

Virginia Board of Education Agenda Item



Agenda Item: D

Date: November 29, 2012

Title	Final Review of a Proposal from Newport News City Public Schools to Establish the Heritage High School Governor’s Science, Technology, Engineering, and Mathematics (STEM) Academy		
Presenter	Ms. Toinette Outland, Program Administrator, Heritage High School, Newport News City Public Schools Ms. Lolita B. Hall, Director, Office of Career and Technical Education Services		
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Purpose of Presentation:

Other initiative or requirement. Specify below:

Final review and acceptance of the Proposal from Newport News City Public Schools to Establish the Heritage High School Governor’s STEM Academy

Previous Review or Action:

Previous review and action. Specify date and action taken below:

Date: October 25, 2012

Action: First Review

Action Requested:

Final review: Action requested at this meeting.

Alignment with Board of Education Goals: Please indicate (X) all that apply:

x	Goal 1: Accountability for Student Learning
	Goal 2: Rigorous Standards to Promote College and Career Readiness
x	Goal 3: Expanded Opportunities to Learn
	Goal 4: Nurturing Young Learners
	Goal 5: Highly Qualified and Effective Educators
	Goal 6: Sound Policies for Student Success
	Goal 7: Safe and Secure Schools
	Other Priority or Initiative. Specify:

Background Information and Statutory Authority:

Goal 1: The academy must meet rigorous criteria established by the Board of Education. Students progress in academic and technical knowledge and skills; and their employability knowledge and skills are monitored and measured annually to ensure successful transition to college and career.

Goal 3: The Governor’s STEM Academy is designed to expand opportunities for the general student population to acquire STEM literacy and other critical skills, knowledge, and credentials that will prepare them for high-demand, high-wage and high-skill careers.

Partnerships establishing academies must include at least one public school division, business and industry, and postsecondary education. On November 29, 2007, the Board of Education approved the criteria to establish a Governor’s STEM Academy. Subsequently, on March 19, 2008, the Board approved the standards for the Governor’s Career and Technical Education Exemplary Standards Awards Program, which all Career and Technical Academies must implement.

As required by the Board of Education, the State Council of Higher Education for Virginia (SCHEV) is currently reviewing the attached proposal. Their report and recommendation is expected by November 1 prior to the second review of the proposal by the Board of Education (Attachment B). Staff members of the Virginia Department of Education (DOE) have reviewed the proposal in the context of the Board’s criteria. An executive summary of the proposal is in Attachment A. Attachment C is the report from the review by the DOE. Attachment D is the complete proposal.

Currently, there are 16 Governor’s STEM Academies in Virginia. They are located in Arlington County, Carroll County, Chesapeake City, Chesterfield County, Fairfax County, Halifax County, Hampton City, Loudoun County, Lynchburg City, New Kent County, Richmond City, Roanoke County, Russell County, Stafford County, Suffolk City, and Virginia Beach City.

Summary of Important Issues:

The proposal for the Heritage High School Governor’s Science, Technology, Engineering, and Mathematics Academy consists of partnerships with Christopher Newport University, Thomas Nelson Community College, Norfolk State University, Newport News Education Foundation, Newport News Shipbuilding, Thomas Jefferson National Accelerator Facility (Jefferson Lab), Canon Virginia, Virginia Peninsula Chamber of Commerce, and the Peninsula Council for Workforce Development.

The Heritage High School Governor’s STEM Academy will offer a program of study designed to expand options for students to acquire skills in science, technology, engineering, and mathematics. The program combines academic coursework and research experience with a challenging and focused school environment to prepare students for 21st century careers. Students will gain the knowledge and skills they need to succeed in postsecondary education and in technology-rich workplaces by learning how to work in teams, communicate effectively, and apply the principles of science, technology, engineering, and mathematics. Students may choose a program of study from six career pathways within three career clusters as follows.

Career Cluster	Career Pathway	Heritage High School Academy Program
● Science, Technology, Engineering, and Mathematics	● Engineering Technology	● Engineering and Electronics
● Architecture and Construction	● Design and Pre-Construction	● Architectural and Engineering Drawing
● Information Technology	● Programming and Software Development ● Web and Digital Communications	● Modeling and Simulation (Computer Science)
	● Network Systems ● Information Support Services	● Computer Systems Technology (Networking)

The *Engineering and Technology* pathway prepares students to apply engineering and technical concepts to develop solutions for problems that exist throughout a broad range of fields from building bridges to flying airplanes to working in the medical industry.

The *Design and Pre-Construction* pathway provides students an opportunity to use their artistic creativity and mathematics skills to transform an innovative concept into a design plan that creates something tangible and guides construction professionals through the building process. Highly-skilled workers who earn specializations and certificates of accreditation are in great demand as this field continues to advance and becomes more competitive.

The study of *Information Technology* requires a solid foundation in mathematics and science as well as high technical skills. Students learn how to design, develop, and manage different types of software programs and hardware. Information technology workers can be found in virtually every sector of the economy, providing assistance at a multitude of levels.

Academy students will be provided an opportunity to participate in dual enrollment courses with the Thomas Nelson Community College and work-based learning experiences..

Impact on Fiscal and Human Resources:

Funding must be provided at the local level.

Timetable for Further Review/Action:

The proposed beginning date for the Heritage High School Governor’s Science, Technology, Engineering, and Mathematics Academy, Newport News City Public Schools, is September 2013.

Superintendent's Recommendation:

The Superintendent of Public Instruction recommends that the Board of Education approve the proposal to establish the Heritage High School Governor’s Science, Technology, Engineering, and Mathematics Academy, Newport News City Public Schools.

Heritage High School Governor's STEM Academy
Newport News Public Schools
Executive Summary
October 9, 2012

Partnership Members: Newport News Public Schools, Christopher Newport University, Norfolk State University, Old Dominion University, Thomas Nelson Community College, Canon Virginia, Inc., Newport News Education Foundation, Newport News Shipbuilding, Peninsula Council for Workforce Development, Riverside School of Health Careers, Thomas Jefferson National Accelerator Facility, and Virginia Peninsula Chamber of Commerce.

Lead Entity and Fiscal Agent: Newport News Public Schools

Contact Person: Mrs. Toinette Outland
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Academy Location: Heritage High School

Number Students: The Governor's STEM Academy will have the capacity to enroll 400 students, grades 9 – 12. During the initial school year (2013–2014) 150 students will be admitted.

Career Pathways: Design and Pre-Construction
Engineering and Technology
Programming and Software Development
Web and Digital Communications
Network Systems
Information Support Services

Academy Goals and Performance Measures: The goal of the Heritage High School Governor's STEM Academy is to promote student achievement and interest in STEM career fields to prepare students for global competitiveness in high-skill, high-wage, and high-demand STEM careers.

The following performance measures have been established by the planning committee:

- Increase the number of students who earn a grade of B or better in advanced mathematics courses beyond Algebra II by 3 percent over the next four years
- Increase the number of Academy students meeting the requirements of the Advanced Studies Diploma by 10 percent over the next four years
- Increase the number of students earning industry certifications by 10 percent over the next four years
- Increase the number of postsecondary credits earned through dual enrollment, advanced placement courses, and the Early College program by 5 percent over the next four years
- Ensure that 100 percent of students participate in work-based learning experiences, through strong partnerships with businesses and organizations
- Increase our school's high school graduation rate by 3 percent over the next four years
- Reduce our school's high school dropout rate by 2 percent over the next four years
- Increase enrollment and retention in postsecondary education by 5 percent over the next four years by giving students the opportunity to earn dual enrollment credit. After graduation from high school, academy graduates will complete Career and Technical Education Follow-Up surveys to determine successful enrollment and retention in postsecondary institutions. Graduates will have the opportunity to network on the Heritage High School's Governor's STEM Academy's social media site. This will allow the school to keep in contact with students and updated with their current postsecondary placements
- Increase the proportion of students completing a college and career curriculum in high school by increasing enrollment and completion rates annually by 5 percent in specified career pathway academy courses
- Reduce the proportion of students requiring remediation in college by 5 percent by carefully monitoring student achievement and providing academic support when necessary. Success will be measured by the number of students who meet the basic college entrance criteria as determined by the Virginia Community College System. An Academic Learning and Tutoring Center will be available for current academy student and academy graduates
- Increase the number of academy graduates employed in high-wage, high-demand, and high-skill careers as identified by the Virginia Employment Commission over the next six years after high school. Approximately sixty percent of Academy graduates will obtain employment within identified

career pathways and related occupations following postsecondary education.

Highlights
of the
Program:

As a result of participating in the Governor's STEM Academy in the pathways of Design and Pre-construction, Engineering and Technology, Programming and Software Development, Web and Digital Communications, Network Systems, and Information Support Services, students will:

- Gain a deeper understanding of the skills and knowledge incorporated in their fields of study;
- Benefit from specialized, project-based courses which develop critical-thinking, problem-solving, and decision-making skills, preparing them for the 21st-century world;
- Acquire greater communication skills;
- Develop workplace readiness skills;
- Receive opportunities to earn industry certifications preparing them to be more competitive in the work force and when applying to advanced training schools or postsecondary institutions;
- Obtain meaningful, real-life, hands-on experiences in their career pathway; and
- Profit from opportunities for internships, mentorships, job shadowing, and cooperative education, which provide students with advantages when entering postsecondary education and/or the workplace.

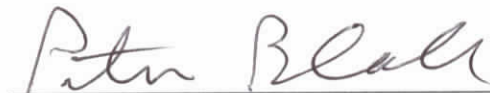
The State Council of Higher Education for
Virginia

Review of Governor's STEM Academy
Proposal

Name of Lead Entity on Proposal: Heritage High School

Date of Review: October 24, 2012

The State Council of Higher Education for Virginia recommends approval of the Heritage High School Governor's STEM Academy as a Governor's STEM Academy.



Peter Blake
Director
State Council for Higher Education

10/24/12
Date

**Virginia Department of Education
Governor's STEM Academy
Proposal Review Checklist**

**Title of Proposal: Heritage High School Governor's
STEM Academy**

Lead Entity for Proposal: Newport News Public Schools

Date of Review: October 9, 2012

**Virginia Department of Education
Governor’s STEM Academy
Proposal Review Checklist**

I. Partnership Capacity

Partnerships desiring to implement a Governor’s STEM Academy shall provide the Department of Education with evidence of the following:

Criteria	Documentation			Comments
	Full	Partial	None	
A. An active, ongoing planning committee, including a list of members and signed certifications from each that they are willing and able to serve in that capacity. At a minimum, members must represent K-12 education (superintendent or designee), higher education, and business and industry. All partners must be represented on the committee.	X			
B. An advisory committee, including a list of members and signed certifications from each that they are willing and able to serve in that capacity.	X			
C. A written memorandum of agreement among school divisions, local businesses, postsecondary institutions, and any other partners that outlines ways in which community resources will contribute to the Governor’s STEM Academy to broaden the scope of students’ educational experiences.	X			

Criteria	Documentation			Comments
	Full	Partial	None	
D. A statement of assurances that the Governor’s STEM Academy Planning Committee has reviewed provisions of <i>Administrative Procedures Guide for the Establishment of Governor’s STEM Academies</i> and agrees to follow the guidelines set forth in the document (see appendix).	X			
E. A statement of assurances that, if applicable, an ongoing Governing Board will be established to reflect current Board of Education regulations relative to jointly operated schools and programs (see appendix).	X			
Comments:				

II. Need/Rationale for the Academy

Partnerships desiring to implement a Governor’s STEM Academy shall provide the Department of Education with evidence of the following:

Criteria	Documentation			Comments
	Full	Partial	None	
A. Demonstration of the need/rationale for the Academy. This statement should be concise and state the major reasons to have a Governor’s STEM Academy, including need at the state, local and/or regional levels.	X			
B. A description of the enhanced or additional offerings in science, technology, engineering, and/or mathematics (STEM) that will meet the need described above.	X			
C. A fiscal agent that is a public entity, including a certification that the entity is willing and able to serve in that capacity.	X			

Criteria	Documentation			Comments
	Full	Partial	None	
Comments:				

III. Program Description

Each Governor’s STEM Academy planning committee shall develop cooperatively with local school divisions, business, community, and higher education partners and have available for review and dissemination, a program description that includes:

A. A statement of program goals addressing the following criteria:

Criteria	Documentation			Comments
	Full	Partial	None	
1. Rigorous academic content in career and technical instruction;	X			
2. An emphasis on STEM career pathways;	X			
3. Individualized high school plans to ensure course selections that are aligned with students’ transition and career goals after high school;	X			
4. Evidence that graduates will complete a college and work readiness curriculum, minimally at the level specified for Commonwealth Scholars Course of Study (State Scholars Core) with the possibility of pre-approved substitution of equivalent courses where there may be more relevant course selections for a particular career pathway;	X			
5. Incorporation of Virginia’s Workplace Readiness Skills.	X			
Comments:				

B. A statement of program objectives and performance measures to:

Criteria	Documentation			Comments
	Full	Partial	None	
1. Improve academic achievement of Academy students;	X			
2. Increase completion of dual enrollment courses;	X			
3. Provide workplace readiness experiences for students through strong partnerships with businesses;	X			
4. Increase high school graduation rates;	X			
5. Reduce dropout rates;	X			
6. Increase enrollment and retention in postsecondary education;	X			
7. Increase the proportion of students completing a college and workplace ready curriculum in high school;	X			
8. Reduce the proportion of students requiring remediation in college;	X			
9. Increase the number of industry certifications awarded to high school students; and	X			
10. Increase the number of graduates employed in high-wage, high-demand and high-skill careers.	X			
Comments:				

C. A brief description of the proposed program, including:

Criteria	Documentation			Comments
	Full	Partial	None	
1. Site location;	X			
2. Number of students to be served;	X			
3. Grade levels;	X			
4. General curriculum design;	X			
5. List of courses to be delivered;	X			
6. Description of how/where the courses will be delivered. Courses may be delivered on a high school, technical center or community college campus, online, or in other innovative ways; and	X			
7. Designation of full-day or part-day, academic-year program.	X			
Comments:				

D. Evidence of participation in the Governor’s Exemplary Standards Award Program for Career and Technical Education

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

E. Program and course descriptions

E.1. At least two well-articulated career pathways must be included that meet the following criteria:

Criteria	Documentation			Comments
	Full	Partial	None	
Pathway #1				
a. Must include opportunities to earn industry credentials, postsecondary certificates, diplomas or associate degrees while in high school and pursue additional industry credentials and academic degrees at the associate, bachelor's and graduate levels. These pathways may be in the same or different career clusters.	X			
b. Must be in a field identified by a statewide authority or organization, such as the Virginia Economic Development Partnership or the Virginia Research and Technology Advisory Commission, as a strategic growth area for Virginia. Examples include biosciences, information technology, automotive technology and motor sports, as well as modeling and simulation and nanotechnology or	X			
c. Must address regional and local work force demand in a high-wage, high-skill field as identified by employers and work force officials.	X			
d. At least one pathway must be in a STEM-related field. This career pathway should drive the innovative capacity of the region and/or state.	X			

Criteria	Documentation			Comments
	Full	Partial	None	
Comments:				

Criteria	Documentation			Comments
	Full	Partial	None	
Pathway #2				
a. Each career pathway must include opportunities to earn industry credentials, postsecondary certificates, diplomas or associate degrees while in high school and pursue additional industry credentials and academic degrees at the associate, bachelor's and graduate levels. These pathways may be in the same or different career clusters.	X			
b. Must be in a field identified by a statewide authority or organization, such as the Virginia Economic Development Partnership or the Virginia Research and Technology Advisory Commission, as a strategic growth area for Virginia. Examples include biosciences, information technology, automotive technology and motor sports, as well as modeling and simulation and nanotechnology, <u>or</u>	X			
c. Must address regional and local work force demand in a high-wage, high-skill field as identified by employers and work force officials.	X			
d. Of the two pathways described, at least one must be in a STEM-related field. This career pathway should drive the	X			

Criteria	Documentation			Comments
	Full	Partial	None	
innovative capacity of the region and/or the state.				
e. Additional career pathways may address one of the areas described above, or an area identified by the partnership as an area of interest, growth, or expansion for students in the service area of the Academy.	X			
Comments:				

E.2 List of all requirements for successful program completion.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

E.3 Academy graduates must achieve one or more of the following benchmarks:

Criteria	Documentation			Comments
	Full	Partial	None	
a. Earn one or more industry certifications or state occupational licenses, and/or demonstrate competencies on an assessment instrument recognized by postsecondary institutions such as CLEP examinations, collaboratively designed or mutually approved end-of-course tests, college placement tests, or student portfolios reviewed by a team of college and high school faculty; or	X			

Criteria	Documentation			Comments
	Full	Partial	None	
b. Earn at least 9 transferable college credits as defined in the Early College Scholars program (includes dual enrollment, AP and other options); or	X			
c. Earn an Associate Degree.				
Comments:				

E.4 Significant work-based experience must be included representing additional instruction or training beyond the classroom such as:

Criteria	Documentation			Comments
	Full	Partial	None	
a. Cooperative Education; or				
b. Internships; or	X			
c. Job Shadowing; or	X			
d. Mentorships; or	X			
e. Project-based learning; or	X			
f. Service learning; or	X			
g. A combination of the above.				
Comments:				

F. Length of program and daily schedule: Governor’s STEM Academies are defined by program content, not by the location or delivery system of courses. Evidence of the following must be submitted:

Criteria	Documentation			Comments
	Full	Partial	None	
Designation of full-day or part-day, academic-year program.	X			
Comments:				

G. Assurance from the fiscal agent that operating funds and facilities are available to support the Governor’s STEM Academy and are adequate to meet the needs of the program

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

H. Materials and equipment to be provided to accomplish program goals and objectives.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

I. Evidence of an internal evaluation process to effect program improvement, including:

Criteria	Documentation			Comments
	Full	Partial	None	
1. A review of the Academy’s policies, procedures, and outcomes;	X			
2. Consideration of feedback from students, staff, parents, the	X			

Criteria	Documentation			Comments
	Full	Partial	None	
community, and partnership members; and				
3. Annual collection and reporting of data to the Department of Education related to student achievement, goal achievement, and other indicators.	X			
Comments:				

IV. Administrative Procedures

Each Governor’s STEM Academy must develop and maintain procedures developed cooperatively with participating partners. There should be evidence of procedures in the four areas that follow.

A. Partnerships - The role of business and industry, public school divisions, and postsecondary institutions in the partnership. The role of workforce and economic development entities should also be included if they are among the partners.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

B. Student recruitment, selection criteria, and admissions.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

C. Code of student conduct and attendance.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

D. Transportation provided by the school division or consortium that is in compliance with all applicable federal and state regulations.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

E. Staff recruitment, selection, and assignment - The Governor’s STEM Academy shall hire staff members who meet the Virginia teacher licensure requirements and/or postsecondary faculty qualifications. Where applicable, they must have industry-specific education with training and experience, including industry certification.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

F. Staff development - The program will provide appropriate staff training in addition to staff planning time.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

G. Staff evaluation – Staff will be evaluated according to the human resources policies of the agency or institution employing Academy personnel.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

H. Parent, student and community involvement

Criteria	Documentation			Comments
	Full	Partial	None	
1. Preparation for entering the Academies should begin by eighth grade.	X			
2. Students, parents, teachers, and counselors should work collaboratively to:	X			
a. Complete career interest inventories;				
b. Prepare academic and career plans outlining an intended course of study in high school;	X			
c. Review multiple postsecondary pathways and the steps required to pursue them;	X			
d. Participate in career assessments to identify areas students should strengthen to qualify for their selected pathways; and	X			
e. Discuss available diplomas, seals, and other recognitions including admission to specialized programs such as Governor’s Academies.	X			

I. Documentation of insurance, budget, and other fiscal information

	Documentation			Comments
	Full	Partial	None	
Insurance	X			
Budget (from appendix)	X			
Budget Narrative	X			
Other				
Comments:				