



Army Educational Outreach Program



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***American Competitiveness Initiative
Technical Service Workshop
“Strengthening Math and Science Education”
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U.S. Weak on Math

Weak on Math

U.S. students performed below average on an international assessment of math literacy. The study tested 15-year-olds in countries belonging to the Organization for Economic Cooperation and Development.

	Rank	Average math literacy score	OECD average: 500
Finland	1	544	
South Korea	2	542	
Netherlands	3	538	
Japan	4	534	
Canada	5	532	
Belgium	6	529	
Switzerland	7	527	
New Zealand	8	523	
Australia	9	524	
Czech Republic	10	516	
Iceland	11	515	
Denmark	12	514	
France	13	511	
Sweden	14	509	
Austria	15	506	
Germany	16	503	
Ireland	17	503	
Slovak Republic	18	498	
Norway	19	495	
Luxembourg	20	493	
Poland	21	490	
Hungary	22	490	
Spain	23	485	
United States	24	483	
Portugal	25	466	
Italy	26	466	
Greece	27	445	
Turkey	28	423	
Mexico	29	385	

NOTE: United Kingdom not included because of low response rate.

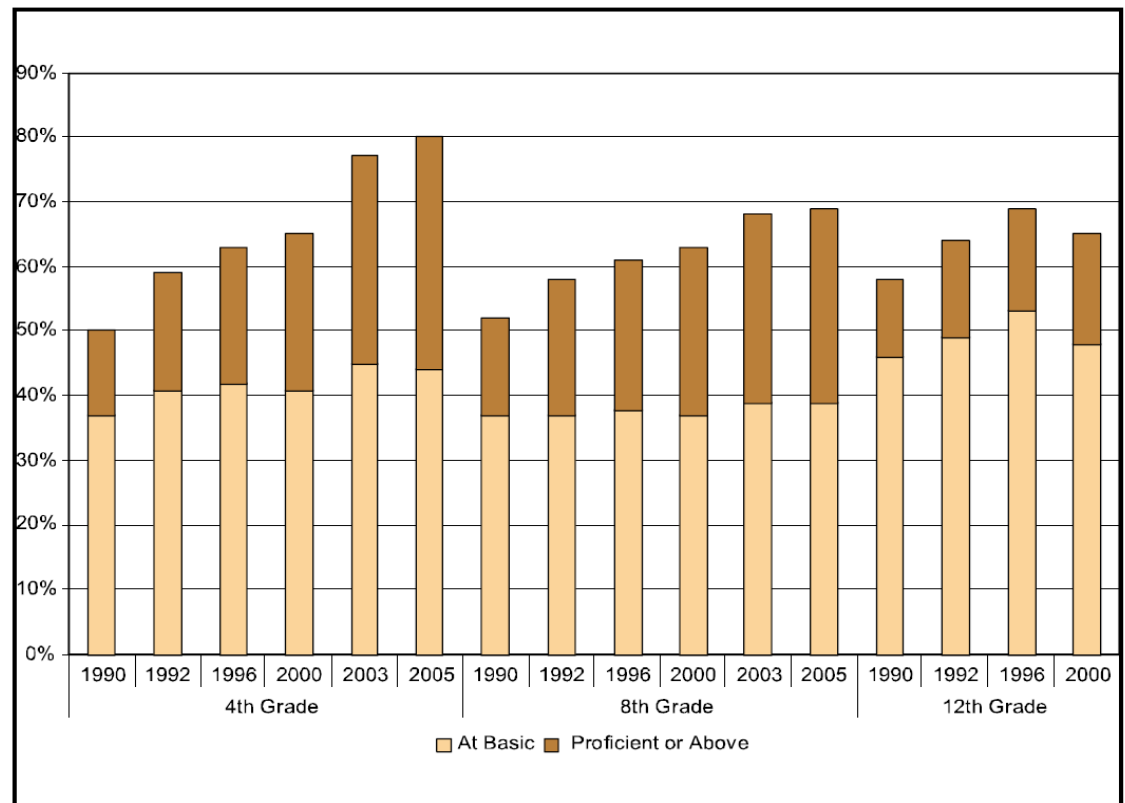
*The Washington Post
December 7, 2004*



% of Students Scoring Basic and Proficient in Math: 1990-2005

- % of 4th and 8th graders performing at basic level shows marginal improvement over 15 years
- In 2005, 20% of 4th graders and 30% of 8th graders scored below the basic level
- For 12th graders, in 2000 almost 50% could only perform at the basic level and 35% performed below the basic level

Figure 1. Percentages of Students Scoring Basic and Proficient in Math, Selected Years: 1990-2005

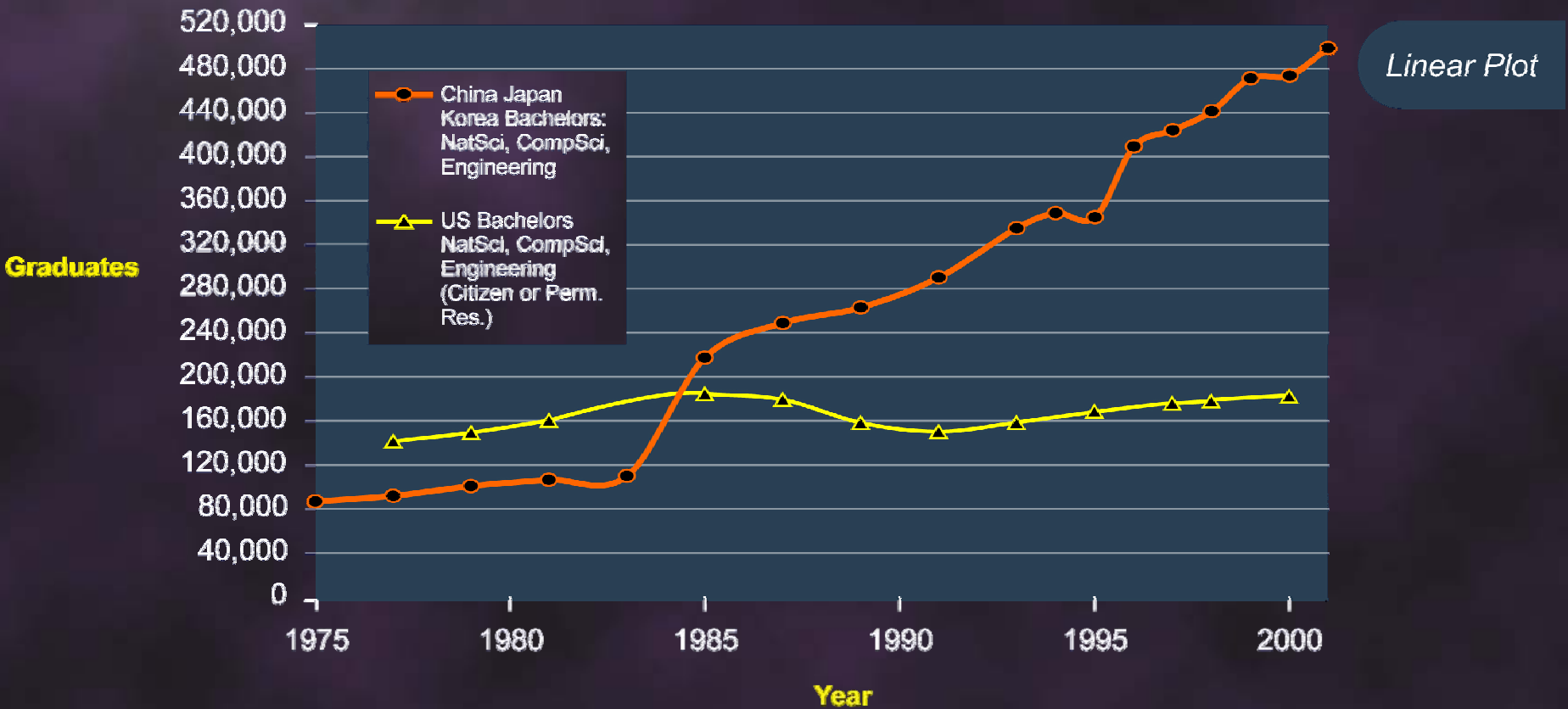


Source: U.S. Department of Education, National Center for Education Statistics, *The Nation's Report Card*, various years.



Bachelors Degrees in Natural Sciences, Comp. Sci., and Engineering, US

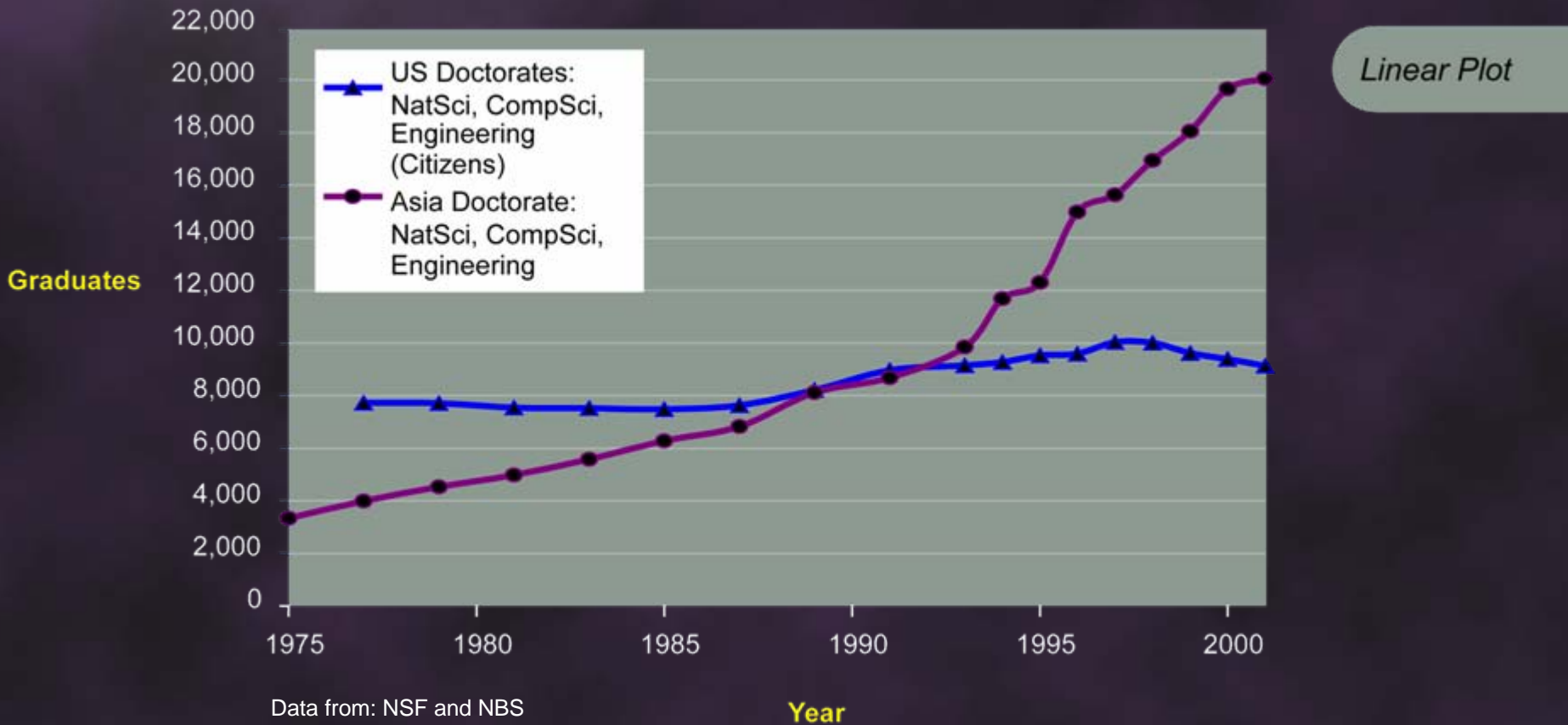
(citizens and permanent residents) and Asia (China, Japan, Korea)



Data from: NSF and NBS



Doctoral Degrees in Natural Science, Comp. Sci., and Engineering, US (citizens) and Asia





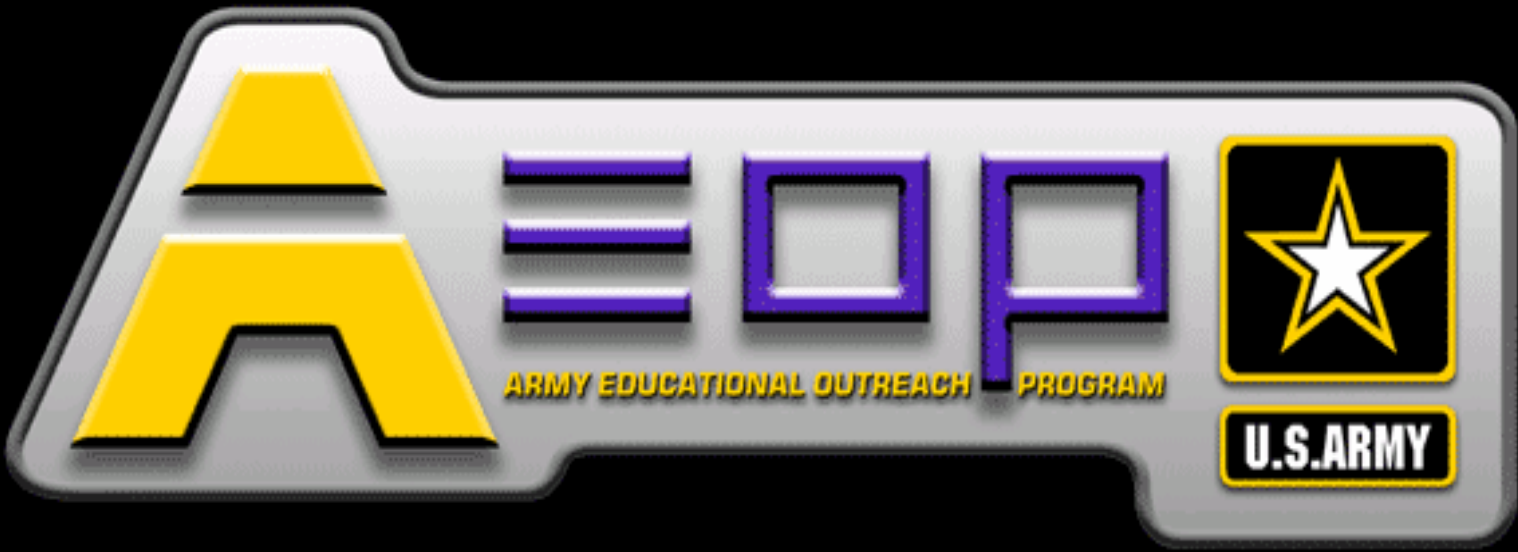
Prevailing National Science, Math, and Engineering (SME) Educational Issues and Concerns

- ***Lack of student interest nationwide at all grade levels***
- ***Lack of teacher qualifications and interest in teaching these subjects***
- ***High drop out rate in freshman year in college***
- ***Future workforce and military unprepared for a world filled with science, math, engineering and technology***
- ***Technical edge needed for our nation to remain globally competitive in the future***



The Recruiting Challenge

- ***DoD needs to hire more than 14,000 scientists and engineers in the next 2 years***
- ***The pool of candidates is shrinking***
- ***More than half of science and engineering graduates from American universities are foreign nationals, who are mostly off-limits to federal agencies***
- ***Fewer American students are entering science and technology fields than in previous years***
- ***DoD must compete with the private sector and other agencies for that talent***



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AMERICA'S FUTURE

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Mission



To engage and guide students and teachers through Army sponsored research, education, competitions, internships and unique practical experiences in science, mathematics, engineering and technology



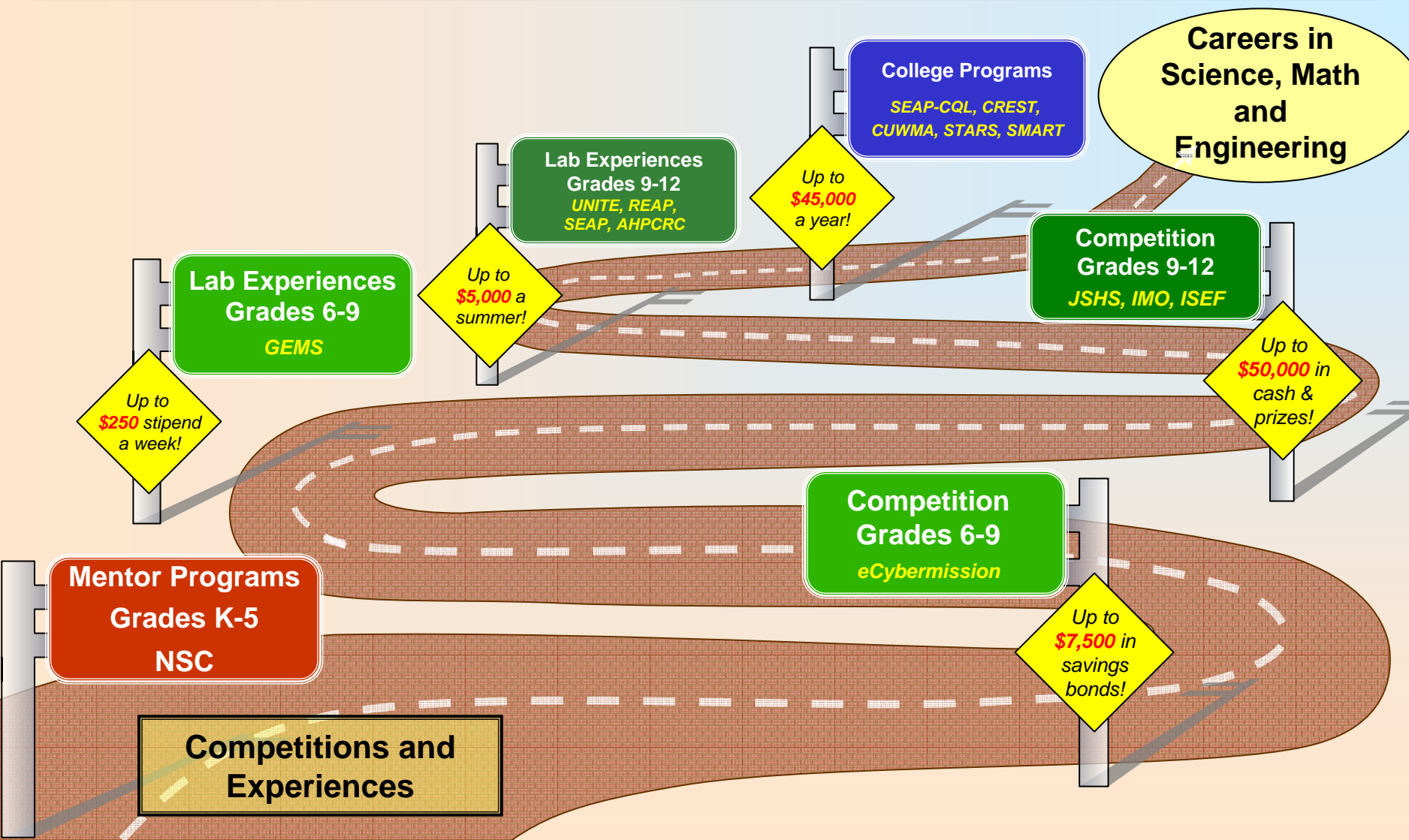
Goals/Objectives



- ***Develop and execute programs that provide hands on learning, incentives and rewards for students and teachers***
- ***Create a simple process and incentives to encourage students to participate in unique practical experiences and competitions***
- ***Encourage Army scientists and engineers to mentor and provide research experiences to teachers and students at Army labs and universities***
- ***Integrate Army Outreach programs - utilize available resources, identify synergies and adopt best practices***
- ***Look for and complement **Tri-service collaborations*****

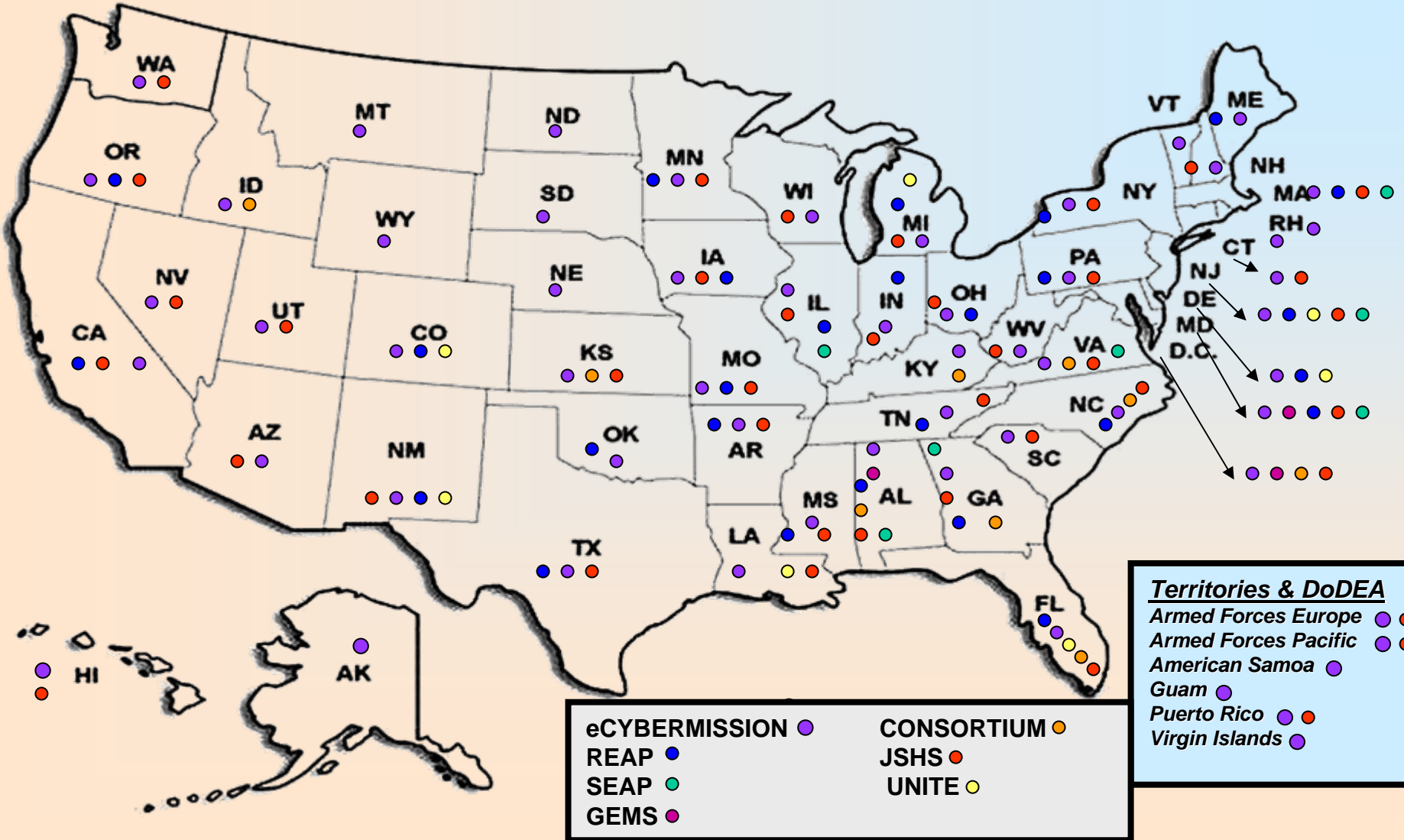


Strategy: Following the Path to Become Scientists and Engineers





Army Educational Outreach Community





Provides Metrics and Tracking

Student Lookup - Microsoft Internet Explorer

File Edit View Favorites Tools Help Links SEAP Closing Student Lookup Cancer.gov - Human Participant Protections Education for Research Teams

Address <http://www.usaeop.com/Application/students.aspx> Go

AEOP Student Database

Application Year: Search for Student By Last Name: Search

Program:

Printable Report	Edit Record	Last Name	First Name	Program	Application Date
View Report	WISP-0001	Morales	Erik	WISP	8/16/2005
View Report	STARS-0001	Calzaghe	Joe	STARS	8/24/2005
View Report	SEAP-0001	Mayweather	Floyd	SEAP	8/16/2005
View Report	SEAP-0002	Karmazin	Roman	SEAP	8/23/2005
View Report	SEAP-0003	Wright	Ronald	SEAP	8/23/2005
View Report	SEAP-0005	Margarito	Antonio	SEAP	8/26/2005
View Report	SEAP-0006	Spinks	Cory	SEAP	8/26/2005
View Report	SEAP-0007	Hamed	Naseem	SEAP	8/26/2005
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View Report	CUWMA-0002	Chavez	Jesus	CUWMA	8/17/2005

**Authority provided by MRMC Human Use Protocol
U.S. Army laboratories as professional environments to train
apprentice scientists, engineers and technicians through research
internships, mentoring, and inquiry-based laboratory experiments
of increasing complexity.**



Educational Outreach 2005/2006 Impact



- ***154,303 K-12 students engaged***
- ***1,400 K-12 teachers engaged***
- ***160 universities involved***
- ***1,266 Army S&T personnel involved***
- ***\$14.5 M funded***

***eCYBERMISSION has grown from
1,583 to 6,886 students in 4 years***



Summary

P·R·I·O·R·I·T·I·E·S

"A HUNDRED YEARS FROM NOW IT WILL NOT MATTER WHAT MY BANK ACCOUNT WAS, THE SORT OF HOUSE I LIVED IN, OR THE KIND OF CAR I DROVE...BUT THE WORLD MAY BE DIFFERENT BECAUSE I WAS IMPORTANT IN THE LIFE OF A CHILD."