



**Roanoke County Governor's STEM  
Academy  
at the  
Burton Center for Arts and Technology**

# Premise

A focus on 21<sup>st</sup> Century Skills development enmeshed with the global landscape will be the foundation for all program development at the Roanoke County Governor's STEM Academy.

# Rationale

- \* The Virginia Employment Commission expects long-term growth of:
  - \* 13% in media
  - \* 5.28% in engineering and architecture
  - \* 20.13% in computer and mathematical occupation
- \* Local employment forecasts indicate:
  - \* 2,500 automotive-related jobs in the Roanoke area over the next six years

# Proposal

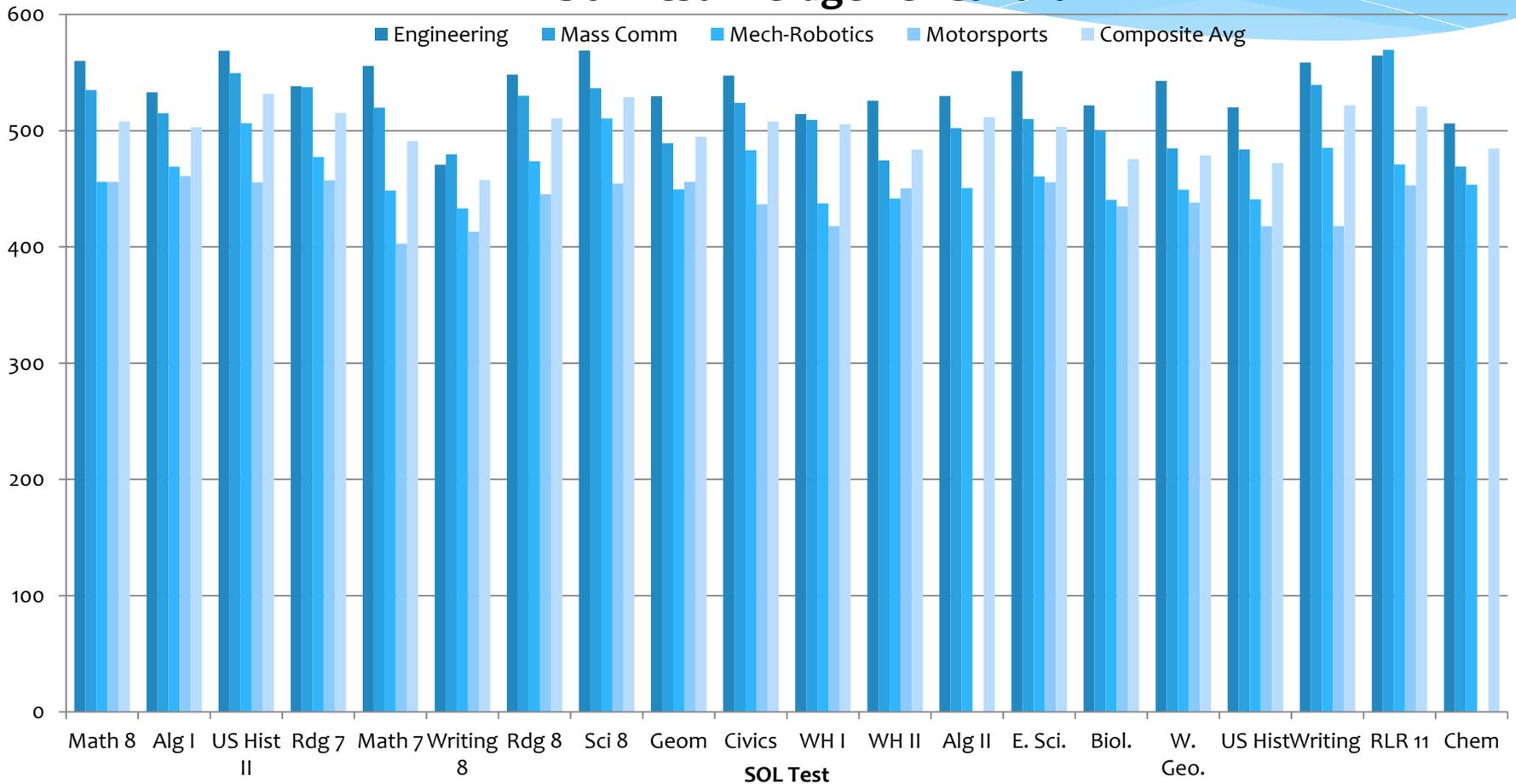
<b>Career Cluster</b>	<b>Pathway</b>
Science, Technology, Engineering, and Mathematics (STEM)	Engineering and Technology
Transportation, Distribution, and Logistics	Facility and Mobile Equipment Maintenance
Arts, Audio/Video Technology and Communications	Journalism and Broadcasting

# Goals

- \* Improve academic achievement by increasing rigor and relevance within the selected pathways
- \* Increase completion of dual enrollment classes – possibly have more students earn an associate’s degree while in high school
- \* Provide workplace readiness experiences through strong partnerships with business
- \* Increase high school graduation rates
- \* Reduce dropout rates
- \* Increase enrollment and retention in postsecondary education

# Data Driven Decision Making

## SOL Test Average Per Cohort



# Goals continued...

- \* Increase the number of industry certifications awarded to high school students
- \* Increase the number of graduates employed in high-wage, high-skilled careers
- \* Increase the number of students completing a college and workplace ready curriculum in high school
- \* Reduce the number of students requiring remediation in college

# Other Performance Measures

- The aforementioned SOL pass rates
  - Failures to proficient
  - Passes to advance proficient
- Dual enrollment success
  - Number of students enrolled
  - Number of credits earned
- AP pass rates with qualifying scores
- Industry certifications pass rates
- CTE completer data
- Postsecondary success
  - College attendance
  - Successful employment

# Governance

- \* Virginia Tech Collaboration
  - \* Engineering
  - \* STEM
- \* Virginia Western Community College
- \* Advisory Committees
  - \* Engineering
  - \* Mechatronics/Robotics
  - \* Mass Communication
  - \* Motorsports
  - \* Burton Center for Art & Technology

# Recruitment

- \* Local cable TV public service announcements and taped 15 minute interviews surrounding the process
- \* A professional DVD (created by our mass communications students) that emphasizes all the programs
- \* Middle School Emphasis
  - \* Academic and Career Portfolios
  - \* Introduction to robotics in 7<sup>th</sup> and 8<sup>th</sup> grades
  - \* Summer camps
  - \* Eighth-grade tours of Burton Center for Arts & Technology
  - \* Interested students apply and a committee reviews the data set surrounding each application

# Projected Enrollment

- \* **Engineering and Technology**

- \* Engineering 62 students
- \* Mechatronics/Robotics 37 students

- \* **Journalism and Broadcasting**

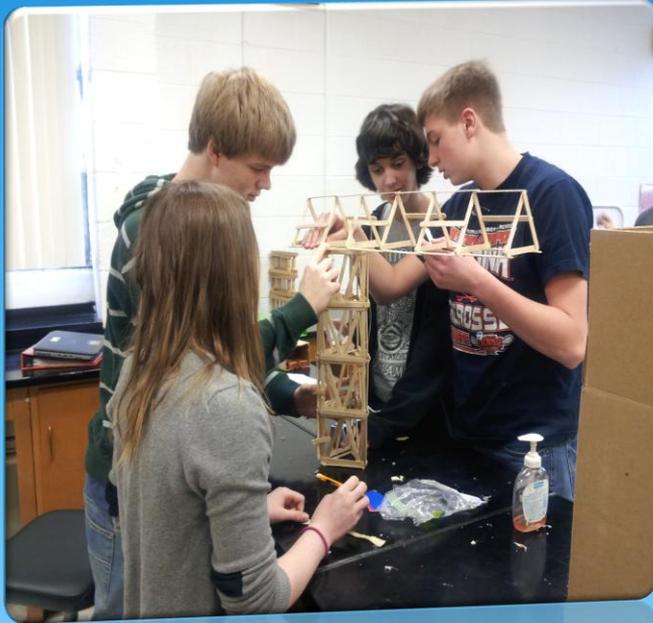
- \* Mass Communication 101 students

- \* **Facility and Mobile**

- Equipment Maintenance**

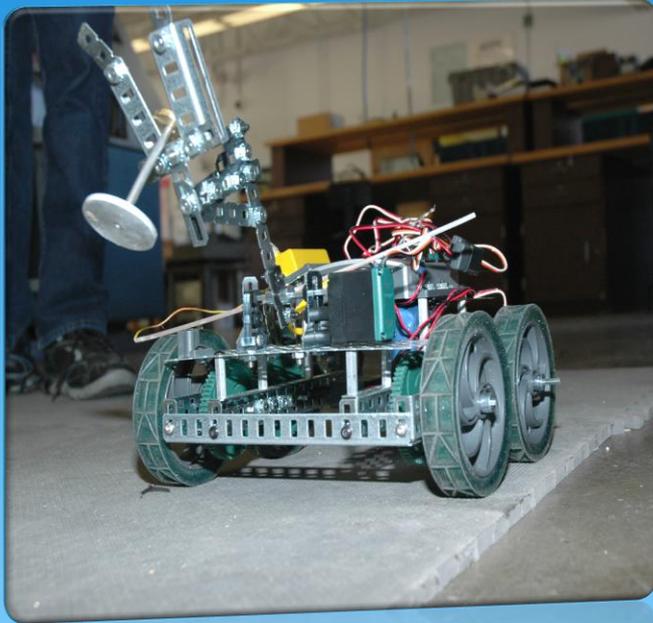
- \* Motorsports 20 students

Total = 220 students



## Engineering & Technology Design and Modeling

Engineering design and models provide real-world problem-solving opportunities and team building experiences.



## Engineering & Technology Robotics/Mechatronics

Students blend logic with creativity in robotic challenges as a part of the curriculum.



# Journalism and Broadcasting Mass Communication

Mixing and preparing for  
the studio as practiced in  
the industry.



## Facility and Mobile Equipment maintenance Motorsports

Bodywork and welding  
complement award-winning  
students within their engine  
building portion of the  
program.

# Partnerships

- \* Accellent Cardiology
- \* Access Advertising
- \* AECOM
- \* Arcet
- \* Berglund Automotive
- \* Balzer and Associates, Inc.
- \* Blue Ridge PBS
- \* Carilion Biomed Institute
- \* Carilion Physics
- \* Carilion TSG
- \* Carter Media
- \* Development Initiatives, Inc.
- \* DRP Racing
- \* East West DyeCom
- \* E & W Machine
- \* General Electric
- \* Graham-White Mfg.
- \* Hill Studios
- \* Hughes Associates
- \* J. C. Nordt
- \* Lionberger Construction
- \* Lincoln Electric
- \* Mason Mechanical Labs
- \* Miller Welders

- \* Mountain Land Machine
- \* NASCAR
- \* New Millium Steel
- \* Novozymes
- \* Optical Cable
- \* Overfelt & Son Welding
- \* Plastics One
- \* Precision Steel
- \* Roanoke County Public Schools
- \* Roanoke Regional Partnership
- \* Synchrony
- \* Sematco, Inc.
- \* Shenandoah Machine & Maintenance Co., Inc.
- \* Spectrum Engineers

- \*The O'Connor Group
- \*Thermal Dynamics
- \*Tread Corporation
- \*Valley Machine
- \*Virginia Tech University
- \*Virginia Western Community College
- \*WDBJ 7
- \*WSLS 10
- \*Western Virginia Workforce Development Board
- \*Wheeler Broadcasting
- \*Wireless Medicare

Thank You!

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