

FloridaLearns STEM Scholars

A Model STEM High School System for Gifted and Talented Students in Florida's Small and Rural Districts

The future of Florida's economy is at stake. Without a highly skilled and educated STEM-proficient workforce, the state will be unable to develop a strong, diversified economy that spurs sustainable economic development. According to the 2010 Florida Council of 100's report, *Closing the Gap*, within a decade nearly 9 out of 10 new jobs will require education beyond a high school diploma and credentials in a STEM (science, technology, engineering and mathematics) discipline. The report further states, "*Workers with skills in these disciplines will win the best jobs – and businesses and communities that have access to such workers will be able to grow.*"

While Florida has made significant strides in addressing the academic needs of many students, the Florida Department of Education is acutely aware the state's small and rural school districts are unable to provide resources for the most capable students to become STEM-ready. Adequately preparing gifted and talented students for STEM-related professions is a costly endeavor. In light of the current economic conditions, districts have made deep personnel and operational budget cuts. Some are discussing reducing the number of days students attend school per week in order to stretch funds to pay for services and programs they currently offer. While there is a significant and ongoing effort to support the most academically vulnerable students, far less support is invested in gifted and talented students at the secondary level. *FloridaLearns STEM Scholars* will enable districts to provide distinctive learning experiences to these students, their families and their communities.

District surveys, analyzed by experts at the Panhandle Area Educational Consortium (PAEC), reveal that secondary gifted and talented students in Florida's small and rural school districts are afforded few rigorous and challenging learning experiences tailored to meet their unique needs. Many gifted and talented students have limited or no access to STEM AP or dual enrollment courses while involvement in instruction differentiated to meet their needs is reduced as they age. Opportunities for structured interactions and collaboration with gifted and talented students from other schools or districts are rare.

FloridaLearns STEM Scholars addresses the need for the gifted and talented secondary students from Florida's small and rural districts to have increased access to STEM-related courses and rigorous and challenging learning experiences. PAEC, located in northwest Florida, serves 14 districts, the Heartland Educational Consortium (HEC), in the south central part of the state, serves six districts, and the Northeast Florida Educational Consortium (NEFEC) in northeast Florida serves fifteen districts.

During the first three years of this initiative, gifted and talented students served in this effort will hail from 28 of the three consortia's districts. **Building and implementing a replicable program to meet the educational needs of Florida's secondary, underserved, gifted and talented students is the focus of *FloridaLearns STEM Scholars*.** PAEC, HEC, and NEFEC will collaboratively form a cadre that includes experts in content and gifted studies, STEM-

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related business and community partners, agencies, foundations, associations, museums, colleges, universities, and other educational entities in order to carry out *STEM Scholars* activities.

This joint venture will ensure gifted and talented students in grades 9 – 12 who reside in PAEC, HEC, and NEFEC districts receive individualized services that engage them in an appropriate STEM curriculum. The initiative will enable them to make informed career choices and create a framework to increase the likelihood of their success in post-secondary STEM curricula or the workplace. Employing a multi-faceted approach, *STEM Scholars* will leverage work already done by *STEMFlorida*; use research from the 2011 *Florida STEM Strategic Plan*; build on past and present networks among Workforce Florida, Enterprise Florida, Banner Centers, local chambers of commerce, regional STEM councils, universities, regional colleges, and other representatives from educational and business communities.

The *FloridaLearns STEM Scholars* grant will:

1. Expand or establish AP and/or dual enrollment STEM course offerings for gifted and talented students in their school of enrollment by employing a combination of courses delivered by interactive video conferencing with college professors as instructors, virtual courses offered by Florida Virtual School (FLVS), colleges or universities, and/or face-to-face with school-based “master” teachers.
2. Partner with local colleges, universities, workforce development agencies, career and technical training facilities, military installations, museums, foundations, and STEM-related businesses to maximize unique and innovative learning experiences for STEM gifted and talented students.
3. Bring regional participants together regularly to foster collaborative relationships among them, promote and enhance development of goal setting and ethical leadership skills, heighten recruitment and STEM career awareness, and involve the students in challenging academic activities via face-to-face and current technologies.
4. Engage students in “doing” STEM by providing summer opportunities which will include:
 - a. Regional workshops led by university or college faculty from STEM content areas and/or STEM experts from the field
 - b. Field immersion research experiences with STEM experts alongside STEM teachers
 - c. A university capstone experience
 - d. Scholarship assistance for scholars interested in attending an extended university-offered STEM research experience
 - e. Workplace experiences in STEM-related businesses and/or industries.
5. Join with *STEM Scholars*' partners to host regional and/or local seminars where parent and student awareness of educational requirements, benefits, and opportunities in

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STEM careers is enhanced via on-site and/or virtual links with business, industry and agencies.

6. Implement targeted counseling services to:
 - a. Ensure individualized learning plans are in place for participating students
 - b. Provide course selection, STEM career choice and scholarship advisement
 - c. Support the social and emotional needs of participating students
 - d. Assist students and their families with transition planning.
7. Provide needs-driven professional development for local school administrators, guidance counselors and teachers by developing or utilizing existing resources developed by FCR-STEM, *BIOSCOPIES*, Orlando Science Museum, Project Lead the Way, FDLRS Associate Centers, *FloridaLearns Academy* productions, MOSI, PRISM, FSU-PC STEM Institute, WOGI, NEFEC, Just Read Florida, Florida's Math Science Initiative, College Board, and others.



Panhandle Area
Educational Consortium

*in partnership
with*



Heartland
Educational Consortium



Northeast Florida
Educational Consortium