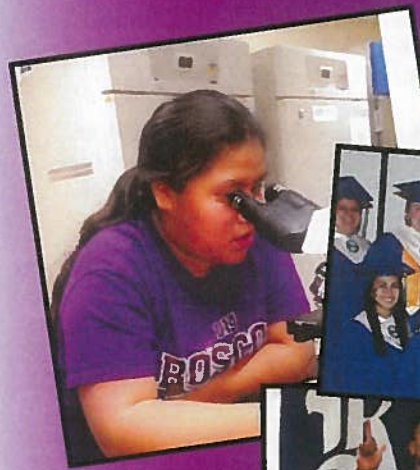




Roscoe Collegiate Early College S.T.E.M Academy

A P-20 model for success



"Without vision, the people will perish."

-Solomon



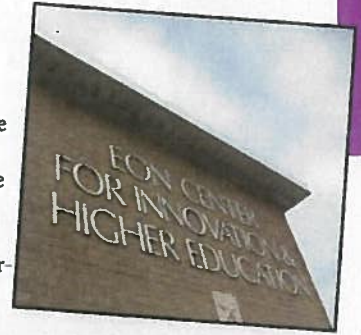
Roscoe Collegiate System Summary

Early College

Roscoe Collegiate ISD is now into year 8 as an Early College. The Early College program has experienced consistent growth over the past seven years. The Fall 2016 Semester is expected to begin with record enrollment rates on college courses. Completion rates for the Associate Degree have also grown steadily from one student seven years ago, to 52% of the Class of 2011, 58% of the Class of 2012, 73% of the Class of 2013, 89% of the Class of 2014, 90% of the Class of 2015, & 92% of the Class of 2016. The current expectation is to sustain 90% or greater of each class to complete the blended model Associate Degree through Roscoe Collegiate and Western Texas College.

Early College Support

As a result of the initial Early College endeavor, Roscoe Collegiate is also heavily invested in a college readiness program, AVID, for all students in grades 6 through 12. Additionally, the district has adopted a Common Instructional Framework that is comprised of the 21st Century skills, of which employers are demanding proficiency among their employees. As a means of assessing the level of student engagement in the Common Instructional Framework, the district has also adopted the Harvard Instructional Rounds Model, consisting of both internal and external assessment of student engagement on a weekly basis. Finally, the district has extensive focus on understanding and educating poverty in an attempt to close the literacy gap among low-socioeconomic learners by grade 3, thereby empowering these students to become truly college ready by grade 9 and beyond.



STEM Academy

Roscoe Collegiate is also now beginning year 5 as a STEM Academy. The purpose of STEM, an acronym for science, technology, engineering, and math, is to develop students who demonstrate high levels of aptitude in the STEM fields, thus empowering them to pursue the abundance of careers in STEM fields having been identified as having acute shortages of qualified applicants. As a result of the STEM designation, we have also now completed the fourth year of an ongoing investigative process, with assistance from a STEM Advisory Committee consisting of over 100 members from local, regional, and state universities, AgriLife Extension, T-STEM, Educate Texas, Region 14 Education Service Center, as well as the local, regional, and state business and political communities. The new \$3.5 million Agricultural Research Center housing Collegiate Edu-Vet, as well as the newly remodeled Engineering Research Center housing Collegiate Edu-Drone are now open for the 2016-2017 school year to complement the E-ON Center for Innovation and Higher Education and the Collegiate Wellness Center in the district's attempt to provide the real world relevance deemed necessary for successfully demanding the required rigor for true college and career readiness.

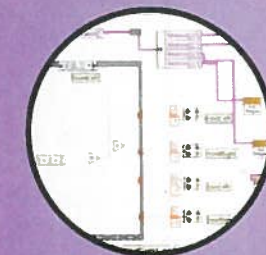


Student Research and Apprenticeship

As a member of the Texas High Performance Schools Consortium, and now the Consortium representative on the Texas Commission on Next Generation Assessment and Accountability, Roscoe Collegiate continues in the development of a multiple measure accountability system. Two aspects of that system for Roscoe include student developed research presentations and evidence based electronic portfolios. The Agriculture and Engineering Research Programs have become the basis for student led research, data collection and analysis, and research poster development and presentation, as we have developed a lesson cycle for a research based institution. All students in grades 3-11 conduct 4H based research projects, culminating with a year long, career path relevant, capstone research project in grade 12. The purpose of the capstone research project is to create additional scholarship opportunities for students seeking financial assistance with the completion of undergraduate and graduate college degrees. Beginning in the fall of 2016, this model now also includes student apprenticeship experiences consisting of both intern and extern opportunities for students in grades 10-12, leading to business and industry recognized endorsements, symbolic of true workforce readiness.

Roscoe Collegiate STEM Pathways Leading to Industry Recognized Certification

The Roscoe Collegiate Early College/STEM Academy System Model is designed for every student to graduate not only with the Associate Degree, but multiple industry recognized STEM certifications as well. Currently, the STEM Program is divided into two broad categories of Biomedical Science and Engineering, each of which require five credits in math and five credits in science. The four pathways within the Biomedical Science category include Clinical, One-Health, Laboratory, and Business/Marketing. The three pathways within the Engineering category include Research and Design, Application and Build, and Business/Marketing.



Biomedical Science

Engineering

School-wide 4H Program

The Roscoe Collegiate School-wide 4H Program is the vehicle used to stimulate student interest and engagement in STEM related practices and research. Students in grades 3 through 12 work across the curriculum to develop 4H science research projects and posters. These research posters are presented at local, regional, state & national 4H & FFA competitions in an attempt to elevate student STEM research skills, thereby enabling students to successfully manage the rigorous demands of a Research Based Early College and STEM Academy at the high school level.

System Model with Multiple Partners

During the developmental phase of The Roscoe Collegiate Model, the district has evolved away from the 20th Century concept of an Independent School District into more of a System Model approach. Currently, members of the Roscoe Collegiate System include the original two-year higher education partners, Western Texas College (WTC) in Snyder and Texas State Technical College (TSTC) in Sweetwater, as well as the original parent organization for Early College and T-STEM, Educate Texas. Additionally, the district now has a direct four-year university partnerships with Angelo State University, indirect partnerships through WTC with Texas A&M University and Texas Tech University, as well as system partnerships with Texas A&M AgriLife Research/Extension, & 4H. Current business partnerships include Collegiate Chiropractic and Wellness Center, INOVA Veterinary Practice Management, 3DRobotics/DroneEDU, Strat-Aero International, Under Armor, as participating partners in the education companies of Collegiate Edu-Vet & Collegiate Edu-Drone. This Systemic Model approach enables Roscoe Collegiate to better provide students with the resources necessary to engage in a much more globally competitive educational and work force environment, than students heretofore have experienced, upon graduation from high school. It is the goal of Educate Texas at the state level and Jobs for the Future at the national level for The Roscoe Collegiate System P-20 System Model for Student Success to become a model that can be replicated by other schools in Texas and the United States interested in 21st Century School Transformation.

Clinical

The Clinical Pathway is designed to lead to Certified Veterinary Assistant (CVA) Level I (core), Level II, and Level III certifications. This educational pathway is designed to enhance opportunities for students to enter into a pre-professional track of higher education en route to either veterinary (DVM) or human medical (MD) professional licensing, or into the workforce as a veterinary or medical paraprofessional. A successful student outcome for this pathway is based on knowledge gained through classroom instruction, field experiences, and related research in basic and applied sciences and the clinical skills gained through a practical apprenticeship served in a cooperative educational/workforce based environment. Depth of learning will also be enhanced through participation in co-curricular 4H Projects and FFA Career Development Events.

One-Health

The One-Health Pathway is designed to lead to CVA Level I non-clinical(core) certification, as well as additional industry certifications in nutrition and food safety. This educational pathway will prepare students to face one of the greatest challenges to today's health professions, research, and allied health workforce, the increasingly complex issue of global change and its effect on disease emergence and resurgence in an interconnected environment of humans, companion animals, livestock, and wildlife. Increased human populations, rapid urbanization, intensified livestock production, encroachment of ecosystems, and globalized trade and traffic have altered how science and technology will be utilized to prevent future pandemics and the movements of disease between human, wildlife, companion animal, and livestock populations. A successful student outcome for this pathway is based on necessary knowledge and skills for students interested in non-traditional clinical professional and paraprofessional careers. Knowledge and skills will be gained through classroom instruction, laboratory experiences, and related research in preparation for rewarding careers that integrate animal, human, and environmental health programs. Depth of learning will also be enhanced through participation in co-curricular 4H Projects and FFA Career Development Events.

Laboratory

The Laboratory Pathway is designed to lead to CVA Level I non-clinical (core) certification, as well as additional certifications in animal and plant biotechnology. This educational pathway will prepare students for a broad array of careers in medical research, diagnostic testing in medical and veterinary laboratories, laboratory and diagnostic technology, animal and human biotechnology, plant biotechnology, animal and human genomics, immunology, virology, biosafety, water and waste water analysis, toxicology and related fields. A successful student outcome for this pathway is based on necessary knowledge and skills for students interested in clinical research in professional and paraprofessional careers. Knowledge and skills will be gained through classroom instruction, laboratory experiences, and related research in preparation for rewarding careers that integrate animal, human, plant, and environmental health programs. Depth of learning will also be enhanced through participation in co-curricular 4H Projects and FFA Career Development Events.

Business and Marketing

The Business Pathway is designed to lead to a CVA Level I non-clinical (core) certification, as well as additional business related certifications. This educational pathway will prepare students for careers in animal and human health care administration by providing students experience with business management and leadership, knowledge of types of veterinary medical practices and how to establish those practices, human resources management and training, employment laws, insurance coverage and compliance, medical records and clinic compliance, medical logs, budget accounting and inventory, financial reporting, revenue management, purchasing, billing, and related fields. A successful student outcome for this pathway is based on necessary knowledge and skills for students interested in health care administration professional and paraprofessional careers. Knowledge and skills will be gained through classroom instruction, clinic management experience, and related research in preparation for rewarding careers in animal or human health care administration. Depth of learning will also be enhanced through participation in co-curricular 4H Projects and FFA Career Development Events.

Research and Design (R&D)

The Research and Design Pathway is designed to lead a student into a bachelor's degree in engineering and an industry certification in CAD, AutoDesk, and Computer Aided Drafting. This educational pathway will be designed to enhance opportunities for students to enter into professional tracks through higher education or paraprofessional tracks for students entering the workforce more immediately in R&D fields related to engineering. A successful student outcome for this pathway is based on knowledge and skills to be gained through classroom instruction, R&D experiences, and related research in engineering R&D. Depth of learning will also be enhanced through participation in co-curricular 4H Projects and FFA Career Development Events relevant to robotics, mechanical and computer engineering, etc.

Application (Build)

The Application Pathway is designed to lead into a bachelor's degree in engineering and toward an industry certification in CAD, AutoDesk, Computer Programming or Industrial Automation. This educational pathway will be designed to enhance opportunities for students to enter into professional tracks through higher education or paraprofessional tracks for students entering the workforce more immediately in areas of applied engineering. A successful student outcome for this pathway is based on knowledge and skills to be gained through classroom instruction, laboratory experiences, and related research in Applied Engineering. Depth of learning will also be enhanced through participation in co-curricular 4H Projects and FFA Career Development Events relevant to robotics, mechanical and computer engineering, etc.

Business and Marketing

The Business Pathway for engineering is designed to prepare students for careers in the business and marketing realm of the engineering profession by providing students experience with business management and leadership, knowledge of the types of engineering practices and how to establish those practices, human resource management and training, employment laws, insurance coverage and compliance, budget accounting and inventory, financial reporting, revenue management, purchasing, billing, and related fields. This pathway will toward an industry certification in Business Management and Marketing. A successful student outcome for this pathway is based on necessary knowledge and skills for students interested in engineering administration professional and paraprofessional careers. Knowledge and skills will be gained through classroom instruction, engineering management experience, and related research in preparation for rewarding careers in engineering administration. Depth of learning will also be enhanced through participation in co-curricular 4H Projects and FFA Career Development Events.

From the Superintendent

As a result of the technology revolution, the world is becoming exponentially smaller in record time, resulting in a more culturally diverse and complex world in which we live. In 2016, both Texas and the U.S. look dependently upon the educational systems to prepare students who can compete globally for jobs and careers. As the need for higher educational attainment among constituents becomes imperative to future successes of this state and this nation, both public and higher educational systems are in the reinvention mode, as we learn how to work more collaboratively toward common student good in a P-20 System Model for Student Success. At Roscoe Collegiate, we embrace these challenges, as we strive to sharpen not only our collaborative skills, but our creative problem solving ability, at the same time. As a National Rural Model for an Early College/ STEM Academy, we pride ourselves in preparing very culturally and socio-economically diverse students to handle the rigorous demands of earning the Associate Degree while in high school here at Roscoe Collegiate. As a STEM Academy, we are preparing to go the extra mile to bring students real world relevance so vital for a strong foundation in critical work shortage fields involving science, technology, engineering, and math (STEM). As an institution that adheres strongly to a research based lesson cycle, we require students to conduct their own investigations, draw their own insightful conclusions, and create their own persuasive analysis of many topics leading toward industry certification in high demand STEM fields related to the biomedical sciences and engineering.

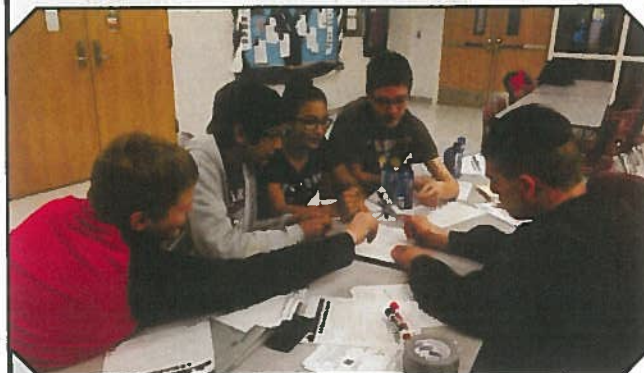
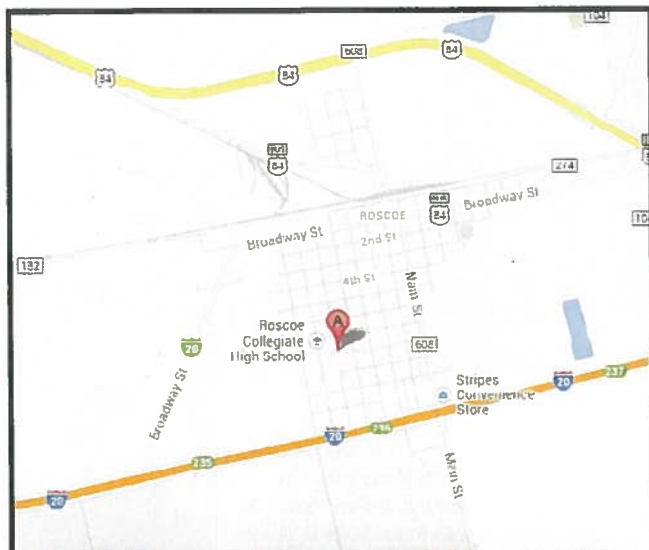
With much assistance from our higher education and system partners, Roscoe Collegiate is intent on developing a strong and successful model for collaborative rural education in Texas and the U.S., that can be replicated by many of the over 700 school districts classified as rural in Texas, who currently serve over 800,000 of Texas' 5,000,000 and growing student population. The goal of this model is to prove that when structured correctly, all students, regardless of cultural, demographic, or socio-economic background, can become truly college and career ready, with the Associate Degree and Industry Recognized Certifications in hand, upon completion of high school.

Operating collaboratively with Texas A&M AgriLife Research/Extension, Roscoe Collegiate is also home to the first school-wide 4H program in Texas, with a goal of developing students prepared to help provide solutions for the Five Grand Challenges established by the nation's land grant universities of feeding our world, protecting our environment, improving our health, enriching our youth, and growing our economy.

Early successes of the model include steady increases in graduates completing the Associate prior to graduation from high school. In our first year as an Early College, 2010, we had our first Associate Degreed graduate. In 2011, 52% of the graduating class earned the Associate Degree, followed by 58% in 2012, 73% in 2013, 89% in 2014, 90% in 2015, & 92% of the Class of 2016. I am confident of the success of our system, our students, and our state, nation, and world.



Dr. Kim Alexander
Superintendent
Roscoe Collegiate ISD



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STEM Academy**

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