

Virginia Board of Education Agenda Item



Agenda Item: Q. **Date:** September 27, 2012

Title	First Review of a Proposal from the Region 2000 Technology Council to Establish the Governor's Career and Technical Education Science, Technology, Engineering, and Mathematics Academy		
Presenter	Jonathan Whitt, Executive Director of the Region 2000 Technology Council Lolita B. Hall, Director, Office of Career and Technical Education Services		
E-mail	lb.hall@doe.virginia.gov	Phone	(804) 225-2051

Purpose of Presentation:

Other initiative or requirement. Specify below:

First review and acceptance of the Proposal from the Region 2000 Technology Council to Establish the Governor's Career and Technical Education Science, Technology, Engineering, and Mathematics Academy

Previous Review or Action:

No previous review or action.

Action Requested:

Action will be requested at a future meeting. Specify anticipated date below:

Date: October 25, 2012

Action: Final review and approval

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

X	Goal 1: Expanded Opportunities to Learn
	Goal 2: Accountability of Student Learning
	Goal 3: Nurturing Young Learners
	Goal 4: Strong Literacy and Mathematics Skills
	Goal 5: Highly Qualified and Effective Teachers and Administrators
	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 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) has reviewed the attached proposal and recommends that the Board approve the proposal. Staff members of the Virginia Department of Education (VDOE) have also reviewed the proposal in the context of the Board's criteria. An executive summary of the proposal is in Attachment A. Attachments B and C are the reports from the reviews by SCHEV and the VDOE. Attachment D is the complete proposal.

Currently, there are 15 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, 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 *Virginia's Region 2000 Technology Council Governor's Career and Technical Education Science, Technology, Engineering, and Mathematics Academy* (R2K CTE STEM) consists of partnerships among five school divisions: Amherst County, Appomattox County, Bedford County, Campbell County, and Lynchburg City. Other active partners include Central Virginia Community College, Region 2000 Technology Council, Region 2000 Workforce Investment Board, and a host of business partners, including Areva, Babcock & Wilcox, Centra Health, Delta Star, Inc., Harris Corporation, Advanced Manufacturing Technology, Inc., and the Future Focus Foundation.

The Virginia's Region 2000 Technology Council Governor's Career and Technical Education STEM Academy will focus on two career clusters that will develop STEM literacy and other 21st Century skills through applied learning to provide students a clear pathway among high school and higher education and high-demand jobs. Students enrolled in the proposed Academy will receive academic and technical training in career preparation for Engineering and Technology and Diagnostic Services pathways.

The *Engineering and Technology* pathway is in the Science, Technology, Engineering, and Mathematics (STEM) Cluster. There is an increasing demand for employees trained in the field of mechatronics, the blending of mechanical and electrical engineering disciplines. Mechatronics involves the study of software and information technology. Many robots today resulted from mechatronics development. As robotic systems become more intricate, software programs in addition to the mechanical and electrical schemes are essential to this discipline. In the fields targeted by R2K CTE STEM, occupations such as maintenance and repair, industrial machinery mechanics, electronics and industrial engineering technicians are expected to grow by more than 24 percent over the next ten years.

The study of health science careers prepares students in occupations for wellness and preventive care. This field allows one to work in diverse environments such as hospitals, medical offices, or labs. The increasing proportion of middle-aged and aging populations will continue to drive demand. In *Diagnostic Services*, students in the Academy will learn how to conduct research on diseases, interpret tests and evaluations to aid in the detection, diagnosis and treatment of diseases, injuries or other physical conditions. They will explore and learn about the tools necessary to live a healthier and problem-free lifestyle.

In both pathway programs, Academy students will be provided an opportunity to participate in dual enrollment courses with the Central Virginia Community College.

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 Virginia's Region 2000 Technology Council Governor's Career and Technical Education Science, Technology, Engineering, and Mathematics Academy, Lynchburg City Public Schools, is September 2013.

Superintendent's Recommendation:

The Superintendent of Public Instruction recommends that the Board of Education accept for first review the proposal to establish the Virginia's Region 2000 Technology Council Governor's Career and Technical Education Science, Technology, Engineering, and Mathematics Academy, Lynchburg City Public Schools.

**Governor's Career and Technical Education
Science, Technology, Engineering, and Mathematics Academy
Executive Summary
September 10, 2012**

Partnership Members: Amherst County Public Schools, Appomattox County Public Schools, Bedford County Public Schools, Campbell County Public Schools, Lynchburg City Public Schools, Central Virginia Community College, Region 2000 Technology Council, Region 2000 Workforce Investment Board, Areva, Inc., Babcock & Wilcox, Centra Health, Delta Star, Inc., Harris Corporation, Advanced Manufacturing Technology, Inc., and the Future Focus Foundation.

Lead Entity: Region 2000 Technology Council

Contact Person: Jonathan Whitt, CEcD
Executive Director, Virginia's Region 2000 Technology Council
828 Main Street, 12th Floor
Lynchburg, VA 24504
(P) 434-847-1447 X 313
(F) 434-847-1455
jwhitt@techcouncil.us

Fiscal Agent: Lynchburg City Public Schools

Contact Person: Gregory P. Sullivan, Ed.D.
Director of Information Technology
Lynchburg City Schools
Information Technology Center
3550 Young Place
Lynchburg, VA 24501
434.477.5901
434.455.4035 (F)
sullivangp@lcsedu.net

Academy Location: Central Virginia Community College

Number Students: The Governor's Career and Technical Education Science, Technology, Engineering, and Mathematics Academy will have the capacity to enroll 100 students, grades 10–12. During the initial school year (2013–2014) 50 students will be admitted.

Career Pathways: Diagnostic Services
Engineering and Technology

Academy Goals and Description: The overall goals of the Governor’s Career and Technical Education Science, Technology, Engineering, and Mathematics Academy are to provide students with the 21st-century, STEM-enriched technological skills and knowledge necessary to succeed in postsecondary education and in the world of work through authentic, rigorous, project-based work while building partnerships with parents, community and business leaders to meet these goals.

Specific Governor’s Career and Technical Education Science, Technology, Engineering, and Mathematics Academy objectives include:

- Improve academic achievement of Academy students by increasing academic rigor and relevance within selected pathways.
- Increase completion of dual enrollment courses.
- Provide workplace readiness experiences through strong partnerships with businesses.
- Increase high school graduation rates.
- Reduce dropout rates.
- Increase enrollment and retention in postsecondary education.
- Increase the number of students completing a college and workplace ready curriculum in high school.
- Reduce the number of students requiring remediation in college.
- Increase the number of industry certifications awarded to high school students.
- Increase the number of graduates employed in high-wage, high-skilled careers.

Highlights of the Program: As a result of participating in the Governor’s Career and Technical Education Science, Technology, Engineering, and Mathematics Academy in the pathways of Diagnostic Services and Engineering and Technology 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: Virginia's Region 2000
Technology Council

Date of Review: September 11, 2012

The State Council of Higher Education for Virginia recommends
approval of the Region 2000 CTE STEM Academy as a
Governor's STEM Academy.



Peter Blake
Director
State Council for Higher Education

Sep 11, 2012
Date

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

First Review

**Title of Proposal: Governor's Career and Technical
Education Science, Technology, Engineering, and
Mathematics Academy**

Lead Entity for Proposal: Region 2000 Technology Council

Fiscal Agent: Lynchburg City Public Schools

Date of Review: 9/14/12

**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 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.				
6. Incorporation of Workplace Readiness Skills for the Commonwealth.	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 <u>or</u>	X			
c. Must address regional and local work force demand in a high-	X			

Criteria	Documentation			Comments
	Full	Partial	None	
wage, high-skill field as identified by employers and work force officials.				
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			
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			

Criteria	Documentation			Comments
	Full	Partial	None	
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 innovative capacity of the region and/or the state.	X			
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); <u>or</u>	X			
b. Earn at least 9 transferable college credits as defined in the Early College Scholars program (includes dual enrollment, AP and other options); <u>or</u>	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				
c. Job Shadowing; or				
d. Mentorships; or				
e. Project-based learning; or				
f. Service learning; or				
g. A combination of the above.	X			
Comments: Work-based experiences should be noted on the Plans of Study.				

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. A review of the program design and instructional delivery;	X			
3. Consideration of feedback from students, staff, parents, the community, and partnership members; and	X			
4. Annual collection and reporting of data to the Department of Education related to student achievement, goal achievement, and other indicators.	X			
Comments: Address above items more completely in narrative.				

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	

	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		In addition to Appendix F, provide a narrative paragraph that explains how the Academy will be financially supported by the participating school division.
Other				
Comments:				

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

First Review

**Title of Proposal: Governor's Career and Technical
Education Science, Technology, Engineering, and
Mathematics Academy**

Lead Entity for Proposal: Region 2000 Technology Council

Fiscal Agent: Lynchburg City Public Schools

Date of Review: 9/14/12

**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 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.				
6. Incorporation of Workplace Readiness Skills for the Commonwealth.	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 <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. 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; <u>or</u>	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); <u>or</u>	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				
c. Job Shadowing; or				
d. Mentorships; or				
e. Project-based learning; or				
f. Service learning; or				
g. A combination of the above.	X			
Comments: Work-based experiences should be noted on the Plans of Study.				

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			

Criteria	Documentation			Comments
	Full	Partial	None	
2. A review of the program design and instructional delivery;	X			
3. Consideration of feedback from students, staff, parents, the community, and partnership members; and	X			
4. Annual collection and reporting of data to the Department of Education related to student achievement, goal achievement, and other indicators.	X			
Comments: Address above items more completely in narrative.				

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:				

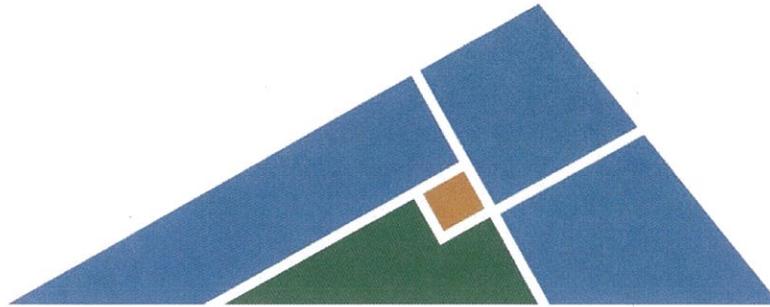
H. Parent, student and community involvement

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		In addition to Appendix F, provide a narrative paragraph that explains how the Academy will be financially supported by the participating school division.

	Documentation			Comments
	Full	Partial	None	
Other				
Comments:				



VIRGINIA'S REGION 2000 TECHNOLOGY COUNCIL

CONNECTING THE TECHNOLOGY COMMUNITY

Region 2000 Technology Council
Proposal for a Governor's
Career and Technical Education
Science, Technology, Engineering, and
Mathematics Academy

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Proposal Narrative

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Overview

Virginia's Region 2000 concept for a Governor's Career and Technical Education Science, Technology, Engineering, and Mathematics (R2K CTE STEM) Academy is the result of a planning partnership consisting of Amherst County Public Schools, Appomattox County Public Schools, Bedford County Public Schools, Campbell County Public Schools, Lynchburg City Schools, Central Virginia Community College, Region 2000 Technology Council, Region 2000 Workforce Investment Board, and a host of business partners, including Areva, Babcock & Wilcox, and Centra Health. All entities involved represent the educational and economic interests of Region 2000 with consideration for program expansion within and possibly outside the boundaries of the region.

Region 2000 Technology Council (<http://www.techcouncil.us>)

Virginia's Region 2000 comprises 2000 square miles that surround Lynchburg, Virginia. Through a unique partnership of six distinct organizations, the council provides a centralized vision of leadership for regional development. The Region 2000 Technology Council's mission is to foster an environment that stimulates innovation and growth of technology-focused organizations in the community.

The council's vision is that Virginia's Region 2000 will be recognized as a place where technology-focused organizations thrive, STEM educational programs flourish, and innovation and technology-based entrepreneurship are championed.

Region 2000 has a diverse mix of technology companies with forecasts for strong growth. The six primary business sectors are energy, engineering, health care, information technology, manufacturing, and wireless technologies. The future of the region depends on building strong networks to support these growing business sectors. The Technology Council works hard to build a community of people who want to partner in growing the technology community.

Region 2000 Workforce Investment Board (<http://www.region2000.org>)

The Region 2000 Workforce Investment Area is made up of the cities of Bedford and Lynchburg and the counties of Amherst, Appomattox, Bedford, and Campbell. The Chief Local Elected Officials, comprised of an elected official from each of the above, are responsible for appointing members from the public and private sectors to the Region 2000 Workforce Investment Board. The Board is expected to reflect the local community.

The Board is charged with implementing work force investment activities throughout Region 2000. Generally, these include increasing occupational skill attainment to improve the quality of the work force, reducing welfare dependency, and enhancing the productivity and competitiveness of the nation's economy. The Board is responsible for administering grants, providing policy guidance, and conducting oversight of all work force activities.

Region 2000 Public Schools

All five public school division superintendents in Region 2000 have agreed to participate on the R2K CTE STEM Academy Planning Committee. Representatives from Amherst County Public Schools, Appomattox County Public Schools, Bedford County Public Schools, Campbell County Public Schools and the Lynchburg City Public Schools will be actively involved in developing and sustaining the academy's instructional program.

Central Virginia Community College (CVCC) (<http://www.cvcc.vccs.edu>)

CVCC is a two-year institution, established as a member of the Virginia Community College System, that provides state-supported postsecondary education for the cities of Lynchburg and Bedford and the counties of Amherst, Appomattox, Bedford, and Campbell—a service area that coincides with Region 2000. The curricula and programs of the College serve more than 8,000 each year.

CVCC offers various programs to meet the diverse needs of the region it serves, with academic excellence its aim in all areas. Its two-year college transfer programs in arts and sciences and in certain pre-professional areas lead to associate degrees and offer courses generally acceptable for transfer to four-year institutions. Its occupational and technical programs lead to diplomas, certificates, or associate of applied science degrees and are designed to prepare individuals for certain professions. Its other programs, including developmental work, special training for industry, and community service, offer instruction commensurate with the needs of individuals, groups, and the area at large.

Centra Health (<http://www.centrahealth.com/about-centra/about-centra>)

Centra Health (Centra), a non-profit healthcare system, was founded in December 1986 through the merger of Lynchburg General-Marshall Lodge Hospital (LGH) and Virginia Baptist Hospital (VBH). Southside Community Hospital (SCH) in Farmville joined in January 2006 as an affiliate.

As the largest employer in the area, Centra includes 6,000 employees and a medical staff of 490 at Centra Lynchburg General Hospital, Centra Virginia Baptist Hospital, Centra Southside Community Hospital, health and rehabilitation centers, a regional cancer center, and physician practices serving an area from Bedford to Farmville and from Nelson County to Danville. In addition, Centra's services include residential and outpatient mental health facilities, home health and hospice programs, mammography centers, a sleep disorders center, and a center for wound care and hyperbaric medicine. A 27-member Board of Directors representing a cross section of the community governs Centra. The board includes eight physicians.

AREVA (<http://us.areva.com/EN/home-99/areva-in-the-us.html>)

AREVA is America's largest supplier in the nuclear energy sector, with more than 4,000 highly skilled workers at 35 locations across the United States and North America. AREVA has provided America with clean energy solutions for more than 40 years.

Ready to build the next generation of nuclear power plants and renewable sources in the United States, AREVA has taken the lead by investing millions of dollars to create domestic industrial capacity which provides a tremendous boost to American energy infrastructure and the U.S. economy and will continue to create thousands of jobs.

Additionally, AREVA has formed a joint venture with Northrop Grumman to produce heavy reactor components at a new facility in Newport News, Virginia. With a total investment of more than \$360 million, the project will generate more than 350 management and operational jobs when the factory is fully loaded and is currently bringing jobs to other Virginia companies involved in the facility's construction.

Babcock & Wilcox (http://www.babcock.com/library/project_profiles_NOGL.html)

Babcock & Wilcox Nuclear Operations Group, Inc., (B&W NOG) located in Lynchburg, a subsidiary of The Babcock & Wilcox Company, is a commercial facility that manufactures components for the U.S. government. This facility is the only domestic supplier of research reactor fuel elements for colleges, universities, and national laboratories. The division's commercial operations include converting or downblending high-enriched uranium into low-enriched fuel for use in commercial reactors for generating electricity.

B&W's Lynchburg work force consists of approximately 2,150 hourly and salary employees. Its highly skilled personnel include machinists, engineers, technicians, security officers, and administrative staff.

B&W NOG has an estimated \$360 million annual impact on the Region 2000 economy. In addition to this economic impact, the site contributes to the quality of life in Central Virginia through its support of social service agencies and programs. Projects range from employee volunteer activities and sponsorship of local programs to contribution of time and funding for programs of local impact.

Part I. Partnership Capacity

Section A. Planning Committee and Memorandums of Agreement

The R2K CTE STEM Academy will benefit from a continually active planning committee composed of executives from K – 12 education, higher education, governmental and non-profit organizations, and business and industry. Numerous meetings were conducted with public education superintendents from Amherst County, Appomattox County, Bedford County, Campbell County, and Lynchburg City, each of which agreed to serve on the planning committee as well as provide an alternate representative. In addition, all area Career and Technical Education program supervisors were invited to planning sessions to provide their input on the framework of the academy. Business executives from Areva, Babcock & Wilcox, Delta Star, Harris Corporation, Advanced Manufacturing Technology, Inc., and Centra Health also agreed to serve on the planning committee and provide an alternate representative. Additional business and industry partners are being recruited at this time. Memorandums of Agreement from each of the planning committee members are included in Appendix A.

Section B. Advisory Committee

One of the duties expected of the R2K CTE STEM Academy Planning Committee is to establish and name a functioning advisory committee comprised of personnel from the community, education, local government, non-profit organizations, business, and industry. The advisory committee will be used to guide facility and policy implementation until the establishment of a more formal board of directors modeled after the Central Virginia Governor's School for Science and Technology. Members of the Planning Committee will also comprise the Advisory Committee for the beginning stages of the project.

Sections C. Memorandums of Agreement

Memorandums of Agreement outlining ways in which partners can assist with resources and similar to those used for the Planning Committee will be obtained from each member of the advisory committee.

Section D. Statement of Assurances for Administrative Procedures

A statement of assurances that the R2K CTE STEM Academy Planning Committee has reviewed provisions of the Administrative Procedures Guide for the Establishment of Governor's Career and Technical Academies and agrees to follow the guidelines set forth in the document is available in Appendix B.

Section E. Statement of Assurances for Governing Board

A statement of assurances that an ongoing Governing Board will be established to reflect current Board of Education regulations relative to jointly operated schools and programs is available in Appendix C.

Part II. Need/Rationale

Section A. Need/Rationale

The National Governors Association Center for Best Practices Science, Technology, Engineering, and Math Center Grant Program published a document entitled *A Gap Analysis of Virginia's Policy Landscape*. The publication claims Virginia has surpassed other states by providing programs for gifted and talented students like Governor's Schools and other accelerated academic programs. However, officials believe it may have been remiss in developing these core skills in general education students, as evidenced by postsecondary remediation data and reports from postsecondary institutions and employers. Therefore, Virginia has identified career and technical education as an ideal venue for developing STEM literacy and other critical 21st Century skills through applied learning. The Region 2000 Technology Council and its public education and industry partners are responding to this gap by initially exploring opportunities for high school juniors and seniors in two potential Career Clusters: Health Science and Science, Technology, Engineering, and Mathematics (STEM). Within the Health Science Career Cluster,

the Diagnostic Services career pathway will be investigated. Likewise, within the STEM cluster, the career pathway of Engineering and Technology will also be explored.

As illustrated in the table below, statewide indicators in the healthcare field show a projected annual average growth in all occupations of 1.4 percent and a total projected increase from 2008 to 2018 of 14.9 percent (*Virginia Workforce Connection* found at www.vawc.virginia.gov). In the career fields targeted by the R2K CTE STEM Academy Planning Committee, occupations such as health technologists and technicians are expected to grow by more than 24 percent in the same ten-year period. Related healthcare support occupations are projected to expand by well over double the general rate with a total potential change of 40 percent from 2008 to 2018. These areas would become the curriculum foundations for our proposed STEM – Health Science Academy.

Occupational Employment Projections in Virginia for Multiple Occupations for a base year of 2008 and a projected year of 2018

Occupation Code (SOC)	Occupational Title	2008 Estimated Employment	2018 Projected Employment	Total 2008-2018 Employment Change	Annual Avg. Percent Change	Total Percent Change
000000	Total, All Occupations	4,014,302	4,612,232	597,930	1.4%	14.9%
292000	Health Technologists and Technicians	69,456	86,247	16,791	2.2%	24.2%
292099	Health Technologists and Technicians, All Other	2,592	3,074	482	1.7%	18.6%
290000	Healthcare Practitioners and Technical Occupations	182,205	225,334	43,129	2.1%	23.7%
299099	Healthcare Practitioners and Technical Workers, All Other	879	1,063	184	1.9%	20.9%
310000	Healthcare Support Occupations	87,123	121,965	34,842	3.4%	40.0%
319099	Healthcare Support Workers, All Other	5,033	5,904	871	1.6%	17.3%

Source: Projections Team / Micro Matrix System

There will also be an increasing demand for employees trained in the field of mechatronics.

According to an article published through Loyola University

(http://www.wtec.org/loyola/mechtron/01_02.htm), a Japanese engineer from Yasukawa Electric

Company first coined the term *mechatronics* in 1969 to describe the blending of mechanical and electrical engineering disciplines. Presently, the term includes a large range of technologies, many of which have become commonplace. Each technology still has the basic element of the merging of mechanics and

electronics, but now may also involve much more, particularly software and information technology. Many robots today resulted from mechatronics development. As robotic systems became more intricate, software programs, in addition to the mechanical and electrical schemes, became essential to this area of study.

Mechatronics gained legitimacy in academic circles in 1996 with the publication of the first refereed journal: *IEEE/ASME Transactions on Mechatronics*. In the premier issue, the authors worked to define this discipline. The authors suggested eleven topics that should fall, at least in part, under the general category of mechatronics:

- Modeling and design
- System integration
- Actuators and sensors
- Intelligent control
- Robotics
- Manufacturing
- Motion control
- Vibration and noise control
- Micro devices and optoelectronic systems
- Automotive systems
- Other applications

As illustrated in the following table, statewide indicators in the mechatronics field show a projected annual average growth in all occupations of 1.4 percent and a total projected increase from 2008 to 2018 of 14.9 percent (*Virginia Workforce Connection* found at www.vawc.virginia.gov). In the fields targeted by the R2K CTE STEM Academy Planning Committee, occupations such as maintenance and repair workers are expected to grow by nearly 21 percent in the same ten-year period. Related machinery maintenance workers and mechanical engineering technicians are projected to increase by 6.2 percent and 3.5 percent, respectively from 2008 to 2018.

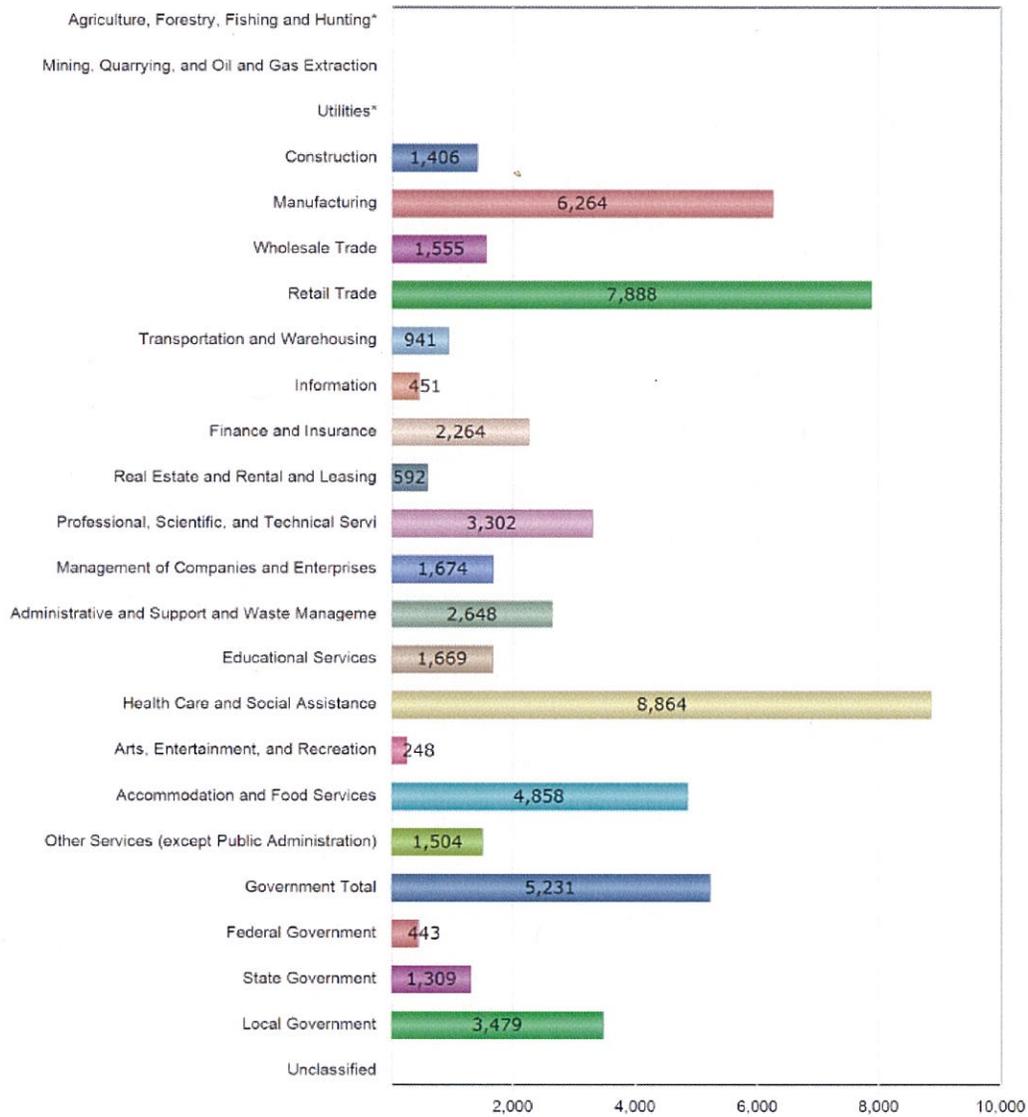
Occupational Employment Projections in Virginia for Multiple Occupations for a base year of 2008 and a projected year of 2018

Occupation Code (SOC)	Occupational Title	2008 Estimated Employment	2018 Projected Employment	Total 2008-2018 Employment Change	Annual Avg. Percent Change	Total Percent Change
000000	Total, All Occupations	4,014,302	4,612,232	597,930	1.4%	14.9%
499042	Maintenance and Repair Workers, General	38,256	46,187	7,931	1.9%	20.7%
499043	Maintenance Workers, Machinery	2,084	2,213	129	0.6%	6.2%
173027	Mechanical Engineering Technicians	1,267	1,311	44	0.3%	3.5%
519000	Other Production Occupations	64,185	64,328	143	0.0%	0.2%

Source: Projections Team / Micro Matrix System

The need for educational and training opportunities in healthcare and mechatronics for high school students in Region 2000 and beyond is also supported by data extracted from a Lynchburg and Region 2000 profile supplied by the Virginia Employment Commission. This report indicates that two of the four largest employment industries in the respective geographic areas are healthcare and manufacturing as shown in the following tables.

Employment by Industry

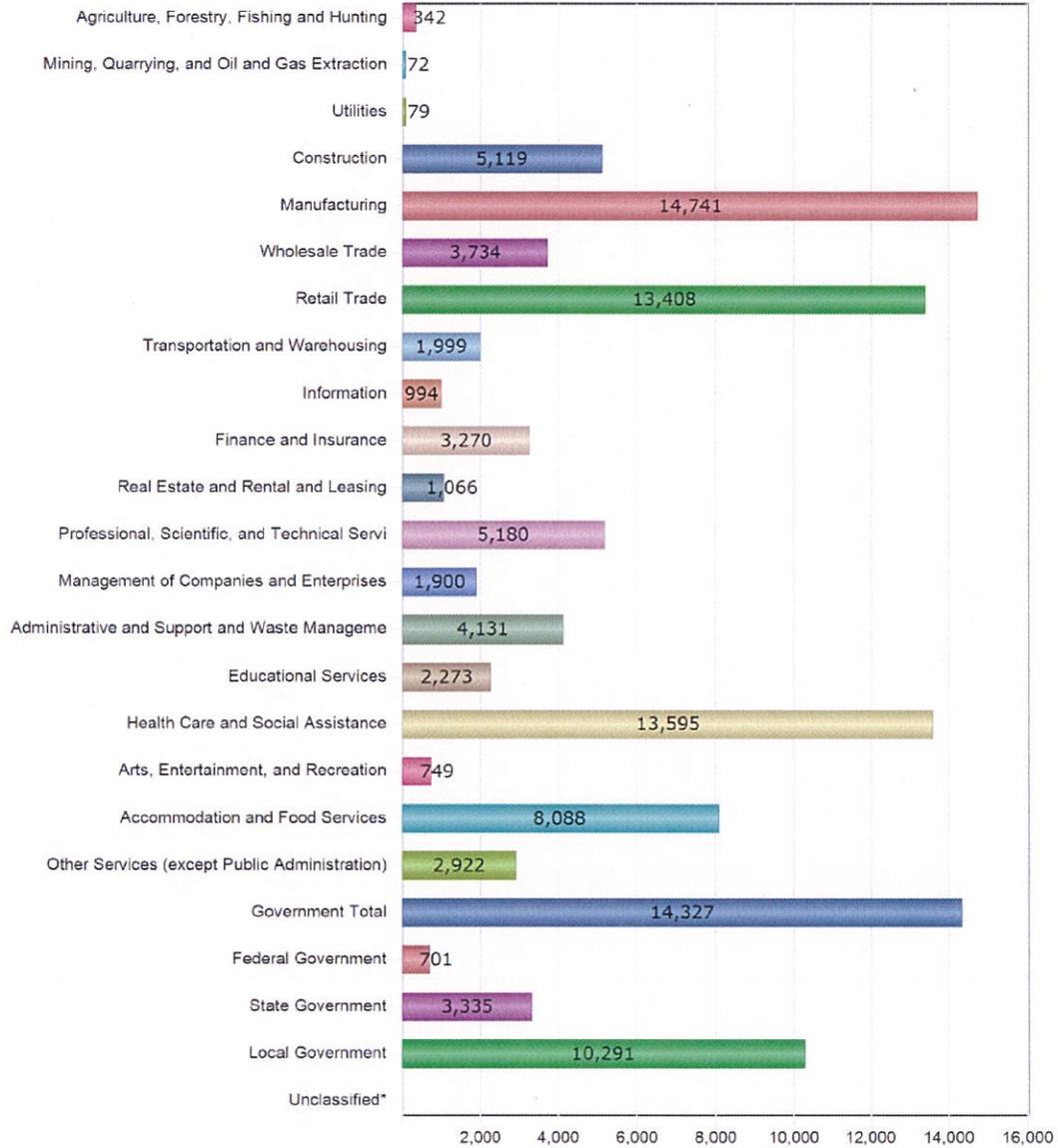


Total: 51,383

Note: Asterisk (*) indicates non-disclosable data.

Source: Virginia Employment Commission, Quarterly Census of Employment and Wages (QCEW), 4th Quarter (October, November, December) 2010.

Employment by Industry



Total: 97,988

Note: Asterisk (*) indicates non-disclosable data.

Source: Virginia Employment Commission, Quarterly Census of Employment and Wages (QCEW), 4th Quarter (October, November, December) 2011.

50 Largest Employers

1. Centra Health
2. Lynchburg City Schools
3. Framatome
4. J. Crew Outfitters
5. City of Lynchburg
6. GNA Corporation
7. Startek
8. Wal Mart
9. Lynchburg College
10. Central Virginia Community College
11. Central Virginia Community Services
12. Harris Corporation
13. Tri Tech Laboratories Inc
14. Nationwide Mutual Insurance
15. R.R. Donnelley Printing
16. Southern Air Inc.
17. Sodexho
18. Frito Lay Inc
19. Westminster Canterbury
20. Kroger
21. Young Men's Christian Association
22. C.B. Fleet, Inc.
23. Postal Service
24. Randolph-Macon Women's College
25. Delta Star
26. Parker Hannifin Corp
27. Giffin Pipe Products Co Inc
28. Flowserve Red Corporation
29. Star Mark Company
30. Louisa Health Care Center
31. The Babcock & Wilcox Comp
32. MDT Personnel LLC
33. Red Lobster & The Olive Garden
34. Food Lion
35. VDOT
36. Air & Liquid Systems Corp
37. Drs. Sackett Glen Et Al
38. Target Corp
39. Flowers Baking Company
40. International Paper Company
41. Bedford County Adult Detention
42. Capps Shoe Company
43. Automated Conveyor System
44. Bausch & Lomb
45. Lowes' Home Centers, Inc.
46. Avante at Lynchburg, Inc.
47. Belvac Inc
48. Old Virginia Candle Company
49. Central VA Orthopaedics Etal
50. U.P.S.

Source: Virginia Employment Commission,
Quarterly Census of Employment and Wages (QCEW), 4th Quarter (October, November, December) 2010.

50 Largest Employers

1. Centra Health	26. Sodexo
2. Babcock & Wilcox Nuclear	27. Nationwide Mutual Insurance
3. Bedford County School Board	28. Appomattox County Schools
4. Lynchburg City Schools	29. R.R. Donnelley Printing
5. Wal Mart	30. Carillion Professional Services
6. Areva NP Inc.	31. Campbell County
7. J. Crew Outfitters	32. Westminster Canterbury
8. Campbell County Schools	33. Lowes' Home Centers, Inc.
9. City of Lynchburg	34. Frito Lay Inc
10. Central Virginia Training Center	35. Mail America Communications
11. GNA Corporation	36. Sweet Briar College
12. Amherst County School Board	37. VDOT
13. Food Lion	38. Young Men's Christian Association
14. Kroger	39. Staffmark Investment LLC
15. Lynchburg College	40. Air & Liquid Systems Corp
16. Central Virginia Community Services	41. C.B. Fleet, Inc.
17. Harris Corporation	42. GP Big Island LLC
18. Abbott Laboratories	43. Randolph-Macon Women's College
19. County of Bedford	44. Bedford County Adult Detention
20. Barr Laboratories Inc	45. Delta Star
21. BGF Industries Inc.	46. Elwood Staffing Services Inc
22. Tri Tech Laboratories Inc	47. Glad Manufacturing Company
23. Central Virginia Community College	48. Residential Care
24. Southern Air Inc.	49. Warsaw Health Care Center
25. Postal Service	50. Startek

Source: Virginia Employment Commission, Quarterly Census of Employment and Wages (QCEW), 4th Quarter (October, November, December) 2011.

According to The National Governors Association's *Gap Analysis of Virginia's Policy*

Landscape, the state has admitted finding gaps between work force needs and the current supply of viable candidates in technical fields. The subsequent shortages in these fields are hampering our capability to recruit and retain traditional and upstart businesses throughout industry sectors and geographic areas in Virginia. While highly educated individuals are necessary to sustain and breed innovation, the R2K CTE STEM Academy Planning Committee also believes skilled workers at pre-baccalaureate levels are just as essential to support and grow those advances.

Virginia has targeted its proposal to the National Governors Association “toward development of model programs in career and technical education to raise the quality of programs and to improve alignment with postsecondary expectations in education and the workplace.” In support of this initiative, the planners believe the R2K CTE STEM Academy will cultivate options for all students to acquire the knowledge and skills that will prepare them for multiple postsecondary pathways, especially for training toward high-wage, high-skill occupations in growing local and state industries.

Section B. Enhanced or Additional Course Offerings

The proposed R2K CTE STEM Academy will target pathways in two Career Clusters: Health Science and Science, Technology, Engineering and Mathematics (STEM). The planning committee will be charged with developing and implementing sequential STEM course offerings in these areas that lead to entry-level employment and/or transition to postsecondary education at Central Virginia Community College or a four-year institution of higher learning. These Health Science and STEM courses will carry dual-enrollment college credit and will be available for students to enroll in by the fall of 2013. The finalized courses will be new options that will not be offered in the surrounding public schools. One of the many benefits of the academy, defined through the planning process, is a shared cost to local school divisions that would ordinarily be unable to fund the high-tech curriculum and laboratory facilities needed to deliver the content of the proposed CTE STEM instructional program.

Section C. Fiscal Agent

The Lynchburg City Public Schools will serve as the fiscal agent for the proposed R2K CTE STEM Academy. A statement of assurance is included in Part V, Section D of this application. The signed Memorandum of Agreement in Appendix A outlines the conditions of the partnership.

Part III. Program Description

The R2K CTE STEM Academy Planning Committee will work cooperatively with the partners from local school divisions, businesses, industries, community organizations, and the community college to make available, for review and dissemination, a program description that includes the following:

Section A. A Statement of Program Goals Addressing the Criteria Listed Below:

1. Rigorous academic content in career and technical education

All partners will contribute to developing a curriculum that is both academically challenging and incorporates the technical training needed to advance a student's career in either of the CTE STEM fields offered.

2. An emphasis on STEM career fields

The academic and technical training program provided through the proposed academy will focus on STEM career fields. Advanced-level core courses will be provided at the base schools with numerous opportunities for dual-enrollment credit through Central Virginia Community College.

3. Individualized high school plans to ensure courses that are aligned with students' transition and career goals after high school

Every academy student will complete an individualized high school plan beginning at the second semester of their seventh-grade year. Skills and interest surveys, as in the Virginia Wizard, will be used extensively when creating a student's individualized plan of study. Each plan will meet the graduation requirements for an advanced studies diploma.

4. Evidence that graduates will complete a college and work readiness curriculum, minimally at the level specified for the Commonwealth Scholars Course of Study

The R2K CTE STEM Academy Planning Committee will work to ensure that the instructional program will elevate the current core curriculum that is available and expected

at the participating school divisions. The focus of the heightened rigor will be in science, technology, and mathematics. Consistent with Governor McDonnell’s educational agenda, dual enrollment opportunities in the mechanical and electrical courses for mechatronics, as well as those of the diagnostic pathway in health sciences, will be incorporated into the curriculum.

5. Evidence that graduates will qualify for the Standard or Advanced Studies Diplomas

The academy planning committee members will work with guidance directors from the partnering public schools to craft an appropriate plan of study that will incorporate newly developed CTE STEM course offerings, challenging core academics, and opportunities for internship programs within the Region 2000 area.

6. Incorporation of Virginia’s Workplace Readiness Skills

Career and technical courses in the Region 2000 public schools consistently practice the integration of Virginia’s Workplace Readiness Skills. The course offerings at the R2K CTE STEM Academy will use the resources of the Workforce Investment Board to develop mentoring and internship opportunities for students enrolled in them.

Section B. Program Objectives and Performance Measures

The R2K CTE STEM Academy Planning Committee believes that all students should graduate from high school prepared for postsecondary education and career opportunities. The academy will incorporate a blend of technical skills with rigorous academics. Students will have opportunities for dual-enrollment through Central Virginia Community College.

The academy will provide students options for on-the job-training, mentorships, and internships with area businesses and industries. Future plans may include an “industry adopt a student” program that would include employment options and/or tuition assistance for students who meet preset qualifications.

More specifically, the R2K CTE STEM Academy Planning Committee will focus on the following criteria and performance measures when developing the proposed academy:

- Improving the academic achievement of academy students by analyzing pre- and post-test data from a variety of assessment instruments
- Increasing the completion rate of dual-enrollment courses by establishing and maintaining those opportunities through a close association with Central Virginia Community College
- Providing work based learning experiences for all academy students through mentorships, job shadowing, internships, project-based learning, field trips and guest speakers in cooperation with our business and industry partners
- Increasing high school graduation rates by 5 percent each year toward an expected annual graduation rate of 100 percent for academy seniors
- Reducing dropout rates by thorough increased academic support and partner “adoption” for all academy students
- Increasing enrollment and retention in postsecondary education through follow-up contacts and surveys to ensure a minimum growth percentage each year of academy graduates who complete a postsecondary program
- Increasing the proportion of students completing a college and career ready curriculum in high school by 10 percent each year with a benchmark of 100 percent as the annual goal
- Reducing by 5 percent each year the proportion of students requiring remediation in college by monitoring academy student scores on university entrance exams (SAT and ACT) and community college placement tests
- Increasing the number of industry certifications awarded to high school students by providing multiple avenues to attain them in the academy’s healthcare and mechatronics fields
- Increasing the number of graduates employed in high-wage, high-demand, and high-skill careers through a yearly analysis of data collected through the Completer Demographics Follow-up Survey sponsored by the Virginia Department of Education with an expected annual benchmark for improvement

Section C. Proposed Program Description

The proposed R2K CTE STEM Academy would be housed on the grounds of Central Virginia Community College. The college has already designated an existing building for the academy that would require little capital improvement. Inside the building, lab space will be created for any on-site technical training for courses in both the health care and mechatronics career fields. Partnering school divisions will provide high tech equipment to support the instructional program.

Each of the two STEM fields will be available to 25 juniors and 25 seniors from the Region 2000 public schools for a total preliminary enrollment of 100 students. For the first year of operation, enrollment will be limited to juniors; no seniors will be enrolled.

The instructional and operational day will be modeled after the Central Virginia Governor's School for Science and Technology. Students will be bused to the academy site for the CTE STEM portion of their day and returned to their base school for instruction in the core academics.

CTE STEM courses will be developed by education and industry and business partners to explore fundamentals of healthcare technology and mechatronics. Applied science, mathematics, and technology will be essential components of all course offerings. Each of the courses will be delivered in a classroom or laboratory setting using highly qualified instructors licensed by the Virginia Department of Education or certified by the Virginia Community College System. The planning committee will also provide opportunities for summer programs.

Section D. Evidence of Participation in the Governor's Exemplary Standards Award Program for Career and Technical Education

Many, if not all, of the partnering school divisions in Region 2000 have applied for the Governor's Exemplary Standards Award Program for Career and Technical Education. Teachers in the Health Sciences and STEM cluster will apply for exemplary status.

Section E. Instructional Program and Course Descriptions

The R2K CTE STEM Academy Planning Committee is in the process of developing a plan of work and establishing an advisory committee who will develop a contemporary and relevant program of study for each of the chosen fields. The following sample documents are provided for health science and manufacturing Career Clusters under which the academy's healthcare and mechatronics fields fall. These documents were retrieved from <http://www.careertech.org/career-clusters/landing-pages/health.html> and <http://www.careertech.org/career-clusters/landing-pages/manufacturing.html>.

The R2K CTE STEM Planning Committee looks forward to partnering with our local business and industry representatives from the healthcare field, as well as the National Consortium for Health Science Education (<http://www.healthscienceconsortium.org/>) to build a stellar curriculum for the academy students in the Health Science cluster.

In addition to our local business and industry representatives in the manufacturing sector, the planning committee will be utilizing organizations such as the Society of Manufacturing Engineers (SME). A 501(c) 3 organization, SME is a leader in manufacturing work force development issues, working with industry, academic, and government partners to support the current and future skilled work force (<http://www.sme.org/about-sme/>). A local chapter has been established for the Lynchburg area.



Commonwealth of Virginia Plan of Study

Rev: 6/12

Student Name: _____
 School: _____
 Date: _____

Cluster: Science, Technology, Engineering and Mathematics

Pathway: Engineering & Technology (Technology)

This Career Pathway Plan of Study can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

EDUCATION LEVELS	GRADE	English/Language Arts	Mathematics	Science	Social Studies/ Science	Other Required Courses Recommended Electives Learner Activities	Recommended Career and Technical Courses Source: Administrative Planning Guide http://www.cteresource.org/app/	SAMPLE – Occupations Relating to This Pathway: http://www.doe.virginia.gov/instruction/career_technical/career_clusters/sample_plans_study/index.shtml http://www.cteresource.org/cpg/
NOTE: Indicate State Course Titles and Codes								
Graduation Requirements: http://www.doe.virginia.gov/instruction/graduation/index.shtml								
MIDDLE	7	English 7 (1110)	Math 7 (3111)	Life Science (4115)	U S History (2354)	Inventions and Innovations (8464/8461)	Technological Systems (8463/8462)	<ul style="list-style-type: none"> - Aeronautical/Aerospace Engineer - Agricultural Engineer/Technician - Application Engineer - Architectural Engineer - Automotive Engineer - Biomedical/Biotechnology Engineer - CAD Technician - Chemical Engineer - Civil Engineer - Communications Engineer - Computer Engineer - Computer Hardware Engineer - Computer Programmer - Construction Engineer - Drafter - Electrical/Electronic/Engineering Technician - Electrical Engineer - Geothermal Engineer - Industrial Engineering/Technician - Manufacturing Engineer/Technician - Marine Engineer - Mechanical Engineer - Metallurgist - Mining Engineer - Nuclear Engineer - Petroleum Engineer - Product/Process Engineer - Survey Technician - Systems Engineer - Transportation Engineer
	8	English 8 (1120)	Math 8/Pre-Algebra (3112)	Physical Science (4125)	Civics & Economics (2357)		Technology Foundations (8402/8403)	
Career Assessment: Identify an appropriate career assessment instrument at the middle school level used to help students and their parents plan for high school: VA Wizard <input checked="" type="checkbox"/> or other assessment (please indicate): _____								
SECONDARY	9	English (1130)	Algebra I (3130)	Earth Sciences (4210)	World History/ Geography I (2215)	Economics & Personal Finance (6120) Health & PE (2 years) Foreign Language (3 years) Other Electives to Complement Pathway (Core Academic and CTE):	Introduction to Engineering Design (8439) PLTW	
	10	English (1140)	Geometry (3143)	Biology (4310)	World History/ Geography II (2216)	Technical Drawing and Design (8434/8435), Pre-Calculus (3162), Multivariate Calculus (3178)	Technology Assessment (8441) PLTW Computer Integrated Manufacturing (8442) PLTW	
	11	English (1150)	Algebra II (3135)	Chemistry (4410)	US/VA History (2360)		Engineering Design and Development (8443) PLTW	
	12	English (1160)	Trigonometry/Advanced Algebra (3137)	Physics (4510) or Principles of Technology I and II (9811/9812)	US/VA Government(2440)			

High school courses in the pathway offered locally for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)

List related certifications/credentials approved by VDOE and offered locally:

<http://www.cteresource.org/apg> (Go to Certification – License Section)

Engineering Technology Examination; National Career Readiness Certificate; Pre-Engineering/Engineering Technology Assessment (NOCTI); Virginia Workplace Readiness Assessment (NOCTI) and IC3 Certification (Certport); Workplace Readiness Skills for the Commonwealth (CTECS)

Additional Learning Opportunities:

CTSO Organization(s): DECA FBLA FFA FCCLA FFA HOSA SkillsUSA TSA

Work-Based Learning:

Career Research Cooperative Education Internship Mentorship
 Job Shadowing Service Learning Project Student Apprenticeship

Postsecondary: Placement Assessments such as Virginia Placement Test or COMPASS		College Entrance Exams such as ACT & SAT	
SAMPLE POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY Individual plans must include locally agreed upon courses at the postsecondary level. (See page 2)			
Pathway	Associate Degree, College Certificate, or Apprenticeship	Bachelors Degree	Postgraduate Degree
Engineering and Technology	Associate of Applied Science in Engineering Technology with a Specialization in Mechanical/Industrial - Transfer	(Determined locally)	(Determined locally – optional)

College: _____ School Division(s): _____

Postsecondary: Placement Assessments such as Virginia Placement Test or COMPASS

Semester	English	Mathematics	Science	Social Studies	Required Courses or Recommended Electives			
POSTSECONDARY PLAN OF STUDIES MUST INCLUDE POSTSECONDARY ACADEMIC, CTE, AND OTHER ELECTIVE COURSES APPROPRIATE FOR AN ASSOCIATE DEGREE.								
Year 1 1 st Semester	ENG 111 College Comp I DE	MTH 115 Tech Math		ECO 120 Survey of Economics	DRF 201 CAD and Design DE	EGR 100 Engineering Tech Orient	EGR 127 Intro to Comp Program	SDV 100 College Success Skills
Year 1 2 nd Semester		MTH 116 Tech Math		PSY 120 Human Relations	DRF 112 Tech Drafting II	EGR 135 Stats for Engineering Tech EGR 136 Strength of Materials for Engineering Tech	HLT 100 First Aid and CPR	IND 113 Materials and Processes in Manufacturing I
Year 2 1 st Semester	Humanities Elective				DRF 241 Solid Modeling MEC 133 Mechanics III Dynamics	CIV 220 Structural Analysis	CIV 240 Fluid Mechanics and Hydraulics	ENV 170 Fundamentals of Energy Technology
Year 2 2 nd Semester	Eng 131 Technical Report Writing		ELE 118 Practical Electricity		DRF 280 Design Capstone Project	DRF 212 Adv Tech Drafting II	Mech 161 Basic Fluid - Mech/Hydraulics and Pneumatics	Mech 210 Machine Design

College courses offered locally in the high school for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)	
Related Industry Certifications Available:	Additional Suggested Learning Opportunities:
	Work-Based Learning: <input checked="" type="checkbox"/> Cooperative Education <input checked="" type="checkbox"/> Internship <input checked="" type="checkbox"/> Mentorship <input checked="" type="checkbox"/> Job Shadowing <input checked="" type="checkbox"/> Service Learning Project <input type="checkbox"/> Registered Apprenticeship
UNIVERSITY	University/College: Degree or Major: Number of Articulated CC Credits:
Notes:	



Commonwealth of Virginia

Sample Plan of Study

Rev: 6/12

Student Name: _____
 School: _____
 Date: _____

Pathway: Diagnostic Services

Cluster: Health Science

This Career Pathway Plan of Study can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

EDUCATION LEVELS	GRADE	English/Language Arts	Mathematics	Science	Social Studies/ Science	Recommended Electives Use state course titles	Recommended Career and Technical Courses Source: Administrative Planning Guide http://www.cteresource.org/apg/	SAMPLE – Occupations Relating to This Pathway: http://www.doe.virginia.gov/instruction/career_clusters/sample_plans_study/index.shtml http://www.careerclusters.org http://www.cteresource.org/cpg/	
MIDDLE	7	English 7 (1110)	Math 7 (3111)	Life Science (4115)	U S History (2354)		Exploratory Health and Medical Sciences (8370)	Lab Technician Process Technician Data Entry Clerk Quality Assurance Technician Quality Control Technician Biochemist Microbiologist Research Assistant Research Scientist	
	8	English 8 (1120)	Math 8/Pre-Algebra (3112)	Physical Science (4125)	Civics & Economics (2357)	Keyboarding/Middle (6150)	Computer Applications (6617/6611)		
Graduation Requirements: http://www.doe.virginia.gov/instruction/graduation/index.shtml									
Career Assessment: Identify an appropriate career assessment instrument at the middle school level used to help students and their parents plan for high school: VA Wizard <input checked="" type="checkbox"/> or other assessment (please indicate): _____									
SECONDARY	9	English (1130)	Algebra I (3130)	Earth Sciences (4210)	World History/ Geography I (2215)	Economics and Personal Finance/6120 Health & PE (2 years) Other Electives to Complement Pathway (Core Academic and CTE):	Principles of the Biomedical Sciences (8379) PLTW		
	10	English (1140)	Geometry (3143)	Biology (4310)	World History/ Geography II (2216)		Human Body Systems (8380) PLTW		
	11	English (1150)	Algebra II (3135)	Chemistry (4410)	USVA History (2360)		Medical Interventions (8381) PLTW		
	12	English (1160)	Trigonometry/ Advanced Algebra (3137)	Physics (4510) or Principles of Technology I and II (9811/9812)	USVA Government(2440)		Biomedical Innovation (8382) PLTW		
High school courses in the pathway offered locally for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)									

List related certifications/credentials approved by VDOE and offered locally:
<http://www.cteresource.org/abg> (Go to Certification - License Section.)

Virginia Workplace Readiness Assessment (NOCTI) and IC3 Certification (Certiport)
 Workplace Readiness Skills for the Commonwealth (CTECS)

Additional Learning Opportunities:
 CTSO Organization(s): DECA FBLA FCCLA FFA
 FEA HOSA SkillsUSA TSA

Work-Based Learning:
 Career Research Cooperative Education Internship Mentorship
 Job Shadowing Service Learning Project Student Apprenticeship

SAMPLE POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY

Individual plans must include locally agreed upon courses at the postsecondary level. (See page 2)

POSTSECONDARY	Pathway	Associate Degree, College Certificate, or Apprenticeship	Bachelor's Degree	Postgraduate Degree
	Diagnostic Services	Medical Laboratory – AAS Radiography - AAS		

College: _____ School Division(s): _____

Postsecondary: Placement Assessments such as Virginia Placement Test or COMPASS College Entrance Exams such as ACT & SAT

Semester	English	Mathematics	Science	Social Studies	Required Courses or Recommended Electives
POSTSECONDARY PLAN OF STUDIES MUST INCLUDE POSTSECONDARY ACADEMIC, CTE, AND OTHER ELECTIVE COURSES APPROPRIATE FOR AN ASSOCIATE DEGREE.					
Year 1 1 st Semester	ENG 111 College Comp I DE		BIO 101 Gen Bio DE	Soc. Sci. Elective	Humanities Elective
Year 1 2 nd Semester		MTH 146 Intro to Elem Stats	CHM 112 College Chem II	Soc. Sci. Elective	BUS 226 Com Bus Apps
Year 2 1 st Semester			MDL 261 Clinical Chem and Instrument I		HTL 141 Intro to Med Term MDL 110 Urinalysis and Body Fluids
					MDL 125 Clinical Hematology I MDL 236 Paritology and Virology
					MDL 215 Immunology
					SDV 100 College Success Skills
					BIO 205 Gen Microbio
					MDL 235 Mycology

Year 2 2nd Semester			MDL 262 Clinical Chem and Instrument II		MDL 216 Blood Banking	MDL 225 Clinical Hematology II	MDL 237 Clinical Bacteriology	MDL 281 Clinical Correlations
College courses offered locally in the high school for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)								
Related Industry Certifications Available:								
Centra Certificate Medical Laboratory Technology accredited by the National Accrediting Agency for Clinical Laboratory Services Additional Suggested Learning Opportunities: Work-Based Learning: <input checked="" type="checkbox"/> Cooperative Education <input checked="" type="checkbox"/> Internship <input checked="" type="checkbox"/> Mentorship <input checked="" type="checkbox"/> Job Shadowing <input checked="" type="checkbox"/> Service Learning Project <input type="checkbox"/> Registered Apprenticeship								
UNIVERSITY University/College: Degree or Major: Number of Articulated CC Credits:								
Notes:								

The R2K CTE STEM Academy Planning Committee will develop an instructional program within each career pathway that meets all the requirements of the Virginia Department of Education for completion of a career and technical program as well as those of the Virginia Community College System or four-year institution for dual-enrollment options. Criteria for academy program completion will include:

- earning a standard or advanced diploma;
- attaining 100 percent of the Competency Based Task List for the pathway courses;
- successfully finishing a Completer Project Model that may include a career portfolio, panel presentation, problem-based, work-based project, and/or research paper;
- successfully completing a workplace learning experience;
- achieving a qualifying score on a postsecondary entrance exam;
- obtaining an industry certification;
- earning dual-enrollment credit; and
- successfully completing a course of study that meets at least the guidelines of the Commonwealth Scholars program.

The academy program will also build on strong school-business partnerships to incorporate a host of work-based experiences for students. Job shadowing, internships, mentorships, and cooperative education components will be built into each pathway program of study. As mentioned earlier, participation in both project- and service-based learning opportunities will be prerequisites for successful completion of the R2K CTE STEM Academy.

Section F. Program Length and Schedule

R2K CTE STEM Academy Planning Committee will determine the program length and schedule. It is expected that the daily schedule for the academy will be modeled after the Central Virginia Governor's School for Science and Technology. Students would attend the academy for a half-day and return to their home school for the remainder of the day and to participate in any extra-curricular activities. The school calendar will follow that of the Lynchburg City Public Schools.

Section G. Funding and Facilities Availability

The Lynchburg City Public Schools will serve as the academy's fiscal agent. Central Virginia Community College will provide a building and lab space on its campus to house the instructional program. Local school division superintendents have agreed in principle to support the academy through in-kind contributions and direct funding and equipment needs. The R2K CTE STEM Academy Planning Committee is actively pursuing other sources of monetary and capital assistance, including contributions from our partners in business and industry.

Section H. Materials and Equipment Availability

Materials and equipment will be provided initially through local contributions from the R2K CTE STEM Academy Planning Committee partners. In the future, materials and equipment will be provided annually through the budgetary process and the governing board of the academy. As this program will be modeled after the Central Virginia Governor's School, it will be expected that the participating school divisions from Region 2000 will appropriate funds in a similar fashion each year in order to sustain the academy.

Section I. Program Improvement and Internal Evaluation

The R2K CTE STEM Academy will participate in the *Governor's Exemplary Standards Program* nomination process for the Health Science and Science, Technology, Engineering, and Mathematics Career Cluster pathways that were chosen. A goal of the academy will be to achieve *Governor's Exemplary Program* status. In accordance with the standards set forth, the evaluation criteria will focus on program excellence, educational significance, and evidence of effectiveness and success.

Quarterly meetings will be held with the Planning Committee, Academy Director, partners, students, teachers, and parents to ensure that the goals of the Academy are being met. The academy will undergo a continuous quality improvement process to annually include

- review of the academy’s policies, procedures, and outcomes by the administrative staff, teachers, planning committee members, advisory committee members, parents, and students;
- review of the program design and instructional delivery by the administrative staff, teachers, planning committee members, and advisory committee members;
- review of survey data and focus group notes from students, parents, staff, community members, and partnership entities; and
- collect and report performance data to the Virginia Department of Education pertinent to student achievement, goal achievement, and other indicators prescribed by the planning committee and advisory board.

Part IV. Administrative Procedures

Section A. Partnerships

The R2K CTE STEM Academy Planning Committee consists of representatives from business and industry, public education, postsecondary education, local government, and professional organizations, discussed earlier in this application. Another important partner is the Future Focus Foundation (FFF). The Managing Director of the Foundation has received planning grant funds from the Region 2000 Workforce Investment Board to assist in the development of administrative procedures for the academy.

The Future Focus Foundation is the product of a vision to expand science, technology, engineering, and mathematics (STEM) opportunities to K-12 students in Lynchburg City and the counties of Amherst, Appomattox, Bedford, and Campbell. Virginia’s Region 2000 Technology Council, a partner organization in Virginia’s Region 2000 Partnership, ranked STEM education as a top critical issue to strategic planning and a necessity for regional work force preparation. In 2009, the Future Focus Foundation received 501 (c) (3) status and began seeking funding opportunities to expand many of the successful educational programs already begun by the Technology Council. Today, growth in the need for the Future Focus Foundation services and programs have resulted in the Technology Council hiring a Managing Director to guide the foundation in supporting and expanding existing programs while strategically constructing new opportunities based on the needs of educators, students, and industry.

The Future Focus Foundation will act as a comprehensive source of information and resources for STEM education and career opportunities in Virginia’s Region 2000 and will be recognized as such by

citizens, local governments, and businesses. Ultimately, the Foundation will ensure that Region 2000 students are prepared to pursue STEM careers and are knowledgeable about career and education opportunities within the region.

By providing a clearly defined continuum of STEM education opportunities to K-12, through the public education system and community involvement, the foundation will seek to

- ensure that all area youth have knowledge of the availability of STEM careers
- ensure that all area youth have exposure to the underlying skills and thought processes necessary for success in STEM careers
- raise public awareness of the importance of developing a STEM work force for the future.

The Foundation partners with local colleges, employers, and other non-profit organizations to offer STEM programs that engage youth in the community. The following is a sampling of the programs supported through the Future Focus Foundation and the Region 2000 Technology Council.

1. **Jr. FIRST:** Jr. *FIRST* Lego introduces children ages 6 to 9 (grades K – 3) to the exciting worlds of science and technology. The Region 2000 Technology Council is currently growing this program through partnership and financial support and looks to integrate Jr. *FIRST* into the *FIRST* Lego League regional tournament.
2. **FIRST Lego League:** *FIRST* Lego League (FLL) is an exciting and fun global robotics program that ignites an enthusiasm for discovery, science, and technology in kids ages 9 to 14 (grades 4 to 8). The Council financially supports local teams and an annual regional competition in partnership with Central Virginia Community College (the largest in the state) each October.
3. **Vex Robotics:** Vex Robotics is a robotics program for students ages 14 to 18 (grades 9 to 12). The Council hosts a competition between local high school teams at the annual Technology Fair at Central Virginia Community College and supports a regional tournament at Liberty University each May.
4. **Technology Fair:** Held each May at Central Virginia Community College, the Council is a supporter of the region's only technology fair for high school students. Students from area high schools compete in a variety of technology-focused competitions.
5. **Summer Career Academies:** Central Virginia Community College, in alliance with the Region 2000 Technology Council, and the Region 2000 Education Consortium, will once again sponsor high-tech career academies for middle school and high school students. These academies are high-quality career exploration events designed to educate and inspire students to explore career pathways in Central Virginia. Summer academies are available to public and private middle and high school students, offering a planned curriculum, skill-building activities, industry tours, guest speakers and more. Academies are limited to 15 students each.
6. **Get Set:** The Council and Central Virginia Community College published an annual magazine for the region's eighth- and ninth- grade students that showcases the variety of technology-based job

opportunities available to students and the educational pathways needed to enter these job fields. In addition, the Council hosts the **Get Set Web site**; an online portal for students, parents, educators and companies that matches career interests and educational opportunities.

7. **Central VA Regional Science Fair:** Hosted each May by the Central Virginia Governor's School, the Council is a corporate sponsor of the region's only area-wide science fair for fifth-through eighth-grade students. This event is affiliated with the Intel International Science and Engineering Fair.
8. **Future Focus Career EXPO:** Held each October, the Council brings together industry and education in a trade-show format where students can explore career opportunities within Region 2000 and compete in a number of technology challenges. More than 1000 participants from area middle and high schools and 50 companies participate each year.
9. **Summer Internships:** The Council is establishing a summer internship program for high school and college students looking for technology-focused career opportunities.

The result of the Future Focus Foundation's efforts will be an increased percentage of students seeking STEM careers, both through college education and career and technical training. The various activities listed above and sponsored by the FFF are part of a continuum that will reach its climax in the proposed R2K CTE STEM Academy.

Through the efforts of the FFF Managing Director, a program of work has been developed that outlines the tasks and duties that will be accomplished toward the establishment of a Governor's Career and Technical STEM Academy for the fall of 2013. A table reflecting this program of work with objectives and responsible parties follows.

Work Plan – Region 2000 CTE STEM Academy

Using the table below, please complete the work plan for this project.

- **Measurable Goal or Objective:** Provide the outcome (in quantitative terms if possible) that will be achieved through the related activity.
- **Activity:** List an activity that will be provided as part of the criteria listed.
- **Method of Evaluation:** Provide a method for evaluating the activity/outcome. How will you know if the activity is successful?
- **Major Partners and Roles:** Provide the partners' names and the role of each partner in this activity. Ensure the required partners are listed for relevant activities described in the narrative proposal.

Measurable Goal or Objective	Activity	Method of Evaluation	Major Partner(s) and Roles(s)
<p>Appoint Career and Technical Education (CTE) STEM Academy Project Manager</p>	<p>A CTE-STEM Academy Project Manager shall be appointed to perform academy research; project compilation; serve as the liaison to the Department of Education STEM support team; organize the steering committee; and coordinate and facilitate the development of academy instructional content and administrative operations.</p>	<p>CTE STEM Academy Planning Committee acknowledges and supports the role of Project Manager for planning and implementation of the Region 2000 CTE STEM Academy.</p>	<p>CTE STEM Academy Planning Committee – Approval of “Project Manager” role and appointment for the Region 2000 CTE STEM Academy planning and implementation project.</p>
Instruction Development			
<p>Establish a minimum of two Career Clusters</p>	<p>Utilize the expertise of the CTE STEM Academy Planning Committee Industry and Education representatives to identify two Career Clusters for student enrollment.</p>	<p>Identified Career Clusters target industry and regional specific work force demands.</p>	<p>CTE STEM Academy Project Manager – Coordinate Planning Committee Career Cluster selection process and industry needs assessment. CTE STEM Academy Planning Committee – Present preliminary Career Cluster findings and develop final selections of Career Clusters.</p>

Measurable Goal or Objective	Activity	Method of Evaluation	Major Partner(s) and Roles(s)
<p>Establish curriculum for each identified Career Cluster.</p>	<p>Under the direction of the Department of Education STEM Support Team and CTE STEM Planning Committee, develop proposed Career Cluster instructional materials.</p>	<p>Instructional curriculum developed is successfully tailored to meet regional work force needs. Curriculum will correlate to industry standards, provide certification potential, and maximize dual-enrollment opportunities.</p>	<p><u>CTE STEM Academy Project Manager</u> – Work with the Department of Education to develop tailored Career Cluster instruction materials.</p> <p><u>CTE STEM Planning Committee</u> – Provide insight to industry work force demands and competitive industry standards and certifications.</p> <p><u>Department of Education</u> – CTE STEM support team provides direction and oversight to Region 2000 curriculum development.</p> <p><u>CVCC</u> – Provide potential dual-enrollment possibilities for Community College credits toward obtaining a degree. Develop a dual-enrollment agreement with local school divisions.</p>
<p>Identify potential CTE STEM Academy instructional faculty.</p>	<p>Assess industry instructional faculty, CVCC adjunct faculty, and secondary certified teaching faculty as potential CTE-STEM Academy instructional faculty.</p>	<p>Develop instructional faculty position descriptions and requirements that meet DOE standards, industry certification standards, and still provide innovative learning opportunities for students to participate in regional work force development targeted programming.</p>	<p><u>CTE STEM Academy Project Manager</u> – research DOE standards and industry standards. Pathways for industry instructors to achieve teaching certification.</p> <p><u>CTE STEM Planning Committee</u> – Identify potential instructional faculty.</p>

Measurable Goal or Objective	Activity	Method of Evaluation	Major Partner(s) and Roles(s)
<i>Operations and Administration</i>			
Establish CTE STEM Academy facility location.	Finalize physical building and classroom space.	Establish a formal memorandum of understanding agreement related to facility usage between the STEM Academy Planning Committee and Central Virginia Community College.	<p><u>CTE STEM Academy Steering Committee</u> – advisory oversight</p> <p><u>CTE STEM Academy Project Manager</u> – facility research and drafting of MOU</p> <p><u>CVCC</u> – detailed description of available facility usage and agreement of MOU</p>
Acquire required laboratory equipment and supplies.	Acquire necessary laboratory supplies as indicated in the finalized academy curriculum.	Equipment and supplies are successfully obtained through donations, secured grant funds, and/or public school funding support.	<p><u>CTE STEM Academy Project Manager</u> – Research needed supplies, prepare a yearly equipment budget, and explore grant opportunities.</p> <p><u>CTE STEM Planning Committee</u> – Identify potential industry partners for equipment acquisition. Assess potential funding, such as Perkins funding, which could support equipment acquisition.</p>
Establish the regional student enrollment selection process.	This process should include multiple methods of student assessment such as interview, application, and academic achievement.	Successful student enrollment selection process is accepted and implemented by all Region 2000 Public Schools.	<u>CTE STEM Academy Planning Committee</u> – primary responsibility of identifying and agreeing on a regional selection process

Measurable Goal or Objective	Activity	Method of Evaluation	Major Partner(s) and Roles(s)
<p>Develop organization diagram and structure.</p>	<p>Develop CTE STEM Academy organizational structure that includes administrative and supervisory responsibilities.</p>	<p>Finalized Region 2000 STEM Academy organizational structure recommended by the STEM Academy Advisory Committee is accepted by the STEM Academy Steering Committee.</p>	<p><u>CTE STEM Academy Project Manager</u> – Research potential organizational structure scenarios.</p> <p><u>CTE STEM Academy Planning Committee</u> – Develop a draft organizational structure diagram.</p>
<p>Establish administrative policies and procedures.</p>	<p>Develop policies and procedures under DOE and the State Council of Higher Education for Virginia (SCHEV) guidelines and requirements for establishing a Governor’s CTE STEM Academy.</p>	<p>Successfully develop required policies and procedures for the day-to-day operations of a regional CTE STEM Academy.</p>	<p><u>DOE</u> – Provide necessary STEM Academy policies and procedures. Provide examples of STEM Academies with a successful record of implementing policies and procedures.</p> <p><u>CTE STEM Academy Project Manager</u> – Coordinate with DOE and research required administrative policies and procedures.</p> <p><u>CTE STEM Academy Planning Committee</u> – Provide oversight and approval to implemented policies and procedures.</p>
<p>Secure student transportation.</p>	<p>Plan and develop a budget that includes daily student transportation to and from the CTE STEM Academy physical facility.</p>	<p>Successfully secure transportation at minimal cost to participating school districts.</p>	<p><u>CTE STEM Academy Planning Committee</u> - Provide suggestions for potential student transportation means. Give final approval on transportation procedures.</p>

Section B. Student Recruitment, Selection, and Admission

Student recruitment for the R2K CTE STEM Academy will begin at the middle school level in all divisions as students make initial selections for their academic and career plans. An extensive selection and admission procedure will be developed. It will be based on a variety of factors, including written applications, interviews, and an academic records review by a committee composed of teachers, counselors, and partnership entities.

Section C. Student Conduct and Attendance

Academy students will be under the jurisdiction of the policies and practices of the participating school divisions. The code of student conduct used by all public schools in Region 2000 is modeled after those suggested by the Virginia School Boards Association Policy JFC.

Section D. Student Transportation

Students who are enrolled at the R2K CTE STEM Academy will be provided with transportation in a manner and practice similar to that of the Central Virginia Governor's School. All participating public school divisions will be responsible for the transportation of their students to and from the academy.

Section E. Staff Recruitment

The R2K CTE STEM Academy administrative staff will hire only staff members who meet the licensure requirements and/or postsecondary faculty qualifications as outlined by the Virginia Department of Education, the Virginia Community College System, and in the *Code of Virginia* 8VAC 20-22-10 et. seq. Where applicable, academy instructors will have industry-specific training and experience with appropriate certifications.

Section F. Staff Development

R2K CTE STEM Academy staff will be expected to participate in local, state, regional, and national professional development activities and organizations. Periodic workshops will be conducted

relative to the instructional program and career pathways delivered at the academy. Opportunities for collaboration between industry partners and instructors will be made available throughout the year. Daily planning time will also be provided for academy instructors.

Section G. Staff Evaluation

R2K CTE STEM Academy staff will be evaluated according to the human resources policies and practices of the Lynchburg City Public Schools that serve as the fiscal agent and therefore will employ academy personnel.

Section H. Parent, Student, and Community Involvement

Students, parents, teachers, guidance counselors, administrators, and partner entity representatives in Region 2000 will work collaboratively to establish policies and practices that will

- prepare students for entering the R2K CTE STEM Academy by the end of tenth grade
- ensure student completion of career interest inventories through tools such as Virginia Education Wizard
- initiate student academic and career plans outlining intended high school courses of study
- explore various postsecondary opportunities and review the steps required for students to take advantage of them
- administer career assessments for students to identify areas of strength and weakness when choosing a desired postsecondary opportunity
- examine all student options for achieving available diplomas, seals, academic citations, and admission to specialized programs.

Appendices

Appendix A

Appendix A
Region 2000 CTE – STEM Academy
Planning Committee/Advisory Committee Members

Mr. Des Black	Senior Manager IT	AREVA
Dr. Scott Brabrand	Superintendent	Lynchburg City Public Schools
Mr. Michael Bryant	CEO	Centra Health
Dr. John Capps	President	Central Virginia Community College
Mr. Brian Davis	Executive Director	Region 2000 Workforce Investment Board
Dr. Dorinda Grasty	Superintendent	Appomattox County Public Schools
Mr. Larry Hatch	President	Advanced Manufacturing Technology, Inc.
Mr. Kendall Jackson	General Manager	Delta Star, Inc.
Dr. Bobby Johnson	Superintendent	Campbell County Public Schools
Mr. Nat Marshall	Senior HR Specialist	Babcock and Wilcox
Ms. Elizabeth Narehood	Director	Future Focus Foundation
Ms. Stephanie Prokity	Co-Founder, Owner	Successful Innovations
Dr. Brian Ratliff	Superintendent	Amherst County Public Schools
Dr. Douglas Schuch	Superintendent	Bedford County Public Schools
Dr. Greg Sullivan	Director of IT	Lynchburg City Public Schools
Mr. Jonathan Whitt	Executive Director	Region 2000 Technology Council

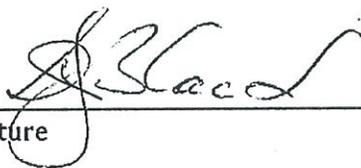
Planning and Advisory Committee Certification

**Virginia's Region 2000
Governor's Career and Technical STEM Academy**

Partner Contact Information

Name: DESMOND BLACK
Title: SENIOR MANAGER INFORMATION SYSTEMS
School/Institution/Organization: AREVA INC

This signature certifies my willingness to be an active participant or assign a designee/representative for the Planning Committee and any future Advisory Committees of the proposed Virginia's Region 2000 Governor's Career and Technical STEM Academy.


Signature

7/9/2012
Date

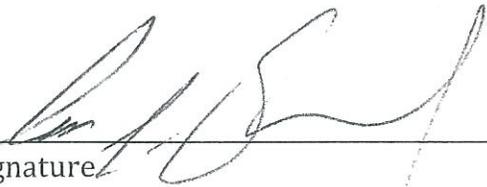
Planning and Advisory Committee Certification

**Virginia's Region 2000
Governor's Career and Technical STEM Academy**

Partner Contact Information

Name:	Scott BrAbrund
Title:	Superintendent
School/Institution/Organization:	Lynchburg City Schools

This signature certifies my willingness to be an active participant or assign a designee/representative for the Planning Committee and any future Advisory Committees of the proposed Virginia's Region 2000 Governor's Career and Technical STEM Academy.

Signature 

Date 7/10/12

Planning and Advisory Committee Certification

**Virginia's Region 2000
Governor's Career and Technical STEM Academy**

Partner Contact Information

Name: W. Michael Bryant

Title: President & CEO

School/Institution/Organization: CENTRA HEALTH

This signature certifies my willingness to be an active participant or assign a designee/representative for the Planning Committee and any future Advisory Committees of the proposed Virginia's Region 2000 Governor's Career and Technical STEM Academy.

Dr. Michael Bryant
Signature

7-16-12
Date

Planning and Advisory Committee Certification

**Virginia's Region 2000
Governor's Career and Technical STEM Academy**

Partner Contact Information

Name: *John S. Capps*

Title: *President*

School/Institution/Organization: *Central Virginia Community College*

This signature certifies my willingness to be an active participant or assign a designee/representative for the Planning Committee and any future Advisory Committees of the proposed Virginia's Region 2000 Governor's Career and Technical STEM Academy.

John S. Capps

Signature

7-10-12

Date

Planning and Advisory Committee Certification

**Virginia's Region 2000
Governor's Career and Technical STEM Academy**

Partner Contact Information

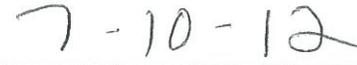
Name: Brian K. Davis

Title: Executive Director

School/Institution/Organization: Region 2000 Workforce Investment Board

This signature certifies my willingness to be an active participant or assign a designee/representative for the Planning Committee and any future Advisory Committees of the proposed Virginia's Region 2000 Governor's Career and Technical STEM Academy.


Signature


Date

Planning and Advisory Committee Certification

**Virginia's Region 2000
Governor's Career and Technical STEM Academy**

Partner Contact Information

Name: *Dr. Donald G. Grasty*

Title: *Div. Supt.*

School/Institution/Organization: *Appomattox Co. Public Schools*

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Donald G. Grasty
Signature

7-10-12
Date

Planning and Advisory Committee Certification

**Virginia's Region 2000
Governor's Career and Technical STEM Academy**

Partner Contact Information

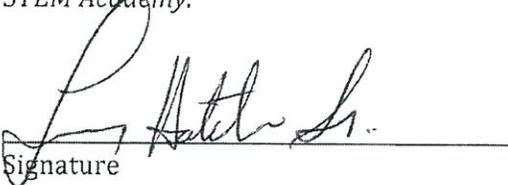
Name: Larry Hatch Sr.

Title: President

School/Institution/Organization: AMTI

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Signature



September 12, 2012
Date

Planning and Advisory Committee Certification

**Virginia's Region 2000
Governor's Career and Technical STEM Academy**

Partner Contact Information

Name:	<i>Kendall Jackson</i>
Title:	<i>General Manager</i>
School/Institution/ <u>Organization:</u>	<i>Delta Star, Inc.</i>

This signature certifies my willingness to be an active participant or assign a designee/representative for the Planning Committee and any future Advisory Committees of the proposed Virginia's Region 2000 Governor's Career and Technical STEM Academy.


Signature

7/10/12
Date

Planning and Advisory Committee Certification

**Virginia's Region 2000
Governor's Career and Technical STEM Academy**

Partner Contact Information

Name: *Robert L. Johnson II*

Title: *Superintendent*

School/Institution/Organization: *Campbell Co. Public Schools*

This signature certifies my willingness to be an active participant or assign a designee/representative for the Planning Committee and any future Advisory Committees of the proposed Virginia's Region 2000 Governor's Career and Technical STEM Academy.



Signature

7-10-12

Date

Planning and Advisory Committee Certification

**Virginia's Region 2000
Governor's Career and Technical STEM Academy**

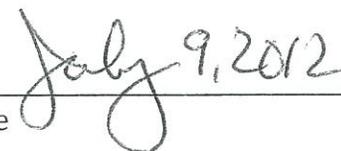
Partner Contact Information

Name:	Nathaniel X. Marshall
Title:	Sr. HR Specialist - HR EEO & Community Relations
School/Institution/Organization:	Babcock & Wilcox

This signature certifies my willingness to be an active participant or assign a designee/representative for the Planning Committee and any future Advisory Committees of the proposed Virginia's Region 2000 Governor's Career and Technical STEM Academy.



Signature



Date

Planning and Advisory Committee Certification

**Virginia's Region 2000
Governor's Career and Technical STEM Academy**

Partner Contact Information

Name: *Elizabeth Narehood*

Title: *Managing Director*

School/Institution/Organization: *Future Focus Foundation*

This signature certifies my willingness to be an active participant or assign a designee/representative for the Planning Committee and any future Advisory Committees of the proposed Virginia's Region 2000 Governor's Career and Technical STEM Academy.



Signature

7/10/12

Date

Planning and Advisory Committee Certification

**Virginia's Region 2000
Governor's Career and Technical STEM Academy**

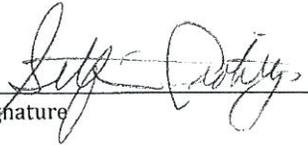
Partner Contact Information

Name: Stefanie Prokity

Title: Owner

School/Institution/Organization: Successful Innovations, Inc.

This signature certifies my willingness to be an active participant or assign a designee/representative for the Planning Committee and any future Advisory Committees of the proposed Virginia's Region 2000 Governor's Career and Technical STEM Academy.


Signature

9-7-12
Date

Planning and Advisory Committee Certification

**Virginia's Region 2000
Governor's Career and Technical STEM Academy**

Partner Contact Information

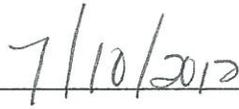
Name: Brian Ratliff

Title: Superintendent

School/Institution/Organization: Amherst County Public Schools

This signature certifies my willingness to be an active participant or assign a designee/representative for the Planning Committee and any future Advisory Committees of the proposed Virginia's Region 2000 Governor's Career and Technical STEM Academy.


Signature


Date

Planning and Advisory Committee Certification

**Virginia's Region 2000
Governor's Career and Technical STEM Academy**

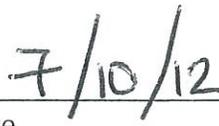
Partner Contact Information

Name: Douglas Schuch
Title: Superintendent
School/Institution/Organization: Bedford County Public Schools

This signature certifies my willingness to be an active participant or assign a designee/representative for the Planning Committee and any future Advisory Committees of the proposed Virginia's Region 2000 Governor's Career and Technical STEM Academy.



Signature



Date

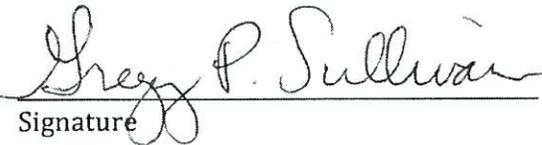
Planning and Advisory Committee Certification

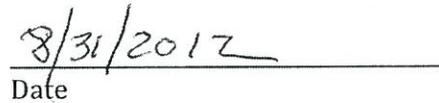
**Virginia's Region 2000
Governor's Career and Technical STEM Academy**

Partner Contact Information

Name: DR. GREGORY P. SULLIVAN
Title: DIRECTOR OF INFORMATION TECHNOLOGY
School/Institution/Organization: LYNCHBURG CITY PUBLIC SCHOOLS

This signature certifies my willingness to be an active participant or assign a designee/representative for the Planning Committee and any future Advisory Committees of the proposed Virginia's Region 2000 Governor's Career and Technical STEM Academy.


Signature


Date

Planning and Advisory Committee Certification

**Virginia's Region 2000
Governor's Career and Technical STEM Academy**

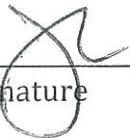
Partner Contact Information

Name: Jonathan Whitt

Title: Executive Director

School/Institution/Organization: Region 2000 Technology Council

This signature certifies my willingness to be an active participant or assign a designee/representative for the Planning Committee and any future Advisory Committees of the proposed Virginia's Region 2000 Governor's Career and Technical STEM Academy.



Signature

7/10/12

Date

Appendix B

Appendix B
Statement of Assurances

**Governor's Science, Technology, Engineering and
Mathematics (STEM) Academy**

STATEMENT OF ASSURANCES

The authorized signature on this page certifies to the Virginia Department of Education that the authorized official assures that:

1. The planning committee has reviewed the provisions of *Administrative Procedures Guide for the Establishment of Governor's STEM Academies* outlined in the Guidance Manual, and understands that an implementation proposal will need to address these criteria and/or others approved by the Virginia Board of Education.
2. The planning committee agrees to follow the guidelines set forth in the *Administrative Procedures Guide for the Establishment of Governor's STEM Academy's* document.
3. If the Governor's STEM Academy will be a jointly operated program, an ongoing governing board will be established or maintained to reflect current Board of Education regulations relative to jointly operated schools and programs.
4. A public, government entity will serve as the grant fiscal agent.

Certification by Authorized or Institutional Official:

The applicant certifies that to the best of his/her knowledge the information in this application is correct, that the filing of this application is duly authorized by the partners participating in this process to establish a Governor's STEM Academy, and that the applicant will comply with the statements of assurances.

Jonathan Whitt Executive Director
Typed or Printed Name of Authorized Official Title

 7/10/12
Signature of Authorized Official Date

Appendix C

Appendix C
Statement of Assurance for Jointly Operated Schools and Programs



STATEMENT OF ASSURANCE FOR JOINTLY OPERATED PROGRAM

The authorized signature on this page certifies to the Virginia Department of Education that the authorized official assures that:

1. Operating funds and facilities are available to support the Governor's Region 2000 CTE-STEM Academy.
2. Operating funds and resources are available to adequately support the program needs of the Governor's Region 2000 CTE-STEM Academy.
3. As the Governor's Region 2000 CTE-STEM Academy will be a regional venture, an ongoing governing board will be established and maintained to reflect current Board of Education regulations relative to jointly operated schools and programs.

Certification by Authorized or Institutional Official:

The applicant certifies that to the best of his knowledge the information in this application is correct; the filing of this application is duly authorized by the Region 2000 Technology Council and the partners participating in this process to establish a Governor's CTE-STEM Academy; and the Planning Committee will comply with the above statement of assurances.

Jonathan Whitt

Printed Name of Authorized Official

Executive Director

Title

[Signature]

Signature of Authorized Official

7/10/12

Date

Appendix D

MEMORANDUM OF AGREEMENT

Between

Virginia's Region 2000 Governor's Career and Technical STEM Academy Partners
and Virginia's Region 2000 Public Schools

The Region 2000 Public School Systems including the counties of Appomattox, Amherst, Bedford, Campbell, and the City of Lynchburg hereby enter into this Memorandum of Agreement with the Region 2000 Governor's Career and Technical STEM Academy partners for the purpose of the establishment, implementation, and sustainability of the academy.

The focus of the Governor's CTE-STEM Academy will be to offer Region 2000 students expanded education opportunities in the areas of science, engineering, technology, and math. A planning committee representing the region's secondary public schools, post-secondary partner institutions, technology related economic development partners, and leading regional industry will offer direction and define a rigorous instruction program with a minimum of two core career pathways. These career pathways offer students industry-based instruction that will prepare students for post-secondary opportunities or certification to directly enter the workforce in a high-skill, high-wage, high-demand employment area.

Region 2000 Public Schools agree to:

1. Designate a representative to participate in the Region 2000 Governor's CTE STEM Academy planning and advisory committees.
2. Assist with the coordination of curriculum development and minimum of two defined career pathways for the Region 2000 Governor's CTE STEM Academy.
3. Partner with Lynchburg City schools designated to serve as the Academy fiscal agent. County school systems shall provide financial support for the Academy as defined by the Academy planning committee.
4. Identify methods of ongoing evaluation of the academy to ensure program methods and deliveries are consistent with the Academy's vision and purpose.

Region 2000 Governor's Career and Technical Education STEM Academy Partners agree to:

1. Designate a representative to participate in the Region 2000 Governor's CTE STEM Academy planning and advisory committees.
2. Identify workforce development needs related to STEM education in Virginia's Region 2000.
3. Provide guidance in the development of Academy curriculum and courses.
4. Develop work-based learning experiences that will include but are not limited to job shadowing, internships, mentoring, project-based learning, and service-based learning opportunities.
5. Provide or assist in the procurement of instructional and instructor professional development resources. Provide information to be used for reporting and evaluation of programs, courses, and overall academy operation.

By signing this agreement, I certify that the organization I represent will be a willing participant and supporter in the development of the Region 2000 Governor's Career and Technical STEM Academy.

Signature

Date

Executive Director, Region 2000 Technology Council

Title and Organization Represented

MEMORANDUM OF AGREEMENT

Between

Virginia's Region 2000 Governor's Career and Technical STEM Academy Partners
and Virginia's Region 2000 Public Schools

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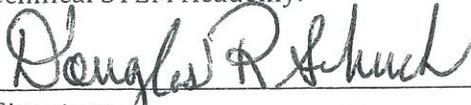
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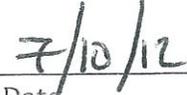
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By signing this agreement, I certify that the organization I represent will be a willing participant and supporter in the development of the Region 2000 Governor's Career and Technical STEM Academy.



Signature
Bedford County Public Schools



Date

Title and Organization Represented

MEMORANDUM OF AGREEMENT

Between

Virginia's Region 2000 Governor's Career and Technical STEM Academy Partners
and Virginia's Region 2000 Public Schools

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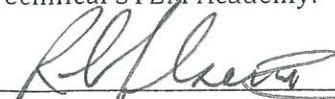
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By signing this agreement, I certify that the organization I represent will be a willing participant and supporter in the development of the Region 2000 Governor's Career and Technical STEM Academy.



Signature

7-10-12

Date



Title and Organization Represented

MEMORANDUM OF AGREEMENT

Between

Virginia's Region 2000 Governor's Career and Technical STEM Academy Partners
and Virginia's Region 2000 Public Schools

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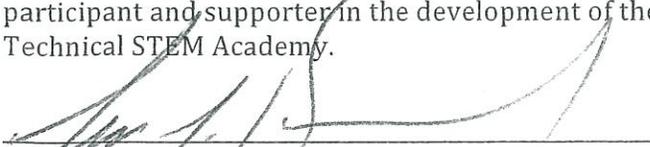
Region 2000 Public Schools agree to:

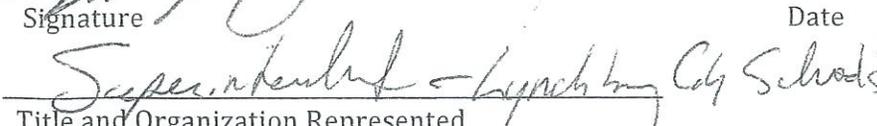
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By signing this agreement, I certify that the organization I represent will be a willing participant and supporter in the development of the Region 2000 Governor's Career and Technical STEM Academy.


Signature _____ Date 7/10/12


Title and Organization Represented _____

MEMORANDUM OF AGREEMENT

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Virginia's Region 2000 Governor's Career and Technical STEM Academy Partners
and Virginia's Region 2000 Public Schools

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By signing this agreement, I certify that the organization I represent will be a willing participant and supporter in the development of the Region 2000 Governor's Career and Technical STEM Academy.

John S. Pappas
Signature

7-10-12
Date

President / Central Virginia Community College
Title and Organization Represented

MEMORANDUM OF AGREEMENT

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Virginia's Region 2000 Governor's Career and Technical STEM Academy Partners
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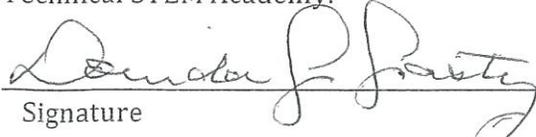
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By signing this agreement, I certify that the organization I represent will be a willing participant and supporter in the development of the Region 2000 Governor's Career and Technical STEM Academy.


Signature

7-10-12
Date

Div. Supr. Appomattox Co. Public Schools
Title and Organization Represented

MEMORANDUM OF AGREEMENT

Between

Virginia's Region 2000 Governor's Career and Technical STEM Academy Partners
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Bruce Rathoff, Ed.D.
Signature

7/10/2012
Date

Superintendent, Amherst County Schools
Title and Organization Represented

MEMORANDUM OF AGREEMENT

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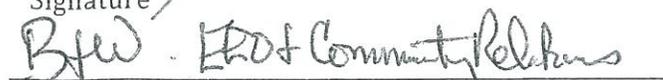
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By signing this agreement, I certify that the organization I represent will be a willing participant and supporter in the development of the Region 2000 Governor's Career and Technical STEM Academy.


Signature


Title and Organization Represented


Date

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Brian K. Davis
Signature

7-10-12
Date

Executive Director, Region 2000 Workforce Investment Board
Title and Organization Represented

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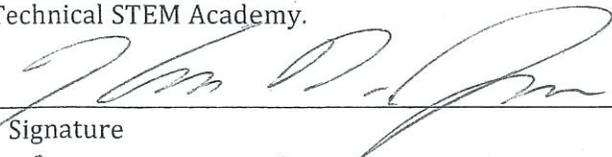
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Signature

Date


G.M., Lynchburg Operations
Title and Organization Represented

Delta Star, Inc.

7/10/12

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Dr. Michael Bryant
Signature

7-16-12
Date

President & CEO, Contra Health
Title and Organization Represented

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7/10/12

Date

Managing Director, Future Focus Foundation

Title and Organization Represented

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Signature

7/9/2012
Date

SNR MANAGER INFORMATION SYSTEMS AREVA INC
Title and Organization Represented

Appendix E

Appendix F

Section B. Proposed Planning Budget with Narrative

R2KCTE STEM ACADEMY ESTIMATED BUDGET FOR 2012 – 13		
EXPENSE CODE	DESCRIPTION	BUDGET
1000 Personnel	CTE STEM Academy Project Manager - provides funding for 500 hours of time dedicated to the research, development, and coordination of the Region 2000 CTE STEM Academy Project	\$75,000
2000 Benefits	Health insurance and other benefits	\$21,000
3000 Contractual Services	Expenses related to professional contractual services in preparing marketing materials and presentation materials	\$1,500
4000 Internal Services		
5000 Staff Development		
5000 Travel/Meeting Expenses	Project will require significant travel to Department of Education meetings, visits to existing CTE STEM Academies, as well as meeting expenses related to planning committee meetings and advisory committee meetings.	\$3,000
6000 Materials and Supplies	General office supplies, paper, printing, postage	\$500
8000 Equipment		
8000 Facilities		
	Total projected costs for 2012-13	\$101,000
Partner Name	Description	Estimated In Kind
TOTAL Cash Grant from R2K Workforce Investment Board		\$20,000
Region 2000 Technology Council	Project Administrator for Industry	\$11,000
Lynchburg City Public Schools	Project Administrator for Education	\$14,300
Central Virginia Community College	Postsecondary Education Consultant	\$5,000
Lynchburg City Public Schools	Administrative support/overhead support	\$2,000
Region 2000 Technology Council	Administrative support/overhead support	\$5,000
TOTAL Estimated In-Kind Contributions for Academy Planning		\$57,300
TOTAL Estimated Expenditures for Academy Planning 2012-13		\$158,300

Appendix G

Section C. Statement of Fiscal Agent, Operating Funds, and Facilities Assurance



STATEMENT OF ASSURANCE FOR FISCAL AGENT

The authorized signature on this page certifies to the Virginia Department of Education that the authorized official assures that:

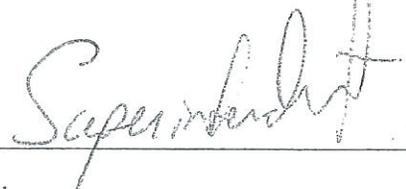
1. Operating funds and resources are available to serve as fiscal agent for the Governor's Region 2000 Career-Technical – Science, Technology, Engineering and Mathematics (STEM) Academy.
2. Operating funds and facilities are available to support the Governor's Region 2000 CTE-STEM Academy.
3. Operating funds and resources are available to adequately support the program needs of the Governor's Region 2000 CTE-STEM Academy.

Certification by Authorized or Institutional Official:

The applicant certifies that to the best of his knowledge the information in this application is correct; the filing of this application is duly authorized by the Lynchburg City Schools and the partners participating in this process to establish a Governor's CTE-STEM Academy; and the Lynchburg City Schools will comply with the above statement of assurances.



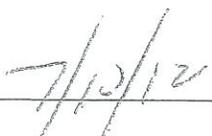
Printed Name of Authorized Official



Title



Signature of Authorized Official



Date