



The American Heritage Defense Corporation

Daniel K. Inouye Science, Engineering, Technology and Workforce for America's Security (SETWAS) Internships

[Issues]

The National Science Board Report on Science and Engineering Workforce, August 2003, after detailed analysis of data pertaining to the production of American born scientists, engineers and technologists arrived at the following conclusions:

- (1) Global competition for Science and Engineering talent is intensifying, such that the United States may not be able to rely on international science and engineering labor market to fill unmet skill needs;
- (2) The number of native-born science and engineering graduates entering the workforce is likely to decline unless the Nation intervenes to improve success in educating science and engineering students from all demographic groups, especially those that have been underrepresented in the Science and Engineering careers;
- (3) The Federal Government and its agencies must step forward to ensure the adequacy of the United States science and engineering workforce. All stakeholders must mobilize and initiate efforts that increase the number of United States citizens pursuing science and engineering studies and careers;
- (4) All Federal Agencies should seek to broaden the base of participation in their Science, Technology, Engineering and Mathematics programs.

The technological workforce that constitutes America's global prowess is aging, and there is an urgent need to broaden the base of participation of American citizens in defense science and engineering in order to replenish the nation's technological workforce, as well as conduct research and development of advanced systems to improve our nation's defense. The United States cannot be assured that it is engaging its best and brightest young men and women in the enterprise of defense science and engineering when many of its native born citizens are not exposed to the mission-oriented challenges of the day.

[Resolution]

The proposed Daniel K. Inouye Science, Engineering, Technology and Workforce for America's Security (SETWAS) Internships program addresses a new paradigm for broadening defense science and engineering development investments into traditionally underrepresented institutions for the purpose of yielding more return on these investments with regard to the production of homegrown engineers and scientists. This program is unique in that it seeks to resolve several issues with a unified approach – an approach which does not compromise any of the missions of the Department of Defense, and which does not divert mission critical funding away from their intended objectives. In fact, the proposed approach aims at increasing the exposure of more American college students to mission-oriented applied research projects. In particular the proposed approach reaches beyond basic research (6.1) into applied research (6.2), advanced technology development (6.3), demonstration and validation (6.4), engineering manufacturing development (6.5), management support (6.6) and operational systems



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development (6.7) activities related to department of defense missions. The program consists of three key components: (1) SETWAS Alliance; (2) Daniel K. Inouye SETWAS Internships; and (3) SETWAS Collaboratories.

SETWAS Alliance

The cornerstone of the proposed program is the establishment and promotion of the SETWAS Alliance, which will be an alliance between Academic institutions, department of defense agencies, industry prime contractors, and other private and public entities (large and small) that are prominent in defense contracting. The overlapping interests of the SETWAS Alliance members and stakeholders is the common need to train and engage the best and brightest American scientists, engineers and entrepreneurs in the business of developing technologies and systems for the defense and security of the homeland. The American Heritage Defense Corporation (AHDC), a non-profit 501(c)3 research and development corporation, proposes to identify and solicit the participation of SETWAS Alliance partners and stakeholders – via briefings, meetings, and workshops.

Daniel K. Inouye SETWAS Internships

It is widely acknowledged that the quality of engineering and technological education is significantly enhanced by the participation of students in mission-oriented applied projects as interns. This involvement cultivates their ability to identify research issues, conduct research projects, produce reports and present results of their efforts – all of which are critical skills essential to success in their professional careers. The merit and value of internships are evidenced by the popularity of such programs. The Daniel K. Inouye SETWAS internships – named after the distinguished Senator Daniel K. Inouye (D-HI), who has demonstrated exemplary national leadership in supporting the SETWAS concept from its inception - will be unique in that unlike most internships that engage students during the summer or winter breaks only, and may not be linked to the study program that the students are engaged in, these internships will be structured specifically to complement the degree programs that the students are enrolled in. The Internships will be continuous throughout the year, and will provide students the much-needed exposure to real life mission oriented research and development projects. In order to allow students to work hand in hand with their department of defense and industry mentors while they are on campus, we propose to establish SETWAS Collaboratories (see next section), which will utilize modern information technologies to bridge the distances between the University campuses and the locations of those mentors.

SETWAS Collaboratories

SETWAS Collaboratories will be web-based collaboration sites that will allow department of defense and industry mentors and their student-interns to remotely create and use collaboration workspaces containing areas for defining and viewing tasks, deadlines, and status as well as real-time audio and video conferencing and editable spaces that teams can use to update and exchange documents. While off site at locations separated by distance from the department of defense and industry laboratories, the



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students will be able to interact with their mentors and continue to function as interns throughout the year.

[Pilot Program]

Scope of Pilot Program

The United States Army Space and Missile Defense Command, Directorate for Technical Interoperability and Matrix Center (USASMDC/TIMC - 0603308A - Army Space Systems Integration 0603308A (990) Space and Missile Defense) has initiated efforts to plan a pilot SETWAS program. The pilot program will demonstrate the proof of concept of the three components of the SETWAS proposal – i.e. SETWAS Alliance, SETWAS Internships and SETWAS Collaboratories. For the pilot program, a SETWAS Alliance is to be developed in the Huntsville, Alabama area among Universities, Private Industry, USASMDC and other Federal Agencies in the region. The pilot SETWAS Alliance will be formed to prove the concept that these various entities can in fact share the common interest of working together to train the future generation of scientists and engineers who will be graduating from their partner institutions. Students enrolled in science, engineering and business management disciplines at participating institutions will be paired up with mentors from both government and industry organizations that are engaged in cutting edge applied research and development projects. Collaboratory tools such as Internet portal, audio-visual facilities, software and hardware will be installed at the Universities to support the activities of the student-interns. The pilot program is proposed for the duration of three years.

Requested Funding

A planning appropriation of \$3M is requested to support initial planning activities in FY08 as a Congressional add to the Army Program Element 0603308A (Project #990). A detailed budget request for the Pilot Program will be prepared for Congress upon completion of the planning effort.