



DEPARTMENT OF THE NAVY

COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENTS ANNUAL REPORT

FISCAL YEAR 2018

Prepared by:

**Department of the Navy
Technology Transfer Program Office
Arlington, VA**

December 2018

EXECUTIVE SUMMARY

This report summarizes Department of the Navy (DON) Cooperative Research and Development Agreement (CRADA) and other technology transfer (T2) activity for Fiscal Year (FY) 2018 and provides a cumulative record of all DON CRADA income and history from FY89 through FY18. 47 labs are part of this enterprise. In FY18, the DON successfully negotiated 404 CRADAs and recognized \$13,210,117 in income through CRADAs and interacted with over 200 industries and 70 university partners. Although most CRADA income is derived from the non-Navy partner, in FY18 \$4,459,241 was received from other government agencies or Small Business Innovation Research/Small Business Technology Transfer funding.

The DON T2 program, and CRADAs in particular, have been used to solve not only research, development, test and evaluation problems, but also maintenance and sustainment issues. The DON T2 program is uniquely poised to assist in the development and delivery of improved equipment and capabilities to the fleet and the warfighter in a cost-effective and expedited manner through its various partnering mechanisms. Examples include:

- Salt spray from roads and oceans attacks Department of Defense (DoD) assets with corrosive catalysts resulting in estimated repair and maintenance costs for naval aircraft at around \$2.6 billion annually. Improved corrosion control primers and top coats that were developed by the Naval Air Warfare Center Aircraft Division (NAWCAD) are being transitioned to fleet and maintenance activities using CRADAs and patent licenses.
- The Fleet Readiness Center Southwest, Naval Air Station North Island, and an Indiana company are working through a CRADA to address advanced manufacturing and supply logistics demands by cooperatively working on emerging technologies that can provide powerful use, protection and transparency in the Navy supply chain.

Innovation discovery events (IDEs), piloted by the DON, led to the promotion and ongoing success of the T2 program. IDEs assist labs to identify and protect their inventions, increase the size and commercial attractiveness of their patent portfolios, and improve the transfer of their patented technologies to the commercial sector. In FY18, IDEs were conducted at Naval Undersea Warfare Center, Division Keyport and at Port Hueneme. Three labs participated in the Port Hueneme IDE: Naval Surface Warfare Center, Port Hueneme Division; Naval Air Warfare Center Weapons Division, and Naval Facilities Engineering and Expeditionary Warfare Center. Nine technologies were reviewed, and two invention disclosures were generated.

Another measure of the success of the DON's T2 Program is the national recognition it receives from the Federal Laboratory Consortium for Technology Transfer. In FY18, the NAWCAD received an Outstanding Technology Transfer Professional Award for its success in licensing improved corrosion protection coatings. Excellence in Technology Transfer Awards were received by:

- Naval Research Laboratory for its success in licensing a canine training device that delivers a mixed vapor from binary explosive materials without mixing the materials;
- Naval Surface Warfare Center, Corona Division for success in transferring its amorphous bubble bonding technique;
- Naval Surface Warfare Center, Dahlgren Division for successfully executing several CRADAs to refine an improved off-the-shelf-decontamination product; and
- Naval Surface Warfare Center, Panama City Division for its Combat Diver Navigation Module.

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LISTING OF ACRONYMS

ABB	Amorphous Bubble Bonding
CRADA	Cooperative Research and Development Agreement
DoD	Department of Defense
DON	Department of the Navy
DPSI	Domestic Preparedness Support Initiative
EPA	Educational Partnership Agreement
FLC	Federal Laboratory Consortium
FY	Fiscal Year
Gov't	Government
IDE	Innovation Discovery Event
LP-CRADA	Limited Purpose-CRADA
MODD	Mixed Odor Delivery Device
NAVAIR	Naval Air Systems Command
NAVSEA	Naval Sea Systems Command
NAWCAD	Naval Air Warfare Center Aircraft Division
NDTTIS	Navy Defense Technology Transfer Information System
NRL	Naval Research Laboratory
NSWC	Naval Surface Warfare Center
NSWCCORDIV	Naval Surface Warfare Center, Corona Division
NSWCDD	Naval Surface Warfare Center, Dahlgren Division
NSWCPCD	Naval Surface Warfare Center, Panama City Division
ONR	Office of Naval Research
ORTA	Office of Research and Technology Applications
PIA	Partnership Intermediary Agreement
PO	Program Office
R&D	Research and Development
SBIR	Small Business Innovation Research
SPAWAR	Space and Naval Warfare Systems Command
Std/Non-Std	Standard/Non-Standard
STEM	Science, Technology, Engineering and Mathematics
STTR	Small Business Technology Transfer
T2	Technology Transfer

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INTRODUCTION

BACKGROUND

The Department of the Navy (DON) Technology Transfer (T2) Program Office (PO) manages the DON T2 Program and the Navy's engagement with the Department of Defense (DoD) Domestic Preparedness Support Initiative (DPSI) on behalf of the Secretary of the Navy. The office coordinates and provides DON policy direction to 35 Office of Research and Technology Application (ORTA) representatives located at 47 Navy and Marine Corps laboratories to promote and increase the transfer of Naval developed technologies to private industry, which in turn, transitions the results of Naval research and development (R&D) for public use and the warfighter.

DON Cooperative Research and Development Agreements (CRADAs) are legal agreements between a DON R&D laboratory and one or more non-federal partners such as private business, academia, and state and local governments. They are used to conduct joint R&D efforts in a given technical area consistent with the laboratory's mission and to share technical results derived from the joint effort. CRADA partners can save money and valuable time in achieving mutually desirable results. A non-federal partner can provide facilities, equipment, personnel, and funding to the CRADA. The DON laboratory can provide the same resources except for funding to the non-federal partner.

Only DON designated laboratories are authorized to enter into CRADAs. In fiscal year (FY) 2018, one new laboratory was added to the DON T2 community.

CRADAs are valuable mechanisms used to strengthen the United States industrial base by transferring technology developed by the DON to the private sector. In addition, the transfer and acceptance of commercial off-the-shelf technology for government use can reduce the cost of items purchased by the federal government. Benefits, other than direct cash funding, result in the cost savings accrued as the result of leveraging the personnel, technical competence, facilities, equipment, and property of the other partner or partners to achieve a specific technology development. This benefit is termed "cost avoidance." It is the additional cost in labor, facilities, equipment, and property that a partner would have experienced in achieving the desired technology development had the partnership not been in place. Cost avoidance experienced by the individual partners of a CRADA is usually different for each partner; but is sufficient to cause the partner to become a member of the partnership. Cost avoidance is not documented; but is an important consideration in each CRADA decision for both the DON laboratory and the private partner.

The DON uses a standard CRADA format as well as several specialty CRADA formats. Limited-purpose (LP)-CRADAs are restricted to the exchange of existing equipment or material that the collaborators need for their own research, development, test, evaluation, or engineering activities. There is no joint work performed under the LP-CRADA, but there is a mutual interest in the results. The number of LP-CRADAs signed at each laboratory is listed separately in Appendices A and B. Other special-purpose formats are Clinical Trials, Multiple-Party, Technical Assistance and Small Business Innovation Research (SBIR) Funded Non-Standard CRADAs. Numbers and revenue for these non-standard special-purpose CRADAs are rolled up into the column for standard and non-standard CRADAs in Appendices A and B.

Signature authority for DON CRADAs was completely decentralized in FY00. The DON T2 PO receives a copy of all signed CRADAs for inclusion into the Navy Defense Technology Transfer Information System (NDTTIS) database. The entire income for each CRADA, including amended sums from terminations and modifications, is credited to the year the original CRADA is received. As a result, CRADA income for a particular year is adjusted to reflect the partnership activity.

The office promotes the accomplishments and technologies of the DON T2 Program through training workshops, conferences, showcases, networking opportunities, monthly ORTA conference calls, publications, and national/regional awards. To increase outside awareness of a lab's innovations and unique technological resources, the DON T2 program has sponsored and conducted a total of 15 Innovation Discovery Events (IDEs) at Navy laboratories. These events help DON laboratories identify and protect their inventions, increase the size and commercial attractiveness of their patent portfolios, and improve the transfer of their patented technologies to the commercial sector to benefit the American public and the U.S. military. Under the IDE process, 75 technologies were reviewed, 86 new invention disclosures were written, 37 new patents were issued, and 4 patents were licensed. The process was developed by the DON and is now being used across the DoD.

The strength of the technologies developed by the Navy can be measured by the number of patents and patent licenses received, the number of CRADAs signed, as well as Partnership Intermediary Agreements (PIAs) and Educational Partnership Agreements (EPAs) that private industries and universities enter into with the Navy. The DON T2 program, and CRADAs in particular, have been used to resolve maintenance and sustainment issues and develop and deliver improved equipment and capabilities to the fleet and the warfighter in a cost-effective and expedited manner. Since 2017, when three shipyards became part of the DON T2 community, there has been an increased focus on maintenance and sustainment. Two additional examples of this focus are shown below:

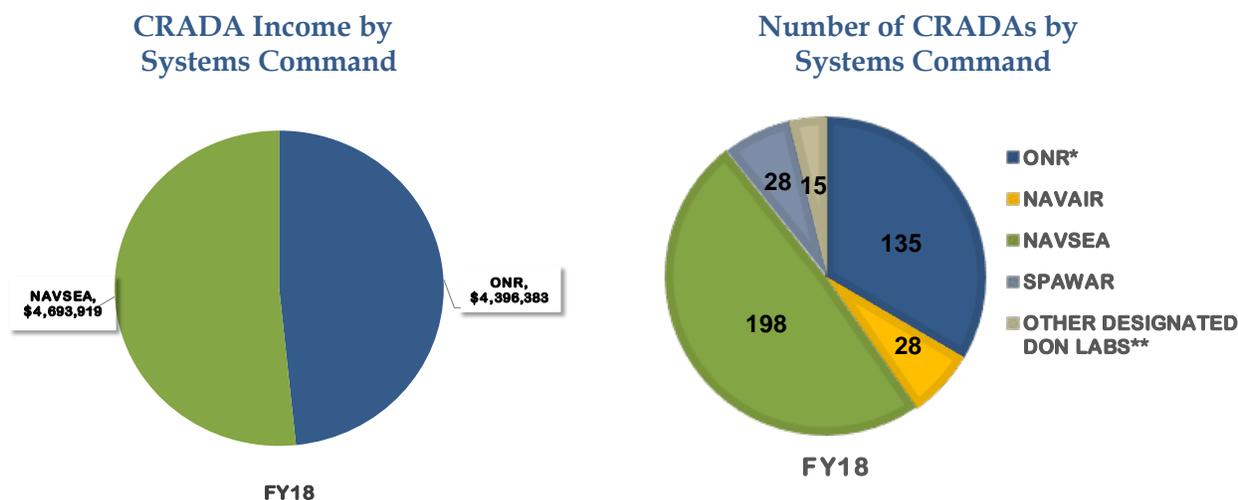
- Salt spray from roads and oceans attack DoD assets with corrosive catalysts resulting in estimated repair and maintenance costs for naval aircraft at around \$2.6 billion annually. Improved corrosion control primers and top coats that were developed by the Naval Air Warfare Center Aircraft Division (NAWCAD) are being transitioned to fleet and maintenance activities using CRADAs and licenses.
- The Fleet Readiness Center Southwest, Naval Air Station North Island, and an Indiana company are working under a CRADA to address advanced manufacturing and supply logistics demands by cooperatively working on emerging technologies that can provide powerful use, protection, and transparency in the Navy supply chain.

CRADA SUMMARY AND INCOME

This report summarizes DON CRADA activity for FY18 and provides a cumulative record of all DON CRADA income and history from FY89 through FY18.

- Appendix A summarizes the cumulative number of CRADAs signed by each DON laboratory as well as overall annual CRADA income and the annual number of CRADAs signed.
- Appendix B includes individual income and history bar charts for any DON laboratories that have reported 10 or more CRADAs in FY89 through FY18.
- Appendix C lists the CRADA non-federal partner and subject for each FY18 CRADA.

Since 1989, the DON has recognized over \$289,172,318 in income through CRADAs. In FY18, the DON received 404 CRADAs and income from CRADAs in the amount of \$13,210,117. In FY18, income from CRADAs from non-Navy partners and number of CRADAs received separated by Systems Command are shown in the diagrams below:

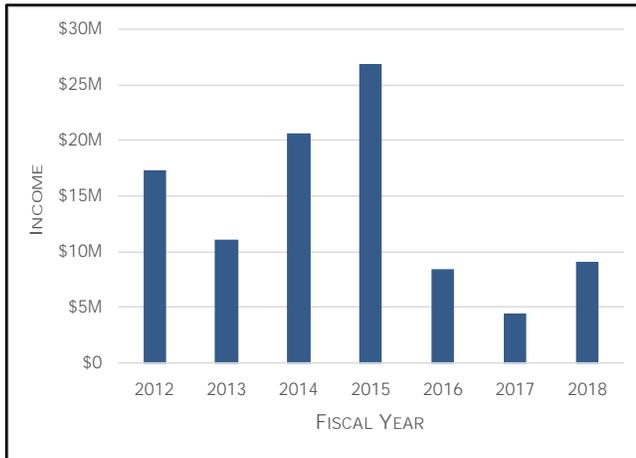


***Includes: Naval Medical Research & Development Command; Naval Medical Center, Portsmouth; Naval Medical Center, San Diego; Naval Postgraduate School; and Naval Research Laboratory.**

****Includes: Naval Meteorology and Oceanography Command; Fleet Readiness Southwest; and Naval Facility Engineering and Expeditionary Warfare Center.**

Although most CRADA income is derived from the non-Navy partner, additional income is received from other government agencies or SBIR/Small Business Technology Transfer (STTR) funding. Since 2012, small businesses working under a Phase I or II SBIR contract have been able to use a portion of their SBIR funding to access a DON laboratories' test and evaluation capabilities under a CRADA. For example, the Naval Research Laboratory (NRL) uses Phase I and Phase II SBIR funds to support collaborative research through CRADAs. This indicates a great partnership opportunity that is being leveraged by NRL in support of the small business community. The DON received \$4,459,241 in FY18 from other government funding to support individual CRADAs. The graphs on the following page show income from the non-Navy partner and income from SBIR/STTR and other government agency funding from 2012 to 2018.

Income from Non-Navy Partner



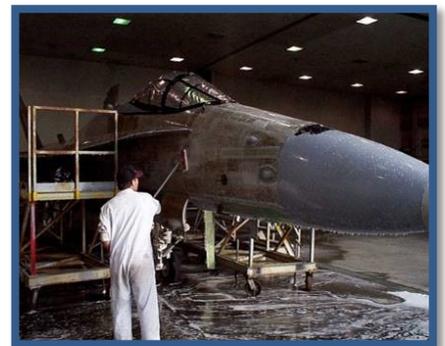
Income from SBIR/STTR and Other Government Agency Funding



FEDERAL LABORATORY CONSORTIUM NATIONAL RECOGNITION AWARDS

The value to the DON, as well as to the United States industrial base, can be demonstrated by the technologies listed below, which all received recognition from the Federal Laboratory Consortium (FLC) for Technology Transfer. This is a congressionally mandated, nationwide network of more than 300 federal laboratories, facilities and research centers that promote and facilitate the movement of research and technology into commercial products for the global marketplace. The DON had the honor of winning five FLC Technology Transfer Awards this year at the National Meeting in Philadelphia, Pennsylvania. The awards and awardees include:

- Naval Air Warfare Center Aircraft Division (NAWCAD), Patuxent River, MD, T2 Office – Outstanding Technology Transfer Professional Award. This award recognizes the efforts of an FLC laboratory T2 professional (or team) who has demonstrated outstanding work in transferring a technology in a manner significantly over and above what was called for in the normal course of their work. The NAWCAD T2 team consistently delivers dual-use successes that meet pressing DoD needs, growing a network of industry and public-sector partners that has a positive impact on the local economy, and cultivates an entrepreneurial spirit at NAWCAD. This award was based on NAWCAD’s Al-Rich coatings which has been licensed to 10 companies and will make the environmentally-friendly coatings available to the military customer at a lower price through economy of scale during the commercialization process.

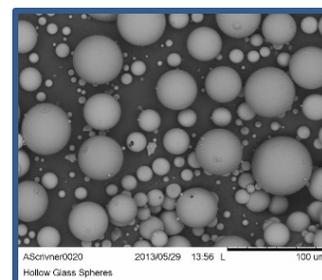


Excellence in Technology Transfer Awards. This award recognizes employees of member laboratories and non-laboratory staff who have accomplished outstanding work in the process of transferring federally developed technology.

- Naval Research Laboratory (NRL), Washington, DC. NRL's Mixed Odor Delivery Device (MODD) is a canine training device that delivers a mixed vapor from binary explosive materials without mixing the materials, leaving them virtually free from risk of detonation and avoids safety issues involved with production, storage, and transportation of live explosives. The MODD technology will enable canine bomb detection operations in the public sector and U.S. military overseas to train the often first-line of defense canine teams against improvised explosive devices both domestically and in protection of the warfighter overseas.



- Naval Surface Warfare Center, Corona Division (NSWCCORDIV), Corona, CA. NSWCCORDIV's Amorphous Bubble Bonding (ABB) technique is a major advance beyond current technologies for fabricating cellular solids, yielding lightweight foams that are shock-absorbent, buoyant, and easily tailored to specific applications, with both military and civilian applications, and are expected to attract customers from aerospace, automotive, construction, personal safety, lightweight submersibles, electronics, and storage/shipping containers. A Patent License Agreement and CRADA with a new startup company in Rockville, MD, are designed to accelerate ABB research and push development into commercial products.



- Naval Surface Warfare Center, Dahlgren Division (NSWCDD), Dahlgren, VA. NSWCDD's decontamination product 'Dahlgren Decon' is highly effective against a wide range of chemical and biological agents, including mustard gas, nerve agents (including VX), anthrax, and Ebola. It is available off-the-shelf to DoD, first responders, or others requiring the decontamination of biological or chemical contaminants. With a neutralization and kill time of just a few minutes, 'Dahlgren Decon' is now the fastest reacting decontamination agent on the market and has become the new standard in decontamination.



- Naval Surface Warfare Center, Panama City Division (NSWCPCD), Panama City, FL. NSWCPCD's Combat Diver Navigation Module provides a clear visual display of a combat diver's compass heading, depth, and time, even in zero visibility conditions, enabling the combat diver to remain clandestine and not degrade his night vision for follow-on land operations. The NSWCPCD partnership with an established multinational company will provide military divers conducting dangerous underwater navigation missions significantly increased accuracy, safety, and situational awareness.



OTHER TECHNOLOGY TRANSFER ACTIVITY

The DON T2 PO coordinates with the DPSI PO to identify opportunities to leverage DON product and logistic capabilities with domestic first responder needs. As a result of our proactive approach, the DON T2 PO received \$100,000 from the DPSI PO for the development of a prototype technology. Selected from five competing proposals, the FY18 awardee was NSWC, Port Hueneme Division, for the Raptor Integration for Electromagnetics Sensors project to provide development and testing of the capability to identify and track surface and swarming air vehicles. In addition to the prototype funding, the Navy T2 PO secured resource funding from the DoD DPSI PO for two other Navy Lab first responder-relevant projects. The DPSI PO provided \$105,000 to the NSWC, Panama City Division, for the Light Emitting Diode Air Warning System to build and evaluate a head-up display for scuba divers to monitor oxygen tank pressure in turbid water. The DPSI PO also provided \$124,000 to the NAWCAD for the Emergency Integrated Lifesaving LanYard project. DPSI continues to provide resource funding to the Navy's national Electro-Optics Loan Program for local law enforcement administered at NSWC, Crane Division, that delivers night vision and thermal devices to qualified personnel. Since 2011, the DON has received \$1.1M from the DPSI PO for Navy laboratory developed innovations in support of the DPSI mission to enhance public safety and improve homeland security.

A PIA is an agreement between the DON and the agency of a State or local government or a nonprofit entity as defined in Section 3715 of Title 10, United States Code. It is used to allow the intermediary to identify new technologies in the private sector that can be utilized by the DON to accelerate delivery of technological capabilities to the nation, and to help identify DON technologies that can be licensed and commercialized. Since 2003, the DON has recorded 57 PIAs including six new in FY18. Many of the PIAs focus on the cooperative activities between the laboratories and small business firms and educational institutions. Appendix D details the PIAs entered into in FY18.

An EPA is an agreement between the DON and educational institutions in the United States, including legal education agencies, college universities and nonprofit institutions that are dedicated to improving science, mathematics, and engineering education. These agreements are in place for the purpose of encouraging and enhancing study in scientific disciplines at all levels of education (pre-kindergarten and up). The laboratory can loan equipment, donate equipment, make laboratory personnel available to teach or assist in developing courses, involve faculty and students in research, etc. This agreement may benefit the laboratory in terms of advance training of future employees, and may benefit the country by exposing students to career opportunities in government R&D. Since FY17, the DON has received 128 EPAs including 98 new EPAs in FY18. Many of the EPAs focus on mutually beneficial innovative projects and Science, Technology, Engineering and Mathematics partnerships between the laboratories and the universities or education agencies. Appendix E details the EPAs entered into in FY18.



APPENDIX A

DON CRADA INCOME AND HISTORY CUMULATIVE RECORD, FY89 THROUGH FY18

Table A-1. DON CRADA Cumulative Record from FY89 through FY18

Lab Name	Cumulative Number of CRADAs
Fleet Readiness Center East	10
Fleet Readiness Center Southeast	1
Fleet Readiness Center Southwest	10
Marine Corps Combat Development Command	2
*National Naval Medical Center	65
Naval Air Warfare Center	
Aircraft Division, Lakehurst	15
Aircraft Division, Patuxent River	238
Training Systems Division	68
Weapons Division, China Lake	263
Weapons Division, Point Mugu	55
Naval Aviation Depot	
Jacksonville	1
North Island	2
Naval Facilities Engineering and Expeditionary Warfare Center	38
Naval Medical Center	
Portsmouth	183
San Diego	315
Naval Medical Research and Development Command	1,101
Naval Meteorology and Oceanography Command	31
Naval Postgraduate School	294
Naval Research Laboratory	551
Naval Sea Systems Command	2
Naval Surface Warfare Center	
Carderock Division	290
Corona Division	3
Crane Division	235
Dahlgren Division	203
**Indian Head Explosive Ordnance Disposal Technology Division	233
Panama City Division	16
Port Hueneme Division	10
Naval Undersea Warfare Center	
Division Keyport	19
Division Newport	418
Naval War College	21
Naval Warfare Development Command	2
Navy Clothing and Textile Research Facility	7
Navy Disease Vector Ecology and Control Center	1
Navy Experimental Diving Unit	2
Office of Naval Research	11
Space and Naval Warfare Systems Center Atlantic	30
Space and Naval Warfare Systems Center Pacific	262
United States Atlantic Command	1
United States Naval Academy	62
United States Naval Observatory	1
TOTAL	5,072

* As of November 10, 2011, the Walter Reed National Military Medical Center was created from the National Naval Medical Center and the Walter Reed Army Medical Center. Due to the realignment, CRADAs from the National Naval Medical Center are no longer being reported to the DON.

**As of February 28, 2013, the NSWC, Indian Head Division and the Naval Explosive Ordnance Disposal Technology Division were merged to form the NSWC, Indian Head Explosive Ordnance Disposal Technology Division. The new Command retains the mission, functions, and technical capabilities of both organizations.

Table A-2. DON CRADA History

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Number of CRADAs Signed			
				Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$124,721,173	—	—	1,633	417	2,050	2,050
2007	\$13,973,555	—	—	160	41	201	2,251
2008	\$9,222,720	—	—	147	51	198	2,449
2009	\$9,925,482	—	—	153	46	199	2,648
2010	\$19,458,868	—	—	174	48	222	2,870
2011	\$13,753,407	—	—	155	45	200	3,070
2012	\$17,376,616	\$100,000	\$1,859,950	141	51	192	3,262
2013	\$11,123,569	\$35,000	\$2,528,038	151	76	227	3,489
2014	\$20,721,248	\$224,559	\$3,399,240	169	77	246	3,735
2015	\$26,830,805	\$781,251	\$6,968,101	182	79	261	3,996
2016	\$8,462,233	\$597,049	\$2,178,446	171	139	310	4,306
2017	\$4,512,341	\$1,197,326	\$782,885	189	173	362	4,668
2018	\$9,090,302	\$810,300	\$2,762,115	219	185	404	5,072

* The entire income for each CRADA is credited to the year that the CRADA was received at DON T2 PO. Funds received under any amendments are allocated to the year the original CRADA was received.

Table A-3. FY18 Non-Navy Partner Income from CRADA Amendments

Lab Name	Amendments Applied to Current Year CRADAs	Amendments Applied to Previous Year CRADAs
Naval Medical Research and Development Command	\$102,200	\$3,484,696
Naval Postgraduate School		\$320,000
Naval Research Laboratory	\$110,000	
Naval Surface Warfare Center, Indian Head Explosive Ordnance Disposal Technology Division		\$283,419
Naval Undersea Warfare Center, Newport Division		\$100,000
United States Naval Academy		\$31,700
Totals	\$312,200	\$4,119,815

Table A-4. FY18 SBIR/STTR Income from CRADA Amendments

Lab Name	Amendments Applied to Current Year CRADAs	Amendments Applied to Previous Year CRADAs
Naval Research Laboratory	\$346,000	
Naval Undersea Warfare Center, Newport Division		\$3,500
Totals	\$346,000	\$3,500

Table A-5. FY18 Other Government Agency Income from CRADA Amendments

Lab Name	Amendments Applied to Current Year CRADAs	Amendments Applied to Previous Year CRADAs
Naval Research Laboratory	\$40,000	\$151,927
Naval Surface Warfare Center, Indian Head Explosive Ordnance Disposal Technology Division	\$50,000	\$731,399
Totals	\$90,000	\$883,326

The DON has entered into 5,072 CRADAs and received \$289,172,318 from non-federal CRADA partners to support this work since 1989. These funds directly support ongoing research projects at the DON laboratories. Income from new CRADAs signed in FY18 (\$8,778,102) as well as amendments to CRADAs signed in FY18 (\$312,200) totaled \$9,090,302 (see Table A-2). Amendments to CRADAs signed in previous years generated additional income in FY18 of \$4,119,815 (see Table A-3) for a grand total of FY18 income of \$13,210,117.

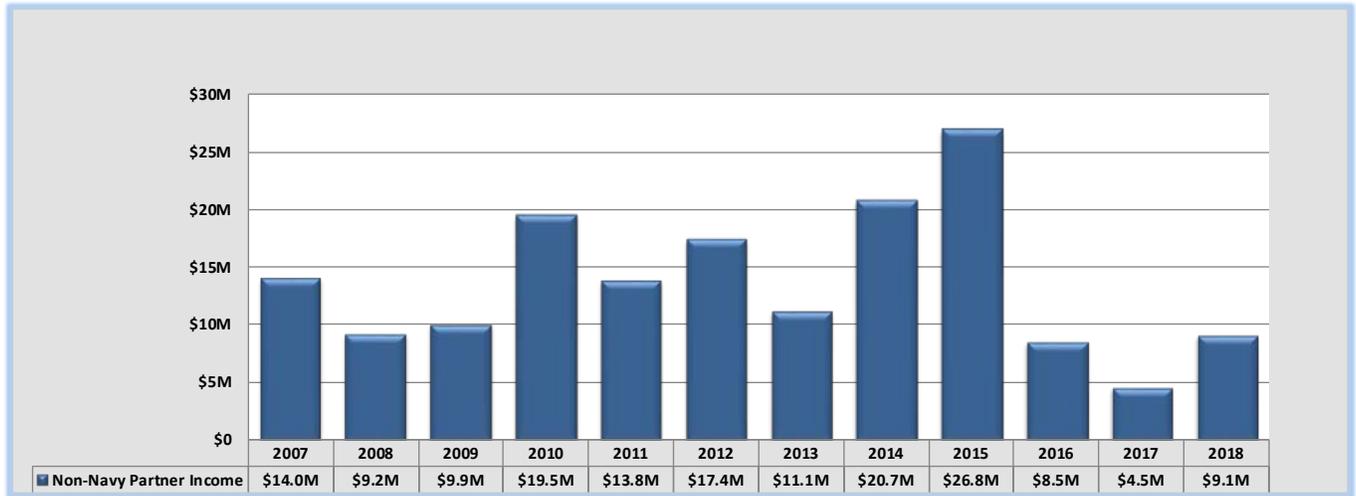
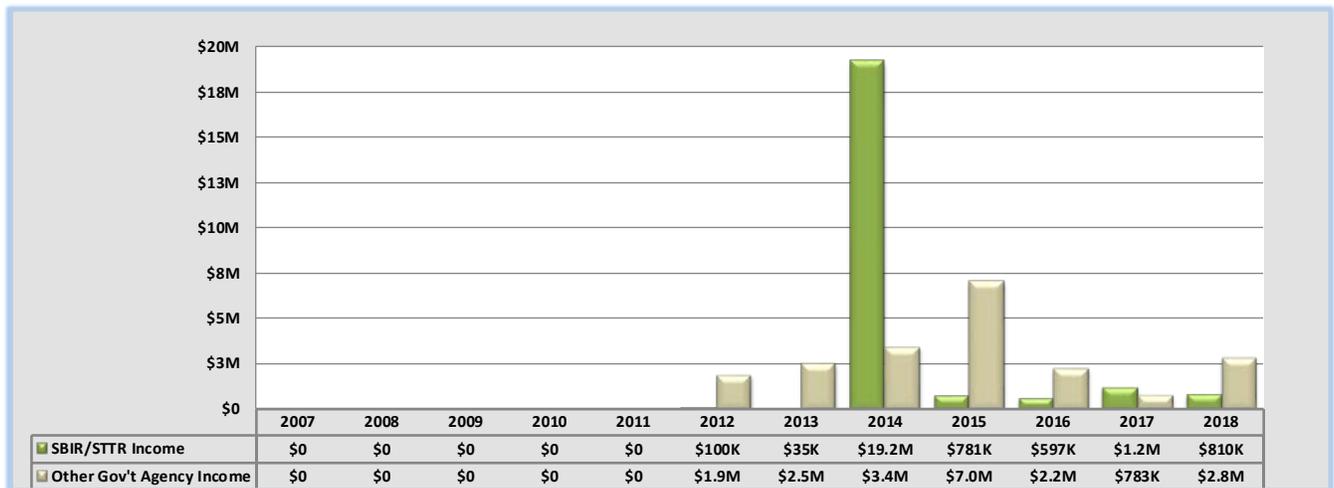


Figure A-1. DON Non-Navy Partner CRADA Income



NOTE: SBIR/STTR income and Other Government Agency income data is not available prior to FY12.

**Figure A-2. DON SBIR/STTR CRADA Income and
DON Other Government Agency Income**

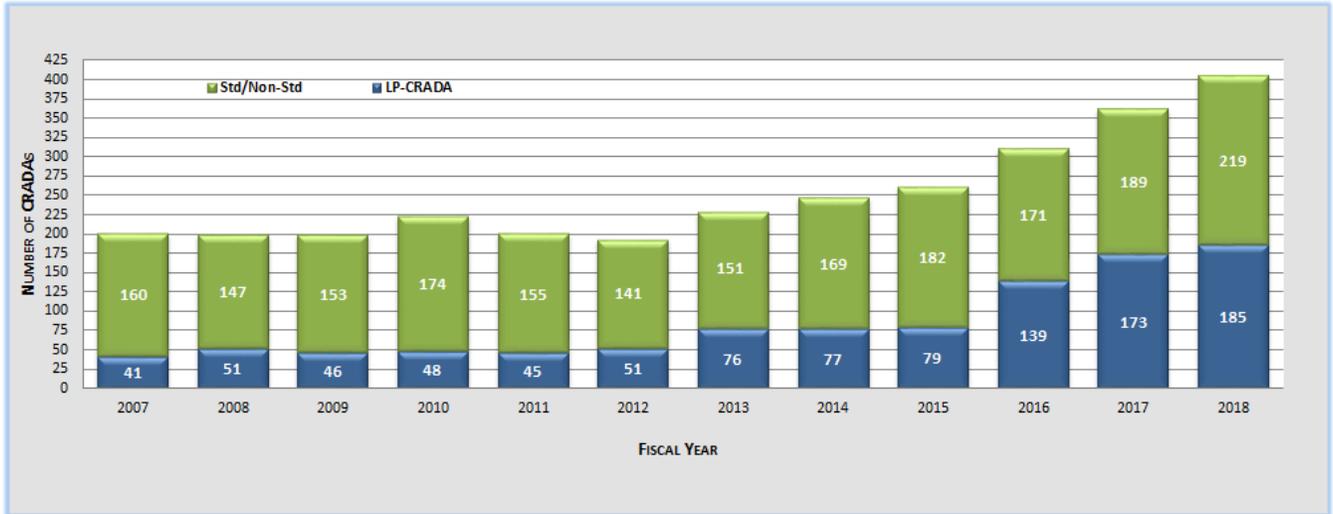


Figure A-3. Number of DON CRADAs Signed



APPENDIX B

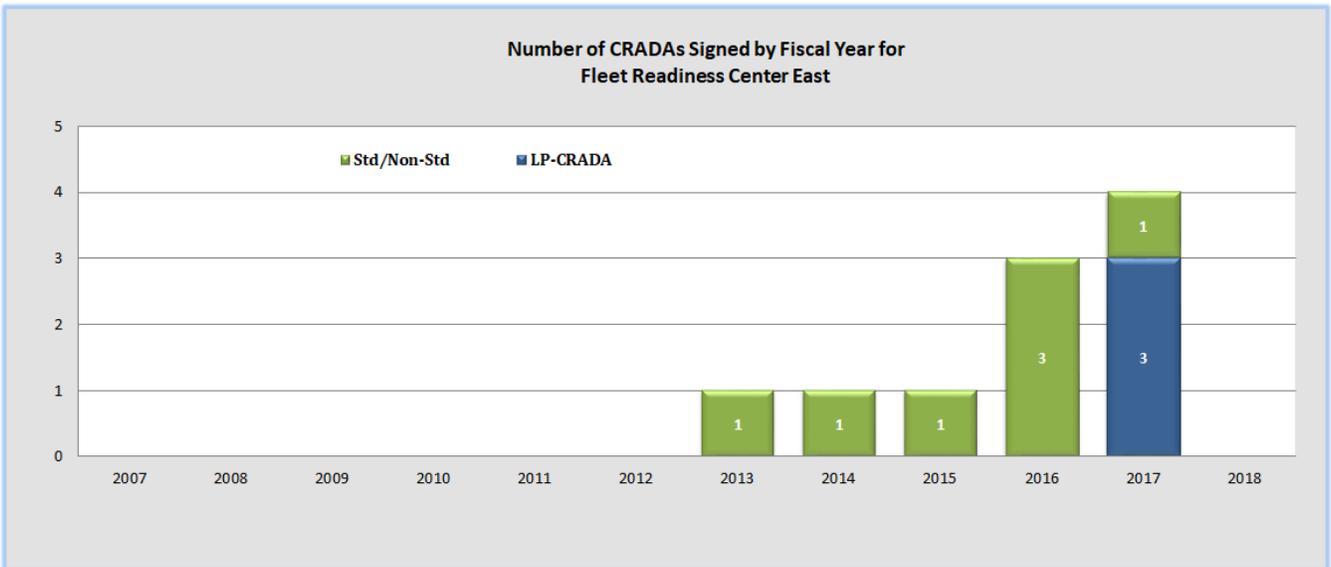
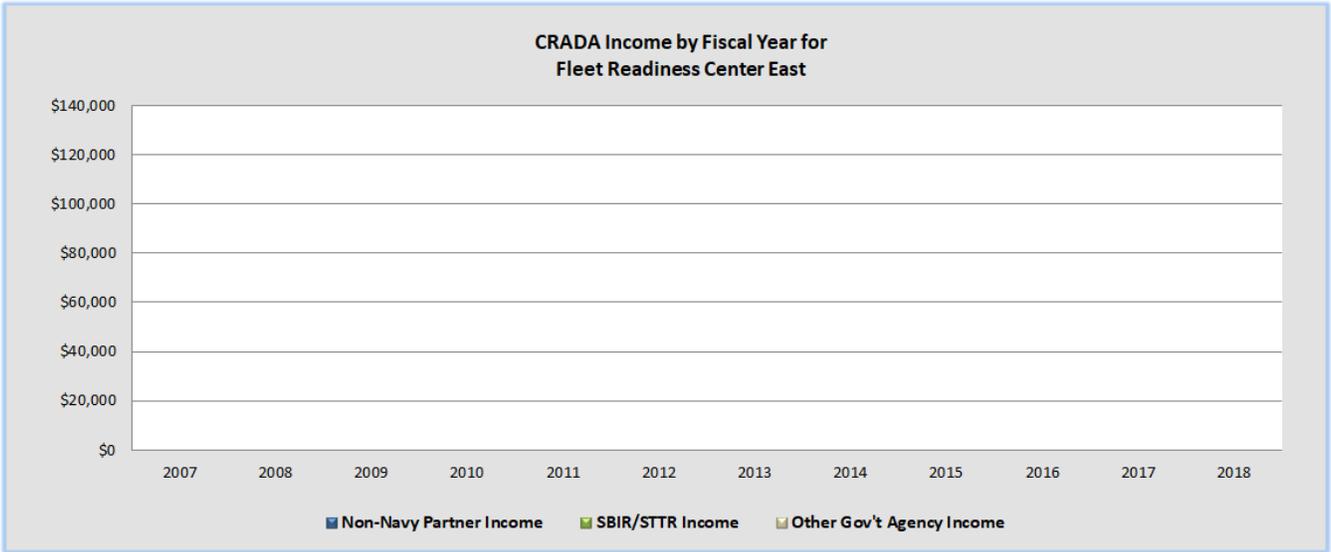
FY18 DON CRADA INCOME AND HISTORY BY LABORATORY

**CRADA History for
Fleet Readiness Center East**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-
2011	-	-	-	-	-	-	-	-
2012	-	-	-	-	-	-	-	-
2013	-	-	-	-	1	-	1	1
2014	-	-	-	-	1	-	1	2
2015	-	-	-	-	1	-	1	3
2016	-	-	-	-	3	-	3	6
2017	-	-	-	-	1	3	4	10
2018	-	-	-	-	-	-	-	10

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** Amendment income from SBIR/STTR and other government agencies is not included.

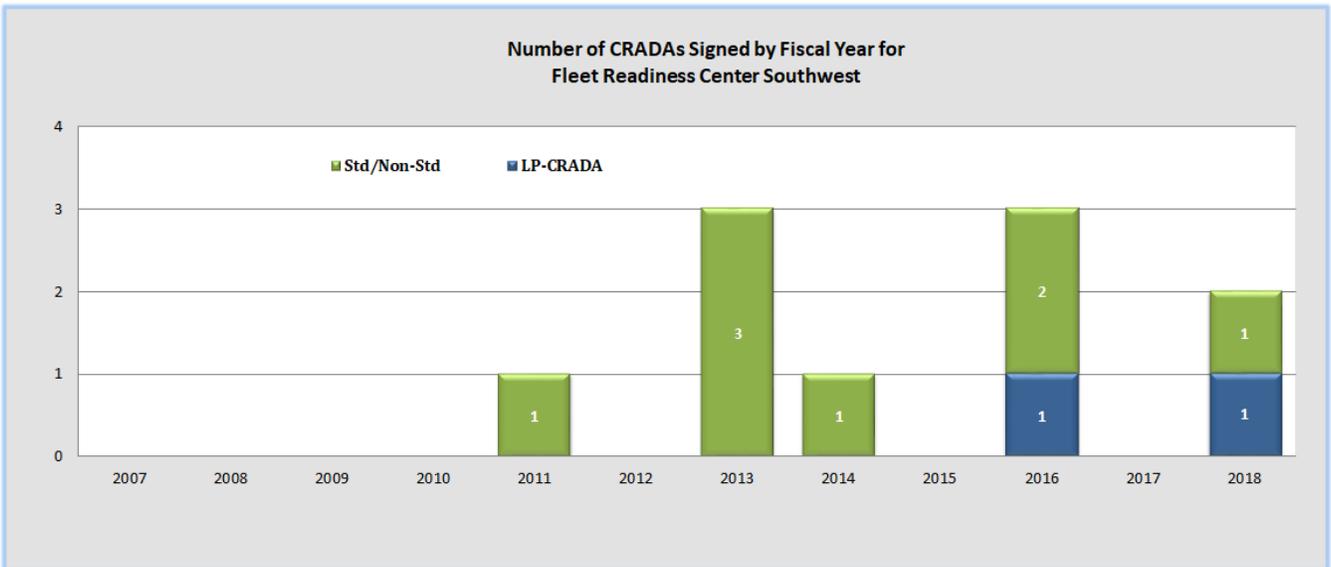
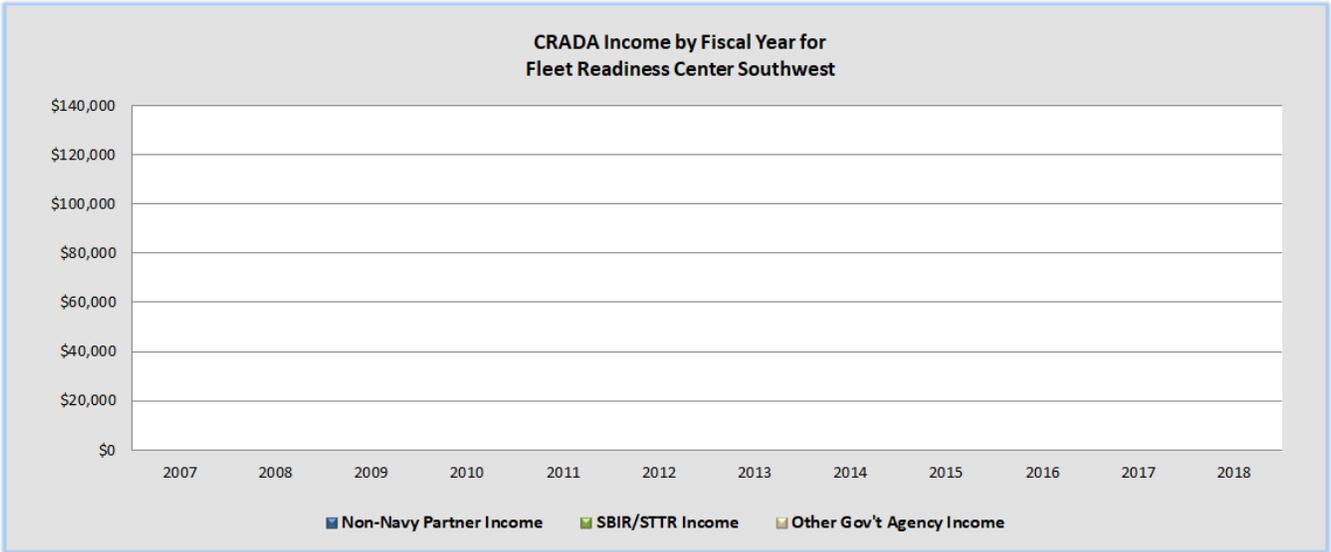


**CRADA History for
Fleet Readiness Center Southwest**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-
2011	-	-	-	-	1	-	1	1
2012	-	-	-	-	-	-	-	1
2013	-	-	-	-	3	-	3	4
2014	-	-	-	-	1	-	1	5
2015	-	-	-	-	-	-	-	5
2016	-	-	-	-	2	1	3	8
2017	-	-	-	-	-	-	-	8
2018	-	-	-	-	1	1	2	10

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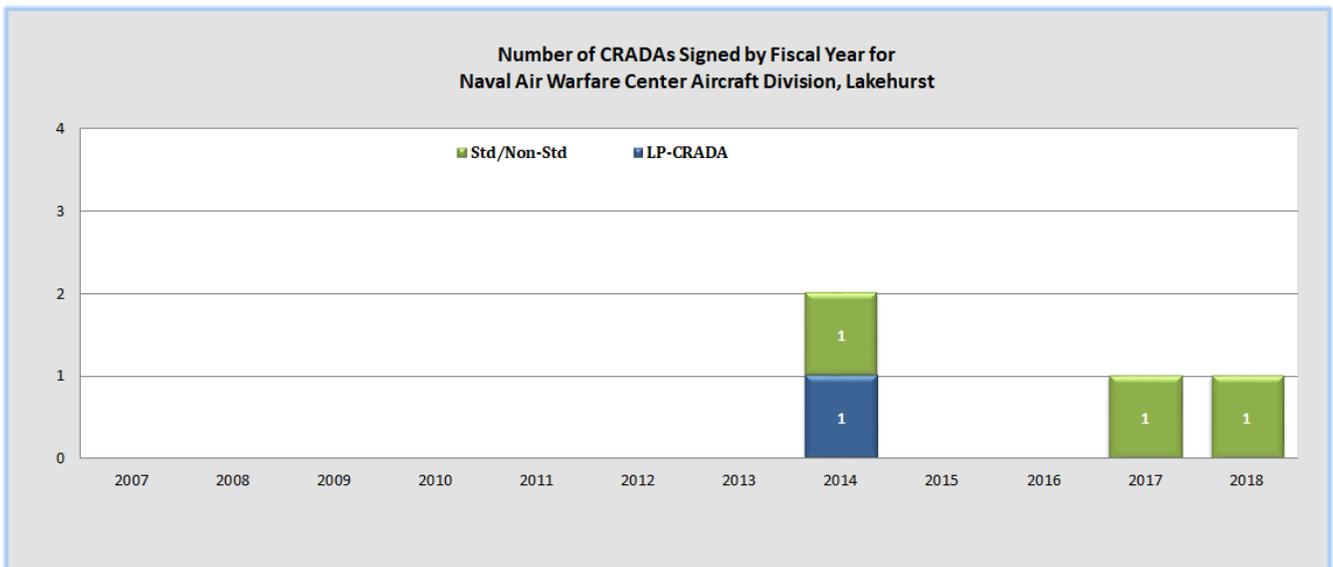
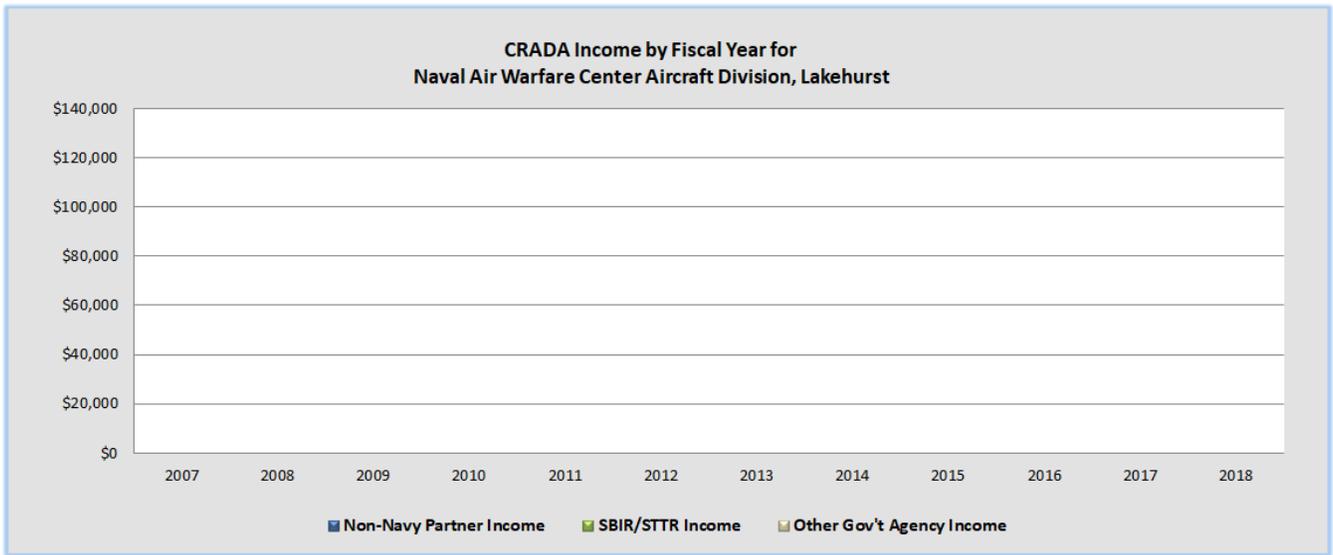


**CRADA History for
Naval Air Warfare Center Aircraft Division, Lakehurst**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$398,300	-	-	-	11	-	11	11
2007	-	-	-	-	-	-	-	11
2008	-	-	-	-	-	-	-	11
2009	-	-	-	-	-	-	-	11
2010	-	-	-	-	-	-	-	11
2011	-	-	-	-	-	-	-	11
2012	-	-	-	-	-	-	-	11
2013	-	-	-	-	-	-	-	11
2014	-	-	-	-	1	1	2	13
2015	-	-	-	-	-	-	-	13
2016	-	-	-	-	-	-	-	13
2017	-	-	-	-	1	-	1	14
2018	-	-	-	-	1	-	1	15

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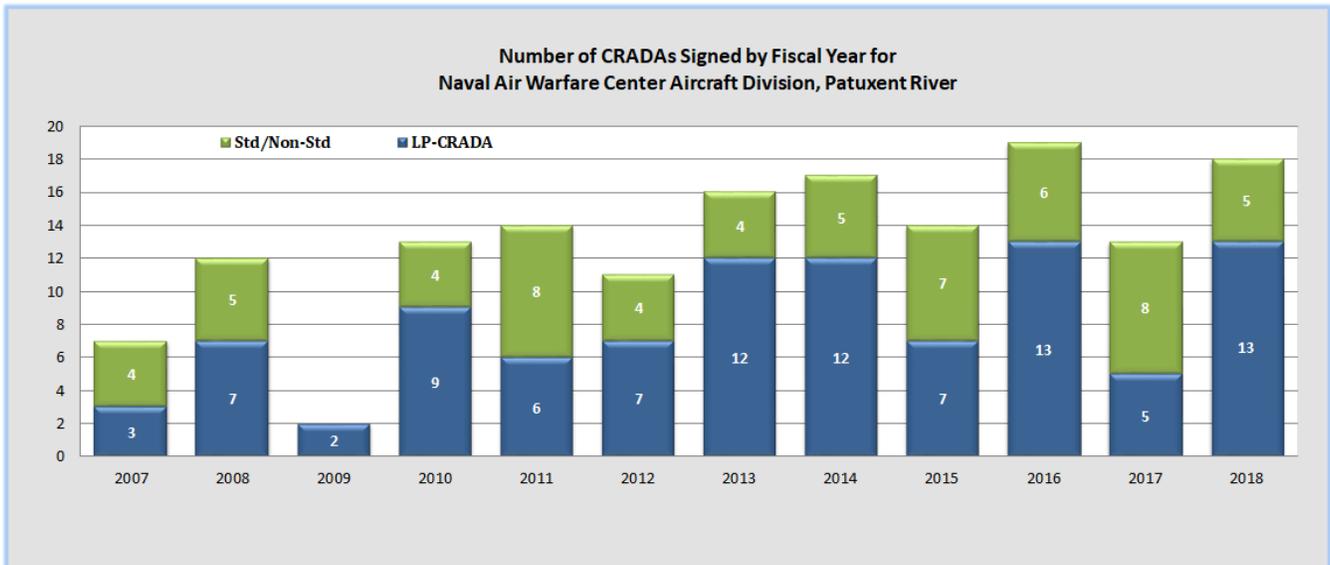
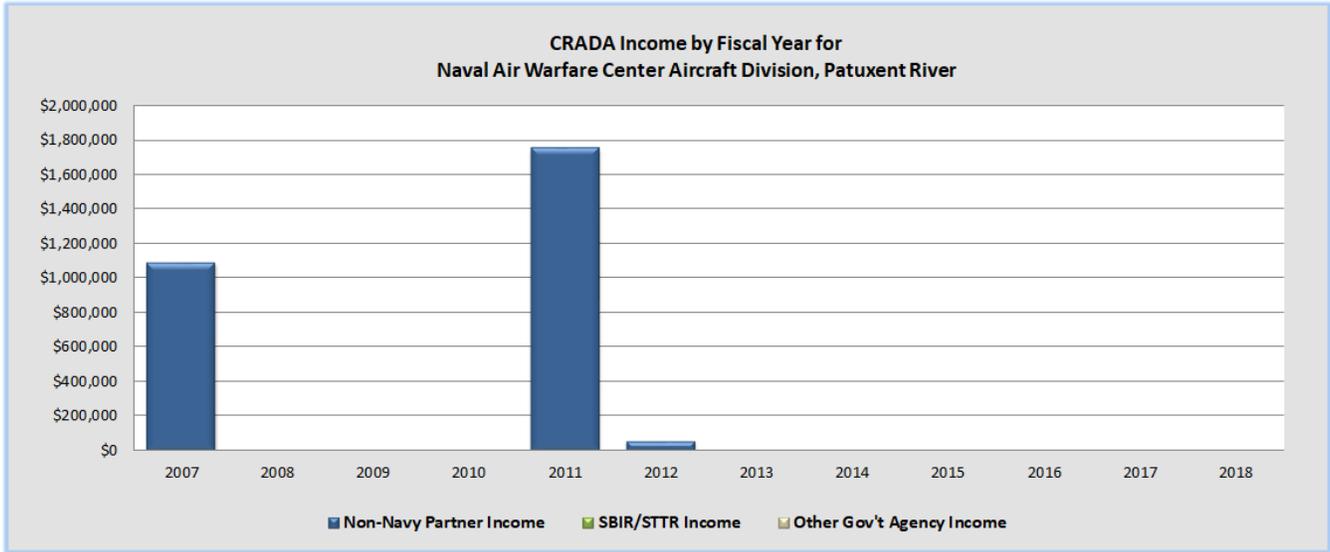


**CRADA History for
Naval Air Warfare Center Aircraft Division, Patuxent River**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$2,074,910	-	-	-	55	27	82	82
2007	\$1,086,000	-	-	-	4	3	7	89
2008	-	-	-	-	5	7	12	101
2009	-	-	-	-	-	2	2	103
2010	-	-	-	-	4	9	13	116
2011	\$1,754,287	-	-	-	8	6	14	130
2012	\$54,500	-	-	-	4	7	11	141
2013	-	-	-	-	4	12	16	157
2014	-	-	-	-	5	12	17	174
2015	-	-	-	-	7	7	14	188
2016	-	-	-	-	6	13	19	207
2017	-	-	-	-	8	5	13	220
2018	-	-	-	-	5	13	18	238

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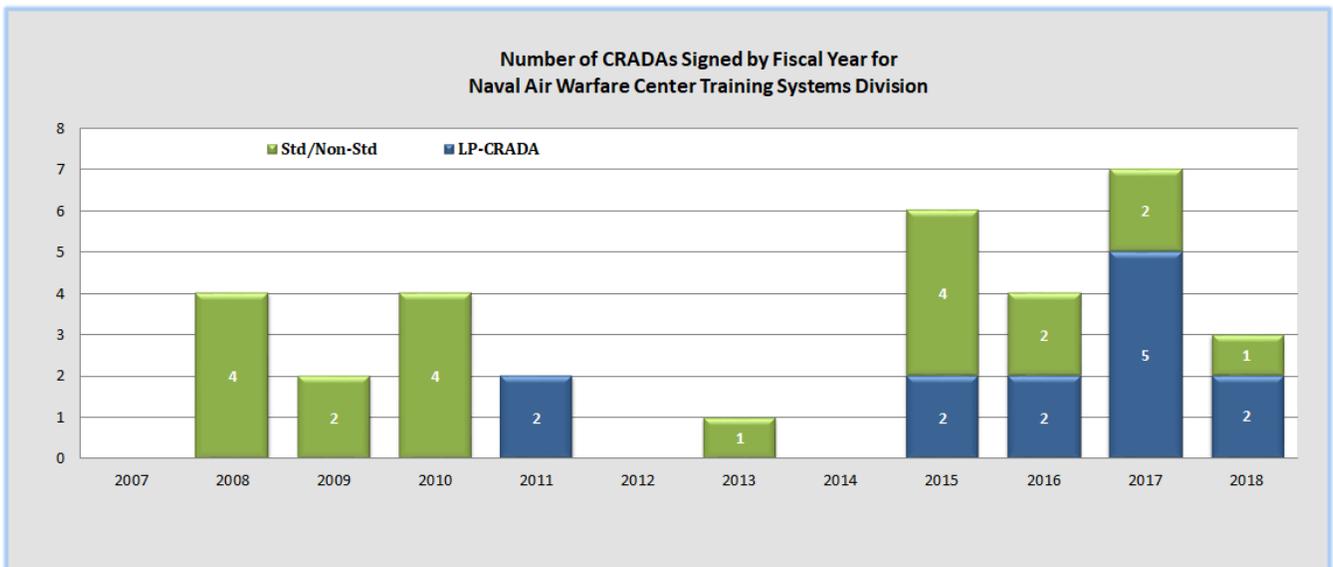
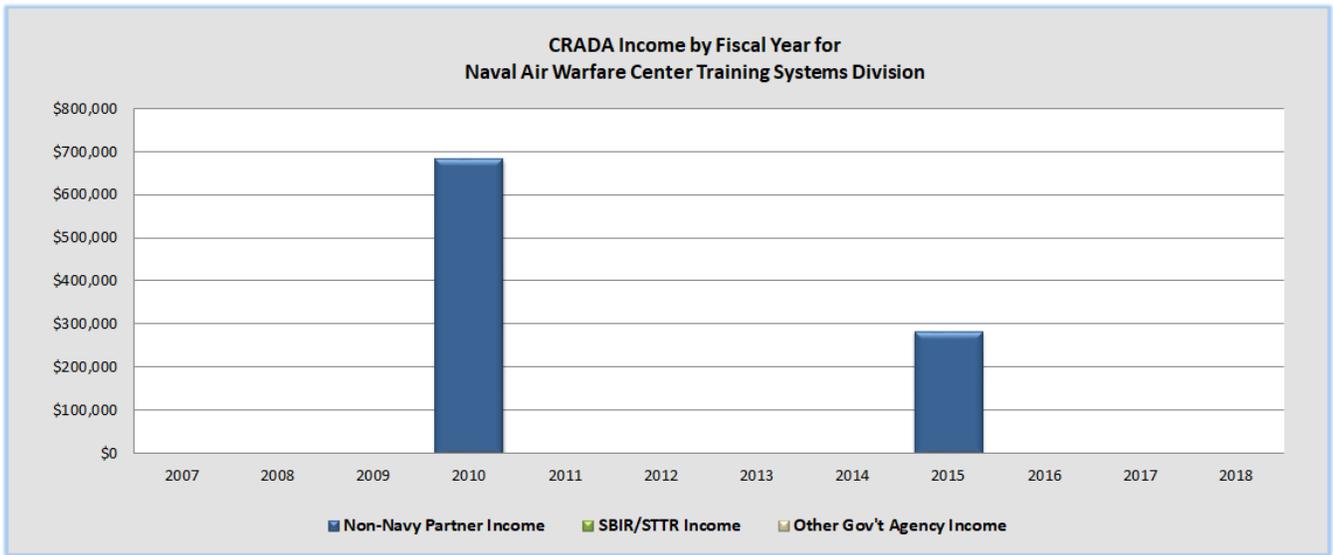


**CRADA History for
Naval Air Warfare Center Training Systems Division**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$13,000	-	-	-	35	-	35	35
2007	-	-	-	-	-	-	-	35
2008	-	-	-	-	4	-	4	39
2009	-	-	-	-	2	-	2	41
2010	\$681,496	-	-	-	4	-	4	45
2011	-	-	-	-	-	2	2	47
2012	-	-	-	-	-	-	-	47
2013	-	-	-	-	1	-	1	48
2014	-	-	-	-	-	-	-	48
2015	\$283,785	-	-	-	4	2	6	54
2016	-	-	-	-	2	2	4	58
2017	-	-	-	-	2	5	7	65
2018	-	-	-	-	1	2	3	68

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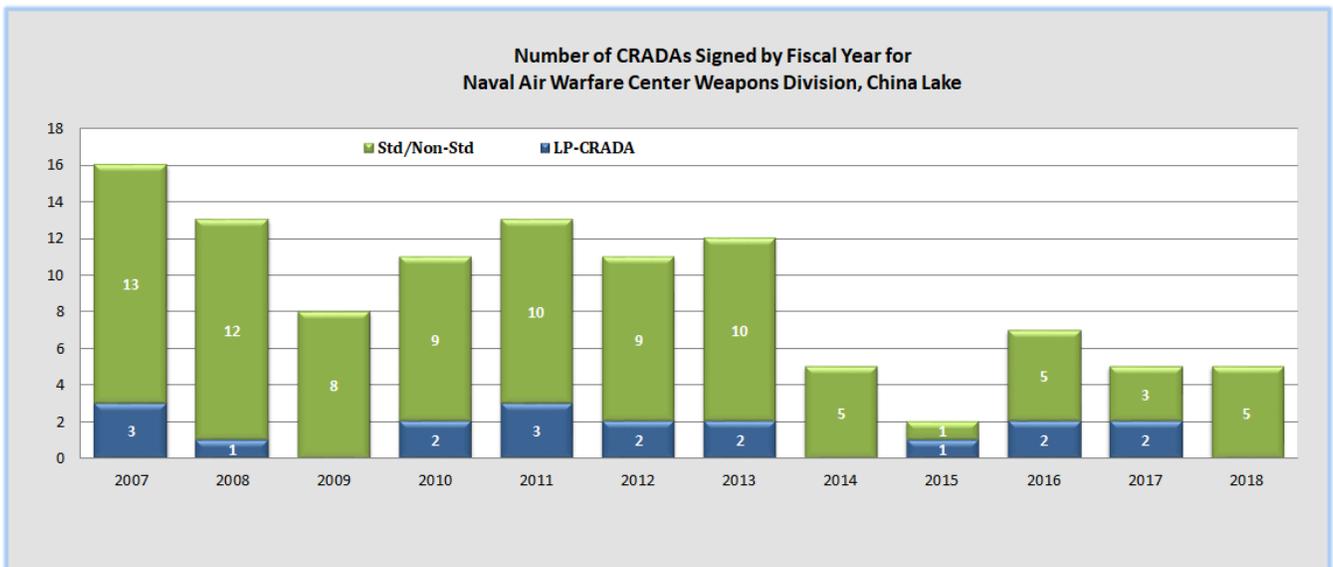
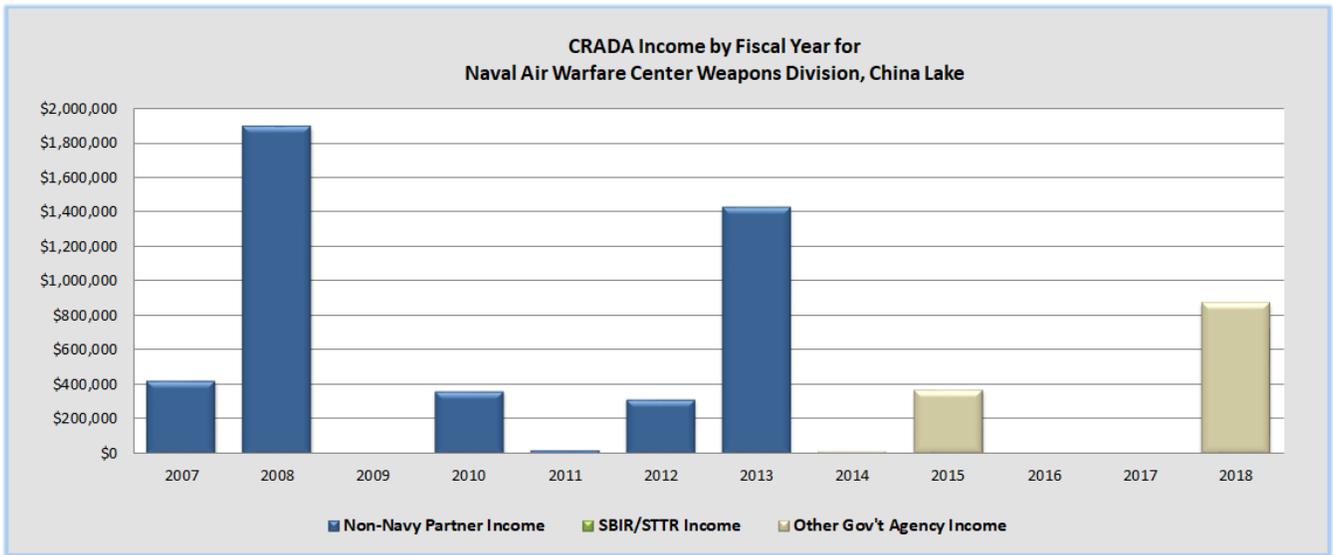


**CRADA History for
Naval Air Warfare Center Weapons Division, China Lake**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$26,190,606	-	-	-	153	2	155	155
2007	\$425,000	-	-	-	13	3	16	171
2008	\$1,895,000	-	-	-	12	1	13	184
2009	-	-	-	-	8	-	8	192
2010	\$365,000	-	-	-	9	2	11	203
2011	\$20,000	-	-	-	10	3	13	216
2012	\$315,000	-	-	-	9	2	11	227
2013	\$1,425,000	-	-	-	10	2	12	239
2014	-	-	\$15,000	-	5	-	5	244
2015	-	-	\$370,000	-	1	1	2	246
2016	-	-	-	-	5	2	7	253
2017	-	-	-	-	3	2	5	258
2018	-	-	\$870,000	-	5	-	5	263

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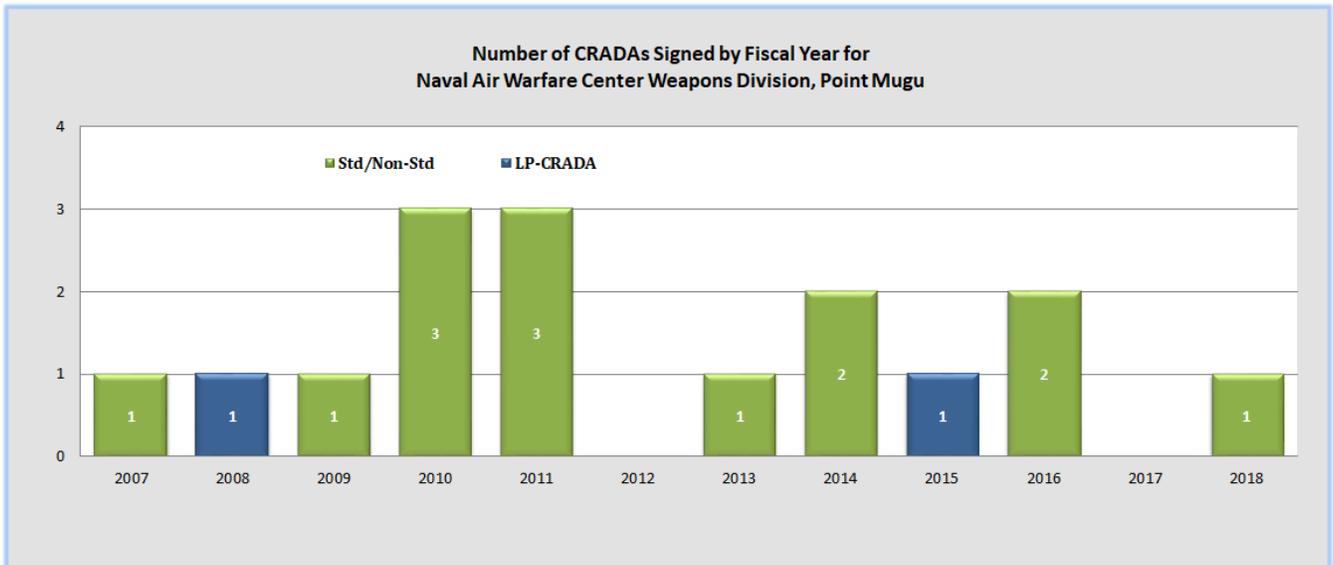
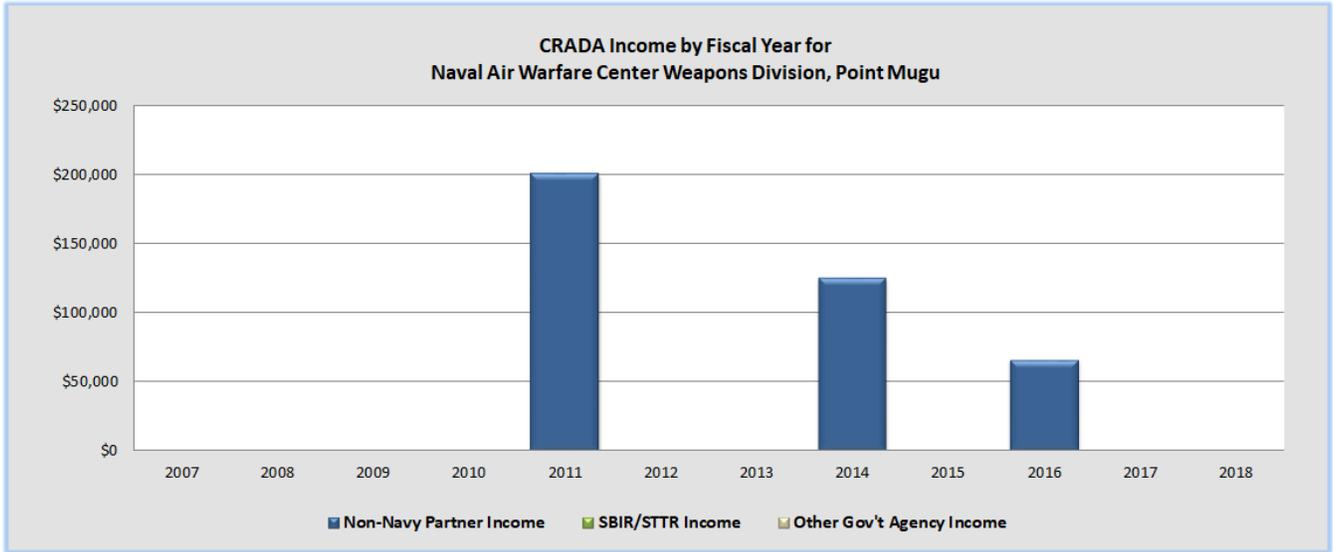


**CRADA History for
Naval Air Warfare Center Weapons Division, Point Mugu**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$2,645,337	-	-	-	36	3	39	39
2007	-	-	-	-	1	-	1	40
2008	-	-	-	-	-	1	1	41
2009	-	-	-	-	1	-	1	42
2010	-	-	-	-	3	-	3	45
2011	\$200,000	-	-	-	3	-	3	48
2012	-	-	-	-	-	-	-	48
2013	-	-	-	-	1	-	1	49
2014	\$125,000	-	-	-	2	-	2	51
2015	-	-	-	-	-	1	1	52
2016	\$65,325	-	-	-	2	-	2	54
2017	-	-	-	-	-	-	-	54
2018	-	-	-	-	1	-	1	55

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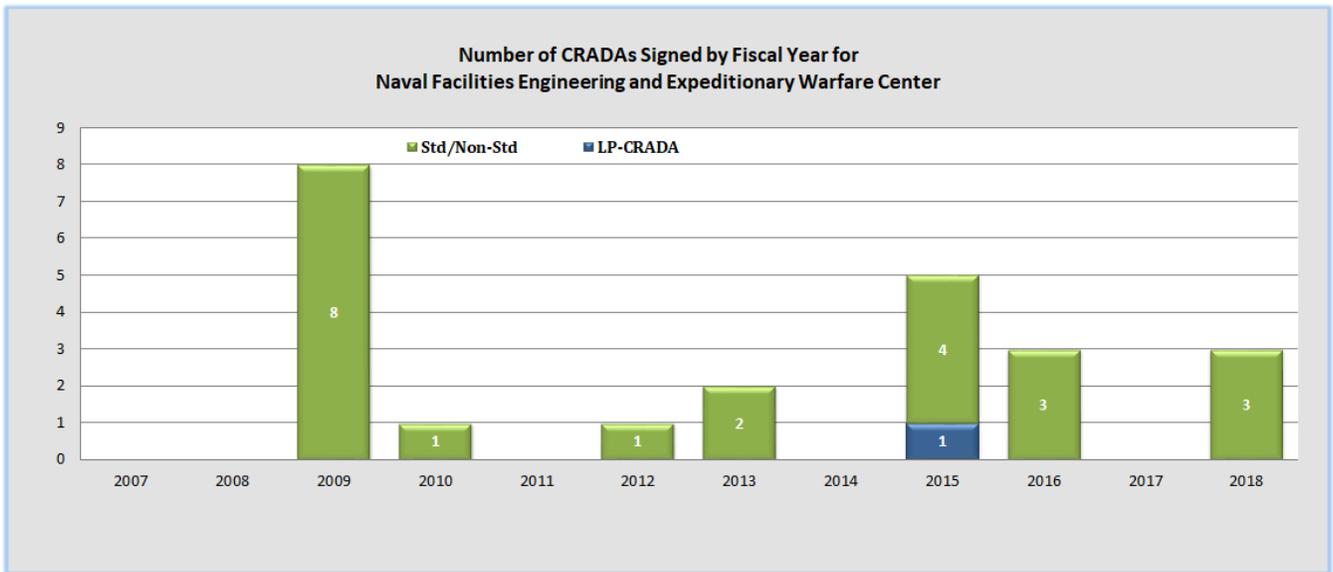
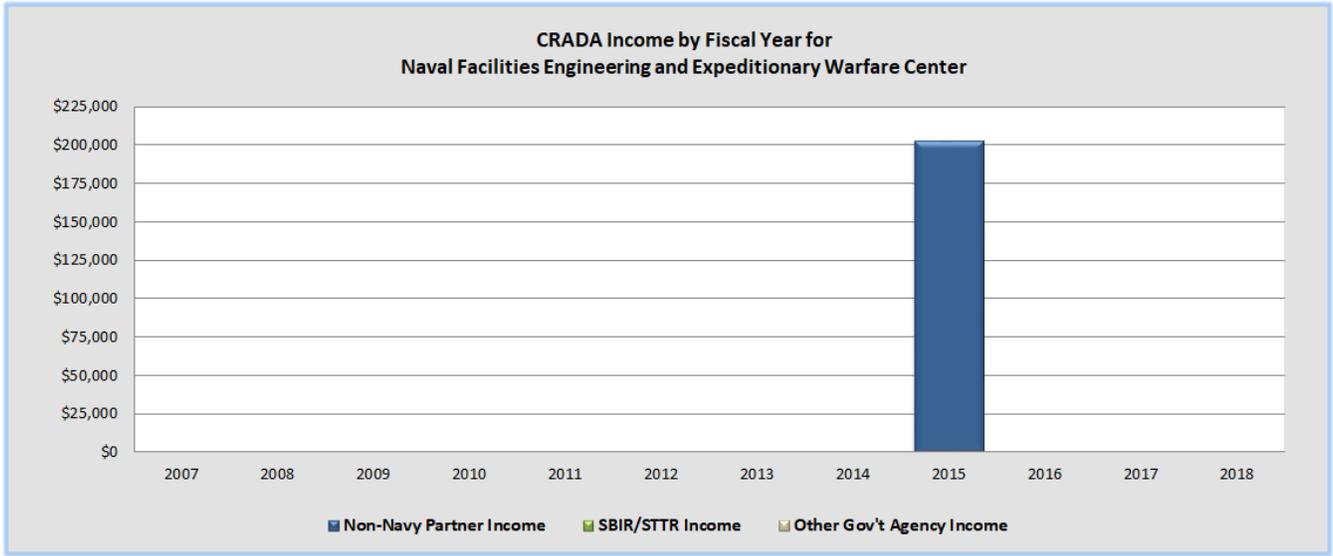


**CRADA History for
Naval Facilities Engineering and Expeditionary Warfare Center**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$495,000	-	-	-	15	-	15	15
2007	-	-	-	-	-	-	-	15
2008	-	-	-	-	-	-	-	15
2009	-	-	-	-	8	-	8	23
2010	-	-	-	-	1	-	1	24
2011	-	-	-	-	-	-	-	24
2012	-	-	-	-	1	-	1	25
2013	-	-	-	-	2	-	2	27
2014	-	-	-	-	-	-	-	27
2015	\$203,235	-	-	-	4	1	5	32
2016	-	-	-	-	3	-	3	35
2017	-	-	-	-	-	-	-	35
2018	-	-	-	-	3	-	3	38

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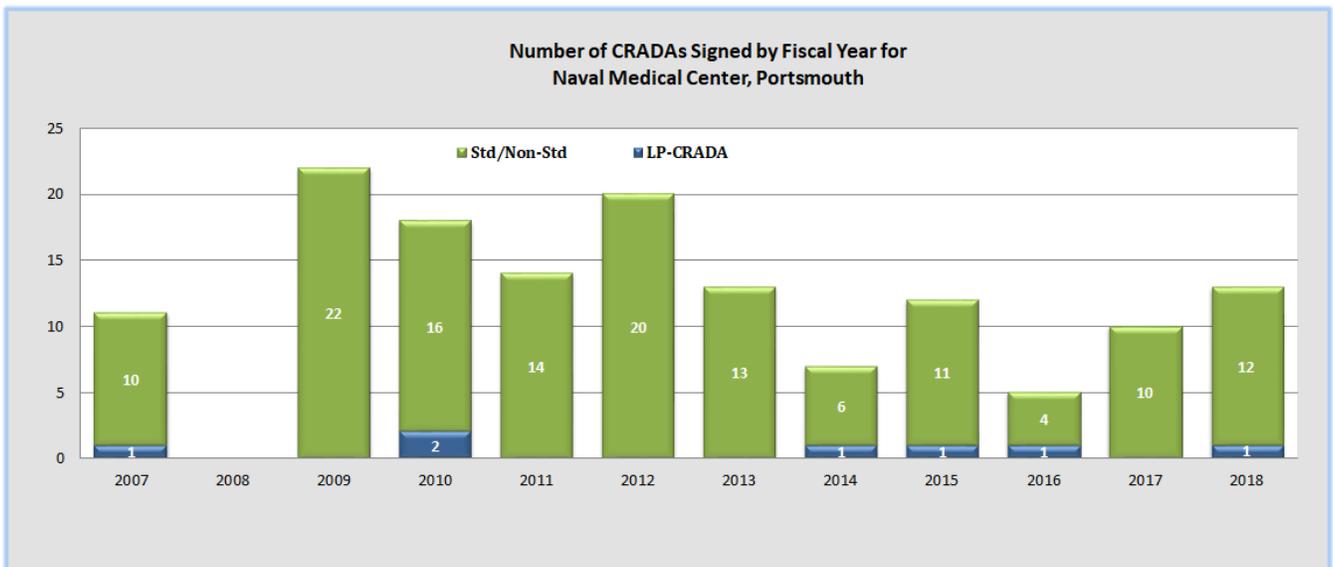
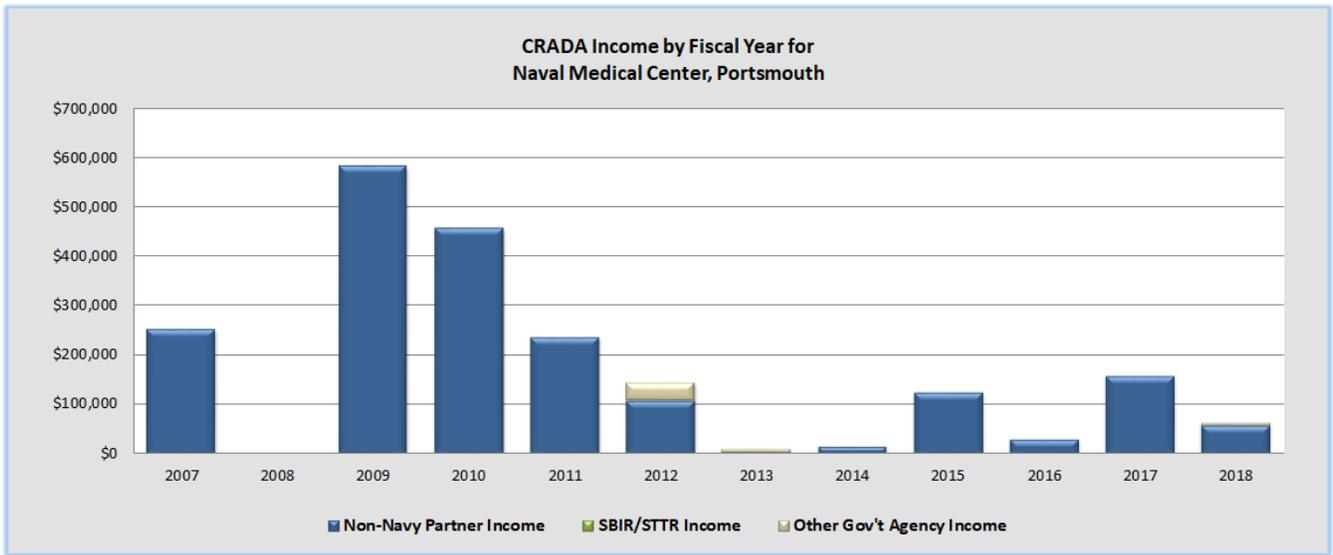


**CRADA History for
Naval Medical Center, Portsmouth**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$464,135	-	-	-	29	9	38	38
2007	\$252,590	-	-	-	10	1	11	49
2008	-	-	-	-	-	-	-	49
2009	\$582,523	-	-	-	22	-	22	71
2010	\$456,590	-	-	-	16	2	18	89
2011	\$235,194	-	-	-	14	-	14	103
2012	\$107,044	-	\$36,892	-	20	-	20	123
2013	\$3,500	-	\$7,500	-	13	-	13	136
2014	\$14,100	-	-	-	6	1	7	143
2015	\$125,350	-	-	-	11	1	12	155
2016	\$30,000	-	-	-	4	1	5	160
2017	\$157,700	-	-	-	10	-	10	170
2018	\$57,637	-	\$6,000	-	12	1	13	183

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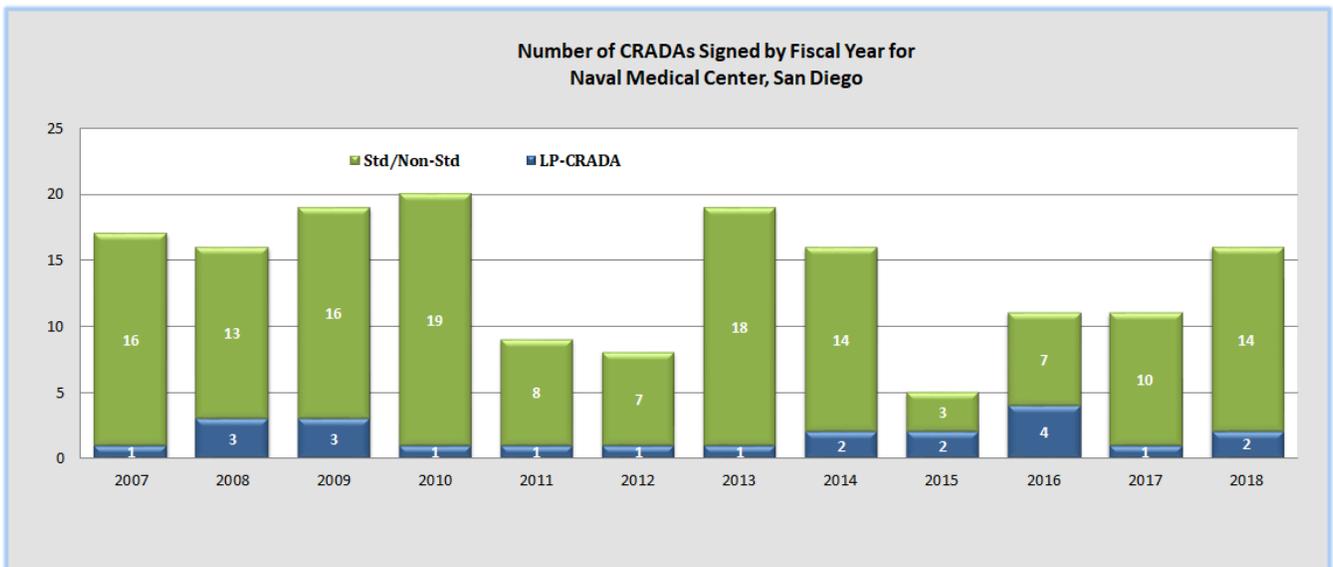
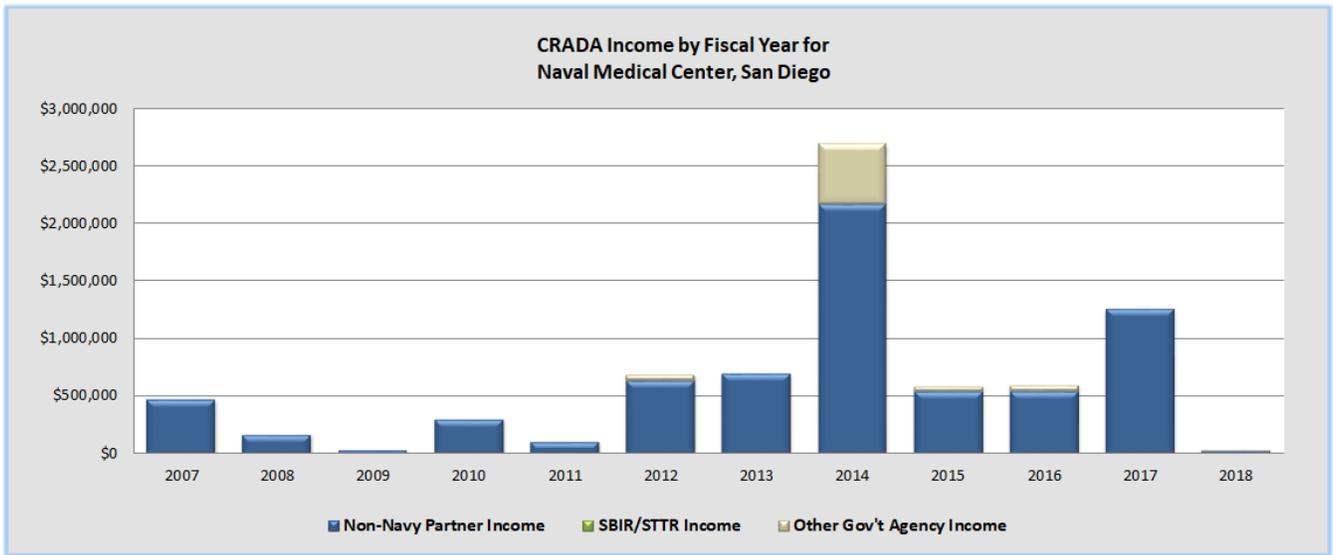


**CRADA History for
Naval Medical Center, San Diego**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$5,852,027	-	-	-	116	32	148	148
2007	\$475,537	-	-	-	16	1	17	165
2008	\$165,250	-	-	-	13	3	16	181
2009	\$37,832	-	-	-	16	3	19	200
2010	\$299,261	-	-	-	19	1	20	220
2011	\$103,193	-	-	-	8	1	9	229
2012	\$630,000	-	\$52,500	-	7	1	8	237
2013	\$695,691	-	-	-	18	1	19	256
2014	\$2,161,389	-	\$525,299	-	14	2	16	272
2015	\$542,944	-	\$41,192	-	3	2	5	277
2016	\$540,102	-	\$56,800	-	7	4	11	288
2017	\$1,252,964	-	-	-	10	1	11	299
2018	\$22,039	-	\$6,000	-	14	2	16	315

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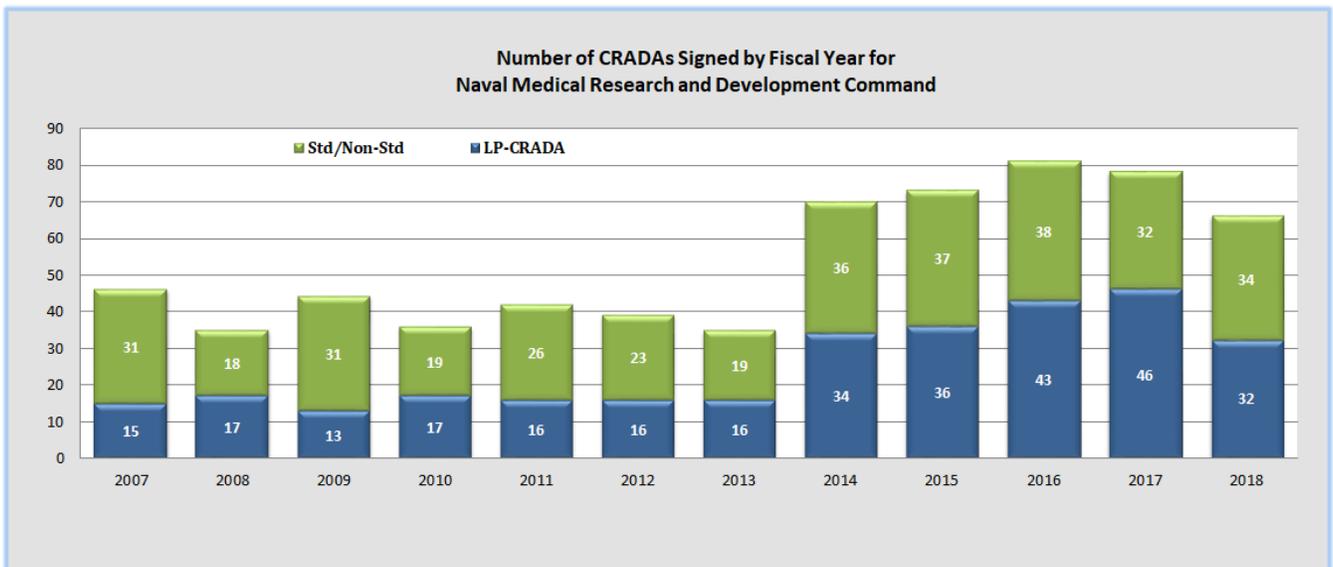
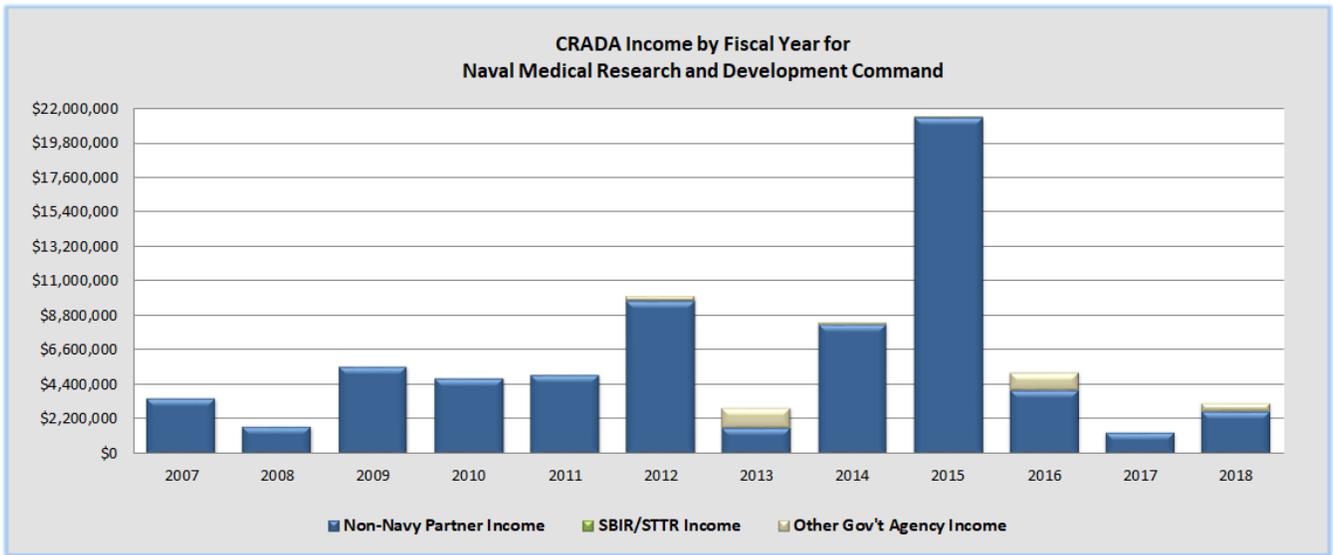


**CRADA History for
Naval Medical Research and Development Command**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$11,809,055	-	-	-	260	196	456	456
2007	\$3,499,070	-	-	-	31	15	46	502
2008	\$1,746,653	-	-	-	18	17	35	537
2009	\$5,565,582	-	-	-	31	13	44	581
2010	\$4,808,894	-	-	-	19	17	36	617
2011	\$5,031,585	-	-	-	26	16	42	659
2012	\$9,726,102	-	\$299,759	-	23	16	39	698
2013	\$1,635,184	-	\$1,318,996	-	19	16	35	733
2014	\$8,200,625	-	\$172,905	\$1,547,470	36	34	70	803
2015	\$21,399,609	-	\$28,000	\$717,194	37	36	73	876
2016	\$4,053,566	-	\$1,133,481	\$1,220,032	38	43	81	957
2017	\$1,338,005	-	-	-	32	46	78	1,035
2018	\$2,733,197	-	\$469,416	\$102,200	34	32	66	1,101

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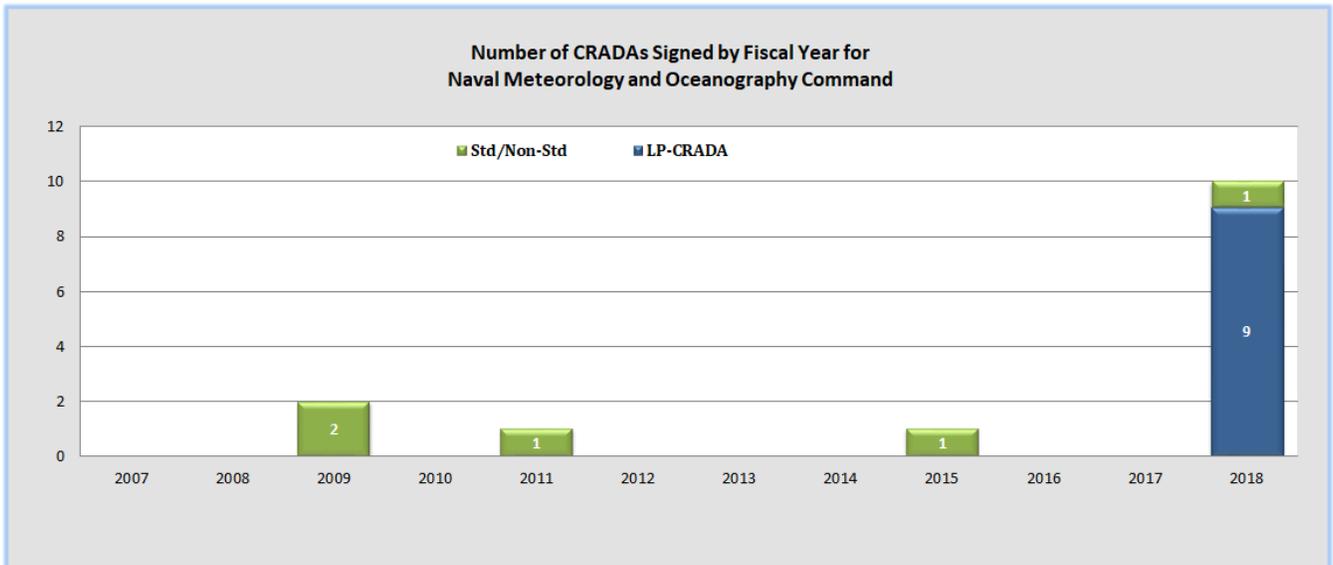
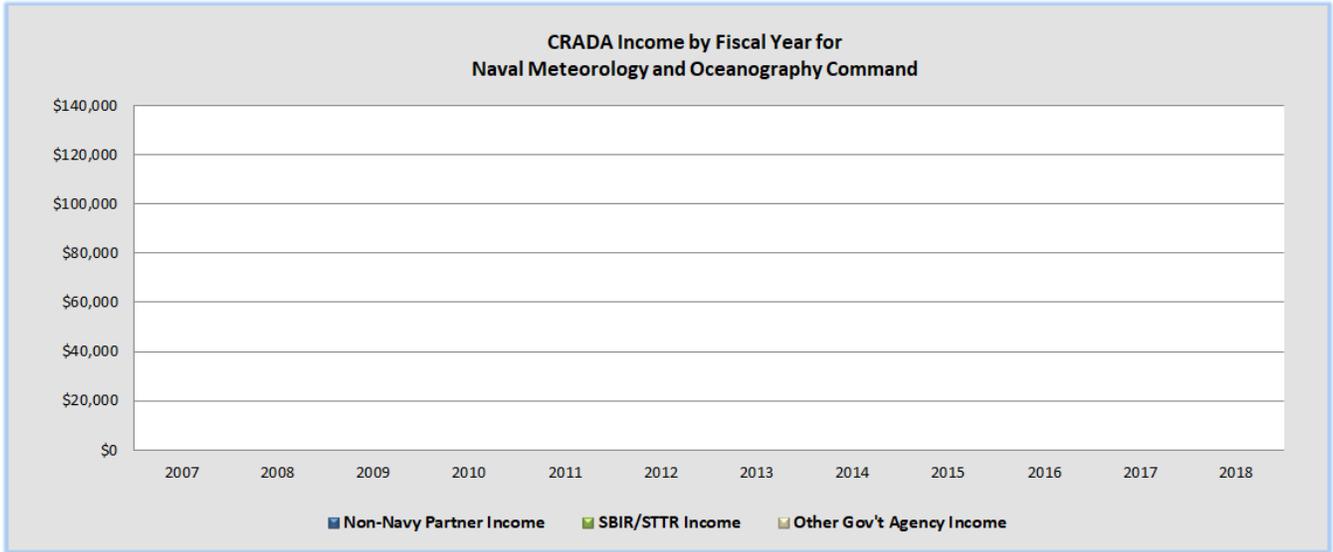


**CRADA History for
Naval Meteorology and Oceanography Command**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$134,500	-	-	-	10	7	17	17
2007	-	-	-	-	-	-	-	17
2008	-	-	-	-	-	-	-	17
2009	-	-	-	-	2	-	2	19
2010	-	-	-	-	-	-	-	19
2011	-	-	-	-	1	-	1	20
2012	-	-	-	-	-	-	-	20
2013	-	-	-	-	-	-	-	20
2014	-	-	-	-	-	-	-	20
2015	-	-	-	-	1	-	1	21
2016	-	-	-	-	-	-	-	21
2017	-	-	-	-	-	-	-	21
2018	-	-	-	-	1	9	10	31

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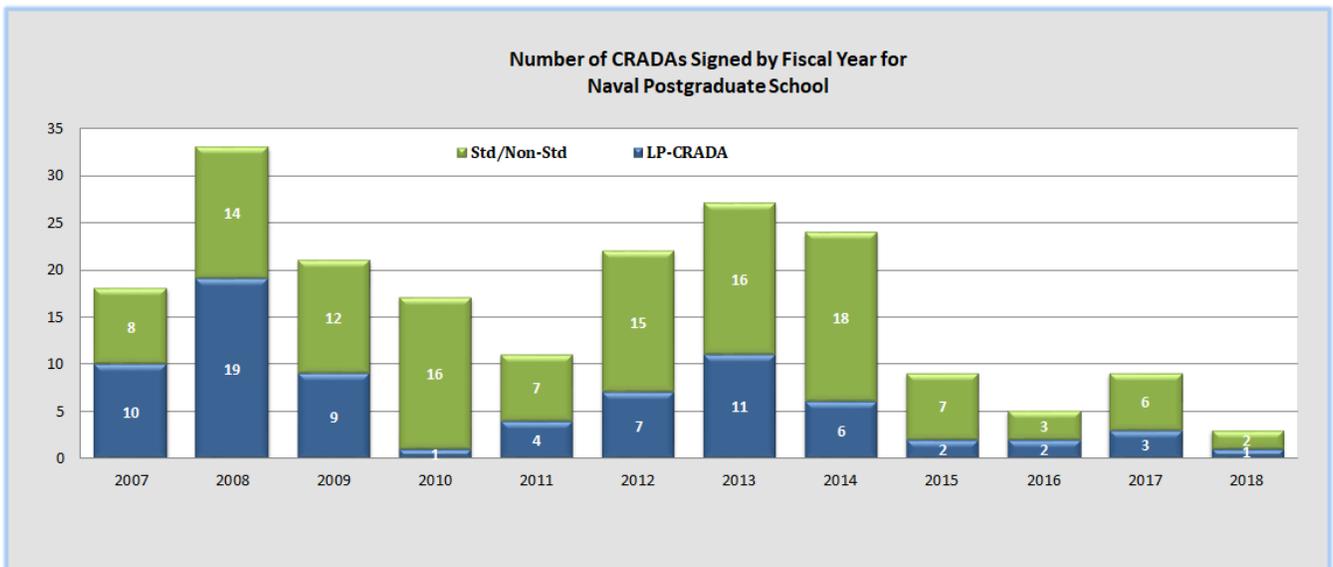
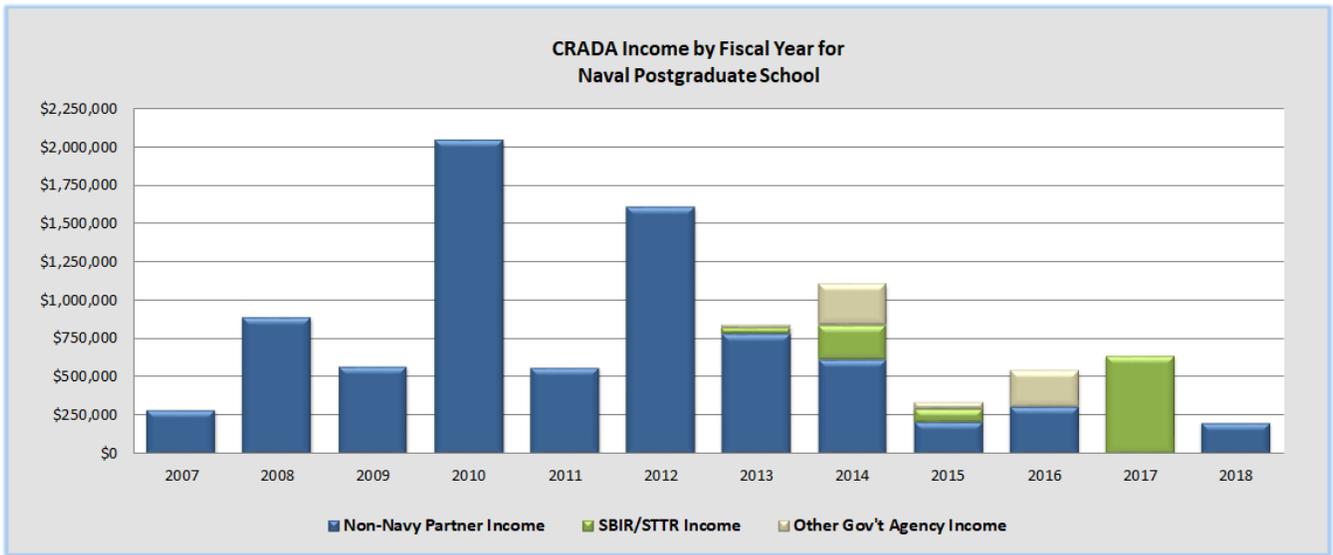


**CRADA History for
Naval Postgraduate School**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$13,984,300	-	-	-	78	17	95	95
2007	\$281,907	-	-	-	8	10	18	113
2008	\$887,399	-	-	-	14	19	33	146
2009	\$566,995	-	-	-	12	9	21	167
2010	\$2,036,811	-	-	-	16	1	17	184
2011	\$557,257	-	-	-	7	4	11	195
2012	\$1,603,746	-	-	-	15	7	22	217
2013	\$782,713	\$35,000	\$16,667	-	16	11	27	244
2014	\$611,000	\$224,559	\$269,091	-	18	6	24	268
2015	\$210,000	\$81,839	\$50,000	\$80,000	7	2	9	277
2016	\$308,000	-	\$238,344	\$240,000	3	2	5	282
2017	-	\$638,116	-	-	6	3	9	291
2018	\$200,000	-	-	-	2	1	3	294

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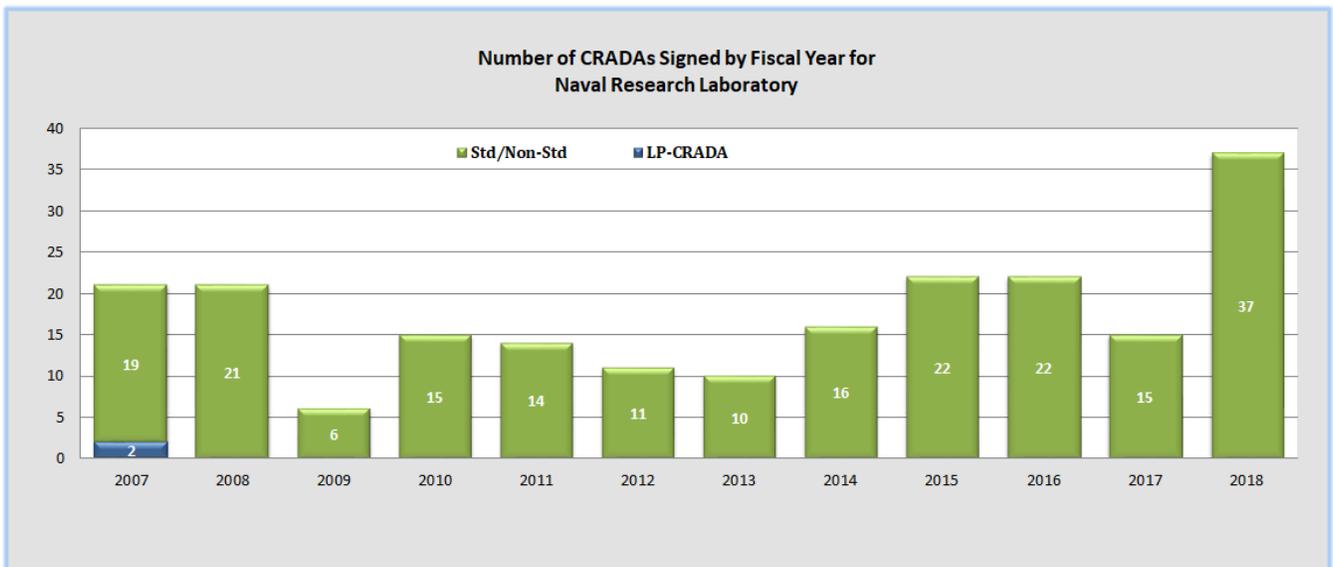
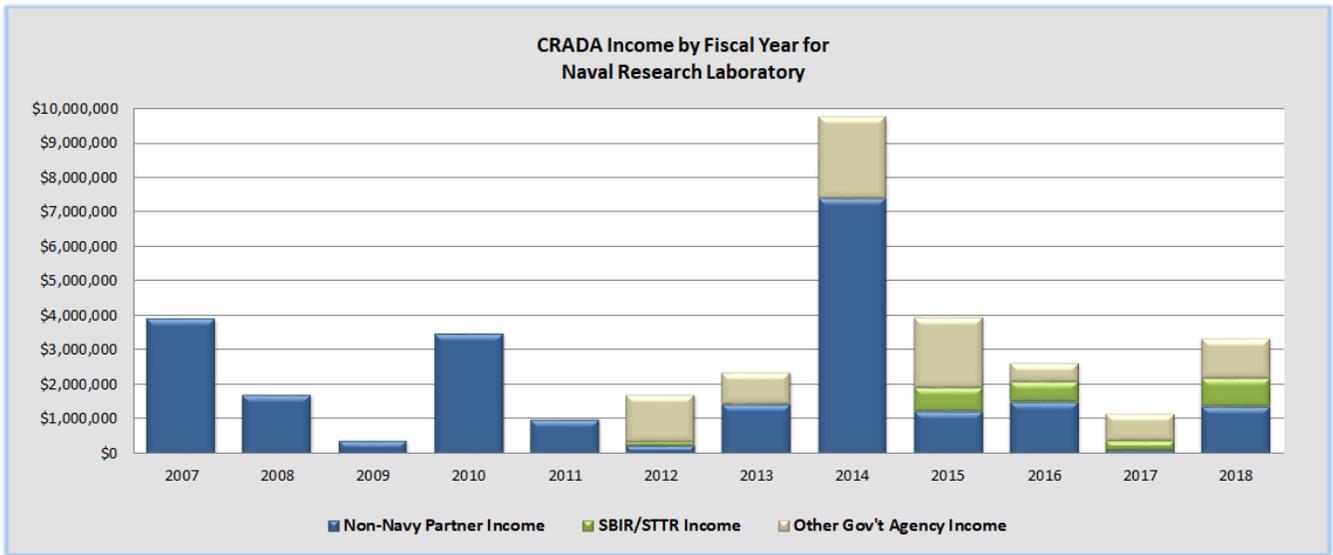


**CRADA History for
Naval Research Laboratory**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$20,068,890	-	-	-	288	53	341	341
2007	\$3,928,068	-	-	-	19	2	21	362
2008	\$1,691,238	-	-	-	21	-	21	383
2009	\$371,000	-	-	-	6	-	6	389
2010	\$3,477,067	-	-	-	15	-	15	404
2011	\$990,815	-	-	-	14	-	14	418
2012	\$246,850	\$100,000	\$1,365,799	-	11	-	11	429
2013	\$1,436,601	-	\$923,312	-	10	-	10	439
2014	\$7,386,034	-	\$2,366,492	-	16	-	16	455
2015	\$1,218,005	\$699,412	\$2,016,325	-	22	-	22	477
2016	\$1,494,793	\$597,049	\$528,000	-	22	-	22	499
2017	\$101,900	\$292,500	\$782,885	-	15	-	15	514
2018	\$1,383,510	\$810,300	\$1,143,483	\$110,000	37	-	37	551

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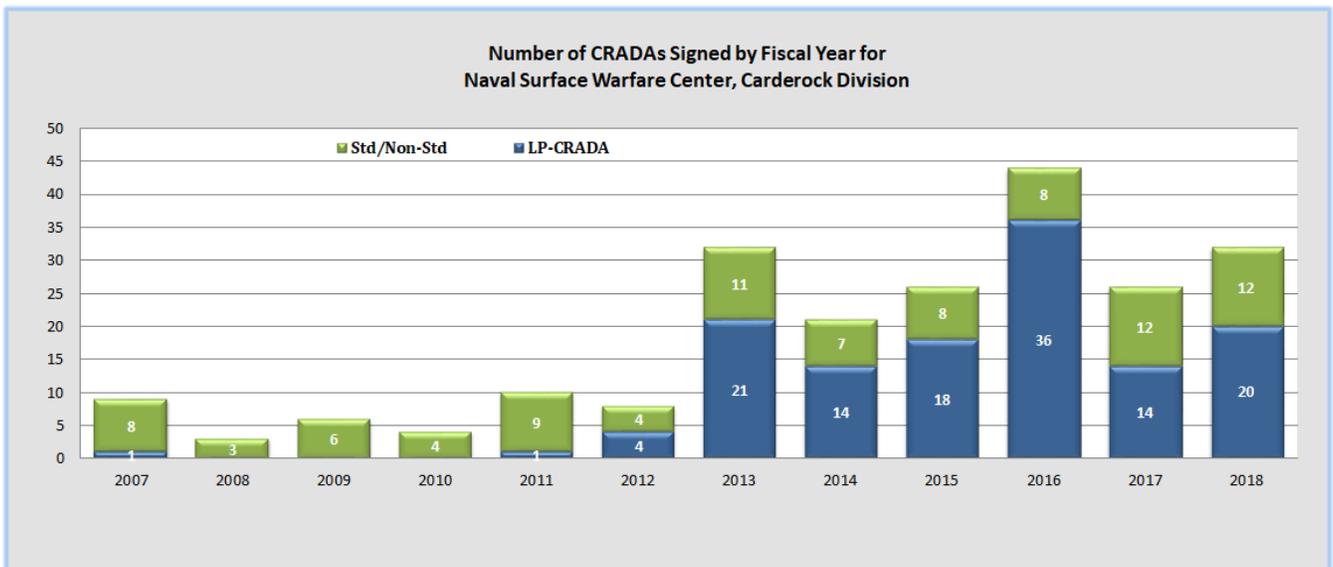
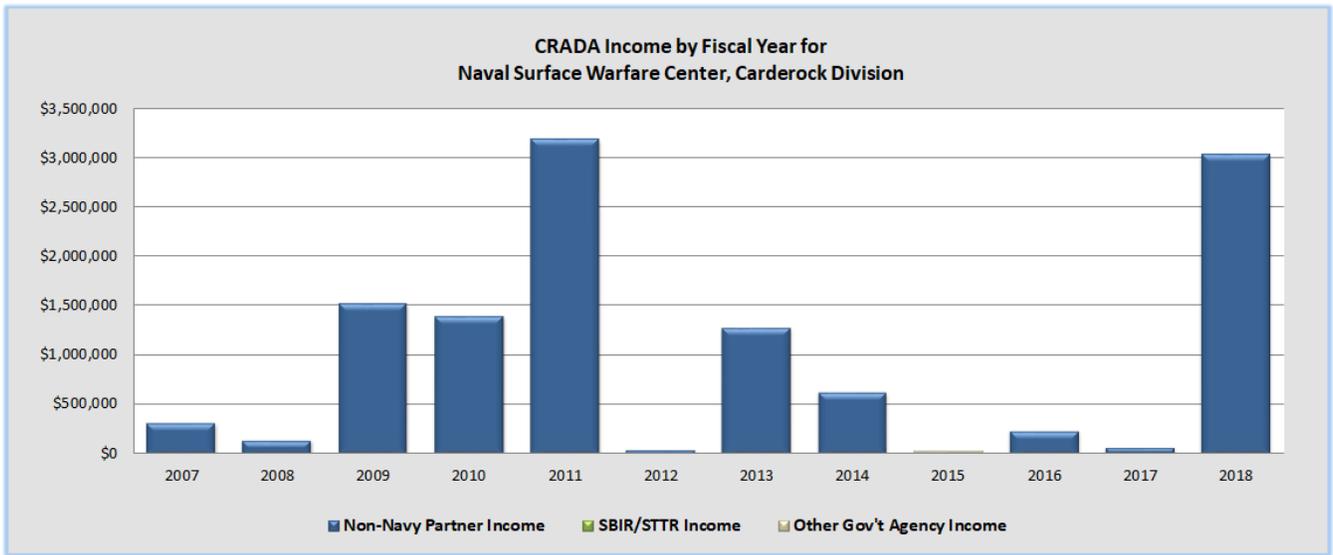


**CRADA History for
Naval Surface Warfare Center, Carderock Division**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$8,331,473	-	-	-	52	17	69	69
2007	\$316,500	-	-	-	8	1	9	78
2008	\$132,100	-	-	-	3	-	3	81
2009	\$1,518,497	-	-	-	6	-	6	87
2010	\$1,387,700	-	-	-	4	-	4	91
2011	\$3,182,384	-	-	-	9	1	10	101
2012	\$35,000	-	-	-	4	4	8	109
2013	\$1,271,800	-	-	-	11	21	32	141
2014	\$617,000	-	-	-	7	14	21	162
2015	\$16,000	-	\$14,000	-	8	18	26	188
2016	\$230,000	-	-	-	8	36	44	232
2017	\$61,000	-	-	-	12	14	26	258
2018	\$3,028,972	-	-	-	12	20	32	290

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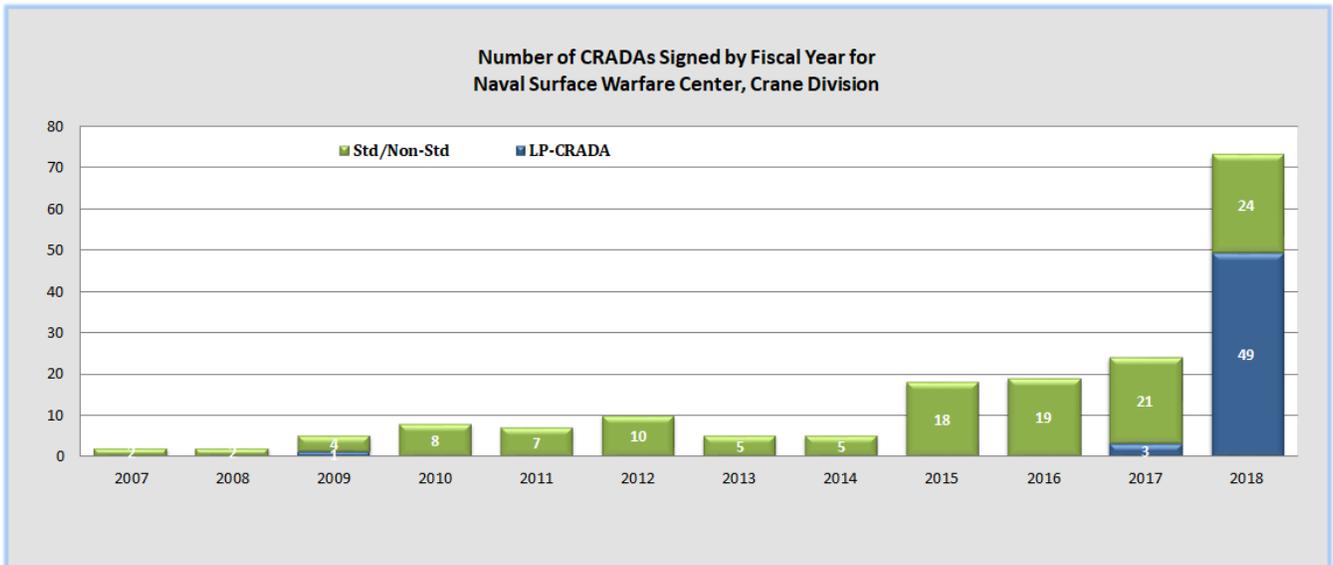
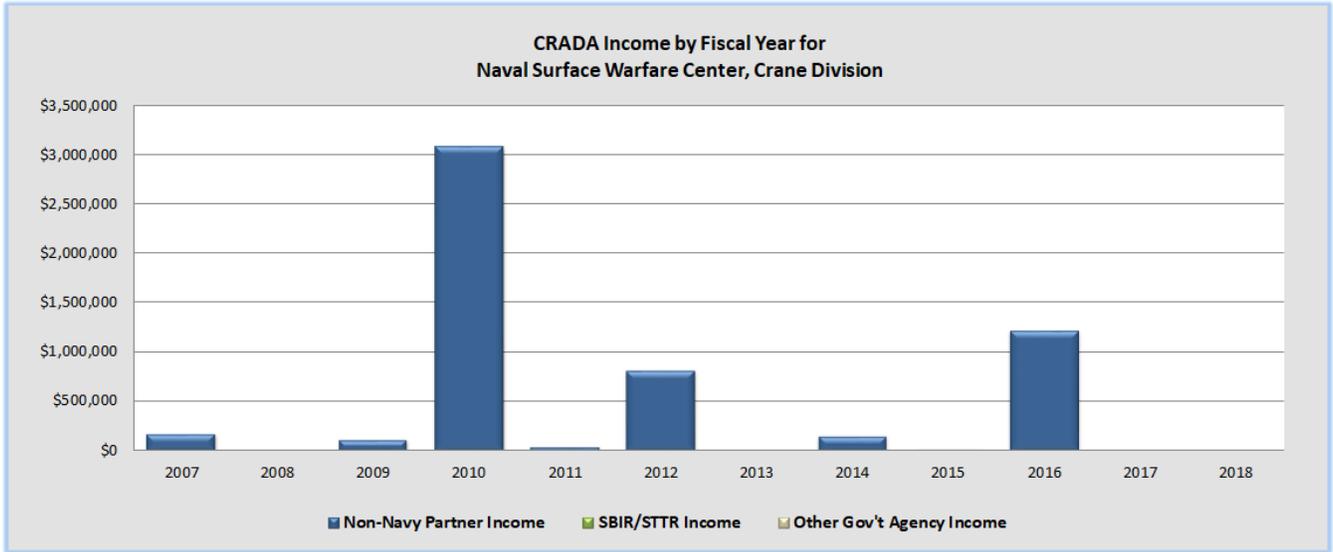


**CRADA History for
Naval Surface Warfare Center, Crane Division**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$3,777,300	-	-	-	29	28	57	57
2007	\$175,000	-	-	-	2	-	2	59
2008	-	-	-	-	2	-	2	61
2009	\$114,912	-	-	-	4	1	5	66
2010	\$3,078,633	-	-	-	8	-	8	74
2011	\$37,200	-	-	-	7	-	7	81
2012	\$810,108	-	-	-	10	-	10	91
2013	-	-	-	-	5	-	5	96
2014	\$150,000	-	-	-	5	-	5	101
2015	\$20,000	-	-	-	18	-	18	119
2016	\$1,212,000	-	-	-	19	-	19	138
2017	-	-	-	-	21	3	24	162
2018	-	-	-	-	24	49	73	235

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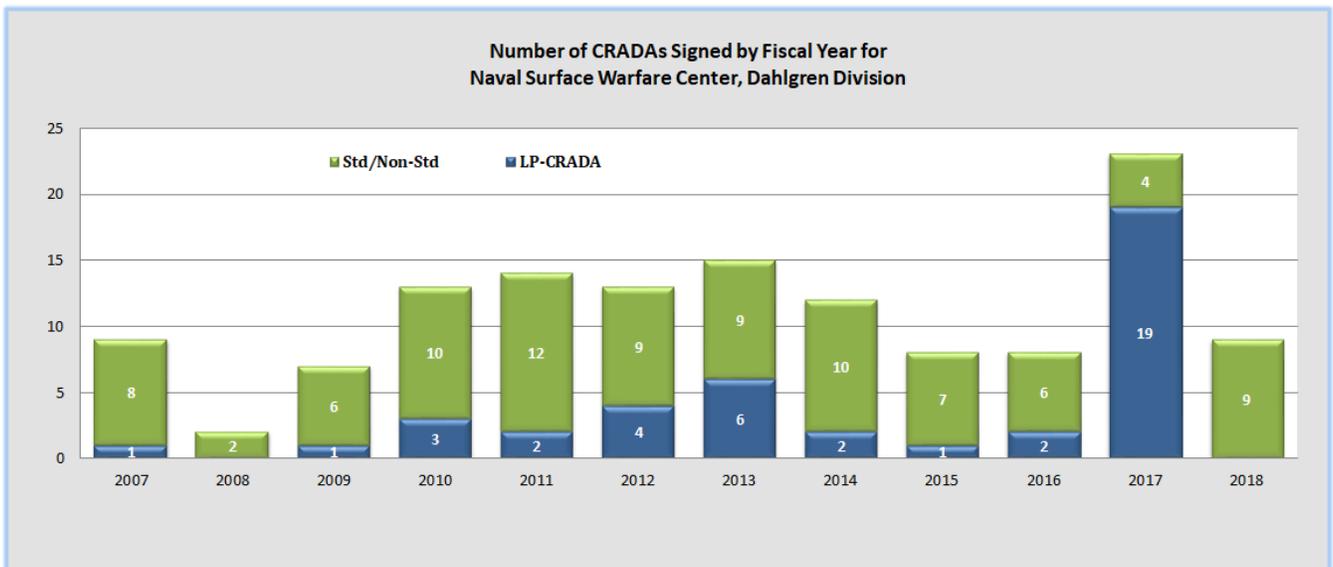
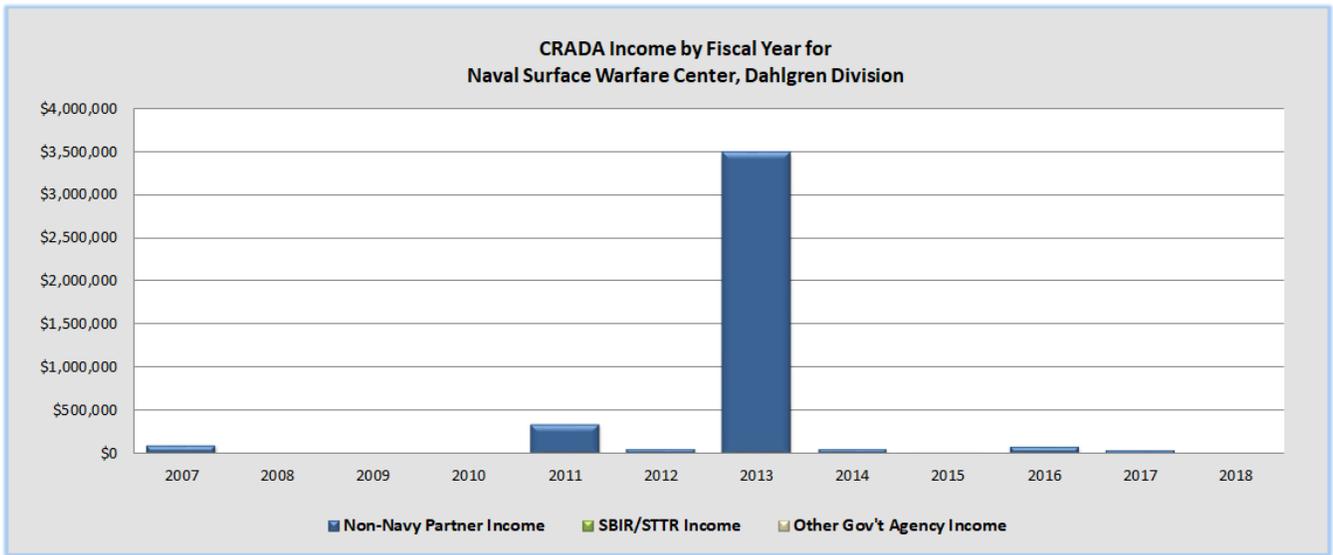


**CRADA History for
Naval Surface Warfare Center, Dahlgren Division**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$2,485,477	-	-	-	69	1	70	70
2007	\$100,000	-	-	-	8	1	9	79
2008	-	-	-	-	2	-	2	81
2009	-	-	-	-	6	1	7	88
2010	-	-	-	-	10	3	13	101
2011	\$339,561	-	-	-	12	2	14	115
2012	\$56,337	-	-	-	9	4	13	128
2013	\$3,485,211	-	-	-	9	6	15	143
2014	\$60,500	-	-	-	10	2	12	155
2015	\$10,000	-	-	-	7	1	8	163
2016	\$84,628	-	-	-	6	2	8	171
2017	\$50,000	-	-	-	4	19	23	194
2018	-	-	-	-	9	-	9	203

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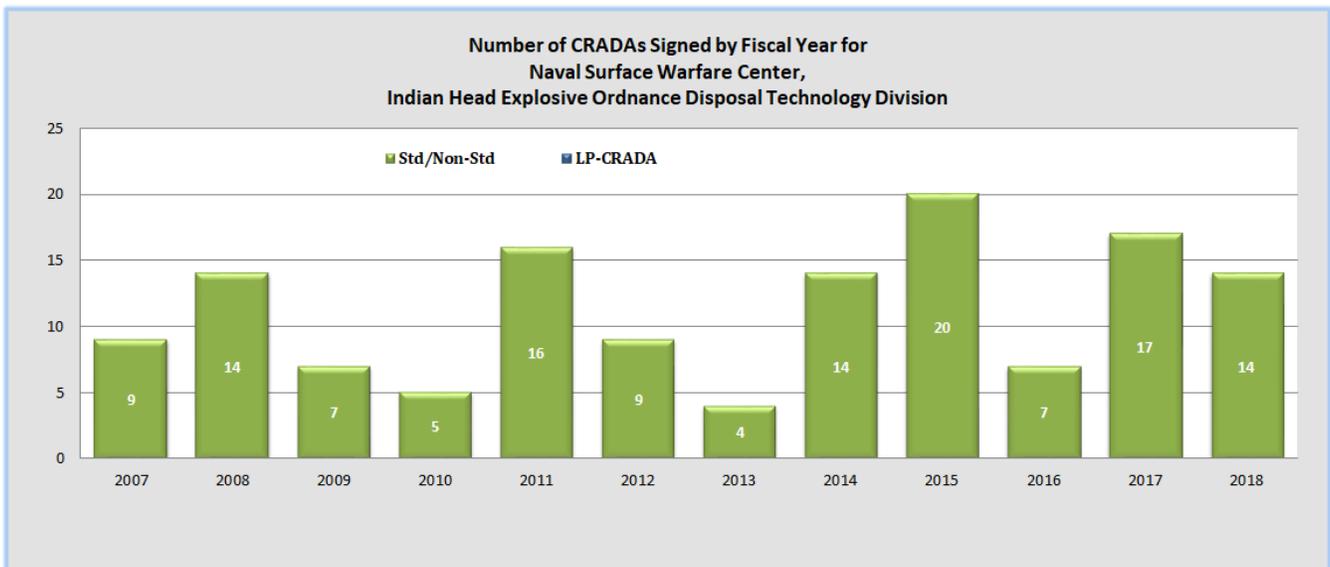
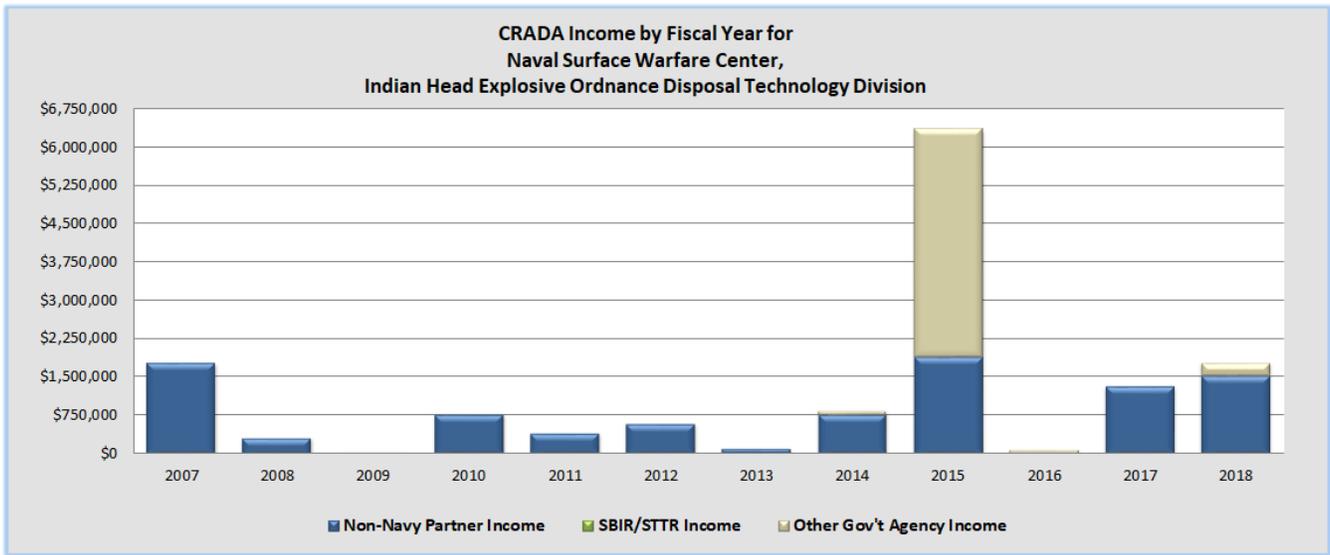


**CRADA History for
Naval Surface Warfare Center,
Indian Head Explosive Ordnance Disposal Technology Division**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$2,083,650	-	-	-	93	4	97	97
2007	\$1,761,340	-	-	-	9	-	9	106
2008	\$300,632	-	-	-	14	-	14	120
2009	\$15,000	-	-	-	7	-	7	127
2010	\$760,000	-	-	-	5	-	5	132
2011	\$385,107	-	-	-	16	-	16	148
2012	\$572,300	-	-	-	9	-	9	157
2013	\$98,000	-	-	-	4	-	4	161
2014	\$770,600	-	\$50,453	-	14	-	14	175
2015	\$1,893,148	-	\$4,448,584	-	20	-	20	195
2016	-	-	\$70,000	-	7	-	7	202
2017	\$1,310,772	-	-	\$283,419	17	-	17	219
2018	\$1,509,387	-	\$267,216	-	14	-	14	233

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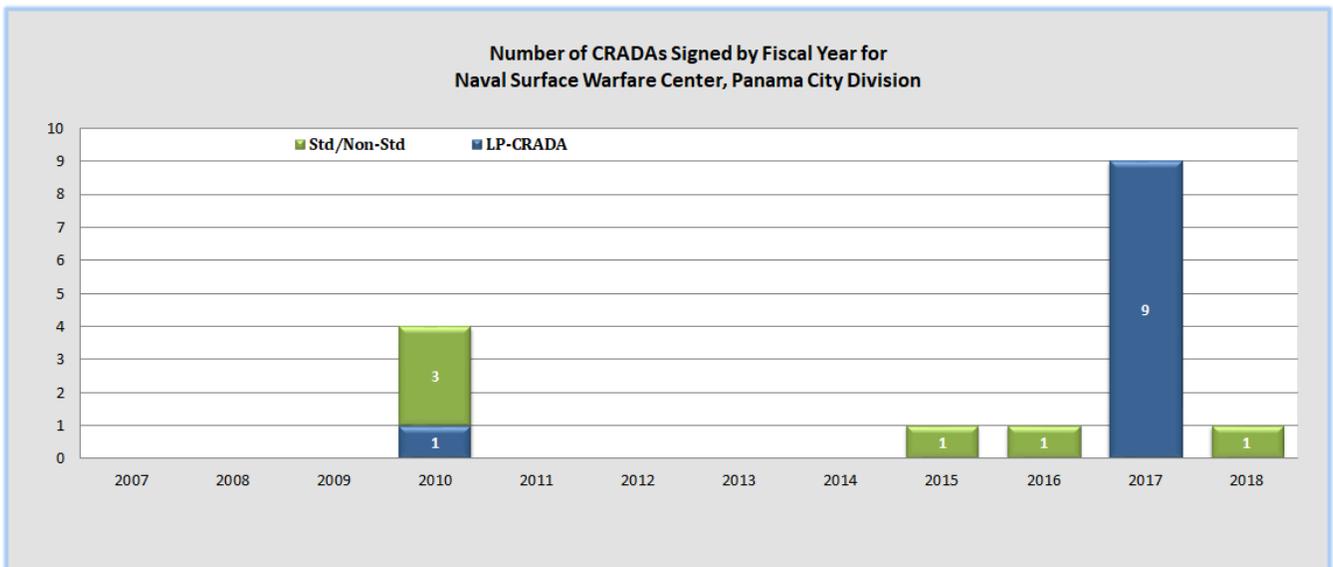
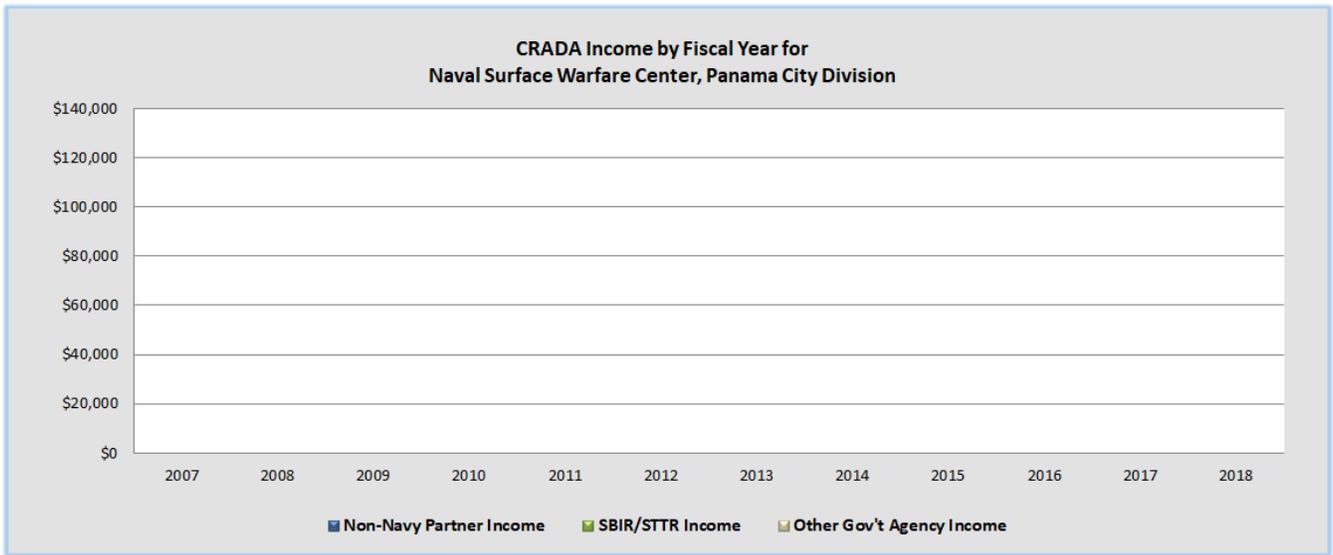


**CRADA History for
Naval Surface Warfare Center, Panama City Division**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-
2010	-	-	-	-	3	1	4	4
2011	-	-	-	-	-	-	-	4
2012	-	-	-	-	-	-	-	4
2013	-	-	-	-	-	-	-	4
2014	-	-	-	-	-	-	-	4
2015	-	-	-	-	1	-	1	5
2016	-	-	-	-	1	-	1	6
2017	-	-	-	-	-	9	9	15
2018	-	-	-	-	1	-	1	16

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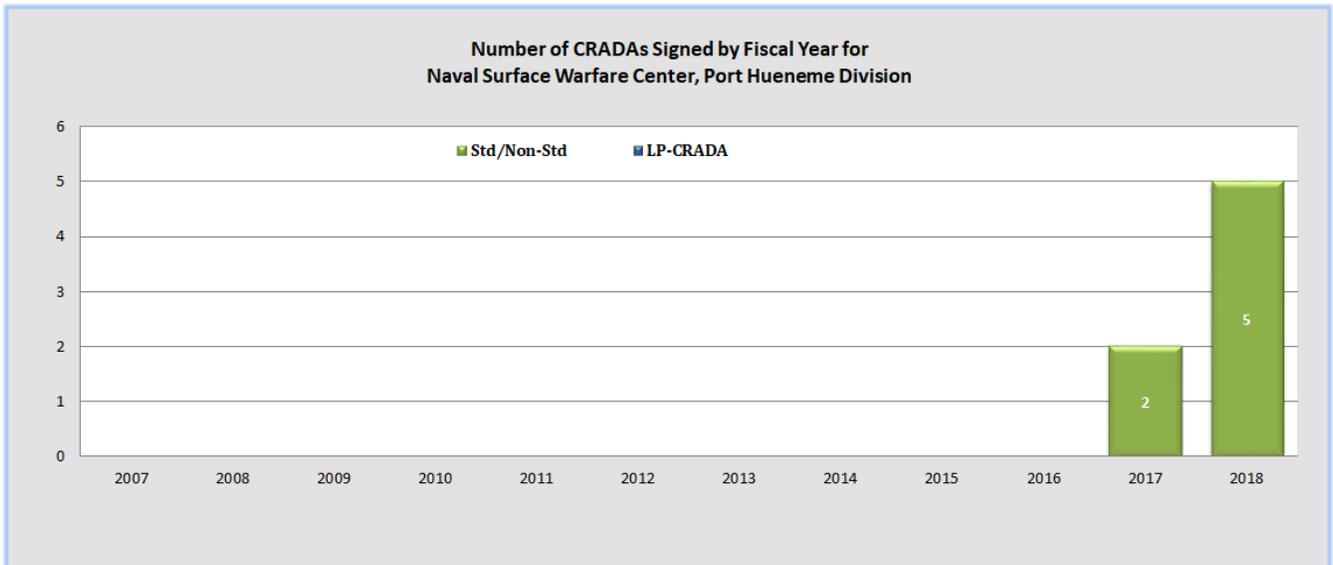
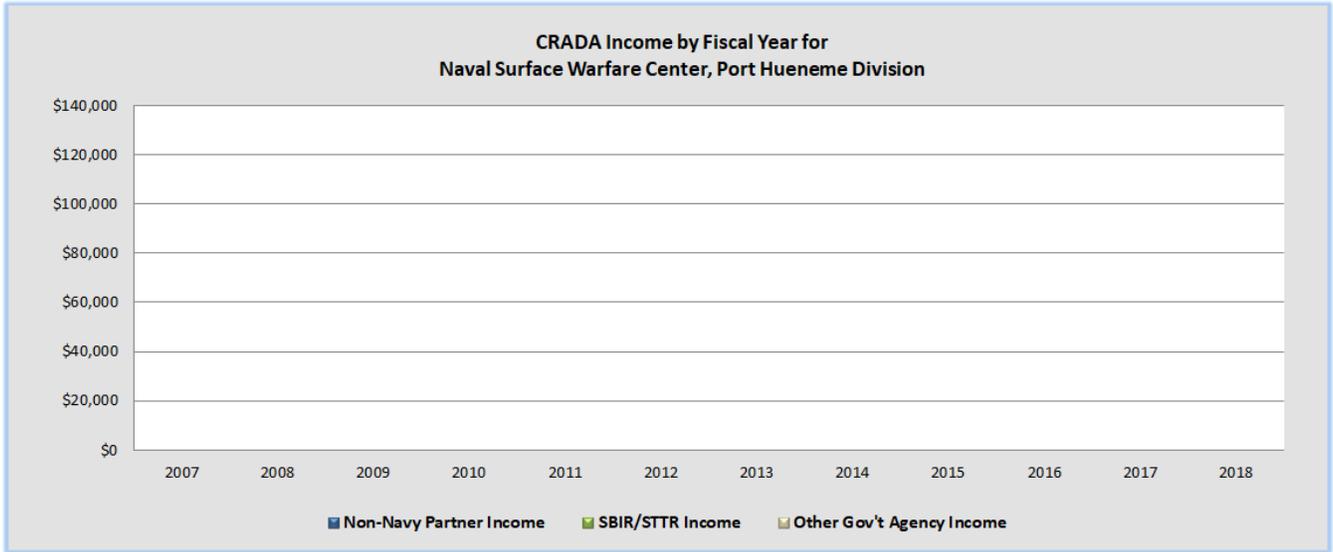


**CRADA History for
Naval Surface Warfare Center, Port Hueneme Division**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$554,200	-	-	-	3	-	3	3
2007	-	-	-	-	-	-	-	3
2008	-	-	-	-	-	-	-	3
2009	-	-	-	-	-	-	-	3
2010	-	-	-	-	-	-	-	3
2011	-	-	-	-	-	-	-	3
2012	-	-	-	-	-	-	-	3
2013	-	-	-	-	-	-	-	3
2014	-	-	-	-	-	-	-	3
2015	-	-	-	-	-	-	-	3
2016	-	-	-	-	-	-	-	3
2017	-	-	-	-	2	-	2	5
2018	-	-	-	-	5	-	5	10

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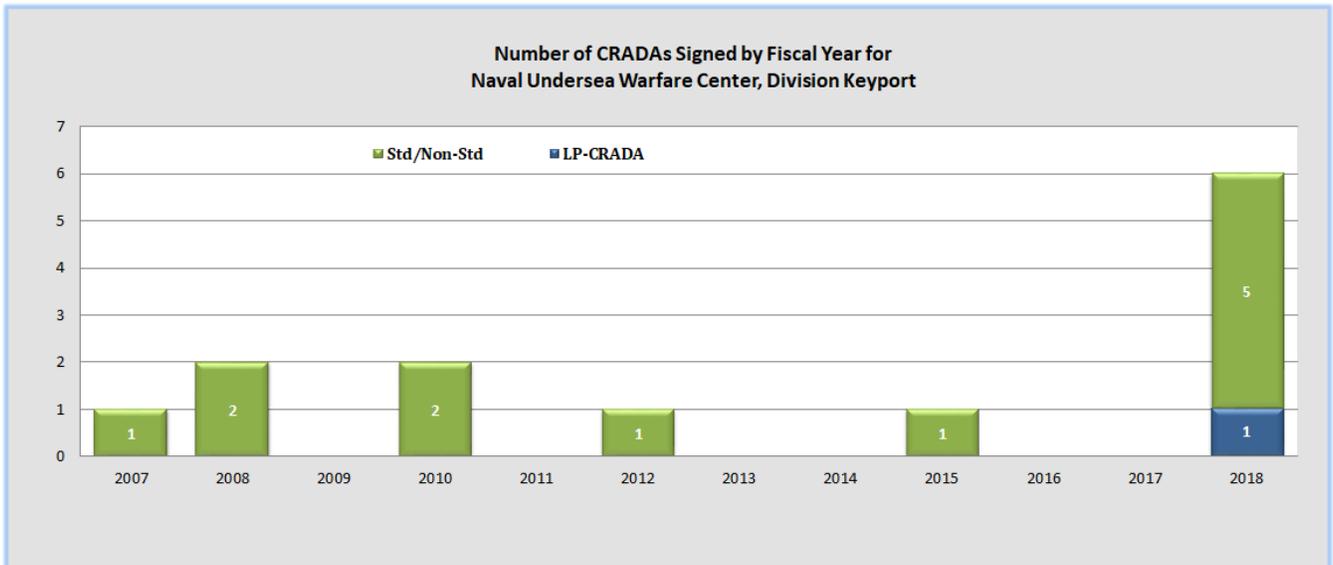
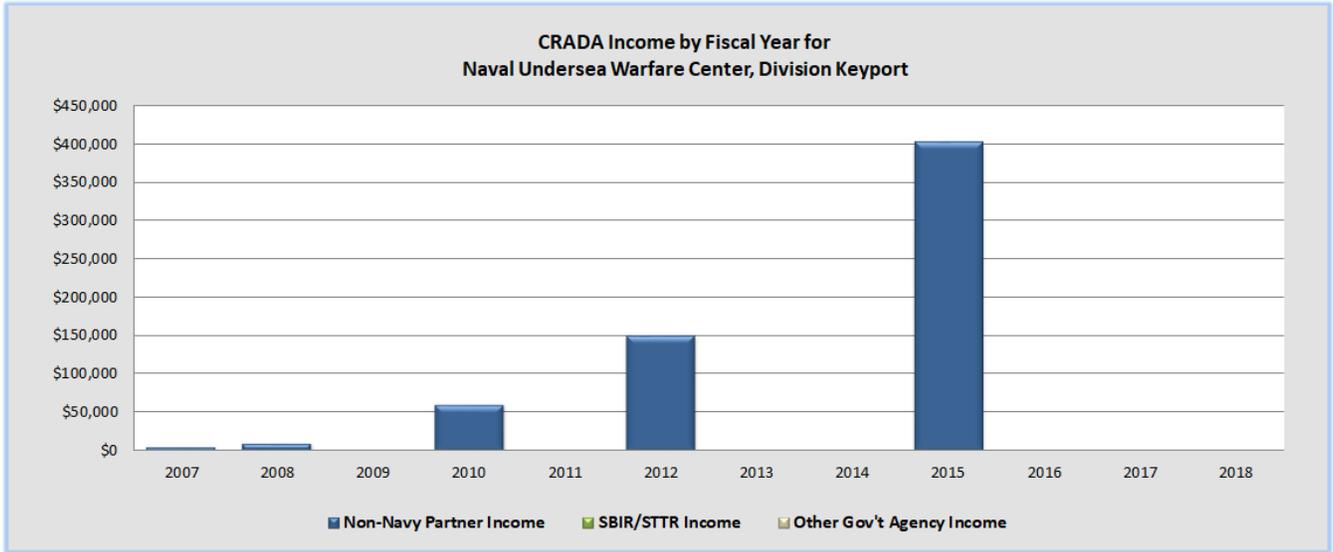


**CRADA History for
Naval Undersea Warfare Center, Division Keyport**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	-	-	-	-	5	1	6	6
2007	\$5,000	-	-	-	1	-	1	7
2008	\$10,000	-	-	-	2	-	2	9
2009	-	-	-	-	-	-	-	9
2010	\$60,300	-	-	-	2	-	2	11
2011	-	-	-	-	-	-	-	11
2012	\$150,000	-	-	-	1	-	1	12
2013	-	-	-	-	-	-	-	12
2014	-	-	-	-	-	-	-	12
2015	\$401,579	-	-	-	1	-	1	13
2016	-	-	-	-	-	-	-	13
2017	-	-	-	-	-	-	-	13
2018	-	-	-	-	5	1	6	19

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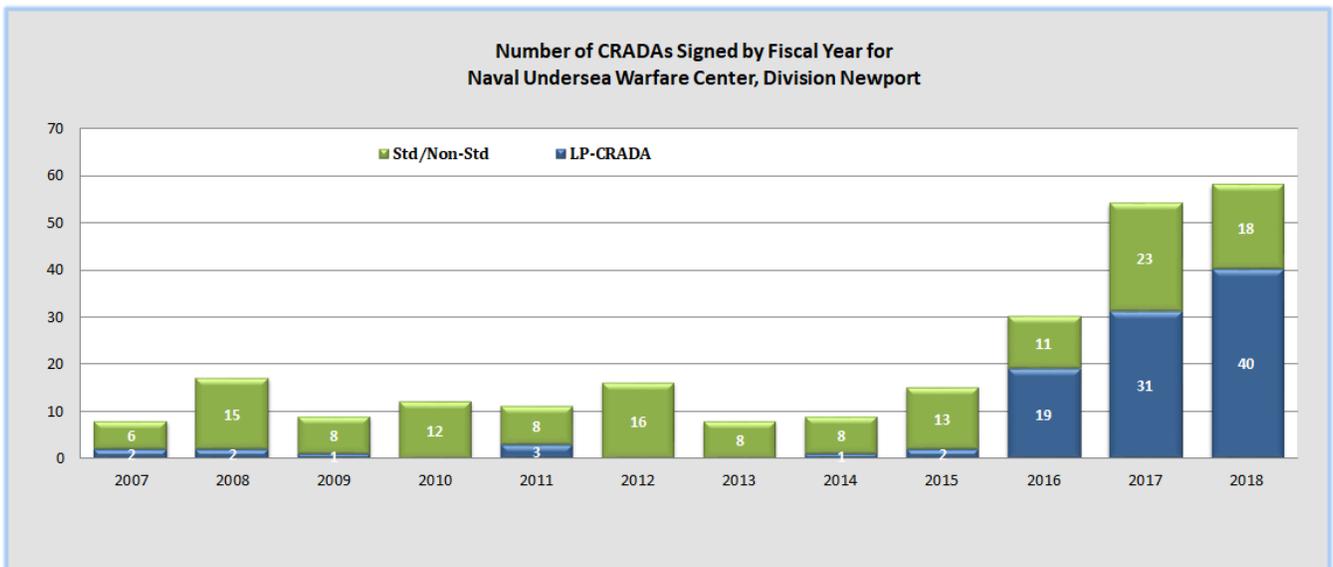
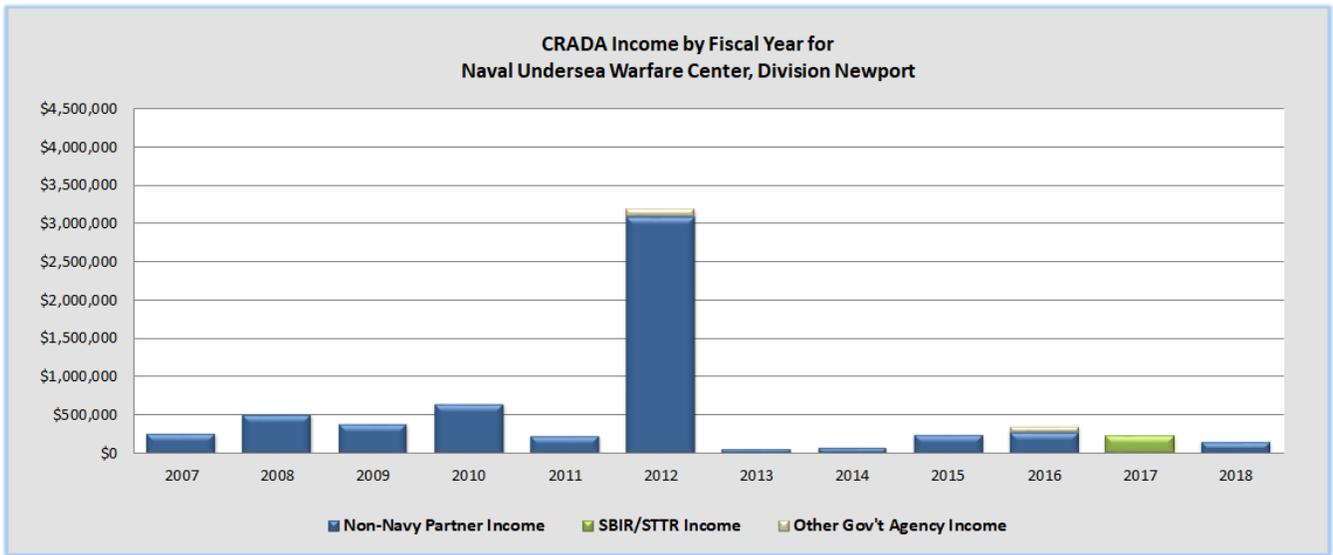


**CRADA History for
Naval Undersea Warfare Center, Division Newport**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$13,876,533	-	-	-	162	9	171	171
2007	\$265,000	-	-	-	6	2	8	179
2008	\$505,907	-	-	-	15	2	17	196
2009	\$384,500	-	-	-	8	1	9	205
2010	\$638,898	-	-	-	12	-	12	217
2011	\$226,500	-	-	-	8	3	11	228
2012	\$3,069,629	-	\$105,000	-	16	-	16	244
2013	\$62,000	-	-	-	8	-	8	252
2014	\$75,000	-	-	-	8	1	9	261
2015	\$246,028	-	-	-	13	2	15	276
2016	\$286,200	-	\$71,624	-	11	19	30	306
2017	\$10,000	\$229,500	-	-	23	31	54	360
2018	\$155,560	-	-	\$100,000	18	40	58	418

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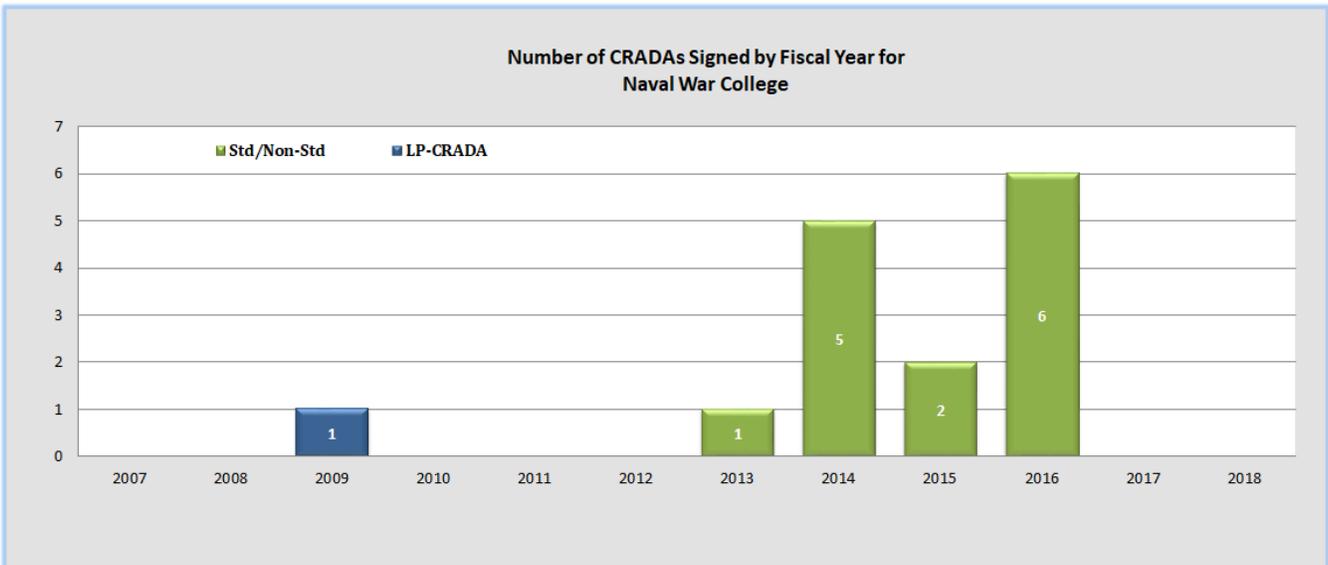
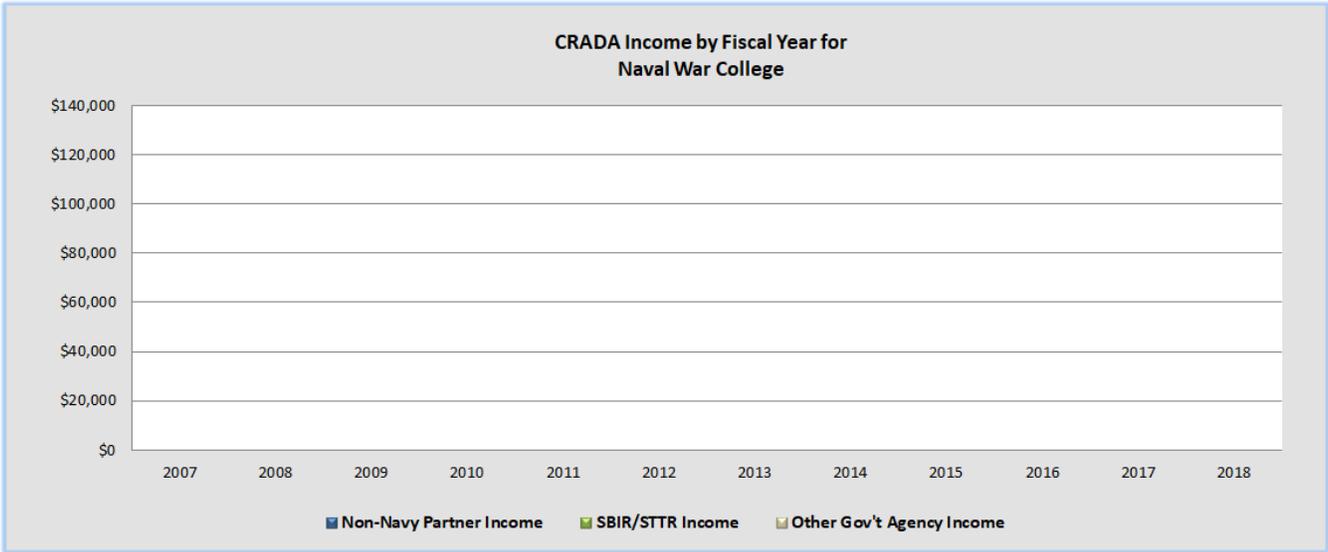


CRADA History for
Naval War College

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$126,934	-	-	-	6	-	6	6
2007	-	-	-	-	-	-	-	6
2008	-	-	-	-	-	-	-	6
2009	-	-	-	-	-	1	1	7
2010	-	-	-	-	-	-	-	7
2011	-	-	-	-	-	-	-	7
2012	-	-	-	-	-	-	-	7
2013	-	-	-	-	1	-	1	8
2014	-	-	-	-	5	-	5	13
2015	-	-	-	-	2	-	2	15
2016	-	-	-	-	6	-	6	21
2017	-	-	-	-	-	-	-	21
2018	-	-	-	-	-	-	-	21

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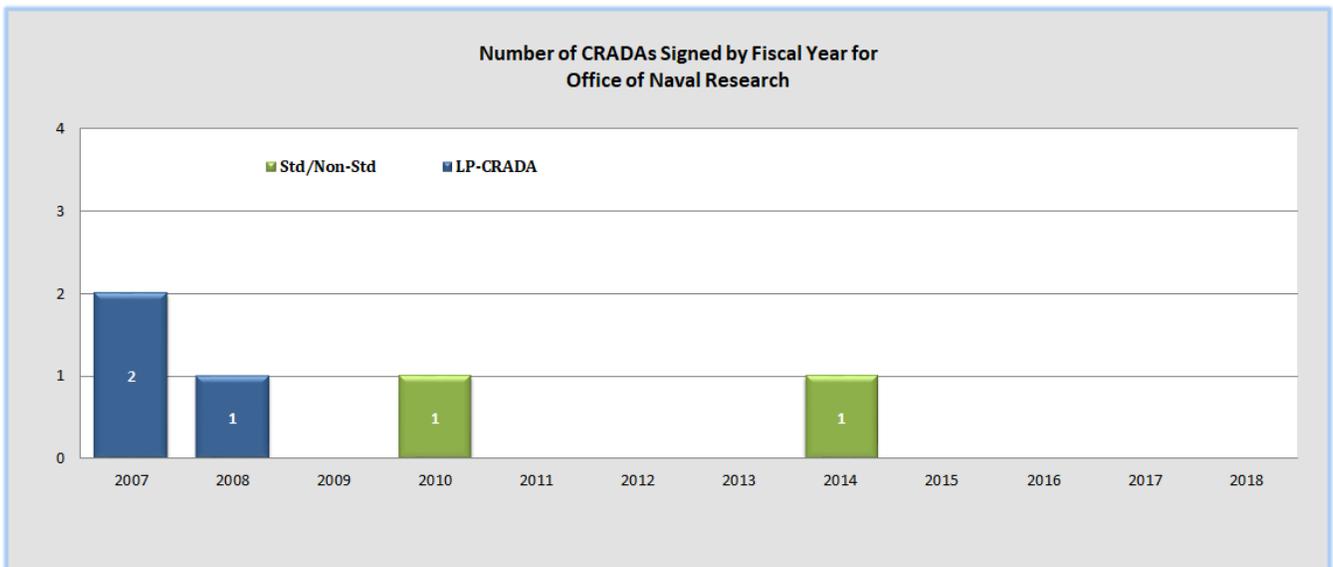
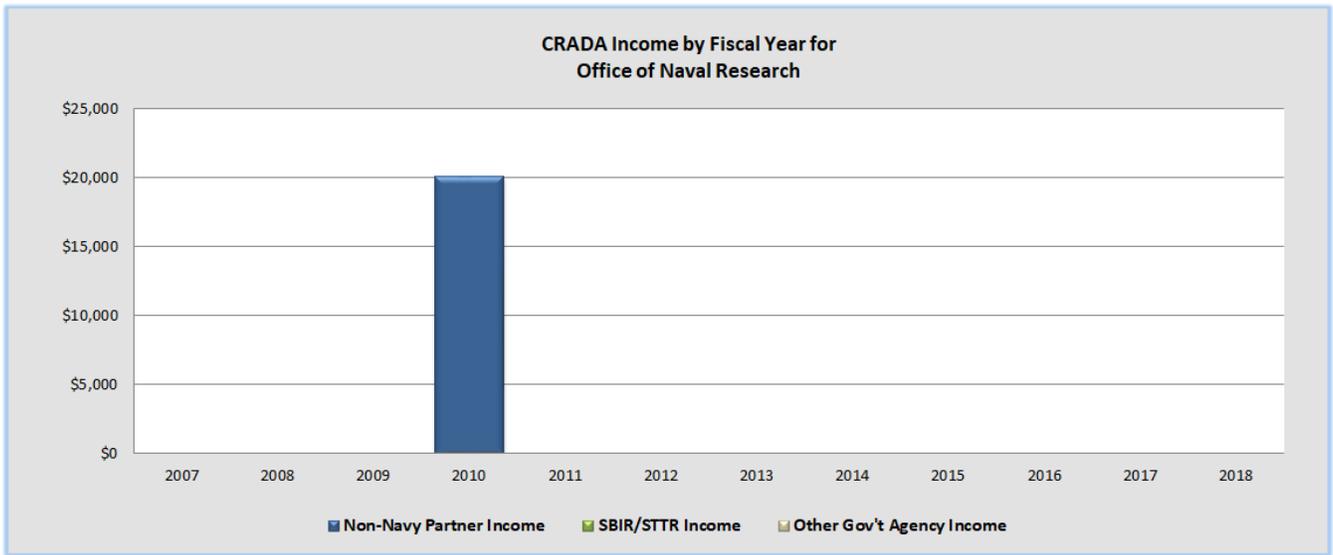


**CRADA History for
Office of Naval Research**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	-	-	-	-	4	2	6	6
2007	-	-	-	-	-	2	2	8
2008	-	-	-	-	-	1	1	9
2009	-	-	-	-	-	-	-	9
2010	\$20,000	-	-	-	1	-	1	10
2011	-	-	-	-	-	-	-	10
2012	-	-	-	-	-	-	-	10
2013	-	-	-	-	-	-	-	10
2014	-	-	-	-	1	-	1	11
2015	-	-	-	-	-	-	-	11
2016	-	-	-	-	-	-	-	11
2017	-	-	-	-	-	-	-	11
2018	-	-	-	-	-	-	-	11

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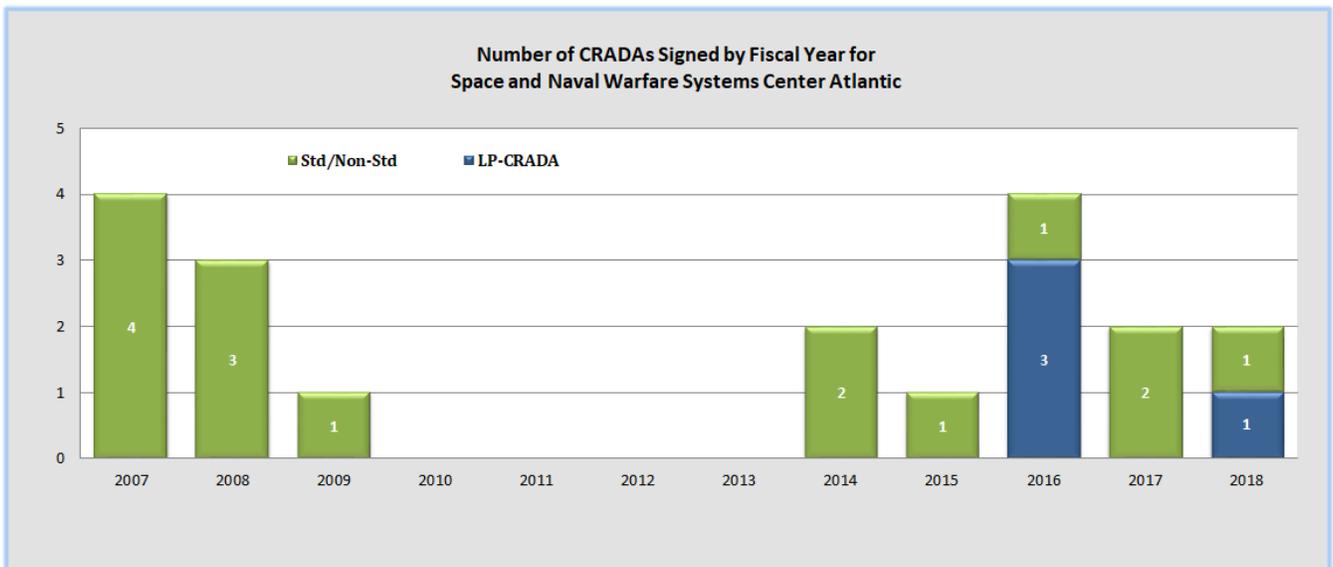
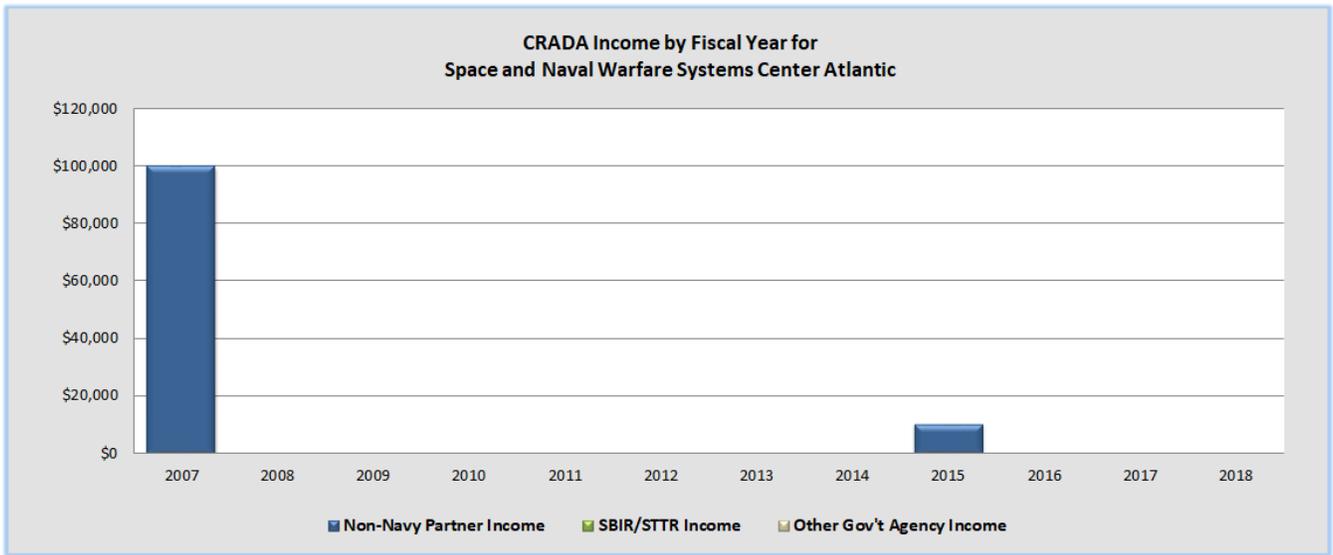


**CRADA History for
Space and Naval Warfare Systems Center Atlantic**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$2,146,480	-	-	-	11	-	11	11
2007	\$100,000	-	-	-	4	-	4	15
2008	-	-	-	-	3	-	3	18
2009	-	-	-	-	1	-	1	19
2010	-	-	-	-	-	-	-	19
2011	-	-	-	-	-	-	-	19
2012	-	-	-	-	-	-	-	19
2013	-	-	-	-	-	-	-	19
2014	-	-	-	-	2	-	2	21
2015	\$10,200	-	-	-	1	-	1	22
2016	-	-	-	-	1	3	4	26
2017	-	-	-	-	2	-	2	28
2018	-	-	-	-	1	1	2	30

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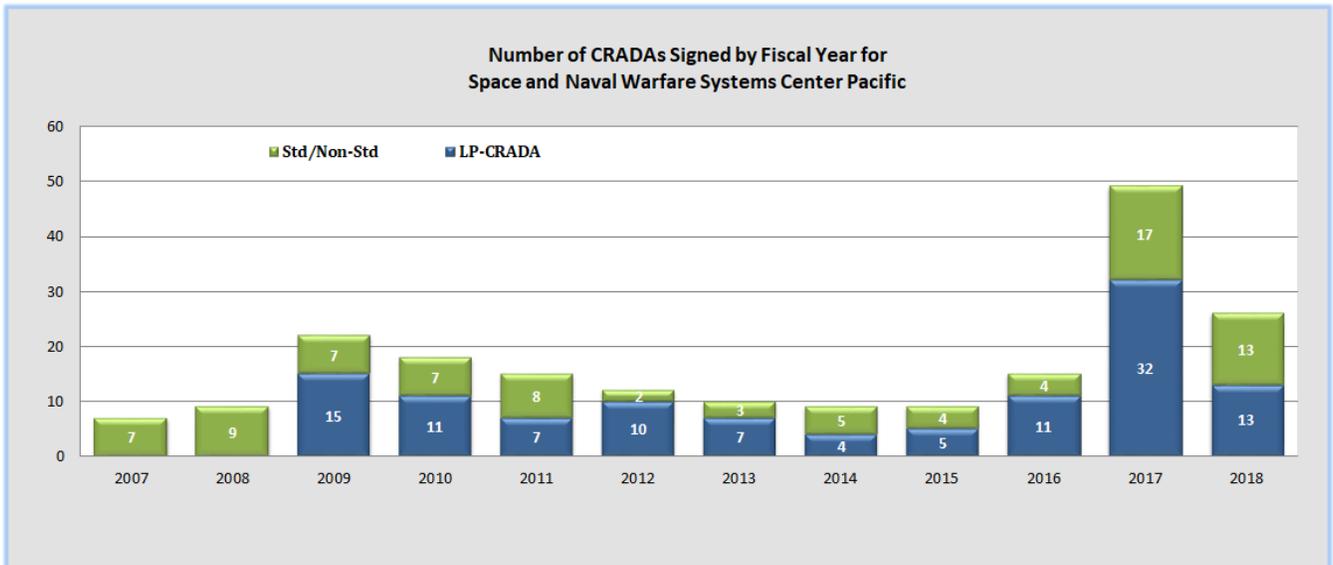
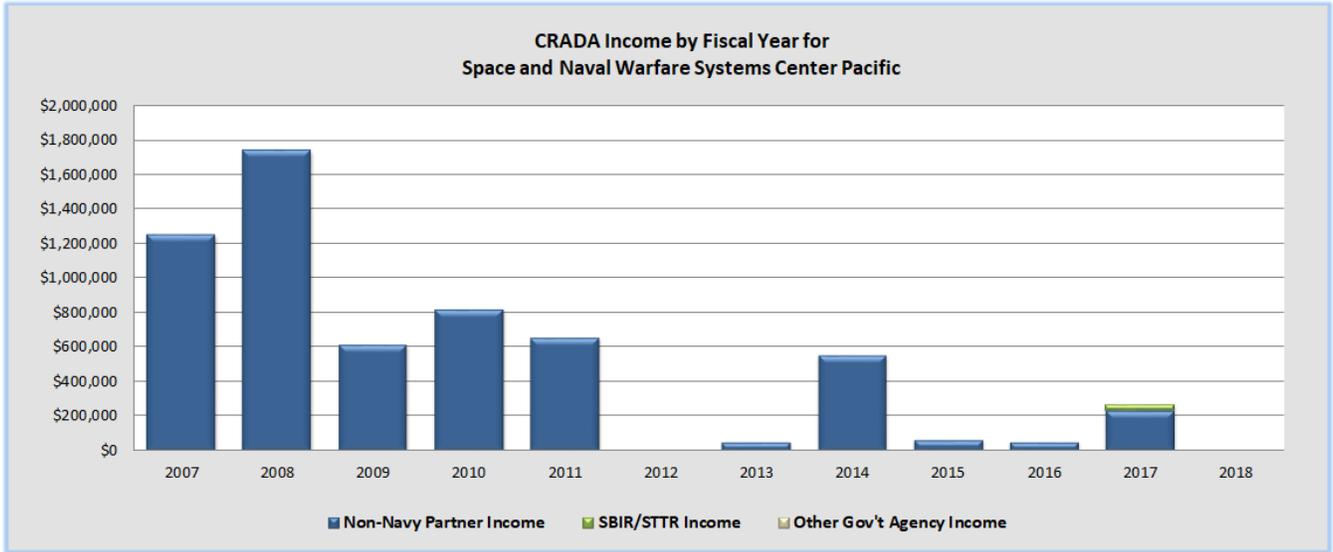


**CRADA History for
Space and Naval Warfare Systems Center Pacific**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$5,344,859	-	-	-	59	2	61	61
2007	\$1,250,000	-	-	-	7	-	7	68
2008	\$1,736,900	-	-	-	9	-	9	77
2009	\$609,613	-	-	-	7	15	22	99
2010	\$818,000	-	-	-	7	11	18	117
2011	\$655,000	-	-	-	8	7	15	132
2012	-	-	-	-	2	10	12	144
2013	\$50,000	-	-	-	3	7	10	154
2014	\$550,000	-	-	-	5	4	9	163
2015	\$60,000	-	-	-	4	5	9	172
2016	\$50,000	-	-	-	4	11	15	187
2017	\$230,000	\$37,210	-	-	17	32	49	236
2018	-	-	-	-	13	13	26	262

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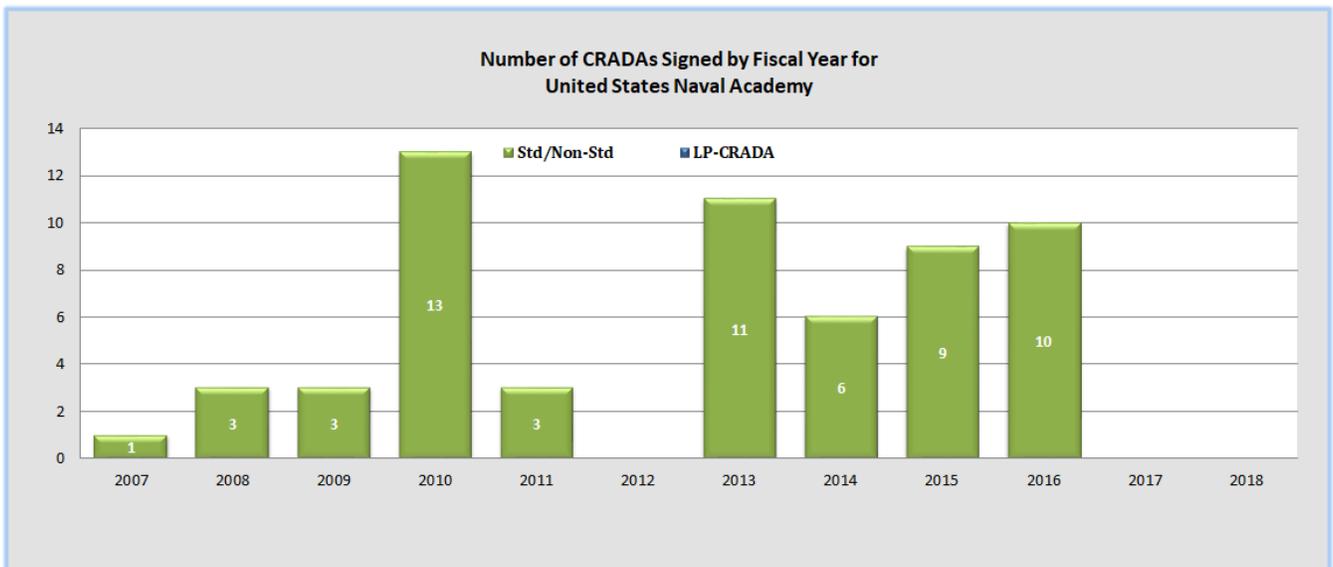
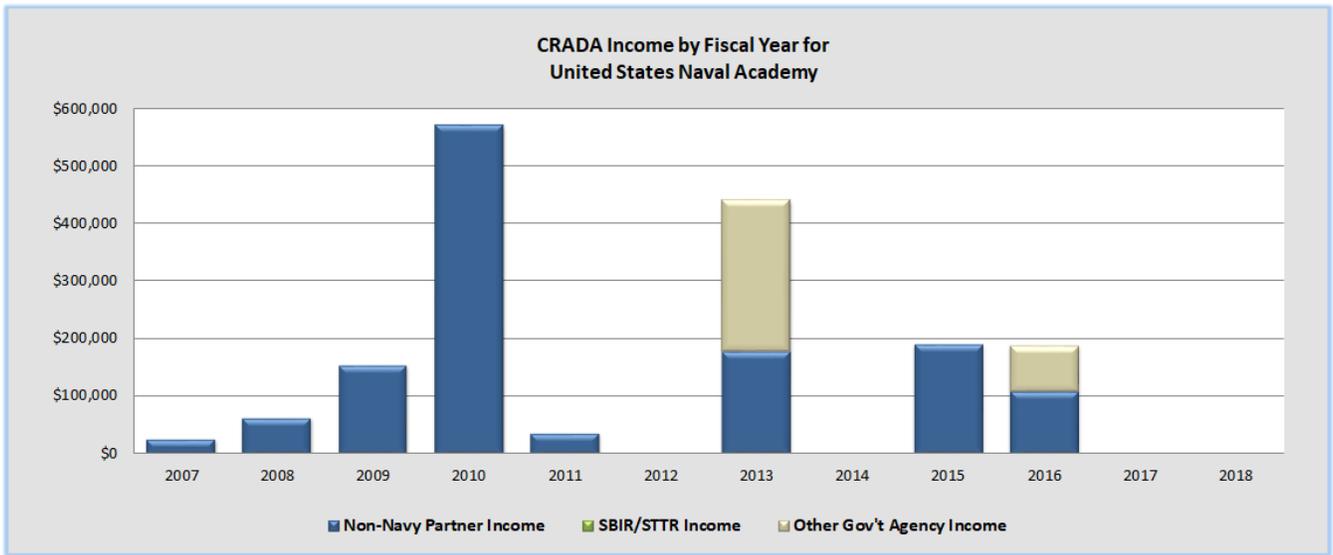


**CRADA History for
United States Naval Academy**

Fiscal Year	Income from Non-Navy Partner*	Income from SBIR/STTR*	Income from Other Gov't Agencies*	Income from Amendments**	Number of CRADAs Signed			
					Std/Non-Std	LP-CRADA	Total	Cumulative
1989-2006	\$2,000	-	-	-	3	-	3	3
2007	\$26,000	-	-	-	1	-	1	4
2008	\$62,430	-	-	-	3	-	3	7
2009	\$153,428	-	-	-	3	-	3	10
2010	\$570,218	-	-	-	13	-	13	23
2011	\$35,324	-	-	-	3	-	3	26
2012	-	-	-	-	-	-	-	26
2013	\$177,869	-	\$261,663	-	11	-	11	37
2014	-	-	-	-	6	-	6	43
2015	\$190,922	-	-	-	9	-	9	52
2016	\$107,619	-	\$80,197	\$31,700	10	-	10	62
2017	-	-	-	-	-	-	-	62
2018	-	-	-	-	-	-	-	62

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** Amendment income from SBIR/STTR and other government agencies is not included.



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APPENDIX C

FY18 CRADA LISTING

Fleet Readiness Center Southwest

Non-Federal Partner	CRADA Number	Subject
Indiana Tool & Mfg. Co., Inc.	NCRADA-FRCSW-18-010	NAVAIR FRCSW Blockchain Exploration Program
Universal Synaptics Corporation	LP-CRADA-FRCSW-18-009	Portable Voyager Intermittent Fault Detector

Naval Air Warfare Center Aircraft Division, Lakehurst

Non-Federal Partner	CRADA Number	Subject
CarboMet, LLC	NCRADA-NAWCADLKE-18-327	Chemical Vapor Infiltration of Carbon Nanotubes into Aluminum to Form Composites for Use in Naval Operations

Naval Air Warfare Center Aircraft Division, Patuxent River

Non-Federal Partner	CRADA Number	Subject
Auburn University National Center for Additive Manufacturing Excellence	NCRADA-NAWCADPAX-18-341	Additively Manufactured Lattice Structure Characterization and Development
Aviation Devices and Electronic Components, LLC	LP-CRADA-NAWCADPAX-18-328	Transfer of Aluminum Anode Alloy
CHEMEON Surface Technology, LLC	LP-CRADA-NAWCADPAX-17-322	Transfer of NAVOIL Technologies
CHEMEON Surface Technology, LLC	LP-CRADA-NAWCADPAX-18-345	Transfer of Corrosion Inhibitors Technology
Federal Industries, Inc.	NSLP-CRADA-NAWCADPAX-18-343	Transfer of KC-130 Refueling Pod
H-I-S Paint Manufacturing Company, Inc.; and 3Chem Corporation	LP-CRADA-NAWCADPAX-18-347	Transfer of Corrosion Inhibitors Technology
Honeywell International, Inc.	LP-CRADA-NAWCADPAX-18-346	Megawatt Generator Equipment Transfer for Enhanced Design and Performance Evaluation
Honeywell International, Inc.	NSLP-CRADA-NAWCADPAX-18-331	Test and Evaluation to Measure Dimensional Control of Additive Manufactured Parts

Naval Air Warfare Center Aircraft Division, Patuxent River (Continued)

Non-Federal Partner	CRADA Number	Subject
Kamatics Corporation	LP-CRADA-NAWCADPAX-18-335	MH-60 Swashplate Scissors Spherical Bearing Initiative
KEYW Corporation	LP-CRADA-NAWCADPAX-18-356	Transfer of "Unit 9" Next Generation Multi-Band Synthetic Aperture Radar and the Agilepod
L-3 Technologies, Photonics Division	NCRADA-NAWCADPAX-17-316	Experimental Validation of Monte Carlo Codes for High Frequency Optical Propagation
Lockheed Martin Corporation acting through its Lockheed Martin Aeronautics Company	LP-CRADA-NAWCADPAX-18-325	Transfer of Common Operating Real-Time Environment Software to Evaluate in the Joint Simulation Environment Lab
Lockheed Martin Rotary and Missions Systems; PMA-299; and Helicopter Maritime Strike Weapons School Atlantic	NCRADA-NAWCADPAX-17-319	Tactical Targeting Network Technology Demonstration
Radco Industries, Inc.	LP-CRADA-NAWCADPAX-18-344	Transfer of Test Panels for Evaluation of Paint Stripper Composition
Rockwell Collins, Inc.	NCRADA-NAWCADPAX-18-340	Helmet-Mounted Display Man Machine Interface Technology
SKF Ltd - Aerospace Division	NSLP-CRADA-NAWCADPAX-18-333	MH-60 Swashplate Scissors Spherical Bearing Initiative
University of Maryland	NCRADA-NAWCADPAX-18-342	Reliability of Photonic Integrated Circuit Devices
wrnch, Inc.	LP-CRADA-NAWCADPAX-18-336	Transfer of wrnchAI Engine Software

Naval Air Warfare Center Training Systems Division

Non-Federal Partner	CRADA Number	Subject
Bohemia Interactive Simulations, Inc.	NCRADA-NAWCTSD-17-009	Evaluation of the Bohemia Interactive Simulations F/A-18 Virtual Reality Part Task Trainer
Rockwell Collins Simulation & Training Solutions, LLC	LP-CRADA-NAWCTSD-18-015	Material Transfer of DoD Purpose Rights in NAVAIR Portable Source Initiative Datasets from NAWCTSD to Rockwell Collins Simulation & Training Solutions, LLC
University of Central Florida Research Foundation, Inc.	LP-CRADA-NAWCTSD-18-016	Material Transfer of COTS EEG Machine from NAWCTSD to University of Central Florida Research Foundation, Inc.

Naval Air Warfare Center Weapons Division, China Lake

Non-Federal Partner	CRADA Number	Subject
Mayachitra, Inc.	NCRADA-NAWCWDCL-18-282	Integrated Statistical and Semantic Analysis for Image and Video Forensics
Quality Material Inspection, Inc.	NCRADA-NAWCWDCL-17-275	Improved Non-Destructive Inspection Capabilities and Methods for Composite Hardware
Raytheon Company	NCRADA-NAWCWDCL-17-277	High Definition Advanced Tactical Forward Looking Infra-Red System Enhancement
Reperi, LLC	NCRADA-NAWCWDCL-18-280	Naval Innovation and Irregular Warfare Futures and Development
Reynolds Systems, Inc.	NCRADA-NAWCWDCL-17-278	Development of Advanced Ordnance Initiation Systems

Naval Air Warfare Center Weapons Division, Point Mugu

Non-Federal Partner	CRADA Number	Subject
Northrup Grumman Systems Corporation	NCRADA-NAWCWDPM-17-275	Advanced Electronic Warfare/Electronic Attack Concept Development and Experimentation

Naval Facilities Engineering and Expeditionary Warfare Center

Non-Federal Partner	CRADA Number	Subject
Blue Pillar, Inc.	NCRADA-NAVFAC-EXWC-18-001	Microgrid Operations Availability Under Energy Service Denial
Lawrence Berkeley National Laboratory	NCRADA-NAVFAC-EXWC-18-002	Study for Islanding Electric Vehicles to Power Operations
Quest Integrated, LLC	NCRADA-NAVFAC-EXWC-18-003	Advancement and Maintenance of Guy Wire Inspection Tool/System

Naval Medical Center, Portsmouth

Non-Federal Partner	CRADA Number	Subject
Cincinnati Children's Hospital Medical Center	LP-CRADA-NMCP-18-393	Material Transfer of Case Study Data for Ohdo Syndrome
Cystic Fibrosis Foundation; NMCSF	NCRADA-NMCP-15-287	Participation in the Cystic Fibrosis Foundation Patient Registry
Eastern Virginia Medical School	NCRADA-NMCP-17-381	Orthopedics Research Collaboration
Eastern Virginia Medical School	NCRADA-NMCP-17-389	Collaboration of Department of Otolaryngology: Head Neck Surgery at Eastern Virginia Medical School and Department of Otolaryngology: Head and Neck Surgery at NMCP
Florida State University; and Vanderbilt University Medical Center	NCRADA-NMCP-17-388	Optimized Suicide Risk Detection and Management in Military Primary Care
Gregory J. Zarrow, Ph.D.	NCRADA-NMCP-18-394	Combat Trauma Research Group
Old Dominion University	NCRADA-NMCP-18-392	The Role of Medical Professionalism and Perceived Purpose of Technology in Technostress of Physicians
Old Dominion University	NCRADA-NMCP-18-399	Clinical Outcomes of an Adaptive Therapy Tool on Speech Understanding in Noise for Individuals with Hearing Loss
Purdue University School of Industrial Engineering	NCRADA-NMCP-17-365	Testing and Validating the STAR Platform: A Teaching and Training Telementoring Tool for Military Medics in a Simulated Combat Situation
The Rector and Visitors of the University of Virginia	NCRADA-NMCP-17-370	The Effects of Methylene Blue on Isoflurane Minimum Alveolar Concentration and Arterial Blood Pressure in Hemorrhagic Swine Model
Trustees of Boston University; and American College of Radiology	NCRADA-NMCP-17-379	Detection of Early Lung Cancer among Military Personnel Program
The Uniformed Services University; The Henry M. Jackson Foundation for the Advancement of Military Medicine; Tulane University; and Walter Reed National Military Medical Center	NCRADA-NMCP-18-391	Hemophilia A and Immune Responses to Factor VIII
The University of Tennessee, Knoxville	NCRADA-NMCP-17-378	Feasibility of the Simulated Electronic Fetal Monitoring

Naval Medical Center, San Diego

Non-Federal Partner	CRADA Number	Subject
Armed Services YMCA	LP-CRADA-NMCS D-18-516	Transfer of 22 Biomodulators to Treat Chronic Pain for Active Duty Service Members
Cool Anesthesia, LLC	NCRADA-NMCS D-18-498	CIP# NMCS D.2018.0033; Effects of a Cooling Device on Pain During Local Anesthesia Injections
Gilead Sciences, Inc.	NCRADA-NMCS D-18-492	CIP# NMCS D.2017.0041; A Randomized, Double-Blind Placebo-Controlled Phase 2 Study to Evaluate the Testicular Safety of Filgotinib in Adult Males with Moderately to Severely Active Ulcerative Colitis
Gilead Sciences, Inc.	NCRADA-NMCS D-18-511	CIP# NMCS D.2017.0063; A Long-Term Extension Study to Evaluate the Safety of Filgotinib in Subjects with Crohn's Disease – Protocol GS-US-419-3896
Gilead Sciences, Inc.	NCRADA-NMCS D-18-512	CIP# NMCS D.2017.0065; A Long-Term Extension Study to Evaluate the Safety of Filgotinib in Subjects with Colitis – Protocol GS-US-418-3899
The Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc.	NCRADA-NMCS D-17-482	Cancer and Leukemia Group B/The Alliance Clinical Research Protocols
Intuitive Surgical, Inc.	LP-CRADA-NMCS D-18-494	da Vinci Surgical System
Johns Hopkins University on behalf of its Bloomberg School of Public Health	NCRADA-NMCS D-17-487	The Major Extremity Trauma Research Consortium
Shepherd Specialty Papers, Inc.	NCRADA-NMCS D-18-504	CIP# S-18-002; Effect of Bedding Type on Microenvironment Ammonia Levels in Cages Housing Laboratory Mice (<i>Mus Musculus</i>)
Strategic Operations, Inc.	NCRADA-NMCS D-18-490	Hyper-Realistic and En Route Care Research Advancement Involving MV-22 and MH-60 Rotary Wing Aircraft
Trustees of Boston University; and American College of Radiology	NCRADA-NMCS D-17-484	Detection of Early Lung Cancer Among Military Personnel
University of California, San Diego	NCRADA-NMCS D-18-495	Pain Prevention and Reduction via Peripheral Nerve Intervention
University of California, San Diego	NCRADA-NMCS D-18-497	Cryoanalgesia to Treat Post-Amputation Phantom Limb Pain: A Multicenter, Randomized, Double-Masked, Placebo-Controlled, Definitive Human Subjects Clinical Trial

Naval Medical Center, San Diego (Continued)

Non-Federal Partner	CRADA Number	Subject
University of Delaware	NCRADA-NMCSO-18-500	CIP# 2018.0003; Assessing Rehabilitation Outcomes After Severe Neuromusculoskeletal Injury: Development of Patient Reported Outcomes Assessment Instruments
University of Incarnate Word	NCRADA-NMCSO-18-496	Mentors Offering Maternal Support Program: A Prenatal Program Building Maternal Self-Esteem, Coping and Resilience
Vanderbilt University Medical Center	NCRADA-NMCSO-17-489	Timing of Inguinal Hernia Repair in Premature Infants: A Randomized Trial, CFDA# 93.865

Naval Medical Research and Development Command

Non-Federal Partner	CRADA Number	Subject
Albert Einstein College of Medicine, Inc.	NCRADA-NMRC-18-10315	Research in an Effort to Develop a Recombinant HSV-2 ΔgD Dengue Vaccine that Induces the Production of ADCC Antibodies
Arquos Medical, Inc.	NCRADA-NAMRU-SA-17-10224	Evaluation of the Regenerative Potential of a Carbon-Based Scaffold with Biotherapeutic Adjuncts to Promote Regeneration of Critical Size Bone Defects
Australian Institute of Tropical Health and Medicine College of Public Health, Medical and Veterinary Sciences James Cook University	LP-CRADA-NMRC-17-10189	Transfer of Purified Laboratory Reagents for James Cook University for Testing Malaria Vaccine Candidates
Aviana Molecular Technology	NCRADA-NMRC-18-10344	Development of Bacteriophage Based Handheld Diagnostic Device by Using Acoustic Wave Technology
BioFire Defense, LLC	NCRADA-NAMRU-3-18-10337	Clinical Evaluation of the FilmArray Global Fever Panel
The Board of Trustees of Illinois State University	NCRADA-NSMRL-18-10362	Partnership Between NSMRL and Illinois State University

Naval Medical Research and Development Command (Continued)

Non-Federal Partner	CRADA Number	Subject
Center for Infectious Disease Research	LP-CRADA-NMRC-18-10336	Transfer of De-Identified PBMC to Center for Infectious Disease Research for Identification of Biomarkers that Correlate with Protection Against Malaria
Center for Technological Biomedical and Environmental Research	LP-CRADA-NAMRU-6-17-10256	Transfer of Animal Samples to Center for Technological Biomedical and Environmental Research for Detection of Infectious Zoonotic Diseases
The Chancellor, Masters and Scholars of the University of Oxford	NCRADA-NAMRU-6-17-10092	Evaluation of New Malaria Vaccine Candidates in <i>Aotus nancymae</i> Monkeys
Chembio Diagnostic Systems, Inc.	NCRADA-NMRC-17-10214	Production and Development of Recombinant Protein Antigens Suitable for the Detection of <i>Orientia tsutsugamushi</i> and <i>Rickettsia typhispecific</i> Antibodies in Blood Using a Rapid Multiplexed DPP® Point-of-Care Assay
Christian Medical College	LP-CRADA-NMRC-17-10182	Transfer of Antigen-Derived Plasmids to Christian Medical College for Cell Based IFA for Scrub Typhus
Disruptive Nutrition, LLC	LP-NCRADA-NMRC-18-10346	An Assessment of the Ketone Ester R,S-1, 3-Butanediol Acetoacetate Diester for the Induction of Ketosis and Delay of CNS HBO2 Toxicity in Swine
Euroimmun AG Germany	NCRADA-NAMRU-6-17-10202	Collaboration on ELISA Development for Detection of Antibodies Against Arboviruses
Excivion, Ltd.	LP-CRADA-NMRC-18-10316	Transfer of Novel Lateral Flow Serological Tests to Navy for Evaluation of Zika and Dengue Virus Infections
FortiusBio	LP-CRADA-NMRC-18-10367	Transfer of LyseNow Perforated Cards to Navy for Dengue Viral RNA Preservation
FUJIFILM Wako Pure Chemical Corporation	LP-NCRADA-NMRC-18-10401	Transfer of Exosome Isolation Kit to Navy for Biomarker Discovery
George Washington University	LP-CRADA-NMRC-18-10314	Transfer of De-Identified Serum Samples to Navy to Explore Mechanisms of Dengue Severe Disease
GlaxoSmithKline Biologicals SA; and Walter Reed Army Institute of Research	NCRADA-NMRC-18-10305	R&D of <i>S. sonnei</i> Vaccine
Hemex Health	NCRADA-NAMRU-6-18-10302	A One Minute Highly Accurate Malaria Test

Naval Medical Research and Development Command (Continued)

Non-Federal Partner	CRADA Number	Subject
ICAHN School of Medicine at Mount Sinai; Uniformed Services University of the Health Sciences; Janssen Research & Development; Prometheus Laboratories, Inc.; and The Mayo Clinic	NCRADA-NMRC-17-10209	Biomarker Evaluation and Discovery in Proteomic Evaluation & Discovery in an IBD Cohort of Tri-Service Subject
ImmPORT Therapeutics, Inc. dba Antigen Discovery, Inc.	LP-CRADA-NMRC-18-10286	Transfer of <i>P. falciparum</i> sporozoite IFA Slides and Anti-PfCSP Monoclonal Antibody to Antigen Discovery, Inc. to Test Polyclonal Sera Raised Against Malaria Antigens
Institut de Recherche en Sciences de la Sante, Direction Regionale de la Recherche Scientifique et de L'Innovation des Hauts Bassins	LP-NCRADA-NAMRU-3-17-10253	Transfer of De-Identified Serum Samples from Institut de Recherche en Sciences de la Sante to NAMRU-3 for Diagnosis of Dengue Fever
Kansas State University	NCRADA-NAMRU-6-17-10203	Vector-Human Contact Biomarkers for Anopheline Exposure in the Americas
Kerecis Limited	NCRADA-NMRC-18-10329	<i>In vivo</i> Testing of Omega3 Fish-Skin Acellular Dermal Matrix for Promotion of Wound Healing and Control of Wound Infections
King Saud Bin Abdulaziz University for Health Sciences, King Abdullah International Medical Research Center	LP-NCRADA-NMRC-18-10324	Transfer of Biological Samples from King Abdullah International Medical Research Center to Navy for MERS-CoV Study
Lysando AG	LP-NCRADA-NMRC-17-10239	Transfer of Artilysin from Lysando GmbH to NMRC for <i>in vivo</i> Testing and Evaluation as a Treatment for Iatrogenic Wound Infections
Manipal Academy of Higher Education	NCRADA-NMRC-17-10255	Seroprevalence of Various <i>Rickettsial</i> Diseases in Multiple Study Sites in India
Mayo Clinic	NCRADA-NSMRL-18-10299	Wearable Fatigue and Environmental Contamination Exposure Monitoring Systems
MRIGlobal	NCRADA-NAMRU-6-18-10304	Pathogen Genomics for Infectious Disease Surveillance and Detection
National Jewish Health	NCRADA-NAMRU-D-18-10300	Inhalation Exposure of Laboratory Animals to Particulate Matter

Naval Medical Research and Development Command (Continued)

Non-Federal Partner	CRADA Number	Subject
Next Science, LLC	LP-CRADA-NMRC-18-10279	Transfer of Ionic Solutions to Navy for Determining the Therapeutic Potential in a Traumatic Murine Infection Model
North Carolina State University	LP-NCRADA-NAMRU-6-18-10448	Transfer of <i>Aedes aegypti</i> to North Carolina State University for Testing and Improving Models of the Population Dynamics and Genetics
North Carolina State University	NCRADA-NAMRU-6-18-10371	Effectiveness of a Novel Mechanical Insecticide to Reduce Risk of Malaria Transmission in an Endemic Area of Peru
Northern Arizona University	LP-CRADA-NMRC-17-10248	Transfer of Choline and Geranate Formulations to Navy to Determine the Therapeutic Potential in a Traumatic Murine Infection Model
Northern Illinois University	NCRADA-NAMRU-SA-17-10162	Prairie Vole Model of Poly-Trauma and Health Outcomes
Oregon Health & Science University	NCRADA-NMRC-17-10274	A Cytomegalovirus-Based Vaccine Targeting the Pre-Erythrocytic Stage of Malaria
PATH	NCRADA-NMRC-17-10212	Development of a <i>P. falciparum</i> Vaccine Lead Candidate Based on E140
Path Vaccine Solutions; and Johns Hopkins University, Bloomberg School of Public Health	LP-NCRADA-NMRC-17-10144	Transfer of Stool, Saliva and Blood Derivative Samples from Path Vaccine Solutions and Johns Hopkins University, Bloomberg School of Public Health to NMRC for Research Purpose
Pendar Technologies, Inc.	NCRADA-NAMRU-SA-18-10368	Development of a Near-Real Time Blood Gas Constituents and Chemistry Analyzer Using In-Line Raman Resonance Spectroscopy
Penn State Milton S. Hershey Medical Center and College of Medicine	NCRADA-NAMRU-6-18-10372	Environmental Sampling and Phage Harvesting Against Multidrug Resistant Bacterial Pathogens
Pulsar Informatics, Inc.	NCRADA-NSMRL-18-10285	Using At-Sea Submarine Watchstanding Data Sets to Construct a Case Study of the Optimized Watchbill and Logistics Tool
The Regents of the University of Michigan	LP-NCRADA-NMRC-18-10293	Development of Bacteriophage Therapy to Overcome <i>Burkholderia</i> and <i>Pseudomonas</i> Related Infections Against a Cystic Fibrosis Background
Repurposed Therapeutics, Inc. dba Defender Pharmaceuticals, Inc.	NCRADA-NAMRU-D-17-10226	Intranasal Scopolamine Gel for the Prevention of Motion Sickness in Military Extreme Environments

Naval Medical Research and Development Command (Continued)

Non-Federal Partner	CRADA Number	Subject
Rockefeller University	NCRADA-NMRC-18-10365	Identification of an <i>Anti-Staphylococcus aureus</i> Lysin with no Reactivity to <i>Staphylococcus Epidermidis</i> and its Efficacy in Clearing a <i>S. aureus</i> Wound Infection
Sher-I-Kashmir Institute of Medical Sciences	LP-NCRADA-NMRC-18-10400	Transfer of Isolated Genomic DNA to Sher-I-Kashmir Institute of Medical Sciences for Diagnosis of Scrub Typhus
St. John Fisher College	LP-NCRADA-NMRC-17-10217	Transfer of 1ml of Various Bacteriophages (20 isolates) from NMRC to St. John Fisher College for Research Purpose
St. Jude Children's Research Hospital	LP-NCRADA-NAMRU-6-18-10375	Transfer of Bird Samples to St. Jude Center of Excellence for Influenza Research and Surveillance for Monitoring Avian Influenza
Takeda Vaccines, Inc.	NCRADA-NHRC-16-9802	Norovirus Acute Gastroenteritis Among International Pediatric and Traveler's Markets (2014-2017)
Takeda Vaccines, Inc.	NCRADA-NHRC-16-9814	Acute Gastroenteritis Surveillance at U.S. Naval Recruit Training Command-Great Lakes
Texas A&M Engineering Experiment Station	NCRADA-NAMRU-SA-17-10223	Evaluation of Biomaterial-Based Scaffolds Loaded with Therapeutics to Promote Bone Regeneration
University of California, Irvine	LP-NCRADA-NHRC-17-10240	Interdisciplinary Salivary Bioscience for Assays of Stress Biomarkers
University of Chicago on behalf of their Department of Microbiology Cummings Life Science Center 1115A	LP-NCRADA-NMRC-17-10037	Transfer of Material From NMRC to the University of Chicago on behalf of their Department of Microbiology Cummings Life Science Center 1115A
University of Ghana Noguchi Memorial Institute for Medical Research	NCRADA-NAMRU-3-18-10393	Cooperative Agreement for Research Between the University of Ghana Noguchi Memorial Institute for Medical Research and NAMRU-3, Ghana Detachment
University of Ghana Noguchi Memorial Institute for Mental Research; NAMRU-3; Henry M. Jackson Foundation; and U.S. Army Medical Research Institute for Infectious Diseases	LP-NCRADA-NAMRU-3-17-10269	Severe Infectious Disease Surveillance in West Africa by the Joint West Africa Research Group Under Protocol RV466
University of Groningen	LP-NCRADA-NMRC-18-10381	Transfer of 2 <i>Bacillus Mycoides</i> Strains for Basic Ecology Research

Naval Medical Research and Development Command (Continued)

Non-Federal Partner	CRADA Number	Subject
University of Lausanne - Department of Fundamental Microbiology	LP-CRADA-NMRC-17-10238	Transfer of Material from NMRC to University of Lausanne - Department of Fundamental Microbiology
University of Malaya	LP-NCRADA-NMRC-18-10313	Transfer of ELISA Antigen and Sera to University of Malaya for Detection of Spotted Fever, Murine Typhus and Scrub Typhus
University of Manitoba	LP-NCRADA-NAMRU-6-18-10431	Transfer of Animal Samples to University of Manitoba for Diagnostics of Rodent-Borne Viruses
University of Maryland, Baltimore	LP-CRADA-NMRC-17-10172	Transfer of up to 5mg Purified CfaE Tip Adhesion Protein and CS5 Tip Adhesion Protein from NMRC to University of Maryland, Baltimore for Research Purpose
University of Maryland, Baltimore	LP-NCRADA-NMRC-17-10201	Transfer of 2074 Strains and Nucleic Acid of Campylobacter from University of Maryland, Baltimore to NMRC for Research Purpose
University of Massachusetts; and University of North Carolina at Chapel Hill	NCRADA-NAMRU-6-17-10220	Biomedical R&D of Deep Sequencing Strategies on Infectious Diseases
University of Notre Dame	LP-CRADA-NMRC-18-10278	Transfer of Ticks to Navy to Understand the Interplay Among Ecological System, Vectors, Pathogens and Mammalian Hosts
University of South Florida Board of Trustees	NCRADA-NAMRU-6-17-10262	Collaborative Research in <i>Plasmodium vivax</i> Malaria Research and Vaccine Development
Valneva Sweden AB	NCRADA-NMRC-17-10141	Study of CS17-ETECD Human Challenge Model
Washington State University	NCRADA-NAMRU-D-18-10417	Investigating Striatal Attentional Circuits to Understand and Mitigate Deficits in Cognitive Flexibility Due to Sleep Loss
Wellcome Sanger Institute	LP-NCRADA-NAMRU-6-17-10124	Transfer of De-Identified Samples to Wellcome Sanger Institute for Next Generation Sequencing on Infectious Diseases

Naval Meteorology and Oceanography Command

Non-Federal Partner	CRADA Number	Subject
Autonomous Surface Vehicles, LLC	SP-NCRADA-CNMOC-18-01	2018 Advanced Naval Technology Exercise
iXblue Defense Systems, Inc.	SP-NCRADA-CNMOC-18-07	2018 Advanced Naval Technology Exercise
Leidos	SP-NCRADA-CNMOC-18-02	2018 Advanced Naval Technology Exercise
McQ, Inc.	SP-NCRADA-CNMOC-18-08	2018 Advanced Naval Technology Exercise
Northrop Grumman Systems Corporation	SP-NCRADA-CNMOC-18-05	2018 Advanced Naval Technology Exercise
Ocean Infinity, Inc.	NCRADA-COMNAVMETOCOM-17-03	Cooperative Participation and Technical Exchange in Areas of Mutual Interest
Quality Positioning Services, Inc.	SP-NCRADA-CNMOC-18-03	2018 Advanced Naval Technology Exercise
Riptide Autonomous Solutions, LLC	SP-NCRADA-CNMOC-18-09	2018 Advanced Naval Technology Exercise
SeaTrac Systems, Inc.	SP-NCRADA-CNMOC-18-04	2018 Advanced Naval Technology Exercise
Z-Senz, LLC	SP-NCRADA-CNMOC-18-10	2018 Advanced Naval Technology Exercise

Naval Postgraduate School

Non-Federal Partner	CRADA Number	Subject
Big Solar, Ltd.	NCRADA-NPS-18-0221	Investigation of NPS Dielectric Materials Used in Big Solar, Ltd. Solar Energy Storage Devices
Northwest UAV	LP-CRADA-NPS-18-0096	Northwest 44 Engine
University of Colorado, Boulder	NCRADA-NPS-18-0222	Resonance Properties of the Ross Ice Shelf, Antarctica, as a Factor in Regional Wave Interaction Between Ocean and Atmosphere

Naval Research Laboratory

Non-Federal Partner	CRADA Number	Subject
AmberWave, Inc.	NCRADA-NRL-17-635	Lightweight Thin-Film Solar Cell with Periodic Optical Nanostructure
Amethyst Research, Inc.	NCRADA-NRL-18-642	Growth of MWIR Interband LEDs on Si Substrates
Applied Materials, Inc.	NCRADA-NRL-18-641	ALD-Nano-Ceramic Coating and EPAS Sintering
Asymmetric Technologies, LLC	NCRADA-NRL-18-656	Distributed Acoustic Sensing
Ben Gurion University of the Negev	NCRADA-NRL-17-634	Proton Conduction in Single Synthetic Protein Fibers
Brimrose Technology Corporation	NCRADA-NRL-18-640	High Resolution XRD Characterization of Mercurous Halide Single Crystals for Acousto-Optic Tunable Filter Fabrication
Busek Company, Inc.	NCRADA-NRL-18-653	Investigation of the Electron Emission Properties of 12CaO-7A12O3 (C12A7) Electride in a Hollow Cathode-Like Environment
DHPC Technologies, Inc.	NCRADA-NRL-17-611	Photovoltaic Devices for Laser Power Transfer
Eblana Photonics, Ltd.	NCRADA-NRL-17-619	Narrow-Ridge Discrete Mode Interband Cascade Lasers with Weak Index Guiding
General Atomics Aeronautical Systems, Inc.	NCRADA-NRL-18-637	Inverse Synthetic Aperture Radar and Small Object Maritime Search Mode Performance Assessment for the Lynx [®] Radar
Hexion, Inc.	NCRADA-NRL-18-649	Development of Isocyanate-Free, Low VOC Epoxy/ Polysiloxane Binder Systems for Topcoats
Intelligent Designs, LLC	NCRADA-NRL-18-655	Ka-Band Comms-On-The-Halt Satellite Terminal Development
Intelligent Material Solutions, Inc.	NCRADA-NRL-17-628	Interband Cascade Amplified Spontaneous Emission Devices with Peak Wavelength 4.7 μm
The Johns Hopkins University Applied Physics Laboratory, LLC	NCRADA-NRL-18-644	Multi-Platform ASCM HK/SK Analysis
Leland Stanford University	NCRADA-NRL-17-631	Basic Single-Event and Total-Ionizing Dose Mechanisms in Ge-and InGaAs-Based CMOS Transistors with ALD and PEALD High-κ Dielectric
Lockheed Martin Rotary and Mission Systems	NCRADA-NRL-18-658	ADEPT and SEI ALQ-217 Pre-Integration Study
Loyola University Maryland	NCRADA-NRL-18-662	Free-Space Material Characterization for Algorithm Validation

Naval Research Laboratory (Continued)

Non-Federal Partner	CRADA Number	Subject
Nanoarmor, LLC	NCRADA-NRL-17-624	Nanostructured Materials for Ballistic Applications
Nanoarmor, LLC; and 3D Potter, Inc.	NCRADA-NRL-18-664	3D Printed Nanostructured Ceramic Parts
Northrop Grumman Systems Corporation Aerospace Systems	NCRADA-NRL-18-663	Materials for Tailored Spectral and Angular Thermal Emission
Opto Diode Corporation	NCRADA-NRL-18-651	Interband Cascade Light Emitting Diodes for 4.3 - 4.7 μm
Packet Digital, LLC	NCRADA-NRL-18-674	Optimizing Energy Management Electronics for Portable Solar Array Modules
Pennsylvania State University	NCRADA-NRL-18-639	Fabrication of Photovoltaic Arrays for Planar Microtracking Concentrator Modules
Q-Peak, Inc.	NCRADA-NRL-18-643	Glasses for Epoxyless Mid-IR Fiber Connectors
Q-Peak, Inc.	NCRADA-NRL-18-652	Glasses for Epoxyless Mid-IR Fiber Connectors
Q-Peak, Inc.	NCRADA-NRL-18-669	All-Fiber Wavelength Independent Beam Homogenizer
Radiation Monitoring Devices, Inc.	NCRADA-NRL-18-646	Transparent SiC Seeker Windows
Raytheon Company	NCRADA-NRL-17-620	Novel Free-Space Optical Communication
Raytheon Company	NCRADA-NRL-17-636	Rare Earth Augmented Linear High Power Transistor Technology
The Regents of the University of California	NCRADA-NRL-18-657	Quantum-Enhanced Motion Sensing Using Entangles Spins in Quantum Dots
Santa Barbara Infrared, Inc.	NCRADA-NRL-17-630	Interband Cascade Light Emitting Devices for Infrared Scene Projection
Soaring Laboratories, Inc.	NCRADA-NRL-18-638	Autonomous Soaring Algorithm
Texas A&M Engineering Experiment Station	NCRADA-NRL-18-647	Modal Beamforming for Conformal Phased Arrays
University of Florida	NCRADA-NRL-17-623	Fundamental Studies and Modeling of Radiation Effects on $\beta\text{-Ga}_2\text{O}_3$
University of Maryland	NCRADA-NRL-18-648	<i>In Situ</i> Mechanistic Studies of CWA Simulant Reactions with Filtration/Destruction Materials
University of Saskatchewan	NCRADA-NRL-18-654	Melanized Fungi as Discriminators for Nuclear Fallout Radionuclides
Valor Professional Solutions, LLC	NCRADA-NRL-18-660	Development of a Handheld, Field Deployable, Inexpensive Electrochemical Sensor for the Detection and Identification of Explosives in the Field

Naval Surface Warfare Center, Carderock Division

Non-Federal Partner	CRADA Number	Subject
The Aerospace Corporation	LP-NCRADA-NSWCCA-18-330	Poseidon 2 Remote Sensing Camera Demonstration for CD18-2
AJA Video Systems, Inc.	LP-CRADA-NSWCCA-18-317	Video Recorder System
Atmospheric Plasma Solutions, Inc.	NCRADA-NSWCCA-18-307	Coating Removal System R&D
Avalex Technologies Corp.	LP-NCRADA-NSWCCA-18-324	Multi-Channel Digital Video
Azimuth, Inc.	LP-CRADA-NSWCCA-18-322	Mission Data Recorder
Bad Wolf Technologies, LLC	LP-NCRADA-NSWCCA-18-321	Digital Video Recorder
Bucknell University	NCRADA-NSWCCA-17-290	Polymer Resin Additive Manufacturing R&D
COMSAT, Inc.	LP-CRADA-NSWCCA-18-315	Marine COMSAT WiSL
Convergent 3D, LLC	LP-NCRADA-NSWCCA-18-314	Depth Perception Enhancement Demo
Dehlsen Associates, LLC	NCRADA-NSWCCA-18-323	Centipod WEC
Digital Design Corporation	LP-NCRADA-NSWCCA-18-320	Ruggedized Video Recorder
DroneTechUAV Corporation	LP-CRADA-NSWCCA-18-306	AV-2 Pelican VTOL Capability Demonstration
EIZO Rugged Solutions, Inc.	LP-NCRADA-NSWCCA-18-331	SPx Radar Tracking Server Demonstration for CD18-2
FLIR Maritime US, Inc.	LP-NCRADA-NSWCCA-18-327	Raymarine MAGMUM Radar System Demonstration for CD18-2
Furuno U.S.A., Inc.	LP-NCRADA-NSWCCA-18-328	NXT Class Radar System Demonstration for CD18-2
Furuno U.S.A., Inc.	LP-NCRADA-NSWCCA-18-329	X Class Radar System Demonstration for CD18-2
George Mason University	NCRADA-NSWCCA-18-313	Corrosion Fatigue Testing
Haivision Network Video, Inc.	LP-CRADA-NSWCCA-18-319	Encoder and Recorder Appliance
HII Fleet Support Group, LLC	LP-NCRADA-NSWCCA-18-338	Proteus UUV
Hydroid, Inc.	LP-CRADA-NSWCCA-18-311	Maritime Broadband Radio Demonstration
Infoscitex Corporation	NCRADA-NSWCCA-18-292	E-Textiles R&D
Lockheed Martin Corporation	LP-NCRADA-NSWCCA-18-336	Ni Vacancy Sensor
Rockwell Collins, Inc.	LP-NCRADA-NSWCCA-18-333	Augmented Bridge Awareness System
Scot Forge Company	NCRADA-NSWCCA-18-312	High Strength Steel R&D
Secured Network Solutions, Inc.	LP-CRADA-NSWCCA-18-318	Secure Video Recorder

Naval Surface Warfare Center, Carderock Division (Continued)

Non-Federal Partner	CRADA Number	Subject
TdVib, LLC	NCRADA-NSWCCA-18-298	Magnetically Activated Smart Materials R&D
Terma North America, Inc.	LP-NCRADA-NSWCCA-18-332	Scanter 2602 Radar System Demonstration for CD18-2
Thermwood Corporation	NCRADA-NSWCCA-18-326	Hybrid Prototyping System
University of Central Florida Board of Trustees	NCRADA-NSWCCA-17-299	Bildgewater Remediation R&D
University of Maryland	NCRADA-NSWCCA-17-301	Exoskeleton R&D
University of Northern Iowa	NCRADA-NSWCCA-18-275	Metal Casting R&D
Virginia Polytechnic Institute and State University	NCRADA-NSWCCA-16-272	Additive Manufacturing R&D

Naval Surface Warfare Center, Crane Division

Non-Federal Partner	CRADA Number	Subject
Adelos, Inc.	NCRADA-NSWCCD-18-287	Security Sensor Qualification
Alion Science & Technology	LP-NCRADA-NSWCCD-18-224	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Alliant Techsystems Operations, LLC, a wholly owned subsidiary of Orbital ATK, Inc.	LP-NCRADA-NSWCCD-18-260	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
American Rheinmetall Munitions, Inc.	LP-NCRADA-NSWCCD-18-273	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Applewhite Aero, LLC	LP-NCRADA-NSWCCD-18-225	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Applied Research Associates	LP-NCRADA-NSWCCD-18-226	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Applied Research Institute; The Trustees of Indiana University; and Purdue University	NCRADA-NSWCCD-18-285	Achieving Scientifically Secured User Reassurance in Electronics
Ascent Vision Technologies, LLC	LP-NCRADA-NSWCCD-18-227	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Atlas Devices, LLC	LP-NCRADA-NSWCCD-18-228	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise

Naval Surface Warfare Center, Crane Division (Continued)

Non-Federal Partner	CRADA Number	Subject
BAE Systems Information and Electronic Systems Integration, Inc.	NCRADA-NSWCCD-17-218	Reconfigurable Signal-Injection Simulation Development - RSIMS 2.0
Beartooth Radio, Inc.	LP-NCRADA-NSWCCD-18-229	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
B.E. Meyers & Co., Inc.	LP-NCRADA-NSWCCD-18-277	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
BlueSky Mast dba VIRIDEON	LP-NCRADA-NSWCCD-18-272	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
The Board of Regents of the University of Oklahoma	NCRADA-NSWCCD-17-221	Joint R&D for a Reconfigurable Radar
Brimtek, Inc.	LP-NCRADA-NSWCCD-18-269	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Cardinal Scientific, Inc.	LP-NCRADA-NSWCCD-18-231	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
CITADEL Defense Company	LP-NCRADA-NSWCCD-18-232	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Coda Octopus Group, Inc.	NCRADA-NSWCCD-18-288	Security Sensor Qualification
Combined Systems, Inc.	LP-NCRADA-NSWCCD-18-233	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
The Critical Threats Project at the American Enterprise Institute	NCRADA-NSWCCD-18-297	Merlin Data Sharing R&D Collaboration
CyPhy Works, Inc.	LP-NCRADA-NSWCCD-18-274	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Dedrone Holdings, Inc.	LP-NCRADA-NSWCCD-18-234	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Defense Research Associates, Inc.	NCRADA-NSWCCD-18-282	OWL Eyes
Department 13, Inc.	LP-NCRADA-NSWCCD-18-235	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Dr. Bill Kiser	NCRADA-NSWCCD-18-286	Microelectronics R&D
Dr. Martin Swany	NCRADA-NSWCCD-17-213	Intelligent Systems Engineering Trusted Microelectronics
DroneShield, LLC	LP-NCRADA-NSWCCD-18-238	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise

Naval Surface Warfare Center, Crane Division (Continued)

Non-Federal Partner	CRADA Number	Subject
Elta North America	LP-NCRADA-NSWCCD-18-270	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Envision Solar International	LP-NCRADA-NSWCCD-18-271	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
FLIR Surveillance, Inc.	LP-NCRADA-NSWCCD-18-240	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
FLIR Unmanned Aerial Systems AS	LP-NCRADA-NSWCCD-18-241	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Gentex Corporation	LP-NCRADA-NSWCCD-18-243	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Getac, Inc.	LP-NCRADA-NSWCCD-18-244	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
goTenna, Inc.	LP-NCRADA-NSWCCD-18-245	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
HDT Expeditionary Systems, Inc.	LP-NCRADA-NSWCCD-18-246	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
IDS International Government Services, LLC	LP-NCRADA-NSWCCD-18-247	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
The Institute for the Study of War	NCRADA-NSWCCD-18-298	Merlin Data Sharing R&D Collaboration
IXI Technology	LP-NCRADA-NSWCCD-18-248	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Jetoptera	NCRADA-NSWCCD-18-294	Advanced UAS Technologies
L-3 Technologies, Inc., Insight Technology Division	LP-NCRADA-NSWCCD-18-249	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
LaserMaxDefense	LP-NCRADA-NSWCCD-18-251	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Logos Technologies, LLC	LP-NCRADA-NSWCCD-18-252	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
McQ, Inc.	LP-NCRADA-NSWCCD-18-253	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Monroe County Community School Corporation	NCRADA-NSWCCD-18-291	Robotic System Collaboration

Naval Surface Warfare Center, Crane Division (Continued)

Non-Federal Partner	CRADA Number	Subject
Nammo Talley	LP-NCRADA-NSWCCD-18-254	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Newcomer Arms, LLC	NCRADA-NSWCCD-18-290	Commercialization of U.S. Patent 9,733,035 and U.S. Patent Application 15/633,899 Entitled: "Retractable Suppressor" and U.S. Patent 9,273,920 Entitled: "Integral Multi-Chambered Valved Suppressor"
Nikola Corporation	LP-NCRADA-NSWCCD-18-256	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Old Dominion University	NCRADA-NSWCCD-18-295	Machine Learning for Situational Awareness in Wireless Networks
OpenWorks Engineering, Ltd.	LP-NCRADA-NSWCCD-18-258	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Optics 1, Inc.	LP-NCRADA-NSWCCD-18-259	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Persistent Systems, LLC	LP-NCRADA-NSWCCD-18-283	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Purdue Research Foundation	NCRADA-NSWCCD-17-219	Technical Assistance CRADA
Purdue University	NCRADA-NSWCCD-17-220	Ambient Ionization for Naval Applications
Purdue University	NCRADA-NSWCCD-17-223	Improving Safety and Performance of Lithium-Ion Batteries Through Modeling, Advanced Designs & Experimentation
Rockwell Collins	LP-NCRADA-NSWCCD-18-261	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
SAZE Technologies, LLC	LP-NCRADA-NSWCCD-18-281	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Sensors Unlimited, Inc.	LP-NCRADA-NSWCCD-18-276	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Shield AI, Inc.	LP-NCRADA-NSWCCD-18-250	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
SimVentions, Inc.	LP-NCRADA-NSWCCD-18-263	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Steiner eOptics, Inc.	LP-NCRADA-NSWCCD-18-275	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Tactical Electronics and Military Supply, LLC	LP-NCRADA-NSWCCD-18-265	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Texas Research Institute Austin, Inc.	NCRADA-NSWCCD-18-279	Improved Accelerated Life Testing

Naval Surface Warfare Center, Crane Division (Continued)

Non-Federal Partner	CRADA Number	Subject
Thermal Hazard Technology, Inc.	NCRADA-NSWCCD-18-293	Evaluation of Calorimeter Equipment for Propellant Monitoring
Torrey Pines Logic	LP-NCRADA-NSWCCD-18-266	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
Transformational Security, LLC	NCRADA-NSWCCD-18-300	Situational Awareness Tool Development
TrellisWare Technologies, Inc.	LP-NCRADA-NSWCCD-18-267	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise
The Trustees of Indiana University	LP-CRADA-NSWCCD-17-222	Transfer of 125W, 1490nm Erbium SS Laser
The Trustees of Indiana University	NCRADA-NSWCCD-18-280	Molecular Design of Organic Films for Improved Charge Transport
The Trustees of Indiana University	NCRADA-NSWCCD-18-299	Improving the Energy Density Lithium-Ion Batteries with Electrolyte Additives
The Trustees of Indiana University	NCRADA-NSWCCD-18-301	Advancement of Software and Artificial Intelligence Assurance
University of Houston - Cullen College of Engineering	NCRADA-NSWCCD-18-292	Advanced Power Electronics
University of Southern Indiana	NCRADA-NSWCCD-18-305	Investigation of Pyrotechnic Reaction Byproducts
W.S. Darley & Company	LP-NCRADA-NSWCCD-18-268	ANTX 2018 Urban 5th Generation Marine Exploration & Experimentation Exercise

Naval Surface Warfare Center, Dahlgren Division

Non-Federal Partner	CRADA Number	Subject
AAI Corporation dba Textron Systems	NCRADA-NSWCDD-18-222	Common Unmanned Surface Vehicle Multiple Warfare Mission Packages R&D
General Atomics	NCRADA-NSWCDD-18-227	Railgun Weapon System and Ship Integration R&D
George Mason University	NCRADA-NSWCDD-15-188	Improving Human Performance
Huntington Ingalls Inc., Ingalls Shipbuilding Division	NCRADA-NSWCDD-18-261	Surface Combat Innovation

Naval Surface Warfare Center, Dahlgren Division (Continued)

Non-Federal Partner	CRADA Number	Subject
Lockheed Martin Rotary and Mission Systems	NCRADA-NSWCDD-18-214	Weapons and Effectors Coordination Improvement Project
Lockheed Martin Rotary and Mission Systems	NCRADA-NSWCDD-18-262	Surface Combat Innovation
SimVentions	NCRADA-NSWCDD-18-219	Software Quality Metrics Evaluation
Systems Engineering Group	NCRADA-NSWCDD-18-263	Sensor and Unmanned Systems Model Development and Analysis
University of Montana	NCRADA-NSWCDD-18-211	Development of Novel Sensor Materials and Devices

Naval Surface Warfare Center, Indian Head Explosive Ordnance Disposal Technology Division

Non-Federal Partner	CRADA Number	Subject
Akita Innovations, LLC	NCRADA-NSWC IHEODTD-18-141	Encapsulated HI308 Microparticles Development and Testing
Applied Energy Technology Corporation	NCRADA-NSWC IHEODTD-18-138	Development of Improved Design, Production and Component Availability for CAD/PAD Applications
Grey OPS, LLC	NCRADA-NSWC IHEODTD-18-126	R&D of EOD Tools and Technologies
Iowa State University of Science and Technology	NCRADA-NSWC IHEODTD-18-137	Advanced Diagnostic Development for Characterization of Detonations and Fireballs
Martin Baker Aircraft Company, Ltd.	NCRADA-NSWC IHEODTD-18-142	Process Development for the Manufacture of CAD/PAD Devices
Nammo Talley	NCRADA-NSWC IHEODTD-18-134	Development of Improved Design, Production and Component Availability for CAD/PAD Applications
New Jersey Institute of Technology	NCRADA-NSWC IHEODTD-18-129	Testing of Advanced Aluminum and Boron-Based Materials for Prompt Agent Defeat
South Dakota School of Mines and Technology	NCRADA-NSWC IHEODTD-18-132	Additive Manufacturing, Metallurgy and Fragmentation Studies
Spectra Technologies, LLC	NCRADA-NSWC IHEODTD-18-118	Explosives Development
St. Mary's College of Maryland	NCRADA-NSWC IHEODTD-17-109	Development of Inkjet Printing Technology for Deposition of Electronic Devices
St. Mary's College of Maryland	NCRADA-NSWC IHEODTD-17-125	Development and Studies of Energetic and Biocidal Materials with Medical Applications

Naval Surface Warfare Center, Indian Head Explosive Ordnance Disposal Technology Division (Continued)

Non-Federal Partner	CRADA Number	Subject
Stratus Systems, Inc.	NCRADA-NSWC IHEODTD-18-130	Development of Improved Design, Production and Component Availability for CAD/PAD Applications
Systima Technologies, Inc.	NCRADA-NSWC IHEODTD-18-135	Development of Improved Design, Production and Component Availability for CAD/PAD Applications
Universal Propulsion Company, Inc.; AMI Industries	NCRADA-NSWC IHEODTD-18-128	Development of Improved Design, Production and Component Availability for CAD/PAD Applications Including CKU-5C/A Rocket Catapult

Naval Surface Warfare Center, Panama City Division

Non-Federal Partner	CRADA Number	Subject
JFD, Ltd.	NCRADA-NSWCPCD-17-049	Combat Diver Display Module Development

Naval Surface Warfare Center, Port Hueneme Division

Non-Federal Partner	CRADA Number	Subject
Aerial Alchemy	NCRADA-NSWC PHD-18-0004	Collaborative Research on Naval Applications of Open Standard, Extensible and Common Control Unmanned Aerial Systems for Maintenance and Readiness
Credential Engine	NCRADA-N63394-18-0005	Navy Training Data with Product Life Cycle Management Analytics
Job Performance Associates, LLC	NCRADA-N63394-18-0007	Job Performance Aids for Enhanced Personnel Training
L-3 Communications EO/IR, Inc.	NCRADA-N63394-16-0001	Collaborative Research into a Commercial Sensor System for Shipboard Maritime Applications
MOBACK, Inc.	NCRADA-N63394-18-0003	Augmented and Virtual Reality for Naval Shipboard Applications

Naval Undersea Warfare Center, Division Keyport

Non-Federal Partner	CRADA Number	Subject
Adelos, Inc.	NCRADA-NUWCDIVKPT-18-023	Evaluation of Acoustic Sensor for Underwater Applications
Applied Physics Laboratory, Johns Hopkins University	NCRADA-NUWCDIVKPT-17-021	Development and Test & Evaluation of Undersea Systems, Vehicles and Associated Technologies
General Dynamics Land Systems	NCRADA-NUWCDIVKPT-17-020	Enhancement of Unmanned Amphibious Vehicle for Use in a Marine Environment
Lockheed Martin Sippican	NCRADA-NUWCDIVKPT-17-022	ASW Test Target Technology Demonstration
RADX Technologies, Inc.	LP-CRADA-NUWCDIVKPT-18-024	Enhancement of Unmanned Amphibious Vehicle for Use in a Marine Environment
University of Rhode Island	NCRADA-NUWCDIVKPT-18-025	R&D of Methods for Estimating the Position of an Underwater Vehicle Based on Sparse External Data

Naval Undersea Warfare Center, Division Newport

Non-Federal Partner	CRADA Number	Subject
Adelos, Inc.	NCRADA-NUWCDIVNPT-17-1377	Fiber Optic Sensor Technology
Advanced Acoustics Concepts, LLC	LP-NCRADA-NUWCDIVNPT-18-1527	Topside
Advanced Acoustics Concepts, LLC	SP-NCRADA-NUWCDIVNPT-18-1500	2018 Advanced Naval Technology Exercise
Aquabotix Technology Corporation	SP-NCRADA-NUWCDIVNPT-18-1501	2018 Advanced Naval Technology Exercise
Aviation Systems Engineering Company, Inc.	LP-NCRADA-NUWCDIVNPT-18-1555	Topside
Aviation Systems Engineering Company, Inc.	SP-NCRADA-NUWCDIVNPT-18-1503	2018 Advanced Naval Technology Exercise
Battelle Memorial Institute	LP-CRADA-NUWCDIVNPT-18-1506	2018 Advanced Naval Technology Exercise
Battelle Memorial Institute	NCRADA-NUWCDIVNPT-16-1292	White Nail Antenna Technology
Center for Transformative Environmental Monitoring Programs	LP-CRADA-NUWCDIVNPT-17-1454	Evaluation and Testing of Distributed Temperature Sensor Units

Naval Undersea Warfare Center, Division Newport (Continued)

Non-Federal Partner	CRADA Number	Subject
Collaboration Technologies, Inc.	LP-NCRADA-NUWCDIVNPT-18-1528	Topside
Collaboration Technologies, Inc.	SP-NCRADA-NUWCDIVNPT-18-1504	2018 Advanced Naval Technology Exercise
Diversified Measurement & Control, LLC	LP-CRADA-NUWCDIVNPT-17-1447	Evaluation and Testing of Distributed Temperature Sensor Units
EDO Western Corporation	NCRADA-NUWCDIVNPT-17-1418	Feasibility of Textured Ceramic for Navy SONAR
Electric Boat Corporation; University of Connecticut; and University of Rhode Island	NCRADA-NUWCDIVNPT-17-1308	Undersea Technology
Fabien Cousteau Ocean Learning Center, Inc.	NCRADA-NUWCDIVNPT-18-1490	Project Proteus
Foster-Miller, Inc. dba Qinetiq North America	SP-NCRADA-NUWCDIVNPT-18-1502	2018 Advanced Naval Technology Exercise
General Dynamics Electric Boat	SP-NCRADA-NUWCDIVNPT-18-1584	2018 Advanced Naval Technology Exercise
General Dynamics Mission Systems, Inc.	LP-NCRADA-NUWCDIVNPT-18-1557	Topside
General Dynamics Mission Systems, Inc.	SP-NCRADA-NUWCDIVNPT-18-1513	2018 Advanced Naval Technology Exercise
Greensea Systems	NCRADA-NUWCDIVNPT-18-1552	Unmanned Maritime Vehicle Navigation and Control
Huntington Ingalls Industries Unmanned Maritime Systems, Inc.	NCRADA-NUWCDIVNPT-18-1563	Proteus Dual Mode Undersea Vehicle Design and Capabilities
Inflatable Composites, LLC	NCRADA-NUWCDIVNPT-18-1536	Inflatable Structures Research, Development and Applications
Kraken Robotic Systems, Inc.	NCRADA-NUWCDIVNPT-18-1547	Operation of a High-Speed Actively Controlled Towed Synthetic Aperture Sonar for Multi-Mission Applications
L-3 Communications EO/IR, Inc.	LP-NCRADA-NUWCDIVNPT-18-1515	Topside
L-3-OceanServer	SP-NCRADA-NUWCDIVNPT-18-1559	2018 Advanced Naval Technology Exercise
L-3 Technologies, Inc. dba Space and Navigation	LP-NCRADA-NUWCDIVNPT-18-1534	Super-TAC Inertial Measurement Unit

Naval Undersea Warfare Center, Division Newport (Continued)

Non-Federal Partner	CRADA Number	Subject
Leidos, Inc.	SP-NCRADA-NUWCDIVNPT-18-1507	2018 Advanced Naval Technology Exercise
Lockheed Martin Corporation	LP-CRADA-NUWCDIVNPT-17-1431	Topside
Lockheed Martin Corporation - C6ISR	SP-NCRADA-NUWCDIVNPT-18-1508	2018 Advanced Naval Technology Exercise
Massachusetts Hydrogen Coalition, Inc.	SP-NCRADA-NUWCDIVNPT-18-1580	2018 Advanced Naval Technology Exercise
The Mitre Corporation	NCRADA-NUWCDIVNPT-16-1274	Application of Radar Technology to the Multi-Static Sonar Problem
Nautilus Defense, LLC	NCRADA-NUWCDIVNPT-17-1427	Technical Textiles, Protective Fabrics and Inflatable Fabric Structures
NKT Photonics, Inc.	LP-CRADA-NUWCDIVNPT-17-1439	Evaluation and Testing of Distributed Temperature Sensor Units
Nortek USA, Inc.	LP-NCRADA-NUWCDIVNPT-18-1574	Doppler Velocity Logger and Acoustic Doppler Current Profiler
Northrop Grumman Systems Corporation	SP-NCRADA-NUWCDIVNPT-18-1514	2018 Advanced Naval Technology Exercise
Northrop Grumman Systems Corporation - Marine Systems	NCRADA-NUWCDIVNPT-18-1538	Blind Mate Connector Concept
NVIDIA	NCRADA-NUWCDIVNPT-18-1469	Machine Learning
Pennsylvania State University Applied Research Laboratory	NCRADA-NUWCDIVNPT-17-1457	Rapid Prototype Torpedo Program
PowerDocks, LLC	NCRADA-NUWCDIVNPT-17-1423	Wireless Charging of Autonomous Systems
Raytheon Company	NCRADA-NUWCDIVNPT-17-1444	Standards-Based Unmanned Systems Vehicle Control
Raytheon Integrated Defense Systems	NCRADA-NUWCDIVNPT-18-1558	Collaborative RF Testing of Maritime Radio Links
Riptide Autonomous Solutions, LLC	SP-NCRADA-NUWCDIVNPT-18-1518	2018 Advanced Naval Technology Exercise
Seatrac	LP-NCRADA-NUWCDIVNPT-18-1529	Topside
Seatrac	SP-NCRADA-NUWCDIVNPT-18-1520	2018 Advanced Naval Technology Exercise
Silixa, LLC	LP-CRADA-NUWCDIVNPT-17-1438	Evaluation and Testing of Distributed Temperature Sensor Units

Naval Undersea Warfare Center, Division Newport (Continued)

Non-Federal Partner	CRADA Number	Subject
Sparton DeLeon Springs, LLC	SP-NCRADA-NUWCDIVNPT-18-1522	2018 Advanced Naval Technology Exercise
Spatial Integrated Systems, Inc.	LP-NCRADA-NUWCDIVNPT-18-1595	Topside
Taoglas USA, Inc.	LP-CRADA-NUWCDIVNPT-17-1425	Antenna Testing
Teledyne Benthos, a Business Unit of Teledyne Instruments, Inc.	SP-NCRADA-NUWCDIVNPT-18-1524	2018 Advanced Naval Technology Exercise
Teledyne Brown Engineering, Inc.	NCRADA-NUWCDIVNPT-18-1581	2018 Advanced Naval Technology Exercise
Teledyne Brown Engineering, Inc.	SP-NCRADA-NUWCDIVNPT-18-1509	2018 Advanced Naval Technology Exercise
Teledyne Brown Engineering, Inc.	SP-NCRADA-NUWCDIVNPT-18-1510	2018 Advanced Naval Technology Exercise
Teledyne Energy Systems, Inc.	SP-NCRADA-NUWCDIVNPT-18-1521	2018 Advanced Naval Technology Exercise
Teledyne Webb Research, a Business Unit of Teledyne Instruments, Inc.	LP-CRADA-NUWCDIVNPT-17-1441	Topside
ThayerMahan, Inc.	SP-NCRADA-NUWCDIVNPT-18-1523	2018 Advanced Naval Technology Exercise
Tritech International, Limited	LP-CRADA-NUWCDIVNPT-17-1394	AquaTrak Velocity Log
University of Rhode Island	SP-NCRADA-NUWCDIVNPT-18-1511	2018 Advanced Naval Technology Exercise
Z-senz, LLC	LP-CRADA-NUWCDIVNPT-18-1519	2018 Advanced Naval Technology Exercise

Space and Naval Warfare Systems Center Atlantic

Non-Federal Partner	CRADA Number	Subject
G3 Technologies	NCRADA-SSC LANT-18-04	Commercial Wireless Network Interoperability with MUOS SATCOM
Nutanix, Inc.	LP-CRADA-SSC ATLANTIC-17-002	Hyper Converged Infrastructure Evaluation

Space and Naval Warfare Systems Center Pacific

Non-Federal Partner	CRADA Number	Subject
9163-2935 Quebec, Inc. dba Opto Electronic Components	LP-CRADA-SSC PACIFIC-18-312	Evaluation of Photon Counting and Timing Equipment
Ario, LLC	NCRADA-SSC PACIFIC-18-303	Augmented Reality Ship Maintenance Demonstration
Arizona Board of Regents, University of Arizona	NCRADA-SSC PACIFIC-17-292	Autonomous and Cloud Security Research Collaboration
Bokam Engineering, Inc.	LP-CRADA-SSC PACIFIC-18-296	Multi-Robot Operator Control Unit Version 4 IRAD Investigation
Forcepoint Federal, LLC	LP-CRADA-SSC PACIFIC-18-308	Evaluation of High Speed Guard for Cross Domain Solutions
Foster-Miller, Inc. dba Qinetiq North America	LP-CRADA-SSC PACIFIC-18-301	Evaluation of Multi-Robot Operator Control Unit Version 4 for Universal and Tactical Robotic Controllers
General Dynamics Mission Systems, Inc.	LP-CRADA-SSC PACIFIC-18-305	Integration of Multi-Robot Operator Control Unit Version 4/CaSHMI into the AN/BYG-1 Combat Control System
Greensea Systems, Inc.	NCRADA-SSC PACIFIC-18-313	Unmanned Experimental Systems Autonomy, Control and Operator Interaction
HaptX, Inc.	LP-CRADA-SSC PACIFIC-18-311	Evaluation of HaptX, Inc. Virtual Reality Equipment
Harris Corporation, Communications Systems	LP-CRADA-SSC PACIFIC-18-307	Loan-In of Harris Mobile User Objective System AN/PRC-117G Radios
HP, Inc.	NCRADA-SSC PACIFIC-18-299	Additive Manufacturing Production Capability Validation
Insitu, Inc.	NCRADA-SSC PACIFIC-18-295	Unmanned Aerial Vehicle Wing Tray Radio Integration
Kutta Technologies, Inc.	LP-CRADA-SSC PACIFIC-18-310	Multi-Robot Operator Control Unit Version 4 Loan and Evaluation
Lorimar Group, Inc.	NCRADA-SSC PACIFIC-18-306	Unmanned Surface Vehicle Payload Delivery Support Project
National Institute for Lasers, Plasma and Radiation Physics	NCRADA-SSC PACIFIC-18-309	Pulsed Laser Ablation and Deposition of Complex Compound Materials
OpenJAUS, LLC	LP-CRADA-SSC PACIFIC-18-300	Multi-Robot Operator Control Unit Version 4 IRAD Program
QC Ware, Corp.	LP-CRADA-SSC PACIFIC-18-304	Test and Evaluation of Quantum Computing Tool
Qualcomm Technologies, Inc.	SP-CRADA-SSC PACIFIC-18-294	MCAS Miramar Autonomous Vehicle Evaluation (Stage I)

Space and Naval Warfare Systems Center Pacific (Continued)

Non-Federal Partner	CRADA Number	Subject
Quinc.tech, Inc.	NCRADA-SSC PACIFIC-18-297	Viability Assessment of Josephson Junction Fabrication Process
Raytheon Company	NCRADA-SSC PACIFIC-18-302	Machine-Learning Enhancements for Electronic Warfare Systems
The Regents of the University of California, on Behalf of its San Diego Campus	NCRADA-SSC PACIFIC-18-314	Human Detection, Localization and Classification Performance of Targets with Sonar Imagery
Riptide Autonomous Solutions, LLC	NCRADA-SSC PACIFIC-17-290	Undersea Swarming with Autonomous Vehicles
Silvus Technologies, Inc.	LP-CRADA-SSC PACIFIC-18-298	MIMO Communications Device Evaluation
Teledyne SeaBotix, a Business Unit of Teledyne Instruments, Inc.	NCRADA-SSC PACIFIC-18-293	Advancement of Unmanned Maritime Systems to Support Naval Expeditionary Operations
The University Court of the University of St. Andrews	NCRADA-SSC PACIFIC-17-291	Structured Light for Quantum Optics and Detection
Varjo Technologies Oy	LP-CRADA-SSC PACIFIC-18-315	Loan-In of Varjo Model One Virtual Reality Display

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APPENDIX D

FY18 PARTNERSHIP INTERMEDIARY AGREEMENTS

Table D-1. FY18 Partnership Intermediary Agreements

Lab Name	PIA Number	Non-Federal Partner	Subject
Naval Surface Warfare Center, Crane Division (NSWCCD)	PIA-NSWCCD-18-038	The State of Indiana	Partnership Intermediary Agreement (PIA) to Promote Cooperative Activities Between NSWCCD and Small Business Firms and Educational Institutions Served by the State of Indiana
NSWCCD	PIA-NSWCCD-18-039	Wright Brothers Institute	PIA to Promote Cooperative Activities Between NSWCCD and the Small Business Firms, Educational Institutions and Federal Laboratories Served by the Wright Brothers Institute
Naval Surface Warfare Center, Indian Head Explosive Ordnance Disposal Technology Division (NSWC IHEODTD)	PIA-NSWC IHEODTD-17-001	College of Southern Maryland	PIA to Promote Cooperative Activities Between NSWC IHEODTD and Small Business Firms and Educational Institutions Served by the College of Southern Maryland
NSWC IHEODTD	PIA-NSWC IHEODTD-17-002	The Patuxent Partnership	PIA to Promote Cooperative Activities Between NSWC IHEODTD and Small Business Firms and Educational Institutions Served by The Patuxent Partnership
Naval Surface Warfare Center, Port Hueneme Division	PIA-NSWC PHD-18-0001	Global Trade & Technology	PIA to Promote Cooperative Activities Between Naval Surface Warfare Center, Port Hueneme Division and Small Business Firms and Educational Institutions Served by Global Trade & Technology
Naval Undersea Warfare Center, Division Newport	PIA-NUWCDIVNPT-16-1269	The University of Rhode Island Business Engagement Center a Division of the University of Rhode Island Foundation	PIA to Promote Cooperative Activities Between Naval Undersea Warfare Center, Division Newport and the University of Rhode Island Business Engagement Center a Division of the University of Rhode Island Foundation



APPENDIX E

FY18 EDUCATIONAL PARTNERSHIP AGREEMENTS

Table E-1. FY18 Educational Partnership Agreements

Lab Name	EPA Number	Non-Federal Partner	Subject
Fleet Readiness Center Southeast	EPA-FRCSE-17-001	Clay County Public Schools	Educational Partnership Agreement (EPA) Between Fleet Readiness Center Southeast and Clay County Public Schools
Naval Air Warfare Center (NAWC) Aircraft Division, Patuxent River	EPA-NAWCADPAX-08-002	University of Maryland College Park	Navy Workforce Development
NAWC, Training Systems Division	N61340071217-04	Embry-Riddle Aeronautical University	Aid in the education of Embry-Riddle Aeronautical University students while promoting interest in research and development (R&D) in technical applications required by the U.S. Navy and facilitating the training and recruitment of potential future employees
NAWC, Training Systems Division	N61340-92014-1149	University of Central Florida	Aid in the education of University of Central Florida students while promoting interest in R&D in technical applications required by the U.S. Navy and facilitating the training and recruitment of potential future employees
Naval Facilities Engineering and Expeditionary Warfare Center (NAVFAC EXWC)	EPA-NAVFAC-EXWC-16-002	California State University Channel Islands	Science, Technology, Engineering and Mathematics (STEM) Outreach with California State University Channel Islands
NAVFAC EXWC	EPA-NAVFAC-EXWC-17-001	California State University Polytechnic, San Luis Obispo	Environmental Engineering
NAVFAC EXWC	EPA-NAVFAC-EXWC-15-001	The Regents of the University of California, Santa Barbara	STEM Outreach with the Regents of the University of California, Santa Barbara

Table E-1. FY18 Educational Partnership Agreements (Continued)

Lab Name	EPA Number	Non-Federal Partner	Subject
NAVFAC EXWC	EPA-NAVFAC-EXWC-18-002	The University Corporation, California State University, Northridge	Cybersecurity and Modeling and Simulation
NAVFAC EXWC	EPA-NAVFAC-EXWC-18-001	Ventura County Community College District	STEM Outreach - Engineering, Information Technology, Math, Science Disciplines
NAVFAC EXWC	EPA-NAVFAC-EXWC-16-001	Ventura County Office of Education	STEM Outreach with Ventura County Office of Education
Naval Medical Center, Portsmouth (NMCP)	EPA-NMCP-17-386	Chatham University	Doctoral Nursing Research
NMCP	EPA-NMCP-18-396	East Carolina University and the Naval Medical Center Camp Lejeune	Graduate Work in Public Health Between East Carolina University and the Naval Medical Center Camp Lejeune in association with NMCP
NMCP	EPA-NMCP-18-400	Excelsior College	Master's Degree in Nursing Informatics
NMCP	EPA-NMCP-18-413	George Washington University	Collaborative Research in Public Health
Naval Surface Warfare Center, Carderock Division (NSWCCA)	EPA-NSWCCA-18-32	Georgetown University	EPA for Material Science, Additive Manufacturing, Robotics and Nuclear Engineering Technology Educational Guidance and Assistance
NSWCCA	EPA-NSWCCA-17-28	Michigan Technological University	EPA for Technology Educational Guidance and Assistance
NSWCCA	EPA-NSWCCA-18-33	National Intelligence University, School of Science and Technology Intelligence	EPA for Vessel Technology, Dynamics, Detection, Experimentation, Expert Advice and Educational Guidance and Assistance
NSWCCA	EPA-NSWCCA-17-31	Old Dominion University	EPA for Technology Educational Guidance and Assistance
NSWCCA	EPA-NSWCCA-17-29	San Diego State University	EPA for Technology Educational Guidance and Assistance
NSWCCA	EPA-NSWCCA-17-30	University of Iowa, College of Engineering	EPA for Science and Technology Educational Guidance and Assistance

Table E-1. FY18 Educational Partnership Agreements (Continued)

Lab Name	EPA Number	Non-Federal Partner	Subject
Naval Surface Warfare Center, Crane Division (NSWCCD)	EPA-NSWCCD-10-0925	Arizona Board of Regents on behalf of the University of Arizona	STEM Partnership
NSWCCD	EPA-NSWCCD-10-0922	Ball State University	STEM Partnership
NSWCCD	EPA-NSWCCD-09-0799	Barr-Reeve Community Schools	STEM Partnership
NSWCCD	EPA-NSWCCD-09-0798	Barr-Reeve High School	STEM Partnership
NSWCCD	EPA-NSWCCD-16-0934	Battery Innovation Center Institute, Inc.	STEM Partnership
NSWCCD	EPA-NSWCCD-17-0940	Case Western Reserve University	STEM Partnership
NSWCCD	EPA-NSWCCD-15-0832	Dugger Union Community Schools	STEM Partnership
NSWCCD	EPA-NSWCCD-16-0935	East Carolina University	STEM Partnership
NSWCCD	EPA-NSWCCD-11-0901	Foundation for the California State University, San Bernardino	STEM Partnership
NSWCCD	EPA-NSWCCD-15-0831	Grandview Elementary School	STEM Partnership
NSWCCD	EPA-NSWCCD-09-0797	Greater Jasper Consolidated Schools	STEM Partnership
NSWCCD	EPA-NSWCCD-17-0939	Hanover College	STEM Partnership
NSWCCD	EPA-NSWCCD-10-0927	Illinois Institute of Technology	STEM Partnership
NSWCCD	EPA-NSWCCD-12-0905	Indiana State University	STEM Partnership
NSWCCD	EPA-NSWCCD-11-0903	Indiana University, Bloomington	STEM Partnership
NSWCCD	EPA-NSWCCD-08-0920	Indiana University/ Purdue University Fort Wayne	STEM Partnership

Table E-1. FY18 Educational Partnership Agreements (Continued)

Lab Name	EPA Number	Non-Federal Partner	Subject
NSWCCD	EPA-NSWCCD-15-0917	Indiana Wesleyan University	STEM Partnership
NSWCCD	EPA-NSWCCD-12-0909	Iowa State University of Science and Technology	STEM Partnership
NSWCCD	EPA-NSWCCD-13-0913	Ivy Tech Community College, Bloomington, Indiana	STEM Partnership
NSWCCD	EPA-NSWCCD-18-0837	Jackson Township Elementary	STEM Partnership
NSWCCD	EPA-NSWCCD-16-0936	Lawrence County Science, Technology, Engineering, Arts and Mathematics	STEM Partnership
NSWCCD	EPA-NSWCCD-09-0795	Linton-Stockton School Corporation	STEM Partnership
NSWCCD	EPA-NSWCCD-16-0833	Metropolitan School District Shakamak	STEM Partnership
NSWCCD	EPA-NSWCCD-16-0937	Michigan Technological University	STEM Partnership
NSWCCD	EPA-NSWCCD-10-0802	Mitchell Community Schools	STEM Partnership
NSWCCD	EPA-NSWCCD-10-0810	Monroe County Community School Corporation	STEM Partnership
NSWCCD	EPA-NSWCCD-12-0910	North Carolina University	STEM Partnership
NSWCCD	EPA-NSWCCD-09-0794	North Daviess Community Schools	STEM Partnership
NSWCCD	EPA-NSWCCD-09-0792	Northeast Dubois County Schools	STEM Partnership
NSWCCD	EPA-NSWCCD-09-0793	North Knox School Corporation	STEM Partnership
NSWCCD	EPA-NSWCCD-09-0800	North Lawrence Community Schools	STEM Partnership

Table E-1. FY18 Educational Partnership Agreements (Continued)

Lab Name	EPA Number	Non-Federal Partner	Subject
NSWCCD	EPA-NSWCCD-15-0920	Ohio State University	STEM Partnership
NSWCCD	EPA-NSWCCD-10-0815	Paoli Community School Corporation	STEM Partnership
NSWCCD	EPA-NSWCCD-07-0917	Pennsylvania State University	STEM Partnership
NSWCCD	EPA-NSWCCD-09-0791	Pike Central High School	STEM Partnership
NSWCCD	EPA-NSWCCD-07-0916	Purdue University	STEM Partnership
NSWCCD	EPA-NSWCCD-18-0494	Purdue University	STEM Partnership
NSWCCD	EPA-NSWCCD-16-0933	Regional Opportunities Initiatives, Inc.	STEM Partnership
NSWCCD	EPA-NSWCCD-10-0816	Richland Bean Blossom Community School Corporation	STEM Partnership
NSWCCD	EPA-NSWCCD-13-0827	Riley High School	STEM Partnership
NSWCCD	EPA-NSWCCD-15-0916	Rose-Hulman Institute of Technology	STEM Partnership
NSWCCD	EPA-NSWCCD-10-0813	Rural Community Academy	STEM Partnership
NSWCCD	EPA-NSWCCD-10-0814	Shoals Community School Corporation	STEM Partnership
NSWCCD	EPA-NSWCCD-09-0790	Southeast Dubois County School Corporation	STEM Partnership
NSWCCD	EPA-NSWCCD-10-0812	South Knox School Corporation	STEM Partnership
NSWCCD	EPA-NSWCCD-10-0819	Southwest Dubois County School Corporation	STEM Partnership
NSWCCD	EPA-NSWCCD-10-0818	Spencer-Owen Community Schools	STEM Partnership

Table E-1. FY18 Educational Partnership Agreements (Continued)

Lab Name	EPA Number	Non-Federal Partner	Subject
NSWCCD	EPA-NSWCCD-10-0821	Springs Valley Community Schools	STEM Partnership
NSWCCD	EPA-NSWCCD-17-0938	State University of New Jersey - Rutgers	STEM Partnership
NSWCCD	EPA-NSWCCD-17-0834	St. Benedict Classical Catholic School	STEM Partnership
NSWCCD	EPA-NSWCCD-11-0823	St. Charles Catholic School	STEM Partnership
NSWCCD	EPA-NSWCCD-11-0824	St. Vincent De Paul School	STEM Partnership
NSWCCD	EPA-NSWCCD-16-0922	Tennessee State University	STEM Partnership
NSWCCD	EPA-NSWCCD-15-0921	Trine University	STEM Partnership
NSWCCD	EPA-NSWCCD-08-0918	Trustees of Indiana University	STEM Partnership
NSWCCD	EPA-NSWCCD-11-0904	University of Akron	STEM Partnership
NSWCCD	EPA-NSWCCD-13-0912	University of Connecticut	STEM Partnership
NSWCCD	EPA-NSWCCD-12-0908	University of Dayton	STEM Partnership
NSWCCD	EPA-NSWCCD-15-0918	University of Evansville	STEM Partnership
NSWCCD	EPA-NSWCCD-10-0928	University of Louisville	STEM Partnership
NSWCCD	EPA-NSWCCD-15-0919	University of Notre Dame	STEM Partnership
NSWCCD	EPA-NSWCCD-08-0919	University of Southern Indiana	STEM Partnership
NSWCCD	EPA-NSWCCD-10-0926	University of Texas at Arlington	STEM Partnership
NSWCCD	EPA-NSWCCD-09-0921	Valparaiso University	STEM Partnership

Table E-1. FY18 Educational Partnership Agreements (Continued)

Lab Name	EPA Number	Non-Federal Partner	Subject
NSWCCD	EPA-NSWCCD-10-0820	Vincennes Community School Corporation	STEM Partnership
NSWCCD	EPA-NSWCCD-12-0907	Virginia Tech	STEM Partnership
NSWCCD	EPA-NSWCCD-10-0811	Washington Catholic Schools	STEM Partnership
NSWCCD	EPA-NSWCCD-15-0828	Washington High School	STEM Partnership
NSWCCD	EPA-NSWCCD-09-0796	White River Valley School Corporation	STEM Partnership
Naval Surface Warfare Center, Dahlgren Division (NSWCDD)	EPA-NSWCDD-18-001	Arizona Board of Regents on behalf of Arizona State University	Mutually beneficial innovative projects, including research and technology transfer or transition projects and activities in the area of Chemical, Biological, and Radiological Defense Systems
NSWCDD	EPA-NSWCDD-18-006	The Regents of the University of California, Davis on behalf of its College of Engineering Office of Research, Sponsored Programs	Mutually beneficial innovative projects, including research and technology transfer or transition projects and activities in the area of Directed Energy Systems Research, Development, Test, and Evaluation
NSWCDD	EPA-NSWCDD-18-003	School Board of the City of Virginia Beach, VA dba Ocean Lakes High School Mathematics and Science Academy	STEM Outreach Program with Ocean Lakes High School, the Virginia Beach City Public Schools' Math and Science Academy
NSWCDD	EPA-NSWCDD-18-007	Tennessee Technological University	Mutually beneficial innovative projects, including research and technology transfer or transition projects and activities in all NSWCDD technical capabilities areas

Table E-1. FY18 Educational Partnership Agreements (Continued)

Lab Name	EPA Number	Non-Federal Partner	Subject
NSWCDD	EPA-NSWCDD-18-004	Virginia Commonwealth University	Mutually beneficial innovative projects, including research and technology transfer and transition projects and activities in all NSWCDD technical capabilities areas
Naval Surface Warfare Center, Indian Head Explosive Ordnance Disposal Technology Division (NSWC IHEODTD)	EPA-NSWC IHEODTD-18-001	Morgan State University	Cyber Security
NSWC IHEODTD	EPA-NSWC IHEODTD-18-002	School of Engineering Rutgers, State University of New Jersey and U.S. Army Armament Research, Development and Engineering Center	Partnership for Packaging, Handling, Storage, and Transportation
NSWC IHEODTD	EPA-NSWC IHEODTD-18-003	St. Mary's College of Maryland and The Patuxent Partnership	Educational Partnership with St. Mary's College
Naval Surface Warfare Center, Port Hueneme Division	NEPA-N63394-18-0001	University of California at Santa Barbara on behalf of the College of Engineering	Strategic partnership for the goal of advancing mission needs and requirements related to in-service engineering and workforce development

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