Increasing Pre-College Students’ Interests in Engineering: Ingredients for Effective Outreach

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Essential Ingredients

- Exposure to an Interesting Range of People and Career Options
- Gain Relevant Knowledge and Experience
- Peer Collaboration
- Range of Mentoring Opportunities
- Pathway of Initiatives
Exposure to Range of People

- Diverse Models of Careers and Lives
  - Vary stage of life and career type
  - Coping models

- Awareness of Stereotypes of Careers and Lives
  - Beyond a panel
    - Web site showcase or portal
    - Rotating guest experts
    - Use of interns
Gain Relevant Knowledge and Experience

- Intellectual Challenge
- Experiential – New Skills
- Interdisciplinary/Real-World Issues
Peer Collaboration

- Cross-Site Recruitment
- Interest Strands
- Climate of Curiosity and Collaboration
Range of Mentoring Opportunities

- **Who?**
  - Peer, Step-ahead, Professional

- **Why?**
  - Career, academic, socio-emotional outcomes

- **How?**
  - Short-term or long-term, face-to-face or distance, fixed or rotational
Help students to form questions…

- “I really like how you did [x]. Do you have advice for how I could get involved in [x]?”
- “I enjoyed when I did [x]. Do you have any ideas about other experiences that I should be thinking about?”
- “I heard about other students doing [x]. Do you know anything about how you get to do [x]?”
- “I’d really like to meet someone who does [x]. Do you know anyone or have ideas of how I could find someone who does [x]?”
- “I’d love to hear more about your life and how you were able to do [x]. Would you tell me more about it sometime?”
- “I’m worried about gender discrimination. Is it difficult to work with mostly men?”
Pathway of Initiatives

- Various entry points
- Cohort can travel together, foster peer collaboration
- Students “graduate on” to the next set of experiences
Low-income urban schools
Higher income prep and suburban schools

Major Employer for Region
Invest in Local Workforce

After-School Program

Hospital

Intern

School

Parents’ Jobs

Hired teachers, access to facilities
Youth are apt to talk to family about experience
Pathway at Hospital

- Go into schools (7-9th grade)
- Mini-med school (10th grade)
  - One week program
- Career prep program (11th grade)
  - Two times per month
    - First: Whole Group; Second: Breakouts
  - Stable “mentor” with guests rotating
- Internship program (12th grade)
Essential Ingredients Summary

- Exposure to Range of Interesting People
  - Diverse Models of Careers and Lives
  - Awareness of Stereotypes
- Gain Relevant Knowledge and Experience
  - Intellectual Challenge
  - Experiential and Skills
  - Interdisciplinary and Real-World Issues
- Peer Collaboration
  - Cross-Site Recruitment
  - Interest Strands
  - Climate of Curiosity and Collaboration
- Range of Mentoring Opportunities
  - Peer, step-ahead, advanced
  - Career, academic, socio-emotional
  - Short term and long term
- Pathway of Initiatives
  - Various entry points, ways to build upon prior experience
Questions?

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