

C-STEM Alumni Newsletter

STEM Goes Red Event Works to Empower Women to Become Leaders in STEM



STEM Goes Red event works to empower women to become leaders in STEM.

Eastern Kentucky University (EKU) and the American Heart Association hosted “STEM Goes Red” on Friday, March 25, 2022. This event was designed to empower young women to become innovative leaders through Science, Technology, Engineering, and Mathematics (STEM) focused careers.

Approximately 100 high school female students from Estill, Madison and Rockcastle counties attended this event which

was held in the Science Building on EKU’s Richmond campus.

The event, partially funded by the Carol Barr Research and STEM Fund, gave the students the opportunity to come together and experience the exciting world of STEM, hear from industry leaders and engage their minds through STEM-related activities. “With only 30 percent of women worldwide entering into STEM fields, it is critical that we invest in creating opportunities for women to easily access STEM education,” said ECU President David McFaddin. “EKU enthusiastically supports the Carol Barr Research and STEM Fund and will continue to seek innovative programming that encourages more women to pursue STEM majors and careers.”

Haven Jacob, a senior ECU pre-med major, provided insight to high school students. She said that these events are important for young women in order for them to believe their dreams about studying and working in STEM are possible.



Group photo of young women attending the STEM Goes Red event.

The event was also an opportunity for the young girls to learn about a significant scholarship opportunity funded by the Carol Barr Research and STEM Fund. The Fund will provide six scholarships for high school girls from any of the 54 Kentucky Appalachian counties who decide to pursue degrees in STEM. Three scholarships will award \$10,000 annually, renewable for four years. Three scholarships will award \$2,500 one-year scholarships.

EKU has confirmed its commitment to the effort by committing to provide full housing to scholarship recipients who decide to attend Eastern.

STEM Goes Red was sponsored locally by CHI Saint Joseph Health, Commonwealth Credit Union, Cardinal Hill Rehabilitation Hospital, Battelle, Carol Barr Fund, Valvoline, Stantec, Jackson Energy, Columbia Gas and Eastern Kentucky University.

PLACES AND PROGRAMS

Central Kentucky Regional Airport

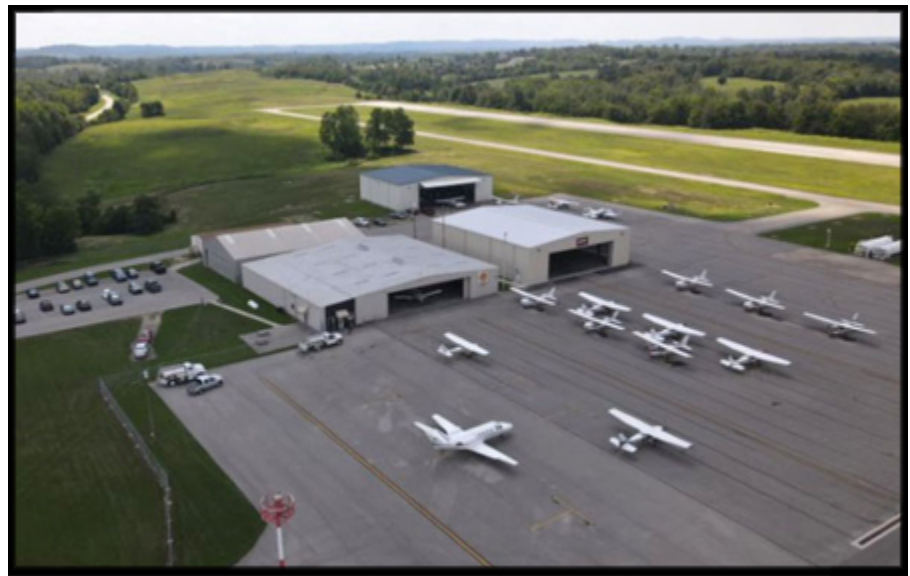
Madison County has an airport? When asked, many residents do not realize that the third busiest general aviation airport in Kentucky is in Madison County.

The Central Kentucky Regional Airport (KRG) is located off I-75 between Richmond and Berea and can be accessed from exits 77 or 83. KRG is situated on approximately 230 acres in the middle of an

economically vibrant area of Kentucky. It is centrally

located relative to nine industrial areas and five population centers within a 30-minute drive and serves Madison, Fayette, Estill, Jackson, Rockcastle, Jessamine and Garrard counties. In addition to its importance to the local communities, KRG also serves as the base of operations for the Eastern Kentucky University (EKU) aviation professional flight program.

The Central Kentucky Regional Airport is co-owned by four entities: the city of Richmond, the city of Berea, the Madison County Fiscal Court and EKU. The mayors of Richmond and Berea, the County Judge Executive, and the EKU president each appoint two representatives to serve on the airport board.



Central Kentucky Regional Airport.

The airport was first opened in 1979 and has continued to grow ever since. Additional, community and T-hangars have been added, the runway has been lengthened to 5001 feet, the taxiway and apron have been expanded, and lighting, fencing, and fuel farm have been upgraded. "The airport has come a long way over the past 45 years and the board has plans for continued development and growth," said Mr. George Wyatt, president of the airport board.

The expansion and upgrades have made the KRGA a perfect spot for ECU to use as its base of operations. In 2011, ECU became the fixed-base operator (FBO) and Mr. Jason Bonham was hired to manage and oversee the FBO and airport daily operations. "The airport is essential to the success of our community. It provides infrastructure and access to our local businesses and is vital for continued economic growth," said Mr. Bonham. The ECU FBO offers a number of aeronautical services such as managing aircraft storage, fueling, tie-down and ramp parking, weather reporting, Wi-Fi, and other services to the general aviation community. In addition, the FBO provides a pilot lounge, courtesy car and other services for corporate aviation. The FBO also includes an on-site Automatic Weather Observation Station (AWOS) accessible by phone, internet, and aircraft as well as Federal Aviation Administration (FAA) approved precision instrument approaches. Other vital services such as aircraft maintenance is provided by Thoroughbred Aviation and community flight instruction is provided by Wings Flight Training.



Aircraft in a hangar at the Central Kentucky Regional Airport.

The ECU aviation professional flight program is a substantial user of the airport. ECU currently has 24 single-engine Cessna 172s and three multi-engine Piper Seminoles that are used to support more than 330 students. "ECU has an exceptional professional flight program, and our goal is to expand to roughly 35 aircraft over the next two years to meet the increasing enrollment demands," said Mr. Dennis Sinnett,

executive director of the Center for Aviation. He continued, "We are working with the airport board to address growth potential and identify future needs for the aviation program."

To help provide awareness of career opportunities to the general public, the Experimental Aircraft Association (EAA) has an active local chapter that is based and meets at the airport. The EAA chapter members are involved in a variety of social and educational activities, including

Young Eagles rallies, fly-ins, building seminars to build awareness in the community. The sole mission of the Young Eagles program is to introduce and inspire kids to the world of aviation. The program provides a free introductory flight for children 8 to 17 which are provided free of charge by EAA member volunteers.

Mr. Wyatt commented, “The airport has become a major economic engine for Madison County. Corporate executives don’t come to the community on a Greyhound bus; they come on corporate jets. Most local industries, and many national retail chains routinely visit their businesses here and use the airport. Business is certainly taking off at the airport!”

Between private aircraft and EKU’s professional flight program’s planes, the airport averages more than 300 take-offs and landings each day. The EKU aviation program is also a significant contributor to the economic impact to Madison County which is estimated at over five million dollars annually.

The vision of the leaders in Madison County in the 1970’s cannot be understated as the once rural and obscure general aviation airport has grown into a vibrant and active aviation hub for Central Kentucky. If not for the Central Kentucky Regional Airport, it is doubtful that EKU would have considered an aviation program that now produces pilots and managers to support the burgeoning aerospace industry. EKU FBO manager Mr. Bonham summed it up well, “The airport provides an aviation education hub in the center of our community that allows us to train tomorrow’s generation of aviation professionals. We are excited about the future here and look forward to what comes next.”

Design plans are currently underway to construct a new terminal building and an EKU flight training center which will include classrooms, offices, meeting rooms, a large conference room and other amenities to support not only the EKU aviation program, but also general and corporate aviation.

Visit the airport website to learn more about the Central Kentucky Regional Airport:
<https://airport.madisoncountky.us/>

Biodiversity and Conservation Concentration in the B.S. Degree in Biology

The biological sciences include a broad range of subdisciplines and related career options that encompasses molecules to ecosystems. Many degree programs at Eastern Kentucky University (EKU) include concentrations which are designed by faculty to help current and prospective students identify specific areas of interest. The Department of Biological Sciences offers four



Students conducting field research.

biodiversity. It prepares students for entry level positions with consulting firms, state and federal agencies, non-profit organizations, and entrance to graduate programs. This concentration is an excellent fit for students and faculty in the department because the curriculum capitalizes on the strengths of our current faculty, our natural history collections, and rich offering of upper division biodiversity-oriented courses.

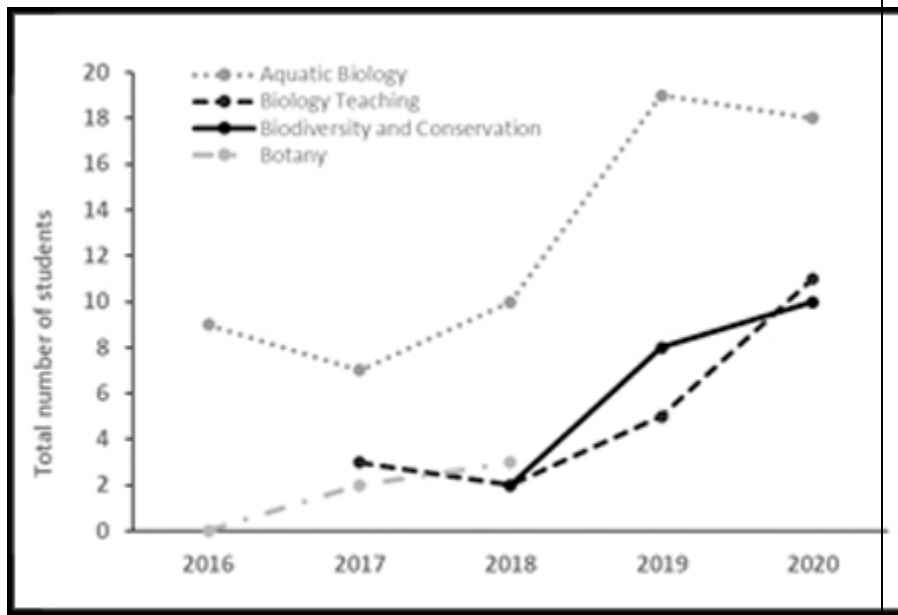
The curriculum is rigorous and is designed to provide undergraduates with a strong foundation of knowledge while building technical skills that provide value to employers. At a minimum, students are required to choose courses from four knowledge areas: natural history of organisms, specialized ecology and behavior, computer skills, and earth and environmental science. “The concentration appealed to me because I felt it allowed more flexibility in career decisions going forward. The skills I learned can be applied to a variety of different jobs in the ecology umbrella and allow for a more “jack-of-all-trades” approach to searching for a job,” commented Mr. Jesse Trost, senior biology major.

Students also have the option to count up to six credit hours of practical, out-of-class experiences, such as independent research projects, summer internships and co-operative experiences towards their degree.

concentration areas to the Bachelor of Science degree in biology: general biology, aquatic biology, biology teaching, and biodiversity and conservation.

This article will focus on the biodiversity and conservation concentration, which is the most recent addition to the degree. The concentration is designed to appeal to students with an interest in botany, zoology, environmental biology, and the conservation of

Steady increases in enrollment in this concentration suggest the conservation of biodiversity is an appealing career option for a subset of early biology majors. “Past program changes in the B.S. degree in biology did not include options for students interested in environmental studies and botany. This new concentration continues to serve those students but also appeals to students with an interest in zoology, evolution, and ecology,” said Dr. Amy Breccia, associate professor in the Department of Biological Sciences. She continued, “Faculty will continue to monitor student success and adjust the program accordingly.”



Graphic that displays the increased enrollment of the biology concentrations from 2016-2020.

Students currently enrolled in the program find the content and flexibility of the program appealing. Senior biology major, Mr. Zachary Maggard, commented, “The biodiversity and conservation concentration provided me a flexible, yet fundamental approach to biology, translating my scientific interest to in-field application.” Junior biology major, Ms. Rachel Back said, “the conservation and biodiversity program has helped me grow as a future scientist. The program has helped broaden my ideas concerning evolution, classifying organisms, and developing scientific ideas.”

For more information about the biodiversity and conservation concentration as well as other concentrations and degree programs in the biological sciences, review our curriculum guides at <https://www.eku.edu/stem/curriculum-guides.html#bio>.

FACULTY/STAFF AND STUDENT SPOTLIGHTS

Faculty/Staff: Ms. Stacia Cook-McCoy



Ms. Stacia Cook-McCoy

The College of Science, Technology, Engineering, and Mathematics (C-STEM) welcomes Ms. Stacia Cook-McCoy to the dean's office staff as the administrative professional II to the dean. "We are very pleased to have Ms. Cook-McCoy join our team," said Dr. Tom Otieno, Dean of C-STEM.

Ms. Cook-McCoy, was born in New York, but moved to Kentucky when she was very young. She attended the University of Kentucky (UK) to pursue a proposed degree in natural resource conservation and management. Unfortunately, the degree program was never fully established and after she acquired 90 credit hours, significant curricular changes to the core requirements caused her to leave UK.

She worked in a variety of fields for several years before applying for a job opportunity at EKU. In July 1999 she was hired as a secretary in the Department of Foreign Languages and Humanities under Dr. Anne Brooks. The EKU faculty/staff scholarship program allowed her the opportunity to continue her education while she worked, and in the spring of 2019, she received her B.A. degree in general studies with a heavy concentration in business and arts courses as well as a minor/certificate in social intelligence and leadership. She is currently working on her master's degree in public administration through EKU Online.

Ms. Cook-McCoy remained in the Department of Foreign Languages and Humanities through many changes. She worked for four chairs, seven deans, five presidents, as well as through three title changes and three departmental name changes and reorganizations at EKU.

She has also worked through many technological changes. "When I started, I hand-typed forms on an electric IBM typewriter with a physical ink ribbon and carbon paper, computers were still in Windows 3.0 and any database systems used were strictly DOS, email was a new-fangled and dubiously utilized communication method, our web-presence was created purely in code, there was no wi-fi or common-use intra-/inter networking, and students registered for classes in-person or by dial-up phone. Now we are fully able to function digitally," she commented.

"I get a lot of satisfaction in my job from seeing a lot of data and information being orchestrated into a final expression of statement," she said. "I get excited for the hunt for the true sight of the circumstance, especially when it helps people get what they need."

Ms. Cook-McCoy is a big history buff and is drawn to ECU's institutional history "I enjoy seeing this institution grow and remain dedicated to serving this commonwealth and region. It really makes me proud," she said.

Outside of the university, Ms. Cook-McCoy stays very busy. "I am constantly, joyously enthusiastic about learning new things, especially hands-on creative craftsmanship," she said. She cooks, sews, does metalsmithing, woodcraft, gardening and herb-craft, studies architecture and design, does leathercraft, markets a range of crafts and henna tattoo art via regional festivals a couple times a year, and has taught belly-dancing. "Take care when asking me about my hobbies. You may not easily escape my enthusiastic tales of adventure," she quips.

She lives on the historic downtown Richmond property that was the childhood home to Dr. Rev. Robert Levi Breck, the founder of the Normal Boys School and the first chancellor of the Central University, the predecessor to ECU. She has aspirations to build an ironworks forge in her backyard, wants to raise honeybees, and wants to install bat houses on her property. She would also like to get the property certified as a wildlife habitat through the National Wildlife Federation as she doesn't use any pesticides or herbicides.

Student Spotlight: Ms. Shelby Spiggle



Ms. Shelby Spiggle

Ms. Shelby Spiggle was raised primarily in Winchester, Kentucky (Clark County). She moved to Fayette County and completed her Junior and Senior year of high school at Henry Clay High School in Lexington, Kentucky.

She decided to attend Eastern Kentucky University (EKU) because several family members graduated from ECU, including her aunt (1978) and her mother (2013).

Ms. Spiggle is a junior who is currently pursuing a B.S. degree in agriculture with a concentration in agronomy, soils, and natural resources. "I grew up around agriculture because my mom worked for Kentucky State University's (KSU) land grant program and I went to many agricultural events and conferences that she helped organize and run," she commented. "Even though I grew up around agriculture, I didn't really get my love for it until I worked as a co-op on The Kentucky Castle farm when I was a senior in high school." She was

involved in the creation of the organic garden that they use today at the castle.

Outside of class, Ms. Spiggle likes to spend time at the gym. She also spends a lot of her time at Stateland Dairy on ECU's Meadowbrook Farm. "I get to help take care of the bottle calves and I

get to visit the heifer that I showed at the annual dairy show at Meadowbrook Farm this past September,” she said.

She considers receiving and accepting an internship opportunity with Anheuser-Busch as an agronomy intern to be her greatest achievement thus far. She hopes this could also lead to possible career opportunities with the company. “Shelby has a bright future in mind and she’s working hard to make it happen,” said Dr. John Settimi, professor in the Department of Agriculture.

After graduation, Ms. Spiggle is making plans to attend the University of Georgia to pursue a master’s degree in crop and soil sciences.

ALUMNI AND FRIENDS

Ms. Jolene Blanset



Ms. Jolene Blanset

“There’s nothing like being immersed in the campus culture to get the most from your college experience. I’m glad I finally had the opportunity to experience this in graduate school at ECU.”- Jolene Blanset

Ms. Jolene Blanset was born in San Fernando, California, and graduated with a B.A. degree in geography, with an emphasis in environmental studies, from California State University Fresno (Fresno State) in 1989. She also obtained a M.S. degree in geology, with an emphasis in statistics, from Eastern Kentucky University (EKU) in 2007.

Ms. Blanset went to college with the intention of majoring in mathematics and computer science but ended up majoring in geography as she explained, “During my sophomore year I accidentally ended up in a physical geography class and absolutely loved it. I went on to major in geography and discovered that almost

every college subject had a geographic counterpart. Politics, agriculture, occupations, economics, landforms, weather and plants and animals all have a connection to geography. One of my favorite courses required for my major was cartography, or map-making. I was in the second group of students at Fresno State to have the opportunity to study and take a “hands-on” course in the new “cutting edge” (in 1988) computer cartography, a combination of computer science and cartography.”

After graduating from Fresno State, Ms. Blanset took a data management job with a record company and had planned to attend graduate school part-time. Halfway through her first semester the company relocated to Tennessee and she dropped out of graduate school to relocate to Nashville. She stayed at that job for eight years while looking for an opportunity to continue her education.

“None of the local schools offered the program I wanted so I finally quit my job and went back to graduate school full-time at ECU to focus on computer cartography,” she said. She started in the Department of Mathematics and Computer Science to gain a solid background in programming and statistics and then switched to geology to focus on environmental research, particularly issues related to water.

“When Jo came to ECU, she had already devised a plan for what she wanted to accomplish while she was here. Unlike some graduate students who are only focused on their specific expertise and research project, Jo wanted to experience every opportunity that ECU could provide her,” said Dr. Melissa Dieckmann, professor in the Department of Physics, Geoscience, and Astronomy. She continued, “Unlike other graduate students who join a research project already designed by a faculty member, Jo designed her own research project that combined computer programming, statistics, and hydrology/hydrogeology to evaluate water quality in Kentucky.”

In addition to coursework, Ms. Blanset’s graduate school experience included working as a teaching/laboratory assistant for Dr. Melissa Dieckmann’s undergraduate The Physical Environment course and her thesis research. “Skills and knowledge gained in these areas gave me a solid background for the water quality research I was involved with in the first few years of my career in the Division of Water and have allowed me to effectively coordinate and manage my team in the development and completion of a diverse array of projects promoting better decision-making through GIS and data analysis,” she said.

Recalling her days as a graduate student at ECU Ms. Blanset stated, “My fondest memories of ECU are beginning and cultivating life-long friendships both with colleagues and instructors. I was a commuter student for my undergraduate studies. I lived on campus for my first year at ECU and just off campus for the rest. There’s nothing like being immersed in the campus culture to get the most from your college experience. I’m glad I finally had the opportunity to experience this in graduate school at ECU.”

In 1999 Ms. Blanset received an Environmental Protection Scholarship sponsored by the Kentucky Department for Environmental Protection (DEP) through the Kentucky Water Resources Research Institute. A condition for the scholarship was that the recipient had to work for DEP for six months for each semester of financial aid. Since Ms. Blanset was considered an out-of-state student, the scholarship made graduate school in geology possible. Equally important, the requirement for the recipient to work for DEP landed her a job with the Commonwealth of Kentucky in the Division of Water (DOW), a division of DEP, where she has worked since September 2001. DOW manages programs that conduct research on aquatic life

in the waters of Kentucky, regulate water usage, and monitor the quality of both surface (rivers, lakes, streams) and groundwater. Since 2008 she has served as the supervisor of a new group formed that year in the division to promote the use of Geographic Information System (GIS) and to analyze the water quality data collected by division personnel. The scope of this unit continues to expand to include staff serving as technical state data stewards for other datasets.

Ms. Blanset concluded by offering the following advice to current students aspiring to follow her line of work, "A college undergraduate degree with a geography or other physical science major is a good start. A knowledge of statistics is necessary if you want to be involved in research and courses are a requirement for many degrees. There are also numerous GIS professional certifications available that will make you a more attractive job candidate than an applicant with a similar background. Computer skills are a must. Spatial and analytical skills are helpful. Because we interact with the public, verbal and written communication skills are also a must. And ask a lot of questions... never stop asking questions."

Dr. Vernon Stubblefield



Dr. Vernon Stubblefield

"My greatest satisfaction is seeing students I have taught complete their course of studies and become productive citizens in our society. Many become doctors, nurses, veterinarians, and pharmacists. For example, when I broke my leg about eleven years ago, I was attended to by a resident doctor, nurse, and X-ray technician who had all been students in one of my classes!" - Dr. Vernon Stubblefield.

When Dr. Vernon S. Stubblefield, a retired professor of chemistry, was employed at Eastern Kentucky University (EKU) to teach forensic science and chemistry in 1971, he could not have imagined that he would be teaching at the same institution 51 years later.

He was born in Murray, Kentucky, and graduated from Murray High School in 1960 where he was a champion baseball pitcher. He then enrolled at Murray State University where he double majored in chemistry and mathematics with a minor in physics. His father and grandfather owned and operated a drug store in Murray. Observing the operations of this family pharmacy business inspired him to study chemistry.

At Murray State University, Dr. Stubblefield was a member of the Phi Kappa Alpha social fraternity and, also, joined the ROTC program. Upon graduation he received a U.S. Army commission as a 2nd Lieutenant in the Signal Corp. He applied for and was awarded a

deferment to pursue a doctorate in chemistry at the University of Kentucky with a teaching assistantship in the fall of 1964.

Dr. Stubblefield was called to Fort Gordon, Georgia for signal officer training in the spring of 1969 and was then sent to Fort Monmouth, New Jersey to the Combat Development Command Communication Electronic Agency. At the completion of this tour of duty, he completed the requirements for his Ph.D. degree in chemistry. He was sent to Vietnam at the start of his second year of active duty and was assigned to an infantry battalion as its communication officer. He was promoted to the rank of Captain and was awarded two Bronze Stars for service in Vietnam.

Dr. Stubblefield secured a teaching position at ECU in 1971 in what was then called the "School of Law Enforcement". He and his colleague and retired professor, Dr. Robert Fraas, began the development of the forensic science program. The two of them later helped design the labs in the new Law Enforcement complex.

Dr. Stubblefield taught many basic courses in forensic science including blood serology, criminalistics, microscopy, and photography, as well as chemistry courses including, chemistry for the health sciences and the two-semester organic chemistry sequence, including laboratories. Over the years he held classes in the law enforcement complex, the football stadium, Moore Building, and the (new) Science Building. He also taught chemistry and forensic science extension classes in Kentucky at Fort Knox, Litchfield, Danville, Maysville, and London. He was also a visiting professor of organic chemistry for several summers at the University of Kentucky Department of Chemistry.

When asked what his fondest memories were at ECU, Dr. Stubblefield replied without hesitation, "The students and faculty that I have encountered over the years."

Commenting on his greatest job satisfaction, Dr. Stubblefield said, "My greatest satisfaction is seeing students I have taught complete their course of studies and become productive citizens in our society. Many become doctors, nurses, veterinarians, and pharmacists. For example, when I broke my leg about eleven years ago, I was attended to by a resident doctor, nurse, and X-ray technician who had all been students in one of my classes!"

Dr. Stubblefield retired as Professor Emeritus from full-time teaching at ECU in 2003 but has continued to teach at ECU part-time for the last 19 years for a total of 51 years.

Aside from teaching, Dr. Stubblefield enjoys family, friends, golf, gardening, church activities and volunteer work. He has been married to his high school sweetheart, Sharon, who is a retired realtor, for 59 years. They are blessed with two daughters, Sara (who lives with her husband in San Francisco, CA) and Alicia (who lives with her family in Richmond, KY), one son, Dale (deceased), and two teenage grandchildren, Natalie and Louis. Both Sara and Dale have bachelor's degrees from ECU.