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Research or Support Activity Proposal Work Acceptance Process Summary

PI Name/Title: Dr. Jesse Hammond & Dr. Leo Blanken

Department: Defense Analysis

Proposal Title: Mapping the Multi-Layered Additive Manufacturing Community

Sponsor:

Period of Performance: Funding Acceptance Date to September 30 2019

1. Executive Summary of Research or Other Sponsored Activity Proposal   
(2-3 sentences maximum)

Create an open-source platform to gather, unify, analyze, and visualize multi-layer network communities of innovation. Enable real-time analysis of dynamic sub-communities of collaboration and communication, with the end goal of understanding emergent dynamics in additive manufacturing field and identifying key actors and institutions for targeted engagement.

1. Personnel/Funding Information

a. Will additional personnel be hired?  No  Yes If yes, how many?

b. Number of FTE required this FY and project total (see budget sheet): 0.28 / 0.41

c. Funding: this FY $1,718.00 Project Total (all years): 100,000

2. Academic/Graduate Curricula, Student & Mission Information

a. Graduate Curricula supported by project: 699 698

b. Curricula taught by PI: 699 698

c. For this project, provide # of graduate students / # of U.S. Naval graduate students.

i. Direct involvement in project (estimate per FY): 1 / 2

ii. Thesis/capstones expected (estimate per FY): 1 / 2

d. Identify which mission function(s) this project supports (see enclosure 1): 1 2 5

3. U.S. Naval Relevance

a. How does this Research project enhance the education of U.S. Naval Officers? (bulleted format)

This project gives U.S. Naval Officers the opportunity to contribute to foundational research on the communities of innovation driving the explosive growth of additive manufacturing. The impact of emerging technology, as well as the non-traditional communities engaged in development, continues to shape the future of border security, logistics, and proliferation.

The analytic platform created through this research project will be open-source and available for use by U.S. Naval Officers in their own research projects, and is adaptible to communities of innovation and emerging technology outside the AM field. Officers interested broadly in emerging technology and industrial disruption will be able to use this tool to analyze and evaluate potential impact on US security, economic, and political issues.

b. What is the benefit to Department of the Navy? (bulleted format)

Enables and accelerates the delivery of key analytical capabilities focused in the field of additive manufacturing, focusing on near- and medium-term analysis of technological development trajectories

Assists in identification of individuals, communities, and groups responsible for disruption and innovation in the AM field for engagement, collaboration, and monitoring

4. Is there a required deadline for completion of the internal and external Work Acceptance Process?

None  Review required by:

Enclosure 1

MISSION AND FUNCTIONS OF THE NAVAL POSTGRADUATE SCHOOL

(OPNAVINST 5450.210D)

Mission.

Provide relevant and unique advanced education and research programs to increase the combat effectiveness of commissioned officers of the naval service to enhance the security of the United States. In support of the foregoing, and to sustain academic excellence, foster and encourage a program of relevant and meritorious research which both supports the needs of Navy and Department of Defense (DoD) while building the intellectual capital of NAVPGSCOL faculty.

Function.

1. Educate, as CNO may direct, commissioned U.S. naval officers to the level essential for professional performance. Educate other authorized U.S. and allied military officers and civilians consistent with the requirements of the individual services, DoD, and foreign governments, within available resources. Educate civilian and enlisted personnel within the U.S. Government consistent with their sponsoring organizational needs and within available resources. Provide executive and continuing education programs that support intellectual innovation and growth throughout the careers of the total force.

2. Design graduate academic programs to equip officers with enhanced intellectual and analytical capacity, and make them more skillful warriors and specialists.

3. Coordinate with appropriate Navy leadership to educate and provide opportunities to those Navy officers and civilians who require education, but whose career paths do not always lead to full time resident education.

4. Develop and maintain strong working relations with combatant commanders, type commanders, Office of the Chief of Naval Operations (OPNAV) organization, Naval Warfare Development Command, industry, and other organizations and universities. Ensure the integration of NAVPGSCOL graduate students with faculty working on advanced concepts to ensure our forces remain dominant across the full spectrum of military operations. Align NAVPGSCOL programs with the rapidly changing needs of the naval services to support our national security.

5. Develop and maintain partnerships with other colleges and universities, business and industry, government and the international community. Achievements by NAVPGSCOL when working in collaboration with others have resulted in both direct and indirect impact on warfare developments, technical and research support for DoD, and the creation of new technologies and new military applications of technology. To sustain its role as a leading center for research and technological development, NAVPGSCOL must continue to build its programs in interdisciplinary areas. This development will enhance the education of NAVPGSCOL students and assure the NAVPGSCOL faculty will remain globally competitive in research and teaching.

6. Conduct, at least biennially, subspecialty reviews for all curricula offered by NAVPGSCOL resident and civilian institution (CIVINS) programs resulting in a degree per reference (b). Coordinate subspecialty reviews with major area sponsors (MAS) and subject matter experts. Endorse recommendations of MAS, on educational skill requirements (ESRs), the program content to meet those ESRs, and educational resources which should be used to most effectively meet curricula (i.e., NAVPGSCOL, other DoD, or CIVINS) requirements. Director, Training and Education Division (OPNAV (N15)) has final approval authority for subspecialty reviews.

7. Maintain direct liaison with the other services' graduate education program managers and international student program managers concerning their routine requirements, curricula content, curricula establishment, and curricula status.

8. Conduct administrative academic screening and administration of applicants for the Doctoral Studies Program. Recommend the selection of institutions and qualified applicants to Chief of Naval Personnel.

9. Conduct program administration, management and resource control for Navy funded graduate education programs for naval officers attending civilian universities through the Civilian Institutions Programs Office, including fully funded graduate education, advanced education, and law education programs.

10. Supervise, administer, control and monitor all officers enrolled in fully funded graduate education at CIVINS and select DoD institutions through the designated reporting and administrative senior officers. Publish appropriate directives to the supervisory officers to ensure efficient military supervision of students using standardized administrative and managerial procedures.

11. Coordinate and approve Navy student officer research at NAVPGSCOL. Maintain a strong, relevant and viable faculty research effort at the NAVPGSCOL to support student, Navy and DoD research requirements. Research assures the latest processes, materials, and technologies can be transferred to Navy and Marine Corps to help strengthen the nation's defense.

12. Plan, produce, conduct and administer programs of educational services to help naval officers, authorized U.S. military officers and authorized government service civilian personnel acquire, maintain and improve their competence through continuing education and update their educational abilities in a cost effective manner.

13. Maintain direct liaison with Navy Personnel Command (NAVPERSCOM) Distribution Management (PERS-45) and appropriate assignment and or placement officers concerning routine "duty under instruction" officer status changes.

14. Maintain student and academic records on all students pursuing graduate education at NAVPGSCOL and CIVINS. Ensure all students' fully-funded graduate education academic achievements are reported to appropriate NAVPERSCOM personnel management offices to guarantee appropriate subspecialty coding and or education level coding in personnel databases in a timely and accurate manner, as well as NAVPERSCOM documentation of service obligation and NAVPERSCOM follow-up in the case of those students not completing degree requirements prior to detachment from NAVPGSCOL.

15. Determine academic profile codes (APC) and maintain a data base of APCs and transcript abstracts for NAVPERSCOM official use in the selection of personnel for graduate education.

16. Maintain library, information technology, and laboratory facilities to support the graduate education program. Conduct long-range planning of library, information technology and laboratory requirements and means to achieve optimum utilization of these resources.

17. Exercise budgetary and funding control over funds allocated by CNO; develop and coordinate long and short-range financial plans and programs. Collect the cost of instruction from the Department of the Army, the Department of the Air Force, the Department of Homeland Security, other agency and defense industry contractors for instruction provided to their members.

18. Act as the United States North Atlantic Treaty Organization Partnership for Peace Training and Education Center.

19. Receive and control funding in concert with reimbursable work including research projects at NAVPGSCOL. Maintain a viable program of energy and utilities conservation per the base energy program and in support of local and national goals.

20. Under Navy's total force concept, support active and reserve naval forces, civilians, and contractors, as authorized by law, to meet requirements in fulfillment of Navy mission and as resources allow.

21. Provide community relations support and information programs for the echelon 2 activity in support of Navy's public affairs plan.

22. Provide an employee assistance and training program to realize high standards of conduct and optimum utilization of human resources. Maintain a viable equal employment opportunity program.

23. Serve as an effective instrument of U.S. foreign policy by initiating and continuing action programs which promote positive relations between the command and other nations with regard to graduate level and continuing education in support of DoD programs.

24. Conduct a program of relevant and distinguished guest lectures to enhance currency of curricula taught; conduct other instruction, perform other staff functions; and engage in research as needed to satisfy mission requirements.

25. Direct and supervise the daily operations of the Defense Resources Management Institute, Monterey, CA, in management education courses. Provide for security of personal information, classified documents and information following NAVPGSCOL personnel and programs.

27. Manage the Board of Advisors to the Presidents of NAVPGSCOL and the Naval War College and its subcommittees per SECNAVINST 5420.60J.

28. Recruit and maintain a faculty per SECNAVINST 1524.2B that is fully competent to support the required advanced programs of study and capable of applying their expertise in support of the naval service.

29. In partnership with the Naval War College, provide opportunities for students to complete Joint Professional Military Education Phase I as a part of their NAVPGSCOL residential program.

30. Operate fleet concentration area offices to coordinate educational opportunities for naval personnel and provide information on available programs to interested personnel. Enter into partnerships with other universities to achieve NAVPGSCOL and Navy objectives.

31. Research and exploit innovative learning technologies, pedagogy and practices to enhance the educational experience for NAVPGSCOL students and provide cost-effective education.