Collaborations with present and future teachers in the Maine Physical Sciences Partnership
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A partnership of:
36 middle schools
12 high schools
The University of Maine
Schoodic Education & Research Center (SERC) Institute
Institute for Broadening Participation
Maine Mathematics and Science Alliance
Maine State Department of Education
Penobscot River EP
MDI RSS
Maine Physical Sciences Partnership

Partnership Vision
A sustained and expanding partnership that supports:
• recruiting, preparing, and retaining science teachers
• improving the teaching and learning of the physical sciences in grades 6–9 and the university
• improved knowledge of science and science inquiry in the classroom

Partnership Goal
A professional community to support learning science and aspirations for teaching and doing science

Regular Collaboratives - Meetings every 3 weeks between teachers, faculty, and education researchers
Goals
Connecting teachers across disciplines and grades, schools and districts
Exploring curricular resources
Sharing insights on teaching and learning
Knowing more about what happens in other grades and classes
A typical evening
Dinner 5:30 – 8 pm
Discussion of resources
Discussion of pedagogy
Framework and implementation
Three locations: Belfast, Ellsworth, Orono
Anchored within existing school units or educational partnerships
One organizer attends all collaboratives
Participation incentives
Collaboration with colleagues
Access to new materials and ideas
Food and $50 stipend
Who attends
Physical, life, and earth science; elementary, middle, and high school teachers
University faculty and post docs
University Master of Science in Teaching students

Curriculum Evaluation Task Force - A common curriculum for middle school physical science instruction
Goals
Students arrive in 9th grade with common background
Core activities for collegial interaction among teachers
Common tools for professional development
Better preparation for future teachers at UMaine
A mix of activities
7 Saturdays 8:30 – 3:30 (between Nov – Apr)
Work alone at home or in pairs and groups
Review process
AAAS Project 2061 review guidelines
Key Ideas to describe middle school understanding of force and motion, energy, properties of matter, earth science
Teacher-motivated arrival at mix & match solution
Participation incentives
Ownership of evaluation process
Collaboration across academic boundaries
$25/hour for evaluation work, including at home
Who attends
Physical, life, and earth science; middle and high school teachers
University faculty and post docs
University Master of Science in Teaching students

University Instructor Observations - Classroom observations of teaching and learning assistants
Goals
Bring teachers into the university as colleagues
Provide training in use of classroom observation protocols
Establish a database documenting teaching practices at the university
Activities
1 day of training
2 days of classroom observations
Participation
24 teachers, many otherwise not involved in the Maine PSP
Observations of 40 classes in mathematics, chemistry, physics
Preliminary results
New insights into own classroom
Sense of shared observation – teachers looking into university

What comes next - Building a better partnership at all levels
Summer Academy
Week-long intensive program for teachers, faculty, researchers
Familiarity with materials
Building a cohort of “pilot teachers” using new materials
Teachers-in-Residence
Teacher on UMaine campus
Interactions with MST students, faculty
Research
Comparing content knowledge, pedagogical content knowledge, and classroom practices
Studying communities of practice e.g. with social network analysis
Course reforms at UMaine
Modifying existing courses for pre-service teacher
Reforming physical science courses often taken by future teachers

http://umaine.edu/mainepsp