

Analysis of a Statewide K-12 Engineering Program: Learning from the Field

Debra Brockway, Beth McGrath, Mercedes McKay
Center for Innovation in Engineering and Science Education



Engineering Our Future NJ

Statewide initiative based at Stevens to promote engineering in elementary, middle, and high schools in NJ



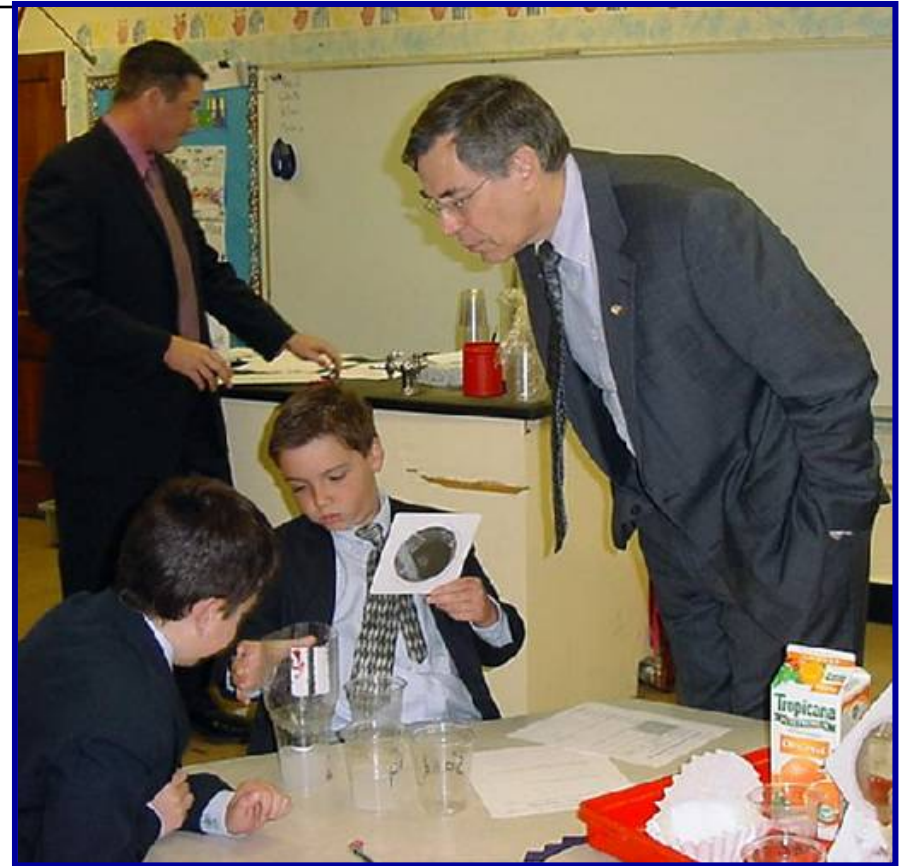
Goal



Ensure that all NJ children experience exemplary engineering curricula, ***with a focus on innovation***, as a requirement of their elementary, middle, and high school education by 2010

Key Initiatives

- Professional development
- Policy efforts
- Partnerships and capacity-building
- Promotion
- Research



EOFNJ Approach

Statewide PD and awareness-building effort

Phase 1 – Pilot project (2005-06) to understand student learning of science & engineering concepts and classroom implementation issues

Phase 2 - Scale-Up (2006-08) to reach 2,000 educators through a statewide network, influence policy, promote importance of engineering, continued research

Phase 3 – Best Practices (2009→) curriculum recommendations, PD, capacity-building

Professional Development

Varied by:

- Content
- Grade level
- Duration
- Classroom support
- Location



Program Curricula



- Engineering is Elementary
- A World in Motion
- Engineering the Future
- Building Math
- Pro/Engineer
- CIESE Online Engineering Projects

Phase 2 Accomplishments

- Over 2,400 NJ teachers trained at end of 2008
- Evidence of positive student learning impact
- Increased awareness among policy makers and educators
- Statewide network of 2-yr, 4-yr, and pre-service institutions



