N-STAR – Naval Research – Science & Technology for America's Readiness

CECD
CENTER FOR ENERGETIC CONCEPTS DEVELOPMENT

UNIVERSITY OF MARYLAND 18 56

NAVSEA
INDIAN HEAD
Surface Warfare Center Division

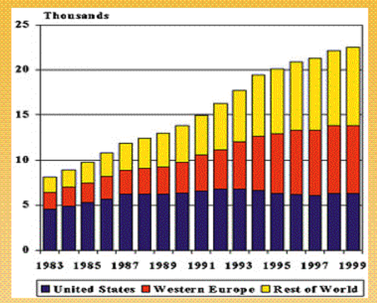
Robert Kavetsky – Office of Naval Research

Overview

N-STAR is an initiative launched by the Naval Research Community to revitalize the Science & Technology base at the Navy's Warfare Centers.

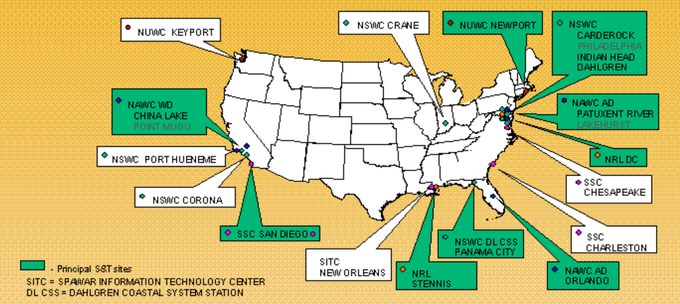
Science & Technology is now Global

Physical Review & Physical Review Letters - Total Submissions



Source: American Physical Society - *APS News August/September 2000* -

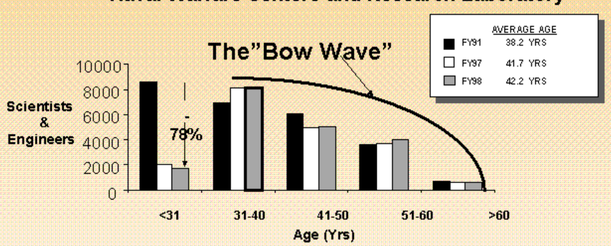
Naval R&D Centers



Providing the Bridge from S&T to the Fleet

Demographic Issue

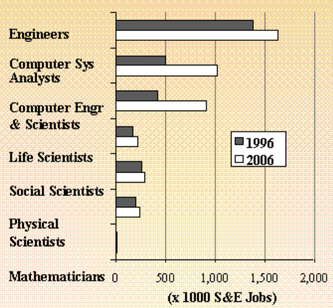
Naval Warfare Centers and Research Laboratory



SOURCE: DTIC/DMDC (DEFENSE CIVILIAN PERSONNEL DATA SYSTEM, AUG 99)
NSWC EXCLUDES NAWAS

Must Develop Next Generation of Scientists & Technologists

NATIONAL S&E EMPLOYMENT PROJECTIONS 1996-2006



EMPLOYMENT IN S&E OCCUPATIONS EXPECTED TO INCREASE AT THREE TIMES THE RATE FOR ALL OCCUPATIONS

- National labor force employment anticipated to rise by 14%
- S&E employment projected to grow by 44%
  - Equates to 1.36M jobs
  - About three-fourths of increase in computer-related occupations

Source: U.S. Bureau of Labor Statistics Office of Employment Projections, *National Industry - Occupation Employment Projections, 1996-2006.*

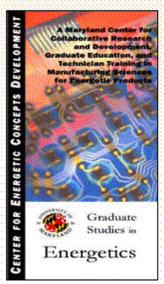
N-STAR Strategic Vision

…recruit the nation's brightest young scientists and technology experts to the Navy and Marine Corps team…*enable us to assemble the critical mass of highly skilled professionals* needed to maintain the country's technological edge.

Focus on University – Navy R&D Center Connection

The Center for Energetic Concepts Development

- Fostering continued advancements in energetics manufacturing, & research
- Educating the next generation of energetics experts



A 21st Century Partnership in Energetics

ONR Undersea Weapons University/Laboratory Initiative

Disciplines

- Acoustics
- Electrical Engineering
- Information Science
- Physics
- Mathematics
- Chemistry
- Mechanical Engineering

Undersea Weaponry Core Technology Areas

- Guidance and Control
  Sensors, Signal Processing, Planning & Control
- Energy Conversion
  Power Sources, Motors
- Hydrodynamics
  Control Surface, Propulsors, Drag & Noise Reduction
- Warheads
  Explosives, Detonators, Fuzes

Ten New PhDs per year will be result

N-STAR - Focusing on Talent

25 New S&E's working on Navy Projects

Rachel - "Feels Navy S&T is the ideal environment to explore her love of math and engineering."

Brandon – "Enjoys working most on research with real applications."

Rachel Goshorn, SSC SD & UCSD PhD candidate. Served as an RA at the UCSD Computer Vision and Robotics lab.

Brandon Zeidler, potential SSC SD hire & UCSD PhD candidate. Theses topic involves coding techniques in a fiber optic channel.

Their Project:

Robust Tactical Networks

Design of robust antennas and waveforms and schemes for adaptively controlling transmit powers and dynamic routing.

Dr. James Zeidler (Mentor)

Author of 50 peer reviewed journal articles, 6 book chapters, and 40 invited papers. Elected fellow of IEEE in 1994.