



U.S. Army Research, Development and Engineering Command



TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

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STEM Update to S&T
Advisory Board

15 April 2009



Evolving the Vision



DoD best situated by Mission, People and Facilities to assist w/ Nat'l & DoD future STEM workforce goals (S&T Labs primary resource): NDEP



Army - Support DoD Stem Future Workforce vision through wide-range educational outreach activities while enhancing public image of the Army as developer of high technologies and STEM employer (Army labs primary resource)



RDECOM – Enable labs to support STEM outreach while ensuring a **comprehensive, integrated, synchronized** STEM program focused on workforce goals (lab S&Es primary resource to communities).



NSSC – Enable S&Es to reach out to host communities to develop educational outreach partnerships; collaborate with local and state educators and industry and academic partners; and monitor and report on success.



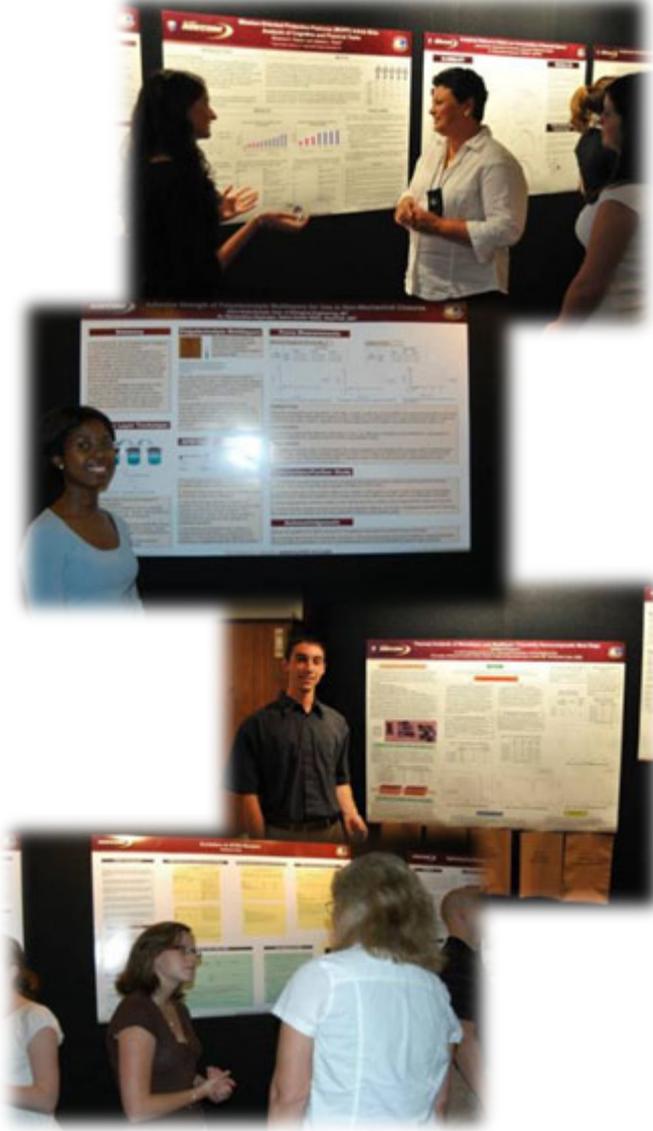
Vision: Fuel the pipeline to ensure STEM supply and development for future workforce



Continuing to focus our Student Hiring Programs



- Engage our students (60+ annually) in real world projects that provide hands on practical experience
- Develop well rounded skills
- Culminating Event: Future Workforce Poster Presentations
- Recent topics:
 - Camouflage Design and Development
 - Copolymer Films for Chemical Vapor Detection
 - Reactivity Testing for Chemically Protective Clothing
 - Sensory Lab Procedures
 - Nonocomposite MRE Meal Bags and Packaging





- National program designed to engage teachers by providing practical experience/exposure in Army lab environment
- Expose to real world science and math examples to enhance classroom activities
- Hosted 10 teachers from Ohio in 2008:
- Extremely positive feedback on how the experience was incorporated in classroom activities!
- Will be hosting 30 Ohio teachers this summer
- We will look to work with the Army to expand this program to Massachusetts teachers





Annual: Bring your Sons and Daughters to Work Day



- Sponsored by Women in Science and Engineering (WISE)
- Annual Event hosted for past 12 years
- ~150 students participate 9-17 years of age
- Includes hands-on demos and technical challenges

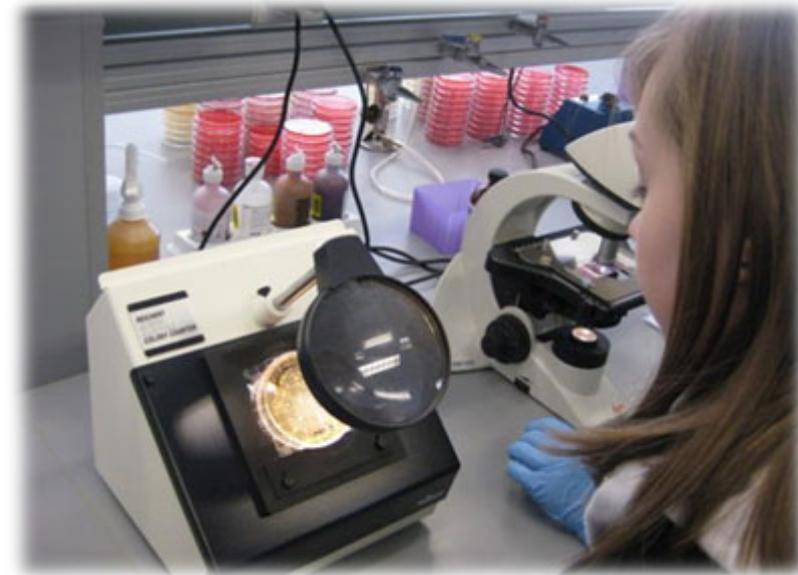


This years program will be highlighted in the National Defense Education Program (NDEP) STARLink Magazine



- Hosted by Women in Science and Engineering (WISE) in March 2009
- 45 Students from Bellingham High School (part of the Mass Bio Ed Cohort)
 - Inspired additional visit from another cohort
 - We will be meeting with Mass Bio Teach
- Extremely positive survey results
- Comment from group leader:

“students discussed how impressed they were when they learned of the research and efforts expended for the care and well-being of our Armed Forces deployed so far away. They (and the three of us) had no idea of the extent of the research conducted at Natick.”





- Hosted in cooperation with Metrowest STEM Education Network - April 4
- 10 Students – over 25 NSSC employee volunteers
- Soldier participation and interaction enhanced the event
- Dr. Freeman was a big hit with the students!





Notional Road Map: Pilot Project with local school systems



Elementary

- Food Science Nutrition Module
- K-3 mini-modules In focus areas
- Afterschool Enrichment Programs

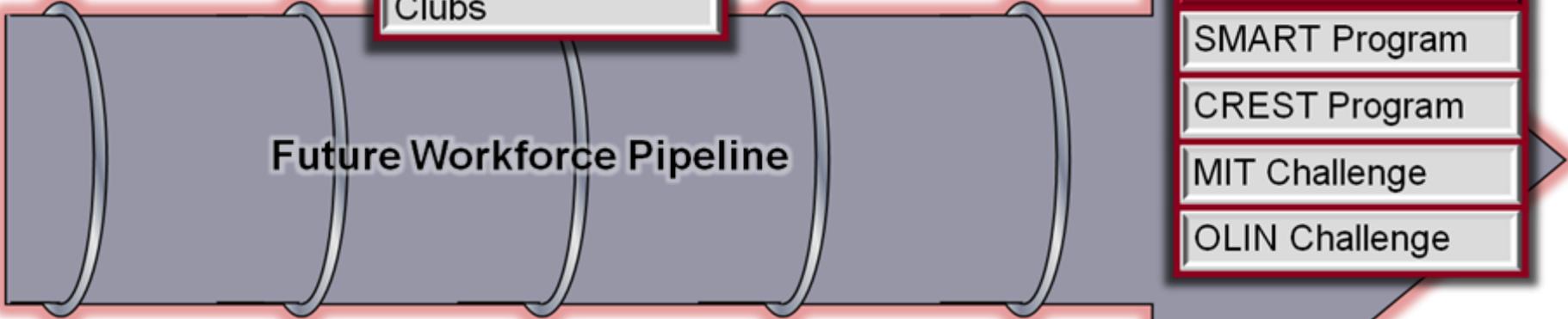
Middle School

- Food Science Nutrition Module
- Math Enrichment
- Lab Visits - hands on experience
- eCybermission
- Afterschool STEM Clubs

High School

- Food Science Nutrition Module
- Advanced Topics/lab visits and mentors
- Afterschool Mind Challenges

Education Collaborative :
 NSSC; Framingham, Natick, Needham, Hopedale; + Industry partners???



14-16+

- SMART Program
- CREST Program
- MIT Challenge
- OLIN Challenge

NSSC S&Es and facilities

Parent, Teacher, Community, Academia, Industry, State



1. Hire LIFT Teacher Externs (target: Math Modeling; Food Field Test; BioChem): Summer 2009
2. Initiate Education Design Teams for 09/10 School Year – May 2009:
 - Three teams: Elementary, Middle and High School
 - Looking for other participants (industry, academia, volunteers)
3. Collaborate with Stakeholders on National Food Science & Nutrition Module
4. Evolve current outreach efforts:
 - Continue to work with UMASS
 - Map current networks (leverage Raytheon STEM modeling effort)
 - Develop retiree corp to assist with efforts
 - Tracking metrics