

Drafting a Blueprint for Educating Tomorrow's Engineers Today

Project Description

- Enabling teachers to reach and inspire students typically outside of the engineering “pipeline”
- Supporting teacher professional development based upon research from the learning sciences is fundamental
 - research shows that effective instruction requires teachers to have both a deep understanding of the subject area and an understanding of how students develop their understanding¹
- Recognizing the need for a sustained and multi-faceted commitment with an approach to teacher education that includes
 - workshops
 - developing an online learning community
 - other strategies for directly supporting teachers in the classroom

[1] National Research Council Commission on Behavioral and Social Sciences and Education, How People Learn: Brain, Mind, Experience and School, National Academy Press, Washington D.C. (2000).

Successes

- Strong partnership between SPS, Smith, and STCC
 - excellent project support from SPS
 - strong collaboration between Lead Team members
- Successful first PD summer workshop
 - recognizing the importance of context in both effective engineering and in the learning process, teachers learned the fundamentals of engineering mechanics through hands-on activities for use in their own classrooms and within a variety of contexts that included the design process, an ethics case study, and the history and aesthetics of bridge design
- Evidence of increased teacher content knowledge
- Evidence of increased teacher buy-in
 - using conceptual frameworks and narratives for making engineering concepts relevant to students in grades 6-8 in an urban, diverse, and challenged community

Future Challenges

- Engaging all Technology/Engineering teachers in SPS
- Developing and sustaining a meaningful online learning community among teachers
- Placing STCC/Smith students into SPS classrooms
- Achieving meaningful curriculum change vs. standardized testing
- Sustaining overall momentum of first workshop experience
- Widening scope to include new partners in academia and industry
- Increasing student achievement and engagement in STEM

To Learn at LNC

- Keys to meaningful and successful online learning community for teachers
- The “hows” of placing college students in the middle school classroom
- Methods of sustaining the initial momentum of project
- Paths to further strengthening the Partnership
- Effective collaborative efforts with academic and industry partners
- Successful strategies for engaging all teachers

**A Partnership Between the Springfield, MA Public Schools,
Springfield Technical Community College, and Smith College**



Springfield Technical Community College
Exceptional Education. Proven Results.



SMITH COLLEGE

