TALENT EXPANSION: IMPROVING STEM EDUCATION IN WEST VIRGINIA

WVUteach

Robert Noyce Teacher Scholarship Program

West Virginia DEPARTMENT OF EDUCATION

Project Accelerate – edX AP Physics 1

CODE

Physics Teacher Education Coalition

Gay B. Stewart, Director,
WVU Center for Excellence in STEM Education
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304.293.5030   stem.center@mail.wvu.edu

The Center seeks to facilitate partnerships focused on improving STEM education.

We are focusing on developing coherent programs that reach across WVU and serve West Virginia.

The following is a quick tour of a few of our current efforts.

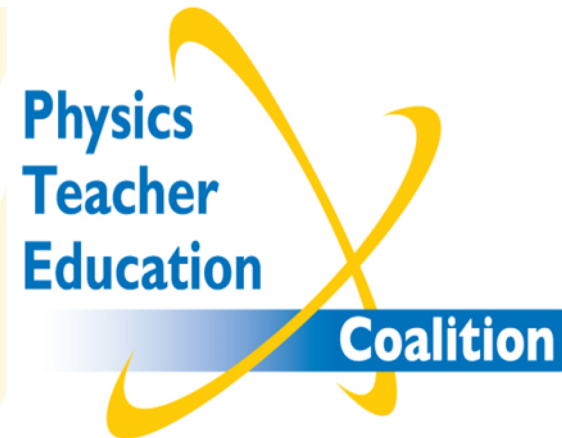304.293.5030   stem.center@mail.wvu.edu

WVUteach

WVUteach is WVU's program to produce high quality, well prepared math and science high school teachers and enrich professional learning for existing teachers to increase the economic potential of WV

Physics Teacher Education Coalition

PhysTEC focuses on the high-need area of high school physics teachers

Gay B. Stewart and Jeffrey Carver Co-Directors, wvuteach.wvu.edu
John Stewart, program director, PhysTEC, phystec.wvu.edu

There are 1,123 open computing jobs in WV, 3.8 times the average number of job openings in any other field in the state (2017 data).
The average salary for all jobs in WV is $40,250 while the average salary for a computing occupation in WV is $71,150.

Yet few WV K-12 schools offer computer science courses because of the lack of qualified teachers.

CodeWV is fixing that!
We are building an effective computer science educator community across West Virginia, particularly in our rural and underserved areas.

We are organizing and hosting quality, local workshops for teachers to implement Code.org's course curriculum, with Code.org-accredited facilitators.

We are growing and sustaining a local community of computer science educators so that all West Virginia students have the opportunity to learn computer science.

Co-Managers: Amanda Jelsema and Gay Stewart

Project Accelerate – edX AP Physics 1 Prep.

Lack of Access and Structures for Success to AP Physics
Especially Among Low Income and Rural Populations
Low Income Districts Lag in Offering AP Courses 2 to 1

Success in AP Courses is Equated to Greater Success in College
Students Earning 3 or Higher Have Greater Success in College

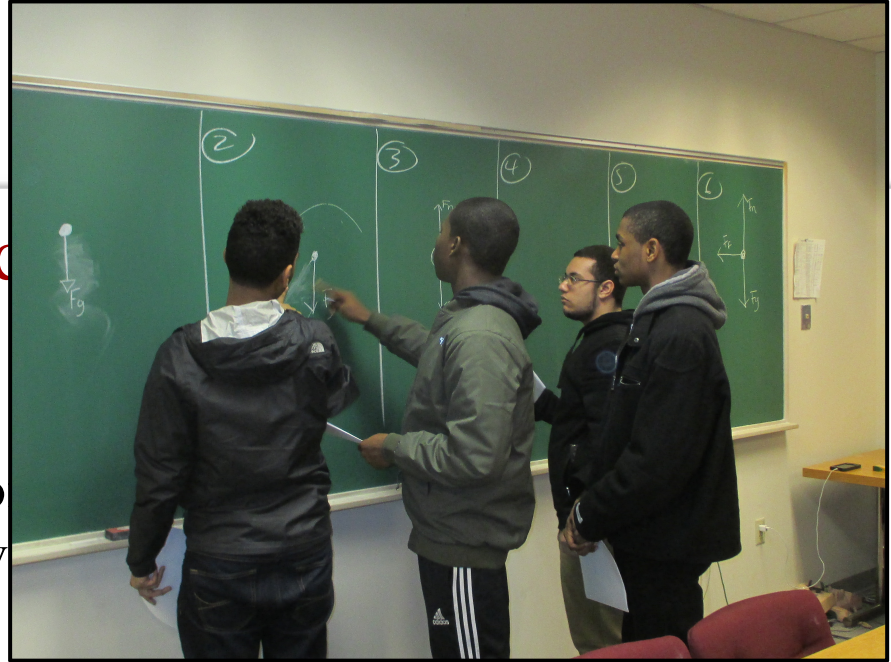**Lacking Opportunity, Students are Hard Pressed to Compete with Their Peers**
WVUCE-STEM is partnering with Project Accelerate to bring this course to high schools in West Virginia unable to offer AP Physics 1.

WVU Project leads: Gay Stewart and Michael Tilley

Project Accelerate – e...

University and
Blends Supportive Infrastructure o...
Bringing Access, Supportiv...

High School Partner
HS Liaison – Communication & Coordination, Lab Instruction
Vetting, Student Record, Time and Family Connection, instructionally supported

University Partner
University Liaison – Communication & Coordination
Online Forum and support for Laboratory Experiences

Center for Excellence in STEMEducation

.bu Digital Learning Initiative

Robert Noyce Teacher Scholarship Program

Two programs funded by NSF through this program: 1. to support more new math and science teachers for WV and 2.(brand new) to develop a cadre of Mathematics Master Teachers to increase our state's ability to prepare students for high-paying, available, careers.

John Stewart (Physics) and Matthew Campbell (Mathematics Education) are the project leaders, with Center support.

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The Center is partnering with the WV Department of Education on strategic goal planning for middle and high school STEM learning, and Computer Science learning K-12.
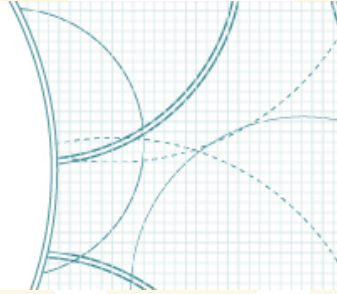
Under development

ENGINEER YOUR WORLD
THE UNIVERSITY OF TEXAS AT AUSTIN

An innovative, student-centered high school curriculum that engages learners in authentic engineering experiences and inspires them to embrace an engineer's habits of mind. The project-based curriculum readily engages students of diverse backgrounds, abilities, and interests, and in a wide range of educational environments.

The curriculum is available inexpensively with online PD. We are seeking funding with partner schools to bring this to West Virginia with full professional development support.

FOR MORE INFORMATION, PLEASE CONTACT:

Gay Stewart
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Center for Excellence in
STEMEducation

SOME SLIDES ON PROGRAMS WITH MORE DETAILS FOLLOW, IN CASE THERE ARE QUESTIONS

WVUteach is WVU's preservice teacher preparation program. Inquiry-based science and math curricular materials and project-based instruction are key components in this program. Engaging with our preservice teachers by mentoring them in placements, and working with our master teachers (expert high school mathematics and science faculty who have joined our program to guide the development of our future teachers) on professional development opportunities can be of direct educational benefit to current WV teachers. STEM majors beyond WVUteach students can engage with K-12 students in career discussions.

FREE for WV teachers teaching a new CS class 2018-19

- *AP® Computer Science Principles* (grades 9-12) (counts as **CPD APSI**)
- non-AP CSP: counts as *Computer Science in the Modern World*
- *Discovering Computer Science* (grades 6-10)

full curriculum, PD, and implementation support.

PD hours will count toward an in-progress WV Advanced Credential.

Supports

- 5-day Summer Conference
  - National conference hosted by Code.org (this year)
  - Atlanta, June 17-22
- 24 hours of follow-up during the school year
  - Hosted locally by Regional Partner
- Online Forum and Community

Requirements

Requirements to participate:

- School is offering course (please put new CS courses on the schedule!)

- Teacher commits to attending all professional learning

- Teacher who attends workshop is scheduled to teach course

- Teacher has appropriate certification (WV: attends the training)

Principal signs off on above items

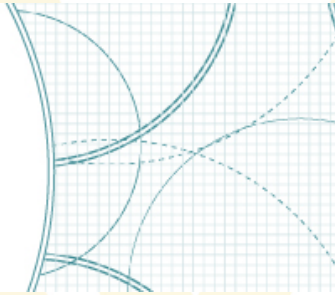Applications opened January 16, 2018 and run through March 30.

https://code.org/educate/professional-learning/cs-discoveries OR

https://code.org/educate/professional-learning/cs-principles

Engineer your world is an innovative, student-centered high school curriculum that engages learners in authentic engineering experiences and inspires them to embrace an engineer's habits of mind. Collaborative, student-directed projects build resilient problem-solving skills and empower students to think like engineers. The curriculum combines rigorous core concepts with cross-discipline perspectives to deliver a rich sequence of socially relevant, student-directed challenges.