SCIENCE DIPLOMACY IN A GLOBAL ENVIRONMENT:

A WAKE-UP CALL

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SCIENCE DIPLOMACY: Building Relationships

• Using science and technology to build peaceful societal relationships, especially where official diplomatic exchange might be limited, strained, or non-existent.

• Can occur at many levels: i.e. between individuals, professional organizations, educational and research institutions, and government agencies.

• Should lead people/governments to a common scientific code of conduct and comfortable familiarity with each other based on sustained interactions.

• The unfettering of curiosity and freedom to ask questions in pursuit of scientific discoveries can become an insidious force for a freer society and a less authoritarian government.
SCIENCE DIPLOMACY GOALS OF THE AAAS

- **Inspirational** – Raising the profile of science diplomacy to a wider science and foreign policy community
- **Operational** – Establishing delegations that demonstrate science diplomacy in action. Organized visits over the past few years to Syria, Myanmar/Burma, North Korea, and Cuba; helped to establish a pan-African science coalition.
- **Intellectual** – Gaining a better understanding of the issues and drivers of science diplomacy: *Science & Diplomacy Journal* (quarterly).
NEW ASIA NATIONS
China, India, S. Korea, Singapore

- demographically youthful
- energetic people
- tradition of respect for intellectual pursuits and for teachers
- belief that science and technology is essential to progress and national success
- WILLINGNESS TO INVEST IN EDUCATION and RESEARCH – 30-year infrastructure improvements
RISE OF NEW ASIA

• Increasing wealth and economic power
• Growth in space exploration, military hardware & manpower, and nuclear capabilities
• Challenge to the U.S. international affairs
• Changing its educational system to foster innovation
• Increasing control over news and access to the internet
SIGNS OF COLLABORATION

• SCIENCE DIPLOMACY
  – USAID
  – Institutions, non-profits, and individuals

• TRADE: FINANCIAL AND TECHNICAL INTERDEPENDENCE

• COOPERATION ON TERRORISM AND GLOBAL WARMING

• LIMITED MILITARY EXCHANGES
INCREASING INTERNATIONALIZATION OF PROFESSIONAL WORKERS

• BRAIN CIRCULATION VS. BRAIN DRAIN

• MANY ASIANS TRAINED IN THE WEST ARE RETURNING TO ASIA: 5-25% return rate

• ASIAN INSTITUTIONS OPENING UP AND ATTRACTING WORKERS FROM OTHER COUNTRIES
BARRIERS TO FULL SCIENCE DEVELOPMENT IN NEW ASIA

• GROWTH IN HIGHER EDUCATION IS SO FAST THAT THE QUALITY OF TRAINEES ARE SUSPECT.
• EDUCATION FAILS TO MAXIMALLY PROMOTE INDEPENDENT, INNOVATIVE THINKING.
• FUNDING IS OPAQUE AND FAVORS CRONYISM.
• TOP DOWN SCIENCE IS DIRECTED BY BUREAUCRATS LIMITED IN SCIENCE & INTERNATIONAL EXPOSURE.
• SENIOR SCIENTISTS GIVE LIMITED INDEPENDENCE TO YOUNGER PROFESSORS.
• NASCENT PROGRAMS IN SCIENCE ETHICS AND INTEGRITY

- Huang & Tan, Achieving Scientific Eminence Within Asia, Science 329, 17 September 2010
MORE: WHAT IS SO SPECIAL ABOUT THE U.S?

- WILLINGNESS TO TAKE RISKS AND MAKE MISTAKES

- A SENSE OF HUMOR & OPTIMISM
OUR PROBLEMS

- Infrastructure of our cities needs repair
- Inability to retain some of our best foreign trainees
- Uneven pipeline in K-12 education
- Poorly prepared teachers who are not well compensated
- Failure to maximize talents of all our own people
Percentage of doctoral scientists and engineers employed in universities and 4-year colleges (S&E occupations) who are tenured, by race/ethnicity and gender (2008)

Quotas for Asian Americans at Elite Schools

Asians Age 18-21 and Elite College Enrollment Trends, 1990-2011

Trends of Asian enrollment at Caltech and the Ivy League universities, compared with growth of Asian college-age population; Asian age cohort population figures are based on Census CPS, and given the small sample size, are subject to considerable yearly statistical fluctuations. Source: Appendices B and C.
Scientists and engineers in science and engineering occupations: 2006

- Asian women 5%
- Asian men 12%
- Black women 1%
- Black men 2%
- Hispanic women 1%
- Hispanic men 3%
- Other women 1%
- Other men 2%
- White men 55%
- White women 18%

NOTE: Hispanic may be any race. Other includes American Indian/Alaska Native, Native Hawaiian/Other Pacific Islander, and multiple race.

WAKE UP CALL

• INVEST IN EDUCATION, ESPECIALLY TEACHER TRAINING AND BETTER SALARIES

• MAINTAIN AND BUILD THE INFRASTRUCTURE OF OUR INTELLECTUAL HUBS and GREAT CITIES

• MAXIMIZE CONTRIBUTIONS FROM OUR DIVERSE POPULATION, ESPECIALLY WOMEN AND MINORITIES
THANK YOU

THE END