A message from the Chair

Dear friends,

Hard to believe it is almost March and the Spring ’13 semester is nearing the midway point. Two weeks ago, I attended the National Animal Sciences Chair’s meeting in Tampa. There were several presentations, including one from the National Association for the Advancement of Animal Science (NAAAS), which is comprised of animal, dairy, poultry and veterinary science departments heads from across the country. The NAAAS was formed last year to address the shortfall in federal funds for the animal sciences, and to serve as a common voice for animal agricultural researchers who play a critical role in maintaining the nation’s status as a world leader in safe, abundant and efficiently produced animal products. The NAAAS is working closely with like-minded groups such as the Federation of Animal Science Societies and the Animal Agriculture Coalition to complement their activities by providing focused advocacy to increase funding for the animal sciences, and with Congress and the Administration to promote the importance of investing in animal science. Dr. Russell Cross, head of the department of animal science at Texas A&M University, serves as president of the association, which includes our department of animal science.

Next week the first of our shortlisted candidates will come to campus to interview for our new tenure-track position in Animal Health. This is an exciting time as we continue to invest into our department.

As you will see from our newsletter, the contributions and activities of our faculty, staff, and students make this department one of the best units on campus. Moreover, it is a great time to get a degree in animal science as we need a new generation of well-educated and motivated people in agriculture to tackle the challenges and discover opportunities to feed our growing global population.

As always, thank you for your support and please follow us on Facebook (UVM Animal Science) and Twitter (uvmasci).

Kind regards,
André Wright, Ph.D.

Dr. Kraft awarded $100,000 dairy grant

Dr. Jana Kraft was awarded a $100,000 grant over one year from the New England Dairy Promotion Board/Vermont Dairy Promotion Council/Dairy Research Institute. Co-Principal Investigator on the research project is Dr. Lawrence Kien at UVM’s College of Medicine. The purpose of the project, entitled "Examining the effects of consuming a diet comprising of milk fat on metabolic health markers," is to improve our understanding of the role of milk fat as an integral part of a balanced diet and its efficacy in modulating metabolic risk factors associated with metabolic syndrome. Drs. Kraft and Kien hypothesize that milk fat (full-fat dairy such as whole milk or whole milk yogurt) has favorable effects on metabolic risk markers associated with the metabolic syndrome as a result of its bioactive fatty acids. Thus, the consumption of full-fat dairy products may play an important role in the prevention of metabolic syndrome through improvement of insulin sensitivity, post-prandial lipid metabolism, and circulating biomarkers of inflammation. To test their hypothesis, the researchers will conduct a clinical pilot study on mildly obese females at the Clinical Research Center at the University of Vermont to test the effects of a isocaloric DASH-like diet (Dietary Approaches to Stop Hypertension diet) with identical macronutrient profiles containing either milk fat or a control fat on insulin sensitivity, blood lipid/lipoprotein profile, and selected inflammatory markers. The goal of the funded project is to produce preliminary data for competitive NIH grant proposals in clinical and translational research.
Our NSF funded work on bovine major histocompatibility complex (MHC) class I allelic diversity, epitope discovery and T-cell responses for critical disease affecting small holder farmers in Sub-Saharan Africa is progressing.

Postdoctoral researcher Jared Patch presented a poster “New strategies for assessing foot-and-mouth disease (FMD) vaccine performance in cattle and swine” at the Keystone Symposium on Immunological Mechanisms of Vaccination, in Ottawa, Ontario. We also had a recent publication on “Designing bovine T cell vaccines via reverse immunology” (Nene et al. 2012. Ticks and Tick-borne Diseases 3:188-192). John was also able to travel to Nairobi, Kenya to visit the International Livestock Research Institute (ILRI) as a part of this research project. John also presented a summary of this research project in the NSF BREAD session at Plant and Animal Genomics, San Diego, January 12-15. John was back in San Diego January 26 to 30 to coordinate a short course on Organic Dairy Production at the annual National Mastitis Council meeting. In related work, Mital Pandya is currently preparing her first manuscript and a pre-doctoral grant proposal.

Robert Mugabi’s field studies are just about to begin where we will be describing Staphylococcus epidemiology on Vermont farms that make artisan cheeses. This project is a component of our trans-disciplinary Food Systems project “Food Safety from Milking to Marketing for Vermont’s Artisanal Cheese Makers.” In the area of mastitis epidemiology, the lab just had a manuscript accepted in BMC Veterinary Medicine, “Effect of lactation therapy on Staphylococcus aureus strain typing and under the guidance of Amanda Carmellini. And of course, Amanda Ochoa continues to do a stellar job as lab manager keeping us all on track as well as managing her own projects including bovine cytokine production in collaboration with Dr. Golde’s lab at Plum Island Animal Disease Center and Green Mountain Antibody.

Finally, this semester John is teaching a new course, “Animal Plagues: Global animal health, infectious disease ecology and epidemiology, zoonoses and food security.” The long title about sums up the content and we are off to a great start with 30 students (mostly animal science majors) enrolled. John is also participating as a co-instructor in a seminar course “Biodiversity and Livestock Well-being” coordinated by Joe Roman Research Assistant Professor at the Rubenstein School of Environment and Natural Resources and Gund Institute for Ecological Economics Fellow.

Visit the Barlow lab webpage at http://asci.uvm.edu/labs/barlow/
The Greenwood lab welcomes two new members to the team this year to date. **Rink Tacoma** is a new PhD student who brings with her an immense amount of enthusiasm for dairy cattle nutrition and an exceptional background in ruminant nutrition and physiology.

**Liz Remick**, Animal Science Major (Class of 2014), is also a new team member to the lab and is investigating the nutritional qualities of locally produced oilseed meals as a part of the whole livestock ration. This project is in conjunction with **Chris Callahan** (UVM Extension).

Sabrina is co-author on two papers which have been published this year, one detailing work that **Victoria Totty** completed during her studies at Lincoln University in New Zealand under Sabrina’s supervision. The second publication details work completed by **Louis Dionissopoulos**, a PhD Candidate under the supervision of collaborator **Dr. Brian McBride** at the University of Guelph in Canada. Sabrina has also accepted the role as a Guest Editor to the journal Animal Production Science for the special publication of articles that will be presented at the 2014 International Symposium on the Nutrition of Herbivores. ISNH will be hosted in Canberra, Australia, and will be a joint meeting with the International Symposium on Ruminant Physiology.

With the spring semester in full swing, Sabrina is currently teaching 82 undergraduate students in the ASCI 110 course Animal Nutrition, Metabolism and Feeding. With the help of Project Coordinator **Fran Kinghorn** and Graduate Teaching Assistants **Laura Cersosimo**, **Melissa Bainbridge**, **Rink Tacoma** and **Robert Mugabi**, we have introduced a completely new syllabus and laboratory schedule to the class, including hands-on learning opportunities. Students are currently preparing to complete a nylon bag experiment using fistulated cows at the Miller Research Center.

**The Kerr lab is making great progress on using bovine skin cells to investigate an animals’ innate immune system.** The lab’s Ph.D. students, **Ben Green** and **Aimee Benjamin**, both gave research presentations at the Conference of Research Workers in Animal Disease meeting in Chicago in early December. Aimee won third place honors for her presentation in the Graduate Student division. Ben’s work is also being well received by the scientific community as evidenced by his winning two different travel awards to attend, and present a poster at the Plant and Animal Genome Conference that was held in San Diego in January. Finally, ASCI undergrads, **Lyndsey Hayden** and **Laila Khayami** are making great progress in their undergraduate research projects. Both have now been accepted to veterinary schools for fall admission.

Visit the Kerr lab webpage: [http://asci.uvm.edu/labs/kerr](http://asci.uvm.edu/labs/kerr)

**Recent presentations:**


News from Dr. Jana Kraft’s Lab

The Kraft lab welcomes an "old" new member. Melissa Bainbridge concluded her position as laboratory research technician at the end of December 2012; and in January 2013, she joined the lab as a graduate student. It has also been exciting times for Dr. Kraft since January. She started teaching a new course entitled "Animal Products in Human Nutrition" currently offered at the Honors College for sophomore students. The course encompasses a wide variety of topics from ostrich eggs to honey. At the end of the fall semester, the Kraft and Barlow labs finished a major part of their collaborative project on 28 Vermont organic farms collecting bulk tank milk samples and feed samples during the pasture season. The members of both labs have been busy processing and analyzing all the samples. The latest research findings will be presented at the upcoming (March 1) Vermont Organic Dairy Conference in Randolph, VT. On February 13, Dr. Kraft, Melissa Bainbridge, Meagan Perley (ASCI Senior), and Jack O’Day (ASCI Junior) participated in the 22nd Annual Vermont Agricultural Experiment Station and Extension Legislative Reception at the State House in Montpelier representing the research conducted in the Kraft lab. This was a very exciting event, especially for the students!

Visit the Kraft lab webpage at: http://asci.uvm.edu/labs/kraft/

News from Dr. Stephanie McKay’s Lab

The McKay lab is new to UVM and is in the process of getting established. Generally speaking, we do genetics and genomics research with farm animal species. However, current projects are focused on epigenetics research in cattle. Epigenetic mechanisms chemically modify DNA but do not actually change the DNA sequence. Results of epigenetic modifications include alterations in heritable traits. In the McKay laboratory, we are performing epigenetic studies to examine the extent to which complex traits are influenced by epigenetic mechanisms. Ongoing work in the McKay lab includes examining the epigenetic effects on feed efficiency in the livers, small intestines and LD muscle in Angus cattle.

Kelcie DeClue joined the McKay lab in January and comes to us from the University of Missouri where she earned her B.S. in Animal Science in May of 1012. Her planned Ph.D. research involves dissecting the genetic and epigenetic components of docility in beef cattle. In January, Dr. McKay attended the Plant and Animal Genome Conference in San Diego, California. This meeting was very productive in establishing future collaborations in the farm animal epigenetics community. At the end of February, Dr. McKay has been invited to attend the Workshop on Leadership in BioScience. This workshop is designed to enhance the management and leadership skills and abilities of scientist in order to generate a more productive and enjoyable laboratory environment.
News from Dr. André Wright’s Lab

Work continues here in the Wright Lab on projects related to our main research areas; herbivore gut microbiology, microbiology of the human gastrointestinal tract and anaerobic digester microbiology.

Our graduate students have been keeping busy with a variety of projects and research interests. Sue Ishaq has been elbow deep with her anaerobic culturing of bacteria from Moose rumen and has been helping complete the work for a collaboration from a university in Canada. Sue has also been working with Dr. Wright to write a book chapter on the “Metagenomics of the Wild Ruminant.” Our newest graduate student, Laura Cersosimo, has been getting the feel for the UVM system. Her project comparing methanogens from different dairy breeds is progressing and has everyone in the lab excited about the potential results. Research Assistant, Rachel Smith, has been attempting to provide order in a sea of chaos. In addition to keeping the lab running and everyone in supplies, she has also been working with Dr. Wright to complete work for collaborating researchers in Texas and Denmark. Post-Doc, Benoit St-Pierre, is still working on learning more about anaerobic manure digesters and has just submitted his first manuscript with Dr. Wright on the work to BioResource Technology.

This semester we welcomed two new (well mostly new) faces to the lab, Doug Reis (Sophomore MMG) started volunteering to assist the lab with projects. We also welcomed back the now UVM alum, Hannah Lachance, to the lab as a part-time research assistant to help Sue and to continue the analysis for her own project looking at Impala gut bacterial communities. Hannah completed her Distinguished Undergraduate Research (DUR) before graduating in December.

Two of our seniors, Sean O’Neill and Rebecca McBride are working on the data analysis from their projects looking at the gut bacteria from Black Bear and Beaver (respectively). Our freshman volunteers, Sam Rosenbaum, Emma Hurley, and Ken Wesley have made themselves indispensable to our research efforts and we would be lost without them!

In the past few months we welcomed a few visiting researchers. Claudia Arndt, a PhD student from the University of Wisconsin came by for a week. And Post-Doctoral Fellow, Jan Lassen, from the Department of Molecular Biology and Genetics at Aarhus University in Denmark, visited. Jan and his coworkers were just awarded a four year research grant for $2.1 million (USD) from the Danish Strategic Research Council for their project titled, “Reduction of methane emissions from dairy cows and concurrent improvement of feed efficiency obtained through host genetics and next generation sequencing of rumen microbiome.” Dr. Wright is a Co-PI on the project that relates to investigating and quantifying the rumen microbial profile. He will host future students coming from Denmark, as well as sending students from UVM to Aarhus University.

Dr. Wright continues his national and international talks, meetings, collaborations, symposiums, in addition to teaching his class on Animal Parasitology. In the last few months he attended the National Animal, Dairy, and Poultry Science Departments Chair’s Meeting in Tampa and the National Cattlemen’s Beef Association (NCBA); was the external examiner for a PhD thesis defense in the Department of Animal and Poultry Science at the University of Saskatchewan in Saskatoon, where he also gave an invited seminar. On Feb 26, 2013, Dr. Wright will give another invited seminar in the Department of Veterinary & Animal Sciences at the UMass Amherst and next month will give a seminar at Wake Robin, Vermont’s Continuing Care Retirement Community.

To learn more about the Wright Lab, visit: http://asci.uvm.edu/labs/wright/

News from Dr. Feng-Qi Zhao’s Lab

The Zhao lab welcomes two new undergraduate researchers, Jackie Devito and Dylan Devino who are both ASCI majors. Jackie is working with graduate student Shun Kitaoka to study the role of glucose transporters in aging in C. elegans. Dylan is investigating the associations of polymorphisms of glucose transporters with milk performance in dairy cattle with graduate student Yong Shao.

Congratulations to graduate students Yong Shao and Xi Qian for their first publications of their thesis.

Twenty twelve was a very productive year for the Zhao lab.
Zoonotic, Foreign, and Endemic Animal Diseases are on Smith’s Spring Agenda

Dr. Julie Smith will be presenting a webinar on zoonotic diseases as part of the online course, Agricultural Medicine: Occupational and Environmental Health for Rural Health Professionals, being offered by the Vermont Farm Health Task Force this semester. Zoonotic diseases are those diseases common to humans and animals and are a risk for those with close contact with infected animals (or people) or their environments. Information on the course is available at: http://www.cvahec.org/

In April, Julie will travel to Louisville, KY, for the National Institute for Animal Agriculture (NIAA) annual conference. She serves as co-chair of the NIAA Foot-and-Mouth Disease Symposium which will be held April 17-18. The symposium theme is “Fostering a New Preparedness Paradigm: Facilitating a Conversation Among Public and Private Sector Stakeholders.” Experts on FMD from academia, industry, and government will present and lead conversations regarding the challenges of controlling FMD while maintaining continuity of business. Early registration discount is offered through March 15. For information and registration, visit: http://www.animalagriculture.org/Solutions/Annual Conference/2013/index.html
Zoonotic, Foreign, and Endemic Animal Diseases are on Smith’s Spring Agenda — continued

In an upcoming meeting closer to home, Dr. Julie will help the CREAMers better understand Johne’s disease and how to prevent its spread. Julie has been assisted by Lucy Carrasco, UVM Extension Assistant Webmaster, in updating the Johne’s disease page on the UVM Extension site: http://go.uvm.edu/1xuw. Dairy and beef farmers are encouraged to seek the advice of a veterinarian who has been certified to work with herds in the voluntary bovine Johne’s disease control program when assessing their farm’s risk and creating or monitoring their management plan.

Fall focus on Johne’s disease was fruitful

Dr. Frank Garry presented on Johne’s disease and Crohn’s disease at four workshops attended by 100 farmers and service providers the first week in November 2012. Dr. Garry is a professor of veterinary medicine at Colorado State University and served many years on the National Johne’s Working Group. These workshops were funded in part by the Walker Milk Fund and coordinated through the Vermont Cattle Health Improvement Program.
VDIA Dairy Banquet Recognizes Vermont Quality Milk Producers

Vermont dairy farmers were recognized for producing high quality cow and goat milk at the Dairy Farmers’ Appreciation Banquet held January 31st during the 79th Vermont Farm Show. The 2012 overall highest-quality (cow) milk award was presented to the Meyer Family of North Hardwick, VT, for the 9th year in a row! The 2012 overall highest-quality goat milk award went to Keith and Cindy Tifft of Orwell, VT. The Dairy Farmers’ Appreciation Banquet has been hosted by the Vermont Dairy Industry Association (VDIA) for many years in cooperation with the Vermont Farm Show and Vermont Agency of Agriculture. Dr. Julie Smith, President of VDIA, served as emcee and had the honor of introducing Governor Shumlin, Secretary Ross, and Congressman Welch who spoke at the event. In addition to honoring Vermont’s Highest-Quality-Milk award winners, the Finley Award was presented to Bob Parsons, UVM Extension Ag Economist, and Chaput Family Farms was presented a hand-painted sign to commemorate its selection as 2012 Vermont Dairy Farm of the Year.

Congressman Peter Welch speaks at the VDIA Dairy Banquet. 
Ag Secretary, Chuck Ross, and VDIA President Julie Smith, present Vermont’s Highest Quality Dairy Award to the Meyer family.
UVM Extension Ag Economist, Bob Parsons, is Finley Award Recipient.

Like us on Facebook! https://www.facebook.com/VermontDairyIndustryAssociation

Photos courtesy of Cheryl Dorschner
Vermont Dairy Producers Conference to be held February 26th

The Vermont Dairy Producers’ Conference will be held Tuesday February 26, 8 am to 4 pm, at the Sheraton Hotel & Conference Center in Burlington. A top notch line-up of speakers is on the agenda including Dr. Greg Bethard (G&R Dairy Consulting, Inc.), Dr. Normand St-Pierre (Ohio State University), and Dr. Mike Hutjens (University of Illinois), along with local water quality experts. Advance registration (after February 8) now $45. For more information and registration, visit: http://www.uvm.edu/extension/agriculture/?Page=dairyconference.html

UVM Dairy Club attends Royal Agricultural Fair

In November the UVM Dairy Club attended the Royal Agricultural Fair in Toronto, Ontario. Seven members took part in the trip. While at the fair, members eagerly followed the dairy shows that took place on Friday Nov 9th and Saturday Nov 10th including the Grand Champion Holstein and Jersey shows, and the final Supreme Championship. Members of the club also visited a variety of agricultural demonstrations and presentations offered at the fair. Some exhibits viewed presented industry information about sheep, goat, rabbit, horticulture, and general agricultural education. Members used this opportunity to learn about dairy judging and conformation as well as livestock knowledge that will enable them to succeed at the Northeastern Students Affiliates (NESA).

The Northeastern Student Affiliates of the American Dairy Science Association annual conference is scheduled for February 23rd at Rutgers University in New Jersey. While at this conference three UVM teams will compete in livestock judging competitions, agricultural quiz bowl, one member from each team will present a paper.

We would like to take the opportunity to thank UVM faculty and students who helped our fundraising efforts on campus by buying pumpkins and fudge, as well as those who donated directly. Without the support of the UVM community we would not be able to go on either of our trips.

Submitted by Liz Remick
Class of 2013

The Royal Agricultural Fair in Toronto, Ontario.

(L to R) Eric Pratt, Morgen Doane, Tyler Laundhardt, Rick Brisson (back), Liz Remick (front), and Lucy Howe at the Royal Agricultural Fair.
The Morgan Horse is known for its versatility. Several young UVM Morgans are undergoing harness/saddle training this season as “curriculum requirements” for their “degree” as all-around pleasure-using horses. Winter 2013 has offered some excellent sleighing conditions providing for this added-value driving preparation.

It is rewarding to have Senior Stallion UVM Tennyson, recognized as Breeders Saddle Horse Report 2012 Top 50 Overall Stallions and he is currently the top ranked United States Equestrian Federation Morgan Stallion. These accolades are based primarily on the show ring wins of Tennyson’s get. For example UVM Opportunity, (a son) now privately owned, won three Grand National Titles at last Fall’s World Championships in Oklahoma City.

Have you seen us on TV? The iconic main barn and Morgans are often called upon to be used in film. Recently, VPT was at Weybridge to shoot some shorts and backdrops to help promote their new offering “Out and About,” Working UVM Morgans in the sleigh and under saddle, in front of the camera, was ‘all part of a day’s work’ here in mid-December. The program is viewable at www.VPT.org.

Six 2013 foals are due from April–June this spring, perhaps the most exciting time for the Farm. The 2013 Raffle Foal will be selected by the end of foaling season. You will be able to see the chosen individual here: www.uvm.edu/morgan/?Page=raffle13.html. We celebrate each crop of foals by presenting UVM MHF “Foal Days” Saturdays in June from 11 am to 2 pm. The event focuses on a Morgan’s first year with some of our current mares and foals on display.

Management information is provided on imprinting, nutritional requirements for both sucklings and lactating mares, as well as de-worming protocols in this extension out-reach effort.
CREAM, a hands-on learning experience

CREAM, Cooperative for Real Education in Agricultural Management, is a student-run dairy herd. Students perform all of the barn chores and manage the whole operation. There are currently around 30 Holstein cows plus replacement heifers in the herd, which is one of the highest producing and genetically superior herds in Vermont. The cows are all housed and milked in the CREAM barn. Around 15-16 students enter the program for one year each year and gain eight credits. Many have no background in dairy or livestock at the start but soon acquire it! CREAM provides a superb learning experience.

CREAM 2013

CREAM 2013 marks the 25th anniversary of the program and we will be celebrating this fact across the year. January 14th marked the last day of CREAM 2012, the 24th group to complete the program since its founding by Dr. James Gilmore (Gilly), CREAM has become one of the most developed experiential based learning classes at UVM.

The CREAM 2012 annual dinner was held on December 4, 2012. The dinner and report were subtitled: “An insight to the trials and achievements of the past year, as well as hopeful visions for the future.” With smiles, and a few tears from our outgoing President, the group summarized their accomplishments. This included successfully revamping their calf feeding protocol in response to a scours epidemic. The students reported on a study they performed to investigate the ventilation of the milking cow barn, using a smoke bomb to compare how long it took for a total air exchange in the barn to the industry standards. There was an investigation performed to cost the price of substituting by-products (waste chocolate, brewery waste) for the energy supplement in the TMR (Totally Mixed Ration). Positive feedback from our guests was encouraging and helps CREAM 2013 target areas for further research.

A new group of bright-eyed students will soon transition from CREAMees to CREAMers. Like CREAM 2012, this new group will face many challenges and tough decisions. CREAM 2013 will experience new teaching and learning styles, improve the herd, work as a team, and love every moment of their CREAM year.
Internship at Fell-Vallee Equestrian Center

Over the summer I participated in the Working Internship at Fell-Vallee Equestrian Center at Taproot Farm in Hinesburg, Vermont. The internship entailed all of the highly physical work involved with keeping an expert training facility operating smoothly, coupled with the opportunity to make connections with professionals working in various fields of the equine industry. After being away from horses for several years, the internship provided me with current, hands-on experience in horse handling and health care.

Arriving at Fell-Vallee bright and early three mornings a week, my day began with feeding the facility’s 40 horses, distributing hay and grain among the barns. After initially learning how to drive the tractor, I would take it around the grounds to the neighboring pastures, cleaning and filling water tubs and spreading out flakes of hay. When the pastures were ready, I would set off to turn the horses out into their personalized locations across the property, putting on an assortment of fly sheets and fly masks, bell boots, fly spray, and sun-tan lotion for sensitive faces, all according to the particular owner’s instructions.

Once all of the horses were turned out, I would proceed in emptying, scrubbing and refilling the water buckets hanging in the stalls. After filling the water buckets, I would help clean the stalls, sifting thoroughly through piles of bedding to remove anything soiled, leaving the stalls on the facility clean and fresh, complete with an ample new layer of shavings. As the morning drew to a close, any horses with half-day turn-out would be brought back inside, trading places with ones that go to pasture later in the afternoon. Before the day’s chores were finished, I prepared the evening grain for the horses, paying close attention to any special supplements or medications that needed to be administered. In closing each day, I raked and swept the aisles of the barns, leaving the grain rooms stocked and cleaned for the next shift.

My internship experience at Fell-Vallee Equestrian Center allowed me to develop a deeper understanding of the care and maintenance of a large equine facility. The internship demands someone responsible, reliable, and hard-working, with clear communication skills and confidence handling horses.

Jamie Fell, Fell-Vallee owner and trainer, was very accommodating of my interests in the medical field, allowing me to shadow the veterinarians and equine massage therapists who frequently visited the facility. I am grateful for the rewarding summer I had interning at Fell-Vallee Equestrian Center, and am taking from it not only a practical understanding of horse health care, but also a sharper perspective of career paths in the equine industry.

The UVM Animal Science Internship Program is an opportunity for students to acquire college credit while receiving supervised practical experience in an on or off-campus animal-related profession. Students interested in internship opportunities should check out the department’s Internships & Careers web site:

http://asci.uvm.edu/intern/

For additional information, contact:
Fran Kinghorn, ASCI Internship Coordinator, Room 107C Terrill Building
or email her at: Fran.Kinghorn@uvm.edu

Internships Available in:
• Abroad
• Animal Education/Welfare & Behavior
• Biological Sciences
• Companion Animals
• Equine
• Farms
• Industry and Government
• Livestock
• Veterinary Medicine
• Wildlife Conservation
• Zoos, Aquaria & Marine Mammals
There is no colder place on campus than the UVM Horse Barn on Spear Street. Regardless, Cooperative Horse Barn and Equus students continue to care for their horses on a daily basis. Dressed under warm blankets, horses frolic in the snow while their two-legged companions shovel, sweep and tidy. Students bond over temperatures below zero and promises of green grass and trail rides to come. This Spring, students are hosting a group of local Girl Scouts on three different Saturdays. Young girls will learn about the daily happenings of a horse barn, working towards earning their equine management badges. Staying involved with the local community remains a priority at the horse barn, allowing students of all ages to share their love of horses.

For more information about the Horse Barn Coop, check out their website: http://asci.uvm.edu/horsebarn/

Horse Barn Coop students mentor Tack-Y Girls, Girl Scouts working toward their horsemanship badge, at the Ellen A. Hardacre Equine Center.

ASCI welcomes three new graduate students

**Melissa Bainbridge** is originally from Burlington, Massachusetts. She graduated from the University of Vermont in 2011 with a B.S. in Animal Science. She then spent the next two years working as a field technician for the Vermont Dairy Herd Improvement Association. Melissa will be working on her Ph.D. in Animal, Nutrition and Food Sciences with Dr. Jana Kraft. Her research will focus on improving the nutritional attributes of milk, concentrating on bioactive fatty acids, to promote both human and animal health.

Melissa also enjoys hiking, cooking and running.

**Kelcie DeClue**, originally from Columbia, Missouri, received her Bachelor’s Degree in Animal Science from the University of Missouri in 2012. After graduation, she worked as a lab technician at the university. Kelcie will be working on her Ph.D. in genetics in Dr. Stephanie McKay’s lab. Her research interest is in epigenetics and behavior. She enjoys reading and cheering on sports teams from her alma mater.

**Rink Tacoma** is originally from the Netherlands and immigrated with her family at the age of two to New Zealand where in 2012 she completed her BSc in Animal Science at Lincoln University. Rink also worked at Penn State as a research technician before starting her Ph.D. program at UVM. She is currently working on her Ph.D. with Dr. Sabrina Greenwood in dairy nutrition, specifically looking at diet and milk protein interactions. She enjoys being in the outdoors with good company.

Horse Barn Update

Submitted by Dr. Jenny Wilkinson
The University of Maine hosted the 2012 Northeast Regional Dairy Challenge, a unique two-day competition for dairy science students representing many universities from across the northeast. In attendance were three of our own Animal Science students: Cassie Bromley (Class of 2014), Andrew Whitney (Class of 2014), and Melissa Woolpert (Class of 2013).

Founded in 2002, the dairy challenge combines real world knowledge of dairy farming, teamwork, and public speaking skills. Teams are comprised of four to five students from different universities. After a few minutes of getting to know each other and some goofy team building games, teams are given a laptop with electronic records, a folder that contains financial statements and operational protocols, and a map of the farm that they will evaluate the following day. Team members have the evening to pour over the records and statements, getting a feel for the farm that they were assigned. The next morning, teams are bussed to their farm and are given four hours to evaluate the farm – everything from stocking density of the group pens to maintenance of the silage bunkers should be assessed. When time is called, students are bussed back to the hotel where they are given five hours to identify the strengths, weaknesses, opportunities, and threats to the farm’s operation. As if this all isn’t enough, students also must compile a consulting presentation that they will present not only to a panel of judges, but also the farm managers and owners, the next day.

The dairy challenge is also an incredible networking opportunity, because the program’s sponsors attend the event and many of them are looking to hire the next generation of professionals in the industry. While the weekend is fast paced and puts a lot of pressure on the students, it is a lot of fun and an educational highlight for many who attend.

Cassie, Andrew, and Melissa are studying this semester at the Miner Institute along with classmates Kaitlin Benoit (Class of 2014) and Morgen Doane (Class of 2013). The five will be traveling to the National Dairy Challenge in Indiana this spring where they will compete as one team representing UVM against teams from across the nation.

Melissa Woolpert and her teammate make observations of the farm’s heifer barn. Melissa is photographing what they see to use in their presentation.

Melissa Woolpert along with teammates from Vermont Technical College, Cornell University, and SUNY Morrisville were members of the Cargill, Inc. team and earned the Platinum award for their farm evaluation and presentation.
Everything Equine is celebrating “A Decade of Equine Education” this year. Established in 2004, this Vermont Equine show has educated equestrians of all levels on the latest innovations in the horse industry.

The 2013 Everything Equine event highlights over 30 indoor seminars and demonstrations, over 100 merchandise and service providers, a kids corner activity center, and an indoor breed and discipline row.

All ticket information available at: www.cvexpo.org

Australian Equine Expert Dan James will be the featured clinician. A World Class colt trainer, Dan James will be highlighting long reining, body control and liberty performance. He will also be featured in the ever popular equine variety show Saturday evening, Horsin’ Around.

On Saturday, he will conduct seminars entitled, “Ground Control: Achieving a Trusting and Respectful Relationship on the Ground” and “Long Reining Basics: Teaching horses to move forward into contact.”

On Sunday, his seminars are “Body Control: Rider exercises to achieve a softer, more willing horse,” and “Advanced Liberty Horses: Putting it all together for an awesome partnership.”

Everything Equine will host The Extreme Trail Challenge, one of the most exciting events to hit the horse world. In its second year at Everything Equine, The Challenge will welcome up to 25 horse and rider teams from New England who will vie for prizes. The horse and rider teams will show off their partnership by completing a series of judged and timed obstacles. The course promises to be exciting, creative and challenging!

The event will take place in the Poulin Grain/Guy’s Farm and Yard Arena on Sunday, April 28 at 9:30 am and is a benefit for the Vermont Horse Council.

Follow Everything Equine “A Decade of Equine Education” on Facebook.

Get your ticket for Horsin’ Around 2013, an equine variety show, to be held April 27 at 6:30 pm.
Unique teaching techniques in classroom

Karyotypes of different species were generated using gummy worms. A karyotype shows the number of chromosomes in an organism’s genome. Originally karyotypes were used to determine the number of chromosomes in a species. Currently karyotypes are more commonly used to determine if there are any chromosomal abnormalities in an offspring. As you can see from the attached karyotypes, the size of the chromosomes get smaller as the chromosome number increased. In each of these karyotypes, the organisms are diploid, meaning that there are two copies of each chromosome. Although the platypus is a bit weird in that it has five copies of its sex chromosomes, but only two copies of all other chromosomes.

(Dr. McKay received her Ph.D. in animal science at the University of Alberta, Edmonton, AB Canada and her postdoctoral fellow at the University of Missouri working in animal genomics. She teaches Animal Genetics and Breeding — ASCI 168 in the Department of Animal Science at UVM.)

Vermont Farm Show

The Vermont Farm Show is Vermont’s largest agricultural showcase. For agricultural professionals, it is an opportunity to meet with vendors, preview products and machinery, attend trade meetings, and network within the greater farm community.

Faculty and staff from Extension and the College of Agriculture and Life Sciences (CALS) maintained booths at the Vermont Farm Show, held at Champlain Valley Exposition from January 29-31, 2013. Helen Maciejewski, Department of Animal Science Administrative Assistant, and Josie Davis, CALS Associate Dean, discussed new plans for UVM Farms and new research within the college.
ASCI alum awarded $10,000 scholarship

Third-year University of Vermont medical student Vanessa Patten was awarded a $10,000 scholarship by the Vermont Medical Society’s Education and Research Foundation at the Society’s annual meeting, held October 27, 2012 in Woodstock, Vt.

Funded through generous contributions from Fletcher Allen Health Care, members of the Vermont Medical Society, and the Chittenden County Medical Society, the scholarship is awarded annually by the Foundation to medical students who are committed to practicing medicine in Vermont and caring for Vermonters. The scholarship program, created by Mildred Reardon, M.D., UVM professor emerita of medicine, was created to encourage young doctors to return to Vermont after completing their residency training. Reardon was instrumental in forming the Vermont Medical Society Education and Research Foundation.

Originally from New Hampshire, Patten earned a bachelor’s degree in animal science in 2009 from UVM, where she participated in the Premedical Enhancement Program (PEP). A joint offering of the College of Arts and Sciences, the College of Agriculture and Life Sciences, and the College of Medicine, PEP provides enhanced opportunities for a select group of highly qualified first-year undergraduate students undertaking a premedical curriculum. PEP students have access to a practicing physician-mentor and other medicine-related opportunities while they pursue an undergraduate degree.

The vice president of the UVM College of Medicine’s Student Council, a student ambassador and a former varsity cross country runner, Patten hopes to practice family medicine in Vermont. Her extensive volunteer service includes counseling Vermont high school students aspiring to enter the medical profession, working as a high school math tutor, teaching health lessons at local elementary schools, and organizing volunteer work and co-directing a girls health and fitness program at the Burlington Boys and Girls Club. She also previously worked as an in-home health provider with Armistead Caregiver Services and as a veterinary technician assistant at VCA Brown Animal Hospital.

“It is our hope and intention that by offering this annual scholarship we can successfully persuade medical students to practice medicine in Vermont, especially in its less-served areas, ensuring that Vermonters in all parts of the state continue to have access to excellent medical care,” says Reardon.

Learn more about the Vermont Medical Society and the UVM PEP program.

(This article was adapted from a news release produced for the Vermont Medical Society by Justin Campfield of ThinkSpark Media.)

ASCI alums show UVM spirit at White Coat Ceremony

Animal Science graduates, Kathleen Gill (Class of ‘12) and Alice Porco (Class of ‘10), and ASCI minor Molly Kaplan (Class of ‘10), show their appreciation for their outstanding UVM education at Ross University School of Veterinary Medicine’s White Coat Ceremony. The White Coat Ceremony celebrates the incoming class of students as they begin their journey in veterinary medicine. In this ceremony, students are officially welcomed to Ross University School of Veterinary Medicine (RUSVM), located in Basseterre, St. Kitts, West Indies, and to the beginning of their veterinary education. The ceremony symbolizes the importance of professionalism and ethical values as key elements in becoming a veterinarian.


ASCI Peer-reviewed Publications for 2012—cont’d.


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20th Annual CALS Alumni & Friends Dinner

Saturday, May 11, 2013
5:00–8:00 pm
Grand Maple Ballroom
UVM Davis Center
Info: http://www.uvm.edu/cals/alumni

Awards presented during this event include:

- Lawrence K. Forcier Outstanding Senior Award
- Robert O. Sinclair Cup Awards
- New Achiever Alumni Award
- Outstanding Alumni Award
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 Animal Science Department in the “Other” category.

Calendar of Events

2013

April
Apr. 19, 2013. Honors Day
Apr. 27 & 28, 2013 Everything Equine at Champlain Valley Exposition, Essex Junction, VT

May
May 1, 2013. Last Day of Classes
May 3, 6, 7, 9, 10, 2013. Exam Days
May 6-8, 2013. The 10th World Buffalo Congress; Phuket, Thailand
May 18-21, 2013. Digestive Disease Week (DDW) Annual Meeting; Orlando, FL
May 18-21, 2013. 113th General Meeting of the American Society of Microbiology; Denver, CO.
May 19, 2013. Commencement
May 27, 2013. Memorial Day Holiday

June
Jun. 11-12, 2013. AgSTAR National Conference and Exhibition; Indianapolis, IN

July
Jul. 4, 2013 Fourth of July Holiday
Jul. 8-12, 2013. The 2013 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 Indianapolis, IN

July—cont’d.
Jul. 27-31, 2013. The 4th International Conference on Sustainable Animal Agriculture for Developing Countries (SAADC); Lanzhou, China.

August
Aug. 26, 2013. First Day of Classes

September
Sep. 2, 2013. Labor Day Holiday
Sep. 9-12, 2013. The 4th EAAP International Symposium on Energy and Protein Metabolism and Nutrition (ISEP); Sacramento, CA

October
Oct. 15-20, 2013. The 11th World Conference on Animal Production (WCAP 2013); Beijing, China
Oct. 28, 2013. UVM Horse Barn Co-op Halloween Barn
Oct. 31, 2013. Morgan Horse Farm Raffle Drawing

November
Nov. 25-29, 2013. Thanksgiving Recess

December
Dec. 5, 2013. Last Day of Classes
Dec. 6, 9, 10, 12, 13, 2013. Exam Days
Dec. 14, 2013. December Commencement