

STEM Lab for Agriculture

A Program to GROW Our
Future

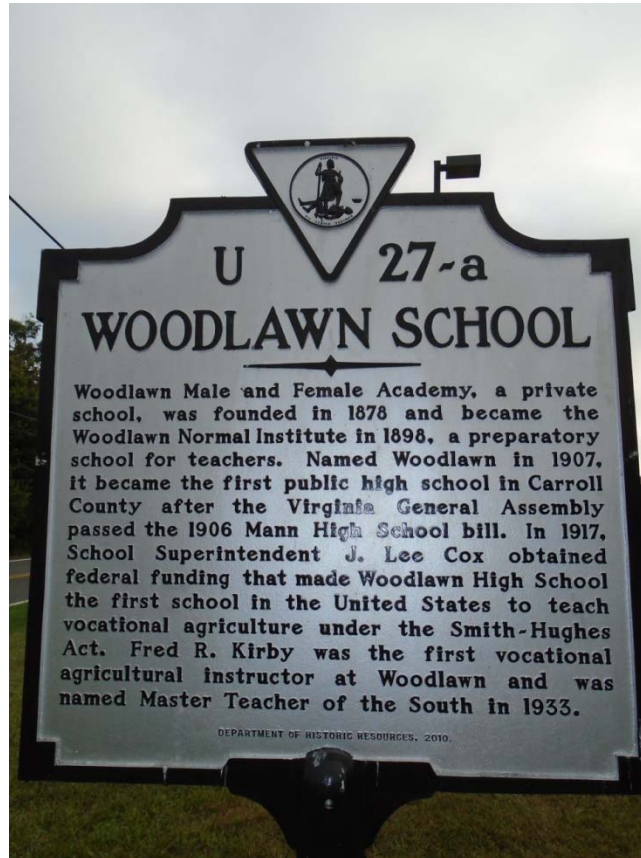
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Carroll County BOS

Carroll- A Community with a History in Agriculture

- Commercial Beef
- Commercial Orchards
- Commercial Vegetables
- Timber/ Forestry Products
- Pasture/Hay
- Dairy
- Southwest VA Farmers' Market

Carroll- A Community with a History in Agriculture

First Vocational Agricultural Program in the Nation Under the Smith-Hughs Act of 1917



Vocational Agriculture

- Gave rise to the teaching of Agricultural Sciences to High School students
- Provided hands on exercises to enhance other classroom education
- Provided for project work that gave students opportunities to practice what they learned
- Modeled around the world
- Changed to Career and Technical Education

BOS Support for the STEM Lab for Agriculture

- 2008 BOS sets Board Goal to assist in additional Workforce Development Training
- 2010 BOS refines Goals to include the STEM Lab for Agriculture
- BOS directs the IDA to obtain funds for the CCHS upgrades
- USDA-RD funds the project that includes the STEM Lab for Agriculture for \$540,000.00

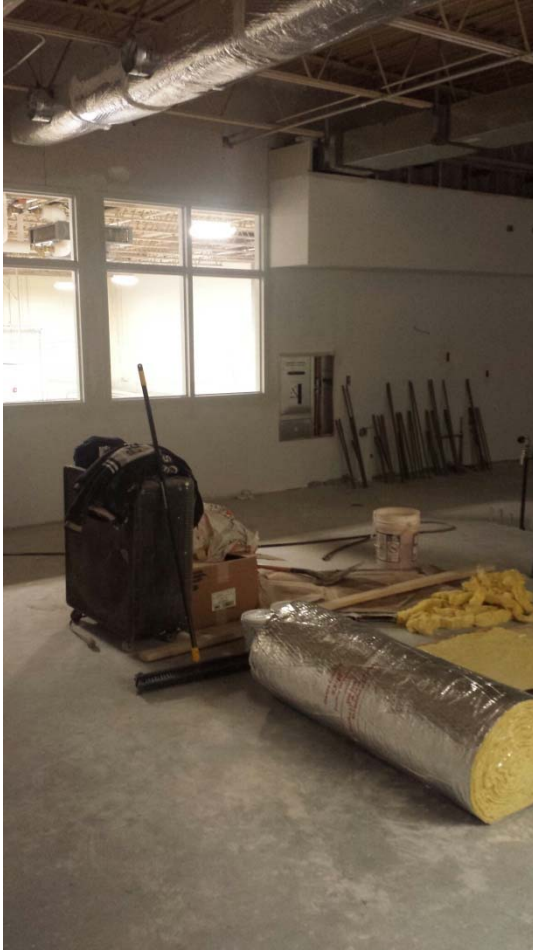
First STEM Lab for Agriculture in the Nation

January 2014, renovations begin

Renovations



Renovations



- Converted former lumber storage area
- Added space with main second floor access
- STEM Lab is tied directly to other Agriculture classrooms on first floor

Finished Product



- STEM Lab for Agriculture completed for the 2014 School year
- Non- Agricultural students are flocking to the program
- Almost anything can be taught using Agriculture and STEM
- National Attention







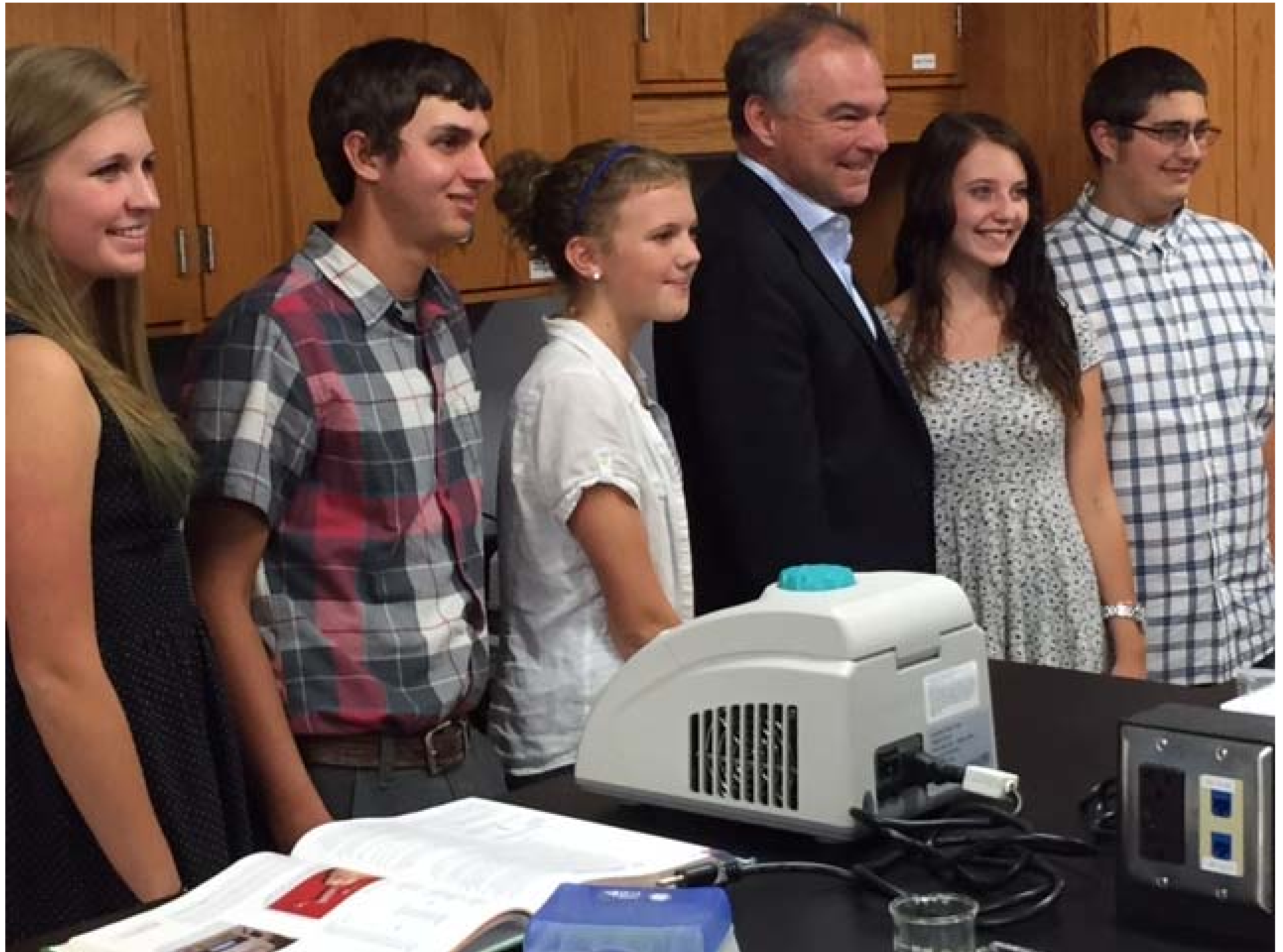












What is Different from A Science Lab?

- Provides students the ability to solve problems
- Exercise their Practical application of education
- Totally ties STEM to the full design of the solution to a problem
- Teaches the student transferrable skills
- Increases the excitement for Education

STEM Lab for Agriculture

- VT providing Graduate Students to assist in the teaching
- VT providing campus activities for local STEM students
- Masters Level education is taking place in High School
- A desire to explore and learn is being created along with skills

Examples

- In a recent Transformation Lab, students worked to finish three days of a gene splicing. The students used two gene plasmids to engineer a new bacteria that was resistant to ampicillin and kanamycin.



Examples

- In a recent visit to Virginia Tech, students toured a lab and tested well water quality and took part in a Food Safety presentation.
- Students swabbed stainless steel equipment in a local food processing facility and grew out and identified the specific bacteria from each area
- Students worked with local farmers to reduce Food Safety risk

How can the BOS Affect Education?

Actions

- Not provide appropriate funding
- Threaten funding reduction
- Not provide support for education in general
- Provide funding/ support and hope the students are educated appropriately for their needs and the needs of the community

Repercussions

- Provide funding/ support and the School System does not meet the student or community need, the funding may be wasted with upset tax payers. Students and community suffer
- If funding is cut or threatened to be cut, the “School Marketing Hand” can slap the BOS. Students and community suffer

How can the BOS Positively Affect Education?

- Support Education in general
- “Focus funding” attached to other conservative requests
- Assist in setting educational priorities

Attributes of the Carroll “STEM Lab for Agriculture” Project

- Better relationship between the School System and County
- Added value to the Carroll Educational System
- Placed state and national attention on the project and a new respect for Education
- Students are anxious to go to school and learn
- Skills are being taught to transfer to other careers

Future Carroll County STEM Student?



Thank You

Questions?