UCONN | COLLEGE OF AGRICULTURE, HEALTH AND NATURAL RESOURCES

ANIMAL SCIENCE

ANSC Undergraduates Conducting Research

Caroline Selesky, a senior Animal Science student in the Honors program, has been working in the laboratory of Dr. Sarah Reed since the fall of her junior year. She has been working under three graduate students: Mia Kawaida, Amanda Reiter, and Nicole Tillquist (Dr. Govoni's lab). Over the past four semesters, Caroline has learned about proper livestock handling techniques, sample and data collections, ultrasounds, administering medications, necropsying, and overall management and care of sheep. In the summer before her junior year, Caroline assisted on an antioxidant supplementation ram lamb growth study in the lab of Dr. Govoni, Dr. Reed, and Dr. Zinn which introduced her to sheep research.

Last fall, she started working in Dr. Reed's lab which examines the effects of ewe maternal nutrition on their offspring. This lab is a multigenerational sheep study looking at the effects of underfeeding and overfeeding ewes on the offspring. Caroline is interested in this project because it's a crucial component in many important real-world issues that humanity is currently engaged in, including climate change and accessibility to resources. The project is a collaboration between Dr. Reed who focuses on muscle growth, Dr. Kristen Govoni, who focuses on growth and development, and Dr. Steven Zinn, who focuses on endocrinology. Caroline has taken both Dr. Zinn's endocrinology class and Dr. Govoni's growth and metabolism class which expanded her interest in the study further. Caroline was able to design a project comparing the relationship between lamb frame size at day 0, 7, and 120 to ewe age, weight, and other body measurements. The objective of her project is to determine if under- and over-feeding ewes during gestation alters the strength of correlations between ewe frame size and lamb frame size measurements. Now, she is working on completing her statistical analysis to complete honors thesis. In addition to her own thesis work, she assisted with other on-going sheep projects such as LPS testing, colostrum collection, liver biopsies as well as working weekly shifts to care for the flock of sheep, clean pens, and help restrain for blood sample collections.

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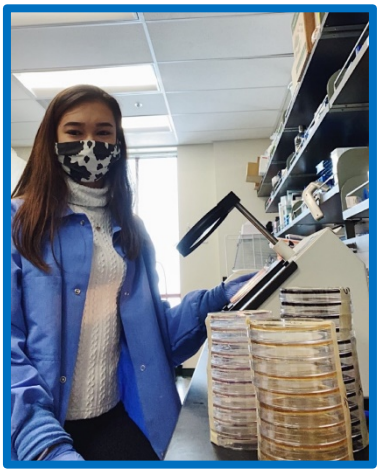
Caroline has greatly appreciated her research experience and exposure to the applicability of this type of study to the present world problems. She is in the process of interviewing for veterinary school to attain a DVM and hopes to pursue a career in mixed animal medicine with a specific interest in theriogenology.



Madeleine Vencek Enriquez, a junior Animal Science student, has been working in Dr. Dennis D'Amico's laboratory since September 2020. Madeleine joined Dr. D'Amico's lab in order to gain lab experience as well as take an immersive approach to learning dairy food microbiology. Madeleine has an interest in dairy and has been working at the Kellogg Dairy Center to learn the dairy industry from a management perspective.

Dr. D'Amico's laboratory focuses on enhancing the quality and safety of foods with a particular interest in dairy products. Madeleine began work in the D'Amico lab shadowing and assisting a Ph.D. student, Sulaiman Aljasir who is studying the effects of protective bacterial cultures on Listeria monocytogenes growth and virulence.

Madeleine has learned to make many types of microbiological growth media designed specifically to support the growth of different bacterial species. She was also trained to dilute and plate samples for the enumeration of target bacteria based on colony morphology.

This spring semester of 2021, she started working with the nematode *Caenorhabditis elegans* as an *in vivo* model to study the impact of protective cultures and probiotics on *L. monocytogenes* virulence. This involve counting to see how many live and dead worms that are present following treatments to track the different rates at which the worms die.

Being a part of Dr. D'Amico's lab has really given Madeleine a new-found interest in dairy food microbiology and is something she is now considering pursuing in graduate school. The laboratory has exposed her to a higher understanding of foodborne microorganisms and has given her appreciation to the systems in place to help keep us from being exposed to these pathogens.