A message from the Interim Chair, Dr. David Kerr

Dear colleagues, alums, students, and friends,

I am very pleased to have been asked by Dean Vogelmann to fill the Chair position on an interim basis as we conduct a national search for a new permanent Chair of Animal and Veterinary Sciences. As you know, our former Chair, Dr. André Wright, has relocated to the University of Arizona as Director of the School of Animal and Comparative Biomedical Sciences. We are all grateful for André’s leadership over the past five years. He has left us in a very strong position and we look forward to building on this foundation.

And, building we will! Kicking it off first with a silver-plated sledgehammer ceremony. You bet! Animal and Veterinary Sciences faculty, staff, and students participated in this “demolition day” ceremony at the UVM farm on February 3rd in preparation for a gold-plated shovel ceremony to be held April 15th to mark the beginning of construction of new dairy facilities at the Paul Miller Research and Education Center. The landmark Fitzsimmons Arena will remain but the old free-stall and maternity barns are to go. New facilities have been in the planning stage for quite some time, and now the work begins. What an exciting time for us all. The new facilities will include a new CREAM barn with milking parlor. The milking herd size will increase from 34 to 50, and this will go a long way to ensuring sustainability of the CREAM program that is now in its 26th year. In Phase III of the renovation, a new research barn will also be attached to the parlor so that researchers can conduct limited scale experiments with intensive sample collection. New construction will be completed over the summer such that the CREAM barn and parlor will be ready for the start of the Fall 2015 semester.

Other continuing initiatives at Animal and Veterinary Sciences include our winter break and summer travel courses. Doug Watkin led 12 of our students on an “Alpaca Husbandry” course with Dr. Stuart White in Ecuador over winter break. This summer, Dr. Pat Erickson plans to offer a second year of “The Horse” where students travel to the Equine Rehabilitation Center at Morrisville State College, and to the Saratoga race track. This is in addition to her very popular “You to the Zoo” summer course. These are great courses to build upon our core program and enhance student-animal interactions.

Before you know it commencement will be upon us and I look forward to handing out degrees to the class of 2015. Enjoy the rest of the semester and drop by the farm to watch us grow.

All the best,

David
Making way for a new CREAM barn

Site preparation for Phase 1 of a three-phase, $10 million upgrade of the UVM Miller Farm on Spear Street has begun. This consists of ground preparation and demolition of the free stall barn, the structure that faces Spear Street. Actual construction of a new 13,176 square foot teaching barn and milking parlor will begin later this spring when the weather warms.

The College of Agriculture and Life Sciences (CALS) held a press briefing on February 3rd at the Miller Farm to mark the initiation of the long-awaited renovation. Tom Vogelmann, Dean of CALS, spoke about the exciting and essential facility improvements which will replace worn, out-moded buildings with state-of-the-art farm facilities designed to serve the College’s teaching, research and public education needs far into the 21st century. Cooperative for Real Education in Agricultural Management (CREAM) student advisor and Animal Science Major Carolyne Richardo (Class of 2017) spoke about the importance of the CREAM program and how construction of a new barn will propel the CREAM program forward in the rapidly advancing dairy industry. Read Carolyne's full speech on the adjacent page. Faculty, staff and students then had the opportunity to swing a silver sledgehammer to begin deconstruction of the free stall barn.

You can be a part of the future of UVM by naming a barn, room or stall. Invest in the future of the CREAM program and advance the important work of the UVM Dairy Center of Excellence. Check out the naming opportunities at: https://asci.uvm.edu/cream/name_opportunities.pdf

Photos courtesy of Jane Kennedy O’Neil

CREAMers ready for a new home

When I arrive here at 3:30 AM, I go to turn on the lights in the barn and say good morning to the cows. Of course they simply continue munching on their feed, and a few of them will look towards the door to see what is going on. A bit over an hour later I am following the cows as they walk outside where the sun is just beginning to rise. Another hour later the calves are all fed, the barn is clean, there is fresh feed for the cows, and we begin to let them back inside. After all is done, boots and overalls back in the closet, it is bittersweet going back to campus. The staff here, my fellow CREAMers, and the wonderful cows all make this place special; after all, the barn has become a second home.

CREAM is a program where students build working relationships with their classmates, on-farm staff and the cows. Over the course of one year, or a summer, students become incredibly knowledgeable and intimate with one topic, and learning is driven by pure joy. This has been the case for the past 27 years, and it will continue to be; but CREAM is ready to move into a new home.

The construction of a new barn will propel the CREAM program forward in the rapidly advancing dairy industry. The new barn will be influential to all aspects of the farm and the program. The magnitude of every management decision made by students will grow and the sheer amount of milk leaving this farm daily will be amazing. CREAMers learn an unimaginable amount about the dairy industry, veterinary medicine and business management; but the most wonderful part of this program is being able to witness and be a part of keeping such wonderful animals happy and healthy from the day they are born.

There is so much thought put into every decision made here, and with a larger herd to fit the new barn, students will have the opportunity to see their decisions take effect. Two years down the road the breeding decisions made by my classmates and I will be a part of the herd of 46 cows milking in a new parlor. We’ll come back to see the granddaughters of our calves growing up in the arena. That is part of the beauty of this program, everything always comes around full circle, and even after our year or summer in the program is complete, we can still see how our time here has had its influence.

The University of Vermont is a research university with high tech labs and facilities all over campus, and more of those are to come. Today we are here to celebrate the beginning of another advanced facility that will provide students with incredible learning opportunities and sheer happiness. I would personally like to thank every single person who has been involved in creating and maintaining this program for the past 27 years, including every CREAMer who has put in so much to this farm. Thank you for being a part of this milestone in CREAM’s history, I’m sure there will be many more to come. CREAM is and will continue to be a huge part in my life; I know I will look back on my time here with nothing but fondness. And I know that the construction of a new barn will be just as influential in the lives of present and future CREAMers.

Photos courtesy of Jane Kennedy O’Neil

Carolyne Ricardo and Tom Vogelmann share why a new facility is so important.

David Kerr prepares to take the first swing at the barn demolition.

Submitted by Carolyne Ricardo
Class of 2017, CREAM Student Advisor
Great things are happening in our lab. First congratulations to Mital Pandya, Ph.D. candidate, who received a USDA National Institute of Food and Agriculture (NIFA) Pre-doctoral fellowship. Her project “A modern approach toward vaccine development demonstrates the role of cytotoxic T lymphocyte responses to Foot and Mouth Disease Virus vaccines” allows her to extend her thesis work to measure vaccination responses in cattle expressing defined major histocompatibility complex (MHC) class I genes.

I am very pleased to welcome Tatjana Sitt, Ph.D., as a post-doctoral researcher joining our lab group (for information on Tatjana’s background see page 18). Tatjana will also be working on our Foot and Mouth Disease Virus (FMDV) vaccine studies, and her work will focus on the role of helper T cell responses following vaccination. As soon as Tatjana arrived in early December, we initiated a second duration of immunity trial and we were busy through the Christmas holidays collecting blood samples to follow the immune responses in the group of Holstein steers. Dr. Bill Golde and Mary Kenney, our collaborators from the Plum Island Animal Disease Center, joined us for the start of this trial.

Megan Warner has also joined our group to work on the FMDV vaccination studies (see page 18 for more about Megan). Megan has only been with us for a few weeks, but she is already fitting right in and her enthusiasm for science is tremendous. Megan will be with us in Vermont to extend our bovine cytokine work. Once her Homeland Security approvals are in place she will work in Bill Golde’s lab at Plum Island.

Our research was recently presented at the Keystone Symposia, Immunity to Veterinary Pathogens: Informing Vaccine Development, and at the 54th National Mastitis Council Annual Meeting. Mital presented an abstract “Identification of peptides from foot-and-mouth disease virus structural proteins bound by bovine leukocyte antigen (BoLA) class I molecules” at Keystone. MHC or BoLA molecules are key to binding antigens during the immune response to viral pathogens. Mital was one of a few students whose abstract was presented for an oral presentation in an excellent session on vaccine antigen prediction. Her work was well received with many excellent comments suggesting the relevance of her work to explore novel approaches for vaccine development. Tatjana also attended this meeting, presenting a great poster “Immunization of cattle against buffalo-derived Theileria parva with a live sporozoite vaccine.” In the poster she described some of her previous research at the International Livestock Research Institute (ILRI) in Nairobi, Kenya. Theileria parva is a protozoan parasite that causes East Coast Fever (ECF), an economically important disease of cattle in Africa. Interestingly, the Cape Buffalo carry variants of this parasite but unlike cattle they do not succumb to clinical ECF.

There are five senior undergraduates completing Distinguished Undergraduate Research or Honors College Research projects in the lab this semester. Samantha D’Amico is finishing up her project “Associations between coagulase negative Staphylococci phenotype and sources of isolation on a dairy farm.” Korin Eckstrom will be concluding her project “Rapid identification of bovine MHC class I molecules using cDNA amplicon pyrosequencing.” Mandy Erdie is completing her project “Possible role of flies in transmission of Staphylococcus aureus and coagulase-negative staphylococci among dairy cattle in Vermont. Joseph Marchell is finalizing his work “Antibacterial activity of Staphylococcus species against major mastitis pathogens.” And, Suzie Stephenson is completing her work on “Duration of Adenovirus and Foot and Mouth Disease Virus Neutralisation Following Vaccination in Cattle.” We have a great crew of graduating seniors in the lab this year, and it is nice to be able to recognize their excellent work.

For more information about the Barlow lab, check out their web site at http://asci.uvm.edu/labs/barlow/.
This fall semester has just flown by. Melissa Bainbridge, Ph.D. candidate, concluded her five-month trial at the Choiniere Family Farm in Highgate, Vermont. This research is a collaborative effort between the Animal Science Department (Barlow Lab & Kraft Lab), Juan Alvez (UVM Extension) and Joe Roman (Rubenstein School of Environment & Natural Resources) investigating how pasture diversity affects grazing behavior/time and thus, rumination, milk composition, and productivity. This project also supports undergraduate research conducted by Emily Egolf (Class of 2015) as part of her UVM summer research award and Distinguished Undergraduate Research (DUR). Meanwhile, Helen Walsh, post-doctoral fellow, has been working relentlessly on volunteer recruitment and the facilitation of our clinical research trial at the University of Vermont Medical Center. Honors College students Michael McLane and Emily Vayda (both Class of 2016) have been working on our large collaborative animal feeding trial (in collaboration with Dr. Tom Jetton, Department of Medicine, Division of Endocrinology, Diabetes and Metabolism) delineating the impact of plant and dairy-derived dietary bioactive lipids on diabetes risk. Dr. Jana Kraft presented at the Vermont Feed Dealers & Manufacturers Association 72nd Annual Meeting in Stowe, Vermont on September 16, 2014, (presentation title: Milk – What’s in it for you?) and at the New England Dairy Promotion Board Annual Meeting in Jay, Vermont on November 7, 2014, (presentation title: Research Update - Milk fat and metabolic risk markers).

Last but not least, the Kraft Lab welcomes Ph.D. candidate Laura Cersosimo, who has been doing her Ph.D. studies under the mentorship of Dr. Andre Wright, as part of the team. Welcome Laura!

The Kraft Lab is looking forward to a successful and productive spring 2015 semester.

For more information about our lab, please visit our website at: http://asci.uvm.edu/labs/kraft/

Participants are needed for a research study into the role of milk fat as part of a balanced diet. The study is being conducted at UVM through the Clinical Research Center (CRC). Qualified participants must be:

- Healthy nonsmokers aged 18 to 40
- Not on prescription medication (except contraceptives)
- Have consistent dietary habits that include dairy products
- For females, not be currently pregnant or trying to get pregnant

**$1,000 compensation** is provided to those who qualify and complete the study. All food for the duration of the study is supplied by the CRC.

For more information and to schedule a screening, email FoodStudy@uvm.edu
Greenwood Lab

The Greenwood lab would like to welcome Research Technician Dave Ebenstein to our team. Dave’s extensive chromatography experience is being put to good use, and he is giving our HPLC a good work-out running milk protein profiles. Our undergraduate students, Sarah Zeger and Matthew Herber, are also working hard in the lab, helping Dave with HPLC sample preparation and Ph.D. student Rink Tacoma with sample preparation for Mass Spectrometry analysis.

We are also looking for a graduate student (MSc PhD level) to join our team. If you or someone you know is interested, please contact: Sabrina.Greenwood@uvm.edu for more information.

Greenwood lab website: http://asci.uvm.edu/labs/greenwood/

Kerr Lab

It has been a great start this year for the Kerr lab with the publication of two peer-reviewed manuscripts. Aimee Benjamin is the lead author on “Cow-to-cow variation in fibroblast response to a toll-like receptor 2/6 agonist and its relation to mastitis caused by intramammary challenge with Staphylococcus aureus” in the Journal of Dairy Science. This was Aimee’s first publication from her Ph.D. research. Meanwhile Ben Green is lead author on “Age dependent changes in the LPS induced transcriptome of bovine dermal fibroblasts occurs without major changes in the methylome” which is now out in BMC Genomics. This is his third publication from his Ph.D. research.

Filiz Korkmaz is heading up a new project aimed at evaluating if epigenetic regulation of immune system genes has an effect on pre-weaning growth rate. This work is being conducted at our collaborator farm: “Green Mountain Dairy” in Sheldon, Vermont. We thank the Rowell’s for their support.

Samantha Monk is completing her undergraduate research project which she will submit for consideration of a Distinguished Undergraduate Research award.

Finally, we welcome Julio Sunshine to our lab. Julio graduated from our department in December 2014 and will work with us as a temporary research technician for the next few months.

For more information about our lab, please visit our website at: http://asci.uvm.edu/labs/kerr/

Three-week-old Sheldon was part of a calf study examining the development of the neonatal innate immune system.
The McKay Lab has generated data that was presented in both oral and poster format at the Plant and Animal Genome Meeting held in San Diego, California. In the cattle workshop, Dr. Stephanie McKay gave a presentation entitled “DNA methylation affects phenotypic variation in cattle possessing extreme phenotypes for residual feed intake.” Bonnie Cantrell presented a poster entitled “Investigating extreme measures of docility and global DNA methylation in the bovine brain.” Abstracts of both presentations can be found on the Plant and Animal Genome Website (http://www.intipag.org/).

Ms. Hannah Lachance has started exploring RNA methylation, an exciting new endeavor in the McKay lab. She will also be working with Vermont Fish and Wildlife to collect additional samples of Bobcat, Fisher and Otter.

Our undergraduate researchers are working diligently on their projects. This semester Sydney Friedman (Class of 2016) will perform an assay to measure global DNA methylation among the Vermont Bobcat population. Sarah Perlee (Class of 2018) and Fernando Betancourt (Class of 2016) are working on epigenetically characterizing the bovine AMPK gene family in various breeds of beef cattle. Tune into our website for additional updates.

McKay lab website: http://asci.uvm.edu/labs/mckay/
Calf managers benefit from distance learning webinar facilitated at multiple sites

Ever think to yourself, if only I didn’t have to travel so far to a meeting? This spring’s Calf Manager Workshop coordinated by Cornell Pro-Dairy, Cornell Cooperative Extension, and the University of Vermont Extension let the speakers and attendees go to a local site hosted by local Extension professionals. Each of the seven sites then connected to a webinar broadcasting speakers and their presentations from the local site or distant sites. Over the two-day series of facilitated webinars, speakers discussed neonatal care and colostrum feeding; feeding before weaning and weaning strategies; identifying, treating, and preventing disease in calves; maintaining desirable air quality in calf housing; group housing and feeding management; and responsible drug use. Let me know what topics are of interest to you so we can take that into account when planning the next set of workshops.

Smith brings farmers and viewers Across the Fence with Dairy Stockmanship training

Dr. Don Höglund led Dairy Stockmanship training in a series of workshops in Vermont and New York in January. Better stockmanship is good for the animals (lower stress), good for the people (fewer injuries), and good for the bottom line (more milk). After an introductory session on how animals learn, each group headed to the barn and practiced herding calves or heifers under the direction of Dr. Höglund. Animal Science senior Katie Barton appeared in the WCAX news clip (http://www.wcax.com/story/27886416/workshop-teaches-dairy-farmers-to-think-like-a-cow) filmed at DeGraaf Farm in Richmond. Dr. Höglund also visited the WCAX studio with Julie Smith and Rachel Gilker to tape an Across the Fence interview before heading to his next destination. The episode aired January 29, 2015, and can be viewed here: https://www.youtube.com/watch?v=S6wPkH8Zvf8

Campus seminar presented by Dr. Don Höglund on how horses learn

As part of Dr. Höglund’s week in the north country, he agreed to present a seminar to UVM students on how horses learn. As with cows, he told students they learn by trial, error, and reinforcement. The removal of stimulus is the most critical reinforcement to help animals learn the desired response. Being calm and using the lowest-energy stimulus necessary are the keys to safe and efficient movement of animals. He also shared the story of his involvement with the removal of free-roaming ranch horses from the White Sands Missile Range in southern New Mexico as recorded in his book, Nobody’s Horses.
Vermont Farm Bureau State Meeting

The Chittenden County Farm Bureau has been very active in efforts to assist, recognize and preserve Vermont’s farming community. We were recognized for a third year in a row with the 2014 Cornwall Award, honoring the best overall County Farm Bureau program in Vermont. Here are a few of the collaborative projects which Chittenden County Farm Bureau participated in, continued, or initiated this past year.

1. “Horse Safety Hits the Road” Equine Road Safety Public Service Announcement video with UVM Extension and The Vermont Horse Council.
   a. This PSA has been distributed to at least seven states for airing on television stations and continues to air on local stations.
   b. It was awarded the national winner of the Communications Awards at the National Association of County Agricultural Agents Association.
   c. It was a finalist in an international digital media awards contest

2. Chittenden County Farm Bureau and UVM Extension put on Horsin’ Around event on Saturday Night at Everything Equine.
   a. Part of the Funds from this event underwrite equine projects by our county.

3. One of our Learning Barns is now in place at the Sustainability Academy in Burlington
   a. Added toy equipment such as tractor/mower and animal puppets to go with the books.

4. Continued to promote and award the Horse Farm of Distinction Program

5. H.202 – bill proposes to include horse farms in the definition of farming for purposes of the Use Value Program
   a. We testified to both Ag Senate and House Committees.

6. Worked to address high cost of worker comp insurance for equine producers

7. Supported Rebate for Roll Bars Program (ROPS)
   a. Our county donated money for two ROPS rebates for Vermont Farmers

Submitted by Dr. Betsy Greene
President, Chittenden County Farm Bureau
Alpaca Husbandry Travel Course

Twelve students were enrolled in Ecuador: Boot Camp in Alpaca Husbandry during the 2014-15 winter session. This course permitted students to become accomplished in the principal alpaca husbandry practices through daily work with a large alpaca herd, and placed alpacas, llamas and vicuñas in their historical and geographical contexts, and examined their potential as generators of income and environmental services. A few students share their thoughts on this course:

Melisa Rayvid: “My experience with the alpacas in Ecuador was unlike anything I had ever done before. There were not many limitations on what we were allowed to do when it came to alpaca husbandry. Some of the many things we did to take care of these amazing animals were to give vaccines, castrate, shear, learn about the newborn crias and how to care for them, learn how to take care of pregnant and lactating mothers, determine the quality of pasture they were grazing, and much more. We took a day trip up to about 15,000 feet and hiked Mt. Chimborazo where the Vicuñas, the wild ancestors of the Alpaca, live. They were beautiful creatures, a little smaller with less fiber than the Alpaca. Something even better than working with these animals was working with the natives who maintain the farm, and hanging out with their families. Their culture is so much different than ours and it is great to see life from a different perspective. This trip was one that I will never forget.”

Ashley Hudson: “Alpaca Bootcamp has to be one of my favorite courses I’ve ever taken at UVM. It was not only amazing working with the alpacas in the beautiful mountains of Ecuador, but it was also incredible spending time with our professor’s herd managers and their families. I learned an incredible amount about alpacas and their history in Ecuador, but also learned a lot about Ecuadorian culture. It was the best two weeks of my life and I’d go back in a heartbeat.”

Submitted by Melisa Rayvid and Ashley Hudson
Class of 2015

Melisa Rayvid participates in a travel course in Ecuador.
2015 ASCI Summer Travel Courses

Summer courses offer students the opportunity to focus on challenging courses, paired with a lighter academic load and more time with faculty, to enjoy great success. Summer is a great time to get ahead at UVM and save 30% on tuition. Learn more at: http://professional.uvm.edu/summer-homepage

The Horse

Explore Equine Health, Handling, and Sport this summer. Expand your knowledge base with experience in the field:

- Hybrid course (both online and travel)
- Understand the principles of horse husbandry and management
- Focus on animal health, including: anatomy, nutrition, preventive medicine, first-aid and common diseases

Learn more at: http://learn.uvm.edu/study-abroad/study-abroad-programs/vtny-the-horse

You to the Zoo

Get behind-the-scenes access at the New York Zoo. Work with professional animal handlers, zoo employees, veterinarians, and para-professionals. Learn how to:

- Manage an animal care site
- Address animal health issues
- Handle diverse species
- Complete a new exhibit
- Expand your network through work with partners in the field

Learn more at: http://learn.uvm.edu/study-abroad/study-abroad-programs/new-york

Summer CREAM Program

The summer CREAM (Cooperative for Real Education in Agricultural Management) is designed for undergraduate students or recent graduates who are exploring veterinary medicine as a career option and who plan to apply to a professional program within the next academic year. Students will receive large animal handling experience that will strengthen their qualifications for veterinary school, and be provided guidance and resources for preparation of the GRE and vet school admission.

Students will benefit from workshop-style sessions on application and interview preparation. The program’s on-farm experience also includes special projects and field trips, and offers students an uncommon experiential learning opportunity that will help distinguish them as future agriculture leaders.

Schedule:

- May 18–August 14, 2015
- 20 Hours of Work-Based Learning Weekly
- Morning Class Sessions: Mondays & Wednesday 8-9:15 am
- Evening Class Sessions: Mondays & Thursdays 6:30–8:30 pm

Upon successful completion of this course, students receive four academic credits.

Students may register at: http://www.uvm.edu/~summer/course-detail/?crn=60615

CREAM website: http://asci.uvm.edu/cream/
Positive changes at the UVM Horse Barn

The academic year 2014-2015 has brought big changes to the UVM Co-operative Horse Barn! The UVM Dressage Team moved into the barn with their three horses in early September, bringing lots of new faces to the barn. Integrating the team into the barn has been a great experience for everyone involved! It has brought the team closer together and allowed everyone to make a few new friends along the way!

Another important group of students in the barn are the Equus students. We have had two really great groups this year! We also have a new ASCI horse on lease from the UVM Morgan Horse Farm named UVM Devana. She has been a great addition to the program and is truly lovely!

Co-op Barn—working toward a common goal

So what exactly is a cooperative barn? By definition, a “co-op” involves many individual members of a group working together towards a common goal. That is what we do at the UVM cooperative horse barn. Each year, around sixteen students are lucky enough to be a part of this unique learning opportunity only available at UVM. At the co-op, all of the work involving the care of the horses and general running of the barn is split up equally among barn members. Members are responsible for several hours of “horsewatch” during the week, daily cleaning of their horse’s stall, several weekend shifts, and some shifts over school breaks. Weekly barn meetings are led by the executive committee, a group comprised of several senior members, and include topics such as scheduling, horse care, and farm maintenance. Sounds like a lot of work – is it worth it? Absolutely. Not only does the UVM horse barn co-op offer a very economical option for college students looking to bring their horse to school with them, it also offers a very valuable educational experience.

Sixteen (or more!) students are brought together from all over the country, with different backgrounds, disciplines, and experiences. Everyone, no matter how long you have been around horses, learns something new at the co-op. Everyone learns how to work together as a team, how to solve problems, and how to come up with solutions. Everyone learns what it takes to run a large equestrian facility and how to integrate that facility into the community around them. And these are not things that you can learn in a classroom.

Applying to the barn

So who exactly gets to bring their horse to the UVM Horse Barn Co-op? Being a member is not an easy task – it requires a great amount of responsibility, experience, and willingness to work with others to ensure the health and safety of our horses and fellow barn members. We do have an application, easily accessed through our website, that anyone interested in becoming a barn member must fill out. We also require letters of recommendation for interested students and their horses. Applications will be reviewed by current barn members and their faculty advisor. While it may seem like overkill, for a barn like the co-op to work, we need members that are experienced horse handlers, and steady, well-behaved horses that are easy to work with and adjust well to an active barn environment. While we understand that horses will always be horses, and do have their moments (don’t we all?), the co-op runs much more smoothly and safely with the right combination of members and their horses. Interested? Please don’t hesitate to visit or give the barn a call with any questions you have about the application process! (802) 863-0205

http://asci.uvm.edu/horsebarn/
The rich heritage of the dairy industry in Vermont is evident to any that visit. Luckily, we get to share a piece of that heritage every day by being students in the Animal Science Department. This year I was fortunate enough to connect with Kelsey Watkin, a fellow Animal Science student. Through her connections within the 4-H Program, I had the privilege of helping Kelsey teach a section of this year’s 4-H Dairy Challenge event on November 16 on the UVM Campus.

We taught a small lesson on Dairy Calf Management and Diseases. We were met with enthusiasm from 4-H participants and their parents from counties all over Vermont. For me, it was encouraging to see both parents and their children committed to fostering education about agriculture in the form of a statewide 4-H gathering.

It is through collaborative efforts such as this that truly show the pride and commitment that Vermont has towards its dairy industry. As a student, being a part of this community has always been an honor to me. Anyone that would like to be involved in next year’s 4-H Dairy Challenge should contact Kelsey Watkin at Kelsey.Watkin@uvm.edu or State 4H Livestock Educator Wendy Sorrell at Wendy.Sorrell@uvm.edu.

Submitted by Benjamin Daggett
Class of 2015

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**UVM Horse Barn’s Annual Easter Egg Hunt**
Saturday, April 4th
10 am—1 pm
Advanced “fast pass” tickets available at Eventbrite.com
(pay $3 at door instead of $5)
“UVM Horse Barn Easter Egg Hunt”
Email questions to sdamico@uvm.edu

Photo courtesy of Jordan Gechtman

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**ASCI students support community through 4-H**

Photo courtesy of Stacey Flanders

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Photo courtesy of Benjamin Daggett

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Spring 2015
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We are now in full swing of 2015 Everything Equine and Canine planning. Our headliner is Dr. Andrew McLean, the founder (with his wife Manuela) of the internationally recognized Australian Equine Behaviour Centre (http://www.aebc.com.au). Andrew’s riding accolades include winning Australia’s premier Horse Trials (Gawler Three Day Event), competing in dressage to FEI level, training Dressage horses up to Grand Prix, and ridden up to Grand Prix and Championship level in Showjumping. He has held a race trainer’s license and has won bareback races in Australia and New Zealand. In addition, he has published peer-reviewed articles on equine behavior and is the author of Australia’s top selling equine book “The Truth About Horses” and “Academic Horse Training: Equitation Science in Practice.” We are very excited to bring Andrew’s excellent knowledge and practical experience to Vermont for the very first time!

Keep checking http://www.cvexpo.org/EverythingEquine.html as we finalize equine and canine seminars, demonstrations, breed rows, and the Horsin’ Around on Saturday Night (dogs too)...

Dr. Andrew McLean founder of the Australian Equine Behaviour Centre will be the featured headliner at Everything Equine & Canine 2015.

2015 Everything Equine & Canine

Saturday, April 25, 2015    Sunday, April 26, 2015
8:30 am—5:00 pm             8:30 am—4:30 pm

Champlain Valley Exposition, Essex Junction, VT

Admission: $10    Children under 5: Free

Advance discount tickets available at Guy’s Farm & Yard in Williston, Morrisville and Montpelier, VT and Adirondack Tack in Plattsburgh, NY beginning March 6, 2015.

**News from Dr. Betsy Greene**

The days and weeks continue to be filled with teaching and extension activities, both on the home front and away. In November, I participated in the 2014 National Animal Interest Alliance (NAIA) annual meetings in Orlando, Florida. The organization’s motto is “The Responsible Voice for Animals and the People Who Care for Them,” and I am currently serving on the Board of Directors. This meeting (in 2013) is where the concept of the ASCI 298: Elephant Care, Handling, and Management began. We had an amazing program by Robert Guyer on working with State Legislators. On a sad note, our friends at the Center for Elephant Conservation (CEC) have been putting this information to practice much too often as they have had to defend their handling and use of elephants. Because of this, the 2015 summer elephant course has been put on hold.

From Janice Aria (CEC Director of Animal Stewardship):

All involved in last year’s pilot program [ASCI 298] agree that the program was a huge success, validated by the students’ reflections indicating 100% understanding and support of elephants trained for possible use in performance. However, presented with the reality of our instructional staff having to be ready at a day’s notice to meet the demand of defending in municipal court houses our right to use the essential tools necessary in handling elephants, we have been forced to eliminate all long-term commitments. Let’s hope things change and we can reconsider this wonderful program and offer other students the opportunity to learn about great animal care from our amazing elephants.

In December, I had the opportunity to see an ASCI Alum putting her education to practice in her workplace. Lindsey King (ASCI 2004) is a Senior Zookeeper at the San Diego Zoo, and she gave me a behind-the-scenes tour of her area, and what a great time meeting the giraffes close up and personal!

The new year started at the National eXtension HorseQuest meetings in Louisville, Kentucky where equine specialists from across the country come together to plan, create, and evaluate our national website content (www.extension.org/horses) and work on grants, learning modules, and even record radio interviews. After that, I was in Lexington, Kentucky for Safety Committee work at the United States Equestrian Federation.

A very quick February trip to Phoenix turned out to be an experience of a lifetime for Betsy Greene and her brother Richard as they cheered the New England Patriots on to victory at the Super Bowl.

Dr. Betsy Greene goes behind the scenes at the San Diego Zoo with Senior Zookeeper and ASCI Alum, Lindsey King.
My journey from suburbia to the farm

Melissa Woolpert graduated from UVM in 2013 with a BS in Animal and Microbiology. She worked for a year at a dairy farm then decided to pursue her Masters of Science degree in Food Systems. She shares her story of how she always had a passion for animals, but never knew she would fall in love with animal agriculture:

My first visit to a dairy farm was in the spring of 2009. I was a senior in high school visiting the University of Vermont. After being herded around campus for a few hours by a tour guide, my dad and I went to check out the horse stables (at the time I was an avid horse back rider, so the condition of the stables was more important to me than the condition of the freshman dorms). The stables just so happened to be located next to the University’s dairy farm. We never made it to the stables.

The big beautiful black and white Holsteins and their slightly smaller Jersey counterparts calmly walked out of the barn while college students, clad in overalls and muck boots, slowly followed behind. I asked a million questions (those who know me know that this is not unusual). How on earth can cows eat that weird looking feed and produce something that tastes so good? Where are the calves? How old are the cows? Who buys the milk? And most importantly: what time do you start milking this afternoon?

We had about two hours until milking started and I was adamant that we waited. I helped one of the students feed the calves. I learned that calves eat milk replacer for about two months before they are weaned. After weaning, they move into small groups with other young calves (think Kindergarten). As they get older, they move from pen to pen, until they are eventually bred and have a calf of their own at around two years of age. I was fascinated by the cycle of life on the farm. And the calves were adorable!

Milking started, and we stayed to watch for a half hour or so. The cows were happy to be milked, I think it feels good to them. I learned that the black and white Holsteins make more total milk, but the fat and protein in their milk is less concentrated. Jerseys make less milk, but it is rich and creamy, perfect for making butter, cheese, and ice cream.

A few things happened that day. First and foremost, I decided that I was going to the University of Vermont for college. Second, I knew I would apply for the Cooperative for Real Experience in Agricultural Management (CREAM) that fall, so that I could milk cows for credit just like these students. Last, and I had no idea that at that moment, but I was embarking on a journey that would lead me to where I am today, and where I want to go in the future. When I woke up that morning I didn’t know the difference between a beef cow and a dairy cow, and by that evening I had started down the winding path of becoming a farmer.

ASCI alum well prepared for vet school

Madison McKay received her B.S. in Animal Science from UVM in 2014 and currently is a freshman at Western University College of Veterinary Medicine in Pomona, California. Madison recently shared her appreciation of the education she received while at UVM with her former advisor, Dr. John Barlow. "I am currently loving it at Western University and learning a ton. While being one of the youngest students in my class, I feel like I have been so prepared from the curriculum at UVM. Not only have I had more experience with various species, but the courses I took at UVM were in-depth and more relevant than most of my other classmates’ courses. I appreciate all you have done to help me get here."

2014 UVM graduate, Madison McKay, attends Western University College of Veterinary Medicine.

Alums tell us what was most important while an ASCI student

“I feel that there were four things that really made the time that I spent at UVM helpful and positive. They were the UVM Horse Barn (with Dr. Josie Davis and Dr. Jenny Wilkinson), the UVM farm experiences, Dr. Pat Erickson (she was my advisor, and was wonderful), and Fran Kinghorn was always there to help me out with everything.”

“Applied animal health classes, companion animals, animal behavior and training, animal welfare and ethics.”

“Excellent teaching and advising, interesting core and elective courses.”

“I loved the hands-on learning experiences. All the professors and lecturers were very knowledgeable and kind in their teaching methods. It was definitely a great experience, especially being able to identify all the ASCI people because we all smelled like cows in a large lecture hall.”

“Solid classes in Anatomy & Physiology, teamwork classes like CREAM.”

“Great relationship with advisor who was up to date on UVM and vet school requirements. Relevant and high quality classes. Opportunity to work/do research in the department.”

“Advisor and professors are either veterinarians and/or experienced. Hands-on and rich curriculum.”

“The CREAM program, my undergraduate research, and the animal welfare course have been the most helpful to me in my current position.”

“The small class size was very helpful. The professors were ALWAYS available for help if needed. The hands-on with the Dairy Farm was amazing and anatomy class was very helpful in preparing me for veterinary school. The animal welfare class opened my eyes to a lot of situations in the real world as they pertained to animals. I believe that class helped make me a better person and ultimately a better veterinarian.”
Welcome to Animal & Veterinary Sciences

Dave Ebenstein was born in Chicago and moved to southern Vermont in the early 1970's. He graduated from the University of Vermont with a B.A. in zoology in 1982 and the University of Southern California with an M.S. in Biology in 1986. He returned to UVM in 1988, in a position with the Biological Mass Spectrometry Facility of the General Clinical Research Center supporting metabolic research in human subjects. He is currently working for Dr. Sabrina Greenwood, using high performance liquid chromatography to examine proteins in bovine milk.

Dr. Tatjana Sitt is originally from California and completed her Ph.D. in Immunology "A model system for assessing vaccine efficacy in cetacean species" at the University of California, Davis in 2007 working with Dr. Jeffrey Stott. From 2007-2010 she continued immunology work in cetaceans at UC Davis assessing vaccine efficacy in boosting animals as well as determining baseline correlates of immune health in cetaceans. Tatjana has spent the last four years working on Theileria parva in cattle in Kenya at the International Livestock Research Institute (ILRI) and more recently developing diagnostic assays to detect viruses in plants at Biosciences Eastern and Central Africa, a part of ILRI. She joined Dr. John Barlow’s lab in December of 2014 to research immune responses to Foot and Mouth Disease Virus vaccination (in collaboration with Dr. Bill Golde at USDA-ARS Plum Island Animal Disease Center).

Megan Warner recently moved to Vermont from Gainesville, Florida where she worked at the University of Florida as a Biological Scientist in the School of Dentistry. Her work focused on studying bone metabolism and growth regulation in Dr. Kevin McHugh's lab. Megan holds a Master’s Degree in Molecular Microbiology and Immunology from Saint Louis University and a Bachelors of Science Degree in Biology from Eckerd College. She will be working as a laboratory technician in Dr. John Barlow's lab. Her work here will focus on Foot and Mouth Disease Virus vaccine efficacy and correlates of immunity.
ASCI faculty appear on 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 p.m. on WCAX TV Channel 3. Department of Animal and Veterinary Sciences faculty appeared on the following episodes:

- February 24: UVM’s ‘Farm of the Future’ — Investments in the Miller Agricultural Farm — Dr. Tom Vogelmann, Dean of the College of Agriculture and Life Sciences and Dr. David Kerr, Interim Chair and Associate Professor of the Department of Animal and Veterinary Sciences.
- February 10: Retraining and Placement for Thoroughbred Ex-Racehorses— Dr. Betsy Greene, UVM Extension Equine Specialist, and Ginny Iverson, AFTER the Track of Hinesburg, Vermont.
- January 29: Dairy Stockmanship: What is Low-Stress Handling?—Dr. Julie Smith, UVM Extension Associate Professor and Dr. Don Hoglund, Veterinarian and Animal Handler.
- January 27: Educational Travel Classes in the UVM Animal & Veterinary Sciences Department—Dr. Betsy Greene, UVM Extension Equine Specialist, and Department of Animal & Veterinary Sciences Senior Lecturer Dr. Patricia Erickson.
- January 6th: Honoring Vermont’s Horse Farm of Distinction and Horse Eventing—Dr. Betsy Greene, UVM Extension Equine Specialist, and John Bourgoin, Arbrook Farm Owner.
- November 18: Education and Community Service in UVM’s Animal & Veterinary Sciences Department—Dr. Betsy Greene, UVM Extension Equine Specialist, and UVM student Taylor Goucher, Class of 2015.

Recent Peer-reviewed Publications


Department of Animal Science changes its name

The Department of Animal Science has changed its name to the Department of Animal and Veterinary Sciences. We feel this name better communicates our academic program. “Animal and Veterinary Sciences” is a simple revision that accurately describes what we do, and it carries meaning for the public in large part because it is what our students are looking for when they are selecting where to attend college.
Support UVM Animal & Veterinary Sciences

The Department of Animal & Veterinary Sciences is home to some of the best and brightest students, faculty conducting 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/cals/

Please specify Animal & Veterinary Sciences in the “Other” category.

Attend the Groundbreaking Ceremony
For Construction of the New CREAM Barn and Milking Center
Wednesday, April 15th
10 AM
500 Spear Street; So. Burlington, VT

Calendar of Events

2015

April
Apr. 15, 2015. Groundbreaking Ceremony for New CREAM Barn and Milking Parlor, UVM Miller Farm; So. Burlington, VT
Apr. 17, 2015. Honors Day
Apr. 23, 2015. Student Research Conference, Grand Maple Ballroom, UVM Davis Center
Apr. 29, 2015. Last Day of Classes

May
May 1, 4, 5, 7, 8, 2015. Exam Days
May 9, 2015. CALS Alumni & Friends Dinner; Grand Maple Ballroom, UVM Davis Center
May 17, 2015. Commencement
May 16-19, 2015. Digestive Disease Week (DDW) Annual Meeting; Washington, DC
May 25, 2015. Memorial Day
May 30-June 2, 2015. 115th General Meeting of the American Society for Microbiology; New Orleans, LA

June
Jun. 7-12, 2015. Gordon Conference of the Mammary Gland Biology; West Dover, VT
Jun. 14, 2015. Walk for the Animals and 5K Doggie Fun Run—Battery Park; Burlington, VT

July
Jul. 12-16, 2015. The 2014 Joint Annual Meetings of the American Dairy Science Association (ADSA), American Society of Animal Science (ASAS), and the Canadian Society of Animal Science (CSAS) will be held together in Orlando, FL