

# Building the Science and Technology Workforce of the Future

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*Office of Educational Programs*

*Community Advisory Council*

*10/2/2008*

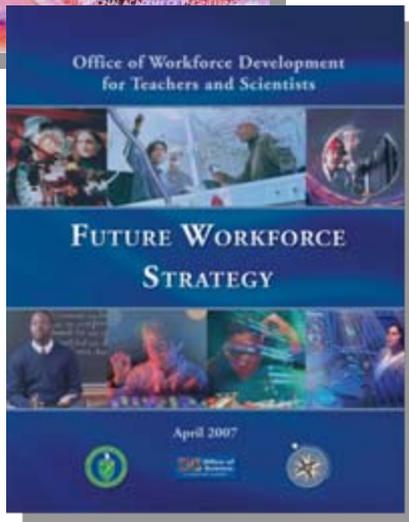
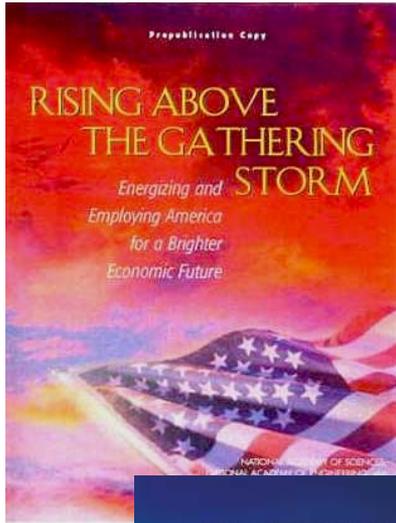
**BROOKHAVEN**  
NATIONAL LABORATORY

*a passion for discovery*



# A National Challenge

## Department of Energy (DOE) Office of Workforce Development



- Prepare a diverse workforce of scientists, engineers, and educators
- Utilize DOE's unique intellectual and physical resources
- Implement a proactive, data-driven, and results-focused model



# **BNL Office of Educational Programs**

**The mission of the Office of Educational Programs  
... initiatives will:**

- **Educate new generations of scientists, engineers, technicians, and teachers**
- **Encourage and promote science literacy**
- **Assist the scientific staff in achieving their goals**
- **Support and celebrate diversity**
- **Maintain BNL as a local, regional, national, and international educational asset**

**The Office of Educational Programs will fulfill this mission safely ...**

# Science Learning Center



- 36,000 participants per year – grades 1-12, teachers, parents, others
- Hands-on inquiry based science learning
- First come, first serve, and funding availability



# High School Summer Programs

- Minority High School Apprenticeship Program – 15 students, 4 week 9<sup>th</sup> grade science introduction program
- Community Summer Science Program – 24 students, 6 week 10<sup>th</sup>/11<sup>th</sup> grade overview of research, lectures, hands-on workshops and field trips.
- High School Research Program – 27 students, 11<sup>th</sup>/12<sup>th</sup> grade research experience
- Academies Creating Teacher Scientists – 9 teachers, 6 week, 3 summer program



# Eastern Suffolk BOCES Partnership

## Middle and High School Science Workshops

- Hands-on programs in Biology, Chemistry and Environmental Science
- In-house or off-site
- School pays BOCES, BOCES reimburses the Lab
- 5000 students in 2007-2008
- New programs being developed in Physics for 2008-2009



# Contests



**Elementary School Science Fair**  
– over 500 elementary school students participate

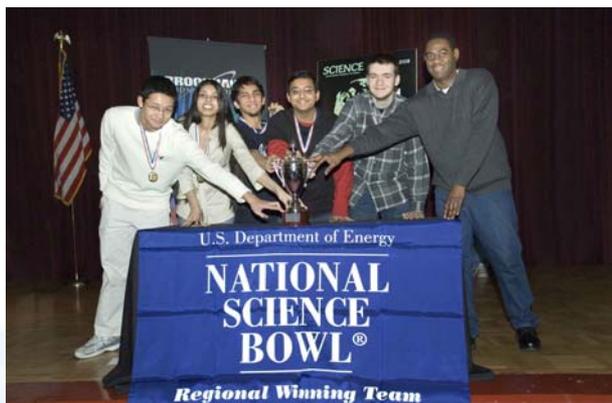


**Middle School Science Bowl & Hydrogen Fuel Cell Car Challenge**



**Magnetic Levitation Vehicle Competition**

**High School Science Bowl**



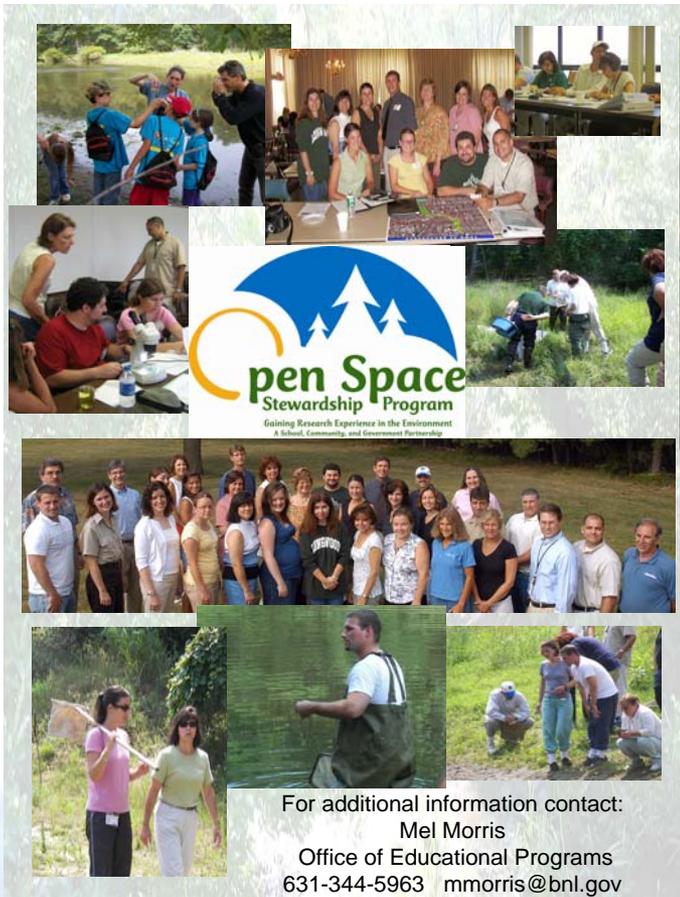
**Bridge Building**



**Science & Society Essay Contest**

# Open Space Stewardship Program

Government, School, Community Partnership [www.greenosp.org](http://www.greenosp.org)



# Undergraduate and Graduate Programs 2008



Science Undergraduate Community College Institute  
Laboratory Internship



Faculty and Student Teams



Pre-Service Teacher



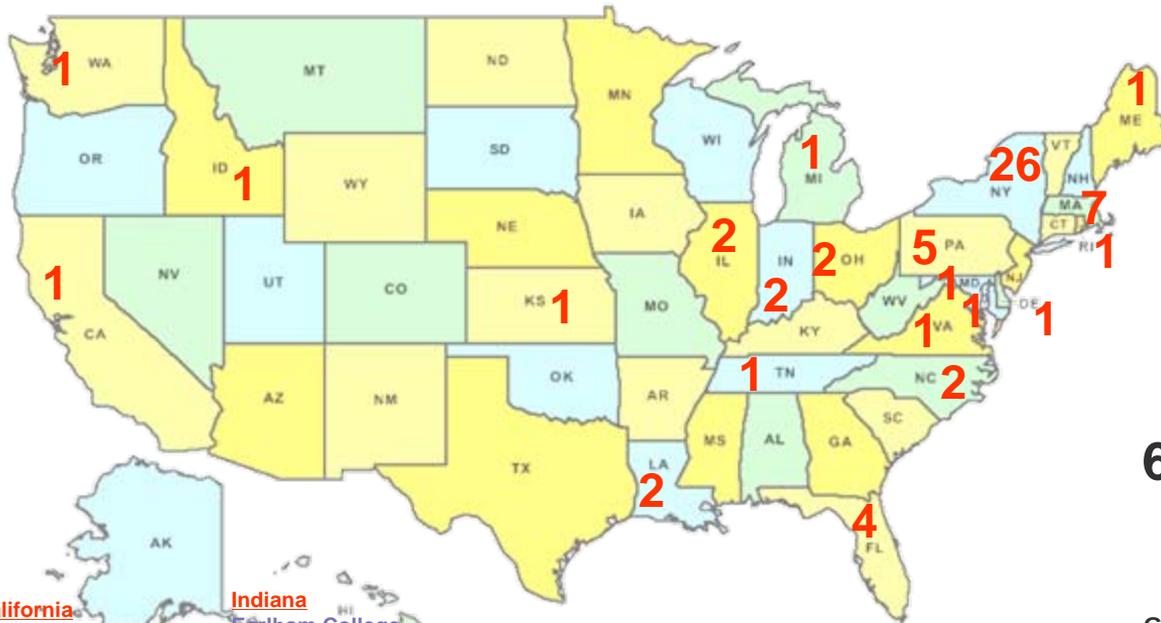
Graduate Research  
Internship Program



New York State College  
Science and Technology  
Entry Program

# 2007 Summer Programs

## Number of Colleges/Universities by State



**California**  
Sacramento City College  
UCLA  
**Delaware**  
Univ. of Delaware  
**District of Columbia**  
Howard University  
**Florida**  
Florida A&M  
Tallahassee CC  
Univ. of Southern Florida  
Univ. of Tampa  
**Idaho**  
Brigham Young  
**Illinois**  
Southern Illinois  
Univ. of Illinois at Urbana-Champaign

**Indiana**  
Earlham College  
Purdue  
**Louisiana**  
Southern Univ. at Baton Rouge  
Southern Univ. at New Orleans  
**Maine**  
Unity College  
**Maryland**  
Loyola  
**Massachusetts**  
Dartmouth  
MIT  
Mt. Holyoke  
Northeastern  
Smith  
Tufts  
UMass Amherst

**Michigan**  
Univ. of Michigan  
**New York**  
Brooklyn College  
City College of NY  
CUNY Medgar Evers  
CUNY Queens College  
CUNY Queensborough CC  
Clarkson  
Colgate  
Columbia  
Cornell  
Dowling College  
Farmingdale State  
Kingsborough CC  
Monroe CC  
Mount Saint Mary'  
NYU  
RPI  
St. Joseph's College

Suffolk County CC  
SUNY Alfred  
SUNY Binghamton  
SUNY Brockport  
SUNY Geneseo  
SUNY Old Westbury  
SUNY Stony Brook  
Union College  
Vassar  
**North Carolina**  
North Carolina A&T  
UNC at Chapel Hill  
**Ohio**  
Central State U  
Ohio State

**Pennsylvania**  
LaSalle  
Penn State  
CC Philadelphia  
Cheyney Univ.  
Temple Univ.  
**Rhode Island**  
Brown Univ.  
**Tennessee**  
Tennessee Tech  
**Virginia**  
College of William & Mary  
**Washington**  
Walla Walla College

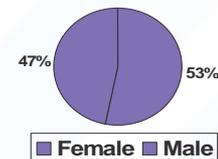


166 Participants

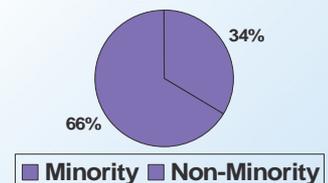
64 Colleges/Universities

20 States

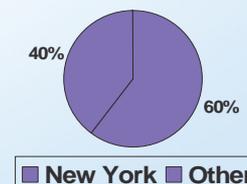
Gender Distribution



Diversity Distribution



New York State Distribution



# Other Programs

- Science and Technology Entry Program (STEP)
- College STEP
- Dowling Gear Up
- Center for Minority Teacher Development and Training
- International Atomic Energy Agency
- Large Synoptic Survey Telescope
- Large Hadron Collider ATLAS Detector
- NYS Excelsior Scholars Program
- Math Science and Technology Partnership
- Eastern Suffolk Board of Cooperative Educational Services
- Wards Natural Sciences

# Summarizing....

- DOE has a strong role in training our future scientists, engineers and technicians and...
- A role in exciting and motivating students with regard to science
- Programs augment academic work
- Rewarding work to see scientific staff work with students to build confidence and interest