal Science” course (with Dr. Julie Smith), so high school students can get a jump start on the fall semester, and our very popular experiential course, “CREAM” (with Dr. Norman Purdie). We are also offering two new exciting travel courses: “The Horse” (going across NY State with Dr. Pat Erickson) and “Elephant Care, Handling, and Management” (in Orlando, FL with Dr. Betsy Greene).

Thanks to our dedicated Faculty, Staff, and Graduate Students for their continued hard work and significant contributions to Animal Science, CALS, and UVM. Have a great summer, stay safe, and I look forward to seeing you at the end of August when we will welcome our returning students and a new group of first year students into Animal Science.

Thank you to our readers for your support and I wish you and your families all the best for a safe and fun-filled summer. Please follow us on Facebook (UVM Animal Science) and Twitter (uvmasci).

Kind regards,
André Wright, PhD

Please Support UVM Animal Science

The Department of Animal Science is home to some of the best and brightest students, high quality research, and outstanding outreach activities at the University of Vermont. Your donation will help the Department continue to deliver first-rate service in these areas. Annual gifts from alumni and friends at all levels do make a difference. Please consider supporting the Department with a donation of any size.

Gifts may be made online at the UVM Foundation’s secure website:
https://alumni.uvm.edu/foundation/giving/online/

Please specify Department of Animal Science in the “Other” category.
Honors Day Awards presented April 18th

Elmer Towne Award
Presented annually by the Vermont Dairy Industry Association to a student whose work in the field of Dairy Science shows the greatest promise for providing the quality leadership exemplified by Elmer E. Towne in his life of service to the Dairy Industry.
Recipient: Elizabeth M. Remick
Presenter: Dr. Julie Smith

Brian Hawley Scholarship Award
This award, in memory of Brian D. Hawley, an Animal Science graduate of UVM, is given to deserving Vermont juniors or seniors in the Animal Science Department.
Recipients: Sean C. Blouin, Elizabeth M. Remick
Presenter: Dr. André-Denis Wright

George H. Walker Award
Awarded annually by faculty vote to a member of the graduating class of the College of Agriculture and Life Sciences, who has majored in Animal Science, who exhibits conspicuous merit in the studies pertaining to Dairy Science, and especially in those courses relating to the production and/or processing of market milk, and who furthermore exhibits high and noble traits of leadership and character.
Recipient: Samuel E. Scheu
Presenter: Dr. Norman Purdie

The Brett Klein Memorial Scholarship
This scholarship is presented to CREAM Student Herd Advisors for fall 2013 and spring 2014 with a big thanks for their time and effort! The award is presented for their dedication, responsible leadership, and friendly attitude that Brett exemplified as a 1990 CREAMer as well as for their excellence in teaching and advising the CREAMers and in passing on the CREAM tradition!
Recipients Fall ’13:
Chantal M. Girard
Ashley S. Hudson
Tyler L. Launhardt
Recipients Spring ’14:
Rachel A. Lundsted
Samuel E. Scheu
Presenter: Dr. Norman Purdie

Donald J. Balch Award
This award is presented annually to the student or students making the greatest contribution to the equine or companion animal activities of the Department of Animal Science.
Recipients: Benjamin P. Daggett, Emily K. Rule
Presenter: Dr. Jenny Wilkinson

Animal Science Faculty Award
In recognition of scholastic performance, outstanding achievements in undergraduate research, and service to the Department of Animal Science.
Recipient: Evelyn A. Bulkeley
Presenter: Dr. Jenny Wilkinson

Honors Day photos courtesy of Dr. Todd Pritchard
Honors Day Awards—cont’d.

Triona Wilder Marno-Ferree Memorial Award
This award is presented to the student or students who possess a genuine love of horses and display the energy and enthusiasm shown by Triona for UVM Horse Barn activities.
Recipients: Samantha L. D’Amico, Kirsten A. Weberg
Presenter: Dr. Jenny Wilkinson

The Doris and Julian Malkiel Scholarship Fund
This scholarship fund was established by the Malkiels out of their mutual respect for domesticated animals and the talented veterinarians who care for them. It is awarded to deserving Vermont students in their junior year, who are pursuing the pre-veterinary curriculum and have demonstrated through their academic performance a level of preparedness and proficiency suitable for admission to vet school.
Recipients: Lauren M. Brown, Heather M. Curley, Desmond S. Dana, Chelsea L. Davidson, Stephanie C. Morancy, Emily K. Rule, Maria C. Watko, Ethan R. White
Presenter: Dr. André-Denis Wright

Staff Award
This award serves to recognize outstanding efforts and achievements in staff support in the College of Agriculture and Life Sciences.
Recipient: Marcia Purvis
Presenter: Dr. Thomas Vogelmann

American Society of Animal Science Award
Presented annually to sophomores, juniors, and seniors whose academic record, scholastic efforts and character warrant recognition as the future leaders in the field of Animal Science. Presenter: Dr. André-Denis Wright

Recipients:
Juniors: Sarah E. Colando, Elizabeth A. Doiron, Mandy L. Erdei, Sarah J. Forsythe, Petty Km, Samantha L. Monck, Laurel K. Saldinger
Sophomores: Austin Ebbott, Sara R. Friedman, Stephanie C. Morancy, Alice V. Symington, Nicholas A. Tatakas, Ken B. Wesley, Sarah L. Zeger

Distinguished Undergraduate Research
The Distinguished Undergraduate Research Program of the College of Agriculture and Life Sciences recognizes students who in addition to pursuing their regular course of study conduct original research. This research is done under the immediate supervision of a faculty member. Undergraduate research is an introduction to the methods involved in the advancement of knowledge that is fundamental to the goals of a university. The following Animal Science student participated in this program:

Pamela L. Bay—"Plant-Derived Bioactive Lipids Impacts Glucose Homeostasis and Energy Metabolism in Mice" Mentors: Dr. Jana Kraft and Dr. Tom Jetton
The University of Vermont’s 213th Commencement Ceremony was held on Sunday, May 18th at 8:20 am on the University Green. The College of Agriculture and Life Sciences’ (CALS) ceremonies were held later that day in the Multipurpose Facility at the Athletic Complex. A reception was held prior to the ceremony in Redstone Dining. Seventy-two Animal Science majors received their Bachelor of Science degrees.

Congratulations ASCI graduating Class of 2014:

Aliquo, Heather Nancy
Atwood, Emily Mae
Bay, Pamela L.
Beckett, Melissa A.
Beigel, Brittney A.
Benoit, Kaitlin Marie
Bick, Philip C.
Blake Megan Rose
Braun, Zoe Rachel
Bromley, Cassie Bliss
Brown, Sheena Louise
Brueckner, Audrey Delaney
Bulkeley, Evelyn Anne **

Carmellini, Amanda Annalice *
Colbath, Brittany Joan *
Crowley, Emma Catherine
Curley, Heather Marie
Devino, Dylan Joseph
Dieffenbach, Mikayla
Donahue, Lauren Rose
Dooley, Hagan Christopher
Drasler, Lauren Frances
Erickson, Amelia L.
Faccio, Taylor Marie
Fey, Annette
Finley, Christa Lynn
Girard, Chantal Marie
Hayes, Anna Dorothy
Hazan, Mary E.
Hemmer, Roberta Lea **
Hershey, Benjamin Joel
Herwitz, Zoe Elizabeth
Howe, Susanna Massey
Hull, Taylor C.
Kaufman, Anne Esther
Kolk, Taylor Lillian
Krawczyk, Lucie Rose
Launhardt, Tyler Leigh
Lavallee, Elizabeth A.
Lawrence, Carolyn Elizabeth
Massimore, Marissa E.
McKay, Madison Rosetta
Meadowcroft, Devon Patricia
Meirs, Cory Kraft
Minuto, Jillian Spencer *
O’Day, John Francis III *
O’rourke, Ryan S.
Payeur, Gina Ann
Phalen, Carey Marjorie
Plummer, Mallory Victoria
Portillo, Tiffany Jazmin
Powell, Lauren M.
Ramalho, Ursula
Rasztmann, Lydia Sawyer
Remick, Liz Marie
Ritchie, Katherine Vera
Rooney, Theresa Ann
Rossi, Lane Ellen
Rule, Emily Kate
Sander, Amy Erica
Schu, Samuel Edward **
Schoenberg, Heidi E.
Sullivan, Mallory Susan
ten Napel, Kristen Anne
Thongwarn, Duangkamol
Treseler, Erin Marie
Webber, Kirsten Anne **
Wellington, Victoria Eve
White, Jillian Margaret
White, Katrina Nicole
Whitney, Andrew James
Wilford, Adriana Sage

** Magna Cum Laude          * Cum Laude

CREAMers celebrate their UVM graduation

Former Chair of the ASCI Department, and now Senior Associate Dean for Research and Faculty Affairs at Purdue University, Dr. Karen Plaut (UVM Class of 1981) was the commencement speaker for the 2014 CALS’ graduating class.
Twenty-six Animal Science students will be attending the following veterinary schools in the fall:

- Kansas State University
- Michigan State University
- St. George’s University, Grenada
- Tufts University
- University of California, Davis
- University of Florida
- University of Glasgow, Scotland
- University of Melbourne, Australia
- University of Missouri
- University of Pennsylvania
- University of PEI, Canada
- University of Tennessee
- Western University

Animal Science Department Chair, Dr. André-Denis Wright congratulates ASCI graduate, Ursula Ramalho.

Drs. Josie Davis, Lyndon Carew, Sabrina Greenwood, Stephanie McKay, David Kerr, Betsy Greene, Karen Plaut, Julie Smith and André-Denis Wright.
Kraft Lab News

The Kraft Lab looks back to a busy and successful spring semester. In addition to the everyday bustle of lab work, four of our students presented their undergraduate research project at conferences. Katie Ritchie (ASCI, Class of 2014) presented her research (“Cyanobacteria blooms and essential fatty acid transfer through the Lake Champlain food web”; a collaborative project with Dr. Jason Stockwell, The Rubenstein School) at the 6th Annual Vermont EPSCoR Student Research Symposium and at UVM’s Student Research Conference (SRC) and will go international presenting at the International Association of Great Lakes Research Annual Meeting in Hamilton (ON, Canada). Way to go Katie! At UVM’s SRC, Hira Haq (BIOC, Class of 2016) presented a poster on “Composition of diets investigating the significance of bioactive fatty acids in whole milk on insulin sensitivity, metabolic risk factors, and inflammation” and Tess Rooney (ASCI, Class of 2014) presented a poster on “Delineating the metabolism of stearidonic acid in the dairy cow.” Pamela Bay (ASCI, Class of 2014) presented her research in an oral presentation at UVM’s SRC and successfully defended her Distinguished Undergraduate Research project “Plant-Derived Bioactive Lipids Impacting Glucose Homeostasis and Energy Metabolism” as part of her Honors College thesis.

Congratulations to Jack O’Day (ASCI, Class of 2014) for successfully defending his Honors College thesis “Quantitative determination of fatty acids in the milk of the University of Vermont’s CREAM herd followed over the course of six months” and to Emily Egolf (ASCI, Class of 2015) for receiving UVM’s Summer Research Award for her research project titled “Effect of increasing pasture forage diversity of bovine milk fatty acid profile.”

Doctoral candidate Melissa Bainbridge successfully completed two trials and her spring course work. Melissa’s abstract (“Effects of supplementing lipid-encapsulated echium oil on lactational responses and milk fatty acid composition”) submitted to 2014 JAM Program Committee has been accepted and scheduled for oral presentation as part of the graduate student completion at the ADSA-ASAS-CSAS Joint Annual Meeting to be held in Kansas City in July 2014.

Dr. Jana Kraft held a workshop ‘Milk Quality - From Farm to Glass’ with Dr. John Barlow and Jon Cleary (Organic Valley) at the NOFA-VT Winter Conference and presented exciting preliminary data (Diets diet rich in stearidonic acid negatively impact visceral adipose mass) of her recent study in collaboration with Dr. Tom Jetton (College of Medicine, Endocrinology, Diabetes & Metabolism Division) at the Experimental Biology 2014 in April in San Diego.

In March, Dr. Kraft received UVM’s 2014-2015 REACH award supporting a collaborative project with Drs. Tom Jetton, Jay Gupta (College of Medicine, Endocrinology, Diabetes & Metabolism Division), and Alexander Wurthmann (Department of Chemistry). Furthermore, Dr. Kraft is Co-PI on three grants awarded this spring [NSF REU award — Jason Stockwell (PI); NESARE grant — Juan Alvez (PI); George Walker Milk Research Fund — Sabrina Greenwood (PI).]

The Kraft Lab commemorated the end and success of the semester with a bowling challenge against the Stockwell Lab (the fishy lab) who has partnered with us in research and lab meetings. The game ended in a tie with lots of fun and team spirit. Go fatty fish!

For six of our lab members (Emily Atwood, Jack O’Day, Christa Finley, Pamela Bay, Katie Ritchie, and Tess Rooney, all ASCI class of 2014), the chapter of undergraduate school closes with a new exciting chapter beginning in graduate school, vet school, or work life. It is of course with mixed feelings for the Kraft Lab to see their lab mates leaving; all became an integral part of our lab community. In fact, Jack was the longest-working member in the lab (since fall 2011). The Kraft lab says “Thank you all for your hard work and your spirit and best of luck in your future endeavors!”

Kraft lab web site: http://asci.uvm.edu/labs/kraft/
Wright Lab News

Spring 2014 has been a busy time for the members of the Wright Lab. At the end of April, Ph.D. candidate Sue Ishaq began a two month long probiotic study on newborn lambs, to determine whether the probiotic she designed will positively impact the developing rumen environment and improve growth. The young flock has been keeping Sue very busy, but they are adorable and always a source of entertainment! Luckily, Sue has had a team of enthusiastic undergraduate researchers assisting: Sam Rosenbaum (ASCI, 2015), Katy Nelligan (ASCI, 2016), Samantha Frawley (ASCI, 2015), Emma Hurley (ASCI, 2016), Sarah Zeger (ASCI, 2016), Anjana Mangalat (ASCI, 2017), Jess Bauchmann (ASCI, 2015), Max Lindauer (ASCI, 2015), and Christina Kim (ASCI, 2013). In her spare time, Sue has been continuing her work in the lab on the microorganisms in the moose rumen. She recently had her second manuscript published in *Microbial Ecology* on high-throughput sequencing of bacteria using moose from three geographic locations, and has a third manuscript on the design of new primers for amplifying rumen protozoa under-going peer-review. She also just came back from the American Society for Microbiology 2014 General Meeting in Boston where she presented a poster on her work culturing lactic acid bacteria from the rumen of moose.

Ph.D. student Laura Cersosimo wrapped up her year-long study on dairy cattle breed differences in rumen methanogens. Special thanks to the following undergraduate researchers who worked on the project: Dylan Deveno (ASCI 2014), Danielle Semick (ASCI 2014), Jillian Minuto (ASCI 2014), Mallory Sullivan (ASCI 2014), Pamela Bay (ASCI 2014), Annie Kaufman (ASCI 2014), Samantha Frawley (ASCI 2015), Michael Eldridge (ASCI 2015), Katherine Boucher (ASCI 2015), Sarah Zeger (ASCI, 2016), and Emma Hurley (ASCI, 2016). Laura is already planning to include a variety of other breeds. Laura is nearly finished with her Ph.D. comprehensive exam, and looking forward to presenting a poster at the Joint Annual Meeting of the American Dairy Science Association® (ADSA), the American Society of Animal Science (ASAS), and the Canadian Society of Animal Science (CSAS).

Post-Doctoral Associate Dr. Benoit St-Pierre has been continuing his work on the microbial communities that populate anaerobic manure digesters. A manuscript comparing the bacterial and methanogen populations amongst four large-scale mesophilic dairy digesters with different combinations of operating conditions has recently been submitted for publication. One of the major findings from this project was that the use of lipids as co-substrates was associated with very distinct microbial compositions. Benoit has also been working with undergraduate researcher Ken Wesley (ASCI, 2016) on the effect of lipids on the composition of digester microbial populations using cultures from manure digesta maintained in laboratory-scale bioreactors. Benoit is also currently analyzing the effects of a commercial additive on the composition of manure digester microbial populations.

The Wright Lab is also excited to welcome Christina Kim, who graduated from ASCI in 2013. Christina has been working in the lab to amplify methanogens from various animals, and will be working full time this summer to collect data from dairy cattle using a thermal-imaging camera.

Have a safe summer everyone. To learn more about the Wright Lab, please visit our webpage: [http://asci.uvm.edu/labs/wright/people.html](http://asci.uvm.edu/labs/wright/people.html)
McKay Lab News

The bovine epigenome is still under investigation in the McKay lab. We are continuing to work with the AMPK gene family and explore economically important traits from an epigenetic perspective. New insights have led us to begin investigating the conservation of methylation between breeds of cattle. In the last three months we have been busy gathering tissues for future research. The most recent tissues that we have collected have been gathered from Bobcat, Fisher and Otter in conjunction with the Vermont Department of Fish and Wildlife Furbearer project.

This summer we are excited to welcome Rex Yee, a high school student from Poteet, Texas who will be exploring global methylation in wildlife tissue samples.

Our travels in the last three months have taken us to New Hampshire, Maine and New York. At the end of February, Hannah Lachance traveled to Dartmouth College in Hanover, NH for a seminar on the advances in Illumina next generation sequencing. In April, Hannah had the opportunity to attend the 70th Annual Northeast Fish and Wildlife Conference in Portland, ME. She spent three days learning about various aspects of research that are being performed with the intention of benefitting our wildlife in the Northeastern United States. We hope to utilize this information to determine where our lab can assist with the conservation of Vermont’s wildlife. In April Dr. Stephanie McKay was invited to speak about “Genetics of Feed Efficiency and Applications for the Dairy Industry” at the 2014 Herd Health and Nutrition Conferences in East Syracuse, NY and West Lebanon, NH.

Lastly, we would like to bring to your attention, a correspondence to Nature, in which Dr. McKay was a co-author, entitled “Scientists need leadership training.”

Visit the McKay Lab website:
http://asci.uvm.edu/labs/mckay/

Kerr Lab News

The Kerr lab is approaching a milestone this June in that Ben Green will be defending his Ph.D. dissertation. Ben has made great progress in research into epigenetic effects on the bovine innate immune system. He will continue this line of research, in a post-doctoral position at Dartmouth College. Meanwhile, Aimee Benjamin is on track to submit two manuscripts this summer describing her work on innate immune variation within the Holstein breed, and between Holstein and Angus breeds. Filiz Korkmaz had a great semester of course work, and is now getting her research program really going on applying the lab’s biomarker genes to distinguish between animals with high or low immune response characteristics. The whole lab will be going to the American Dairy Science meetings in Kansas City in July where we will be giving three oral presentations. Dr. David Kerr will also be giving a presentation in Ghent, Belgium in August at the Mastitis Research Workers Annual Meeting. And, as usual, we’ll all find some time for R & R to enjoy the beautiful Vermont summer.

http://asci.uvm.edu/labs/kerr/

Zhao Lab News

Graduate student, Shun Kitaoka, attended the Experimental Biology (EB) Conference 2014 in San Diego April 26-30 to present his thesis work on insulin regulation of glucose transporter in C. elegans. The EB conference is one of the largest conferences organized by several American scientific societies, including American Society of Nutrition, American Physiology Society, and American Society of Biochemistry and Molecular Biology. Shun’s poster was entitled “Regulation of glucose transport by insulin/IGF-like signaling in Caenorhabditis elegans.” In addition, Shun learned from thousands of scientific presentations in both oral presentations and posters. He also enjoyed sightseeing beautiful San Diego with his family.

Zhao lab web site:
http://www.uvm.edu/~fzhao/
**Barlow Lab**

Research is the plan for the Barlow lab this summer. Our group has four projects underway and the lab should be a hive of activity with three graduate students and six undergraduate students working in the lab this summer.

**Mital Pandya** (PhD student) is busy with her Holstein class I major histocompatibility complex (MHC) work. She recently presented her Bovine MHC-peptide binding results to the UVM Immunobiology group and received lots of positive feedback and suggestions for additional studies. Her goals for the summer are to complete her first manuscript and use her current results to develop a series of vaccine constructs to test T cell responses. This project is tied to our collaborative work with Dr. Bill Golde, USDA-ARS, where we are evaluating the duration of immunity following vaccination with the new USDA Adenoviral vectored Foot and Mouth Disease (Ad5-FMDV-A24) vaccine. The lab is currently interviewing for postdoctoral scientists to contribute to this work.

Two animal science undergraduate students will be working on Honors College research projects related to our cattle vaccine studies this summer: **Korin Eckstrom** will start a project on “High throughput sequencing of bovine class I major histocompatibility genes in Holstein cattle” and **Suzie Stephenson** will continue her work “Evaluating duration of immunity conferred by new USDA-approved Ad5-FMDV-A24 vaccine in cattle.” Suzie received the 2014 Brennan Summer Research Award which will allow her to travel to Plum Island to conduct her research in the Golde lab for the summer.

**Robert Mugabi** (PhD student) will be focused on his work on *Staphylococcus* epidemiology on farms that make artisan cheese. His research is tied to our UVM Food Systems Grant “Food Safety from Milking to Marketing for Vermont’s Artisanal Cheese Makers” and our new USDA-HATCH project “Genotypes, phenotypes and resistance of *Staphylococcus* ecotypes on dairy farms.” Robert presented preliminary results of this research “*Staphylococcus aureus* strain types are associated with epidemiologic sources on farmstead cheese producing dairy farms in Vermont” in a poster session at the American Society of Microbiology (ASM) meeting in Boston, MA.

**Katrina Light.** Food Systems professional track MS student, and **Amanda Carmellini**, recent ASCI graduate, are also working on the Food Systems artisan cheese project this summer. They will be completing their survey of mastitis and milk quality control practices on farms that supply milk for artisan or farmstead cheese production. Plus we have four undergraduates working on related projects for the summer. **Adam Bushell** will be starting his biology independent research “*Staphylococcus aureus*: A One Health problem on dairy farms.” **Samantha D’Amico**, will be continuing her CALS Distinguished Undergraduate and Honors College Research, “Associations between coagulase negative *staphylococci* phenotype, and source of isolation on a dairy farm.” **Mandy Erdei** will be starting her senior research on flies as a source of *Staphylococci* on dairy farms. And, **Joe Marchell** will be starting his Honors College research “Antibacterial activity of *Staphylococcus equorum* against major mastitis pathogens.” Joe received an Undergraduate Summer Research Award for his project.

In addition to the research activities, I will be traveling to an American Academy of Microbiology colloquium, “FAQ: Cheese” and a Conference on the Science of Artisan Cheese in Somerset, UK. I also recently attended the ASM meeting in Boston where I ran into **Matt Sammons** (ASCI and Barlow lab alum), and the Supermoms Against Superbugs Advocacy events on judicious antimicrobial use in agriculture sponsored by The Pew Charitable Trusts.

Finally, congratulations are due to a number of lab members. To **Amanda Ochoa**, who has left our lab group for a new job as a lab supervisor at Keurig Green Mountain. To **Hagan Dooley** and **Ashley McCoy** who will be attending veterinary school in the fall. To **Jared Patch**, post-doc on our NSF project, who has taken a research job with ELANCO Animal Health. And especially to **Janet Sei**, post-doc on our FMDV project, who has taken a new post-doc job on vaccine research at Merck, and also, with her husband **Gus Keilers**, has a new son, **Oskar Kipkemboi Keilers** born March 26. **Amanda Carless**, who has left our lab group for a new job as a lab supervisor at Keurig Green Mountain. To **Hagan Dooley** and **Ashley McCoy** who will be attending veterinary school in the fall. To **Jared Patch**, post-doc on our NSF project, who has taken a research job with ELANCO Animal Health. And especially to **Janet Sei**, post-doc on our FMDV project, who has taken a new post-doc job on vaccine research at Merck, and also, with her husband **Gus Keilers**, has a new son, **Oskar Kipkemboi Keilers** born March 26. **http://asci.uvm.edu/labs/barlow/**

Submitted by Dr. John Barlow
Industry leaders tour ASCI labs

Board members from the Vermont Feed Dealers and Manufacturers Association (VFDMA) recently toured research labs in the department.

The VFDMA is an advocate for agriculture in Vermont, providing a balanced perspective. They promote responsible environmental stewardship and help to sustain Vermont’s agricultural strength, through Academic Scholarships.

The department also offered tours to Holstein Association USA, including former CREAMer and UVM Class of 2004 alum Adam Griffin, Dairy ID and Programs Manager; Dr. Sam Comstock, Genetics Programmer Analyst; and Tom Lawlor, Director Research and Development.

Located in Brattleboro, Vermont, Holstein Association USA is the largest breed organization in the world, comprised of members who have a strong interest in breeding, raising, and milking Holstein cattle.

Representatives from each of the seven labs in the department gave a brief overview of the research currently being done in their lab. Industry leaders then had the opportunity to ask questions and dialogue about future research possibilities.

Greenwood Lab News

The Greenwood lab is taking the summer as an opportunity to complete lab work and prepare for upcoming experiments. PhD student Rink Tacoma is completing milk proteomic analysis while the lab group is also preparing for two upcoming studies in the dairy barn. Sabrina was an invited speaker at the 2014 Eastern Nutrition Conference held at Guelph, Ontario, Canada, in May, delivering a talk entitled “Diet manipulation to reduce nitrogen emissions from dairy cattle.”
Remick Receives Elmer Towne Award

Julie Smith, President of the Vermont Dairy Industry Association, presented Elizabeth (“Liz”) Remick of Waterford, Vt, with the Elmer Towne award at the CALS Honors Day.

During her time at UVM, Liz rounded out her academic achievements with service and leadership. Her service commitments have benefited the local community, for instance through the Dewey Center for civic engagement and the Campus Kitchens connection with food shelves. Over time she took on leadership roles in these activities and others. While president of the Dairy Club, she led the development of a merit badge workshop for Boy Scouts conducted at the Miller Research Farm. In addition, she was one of the first Food Systems interns on campus and has worked with the Vermont Dairy Industry Association to develop a social media plan and enhance its online presence.

Liz is also a former “CREAMer”, an her last semester was spent at the Miner Institute taking Advanced Dairy Management. She returns to the Miner Institute this summer to begin a year as the Research Intern. Her sights are set on a graduate program and career in ruminant nutrition.

Congratulations and all the best, Liz!

Smith Supervising Summer Projects

Rising Senior Mia Cosentino has taken on a Distinguished Undergraduate Research project to examine calf management practices on dairy farms in Vermont. She is particularly interested in exploring how what is practiced on farms in the state line up with recommended best management practices. Mia will be conducting a survey this summer using mail, online, and interview modes of data collection. This data will prove useful to her supervisor in developing future Extension programs.

Biology major Stephanie Bronsther will be assisting with Mia’s project and a related study of associations among calf facility management, ventilation and respiratory disease in facilities with group-housed calves. UVM Extension Ag Engineer Chris Callahan will be providing assistance documenting the ventilation performance of the facilities. The goal is to provide data to assist decision-making on dairy farms when considering managing pre-weaned calves in groups.

Smith Lines Up Summer Travels

Believe it or not, I will get away from Burlington a few times this summer. First, I head to Ithaca in June for my 25th Reunion with my veterinary class. Then I’m off to Kansas City in July for the Joint Annual Meetings of the American Dairy Science Association and American Society of Animal Science. But the real fun takes place in August when my family travels to Iowa for the Albert City Threshermen and Collectors Show – featuring John Deeres this year! This was featured in a John Deere video that my 6-year-old son loves! And it just happens to be state fair week in Des Moines, so we’ll take that in as well.

Model D (aka John Deere Industrial) tractor was first released in 1923 and production continued until 1953.

Save the date: VDIA Fall Conference

The Vermont Dairy Industry Association and Vermont Feed Dealers are again lining up a great program at the Stoweflake in Stowe, VT, September 16 - 17, 2014.
Everything Equine & Canine

In an effort to renew and reinvigorate this valuable educational event in the first year of the second decade, we introduced a Canine piece. It makes sense...most horse owners have dogs, there is an active dog breeding, show, and performance crowd in Vermont, and much of our target audience loves and owns dogs. We brought folks from Show Me the Biscuit and Champlain Valley Kennel Club in to organize several canine activities including a canine Showmanship training and demonstration, a breed show, a “Meet the Breeds,” and several educational seminars and demonstrations. I also included several canine performances such as agility and police dogs apprehending a suspect in the “Horsin' Around on Saturday Night” variety show to make for a great evening of “edu-tainment”.

Of course we still had the excellent variety of equine educational seminars and demonstrations, equine breed row, extreme trail competition, and the consumer trade show for equine and canine shopping, too. Overall, the presentation evaluations and computer survey feedback show that this new twist was a success! The great partnerships with Champlain Valley Expo and equine industry partners (and now our canine friends) provide a win-win collaboration which brings the industry and enthusiasts together for education and enjoyment. And, we were “Vermont’s First Dog and Pony Show!”

A special thank you to senior Melissa Beckett who did an excellent job in her Everything Equine and Canine internship (see page 15).

Photos courtesy of Jane Kennedy O’Neil
This spring, students had the chance to not only learn about the concepts of real life dilemmas that Vermont equine farm operators face, but to gather data and disseminate the results to stakeholders and Vermont Legislators. Students gained knowledge about Vermont’s Current Use program administered by the VT Department of Taxes, its goal of “keeping Vermont Vermont” by taxing agricultural land at rates based on its current use, rather than potential earning capability (e.g. commercial use such as shopping plazas or development). They also learned that there were eligible equine operations being excluded from full benefit of the program in spite of meeting the definitions of agriculture set by the VT Agency of Agriculture and Act 250, as well as Chittenden County Farm Bureau’s work with local legislators to introduce the bill H-202 to remedy this problem for eligible horse and other farms being excluded.

Their class project was multitier and began with creating an effective survey to collect data to determine the validity of a list of “eligible equine operations” that would result in high losses of tax revenue if they were admitted to the program. This list had been provided to Chittenden County Farm Bureau by the Vermont Tax Department as a potential justification to deny eligible equine farm operations full admission to the program (i.e. land was admitted, not buildings). The students surveyed those “tax list” farms and others throughout the state, and found that of the respondents on the tax list, approximately 25% did not even meet the Current Use requirements (>50% of income from farming operations, 25 acres owned or leased, and at least 4 horses). These results brought into question the validity of the tax data, as well as the calculations of high loss of possible tax revenue. They also found that several former dairy farms had been admitted to the program, but when herds were sold and the farms converted to equine farms, they were not allowed to maintain the status even though all requirements were still met.

Students learned to present an effective message to legislators from Clark Hinsdale, President of VT Farm Bureau, and to the media through “on camera training” with Keith Silva and Becky Golin from Across the Fence. This was followed with the creation of a PowerPoint presentation and popular press article to inform Vermont legislators, equine industry members, and horse enthusiasts about the challenges that some eligible Vermont equine operations faced with a higher tax burden than other farming operations in the state. Three students presented this information at the Everything Equine and Canine event and Dr. Betsy Greene presented the student’s data while testifying to both the Vermont Senate and House Agriculture Committees at the end of April. One student summed up the entire project quite effectively in a homework assignment: “Why should the tax department have the ability to choose which Vermont farms succeed and which fail?”
My Experience Being an Agvocate

I didn’t misspell it. This semester I had an experience with agvocacy, a term some people are using to describe a public advocate for agriculture. I have always had an interest for the dairy industry, specifically the Vermont dairy industry. I grew up on a dairy farm that sold out when I was still in grade school. I still have my grandparents farm and my parents beef farm to express a curiosity for different styles of agriculture such as grass fed beef, pastured poultry, and small scale pork production.

I am a UVM animal science student with a goal of going to graduate school for ruminant nutrition. I am currently finishing the Advanced Dairy Management course at the Miner Institute through UVM. As an ASCI student, the concept of building a social media plan for the Vermont Dairy Industry Association (VDIA) was a little daunting. Like most students I have accounts on most of the social media sites, and have used administrator roles for clubs in the past. However the thought of altering a WordPress site, and building an audience for the VDIA was a little intimidating for my normally shy self.

During the past two semesters I designed a social media questionnaire for the VDIA to learn more about what a target audience would like to see on WordPress and Facebook. I also had to add questions to determine the population demographic for the VDIA. Once I sent the survey to the widest audience I could think of, I closed the survey, and developed a social media plan for the VDIA board.

I presented and implemented this plan by giving the WordPress site a makeover and fixing some of the existing components of the site. I tried to increase readership on the Facebook site by posting articles of agriculture and the dairy industry in Vermont.

The biggest lesson I learned from this internship is that it isn’t difficult to be an agvocate. It may be frustrating at times, and it may seem like you aren’t reaching a large audience. Over the course of the semester I have seen the readership increase slowly but steadily. Agvocacy is a skill that I will need for the rest of my career in the dairy industry. Less than 5% of the population has a career in agriculture and the population with even a small connection to agriculture is dwindling. Agvocacy is about giving an honest and unbiased view of agricultural practices. We know consumers want to know about agriculture, and they will seek out information. Sometimes the information a consumer finds is not true or from an organization that wants to phase animal agriculture out of the population altogether.

Agvocacy is an important tool for farmers and industry professionals to express what they do and why they love agriculture to an interested population. Social media is an inexpensive and effective way to do this. The skills I have gained make me more comfortable pursuing agvocacy on my own time. Even the possibility of creating my own site or speaking out online seems less daunting.

If you are interested in more examples of dairy advocacy, I encourage you to go to a blog page written by Carrie Mess called Dairy Carrie http://dairycarrie.com/. I would also be lax if I did not encourage you to visit the VDIA Facebook page or WordPress site http://blog.uvm.edu/vdia/.

Xiaozheng Song passes defense

On May 5th doctoral candidate Xiaozheng Song defended his Ph.D. thesis, “Estrogen receptor beta is a negative regulator of mammary cell proliferation.”

Xiaozheng graduated from Shandong Normal University in China and joined the Lactation and Mammary Gland Biology (LAMGB) Ph.D. program in the summer of 2008. He is interested in molecular mechanisms of mammary gland development and breast cancer. Xiaozheng worked under the guidance of Dr. Zhongzong Pan.

Learn more about internships and career opportunities: http://asci.uvm.edu/intern/
My internship experience with Everything Equine and Canine

My internship in the spring of 2014 was working with our University Extension Equine Specialist, Dr. Betsy Greene, putting together Everything Equine and Canine. Everything Equine has been going on since 2004 and in its 11th year canines were added to the event. The equine side of things offers seminars, mini clinics, demonstrations on live horses, breed row, and trade show shopping. For the canine side we hosted a B-match dog show, showmanship clinic and competition, rally, obedience trails, canine good citizen testing, breed row, as well as educational seminars.

UVM Extension’s main role is coordinating the educational seminars in the classrooms and demonstrations for both the arena and smaller demo pen spaces. From the start I was able to have input on ideas of topics and/or presenters that we would like to have at this year’s event. My primary responsibility was to contact and schedule the seminar speakers and entertainment acts for the Horsin’ Around show on Saturday night. It was my responsibility to keep all of the information organized and be able to present it to the committee at our weekly meetings at the Champlain Valley Exposition.

Another main portion of my internship was to write, publish, and make a public appearance on the University Extension TV show about the equine health topic of kissing spine. I gained firsthand experience with this disease when my horse was diagnosed in February of 2013 and I became obsessed with researching and learning all I could about it. The article I wrote was published in the official program for the event and I had the opportunity to present my findings during a seminar room presentation. I also was able to make an appearance on Across the Fence, which gave me a completely new experience on camera.

My tips and tricks for other students wishing to work with the Everything Equine and Canine event would be to first make sure you can commit a large amount of time, both to be in the office working with Dr. Greene, and independently. I did a large portion of the work independently and there were no set times when our guest speakers would be calling me to talk about the event, so I had a lot of odd hours! Keeping organized is an essential skill for this kind of internship where you will be contacting 50-70 speakers as well as trying to coordinate accommodations for their horses. Being able to be confident and work well within a group is important as well, or else you may become unimportant in the large committee (~12-16 people) who all coordinate to host this event.

I learned so much about the amount of work that goes on behind the scenes putting on such a large event, and I also strengthened my ties with those in the equine industry.
Dr. Mary O’Donovan (Meadowbrook Equine) was joined by colleagues Dr. Molly Witters (Balanced Rhythms), CALS Dr. Josie Davis, Katie Ballard (Miner Institute) and MHF staff as key clinicians for the 26th Annual Equine Reproductive Workshop on March 28-29th, 2014. UVM and Vermont Technical College Equine Studies undergraduates were well represented in the full complement of attendees.

Dr. Donald Balch with Grand Champion UVM Kathy 1965

Dr. Donald Balch former MHF Director and ASCI emeriti faculty (1952-1985) was featured on WCAX’s May edition of the “Super Senior” segment. Many thanks to Joe Carroll and WCAX for their excellent coverage. This piece can be viewed on WCAX’s website or at http://www.wcax.com/story/25467294/super-senior-donald-balch

Apprentice Intern Dani Black holding UVM Perlee for grooming during the VMHA Youth Clinic

Morgan Horse Farm staff hosted an April clinic for the Vermont Morgan Horse Association. Youth leader Jennifer Hopper worked with participants on the AMHA Horsemastership curriculum while MHF personnel supervised hands-on opportunities in fitting, showing and equitation patterns.

Dr. Mary O’Donovan mare insemination instructor.

UVM Ready Made ridden by Horse Specialist Kim Demars at the UPHA Spring Premier

Horse Specialist Kim Demars exhibited UVM Ready Made at two spring venues: UPHA Spring Premier at the Big E and the Everything Equine trade show, Champlain Valley Exposition. Weybridge Morgans will be shown at several more events during the season (next up – Vermont Spring Classic June 19-21st).

2014 Raffle Foal UVM Whimsical

The 2014 Raffle filly UVM Whimsical (D.O.B 5-1-14) is an outstanding example of the University’s Morgan product. Current foal roster: four fillies and two colts (last foal due June 1st ). Each Saturday in June youngsters will be on display during “Foal Days” 11 am – 2 pm. Plan to visit.
Students organize Easter Egg Hunt

Over 500 children searched for eggs at the UVM Horse Barn in April for the Horse Barn Cooperative’s 1st Easter Egg Hunt. UVM students hid more than 3,000 eggs filled with candy, provided arts and crafts for their guests, and offered face painting. Visitors also had a chance to ride the horses and learn more about what it takes to keep the barn running smoothly. The UVM Horse Barn Coop is an educational facility run completely by students. Applications are being accepted for the fall semester. If you are interested in bringing your horse to college, apply online at: http://asci.uvm.edu/horsebarn/?Page=applicationform.html

4H Vet Science Program

Every spring, students from the Animal Science Department and faculty from UVM Extension combine their knowledge and ideas into one educational program for young teens that is known as the 4-H Vet Science Program. The program consists of three 2-hour sessions on Saturdays including two sessions at the ASCI Lab in the Jeffords building and one session at the UVM Barn on Spear Street.

The session at the UVM Barn on Spear Street is always thrilling for the participants of this program. This year, instructors taught lessons on how to do a physical exam on horses, cows, and dogs. This provides the students with great hands-on experience and valuable knowledge, regardless of their level of animal experience.

One of the best aspects of the 4-H Vet Science program is its initial amorphous nature. Students create a new curriculum each year, allowing us to include activities from previous years that were well received and try new activities that we think are fun and innovative. This year, repeated activities included a hands-on session with a fistulated cow (everyone’s favorite) and a suture lab. New activities included a lecture on zoonotic diseases and a wildlife conservation activity.

One thing that does not change from year-to-year is the enthusiasm of all the participants. Both instructors and students alike are passionate about learning and always bring interesting sets of knowledge to the program. Personally, I can say that the students never fail to impress me with the knowledge they have gathered at such a young age.

If you have a passion for education and want to assist in next year’s 4H Vet Science Program, please feel free to contact me at bdaggett@uvm.edu or contact 4-H Educator Rose Garritano at roosemarie.garritano@uvm.edu
**ASCI 272 at VINS**

Students in Dr. Pat Erickson’s ASCI 272—Advanced Topics: Zoos, Exotics, and Endangered Species class spent a day at the Vermont Institute of Natural Science (VINS) in Quechee, VT. Students went behind the scenes to visit the rehabilitation and veterinary medical areas, while listening to a VINS expert discuss the daily schedules of all the resident birds.

Submitted by Dr. Pat Erickson

![ASCI 272 students (L to R) Ethan White, Maddie Camerlengo, Natalie Kane, Tara Fisher, Susanna Howe, Zoe Braun, Christa Finley, Marissa Massimore, Brittney Beigel, and Stuart Sporko at Vermont Institute of Natural Science.](image)

**Across the Fence**

*Across the Fence* is the longest running daily farm and home television program in the country, airing Monday-Friday, 12:10—12:30 on WCAX TV Channel 3. Department of Animal Science Professor and UVM Extension Equine Specialist, Dr. Betsy Greene, appeared on the following episodes, which are also available online:

- **Horse Safety: On the Road, On the Trail and In the Ring** (and with Ben Wallace, Arrowhead Horsemanship in Rhode Island) — 5/05/14
- **Training Your Horse** (and Shawna Karrassch, Professional Horse Trainer) — 5/02/14
- **Looking Ahead to 2014 Everything Equine & Canine** (and Ashley Porter of Show Me the Biscuit!) — 4/21/14
- **Upcoming Equine Specialty Shows: The 2014 “Horsin’ Around” Event and Extreme Trail Competition** (and Doug Smith of the Vermont Horse Council) — 4/18/14
- **UVM’s Equine Science Program: Addressing Issues that Affect Vermont Horse Owners** (and Melissa Beckett, UVM Senior) — 4/09/14
- **Education Outside the Classroom: UVM Animal Science Students and the Vermont Large Animal Clinic** (and clinic owner, Dr. Philip van Harreveld) — 3/12/14

Submitted by Dr. Pat Erickson

![WCAX host Judy Simpson discusses equine issues with Dr. Betsy Greene and UVM Senior Melissa Beckett](image)
Recent Peer-reviewed ASCI Publications


Shao, Yong, and F-Q Zhao. 2014. Emerging evidence of the physiological role of hypoxia in mammary development and lactation (invited review). *Journal of Animal Science and Biotechnology* (IF: n/a), 5(January), 9.

Dr. Betsy Greene’s Summer Activities

This summer will include a flurry of meetings, presentations, coursework and travel. Students are already working on the online portion of my pilot class ASCI 297: Elephant Care, Handling and Management. The 10 students will put their online efforts to practice when we travel to the Center for Elephant Conservation in early June for eight days of hands on with the elephants, expert lectures, and participation in research and educational projects. We hope that this unique opportunity for our students results in continuation of the course on an annual basis.

Other trips include attending the International Committee on Equine Exercise Physiology meetings in Chester, England, presenting a paper on the “Flipped Classroom” with Purdue and Nebraska colleagues at the National Association of Equine Affiliated Academics meetings in Louisville, KY, attending the National Association of County Agricultural Agents Annual Meeting and Professional Improvement Conference in Mobile, AL, presenting a poster and making a presentation to the Annual General Meeting on impact and attendee viewpoints from the 2013 meeting at the International Society of Equitation Science meetings near Vejle, Denmark, and participating in the NE-1041 Research Meetings in South Dakota.
CALS Alumni and Friends Dinner

The College of Agriculture and Life Sciences’ (CALS) Alumni and Friends Dinner was held on May 10th in the Grand Maple Ballroom in the Dudley H. Davis Center. This annual event celebrates the college’s exceptional community of students, alumni, faculty, emeriti, staff and friends. Graduating seniors, including those in the Department of Animal Science, were recognized for their many accomplishments.

Enjoy a day out with families, friends and dogs while helping to support the work of the Humane Society of Chittenden County! Vermont’s largest dog friendly event will feature a 1.25 mile walk through scenic Burlington, a 5K Doggie Fun Run/Walk, music provided by Ronnie K., Ben and Jerry’s ice cream, fun, contests and more!. Join our team, *ASCI Paws for a Cause* on Sunday, June 15th at Battery Park in Burlington as we "Walk for the Animals" to raise money for the Humane Society of Chittenden County. ALL are welcome to participate by registering or making a donation at:  
http://www.firstgiving.com/team/268520

Calendar of Events

2014

June
Jun. 15, 2014.  HSCC 20th Annual Walk for the Animals, Battery Park, Burlington, VT
Jun. 12-13, 2014. The 20th annual Boston Bacterial Meeting (BBM2014) will take place at the Harvard University Science Center.

July
Jul. 4, 2014.  Fourth of July Holiday
Jul. 20-24, 2014. The 2014 Joint Annual Meetings of the American Dairy Science Association (ADSA), American Society of Animal Science (ASAS), and the ASAS Western Section (WSASAS) will be held together in Kansas City, MO

August
Aug. 25, 2014.  First Day of Classes

September
Sep. 1, 2014.  Labor Day Holiday
Sep. 16-17, 2014. Vermont Dairy Industry Association and Vermont Feed Dealers Fall Conference in Stowe, VT

October
Oct. 10-12, 2014. UVM Homecoming & Family Weekend, Horse Barn and CREAM Open House at UVM Farm
Oct. 27, 2014. UVM Horse Barn Co-op Halloween Barn
Oct. 31, 2014. Morgan Horse Farm Raffle Drawing

November
Nov. 25-29, 2014. Thanksgiving Recess

December
Dec. 3, 2014. Last Day of Classes
Dec. 5, 8, 9, 11, 12, 2014. Exam Days