The Poultry Science Center was built in 1985, and since then many changes have taken place in the poultry industry. Over the last few years, several renovation projects have taken place at the Center to keep pace with the advancing industry.

Improvements include upgrades to the feed mill and several broiler rearing houses. The Center now has five upgraded broiler houses complete with modern tunnel ventilations systems and computer controllers, insulation, water systems and new modular pens that will hold up to 2,500 broilers per house for rearing under industry-type conditions. New research laboratory space has been created and teaching classroom spaces have been upgraded with new electronic media capabilities. Additional renovation plans are in the works for rearing space for breeders, turkeys and laying hens. Renovations to hatchery and processing and products areas are underway. See more photos on page 8.

POS Center renovations increase research capacity

From the team behind Poultry 101 comes an in-depth workshop, Poultry 201 - Marination, Batter and Breading. This two and a half day industry course covers all aspects of marination, batter and breading systems for poultry products. Topics will include meat chemistry and quality, consumer and market demands, marination systems, sensory evaluation, equipment use and maintenance, batter and breading systems, cookery methods, and food safety.

This workshop will be taught by Poultry Science faculty as well as technical experts from the industry such as Kerry Ingredients, ICL, Marel, Formtech Solutions, IsoAge, and Foss. The course includes a combination of educational seminars and hands-on laboratory exercises to demonstrate the use of functional ingredients, equipment and troubleshooting when formulating further processed poultry products.

The next Poultry 201 course will be held at Texas A&M University on Oct. 14-16, 2014. For more information about the course and to register please visit http://www.poultry201.com.

Poultry 201 Workshop to be held at Texas A&M

Mark your calendars for the annual Poultry Science Weekend planned for Oct. 17-18, 2014. Poultry Science Weekend is a great opportunity for current and former students, staff and faculty to get together for food, fun and fellowship. The weekend will kick off with the traditional Steak Fry dinner on Friday evening at Brian Bachmann Park in College Station. A skeet shoot will be held on Saturday morning followed by a football game watching party. If you would like more information or would like to sponsor the event, please visit http://posc.tamu.edu.

2014 Poultry Science Weekend set for October 17-18
Welcome to Texas Aggie Poultry

A message from the Department Head
By Dr. David Caldwell

Howdy from the Department of Poultry Science at Texas A&M and welcome to Texas Aggie Poultry. This newsletter showcases our academic, research, and extension programs. A big thank you to Dr. Craig Coufal for taking charge of creating the newsletter and overseeing distribution to former students and friends of the department.

The department is headed in an exciting direction. Undergraduate enrollment is up approximately 15 percent this fall and the number of Poultry Science doctoral students has doubled since this time last year. During the past academic year, the department graduated 53 students with a bachelor’s degree in Poultry Science, a record for our undergraduate program. Our graduates continue to receive attractive job offers for employment in the commercial industry within Texas and throughout the U.S. Thanks to those of you in the commercial industry who continue to look to our graduates to fill vacancies within your operations.

We have two new faculty members joining the department. Dr. Audrey McElroy, who has spent the last 15 years in a faculty position at Virginia Tech, will join us Sept. 1, 2014, as a Professor and Extension Specialist. Dr. Giri Athrey, currently completing postdoctoral work at Texas A&M, will fill our vacant avian genomics position on Jan. 1, 2015. We look forward to the expertise they will each bring to our program.

Our research and extension programs have been very productive over the past year. Learn more about these activities and the accomplishments of our faculty, staff and students in the pages to follow. We hope you enjoy the new newsletter! Please don’t hesitate to contact us if we can help you in any way.

Poultry Science offers certificate program for continuing education

The Poultry Meat Production Certificate Program is a non-transcripted, online continuing education program. This program is designed for industry people wanting to increase their knowledge about poultry meat production. The online courses include General Avian Sciences, Poultry Meat Production, Breeder and Hatchery Management, and Animal Waste Management. All courses are taught by Poultry Science faculty members, and upon completion a certificate will be administered.

Due to the strong international need for these types of continuing education courses, the Production Certificate will be offered in Spanish starting in the Fall 2014 semester with the General Avian Sciences class and will be expanding to the other courses the following semesters.

We have also received significant interest in the program from industry personnel looking for continuing education courses related to the poultry industry but have little processing and food safety background or for those personnel that need some extra education for management type positions. Based upon these needs and the success with the Poultry Production Certificate Program, the department will soon offer a Processing Certificate Program. This Processing Certificate will include four courses (General Avian Sciences, Poultry Processing, Further Processing, and Food Safety/ HACCP). Once completed, the student will receive a Processing Certificate. These courses will be offered starting in 2015, so if you are interested, please contact the department.

Time for completion for these certificates program is a minimum of one year to a maximum of two years depending upon timing of the student. For more information visit http://posc.tamu.edu/agenciesindustry/poultry-meat-production-certificate/
2014 Poultry Institute for Youth

The Department of Poultry Science hosted the annual Poultry Institute for Youth on June 15-17, 2014. The purpose of this program is to give high school students with an interest in learning about the poultry industry a chance to gain first-hand knowledge. This year, 29 students from across Texas were in attendance.

During the Youth Institute, students were able to participate in activities highlighting many of the opportunities available through the department as well as the poultry industry. Several Poultry Science faculty and graduate students provided lectures and hands-on activities on topics such as broiler processing, egg sanitation, anatomy, immunology, carcass debone, embryology and further processed products. The students also had the chance to visit Feather Crest Farms’ egg production facility as well as Sanderson Farms’ broiler processing plant.

Dr. Christine Alvarado instructs students about further processed poultry products in a hands-on demonstration.

BBQ Camp

The 2014 Barbecue Summer Camp was held June 6-8 at the Rosenthal Meat Science and Technology Center on the Texas A&M University campus. Dr. Christine Alvarado, Dale Hyatt, left, and Mickey Speakmon, right, from the Department of Poultry Science taught attendees about the poultry industry and how to make barbecue chicken. They also made jalapeno cheese sausage, beer can chicken, mayonnaise rubbed drums, breast and dark meat fajitas, and orange marmalade Siracha chicken wings.

Brazilian scientists welcomed

The Department of Poultry Science hosted two delegations of scientists, faculty and students from Brazilian research institutions and universities in July. The purpose of these meetings was to become better acquainted with each other’s programs and discuss ways to enhance international experiences for faculty and students in both countries.

TPF Convention

Students from the department’s Aggie Leadership Council and several faculty attended the Texas Poultry Federation Convention in San Antonio on July 24-26. The students assisted with the Texas Allied Poultry Association scholarship auction on Friday night. Funds generated from this auction are used to support scholarships for students studying poultry science at Texas A&M University and Stephen F. Austin University.
Research Highlights

Combatting aflatoxins in animal feeds

By Justin Fowler, Ph.D. graduate student

Ethanol has received considerable attention as a potential source for a renewable fuel source in recent years. As a result, the price of corn for animal feed has increased and the use of fermentation co-products, such as distiller’s dried grains and solubles (DDGS) has become more common in the animal feeding industry. Any mycotoxins contained in grain used for fermentation will remain in the co-products and eventually end up in the feed. In fact, previously published research suggests that fermentation and distillation may actually increase mycotoxin concentrations up to three-fold in corn-derived co-products.

The use of non-nutritive, clay-based adsorbents has proven effective at reducing the toxic effects of mycotoxin contamination in various animal species. These various aluminosilicate and bentonite clays have been shown in vitro to bind aflatoxins with relatively high affinity. Once bound, aflatoxins can pass through the gastrointestinal tract unabsorbed, thereby reducing the toxic effects. The inclusion of such clay based binders in animal feeds has been shown in vivo to have a significant protective effect against aflatoxicosis in a variety of species.

To evaluate the efficacy of various clay-based additives as a viable strategy for detoxifying aflatoxin contaminated diets in animal feeds, academic trials typically use concentrations higher than would ever be present in real world feeds (i.e., most data are collected within the 1,000 to 2,500 ppb range, when the legal action level is 20 ppb). This is because main effects for aflatoxins on production parameters (weight gain and feed conversion) and relative organ weights (principally the liver and kidney) are unlikely to be seen at concentrations less than 1,000 ppb in a typical three-week, battery cage broiler trial. So, while feeding aflatoxin at concentrations greater than 1,000 ppb may make observing statistically significant results more probable for researchers, such trials are subjecting clay-based feed additives to levels of aflatoxin that are 100 times or more what would be encountered in a "real world" setting.

The goal of research in Dr. Chris Bailey’s lab has been to evaluate common biological assays for measuring aflatoxicosis in broilers (such as growth and organ weights) along with variables such as aflatoxin residues in the liver, serum biochemistry of liver enzymes, or hepatic gene expression, pursuant to identifying a more sensitive biological assay that will allow three-week broiler trials to be conducted at aflatoxin concentrations less than 1,000 ppb. This research will help us better understand how aflatoxicosis manifests in broilers, as well as help us evaluate the efficacy of smectite clays for their ability to ameliorate aflatoxicosis.

Electron Beam Center certified by USDA-APHIS to treat agricultural produce

The electron beam (eBeam) facility associated with the National Center for Electron Beam Research in the Department of Poultry Science has been certified by the USDA-APHIS to treat agricultural produce for import, export, and interstate shipments. This is only the second such facility in the United States that has been approved to use this technology. The eBeam Center promotes the use of this technology to empower private enterprises to build businesses around this technology to enhance job creation in the U.S. and to enhance U.S. global competitiveness. Commercial processing of imported foods from Asia has begun.

Dr. Suresh Pillai, professor in the Department of Poultry Science and Director of the National Center for Electron Beam Research, was recently invited by the International Atomic Energy Agency to Vienna, Austria to deliver presentations on eBeam technology. One of his presentations centered around the use of eBeam technology to improve global food safety and security, while the other presentation was on the use of eBeam technology for environmental applications.

In addition, several Poultry Science undergraduate students are gaining experience with eBeam technology while working at the eBeam Center. Additional information about the eBeam Center can be found at http://ebeam.tamu.edu.
LED a promising alternative light source for poultry

by Dr. Gregory Archer  
*Assistant Professor and Extension Specialist*

The poultry industry continually looks for ways to improve efficiency and reduce costs. Lights to illuminate layer and broiler barns are a significant contributor to electrical usage on poultry farms. The traditional lighting sources such as incandescent and high pressure sodium bulbs are less efficient, and in the case of incandescent bulbs, are being phased out of production. This has led to an increased interest in and use of compact fluorescent (CFL) and light emitting diode (LED) light sources. Light can greatly impact bird production, behavior, health and overall well-being, thus making it a critical factor in poultry production.

We have been actively studying the effects different types of light sources have on egg production in laying hens and growth in broiler chickens. Several projects have been conducted to compare not only the different types of lighting equipment, but also the impact of light placement, intensity and spectrum (color). We have observed decreases in stress and fear in birds reared under LED lighting in both layers and broilers. We have also documented increased production levels in both types of birds with LED bulbs compared to CFL and incandescent bulbs. These preliminary trials indicate that LED lighting has the potential to save poultry producers money on electrical costs and possibly increase revenue through improved production.

We will continue to explore how LED technology can be utilized to optimize the rearing environment as well as enhance bird welfare.

Market Poultry Production and Selection Workshop draws large crowd

The 2014 Market Poultry Production and Selection Workshop was a huge success and attracted the largest audience to date in the history of this workshop.

The event was held on May 31 at Louis Pearce Pavilion on the campus of Texas A&M University and was attended by 279 youth, parents, and 4-H and FFA advisors.

This annual workshop is held in the late spring or early summer each year to provide information and hands-on learning to people raising market broilers and turkeys for youth livestock shows in Texas. Poultry Science faculty and staff gave presentations covering housing, management, feeding programs, health and biosecurity. Hands-on activities gave participants the opportunity to learn skills for proper bird handling and evaluating birds for the purposes of culling and selection for the show.

2014 Texas Broiler Symposium to be held September 23-24

The annual Texas Broiler Symposium will be held Sept. 23-24, 2014 in Center at the John D. Windham Civic Center. The Texas Broiler Symposium is an educational seminar covering topics of interest to people engaged in the commercial broiler industry.

This year’s agenda includes topics such as lighting, gut health, ventilation equipment maintenance, litter sourcing, hatching egg sanitation, chick transport and alternative methods of keeping birds cool in hot weather.

The educational program will begin at 9:30 am on Wednesday. A golf tournament and skeet shoot will be held on Tuesday afternoon followed by a dinner at the civic center starting at 6 p.m.

For more information about the program or if you would like to sponsor the event, contact Dr. Gregory Archer in the extension office at 979-845-4319 or email garcher@poultry.tamu.edu. Online registration is available at https://agriliferegister.tamu.edu/Poultry.
Poultry Science faculty honored by Poultry Science Association

Faculty and students from the Department of Poultry Science attended the annual meeting of the Poultry Science Association in Corpus Christi, Texas on July 13-17, 2014. Several faculty and students from Texas A&M and the Texas poultry industry were recognized during the event’s awards program.

Carey Named Fellow

Dr. John Carey, professor, was recognized as a Fellow of the Poultry Science Association. The designation of “Fellow” is given in acknowledgement of significant service to the Poultry Science Association (PSA) during the course of a distinguished career devoted to poultry research, teaching, extension, administration or the poultry industry. This recognition represents the highest honor bestowed by the PSA on a member.

Dr. Carey has served as the Extension Program Leader as well as the Department Head in the Department of Poultry Science at Texas A&M University. He currently teaches the poultry meat production and game bird production courses in the department. He has served the Poultry Science Association in many roles, including President in 2007-2008.

Alvarado Receives Teaching Award

Dr. Christine Alvarado, associate professor, was the recipient of the 2014 Poultry Science Association - Novus International Teaching Award. This award is given to a member of PSA who has demonstrated outstanding success as a teacher over a number of years. The award is administered by the PSA Teaching Committee and sponsored by Novus International based upon the fact that excellence in teaching is basic to the future of the poultry industry.

Dr. Alvarado currently teaches undergraduate and graduate courses in processing and products and a senior seminar course. She also serves as an advisor to the Poultry Science Club and the department’s Aggie Leadership Council. In addition to her classroom teaching, Dr. Alvarado also teaches several courses for industry professionals, including Poultry 101 and 201.

Texas Poultry industry leaders honored by Poultry Science Association

Palm, Grimm Named Lifetime Members

Bob Palm (Texas A&M Poultry Science class of 1965; left), former Vice President of Live Production for Pilgrim’s Pride, and James Grimm (right), Executive Vice President of the Texas Poultry Federation, were each recognized by the Poultry Science Association with Honorary Lifetime Membership Awards. This distinction is reserved for individuals who, over the course of their careers, have demonstrated outstanding service and contribution to the commercial poultry industry.
Students receive awards at annual Poultry Science Association meeting

Several Texas A&M students received awards in the student presentation and poster completion for the high quality of their oral presentations or posters regarding their research projects.

Gerardo Casco was awarded a Certificate of Excellence for his oral presentation entitled, “The effects of sorghum phenolic compounds used as lipid antioxidants in chicken nuggets.” Gerardo also received a Jones-Hamilton travel fellowship from the Poultry Science Association to attend and participate in the annual meeting. Gerardo is a doctoral student advised by Dr. Christine Alvarado.

Congratulations!

Justin Fowler received a Certificate of Excellence for his oral presentation entitled, “Comparing the bioactivity of 25-OH-vitamin D₃ (Bio-D) to cholecalciferol for starter broiler growth performance and bone mineralization.” Justin is a doctoral student advised by Dr. Chris Bailey.

Brittany Rocha received a Certificate of Excellence for her poster entitled, “Comparing the use of bird-level versus room illumination on broiler production, fear, and stress.” Brittany is a senior conducting undergraduate research under the guidance of Dr. Gregory Archer.

Kacie Gallegos was awarded a Certificate of Excellence for her poster entitled, “Comparison of the effect of light-emitting diode (LED) versus compact fluorescent lamp (CFL) lighting on hen production, egg quality, fear, and stress.” Kacie is a senior conducting undergraduate research under the guidance of Dr. Gregory Archer.

Alyssa Domingue was awarded a Certificate of Participation for her poster entitled, “The effect of exposing chicken embryos to warm- or cool-spectrum light emitting diode (LED) light during incubation on hatchability, embryo mortality, 14-d growth and FCR, fear and physical asymmetry.” Alyssa is a senior conducting undergraduate research under the guidance of Dr. Gregory Archer.
Outside view of newly renovated broiler houses at the Poultry Science Center.

Inside view of newly renovated broiler house with new modular pens.