Cultivate Spring/Summer 2018

Utah State University

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LETTER FROM THE DEAN

The years spent as a college student are life-changing, whether students enroll right after high school, begin after a period of working or traveling, or return to college after a hiatus of a few (or many) years. Many of our students now take classes online, or at campuses throughout the state. No matter how students access their courses we are proud to call them Aggies.

But the student experience comes at a price, and though USU consistently ranks among the nation’s most affordable universities, it requires an investment of money and energy.

Each year, students apply for scholarships awarded by the college. This spring, CAAS was able to award $630,989 in scholarships for the coming academic year. Many of you contribute to the scholarships that help lighten the financial load for many of our students. The majority of USU students work while they attend school, but increasing costs mean that it is rarely possible to “work your way through school” and emerge without debt. Helping to expand the college’s scholarship offerings is an investment in individual students and in our collective future.

It is a privilege to teach at USU and to work with students in our classrooms, laboratories, and at our farms. It is a task worthy of our best efforts, and everyone can play a part in helping students learn and get on their way to serving a world that needs them. ∆

Kenneth L. White
Dean, College of Agriculture and Applied Sciences; Vice President, Extension and Agriculture

CAAS ALUMNI COUNCIL PRESIDENT

It has been a great opportunity to be president of the College of Agriculture and Applied Sciences Alumni Council this past year. It has been an honor to serve with the amazing CAAS Alumni Council members and to associate with college faculty and staff, students, CAAS donors, and distinguished alumni. So many wonderful people are part of this great college.

I have discovered tremendous opportunities to be involved. At the beginning of the year, I attended the CAAS Experience Fair, an event that showcases career opportunities for students. The Alumni Council members had the privilege of networking with students, sharing realities we discovered in our own professional lives, and discussing possible career options.

Recently, CAAS Alumni Council members attended the Utah Farm Bureau CAAS Senior Send-Off event. Graduating CAAS seniors were honored with a dinner at the USU Alumni House, and it was exciting to visit with these accomplished and enthusiastic students. We look forward to seeing the new CAAS alumni make their own marks in the world and fulfill their dreams.

It has also been a pleasure for JoAnn and me to interact with students on a more personal level. Through an endowed scholarship, in memory of my parents, we have had the opportunity to visit with the recipients of our scholarship at the annual CAAS Awards and Honors banquet. Throughout the years, these students have expressed appreciation for the scholarship, as it allowed them to achieve their goals of graduating from college.

I invite all CAAS alumni to join our efforts in providing the best experience possible for these students. There are many ways to make a difference! If you are interested in learning how you can become involved, please contact Brandon Monson at brandon.monson@usu.edu or (435)-797-2208. GO AGGIES!

Robert Adams
CAAS Alumni Council President
THINK IT, BUILD IT
Some of the world’s great innovations have come from people tinker-
ing in garages. The same creative process is playing out in Logan dorm
rooms, basements and design labs as Outdoor Product Design and De-
velopment students turn ideas into realities.

DAIRY ROBOTICS & ECONOMICS
A new robotic milking system is at work at USU’s Caine Dairy. Controlled
temperatures, soft bedding, specialized diets, massages, and being
milked whenever they choose makes for relaxed and happy cows.

A CENTURY OF AGRICULTURAL EDUCATION
“Ag Ed” or any of the other names the program has been known by over
the last 100 years has grown well beyond plows and cows. A growing
global population, shrinking farmland, and changing climate mean prepar-
ing great high school agriculture teachers may be more important now
than ever.

80 YEARS OF FLYING AGGIES: LOVE AT FIRST FLIGHT
Helping young people fly for the first time brings Andreas “Baron” Wese-
mann’s thoughts back to his childhood dreams of being a pilot. For him,
it was love at first flight.

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ON THE COVER: Bronson and Elise Teichert and nephew Elias check out the
remodeled Aggie Creamery. Come see it for yourself this summer, or any time,
because there is no bad time for a scoop of Famous Aggie Ice Cream.
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Utah State University is an equal opportunity/affirmative action institution.
Alexis Cooper came to USU having had no experience with livestock or pageants, but she is getting more comfortable with both as a bioveterinary science major and the newly crowned Miss USU.

See her story on page 6.
Alexis Cooper didn’t set out to win the Miss USU pageant, but she did. Her goals in entering were to be part of an event at a school she has come to love, and to make the pageant’s theme, There’s More to Me, an opportunity to tell people some of her truth about being a young black woman who is part of a predominantly white student body. For her talent, Cooper wrote and performed a spoken word poem about some of her experiences.

The Utah native is majoring in bioveterinary science and completing minors in chemistry and biology, and plans to become a veterinarian, though opportunities to do undergraduate research are showing her other interesting paths and complicating the decision a bit. She applied for and received an Undergraduate Research and Creative Opportunities grant that will fund her summer research with Professor Juan Villalba, studying ways to make Medusa head, an invasive weed, more palatable to grazing cattle.

“It’s amazing to me I get to do research and work with animals,” Cooper said. “I love it, but I also love face-to-face interaction with people, so vet school is still very interesting to me.”

She credits her maternal grandmother, Irene Jenson, a USU alumna, who loved all kinds of animals for sparking an interest in veterinary medicine. Cooper’s mother, Angela Jenson, attended USU and thought vet school might be her path. Cooper said her mother soon realized she was overly empathetic when it came to animals and that vet school would not be a good fit for her. She took her love of science in a different direction and became a pharmacist.

Cooper said she gets her curiosity and love of science from her mother and her love of people from her dad, Myron Cooper, whose big and warm personality “apparently didn’t leave enough room in my brain for organic chemistry.”

Cooper, who did not grow up around livestock, said she was surprised at how much she likes large animals.

“I would like to be a mixed-practice vet (treating large and small animals),” Cooper said. “I am concerned about animal health and welfare, but I am also pretty practical and know that raising large animals comes with financial realities. I have so much respect for farmers and the time and energy it takes to be successful.”

She is also surprised at how much she loves USU. Cooper didn’t start her college career at USU. After high school, she had a full scholarship to Tuskegee University and made the move to Alabama to attend the historically black university. A family tragedy brought her back to Utah and she decided to finish college closer to home.

“I love USU,” Cooper said. “I didn’t think I would like it here. I’m black. I am not LDS. Nearly all my friends from high school who came here are married, some even have children. I just didn’t think this would be the place for me. But it’s so beautiful here! I grew up near mountains, but not this close. I love to hike, float the Oneida Narrows, just be outside. Plus, tuition is a great deal and we have a great animal science program. People are so open and I really feel like everyone is interested in my education and my future. We are all different in many ways, but it really feels like we are a big family. Our big Aggie family.”

Not everything in her life has been warm and inclusive though, and Cooper transformed some of those experiences and feelings into a spoken word poem she performed at the Miss USU Pageant.

Cooper said she lives her life—school, work, 13 years of piano lessons,
Congratulations to faculty members who are retiring from CAAS this year and to those who have joined the college's faculty in the past year.

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**JEFF BALDWIN,**
**NOVEMBER 1961–APRIL 2018**

Jeff Baldwin, a faculty member in the School of Applied Sciences, Technology and Education’s (ASTE) aviation technology program, passed away April 25, 2018, due to leukemia. He had been an important part of the aviation maintenance program since 2009, and had hoped to complete spring semester with his students.

ASTE Department Head Bruce Miller said, “Jeff brought a wealth of experience as an aircraft mechanic and pilot to our aviation technology program, and always had students’ best interests as his focus. He was a remarkable mentor who emphasized to his students the high level of responsibility entrusted to aircraft mechanics. We were fortunate to have known Jeff as a colleague and a friend.”

Read more about Alexis Cooper at caas.usu.edu/alumni/Cultivate and see her perform her poem, Who Am I? at tinyurl.com/AlexisCooper.
Members of the Ag Tech Club routinely gain first-hand knowledge and experience with agricultural machinery in their classes. But they are also working on restoring a donated tractor that is giving them technical experience and will support more learning opportunities for themselves and others.

The project is giving agricultural machinery or agricultural systems technology students at USU skills that will be beneficial to their future careers in the agricultural industry, according to Royce Hatch, club advisor and agricultural systems technology instructor.

“The agricultural industry relies on machinery to be fast and efficient,” Hatch said. “Our students are learning how to best take care of those machines, and that is so important for the world’s food supply.”

The tractor the students are working on in evening hours was donated by a generous farmer and Aggie alumnus from Tremonton. Once the tractor’s repairs are completed, it will be sold and the proceeds used to help support trips for club members to visit agricultural manufacturers and connect with future careers. The club will also donate part of the proceeds to the CAAS Alumni Scholarship where it will combine with other donations to endow scholarships for years to come.

Though Hatch is the club advisor, he says the real guidance on the project comes from students.

“The club’s primary goal is to teach leadership skills,” Hatch said. “Students work with other students to direct, teach and work as a team.”

Work got underway spring semester and will continue this fall, but restoring the tractor is not the only project the club is working on. Since its founding in 1970, hands-on projects have been the club’s focus. Currently, members are welding and repairing a Ford Model A, fixing the axle and transmission on a Ford 8N tractor, and painting a Ford 4600 tractor.

For more information about agricultural technology programs and the Ag Tech Club at USU, visit aste.usu.edu, and to learn more about the tractor and its eventual sale, contact: Royce Hatch, royce.hatch@usu.edu.
Kyleigh Tyler, a junior in the College of Agriculture and Applied Sciences, was among just 29 students in the country selected to attend the United States Department of Agriculture’s 94th Annual Agricultural Outlook Forum as a winner in the Student Diversity Program. Tyler received a week-long trip to Washington, D.C., to represent Utah State University at the conference.

The Agricultural Outlook Forum is the USDA’s largest meeting, and the Student Diversity Program is designed to expose students to future and current issues in agribusiness, scientific research and agricultural policy. Tyler, who is studying animal, dairy and veterinary sciences, said this is what drew her to applying to the program.

“I’m fascinated with politics and I was just really interested in going to D.C. and making a difference from a student standpoint in government,” she said.

Tyler was selected based on an essay she wrote about agriculture as a career. In her essay, she discussed how companies and individuals can use their skills and talents to help improve the agricultural condition of the United States.

“This doesn’t necessarily mean that everyone has to have an ADVS degree, or go to Utah State or even to a land-grant college,” Tyler said. “But it does mean that everyone should have agriculture in their sight as they work. I specifically talked about how business people, because I’m also minoring in business, can think about the repercussions of their actions on agriculture.”

Throughout the week, Tyler and the other students participated in discussions with some of the top agricultural officials in the country. Students discussed topics such as the farm bill, addressed growing concerns in agriculture, and were asked about their thoughts on current issues.

One of the biggest highlights for Tyler was meeting with Sonny Perdue, United States Secretary of Agriculture.

“I loved meeting Sonny Perdue,” she said. “It was cool for him to spend so much time with us and for him to really care about us as students. He was very engaged with us, and we all just sat in a room and bounced ideas off each other for 2 hours. It was fun because I felt like we were actually a part of discussions of policy.”

Overall, Tyler said this opportunity provided her with real-world experience and helped her realize the importance of students stepping up, getting involved and gaining experience to go along with their education.

“I was impressed by how important it is for us, as the next generation of agriculturists, to step up and take on these problems,” Tyler said. “The problems aren’t going to go away — our resources are going to keep being depleted and we need to be able to feed and clothe the entire population. It is important to step into that role and to educate the individuals who are coming up behind us so we can keep solving problems and be successful in agriculture.”

Kyleigh Tyler and students from across the country learned more about agriculture policy and met with U.S. Secretary of Agriculture, Sonny Perdue.
An iconic Aggie “Block A” now stands in the form of a topiary plant outside the Stan L. Albrecht Agricultural Sciences Building at Utah State University. The arborvitae trained in the shape of an “A” was donated by the Nelson family, and now stands near the memorial wall and London planetrees representing 11 agriculture students and their advisor who were in a van crash in 2005.

Jared Nelson was one of two survivors of the crash, his injuries disabling him to this day. Jared comes from a long line of Nelsons who completed their degrees from the College of Agriculture and Applied Sciences at USU. The Nelson family owns Bountiful Farms Nursery in Woodburn, Oregon, and specializes in topiary plants.

“It’s a kind of fun to have something from our farm be there on the campus because we’re attached to Utah State in many ways,” said Todd Nelson, who runs Bountiful Farms Nursery.

“It’s strengthened our business, it’s strengthened who we are as a family and it’s nice to have one of our plants that we worked hard to grow there at Utah State,”

When Todd’s children attend Utah State, he hopes they will maintain the family’s connection with the people who supported them during their time of need.

“They’re a great family,” said Larry Rupp, USU Extension ornamental horticulture specialist. “They’ve been great supporters of the College of Ag and Applied Sciences. They’re great folks.”

Rupp said USU students travel to the Nelson’s nursery on occasion for tours and it’s been a way to maintain connections over the years.

“It’s generous of the Nelsons to donate the plant,” Rupp said. “From my perspective it allows us to show our horticulture students a different way that plants are used in the industry. It required different management techniques than a natural plant would, so we thought we would add that to the diversity of the landscape around the building.”

The topiary “A” was planted by students in Rupp’s horticulture course as an Arbor Day project in April. According to Rupp, the new addition is part of the outdoor classroom around the building.

Jim Huppi, the campus landscape architect, said students and USU landscape operations will work together to maintain the topiary’s shape.

“In front of the memorial there is a pollarded bosk of trees and that’s also a joint venture between the students and landscape operations here at facilities,” Huppi said. “The topiary is to be something similar to that and it’s mainly to display what can be done with plants and some of the things that are being taught here.”

A site on campus for a second topiary gift from the Nelson family—a bull’s head—will be determined soon.

A LIVING TRIBUTE FROM AGGIE ALUMNI

BY BRONSON TEICHERT

The “A” topiary donated by Bountiful Farms Nursery is part of a memorial and living classroom. Photo by Larry Rupp.
A BRAND NEW LOOK AND THE SAME GREAT ICE CREAM

BY LYNETTE HARRIS

The Aggie Creamery in the C. Anthon Ernstrom Nutrition and Food Sciences Building has a brand new look, though the most important aspect of the place—21 flavors of Famous Aggie Ice Cream—remains the creamy, delicious treat it has been for decades.

The store closed for a few weeks beginning in mid-February, not the prime time for ice cream consumption in Northern Utah, although there is no wrong time to eat Aggie Ice Cream. The space got new countertops, cabinets, flooring, lighting and other décor, but the biggest difference is the way customers move through the store to get their ice cream and the flavored sodas that are new additions to the menu. Moving customers more efficiently will help reduce the waits that can leave people lined up out the doors at peak times.

The menu and photos from Aggie Ice Cream’s history are part of the new décor, and a new display is coming this summer explaining how the creamery starts its creations with milk from USU’s Caine Dairy and will showcase the process from cow to cone. △
Some of the world’s great innovations have come from people tinkering in garages and tearing things apart. Nike running shoes and their legendary waffle design were made in Bill Bowerman’s garage with an actual waffle iron. Alpinist and rock climber Yvon Chouinard learned blacksmithing so that he could craft better climbing gear and eventually went on to create the Patagonia brand.

The same creative process is playing out in Logan dorm rooms, basements and design labs as Outdoor Product Design and Development students turn ideas into realities. Although the program in the School of Applied Sciences, Technology and Education (ASTE) is so new there are no graduates yet, it has had a remarkable start. National and international interest in the program has only increased since Outside Magazine published a story titled, “Get a Degree in Gear at Utah State University” in its March 2018 issue.

“I pretty much grew up in my parents’ garage smashing and taking things apart,” said Andrew Deceuster, OPDD hard goods instructor. “I recall one of my biking friends showing off his expensive lightweight carbon fiber bicycle cranks. I thought they were great, but too expensive. I was sitting in high school physics class and knew if I drilled a hole here or there it wouldn’t affect the performance but would reduce the weight while being much cheaper than carbon fiber. I’ve always liked the whole idea of designing and redesigning and making new things.”

Deceuster is quick to add that not every great idea he and his friends tried panned out. For instance, the eight-man street bobsled made with skateboard trucks didn’t work out so well, but luckily nobody got hurt.
The drafting and shop classes Deceuster took in high school helped him find his passion for design. “In college I started out as a mechanical engineer, but it was too theoretical. I got into industrial technology and started making things,” he said. “I worked my way through college designing professional archery equipment. My biggest thrill was to see professionals using my creations and giving me feedback.”

Andrea Olsen, an OPDD adjunct instructor, grew up in Cache Valley loving both fashion and snowboarding. That led her to the Art Institute of Portland (Oregon).

“It is a fashion design school so I spent a lot of time learning about couture dress techniques, wedding dresses and children’s clothes, but they also had classes in outerwear and active wear,” Olsen said. “There was no outdoor product degree, but the three main companies that hired from the school were Columbia, Nike and Adidas. I knew I wanted to work at Columbia and got an internship there. Though I got a good education in Portland, I never got to work on ski jackets until after I graduated. In our program you jump right in designing and sewing prototypes.”

“An educational program has two customers: students and industry,” Deceuster said. “You have to get students in the door and train them so that industry wants them. The last thing we want is to train a student and have them not be able to find a job.”

This is one of the reasons why we work closely with an advisory board made up of people in the industry. We also bring in guest speakers to constantly keep the students and faculty up to date.”

Olsen adds that theory is important but actual practice coming up with an idea, sketching it out, researching your customers, and getting critiques from your peers are all skills you actually need to succeed. Concept-to-design teamwork is a huge part of success in the professional outdoor product design and development world.

“Yes, you have to know sewing,” Olsen said. “You may not be sewing as your final role, but as a designer you need to know how things work. It has to be more than lines on paper, things have to be designed to function.”

Riley Hughes, a third-year OPDD student, said before he started the program he didn’t even know how to thread a needle.

“It has taken a long time and some patience, but it can be done, even by me,” Hughes said.

He sewed and constructed a prototype ski jacket that won an award last year as part of a team that took first place in the Grow Utah Concept to Company competition. The Snow-C jacket incorporates a wireless phone charger into a ski jacket with integrated wiring to charge a cell phone.

James Clark is another student getting experience while in school. He’s working for a company that is currently in the basement of a Logan bakery. Infuze Hydration adds metered amounts of flavors or electrolyte mixes, such as Gatorade, into water from hydration packs (like Camelbacks), and it does it on demand, letting users control with each sip whether they want just water, or something more. With a couple of large contracts pending, Infuze could be expanding right out of that basement very soon. Similar to Deceuster, Clark said he started out in engineering but transferred to OPDD because he wanted something more hands-on.

Bruce Miller, head of ASTE, said the program has grown quickly and is still expanding and adding faculty. Students are learning to produce many types of hard goods and soft goods; nearly everything other than off road vehicles, though designing accessories and specialty parts for those is certainly possible.

The first class of OPDD graduates won’t finish their degrees until 2019, so the advisory board is an important connection with industry, Miller said, and future alumni will also play important roles in shaping the program.

“We have partners such as Altra and Handi Quilter who have made the sewing lab possible,” Miller said. “We also have more than 100 internships lined up for our students. Like many great companies and businesses, we are sort of starting out in a garage and increasing capacity as we go along.”

Among the companies that students have landed internships with are Helly Hansen and Patagonia. Closer to campus, WaltUSA, an international sock manufacturer based in Logan, offered one design intern position. Then after reviewing OPDD students’ portfolios and resumes, they created six intern positions instead.

“The faculty come with a lot of experience,” Olsen said. “We want to stress that we are a design program, not an outdoor recreation degree. We’re creating hard goods that require practice in machining and casting, plastic processes, 3D printing, laser cutting and computer aided design.”

“By understanding how a thing is made, students can design it to be more economical or function better,” Deceuster said. “It doesn’t make sense to design a million-dollar widget that will never make it to market. Nothing gives you more satisfaction than to see someone use the gear you designed.”

Left: Outdoor Product Design and Development students are designing and building gear and clothing and finding success in a major so new that it doesn’t yet have any graduates.
NEW MILKING BARN AT USU CHANGES MORE THAN EQUIPMENT

BY BRONSON TEICHERT

The United Nations projects the world’s population reaching close to 9.7 billion people by the year 2050. As the consumer population continues to rise, farmers are turning to technology to produce more food with fewer resources.

“The average farmer is more efficient today out of necessity than we were 30 to 40 years ago,” said John Wallentine, Utah State University Caine Dairy manager.

The facility used by the USU dairy program, until now, was more than 30 years old. A new barn with robotic features was implemented into the dairy program just over 2 months ago. The addition of a robotic milking system means cows are no longer milked on a schedule.

“Within the first week we had some cows going back two, three, four times a day because it was a positive experience,” Wallentine said. “In the course of their day, we like to see a cow doing one of four things: eating, drinking, resting is very important, and being milked.”

Each cow wears a transponder connected with the dairy computer system. Wallentine said when a cow walks in to be milked, the system reads the transponder and recognizes the individual animal. Lasers scan the udder and correctly position the robot for milking. After each session, the robotic milker sanitizes itself for the next cow in line.

Wallentine said the robotic system tracks details of how much the cow eats and rests. During milking, components such as fat and protein content are recorded for each cow, along with any abnormalities in the milk. As data become available for each cow, adjustments can be made, creating a more efficient and cost-effective system.

“The purpose behind this is to expose students and other producers to modern technology,” Wallentine said. “Our mission here at the farm is to help facilitate the College of Agriculture and its mission of teaching, research and Extension.”

According to Dillon Feuz, the Department Head of Applied Economics, the new dairy facility is the best way to fulfill USU’s mission of teaching, research and Extension for future and current dairy farmers.

“We’ve had a good producing dairy herd here for years, but now we’ll be able to document the changes as we’ve come into this fully enclosed facility,” Feuz said. “As a university we can
be conducting research and helping producers to know whether or not that’s a good decision for them to make.”

The new barn saves money in multiple ways according to Feuz. For example, the indoor facility prevents the sun, rain or wind from damaging expensive feed.

“It’s designed for cow comfort,” Feuz said. “The research shows the more comfortable a cow is, the higher the milk production.”

The cattle have access to year-round controlled temperature, soft bedding, a specialized diet, massages, and they go to be milked whenever they choose.

“At first people look at robotic milking as a capital labor trade-off, we’re just trading machine for a laborer,” Feuz said. “If that’s the only trade-off, it would take quite a while to pay off one of those robotic units because they’re pretty expensive.”

According to Feuz, the savings and profitability doesn’t stem from less labor, it comes from allowing the cows to free flow in the barn.

“They’re milking themselves at more than three times a day rather than only twice,” Feuz said. “Each cow is dictating how often they go. You typically see an increase in milk productivity per cow and overall for your herd.”

To watch the new equipment in action, see the story on USU’s student-produced news channel, A-TV News tinyurl.com/dairy-robots.

Above: A robot pushes feed to cows at the newly automated Caine Dairy (top). Cows are milked when they choose by robots, and milk is analyzed and measured as it flows into the first tank in the system. Photos by Dennis Hinkamp.
Chocolate. Names of few foods trigger as many thoughts, feelings, and cravings. Dark, milk, bittersweet, creamy, smooth... And beginning this fall, chocolate becomes a delicious and intriguing new venture for Utah State University’s food science program with the opening of The Aggie Chocolate Factory.

“You won’t be able to swim in a chocolate river like in Willie Wonka’s factory, but you will see chocolate making from bean to bar,” said Dave Irish, who knows about sweet treats as manager of the USU Creamery and Aggie Ice Cream.

The workings of The Aggie Chocolate Factory will be visible behind a glass wall in a space currently under renovation in the restaurant area of the Aggie Blue Square complex just west of the Maverik Football Stadium. It will be an unusual combination of public space and working laboratory.

“The factory will serve several purposes, but it is first a laboratory for students in food science,” said Professor Silvana Martini. “It will also facilitate research and outreach to the confectionery industry. This will be the only chocolate factory at a university in the western United States, and people in the industry are excited about the opportunities for short courses and working with us to produce certain flavor profiles.”

Martini has taught a general education science course in chocolate for the past 3 years, and students find out on the first day of class that chocolate is much more than a bite of something sweet—which is sometimes shocking to students who managed to get in the class and thought it was going to be all about tasting chocolate.

“The teaching part really excites me because of the opportunities we will have to teach students about the complexity of making chocolate,” Martini said. “When students think about making chocolate, they typically think, ‘Ok, I buy some chocolate at the store. I melt it and put it in a mold, or I dip a truffle.’ Most of them don’t realize all the complexity of finding the right bean, roasting the bean with the right process to get the flavor profile that you want, processing it, aging, tempering, and molding it.”

Martini said many students in the general education chocolate class are not food science majors, but if any student is especially interested in the complexities of chocolate there will be opportunities for Special Problems credits for individual research projects with faculty mentors.

The factory will be capable of working in batches as small as a single kilo of cocoa beans or up to as much as 250 kilos, and all beans will be sourced from sustainably farmed operations that receive fair trade prices for their product.

Steve Shelton, Aggie Creamery business manager, said artisan chocolate making from bean to bar is much like the artisan cheese or craft brewing industries in that small batches allow careful control of flavor profiles and exploring the nuances that different ingredients and processes produce.

“Most artisan chocolate makers are involved in ethically sourcing cocoa beans from small farms or co-ops and working directly with producers,” Shelton said. “They invest time and money to help farmers develop ways to grow and process their crop and give them an outlet to sell it for fair prices that provide opportunities that change their families’ lives.”

In addition to operating as a laboratory, The Aggie Chocolate Factory will produce the chocolate used in Famous Aggie Ice Cream. Large bars of processed and aged chocolate will also be sold to candy makers, and a new Chocolate Café (part of the operation’s second phase) will sell chocolate confections, pastries and chocolate drinks, including a line of high-end chocolate bars. △
When the Smith–Hughes Act passed the U.S. Congress in 1917, providing funds to train high school agriculture teachers, agriculture was a primary occupation among Utahns. But the world was changing. The infusion of federal funds to train and employ teachers to prepare people “who have entered upon or who are preparing to enter upon the work of the farm,” came while World War I still raged in Europe and industrialization was pulling people away from farming.

New technologies and methods were changing food production, and people who formerly grew much of their own food left the farm, meaning farmers had the task of producing enough food for everyone. The war put a spotlight on food insecurity and people turned their yards into Victory Gardens. Given these themes—the rise of new technologies, interest in local food production, war and global events impacting people in the U.S., and farmers trying to meet the challenge of feeding more and more people—it seems that the more things change, the more they stay the same. Agriculture adapted then, and continues to change to meet today’s challenges and opportunities.

“No Teacher Training Allowed”—Utah Legislature

When the Smith-Hughes Act passed, the Agricultural College of Utah had been the site of research and preparing people for work in agriculture for 29 years. The school offered courses in horticulture, animal and dairy sciences, agronomy, economics, and related subjects, but there was a major obstacle in the plan for Utah’s land-grant school to take on training people to become high school agriculture teachers: the state legislature had mandated in 1907, that the “AC” was to teach agriculture, industrial arts, and economics, and all teacher training was restricted to the University of Utah.

There were people already teaching agriculture in Utah high schools at the time, but the route to the profession was not simple. USU agricultural education Professor Brian Warnick recalls how his great-grandfather, Adolphus Peter Warnick, wanted to teach high school agriculture, so he (and others like him) graduated in agricultural studies from the UAC and then had to attend the University of Utah for courses in pedagogy in order to qualify for a teaching certificate. At the start of the new program, faculty from the UofU traveled between Salt Lake City and Logan to provide pedagogy training—which was no beautifully paved and quick journey—or stayed in Logan under short-term agreements, until 1927 when the state legislature expanded UAC’s mission to include teacher training.

Ongoing teacher education has always been part of the profession, but where online learning or attending a short course are now the norm, agricultural education teachers once made the trek to Logan for the annual farmers’ encampment on the Quad, sleeping in tents and learning the latest methods during the day. In his 1965 book The Early Development of Vocational Education in Agriculture in Utah, L.R. Humpherys, who was then a USU emeritus professor and former State Supervisor of Agricultural Education in the Utah Department of Public Instruction, heralded “One of the important major professional improvement devices used” since 1918 by the state supervisor’s office: the “Monthly News Letter.” With the speed of information today, it is difficult to relate to a single monthly newsletter being groundbreaking.

It’s Science!

In the early days of agricultural education, Americans were interested in scientific improvements, though some were slow to embrace change. It was also the early days of 4-H, and agricultural education was closely tied with Corn Clubs for boys and a little later, Canning Clubs for girls.

“Typically, a boy in a Corn Club would negotiate with his father or another farmer to let him have his own plot to grow new varieties and use new techniques,” Professor Warnick said. “Then, when the boy’s plot, and it was always boys, out produced his dad or grandfather’s plots, they got interested in trying new hybrid varieties too.”

That sort of thing can still happen when a student’s Supervised Agricultural Experiences, which have long been a critical part of successful agricultural education programs, meet older methods. But “ag ed” or any of the other names the program has been known by over the past century, has long outgrown being only about growing a crop or raising a calf.

“It’s not about cows and plows,” said Assistant Professor Tyson.
Sorensen. “Ag ed is drones, satellite images, cloning, soil science, natural resources, business, public policy, and agriculture is woven into many other industries and other disciplines. Agricultural education is really the applied science. We put concepts students may have learned in other classes, that maybe didn’t quite make sense to them, into context. So, for example, we take the x, y and z formula someone didn’t quite grasp in math and use it to build something. Then it makes more sense.”

When Gary Straquadine was a high school agriculture teacher 30+ years ago, the curriculum was ruled by textbooks. “We worked our way through units in sets of textbooks,” Straquadine recalls. “There were sets for the animal area, plant area, ag mechanics, etc., and those drove the curriculum.”

Straquadine, who currently serves as interim chancellor at USU Eastern, recalls various iterations agricultural education has been through during his career. In the 1990s there was a push to certify agriculture teachers to teach biology so ag classes qualified for science credit.

“And we built curriculum so science teachers could teach agriculture,” Straquadine said. “That included a whole other group of teachers who were cross-teaching agriculture for science credit.

Utah was quite progressive in doing this and a lot of states have since used our model.”

**Good-bye to Going by the Book**

As the importance of textbooks waned, replaced by information sources that could more easily keep up with rapid advances in knowledge, it became easier and more important for teachers to customize curriculum to the needs and experiences of local communities.

“There are still standards from state offices of education, but there is enough latitude that how I would choose to teach a principle in my community really depends on agriculture in my area,” Straquadine said. “As you go north to south and east to west, there are big differences in agriculture, and that is just on the production side. So they may talk about a concept as part of dairy production in Smithfield, but in Carbon and Emery counties they focus on natural resource issues, and in Sanpete County they talk about turkeys.”

Warnick pointed out that agriculture education programs are rapidly growing in urban and suburban areas where students usually have no farm experience and are just looking for an interesting class. Then they find themselves drawn in by learning about where their food comes from, and interested in the business skills they learn. In some cases, as Straquadine put it, they take an agriculture class because they are a couple of generations removed from the farm and have romantic notions about what they think agriculture is or what they think it should be.

“Then students begin to understand how you look critically at data to make decisions in agriculture, about how international trade is involved, and how agriculture to feed the world is not just a backyard enterprise,” Straquadine said. “They learn that agriculture is a major economic and political policy undertaking.”

Associate Professor Becki Lawver said there are great USU alumni teaching agriculture across the state (and beyond) who supervise student-run greenhouses, teach animal science using snakes or pets, and even lead students in caring for school farms and gardens.

Straquadine said, “Exciting agriculture programs are always led by highly competent, excited ag teachers. When you look at the research, it’s not the money, the size of the school, whether it’s rural or urban. What success comes down to is the teacher.”
So we must continue to train teachers for excellence in agriculture content, but also in pedagogy."

He added that while technology is important, it must be incorporated but not “worshipped” because it can’t do everything.

“It doesn’t matter if someone can control a tractor or run robots from their phone if they don’t know why they plant or manage crops a certain way, where they are going to sell their product, and what the return on investment has to be for technology on the farm to pay for itself,” Straquadine said.

Periodically, a school board member or legislator suggests that agricultural education is so effective and important that it should become a required class for all high school students. Straquadine disagrees, because once a subject is required, a more rigid set of standards will restrict the curriculum.

Likewise, when STEM became the hot acronym in education, many people said it should be STEAM with an “A” for agriculture. Warnick disagreed because that change would undermine the fact that science, technology, engineering and math are all components of agriculture.

Sorensen said he is optimistic about the future of agricultural education because people are realizing that agriculture is tied to many of the big issues societies face.

“Issues like having nine or ten billion people on this planet by 2050, which means we have to double our current food production in that time,” Sorensen said. “And how will we do that? How do we step up production worldwide? It will take understanding technology and genetically modified organisms, and considering how we do these things and protect the planet so we can continue to feed people, and with a changing climate and limited water. They are complex problems, but if solutions don’t start with kids engaged in junior high and high school agriculture programs, who is going to tackle them in a holistic way?”

His sentiments echo those in the preface of Humphrey’s 1965 book, which says of agricultural education, “It truly lays a solid foundation for better tomorrows which can come about only through devising better ways of dealing with the good earth by those who choose to be closely associated with it.”△
When Scott Fuhriman started at Utah State University in the early 1970s, he had no idea where his journey as an Aggie would lead. Through his generosity, hard work and dedication, Scott has created a legacy of giving that has helped and inspired those around him.

As a student at USU, Scott pursued a degree in agricultural systems technology, and later he and his brother took over the family farm in Pocatello Valley, Idaho. The farm has been in his family for over 110 years and produces wheat, alfalfa, and some specialty seed crops.

In September 2005, tragedy struck the Fuhriman family. Dusty, Scott’s only son, lost his life in the van accident that took the lives of eight students and one faculty member in the College of Agriculture and Applied Sciences. It was this devastating loss that first inspired Scott to give back to the college. He took the money he had saved for his son’s education and established an endowed scholarship in Dusty’s name. Several years later, Scott also had a lab in the Stan L. Albrecht Agricultural Sciences Building named for his son – The Dusty Fuhriman Soil Science Student Laboratory.

Shortly after the loss of his father, N. Dean Fuhriman, Scott endowed a scholarship in his father’s name. His generosity and support has also inspired those around him to give back to the college. Thanks to his encouragement, Scott’s uncle, Carl Fonnesbeck, also started an endowed scholarship for CAAS students.

This year, Scott endowed the new Jolley and Hatch Scholarship as a tribute to former professors Darwin Jolley and Keith Hatch, long-time faculty members in agricultural education and machinery. Scott chose to honor them because of the tremendous impact each of them had on students through decades of teaching. The scholarship is for students pursuing degrees in agricultural education and machinery.

“They loved their students and helped keep a lot of good young men in school who might have otherwise washed out before they learned skills that helped them in their careers and throughout their lives,” Scott said. “This scholarship is for students who are preparing to become teachers, who can spread that kind of influence to many other young people.”

Scott has served as a member of the CAAS Alumni Council since 2014, including a year as the council’s president. Knowing that not everyone who would like to support students in the college has the sum of money necessary to establish an endowment, Scott came up with the idea for the CAAS Alumni Scholarship. This scholarship makes it possible for CAAS alumni to donate any amount of money, no matter how big or small, to build an endowment that will make a difference in the lives of students.

Brandon Monson, CAAS executive director for development, said the Alumni Council Scholarship extends the joy and benefits of donating to everyone.

“Scott provided great leadership on the alumni council and this idea immediately gained the support of all the council members,” Monson said. “Endowing a college scholarship is a wonderful way to help bright and dedicated students, but it just isn’t possible for everyone to create their own endowment. This scholarship gives alumni and friends of the college the opportunity to leave a lasting impact of their own.”

In recognition of his dedication to both the college and university, Scott was recognized as USU’s Alumnus of the Year in 2013. At this spring’s CAAS Senior Send-off Dinner, he was surprised to receive special recognition from the college for his service and dedication.

“I FEEL STRONGLY ABOUT BEING INVOLVED TO HELP THE STUDENTS BECAUSE STUDENTS AND ALUMNI OF THE COLLEGE OF AGRICULTURE AND APPLIED SCIENCES STAND OUT FROM THE CROWD. CAAS GRADUATES ARE GOOD, HARD WORKERS WHO CAN SHOW OFF THEIR ABILITIES IN THE WORKFORCE.”

Scott is a true and loyal friend to the College of Agriculture and Applied Sciences. Thanks to his kindness and generosity, he has helped countless students achieve their dreams of receiving a higher education.
Our son has ADD (without the H) and audio dyslexia. He learned to read lips just to get through school. When looking for a university for our son to attend, we first visited the disabilities departments to see what help they could provide. USU was one of two schools that was willing to tell us what services they would provide for our son before he actually paid money to attend the school. He chose to attend USU in the College of Agriculture and Applied Sciences. We never regretted it. USU made good on its promises. The care that teachers and the disabilities office gave him in class, as well as after hours, was amazing. They helped him to be successful. Our son now has a master’s degree in biotechnology and is doing work in cancer research.

— Arlo and Linda Ames

“We are passionate about the dedication of the faculty and the commitment of students to excellence.

“WE KNOW THAT EVERY DOLLAR HAS AN IMPACT, AND WE FEEL IT IS IMPORTANT TO GIVE BACK.”

Now it’s our turn to create opportunities for others.

— Ken and Cindy White

As USU alumni, we very much appreciate our education, life’s experiences, and a career with USU Extension, extending the university’s agricultural educational resources to the people of Utah. As college students with a young family, we continually struggled to pay for tuition, housing, food and medical care. With part-time jobs, frugal living, help from family, educational grants, and college scholarships, we received our degrees. USU, lifelong learning, family, and service have brought great richness to our lives and the lives of our children.

— Jody and Cindy Gale

“AS PAST RECIPIENTS OF FINANCIAL HELP, PAYROLL DEDUCTION HAS BEEN A GREAT WAY FOR US TO HELP STUDENTS BY GIVING BACK TO THE COLLEGE OF AGRICULTURE AND APPLIED SCIENCES.”

CAAS ALUMNI SCHOLARSHIP SUPPORTERS

Thank you to these donors:

Robert and Joann Adams  Troy Cooper  Cara Galleni  Randy and Shelly Parker
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Love at First Flight

I remember lying on the cool grass on a warm summer day as a child watching billowy clouds drifting by and birds soaring high in the sky. Airplanes with the big red "W" on the tails were on their way to landing at the Salt Lake City International Airport, and to me were Wesemann Airlines, not Western Airlines. I dreamed of becoming a pilot someday, but didn’t know how that would ever be a reality for me. In 1981, I joined Civil Air Patrol and found my path to flying, where I received a flight scholarship and soloed an aircraft for the first time in 1985. After graduating from the United States Air Force Academy, I achieved my dream and earned my silver Air Force wings in 1993, having flown for over 2,800 hours over five continents around the globe. After my military retirement, I was hired to direct Utah State University’s professional pilot program, where I now help the next generation of aviation professionals achieve their dreams.

Many people do not know we have an aviation program at USU, or that the program has been at USU since 1939. Starting as part of the Civilian Pilot Training Act of 1939, USU began teaching pilots and aviation mechanics in preparation for service in the U.S. Army Air Corps. As part of the land-grant mission, USU professors traveled around the state, and in 1968 started flying to deliver courses to remote areas. Many emeritus and current professors were part of our “Flying Faculty” before the program ended in 1995.

The aviation maintenance program offers the full Airframe and Powerplant (A&P) certification, and operates the only engine test cells on a university campus in the nation. This unique engine lab is used by the College of Engineering, industry partners, and even NASA to test engine designs and batteries for thermal runaway (when a temperature increase causes a change that creates more heat, often with destructive results). In 2006, USU purchased its current fleet of Diamond Aircraft, and student pilot numbers have grown by 50 percent in the past 3 years. With the addition of the
helicopter program in 2017, USU Aviation Technology now has 28 aircraft, including a TBM-700 for a turbine transition course. New to the program in 2018, is a state-of-the-art CRJ-700 flight simulator, with 200 degree wrap-around 4K visuals to prepare our students for careers in the aviation industry.

The aviation program is now flying higher, with a new Master of Aviation Science degree, providing a path to advanced education wherever aviation professionals live and work, with a 100 percent online degree in aviation safety. The newest program in aviation technology is Unmanned Aerial Systems (UAS), or the more commonly used term, drones. This new minor is designed for students in landscape architecture, natural resources, plants, soils and climate, business, or for any student interested in becoming a certified FAA Remote Pilot. Having worked with the large scale UAS in the Air Force, I know this emerging field will have exponential growth in the next decade. Over 100 students enrolled in UAS courses in its first year.

Aviation is in my soul, and I often say I have never worked a day in my life because I have the best-paying hobby in the world. Although I am not primarily an instructor pilot at this time in my career, seeing our students solo, earn their certifications, and land jobs in their profession, is almost as satisfying. Helping young people fly for the first time brings me back to my childhood. For me, it was love at first flight! ∆
*All proceeds benefit CAAS student scholarships through the Utah Agricultural Leadership Endowment.

SATURDAY 9.22.18
3 hours prior to kickoff

CRAIG ASTON PARK
1307 N. 800 E., Logan, Utah

Ticket Information
AGBBQ.USU.EDU