

# VISTA

VIRGINIA INITIATIVE FOR SCIENCE TEACHING AND ACHIEVEMENT



WHERE INNOVATION MEETS SCIENCE EDUCATION



## VMI STEM Education Conference

October 3, 2012



## Virginia Initiative *for* Science Teaching and Achievement

[VISTA.GMU.EDU](http://VISTA.GMU.EDU)

FOSTERING THE DEVELOPMENT OF  
SCIENCE EDUCATORS AND STUDENTS



V *irginia*

I *initiative*

S *cience*

T *eaching*

A *chievement*

## *What is VISTA?*

- A **professional development** program designed to to improve teaching effectiveness in science at the elementary, middle and high school levels
- A **research program** designed to verify that Problem-Based Learning (PBL) and “inquiry-based” teaching is effective on a broad-based scale
- It is the start of a **community of “best practice”** which incorporates all elements of the K-12 teaching and research community



# *VISTA is Collaborative*



- 6 Virginia Universities
- 67 School Divisions
- VA Dept of Education
- US Dept of Education “Investing in Innovation” (i3) Program
  - 1 of 49 awards out of nearly 1,700 submissions
  - \$34M including \$5.7M Private Sector Matching Requirement (Exemplary Project and Validation Project)
- Corporate Donors



# *Pilot Program Results*

VISTA's inquiry-based teaching methodologies for STEM subjects were developed and tested among more than 10,000 secondary school students in three Northern Virginia school districts.

The results of the peer-reviewed and published research were impressive:

35%

*reduction in the number of failed students for provisionally licensed teachers – a measure of student performance and teaching effectiveness*

38%

*increase in the number of high-achieving students—a measure of student achievement the equivalent of receiving a grade of A in secondary science*



# *Four Main Professional Development Programs*

*In-depth professional development programs for elementary science teachers*

*Graduate-level academic certification and support for new middle and high school science teachers*

*New school district science coordinator professional development*

*College-level professional development for science education faculty*



# *Elementary Teacher Professional Development*

*540 elementary teachers who teach 37,000 elementary students will receive*

Month-long  
immersion  
“Institute”

- More science content
- STEM applications
- Problem-based learning
- Teach students in camp
- Curriculum planning

Year of coaching

- VISTA training coach

Professional  
development

- Annual conference

Online and in-class  
resources

- ExploreLearning
- Real science equipment

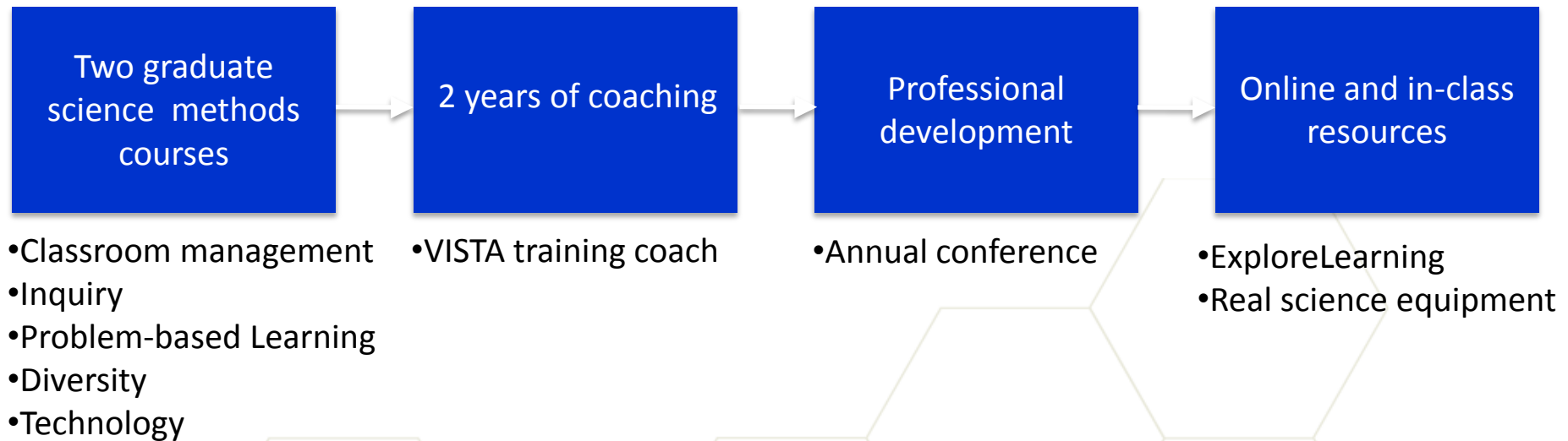
*Validating research: Each teacher is evaluated six different ways throughout the year to validate the impact of Problem-Based Learning and “inquiry based” teaching*





# Secondary Teacher Professional Development

*300 secondary school teachers who teach 112,000 middle and high school students will receive*



*Validating research: Each teacher is evaluated six different ways throughout two years to validate the impact of Problem-Based Learning and “inquiry based” teaching*



# *Leadership*

*New district science coordinators  
will receive*



Five day  
immersion  
“Academy”

- District-level  
“inquiry-based”  
strategic  
planning
- Develop  
effective teacher  
leadership  
capacity
- Data-based  
science program  
decisions

*Science education college faculty  
will receive*



Five day  
immersion  
“Academy”

- Learn about  
new science  
research
- Share effective  
teaching  
strategies
- Collaborate to  
identify  
challenges





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*To Learn More About VISTA:*

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Teaching and Achievement