

The Moo's Letter



HOLIDAY EDITION

CREAM 2018-2019

Dr. Jim Quigley Visits the University of New Hampshire

By Colleen Berry



Dr. Jim Quigley visited the CREAM class on November 19th to discuss his accomplishments and career, after presenting a seminar for the Agriculture, Nutrition and Food Systems Department. Dr. Quigley is native of Hudson, NH, and an alumni of Alvirne High School, as well as the University of New Hampshire, where he received his BS and MS degrees. He later received a PhD at Virginia Tech. He discovered his love for calves and research when he returned to UNH for his masters, after spending a year teaching in a high school in Vermont. His UNH research with Dr. Chuck Schwab focused on the amino acid and dietary protein requirements of dairy calves.

Over the last two decades or more, Dr. Quigley has continued his work with calves. He started his professional career at Cargill, later moved to the University of Tennessee, then his career took him to APC-Functional Proteins in Iowa, and to Diamond V. He seemed happy to be back with Cargill Animal Nutrition, in their Provimi calf team. He is also known for his website <https://www.calfnotes.com/>

Dr. Quigley's presentation was very informative and interactive. His work takes him all over the world, and he was headed to Russia after visiting with us. His presentation highlighted how farms in other countries operate and explored the best way to care of dairy calves. He explained his evaluation process, and opened up for a class discussion after showing photos he had from farms with shortcomings both in the USA and abroad. We practiced evaluating good and poor practices, and discussed the various health concerns that can be prevalent in various management flaws. It was an exciting and fun lecture and we felt honored to have had such a prominent UNH Alum visit us for the evening.

Acknowledgements

The Newsletter Subcommittee would like to acknowledge Dr. Jim Quigley, Ginny Chamberlain, Tess Stahl, and Clark Veterinary Hospital staff for their contributions to this winter 2018 Newsletter.

We would also like to acknowledge the Fairchild Research Center and staff, our professors Dr. Drew Conroy and Dr. Peter Erickson, our TA Eric Hatungimana, as well as our authors for their contributions to this winter 2018 Newsletter.

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All About Our CREAMers



Leicester and Tunis sheep, showing them throughout New England and New York. I downsized my flock to about 10 since coming to college. While I was in 4-H I helped show dairy cattle for friends, and I showed a steer my last year in 4-H. While being at UNH I have been able to make connections with small-scale local dairy and beef farmers and have had the opportunity to farm sit while the farmers are at shows throughout the country. CREAM has given me the opportunity to teach my peers, provides hands-on learning, and allows me to learn in an environment that I love: the barn. One of my favorite parts about CREAM is waking up early to work with the cows. I'm not a morning person, but something about being up before the rest of the world and being in the barn gives me a sense of peace.

Hi there! My name is **Kit de Wolf** and I'm a junior from Bristol, Rhode Island. I'm currently majoring in Equine Studies: Equine Science (pre-vet intent) and I also hope to fulfill a minor in Dairy Management before I graduate. Post-graduation, I hope to get into vet school and get my DVM. If I get that far, I hope to focus on reproduction and neonatal care (equine). My assigned cow for CREAM is #878, Bambi (see picture). She is such a sweetheart,



and one of the higher producers in the herd. I applied to CREAM on a whim and I am so glad I did. This past fall semester I have learned a lot about working with other students, and a lot about working with cattle... I had never handled or worked with cattle until CREAM! My favorite chore to do is tying. Tying involves herding the girls up to the parlor, cleaning their stalls and water dishes, collecting them from the parlor and putting them back in their specific stalls. As silly as it sounds, I love being able to pet the cows, observe their different behaviors and I really do enjoy cleaning stalls.

CREAM PRESIDENT

Name: Emily Gibson **Hometown:** Lee NH
Major: Sustainable Agriculture & Food Systems

Plans After Graduating: I want to pursue a career in Agricultural Education at either a high school level or as a state specialist for Cooperative Extension. I want to share my passion and love for agriculture with others.

Animal/Cow Experience: I was born into a family of sheep breeders and 4-H'ers, so my passion and love for agriculture started at a very young age. I am a 4th generation shepherd and a 3rd generation NH 4-H'er. Before UNH I owned about 35 Border



Hey everyone! My name is **Hannah Ziegele** and my hometown is Acworth, Georgia! I am currently a Junior Biomedical Science Veterinary Science major with a minor in Dairy management. My CREAM cow is Winnie #896 and she is the most adorable cow on the farm! She is currently pregnant and will be giving birth one day after my 21st birthday! Even though she can never manage to stay clean, we all still love her! After

graduation my plans are to attend veterinary school for a DVM. The CREAM program was one of the main reasons I chose to attend UNH. As a freshman in college, I started to prepare for it by getting dairy experience. I took classes such as Dairy Selection, Dairy Management, and Dairy Cattle Diseases. Before coming to UNH, I had no experience with cows and worked mostly with small animals at my hometown clinic, Kennesaw Mountain Veterinary Services. Growing up riding horses was another way I got large animal experience. Animals have always been my passion and I have even gotten to study marine life at Marine Lab Key Largo, as well as, SHOALS Marine lab in Maine. CREAM has taught me so much about the importance of working with my peers, biosecurity, and making our cow's health priority. My favorite chore is working with the calves. The calf shift includes cleaning each of their stalls, feeding grain, giving milk and colostrum, cleaning water, and getting to work with the most precious animals on the farm.

Gabrielle Woodruff

Hometown: Southbridge, MA

I am a Senior Animal Science with Pre-vet focus major and my cow is Harambe(912). I chose to join CREAM because of the chance to get hands on experience that will help me with my career, will help me grow as a person, giving me a greater appreciation for cows and farmers. Getting to work with other dedicated students has strengthened my ability to work with others



and understand the inner workings of running a dairy farm. My plans after graduation are to attend veterinary school after taking a year to work in a veterinary office. I want to gain as much experience as possible and I know CREAM is going to help me get that extra experience. My favorite part about CREAM is getting to talk to and work with people who share the same passion as I do. My other favorite part is when I tell people I have a cow named Harambe I get to see their confused and partially disappointed faces. Something unique about the CREAM herd is we give our cows baths. So many people I've talked to were surprised that you could give a cow a bath and I just tell them it's like washing a really big dog.

Subcommittee Highlights

By Kit de Wolf

The students in CREAM have created many course-related subcommittees. The focuses of these subcommittees vary, with one about dairy nutrition, another on field trip planning, others on herd health, and more. Two subcommittees that have been hard at work this year are the Social Media subcommittee and the Clean Tails subcommittee. The Social Media subcommittee is made up of six students, all with special talent to bring to the table. As social media is now one of the top ways to connect with others, it seemed important to these students to actively advertise the CREAM program online. See: Students have almost completed a website for the course, and have an active Facebook and Instagram page. Students have met many times to work on these accounts, to ensure in part that the pictures are well described and the class is well



represented. The group works on keeping these accounts active, interesting and up to date. The Clean Tails subcommittee was started a few weeks into the fall semester by five students and has grown by one since. The subcommittee goes to the Fairchild Dairy Teaching and Research Center in the evening and cleans the lactating cows in the CREAM string every week. The subcommittee name originates from the white switches that can be seen after the subcommittee cleans the cows. The work takes anywhere from forty-five minutes to two hours, depending on the students who are available to meet and the condition of the cows that week.



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Merry Cryptmas

By Emily Winfrey

This year's CREAM class is all too familiar with the protozoan cryptosporidia (crypto). With about 1/3 of the CREAM class falling victim to this zoonotic parasite, farm staff, faculty, the state veterinarian, and even the Department of Health are working hard to help us minimize the risk of becoming infected. Cryptosporidia is a parasite that is present in even urban environments, but is especially prevalent on dairy farms- more specifically young calves. Infected calves can have "blasting diarrhea" and may stop drinking their milk formula causing them to become dehydrated and lethargic. Luckily, most calves' immune systems are able to fight off the parasite themselves and they recover relatively quickly with no lasting effects. To become infected, cryptosporidia has to be ingested by the host where the parasite finds its way to the intestines. There it causes the characteristic diarrheal symptoms. Infected animals will then shed the parasite in their waste for a couple of weeks after infection, making this problem very hard to eradicate on dairy farms. Crypto is spread via the fecal-oral route, and with CREAMers and farm staff often thoroughly exposed to cow and calf manure during chores. People can carry the parasite on their clothing, hair, face and hands.

At the Fairchild Dairy Research Center, protocol has been in place for years to minimize the risk of spreading crypto between calves and people. However, with many student cases in the past couple of years, more steps for greater biosecurity had to be taken. Calf pens have always been cleaned from youngest to oldest to protect the youngest animals with developing immune systems. Hand washing has been mandatory after shift and water bottles with exposed tops have never been allowed. Sanitization stations have been located within the calf room and throughout the rest of the facility with notices posted, warning against letting calves suckle on fingers and the risk of crypto that brings. New for this year, water buckets in the calf room are now filled by hand instead of using the hose. We suspect that vaporized water from using the hose to fill infected buckets may have caused contaminated water to spray into CREAMers' faces. A foot bath was introduced to the calf room and is used between cleaning sick calves' pens and after leaving or entering the room. Additionally a bucket with disinfectant is now used to clean the shovel used for chores, so manure, and the parasites it contains, is not spread from animal to animal. Most recently, the use of disposable gloves and face masks has been implemented for all staff and CREAMERS working with calves. All of these things are improvements in our farm biosecurity hat will hopefully keep our class and calves healthier as the year goes on!

A Visit from Clark Veterinary Hospital

By Hannah Ziegele and Lindsey Beahm



The outreach subcommittee had a great time on November 17th when Hannah Ziegele and Lindsey Beahm reconnected with CREAMer Alumni Ari Gough and her fellow staff members from Clark Veterinary Hospital. The veterinary staff brought family members and friends to visit and tour through the barns. We introduced them to the heifers, talked about what research is going on at the farm, explained our milking procedures in the parlor, as well as met with our very own CREAM herd!

The staff enjoyed petting cows, hearing about our day-to-day chores, and spending time with our adorable baby calves. The children completed cow-name scavenger hunt which involved getting fun hints to find each cows ear tag number. We had a wonderful time touring the entire barn and sharing our love for cows. Thank you, Ari and Clark Veterinary Hospital staff, for reaching out and coming to visit the University of New Hampshire!

The Farm Outside of CREAM

By Hannah Walsh

Lindsey Beahm Since the beginning of the semester, Lindsey has been earning credit by helping Tess Stahl with her study of butyrate in heifer diets. She is comparing butyrate to monensin on the growth of heifers. The diets of her selected group of heifers are grouped by a control, and three treatments, with only monensin added, only butyrate added, and a combination of butyrate and monensin in the diet. Lindsey has helped feed and make sure each heifer eats the correct diet. She then collects, sorts, and masses out the orts for each heifer. These orts are then dried and Lindsey helps grind them down and compile them to save space in the lab. Each sample is organized by individual heifer and Lindsey helped on the occasional Tuesday morning with weekly blood and fecal samplings, as well as collecting measurements and weights of all the heifers on the study. In addition, fecal samples are taken at certain times over weekends and taken when any of the heifers get sick. Lindsey also helps masters student Tess Dahl take samples whenever possible. Beyond the cool research, Lindsey helps scrape out their pens, move heifers, and deal with any mishaps that happen along the way as all have experienced.

Ben Kerns, Hannah Robertson, Emily Golomb, Kate Allen, Gabby Woodruff, & Liv Gorman These students are some of the many that are very involved around the barn outside of class. All six of them are working on Dr. Nancy Whitehouse's study on the 24 cows which is researching Selenium in Holstein cattle diets to get FDA certification. These CREAM'ers also work on health checks, production, and take milk samples. Two of them, Hannah and Ben, even live above the barn, always present and helping other CREAMers! They are really engaged at the farm, as they also work as researchers for Jon Whitehouse, working over and above CREAM.

Cassidy Barrett & Hannah Walsh Something that Cassidy Barrett and Hannah Walsh do outside of CREAM is help with a research study led by one of our master's students, Tess Stahl. This is a nutrition-based study which is comparing sodium butyrate in heifer diets to monensin, which is a product that is currently on the market. The purpose of this study is to determine if sodium butyrate is a good replacement in heifer diets. Every Tuesday morning, they assist in taking weights and measurements of the heifers, as well as collecting fecal and blood samples. Recently, they have also been able to help in running the blood through a centrifuge and testing the level of ketones in the blood. Cassidy says she really loves helping out with this study because it is giving her great hands on experience that will help her in the future. Taking blood samples and testing them is something that she has never been able to do before. Since Cassidy and Hannah are both hoping to go to vet school, this experience is a great way for them to learn skills that they are going to need to get there.

ALUMNI OF THE MONTH

By Colleen Berry

Virginia “Ginny” Chamberlain is a UNH alum of 2011 and was a CREAM’er in 2009-2010. She visited the current CREAM class during her honeymoon (yes her honeymoon, with her husband Sam) in October, to discuss her experience in CREAM and her work now.

Ginny is now the Farm Manager at Alfred State College in Alfred, NY, where she takes care of a small beef herd, meat goat herd, and a flock of sheep as well as a herd of 50 organic dairy cows that are milked by a Delaval VMS robot. While she was attending the University of New Hampshire she was a pre-veterinary major. After graduating she decided to go on a different career path and work as a herdsman for the Nordic Farm in Vermont. She gained interest in this position after going there on a field trip with CREAM.

Since graduating from the University of New Hampshire she has worked in the dairy industry. CREAM gave her the confidence to pursue this career and to change the trajectory of her career and life beyond veterinary medicine.

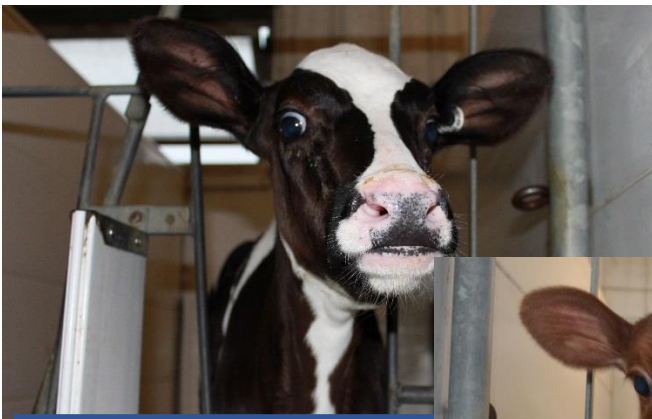
Ginny said, CREAM also helped her in other aspects of her personal life. For example it helped her with working with people. Specifically, in working and making decisions with large groups of people, which is a skill she has to use every day while working with her farm staff, the Alfred State students and faculty. She eventually moved into management roles and has interests in robots and reproduction. She has been working at Alfred State for 5 years.

Some fun facts about her is that she loves to hike with her black lab. She was a Sigma Alpha sister and also worked at the UNH’s organic dairy. Her CREAM cow was Molokai, who was one of the five embryos that UNH acquired and was named after the five Hawaiian Islands. Although she was Ginny’s favorite, she was not that high in production and had chronic udder rot which Virginia was always tending to. Molokai then gave birth to twin bulls, had issues and was culled from the herd. However, Virginia also fell in love with PoohBear. PoohBear was retired in 2017. Virginia’s favorite place to eat on campus was Holloway Commons specifically at the Omelet and Stir-fry bar. It was obvious that CREAM has affected her in many great ways and without the help of this class she would not be doing what she is doing today.



New to the Nursery

By Hannah Ziegele and Lindsey Beahm



Calf: Tallulah (#1005)

Born: 8/24/2018

Mother: Frenchie (#782)

*CREAMer: Emily
Winfrey*



Calf: Brayleigh (#1009)

Born: 9/12/2018

Mother: Faith (#762)

*CREAMer: Ashley
Walalis*



Calf: Joey (#1015)

Born: 10/26/2018

Mother: Kanga (#883)

CREAMer: Kate Allen

Herd Health and Nutrition *By Olivia Gorman*

The CREAM herd health sub-committee has been busy identifying things that we could do to improve our CREAM cow's health. One of the major issues that we have identified this past semester has been the presence of mold in the corn silage and haylage. It is hard to prevent mold in these types of feed because they are exposed to the environment and can get frequently damp during the different seasons of the year. Mold can be easily seen in the feed in some cases because it causes the feed to clump together. In many instances our cows will still consume these clumps because they cannot always detect the mold. Mold in feed can be detrimental to our cow's health due to the presence of mycotoxins. Mycotoxins are produced by fungus and can cause problems in cows like immune suppression, cell/tissue death/ decrease in nutrient absorption, and altering of rumen pH. The herd health sub-committee believes that management and awareness of moldy feed is important and can be prevented by looking out for large feed clumps when feeding our cows their diet. Although it is hard to prevent mold from growing where our feed is stored, we can do our best to prevent it from being ingested by our herd.

Learning about The New England Dairy Industry

By Lindsey Beahm

On November 15th, 2018, the current C.R.E.A.M. class watched and discussed the film, *Forgotten Farms*, produced by Sarah Gardner and filmmaker/director, Dave Simonds. The film encompasses the hardships New England dairy farmers currently face. Larger farms seem to benefit more now, more than ever, than the much smaller and local dairy farms do. Sadly, this situation is not the only problem the local dairy industry is facing. Local farmers markets and community supported agriculture (CSAs) cause a great risk to local dairy farms, because they don't celebrate dairy and can cause a misunderstanding that dairy farms are a part of a larger industry that is seen as cruel. The film specifically highlights local farmers that have stayed steadfast through all the hardships and stuck around to still be a large part of our local dairy today. Of the farms not focused on, we know that there are less than 2,000 left, and over 10,000 lost in the last 50 years, greatly impacting the northeast industry (Simmons). And the largest part of the population is located in Vermont. The largest impact on the industry is the milk prices, and in the current state, the industry in New England may continue to suffer great losses of local grown, family owned, small dairy farms.



A large misunderstanding is that most, if not all, the milk that's being sold in New England is produced here. The misconception that the milk is transported thousands of miles is hugely affecting people's perception of the industry. New England dairy farmers produce more than most local agriculture farms, which account for approximately 3% of the food eaten in NE (Simmons). Another large misconception is the quality and ingredients in the milk. Many labels on organic dairy products are mislabeled saying the milk is "no hormones, non-GMO, and no antibiotics" when in reality, there is not a single jug of milk that contains these ingredients. Even conventional dairy farms, that do use antibiotics will not put that milk into the tank. Milk that contains antibiotics would be dumped, and the cost of this waste would be charged to the farm that caused this error. Making that mistake is expensive, so no dairy farmer would want to make that large of an error.

During CREAM's discussion, we talked about the local dairy challenge event that was held in Vermont. Multiple students had gone to this event, and had visited local dairy farms on the border of VT and NH. These dairy farms, from small ones to large ones, had their individual hardships. Local dairy farms aren't the dark horrible industry, extreme groups deem it to be. It's made up of local families who work hard each and every day to provide New England with the milk and milk products we all know and love. It's important to celebrate and support our local farmers, especially because they feed so many of us.

Note from the Editors -

Hi everyone! CREAM has had a very busy semester thus far, but we have learned so much! We would like to especially thank Jack Lapierre for his contribution to this newsletter by drawing the beautiful cover photo! I hope you have enjoyed this Holiday edition of the newsletter! Have a wonderful holiday break and a happy new year!

- Hannah Ziegele and Lindsey Beahm

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Photos taken by Kit de Wolf and Professor Andrew Conroy

