How can scientists collaborate with STEM Educators?

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How can scientists collaborate with STEM Educators?

Ideas and experiences of a serial border crosser and collaboration junkie.
-disclaimer-

• *Business as usual* is good for business. Evolution is just as important as revolution.

• Overgeneralization can make for an interesting talk, but it isn’t personal. Please don’t let it be.
How can scientists collaborate with STEM Educators?

Where have I seen this question before??
How can scientists collaborate with STEM Educators?

Less Turf, More Trust

Design for Broad Impact

Prioritize Innovation
How can scientists collaborate with STEM Educators?

How should we think about this question?
The Classic Model of Education and Outreach

Campus

Community

Information
Think of science...

Grand Challenges are ambitious but achievable goals that harness science, technology, and innovation to solve important national or global problems and that have the potential to capture the public’s imagination.

-The White House, Office of Science and Technology Policy
Seek to achieve broad impact...

Scientists and engineers working in science and engineering occupations: 2010

White men 51%
White women 18%
Asian men 13%
Asian women 5%
Black men 3%
Black women 2%
Hispanic men 4%
Hispanic women 2%
Other men 1%
Other women 1%

NOTE: Hispanic may be any race. Other includes American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and multiple race.
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Design for Broad Impact

Prioritize Innovation
Recognize the Need for Diverse and Distributed Expertise

- Scientists Outreach Specialists
- Innovation Space
- Learning
  - Psychologists
  - Educational Psychologists
  - Learning Sciences
- Content
- Curriculum & Instruction
  - NEED Authentic Contexts For their work.
  - NEED to work outside of the K12 context and teacher education.
- Science Education
Know the Strengths and Limitations

Level the Playing Field

Scientists
Outreach Specialists

Deep content knowledge
Theories and models for science
Passion for science
Limited knowledge of learning
Limited knowledge of C&I

Psychologists
Educational Psychologists
Learning Sciences

Theories and models for learning
Limited knowledge of content
Limited knowledge of C&I

Learning

Science Education

Theories and models for C&I, technology use
Limited knowledge of learning
Potential for advanced knowledge of science
Experience and desire for teaching science

Content
Curriculum & Instruction

UF College of Education
UNIVERSITY OF FLORIDA
Use the Process of Science to Create a Learning Culture

- Build the Capacity of the Team
- Accept the Grand Challenges
- Engage Deeply
- Have Fun
- Support Claims with Evidence
- Design to Innovate
- Emphasize Logic

Learning

Content

Curriculum & Instruction

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Design for Broad Impact

Prioritize Innovation
A New Model of Education and Outreach
Questions and Comments?

Thank you.