

TEACH WV: An NSF Robert C. Noyce Funded Project to Increase Science and Mathematics Teachers in High Needs West Virginia School

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Description

Teaching Excellence At College for High Achievement in West Virginia (TEACH-WV) recruits undergraduate majors in science, technology, engineering, and mathematics (STEM) at West Virginia University (WVU) to become TEACH-WV Scholars.

http://wmst.wvu.edu/financial_assistance_awards_scholarships/teach_wv

TEACH-WV Scholars receive substantial financial support to complete a program of study, resulting in a bachelor's degree and teaching certification in science or mathematics and a master's degree in education.

TEACH-WV is a collaborative effort between WVU's Eberly College of Arts and Sciences and College of Human Resources and Education: It was initiated through participation in Science Education for New Civic Engagement and Responsibility (SENCER), which encourages member universities to include science / mathematics and education faculty on their SENCER teams.

Top priority is given to recruiting undergraduates majoring in physics, chemistry, and mathematics, in order to respond to the WV STEM teaching shortage areas that are most acute.

TEACH-WV Scholars complete over 1000 hours of clinical experience in K-12/public school settings through participation in the nationally recognized Benedum Collaborative Five Year "Dual Degree" Teacher Education program. <http://depts.hre.wvu.edu/benedum>

TEACH-WV emphasizes societal issues for contextualizing science and mathematics instruction at the secondary and post-secondary levels, which will facilitate vertical alignment of 5-12 and university level STEM teaching.

Goals

To attract freshmen-sophomores to secondary STEM teacher certification.

To increase retention of college students who traditionally leave STEM majors.

To decrease WV STEM teacher shortages by graduating 20 TEACH-WV scholars—the majority with degrees in mathematics, physics, or chemistry—and facilitate their employment by high needs WV Schools.

To retain for at least 6 years 20 TEACH-WV graduates in teaching positions in high needs WV School Districts.

To sustain/institutionalize at WVU key components of TEACH-WV.

Activities

Recruitment: Develop materials (e.g., brochure, web site) and relationships with critical on-campus entities (e.g., WVU Advising /Advisors, Financial Aid). Mount recruitment campaign (especially presentations in freshman-junior physics, chemistry, biology, and mathematics courses). Accept /establish 1st and 2nd cohorts. (Timeframe: Spring 2009 –Spring 2010)

Mentoring: Science and mathematics faculty guide TEACH WV Scholars in designing Science-Technology-Society-based materials to contextualize science concepts for introductory STEM classes. Education faculty guide Scholars in developing and providing secondary level instruction that embeds societal issues ; and in conducting action research in their Professional Development School field placements.

Develop Formative and Summative Assessment/Evaluation: Includes rubrics for assessing the degree to which TEACH WV Scholars embed social issues in science and mathematics instruction.

Facilitate Employment of Graduates in WV High Needs Schools: Network with WVU Career Services , WV Regional Educational Service Agencies, WV School Districts.



Would you like to shape the future of
mathematics and science in the US?
Apply to TEACH-WV!

Evaluation Design

SENSOR SALG survey: Assess TEACH-WV Scholars' self -reported science and mathematics ability, interest in science and mathematics, and attitudes about science and mathematics. Pre/Post design utilized to measure change throughout the program.

Interviews and focus groups: Gather data on TEACH-WV Scholars' progress.

Lesson plans of TEACH -WV Scholars for use in practica: Evaluate by rubric for quality of science and mathematics in the context of social issues.

Classroom (practica) observations of TEACH-WV Scholars: Evaluate by rubric for presence of reformed teaching practices and implementation of science and mathematics in the context of social issues.

Praxis II scores and STEM GPA of TEACH-WV Scholars: Evaluate content expertise.

Track TEACH-WV Scholars for 6 years after graduation and evaluate effectiveness of teaching over that time period.

External Evaluation: By Rose Shaw at Metrica in program years 2 and 4.

Accomplishments

TEACH-WV is a new project: Funding began February, 2009.

Recruitment materials and evaluation rubric to rate applicants have been developed. (Video: <http://www.youtube.com/watch?v=70UnkCqjNbw>)

Early recruitment efforts yielded 8 applicants;3 awarded and accepted the TEACH WV Scholarship. All 3 are mathematics majors with junior level academic standing beginning Fall, 2009.

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