The FY09 has ended with a “bang,” with an increase of over twenty percent in sponsored program activities. The NPS Annual Sponsored Activity Report will be completed within the next month and made available to the campus as well as distributed to our outside customers/stakeholders. As you can see from this issue, receipts of sponsored funding exceeded $225M. Preliminary execution reports indicate over $150M expended in FY09; this is up from $118M in FY08.

For FY10, the RSPO will continue to focus on providing adequate staffing and streamlining processes supporting the principal investigator/program manager (PI/PM) of sponsored activities. The campus is transitioning to KUALI, a management-information system for financial reporting. The full implementation of KUALI will provide the PI/PM with a more robust tool for managing their sponsored project accounts.

As we continue to grow our sponsored programs, the compliance requirements become increasingly important. Many of you have asked why “accountability training” is required each year. The completion of accountability training and the attestation process are two cornerstones of NPS accountability compliance. These two processes assure that the PI/PMs receive information on their responsibilities (accountability training) and have the opportunity to review their expenditures to assure all transactions are appropriate to their accounts (attestation). We count on you for your input and your support. As mentioned in the accountability modules, the responsibility for accountability is a shared effort...a shared responsibility. We endeavor to work with you to assure both processes are effective.

**IMPORTANT DATES**

**Brown-Bag Seminar Series**
- Contracting for Support Services, Thurs, 10/22, 1200, SP 101A
- Working with Industry, Mon, 11/24, 1200, SP 101A
- National Research Council Postdoctoral Associateship Program at NPS, 12/9, 1200, MAE Conference Room

**Workshops**
- NPS Cyber Security Workshop, Thurs, 10/29, Glasgow Hall (contact Dean Purdue, ppurdue@nps.edu for further info)

**NPS Research Initiation Program**
- Proposals (Year One): Due one month before research quarter begins
- Progress Reports (Year Two): Due 10/15 2009

**Beginning FY10**
- Rollover accounts are available for expenditure 1 October; see your SPFA for balance available. Budget pages are being issued if PI/PM have completed accountability training.
- Accountability training (Fiscal Law, Accountability, Human Subject Protection) must be completed for release of FY10 funding. (See exception for labor below.)
- Labor should be charged to appropriate source from beginning of fiscal year; labor charges are allowed for first two pay periods regardless of whether accountability training has been completed.
- Interim accounts for sponsored activity that must begin prior to receipt of funds should be requested ASAP. Interims require proposal of record and confirmation from sponsor on intent to fund.
- FY10 indirect rates are at http://intranet.nps.edu/ResAdmin/fy10IndCostRates.pdf.
- Acceleration rates are 45% for both faculty and staff.

**SPONSORED PROGRAMS STATUS—SEPTEMBER 2009**

**Funds Received to Date:** $225.2M

**By Type of Activity**

**By Sponsor**

**By School**
Graduate School of Engineering and Applied Sciences

Funds received to date: $55.8M

By Department

- **Electrical and Computer Engineering**: 8% ($4.3M)
- **Applied Math**: 1% ($704K)
- **Mechanical/Astro Engineering**: 20% ($10.9M)
- **Meteorology**: 9% ($5.1M)
- **Oceanography**: 23% ($12.6M)
- **Physics**: 22% ($12.1M)
- **Systems Engineering**: 14% ($7.9M)
- **Academic Group**: 3% ($1.9M)
- **Graduate School of Engineering and Applied Sciences**: Funds received to date: $55.8M

By Sponsor

- **Air Force**: 8% ($4.8M)
- **Army**: 8% ($4.6M)
- **CRADA**: 2% ($253K)
- **DoD**: 10% ($8.5M)
- **DHS**: <1% ($62K)
- **Joint**: 3% ($1.6M)
- **Navy**: 44% ($24.3M)
- **NSF**: 11% ($6.1M)
- **Other-Fed**: 13% ($7.2M)
- **By Department**: 1%
- **By Sponsor**: 1%

Projects funded in September:

- **Manhunting A Search for a Moving Fugitive**, Guillermo Owen, *Applied Mathematics* (United States Military Group Bogata, Columbia)
- **Cyber Research to Support GED Mission Areas**, Jeffrey Knorr, *Electrical & Computer Engineering* (SAF/FMBIB-AFOY)
- **ECE Distance Learning Program**, Jeffrey Knorr, *Electrical & Computer Engineering* (Fleet Readiness Center SW)
- **Advanced Marine Gas Turbine Technology Programs**, Knox Millsaps, *Mechanical & Astronautical Engineering* (NSWC-Carderock Division)
- **Linking the Surf Zone and Inner Shelf: Cross-Transport Mechanisms**, James MacMahan, *Oceanography* (ONR)
- **Collaborative Research: Does Coupling between the Inner Shelf and Surf Zone Regulate Larval Supply to Intertidal Populations**, James MacMahan, *Oceanography* (NSF)
- **Collaborative Research: Fingerling Convection at Low Prandtl Number**, Timour Radko, *Oceanography* (NSF)
- **USAF Project**, Richard Olsen, *Physics* (SAF/FMBIB)
- **Modeling and Assessment of the C4ISR OTM Event 09 Architecture**, Kristen Giammarco, *Systems Engineering* (USARDECOM)
- **Tunnel Detection Research**, Tom Haym, *System Engineering* (TRAC-Monterey)
- **SEM PD21**, Wally Owen, *System Engineering* (Various)
- **NPSCUL-Lite Flight Unit for ADaMaST**, James Newman, *Space Systems* (NSF)

Graduate School of Operational and Information Sciences

Funds received to date: $33.5M

By Department

- **Computer Science**: 37% ($12.4M)
- **Defense Analysis**: 10% ($3.1M)
- **Information Science**: 34% ($11.5M)
- **Operations Research**: 19% ($6.2M)

By Sponsor

- **Air Force**: 44% ($12.6M)
- **Army**: 38% ($12.6M)
- **CRADA**: 1% ($253K)
- **DOD**: 25% ($8.5M)
- **DHS**: <1% ($2.6M)
- **Joint**: 8% ($1.6M)
- **NSF**: 9% ($3.3M)
- **Other-Fed**: 12% ($4.2M)
- **Other**: <1% ($58K)

Projects funded in September:

- **OB-1 Evaluation Support**, George Dinolt, *Computer Science* (SPAWAR-Charleston)
- **Creating Realistic Forensic Corpora for Undergraduate Education and Research**, Simson Garfinkel, *Computer Science* (NSF)
- **Automated Media Exploitation and Information Fusion**, Simson Garfinkel, *Computer Science* (USMC-MARCORSYSCOM)
- **Software Engineering Master's Degree Program**, Loren Peitso, *Computer Science* (Various)
- **NPS Dark Web Development**, Nancy Roberts, *Defense Analysis* (NETSAFA)
- **Center for Edge Power & C2 Chair**, Mark Nissen, *Information Sciences* (OASD)
Projects funded in September:

- Technical Support for NPS Field Experimentation Program, Ray Buettner, Field Experimentation Coop (OSD)
- COMBATXXI: MCCDC Behavior Development and Technical Support, Imre Balogh, MOVES (USMC Combat Development Command)
- Undersea Warfare Extensible Markup Language Working Group for Anti-Submarine Warfare Community of Interest, Donald Brutzman, MOVES (NAVSEA)
- Medical Simulation and Training Technology, Paul Chatelier, MOVES (Telemedicine and Advanced Technology Research Center)
- Building and Sustaining International Security Relationships through Wiki-Based Social Networking and Instant Interactive Applications, Stephen Lieberman, MOVES (OSD)
- S1000D Analysis, Michael McCauley, MOVES (OUSD)
- Game Engines as Basis of Defense-Based, Game-Based Training and Analysis, Perry McDowell, MOVES (Lockheed Martin)
- Tools and Methods Used in the Assessment of Network Security and Interoperability, Joe Sullivan, MOVES (OT&E)
- Collaborative Research II: A Field Guide to the Science of Computation, Peter Denning, Cebrowski (NSF)
- Strategic Change Communications, Sue Higgins, Cebrowski (ONR)
- Research, Development, Analysis of Exercise to Evaluate Mass-Evacuation Plans, David Banks, CAW (City of Los Angeles)
- NPS Academic Support to Joint IED Defeat Organization, Ed Lesnowicz, NSI (JIEDDO)

No NS projects were funded in September.
MILITARY ASSOCIATE DEAN JOINS VP FOR RESEARCH STAFF

Dean of Research Karl van Bibber has named CAPT Rod Abbott, USN, as the military associate dean of research. CAPT Abbott was called back to duty to serve in this role. CAPT Abbott will be an invaluable addition to the research organization, helping with many issues associated with the strong growth of NPS as a research university.

Among his immediate tasks, Rod will lead an ITAR working group to develop a comprehensive plan for the protection of export controlled technology at the school. He will help stand up a research safety group, which is developing a safety plan for program-specific risk areas, such as laser operations, accelerators, and radiation, chemical, and explosive hazards. Rod will work closely with the dean in the upcoming review and continuing oversight of the four research institutes at the school. Finally, he will join an effort in the early stages of formalizing, to explore options for the growth of the NPS research enterprise beyond the current site boundaries.

CAPT Abbott was previously part of the Navy Reserve Science and Technology Program, also known as Navy Reserve Program 38, whose mission is to leverage unique naval reserve capabilities to help the Office of Naval Research and the Naval Research Laboratory provide science and technology solutions to the warfighter. Many reservists within Program 38 combine an exceptional degree of operational and technical expertise in a single individual. Members of Program 38 reside throughout the country, providing the potential for outreach activities in areas where it would otherwise be impractical or uneconomical to provide colleagues.

CAPT Abbott was most recently a physicist at Lawrence Livermore National Laboratory. Among his assignments were serving as deputy project leader for the RRW-2 Phase 1 Study/Sigma 20 Program (Weapons and Complex Integration Directorate) and deputy program leader for RRW-2 Phase 0 and Evaluation and Planning Program, Defense and Nuclear Technologies Directorate. In these positions, he provided technical, engineering, systems analysis and information identification, training, security and control guidance as well as project management management for the Reliable Replacement Warhead (RRW). Other assignments included technical advisor to the AF/XOS Directorate of Strategic Security and Space Operations in the fields of surety, nuclear weapons design, directed energy, and counter-proliferation, and technical adviser in use control and special programs for the National Nuclear Security Administration.

CAPT Abbott received an MS in international business from St. Mary’s College, MS in physics from the University of Minnesota, and BA in physics from the University of Minnesota, Morris.

Contact Rod at rpabbott@nps.edu.

WORKING WITH INDUSTRY

NPS works with industry and nongovernmental agencies through Cooperative Research and Development Agreements or “work for others.” The following agreements were executed in September 2009:

- Direct Imaging Minority Carrier Diffusion in CZT Crystals, General Electric Company, Nancy Hagel, PH
- Spacecraft Survivability, Lockheed Martin, Simulation, Training and Support, Perry McDowell, MOVES
- “Bat” UAS Flight-Training Support, Northrop Grumman, Robert Bluth, CIRPAS

RELATIONSHIPS

The following MOUs/MAOs were executed in September 2009:

- Support for the Chair of Measurement and Signature (MASINT) at NPS, MASINT Office, Chris Olsen, PH
- Joint Education and Research Programs, Naval Sea Systems Command (NAVSEA), CAPT Dan Burns, USN

PATENTS

Two provisional applications were filed in September:

- “Method for Determining Hard Drive Contents through Statistical Drive Sampling,” Navy Case #2009008, Simon Garfinkel, CS; Alexander Nelson, CS
- “Micro-coupling Active Release Mechanism,” Navy Case #2009003, LCDR William Crane, USN; Paul Oppenheimer, NRL, Marcello Romano, MAE; James Newman, SP

USE OF HUMAN SUBJECTS IN RESEARCH

The DoN Human-Research Protection Program Office visited NPS recently to review our program for protecting human subjects used in research. One area noted as inadequate was training for investigators and key personnel. While NPS has provided several training plans in response to the requirement, DoN HRPP has deemed them insufficient and is mandating the training below.

Effective immediately, all researchers (principal investigators, co-investigators and other key personnel, including students) will be required to complete web-based research-ethics training mandated by the DoN Human Research Protection Program Office prior to the review of their research protocol.

Training certificates for all key personnel must be submitted with the research protocol package.

Training will take approximately four to six hours and is found at http://www.med.navy.mil/bumed/humanresearch/Pages/EducationTraining.aspx. The course required is “Social and Behavior Research Basic Course.”

In addition, persons who perform scientific review (notably department chairs/institute directors) must complete the three modules found at http://www.med.navy.mil/bumed/humanresearch/Pages/EducationTraining.aspx (History and Ethical Principles; Defining Research with Human Subjects; DON HRPP Module). The estimated completion time for these modules is an hour.
The newest research center at the Naval Postgraduate School is focused on the global cyber challenge. Established in the Department of Electrical and Computer Engineering, the Center for Cyber Warfare is a multi-departmental research center focusing on the general area of cyber warfare with emphasis on cyber attack. The research will support interdisciplinary graduate education for the cyber workforce. The fusion of faculty, staff and laboratories forming the center is illustrated below.

Cyberspace has been defined as “a global domain within the information environment, consisting of the interdependent network of information technology infrastructures, including the Internet, telecommunications networks, computer systems, and embedded processors and controllers.” This describes a physical environment that will become a new domain for warfare along with subsurface, surface, land, air, and space, in which we must develop capabilities to detect, exploit, attack and protect signals and systems. To combat new, global, and increasingly complex national cyber security threats, the U.S. Navy, DoD and the nation must employ, educate, train, develop, and retain a dynamic, agile, technical, military and civilian cyber workforce that can utilize current information technology coupled with proficiency, perspective, experience, and expertise to counter threats in cyberspace.

NPS’ ability to meet this challenge depends on a well-educated, effective cyber workforce. Just as corporate America has recognized the value of cyber technology to gain and sustain competitive advantage, the government and DoD must gain and sustain competitive advantage in defending against adversaries, protecting citizens, and preserving national security.

Cyber warfare must be an integral component of military operations. For example, anti-access or area denial requires multiple layers of offensive systems, utilizing the sea, land, air, space, and cyberspace. The purpose of a cyberspace strike is to deter the enemy, not to provoke combat. Thus, the objectives selected for a cyber strike must be few and precise. Important adversary information systems such as command and control centers, communications hubs, and other objectives might be targeted. This could impair the operation of adversaries’ systems and organizations and intimidate their policy makers.

The workforce that will staff the nation’s cyber organizations, both military and civilian, is currently skeletal and will need to grow in the years ahead. Some functions will require graduate education, and NPS is uniquely qualified to provide it. Research will also be required and should be an integral part of any graduate program.

The overarching strategy of the Center for Cyber Warfare will be to bring focus to an effort to establish alliances between NPS, the operational forces, universities, and the intelligence community. Center research programs will support the education of a new generation of military officers and civilians who will constitute the cyber workforce.

Alliances will be forged through a program of outreach by the center’s business group. Center research will assure that related cyber-focused graduate courses remain on the leading edge. The center will bring together existing labs and create new labs to support faculty research and strive to establish a campus-wide secure laboratory environment for cyber research and education. NPS currently has a certified classified environment with adequate spaces, secure connectivity, and some existing funding for classified research and education. It is anticipated that top secret SCI billets will be obtained for faculty, staff, and students at NPS through ODNI sponsored agencies (NSA, NRO, CIA, NGA, and DIA). Through relationships with these agencies, a research program will be established that supports cyber-centric graduate education for the Navy, DoD, and nation, ensuring a cyber workforce prepared to meet the challenges of the 21st century.

**Mission**

The mission of the Center for Cyber Warfare is to conduct sponsored cyberspace research in support of graduate education for the cyber workforce.

**Vision**

The vision of the Center for Cyber Warfare is to achieve national recognition of the NPS Cyber Program excellence, demand for program graduates, and a robust student enrollment in an interdisciplinary cyber curriculum.

**Products and Services**

The primary product of the center will be research results, both theoretical and applied, as they relate to problems associated with the cyber domain, computer-network operations, information operations, and signals intelligence. Such results typically take the form of techniques, models, simulations, computer programs, or theoretical analyses and are documented in student theses or dissertations, technical reports, conference presentations, and archival publications in the classified and unclassified literature.

**Center Membership**

- Professor Jeffrey B. Knorr, ECE, Interim Center Director
- Professor John McEachen, ECE
- Professor Murali Tummala, ECE
- Assistant Professor Weilan Su, ECE
- Professor Clark Robertson, ECE
- Professor Tri Ha, ECE
- Assistant Professor Frank Kragh, ECE
- Professor Bret Michael, CS and ECE
- Senior Lecturer Chris Eagle, CS
- Professor of Practice George Dinolt, CS
- Research Professor David Ford, PH
PAGES-PUBLICATION CHARGES

The RSPO processes and funds the page-publication charges associated with journal publications. It is important that the RSPO be notified as soon as a paper is accepted for publication. Faculty authors should not sign any documentation provided by the publisher that states “agreement to pay” any charge. This constitutes an “unauthorized commitment” as only a contracting officer can commit the government to a procurement.

The problematic situation of an unauthorized commitment can be avoided by contacting the RSPO, Hoda Salib, hsalib@nps.edu, as soon as the acceptance for publication is received. Payment of “publication charges” must be processed prior to the publication of the article. The RSPO will also fund journal reprints. RSPO does not fund conference registration fees, however, when an article is being included in the conference proceedings. If you have any questions, please email research@nps.edu.