



White Paper (Proprietary)

# Science, Engineering, Technology and Workforce Development for America's Security (SETWAS) Alliances

**(The) American Heritage Defense Corporation (AHDC)**

**POC:**

**Dr. James A. Fabunmi, Consulting Scientist**

**Tel. 301 249 2900**

**Email: [jfabunmi@alum.mit.edu](mailto:jfabunmi@alum.mit.edu)**

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## Introduction

While 10 USC 2323 and similar Federal legislations were intended to create opportunities for Historically Black Colleges and Universities and other Minority Institutions (HBCUs/MIs) to increase their capacity to participate in Federal contracting, available data shows that to date they have not been able to take advantage of these opportunities for a number of specific reasons. While the provisions of these laws may have created potential research and development markets for the HBCUs/MIs, the infrastructure that would enable these institutions to fully take advantage of these opportunities have not been established. In reality, the HBCUs/MIs have not received the investments to establish an environment conducive to applied research and development capabilities.

To become competitive in research and development demands the development of the appropriate infrastructure. However, opportunities for realizing this objective are yet to be fully explored. The modest research activities at the Basic Research (6.1) level that go on at the HBCUs/MIs have had little or no long term relevance to the mainstream 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 Development (6.7) activities that represent the billions of dollars of annual investment by the federal government in research, development, test and evaluation programs (see Figure 1.). For this reason, the significantly higher levels of dollars that could be flowing into HBCUs/MIs via contracts involving 6.2-6.6 categories of RDT&E remain untapped.

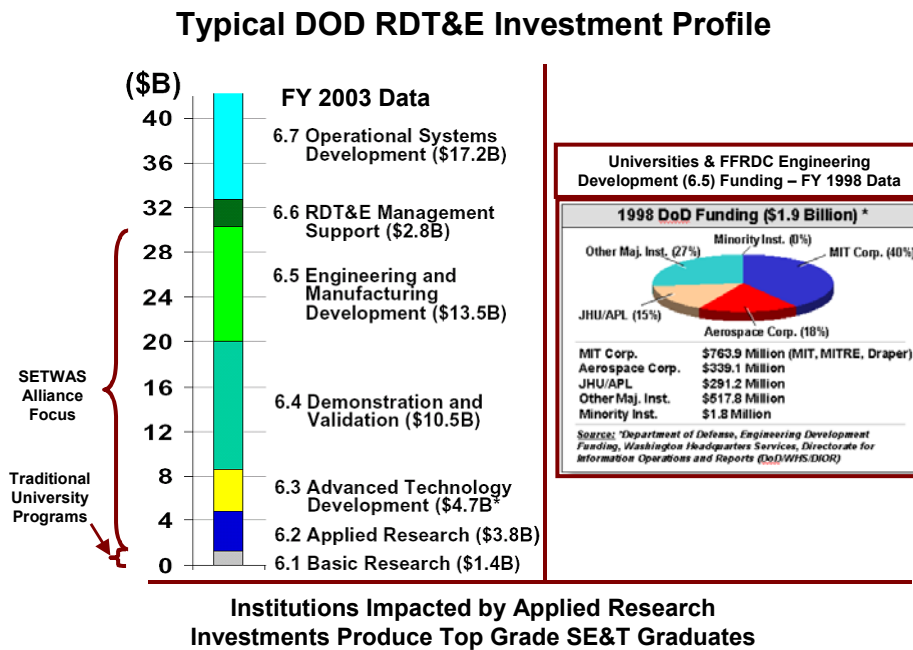


Figure 1.

## SETWAS Alliances

In 2002 the American Heritage Defense Corporation (AHDC) was chartered in the District of Columbia as a non-profit organization whose mission is to develop and implement strategies for creating and enhancing the research and development infrastructure at HBCUs/MIs (see Appendix 1). This was in response to the urgent need for the United States to broaden the involvement of all demographic groups in the science and technology enterprise, due to the projected shortage of science and technology workforce for future growth of our economy and robust national security.

AHDC proposed the Science, Engineering, Technology and Workforce for America's Security (SETWAS) approach, which consists of initiatives aimed at leveraging Alliances between Universities, Industry (large and small), Government Laboratories (defense and non-defense), K-12 School Systems, and other private and public entities that are stakeholders in the research and development of advanced technology and the education of scientists and engineers, who are U.S. citizens. The SETWAS Alliances will be constituted and sustained by the overlapping interests among the host institutions (HBCUs/MIs), technical partners (major industry and other businesses) and the Federal Government (Congress and Federal Agencies) as shown in Figure 2. Each SETWAS Alliance will comprise a participating HBCU/MI and technical partners, who will agree to two basic things: 1) Collaborating with the HBCU/MI to develop new institutes specifically for performing contract Research and Development; and 2) Hosting facilities and other infrastructure for Research and Development at or in close proximity to the main campuses of the HBCU/MI so as to foster internship and apprenticeship programs for students at the institution.

### **SETWAS Alliances – Based on Intersection of Political, Business and Institutional Interests**

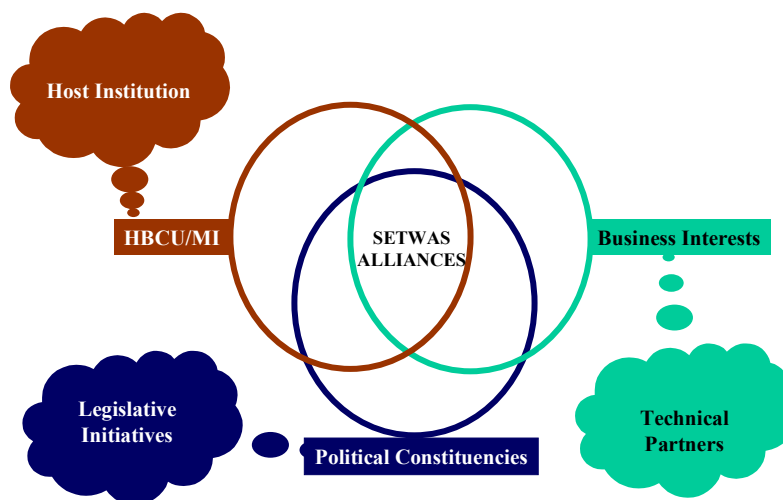


Figure 2.

## AHDC Activities

AHDC engages in the following activities in support of the promotion and management of each SETWAS Alliance (see Figure 3):

- Task 1.** – Identify and solicit the participation of Alliance partners – via briefings, meetings, and workshops.
- Task 2.** – Identify and develop relationships with federal agencies that will be potential customers for the collaborative projects among Alliance partners – via briefings, meetings, and workshops.
- Task 3.** – Coordinate participation of Alliance partners for the planning and development of new R&D institutes at the HBCU/MI targeted at specific funding opportunities from the Federal Government.
- Task 4.** – Provide management and technical assistance to HBCU/MI for acquiring technical expertise necessary for partnering with other Alliance members on Research and Development Contracts.

These activities are of a recurring nature as R&D opportunities present themselves. AHDC compensation is based on annual budgets consistent with the level of activities engaged in by the SETWAS Alliances (see next section).

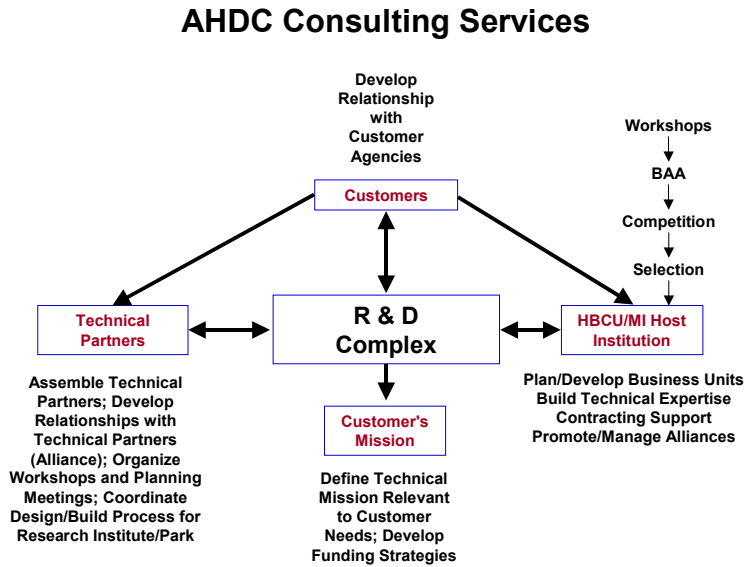


Figure 3.

### **SETWAS Alliance Cost Structure**

**Start-Up Costs per Alliance:** SETWAS Alliance initiation and start up costs are negotiated with individual institutions based on the level of effort required to perform the following start-up tasks:

- a) Establish SETWAS Alliance Office on Campus of Host Institution. This includes physical space of at least 1500 square feet; Conference Room; Office management staff (Office Manager, Secretary, and Administrative Aide); Communications Infrastructure (Phones, Faxes, Workstations, High Speed Internet, Printers, Video/Tele-Conference Equipment; Office Furniture (Desks, File Cabinets, Conference Table, Chairs, and Safes); etc.
- b) Conduct Briefings, Workshops and Round-Table Meeting among potential Alliance Partners – Equivalent of one full time senior consultant compensation (actual tasks will be spread over both senior and lower level staff).
- c) Travel and other miscellaneous expenses.

**Annual Budget per Project per Alliance:** Negotiated Based on Level of Effort Required to perform the recurring tasks listed in the Proposed AHDC Tasks section.

### **Funding Sources**

1. Host Institution Seed Funds – Start Up Costs
2. Major Industry Contributions - Negotiated
3. State/Local Government Contributions - Negotiated
4. Funded Projects – Overhead Cost Pool
5. Endowments – Charitable Foundations

### **AHDC Principal Consultants**

Corresponding to the three overlapping interest areas of the SETWAS Alliances depicted in Figure 2 – Research and Development Business, Legislative Initiatives and HBCU/MI Institutional Development, AHDC consulting team is lead by individuals with considerable experience and expertise in those areas.

#### **Dr. James A. Fabunmi, Ph.D., P.E. – R&D Business Consultant**

Dr. Fabunmi has over 27 years experience as an individual research and development consultant. He has provided scientific, engineering, program development and management consulting support to industry, academia and government in a variety of fields including: Turbo-machine Aero-elasticity, Aerospace Propulsion, Structural Dynamics, Space and Missile Defense, Advanced Signal Processing, Machine Intelligence and Sensors

For more than 20 years, he has been president and principal scientist at the Advanced Engineering Design and Research (AEDAR) Corporation, a Research and Development Corporation engaged in Defense Aerospace Research and Development Business. Areas of expertise include: Missile Defense Weapon Systems, Advanced Processors, Artificial Intelligence, Machine Vision, Multi-sensor Fusion, Neural Networks, Fuzzy Logic & Expert Systems, Vibration & Acoustics, Flight Propulsion & Dynamics, Dynamics & Active Control of Flexible Structures, and Aero-elasticity. AEDAR has collaborated with Colleges and Universities, and Industry to perform cutting edge applied research in these areas of advanced technology.

He holds a Doctor of Philosophy (Ph.D.) degree in Aeronautical Engineering from the Massachusetts Institute of Technology (MIT Cambridge, Massachusetts, February 1978).

#### **Mr. Anthony Robinson, Esq. – Legislative Initiatives Consultant**

Mr. Anthony W. Robinson for the past twenty-three years has been President of the Minority Business Legal Defense and Education Fund (MBELDEF). As President he has guided the organization into the premiere legal advocacy and watchdog organization on behalf of the minority business community. The organization's founder, Parren J. Mitchell, who was the first Black to be elected to the U.S. House of Representatives from the State of Maryland, chose Mr. Robinson to lead the organization.

For the past twenty four years MBELDEF under Mr. Robinson has engaged in activities on behalf of Minority Business Enterprises (MBEs) that have been comprehensive in nature including litigation, testimony before legislative bodies, legal guidance and technical assistance to local, state and federal agencies. He and the organization have actively participated in the passage and preservation of major MBE legislation including P.L. 95-507, P.L. 99-661 and the Disadvantaged Business Enterprise Program with the US Department Transportation. He has testified before Committees of the US Congress regarding issues of importance to the MBE community. These issues have included such

federal agencies as the Small Business Administration, Department of Defense, Department of Transportation, Environmental Protection Agency and General Services Administration to name a few. The numerous congressional committees on both the House and Senate have included Small Business, Armed Services, Government Operations, Transportation and Judiciary.

He holds a Bachelor of Science Degree in Political Science from Morgan State University and a Juris Doctorate Degree from American University School of Law.

**Dr. Kofi Bota, Ph.D. – HBCU/MI Institutional Development Consultant**

Dr. Bota has served in several professorial and administrative capacities at Clark Atlanta University, including assistant, associate and full professor of chemistry and physics; chair of the Department of Physics; provost and vice-president for academic affairs; vice-president for research; and acting president.

As vice president for research and sponsored programs, he provided overall administrative oversight of sponsored project initiation, implementation, compliance and monitoring, and closeout. He also provided assistance in conceiving, developing and initiating new programs in research and education, including leadership in resource identification and acquisition, managerial and academic program development and leadership for a wide range of disciplines such as the natural sciences and engineering, information science and technology, science and mathematics education, international affairs and development, public administration and policy, criminal justice, and economic and urban development.

Under his leadership, Clark Atlanta University has received more than \$300 million in federal grants and contracts over the period 1989 to 2000. He initiated and guided the feasibility study that led to the establishment of Clark Atlanta University's degree program in engineering. As acting president, he had responsibilities as the chief administrative officer, and as vice president for academic affairs, he had the chief responsibility for the operations and coordination of the academic programs and research activities. He has devoted considerable energies to the growth of research, especially in the sciences and engineering, and was instrumental in the growth of Clark Atlanta University's research programs in physics, chemistry, information sciences, advanced materials, energy technology, and environmental sciences and technology.

He holds a Ph.D. in chemical physics from the Massachusetts Institute of Technology (MIT) and is currently a Kimuel A. Huggins Distinguished Professor at Clark Atlanta University.

# Appendix 1: AHDC Business Matrix

<b>Business Units</b>	<b>Customers</b>	<b>Products &amp; Deliverables</b>	<b>Funding</b>
<b>SETWAS Alliances</b>	<ul style="list-style-type: none"> <li>• HBCUs/MIs</li> <li>• Industry Primes</li> <li>• Federal Agencies</li> <li>• FFRDCs/Other IHEs</li> </ul>	<ul style="list-style-type: none"> <li>• Promotion/Planning</li> <li>• Management/Consulting</li> <li>• Marketing/Projects</li> <li>• Collaboratories</li> </ul>	<ul style="list-style-type: none"> <li>• Fees</li> <li>• Grants/ Endowments</li> <li>• Contracts</li> </ul>
<b>SETWAS K-12 Apprenticeships</b>	<ul style="list-style-type: none"> <li>• Federal Agencies</li> <li>• Private Industry</li> <li>• School Systems</li> </ul>	<ul style="list-style-type: none"> <li>• Promotion/Planning</li> <li>• Management/Consulting</li> <li>• Placements/Collaboratories</li> </ul>	<ul style="list-style-type: none"> <li>• Fees</li> <li>• Grants/ Endowments</li> <li>• Contracts</li> </ul>
<b>SETWAS UG Internships</b>	<ul style="list-style-type: none"> <li>• Federal Agencies</li> <li>• Private Industry</li> <li>• HBCUs/MIs/Other IHEs</li> </ul>	<ul style="list-style-type: none"> <li>• Promotion/Planning</li> <li>• Management/Consulting</li> <li>• Placements/Collaboratories</li> </ul>	<ul style="list-style-type: none"> <li>• Fees</li> <li>• Grants/ Endowments</li> <li>• Contracts</li> </ul>
<b>SETWAS G Internships</b>	<ul style="list-style-type: none"> <li>• Federal Agencies</li> <li>• Private Industry</li> <li>• HBCUs/MIs/Other IHEs</li> </ul>	<ul style="list-style-type: none"> <li>• Promotion/Planning</li> <li>• Management/Consulting</li> <li>• Placements/Collaboratories</li> </ul>	<ul style="list-style-type: none"> <li>• Fees</li> <li>• Grants/ Endowments</li> <li>• Contracts</li> </ul>
<b>VI-STEM</b>	<ul style="list-style-type: none"> <li>• HBCUs/MIs</li> <li>• Other IHEs</li> <li>• Federal/Industry Labs.</li> </ul>	<ul style="list-style-type: none"> <li>• Promotion/Planning</li> <li>• Management/Consulting</li> <li>• Collaboratories</li> </ul>	<ul style="list-style-type: none"> <li>• Fees</li> <li>• Grants/ Endowments</li> <li>• Contracts</li> </ul>

**LEGEND:**

**SETWAS = Science, Engineering, Technology and Workforce for America's Security**

**K-12 = Kindergarten – 12<sup>th</sup> Grade; UG – Undergraduate; G- Graduate; FFRDCs = Federally Funded R&D Centers**

**VI-STEM = Virtual Institute for Science, Technology, Engineering and Mathematics**

**HBCUs/MIs = Historically Black Colleges and Universities/Minority Institutions; IHEs = Institutions of Higher Learning**