White Paper (Proprietary)

Title:	Demonstration Project for Emerging Research Institutions Coalition for Applied Research (DP-ERICAR)
Prepared For:	Dr. Leonard Haynes, United States Department of Education Mr. Jimmy Smith, United States Naval Sea Systems Command
By:	Dr. James A. Fabunmi, American Heritage Defense Corp.
Date:	30 August 2011

Goal: To broaden the participation of more Institutions of Higher Learning in use-directed Applied Research.

Objective: To demonstrate a collaborative approach that would enable more Institutions of Higher Learning to participate in, and contribute to the transition of emerging technologies from the laboratories to end users and other commercial markets, thereby enhancing the relevance of science, technology, engineering and mathematics (STEM) education at those Institutions to the nation's gross domestic product (GDP).

Background: Use directed applied research is at the nexus of the nation's economic development, job creation and STEM workforce development. Yet only a handful of top tier research institutions are fully engaged at this level of research and development, as evidenced by the scale of funding to those institutions by such agencies as the Department of Defense, NASA, Department of Energy, NIH and similar agencies, whose missions demand the application of the latest cutting edge technologies. There are far many more institutions of higher learning in the country, which have strong capabilities in individual disciplines, but whose overall infrastructure and capabilities have not reached the critical level to allow them to competitively participate in applied research on a significant scale. Many land grant universities that were directly plugged in to the nation's GDP in the 19th century, when the GDP was principally based on agriculture have since gotten disconnected from the GDP when the shift to technology occurred in the early to mid 20th century. Those that were opportuned to receive direct congressional charters as Federally Funded Research and Development Centers (FFRDC), or University Affiliated Research Centers (UARC), have since emerged as the few institutions of higher learning where students get a chance to experience the transition of knowledge into marketable technologies as part of their educational preparation. Graduates from many of the remaining institutions have to wait until they are employed by industry before gaining similar exposure. At a time when the nation, in the face of intensifying competition abroad, is pressed to create more jobs, develop its regions' economies and boost its GDP, there is a need to focus attention on finding ways of broadening the participation of more institutions of higher learning in use-directed applied research.

Approach: The proposed Demonstration Project (DP) for Emerging Research Institutions Coalition for Applied Research (ERICAR) will combine complementary capabilities from a number of land grant institutions (selected based on the willingness of the institution's leadership to try new approaches for expanding their

applied research infrastructure and investing portions of their Title III funding from the Department of Education towards that goal) into a collaborative team which, in cooperation with other innovation companies and other suppliers of technology to the United States Naval Systems Command (NAVSEA), will design, develop, build, test and deliver an innovative technology to NAVSEA in response to the agency's current or future mission needs. In recent years, NAVSEA has encouraged and partly funded the development of the Coalition for Applied Research (CAR), (http://coalitionforappliedresearch.ning.com), a non profit business partnership among seven categories of member entities including: Emerging Research Institutions (ERI), Tier-1 Research Institutions (T1RI), University Affiliated Research Centers (UARC), Small Business, Tier-1 Industry Suppliers (T1S), Major Industry Prime Contractors (MIPC), and Other Applied Research organizations that share a common commitment to three simultaneous goals: (1) To expedite the transition of new scientific discovery and invention to mission deployment and other commercial applications; (2) To enhance the applied research competitiveness of its members in support of the United States Government; and (3) To Establish Non Traditional Centers of Excellence in emerging advanced technology disciplines at member institutions. CAR will provide the platform for assembling the team that will define and execute the tasks proposed under this demonstration project.

Proposed Tasks: (1) Convene workshop to define a specific technology target of opportunity; (2) Establish necessary formal relationships among project participants i.e. develop and execute necessary agreements; (3) Identify NAVSEA end user and technology challenge via visits and discussions; (4) Define work break down structure and scope of work; (5) Establish contracting vehicle for NAVSEA funding of targeted technology; (6) Establish essential facilities at host institutions, including access control, security clearances, physical structures as needed; (7) Execute work plan, and deliver technology to NAVSEA; (8) Convene workshop to assess success/failure of demonstration project; (9) Prepare and deliver final report with recommendations for future efforts. (18 months)

Sponsorships: The proposed demonstration project is targeted for funding from multiple sources: (1) Title III funds from the Department of Education in the form of grants to the participating institutions to underwrite the cost of: (a) Pulling the Coalition together; (b) Technical support from participating CAR organizations for planning and proposing the applied research project; (c) Students and faculty compensation during the planning and proposal stages; (d) Upgrade/build-out/facilities for hosting the proposed technology development project; (2) Contract funds from NAVSEA to underwrite the cost of: (a) Direct Labor; (b) Other Direct Costs; (c) Overhead Costs; (d) General and Administrative Costs – for technical effort required to deliver the proposed technology.

Proposing Organization: The American Heritage Defense Corporation, a non-profit research and development company, which has been providing technical support to NAVSEA for the organization and coordination of CAR.