Technical Outreach Community Help: Initial Results

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Outline

• Program History & Previous Work
• Current Status
• Mentor Impact
• Next Steps
National Society of Black Engineers

T.R.C.H.®
Technical OutReach Community Help

NSBE AND TORCH

...positively impacting the community through Technical Outreach Community Help

ASEE 2011 Conference and Exposition
NSBE background

• Student-run professional organization
• 6 geographic regions
• Collegiate, Alumni, and Pre-collegiate chapters
• Mission: To increase the number of culturally responsible Black engineers who excel academically, succeed professionally and positively impact the community.
TORCH History

• Response to the Digital Divide
• Minimal structure 2002-2008
• New structure, objectives 2008-2010
• Broader implementation 2010-2011
Components and Objectives

A Walk For Education
Informal Science and Engineering
STEM Community Training
Technical Expertise Services
Traditional Community Service

- Encourage greater Black participation in science, engineering, technology and mathematics at all levels
- Promote the value of science, engineering, technology and mathematics education at all levels

To provide introductory training to members of the community in modern technology, software and technical knowledge

To provide science, engineering, technology and mathematics exposure opportunities within Black communities

To stimulate enthusiasm about science, engineering, technology and mathematics within Black communities
Foundation Research

- Motivations & niche
- Developed research questions and metrics
  - Mentor impact
  - Student motivation to STEM
  - Interaction between mentors & students
CURRENT STATUS

Implementation
Data collection
Data Collection

• Documented participation increased from 2-12 chapters
  – Hours reporting only

• AWFE
  – Funded 14
  – Evaluations from 8
2010-2011 Reported Activities

- 8 Collegiate chapter volunteer hours reports
- 8 collegiate chapter AWFE reports
- 1 alumni chapter volunteer hours report
- 2 alumni chapter AWFE reports
- No participant/community surveys returned
- Volunteer impact surveys from annual convention
Reported Activities

Fall Semester (total: 1045)

- STEM Community Training
- Informal Science & Eng
- Technical Expertise Services
- AWFE
- Traditional Community Service

Spring Semester (total: 279)

- STEM Community Training
- Informal Science & Eng
- Technical Expertise Services
- AWFE
- Traditional Community Service

*January & February, late spring hours not submitted*
Northeastern University

- Weekly program ~10 weeks/semester
  - Since Fall 2008
  - Adult course
  - Youth course
- STEM Community Training
- Informal Science & Engineering
- Technical Expertise Services
- AWFE used to market courses
UCF: Spooky Science Day

Spooky Science Day

Hosted By: National Society of Black Engineers - UCF Chapter

Date: Friday, October 29th

Location: J.B. Callahan Neighborhood Center

Address: 101 N Parramore Avenue
Orlando, FL 32805

Time: 3:00 pm - 6:00 pm

Carpool: at 2:30 pm
@ Milican Hall

GAMES

ENGINEERING ACTIVITIES

PRIZES
## Modified AWFE

<table>
<thead>
<tr>
<th>University of Illinois - Chicago</th>
<th>University of Delaware</th>
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<tr>
<td>• Visited schools instead of door to door</td>
<td>• Intervention style, in community center</td>
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<tr>
<td>• Safer access to communities most in need</td>
<td>• Informal Science &amp; Engineering for youth</td>
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<tr>
<td>• Week-day participation accommodates commuter students</td>
<td>• Resume/ MS office support for adults</td>
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<td>• College prep advice/ info distribution</td>
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<td>• Previous volunteering in the neighborhood</td>
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MENTOR IMPACT

How does technical community service impact college and graduate level mentors who serve k-12 students?
Literature

• NSF GK-12
• Service learning models
• Asses mentors through self-reported views of engineering education
  – Confidence and perceived skill in communicating technical ideas
  – Impact on an individual’s career and educational objectives.
AWFE

• Broadly adopted program component
• Survey distributed via chapter leaders
  – Involvement with Youth
  – Personal Growth
  – Fulfillment of the NSBE mission
• Sixty-one volunteers from 8 different walks responded
  – Demographic information,
  – AWFE participation information
AWFE Results

- Personal Growth [I became a better person today (Self confidence, social skills, community connections, learning...]
- Personal Growth [I provided service to others (active citizenship)]
- Personal Growth [I developed community connections]
- Personal Growth [I gained public speaking and leadership skills]
- Personal Growth [I gained organizational skills]
- Involvement with Youth [I helped the youth grow and develop]
- Involvement with Youth [I helped the youth learn and provided opportunities to them]
- Fulfillment of the N.S.B.E. mission [I helped fulfill the mission of N.S.B.E.]
- Fulfillment of the N.S.B.E. mission [The purpose of A Walk for Education was achieved]
- Fulfillment of the N.S.B.E. mission [I made a difference during A Walk for Education]
- Personal Growth [I gained planning skills]
- Involvement with Youth [I enjoyed the opportunity to be with the youth]

Diagram showing the percentage of responses for each category, with bars for 'Agree' and 'Strongly Agree'.
Annual Convention: Informal Science & Engineering Fair

• Survey
  – Academic interests
  – Effect of TORCH volunteering

• All reported influence on career goals
  – Interest in teaching
  – Corporate outreach programs

• All interested in continued technical community service

• All see mentor role as important
Focus for 2011-2012

- Continued data collection on mentor impact
- Collect efficacy data from students in established programs
- Increased exposure within the society of the program
- Promote chapter funding, tie data collection in
- Establish timeline and tools for further research
Questions?
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