



# **REVIEW OF THE DEPARTMENT OF THE NAVY COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENTS (CRADAs) FOR FISCAL YEAR 2011**

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Arlington, VA  
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## Table of Contents

Listing of Acronyms.....	ii
Fiscal Year (FY) 11 Overview.....	1
Appendix A – DoN CRADA Income and History .....	A-1
Cumulative Record of DoN CRADAs, Listed by Laboratory FY89 Through FY11 .....	A-2
Appendix B – DoN Laboratory CRADA Income and History (For Laboratories with a Cumulative Total of 10 or More CRADAs)	
National Naval Medical Center.....	B-1
Naval Air Warfare Center Aircraft Division, Lakehurst.....	B-3
Naval Air Warfare Center Aircraft Division, Patuxent River .....	B-5
Naval Air Warfare Center Training Systems Division.....	B-7
Naval Air Warfare Center Weapons Division, China Lake .....	B-9
Naval Air Warfare Center Weapons Division, Point Mugu.....	B-11
Naval Facilities Engineering Service Center .....	B-13
Naval Medical Center, Portsmouth .....	B-15
Naval Medical Center, San Diego.....	B-17
Naval Medical Research Center and Naval Health Research Center .....	B-19
Naval Meteorology and Oceanography Command .....	B-21
Naval Postgraduate School.....	B-23
Naval Research Laboratory .....	B-25
Naval Surface Warfare Center, Carderock Division.....	B-27
Naval Surface Warfare Center, Crane Division .....	B-29
Naval Surface Warfare Center, Dahlgren Division.....	B-31
Naval Surface Warfare Center, Indian Head Division .....	B-33
Naval Undersea Warfare Center, Division Keyport.....	B-35
Naval Undersea Warfare Center, Division Newport.....	B-37
Office of Naval Research .....	B-39
SPAWARSCEN Atlantic .....	B-41
SPAWARSCEN Pacific.....	B-43
United States Naval Academy .....	B-45
Appendix C – FY11 CRADA Listing.....	C-1

## Listing of Acronyms

COTS	Commercial Off-the-Shelf
CRADA	Cooperative Research and Development Agreement
DoN	Department of the Navy
DoN T2 PO	Department of the Navy Technology Transfer Program Office
FY	Fiscal Year
LP-CRADA	Limited Purpose Cooperative Research and Development Agreement
NAWCADLKE	Naval Air Warfare Center Aircraft Division, Lakehurst
NAWCADPAX	Naval Air Warfare Center Aircraft Division, Patuxent River
NAWCTSD	Naval Air Warfare Center Training Systems Division
NAWCWDCL	Naval Air Warfare Center Weapons Division, China Lake
NAWCWDPM	Naval Air Warfare Center Weapons Division, Point Mugu
NCTRF	Naval Clothing and Textile Research Facility
NDTTIS	Navy Defense Technology Transfer Information System
NEODTD	Naval Explosive Ordnance Disposal Technology Division
NFESC	Naval Facilities Engineering Service Center
NMCP	Naval Medical Center, Portsmouth
NMCSD	Naval Medical Center, San Diego
NMOC	Naval Meteorology and Oceanography Command
NMRC/NHRC	Naval Medical Research Center and Naval Health Research Center
NNMC	National Naval Medical Center
NPS	Naval Postgraduate School
NRL	Naval Research Laboratory
NSWC Carderock	Naval Surface Warfare Center, Carderock Division
NSWC Crane	Naval Surface Warfare Center, Crane Division
NSWC Dahlgren	Naval Surface Warfare Center, Dahlgren Division
NSWC Indian Head	Naval Surface Warfare Center, Indian Head Division
NSWC PCD	Naval Surface Warfare Center, Panama City Division
NUWC Keyport	Naval Undersea Warfare Center, Division Keyport
NUWC Newport	Naval Undersea Warfare Center, Division Newport
ONR	Office of Naval Research
R&D	Research and Development
SPAWARSYCEN Atlantic	Space and Naval Warfare Systems Command Systems Center, Atlantic
SPAWARSYCEN Pacific	Space and Naval Warfare Systems Command Systems Center, Atlantic
T2	Technology Transfer
USNA	United States Naval Academy

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## Fiscal Year (FY) 11 Overview

Department of the Navy (DoN) Cooperative Research and Development Agreements (CRADAs) are legal agreements between a DoN Research and Development (R&D) laboratory and a non-federal partner 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. Both 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 partner can provide the same resources with the exception of funding; the federal government cannot provide funding to a non-federal partner under a CRADA.

CRADAs are valuable mechanisms to strengthen the United States industrial base by transferring technology developed in the DoN to the private sector. In addition, the transfer and acceptance of commercial-off-the-shelf (COTS) technology for government use can reduce the cost of items purchased by the federal government.

The DoN uses a standard CRADA format for most agreements as well as two specialty CRADA formats: Technical Assistance mini-CRADA and Limited Purpose CRADA (LP-CRADA). The mini-CRADA, also known as a Request for Cooperative Research, allows local companies to utilize a laboratory's facilities and technical expertise for a limited time (maximum four days) for a specific project. 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 DoN has entered into 3,073 CRADAs and received \$182,903,261 from non-federal CRADA partners to support this work since 1989. These funds directly support ongoing research projects at the DoN laboratories. Additional funding received by DoN laboratories from third-party government sponsors to support CRADAs is not reported. During FY11, CRADA income totaled \$12,846,123. This includes FY11 CRADAs, modifications (or amendments) to FY11 CRADAs and modifications to previous year CRADAs. The DoN entered into 155 new CRADAs and 45 new LP-CRADAs in FY11 (200 agreements) for a total sum of \$10,604,506. Modifications to CRADAs signed in FY11 totaled \$586,894. These modifications were from:

- Naval Air Warfare Center Aircraft Division, Patuxent River (\$271,842)
- Naval Medical Research Center (\$18,052)
- Naval Postgraduate School (\$97,000)
- Naval Research Laboratory (\$75,000)
- Naval Surface Warfare Center, Carderock Division (\$100,000)
- Naval Surface Warfare Center, Dahlgren Division (\$25,000)

Modifications to CRADAs signed in previous years generated additional income in FY11 of \$2,241,617. This income includes:

- Naval Air Warfare Center Training Systems Division (\$50,000)
- Naval Air Warfare Center Weapons Division, China Lake (\$205,000)
- Naval Medical Research Center (\$1,221,777)
- Naval Postgraduate School (\$270,000)
- Naval Research Laboratory (-\$57,300)
- Naval Surface Warfare Center, Carderock Division (\$189,647)
- Naval Surface Warfare Center, Indian Head (\$131,990)
- Naval Undersea Warfare Center, Division Newport (\$116,000)
- SPAWAR Systems Center Pacific (\$100,000)
- U.S. Naval Academy (\$14,503)

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(s) 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 cooperative development partnership not been in place. Cost avoidance experienced by the individual partner(s) 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.

Signature authority for DoN CRADAs was completely decentralized in FY00 and CRADAs are initiated without DoN Technology Transfer (T2) Program Office involvement. The DoN T2 Program Office receives a copy of all signed CRADAs and CRADAs are credited to the year received. Modified or extended CRADAs are not credited again. The entire income for each CRADA, including amended sums from terminations and modifications, is credited to the year the original CRADA is received. Thus the CRADA income for a particular year may fluctuate up or down.

This Annual Report details CRADA history for DoN laboratories having 10 or more CRADAs since FY89. Graphs showing CRADA income, number of new CRADAs, and a cumulative record of signed CRADAs for each laboratory are presented.

The DoN’s overall income from and participation in CRADAs since FY89 are summarized in **Appendix A**. For DoN laboratories with a cumulative total of 10 or more CRADAs, income received from and participation in CRADAs are provided in **Appendix B**. A listing of the CRADA partner and project subject for each FY11 CRADA is provided in **Appendix C**.

To stay current with the ever-changing environment of our Navy laboratories, the DoN T2 Program Office updated the Navy Defense Technology Transfer Information System (NDTTIS) database with the ability to capture information identifying third party funding and first responder technology.



**Appendix A: DoN CRADA Income and History Cumulative Record Listed by  
Laboratory FY89 Through FY11**



## Appendix A: DoN CRADA Income and History Cumulative Record, Listed by Laboratory FY89 Through FY11

Fleet Readiness Center Southwest .....	1
Marine Corps Combat Development Command.....	2
National Naval Medical Center .....	65
Naval Air Warfare Center	
Aircraft Division, Lakehurst.....	11
Aircraft Division, Patuxent River .....	130
Training Systems Division .....	47
Weapons Division, China Lake.....	216
Weapons Division, Point Mugu.....	48
Naval Aviation Depot	
Jacksonville.....	1
North Island .....	2
Naval Explosive Ordnance Disposal Technology Division .....	2
Naval Facilities Engineering Service Center .....	24
Naval Medical Center	
Portsmouth .....	103
San Diego .....	229
Naval Medical Research Center and Naval Health Research Center.....	659
Naval Meteorology and Oceanography Command.....	20
Naval Postgraduate School.....	196
Naval Research Laboratory .....	418
Naval Sea Systems Command.....	2
Naval Surface Warfare Center	
Carderock Division .....	101
Crane Division .....	81
Dahlgren Division .....	119
Indian Head Division .....	146
Panama City Division.....	2
Port Hueneme Division .....	3
Naval Undersea Warfare Center	
Division Keyport .....	11
Division Newport.....	228
Naval War College .....	7
Navy Clothing and Textile Research Facility .....	7
Navy Disease Vector Ecology and Control Center.....	1
Navy Experimental Diving Unit.....	2
Office of Naval Research .....	10
SPAWARSYSCEN Atlantic.....	19
SPAWARSYSCEN Pacific .....	132
United States Atlantic Command .....	1
United States Naval Academy .....	26
United States Naval Observatory .....	1
<b>TOTAL .....</b>	<b>3,073</b>

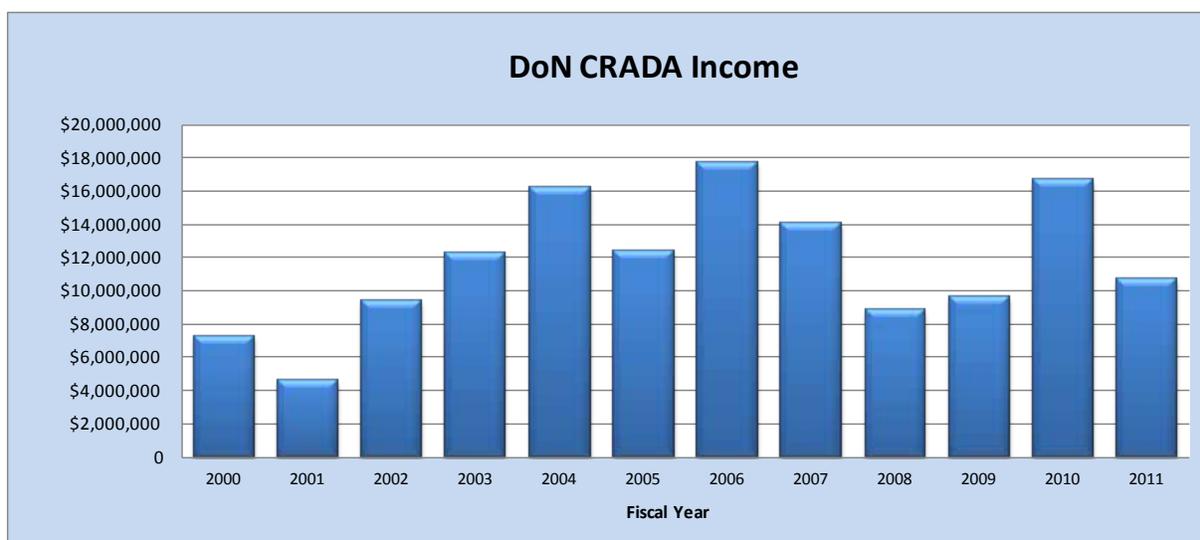
## DoN CRADA History\*

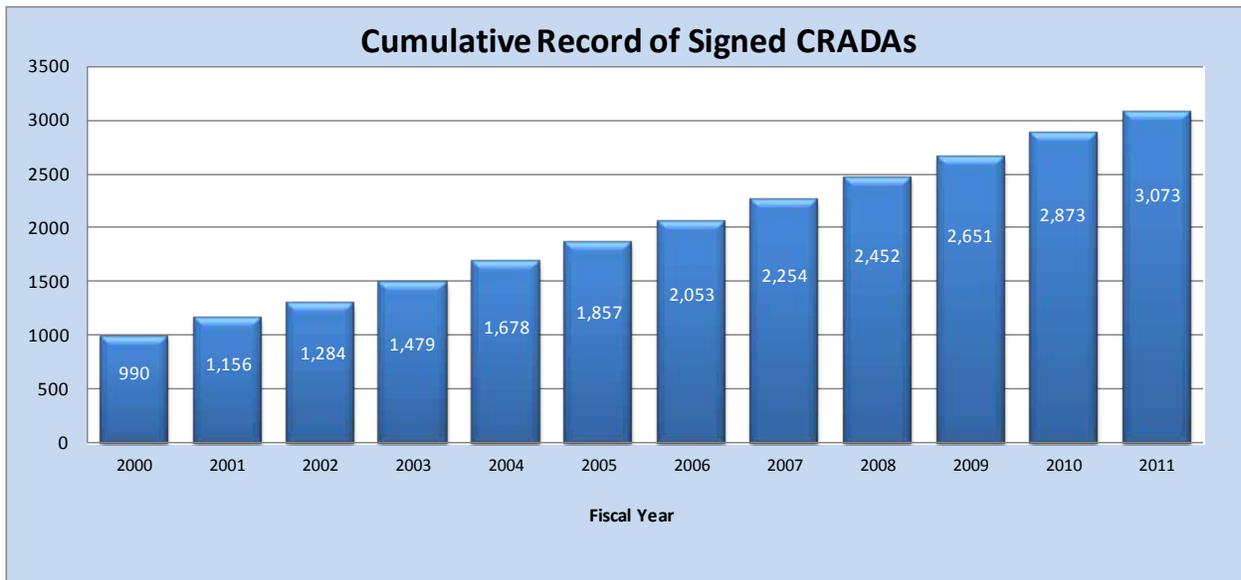
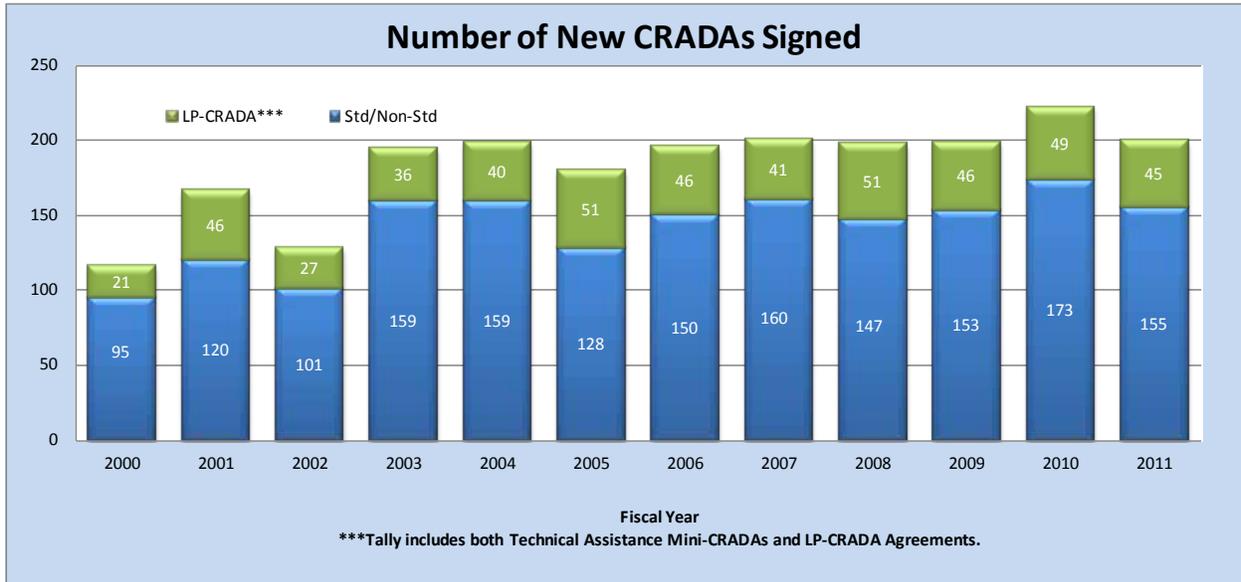
Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/NonStd	LP-CRADA***	Total	Cumulative
1989	\$784,428	2	-	2	2
1990	\$214,740	16	-	16	18
1991	\$529,020	21	-	21	39
1992	\$1,590,942	27	-	27	66
1993	\$857,500	41	-	41	107
1994	\$3,823,286	84	-	84	191
1995	\$1,763,032	103	23	126	317
1996	\$2,795,397	92	48	140	457
1997	\$7,248,751	120	26	146	603
1998	\$17,825,718	121	11	132	735
1999	\$6,150,938	98	41	139	874
2000	\$7,250,308	95	21	116	990
2001	\$4,569,360	120	46	166	1,156
2002	\$9,382,039	101	27	128	1,284
2003	\$12,266,377	159	36	195	1,479
2004	\$16,223,025	159	40	199	1,678
2005	\$12,314,316	128	51	179	1,857
2006	\$17,685,070	150	46	196	2,053
2007	\$13,973,559	160	41	201	2,254
2008	\$8,808,736	147	51	198	2,452
2009	\$9,578,802	153	46	199	2,651
2010	\$16,663,411	173	49	222	2,873
2011	\$10,604,506	155	45	200	3,073

\* This data reflects the number of CRADAs sent to DoN T2 Program Office (PO). CRADAs are credited to the year the CRADA is received at DoN T2 PO. Modified or extended CRADAs are not credited again.

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

\*\*\* Tally includes both Technical Assistance Mini-CRADAs and LP-CRADA Agreements.





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## Appendix B: DoN Laboratory CRADA Income and History



## National Naval Medical Center (NNMC)

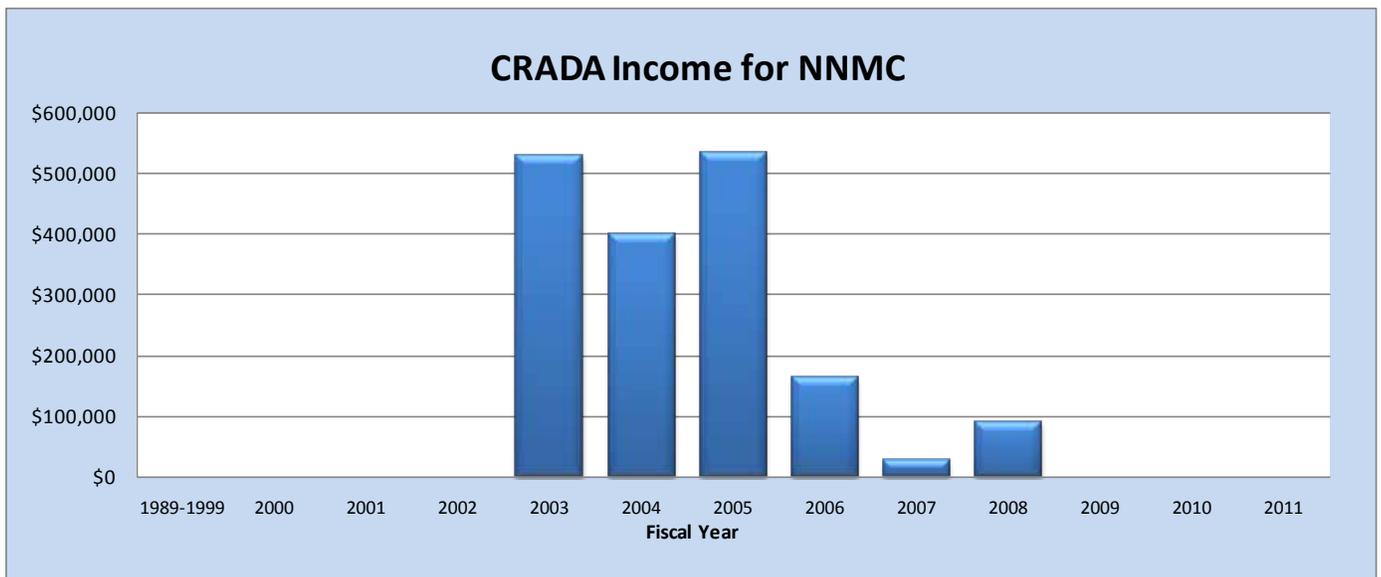
### NNMC CRADA History\*

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
1989-1999	\$0	2	-	2	2
2000	\$0	-	-	-	2
2001	\$0	-	-	-	2
2002	\$0	-	-	-	2
2003	\$529,882	16	-	16	18
2004	\$399,853	6	1	7	25
2005	\$533,928	5	6	11	36
2006	\$162,881	5	-	5	41
2007	\$26,543	12	-	12	53
2008	\$89,210	7	-	7	60
2009	\$0	2	-	2	62
2010	\$0	2	1	3	65
2011	\$0	-	-	-	65

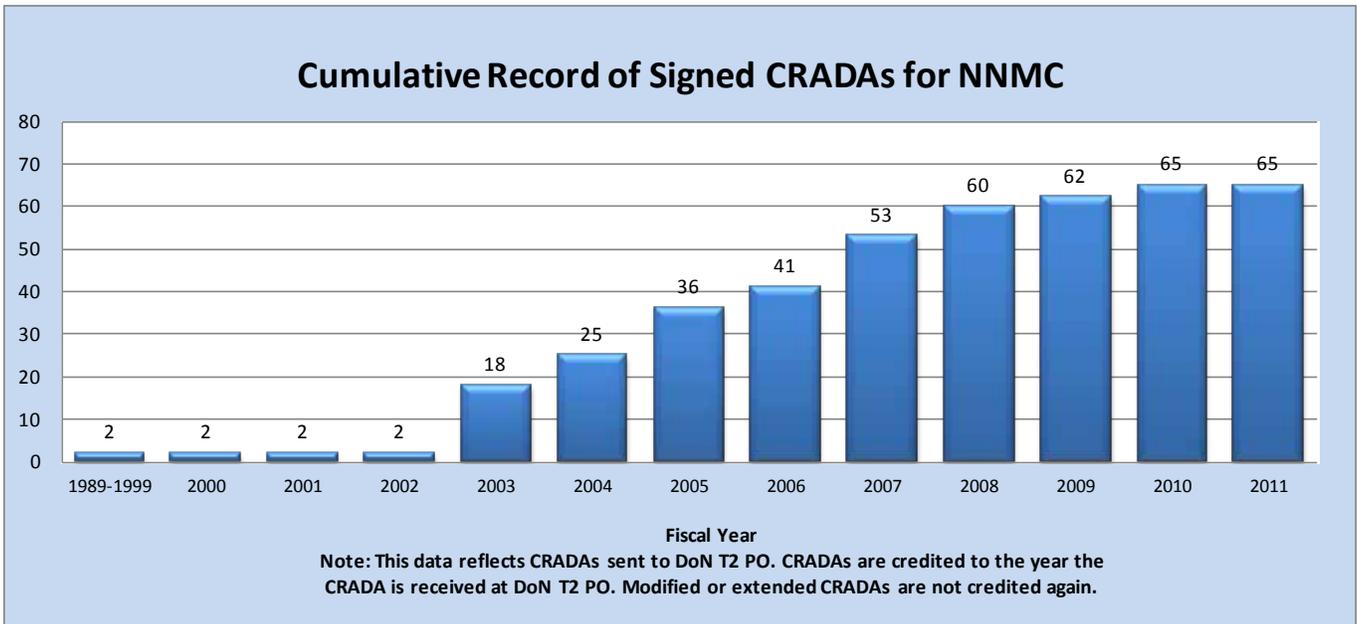
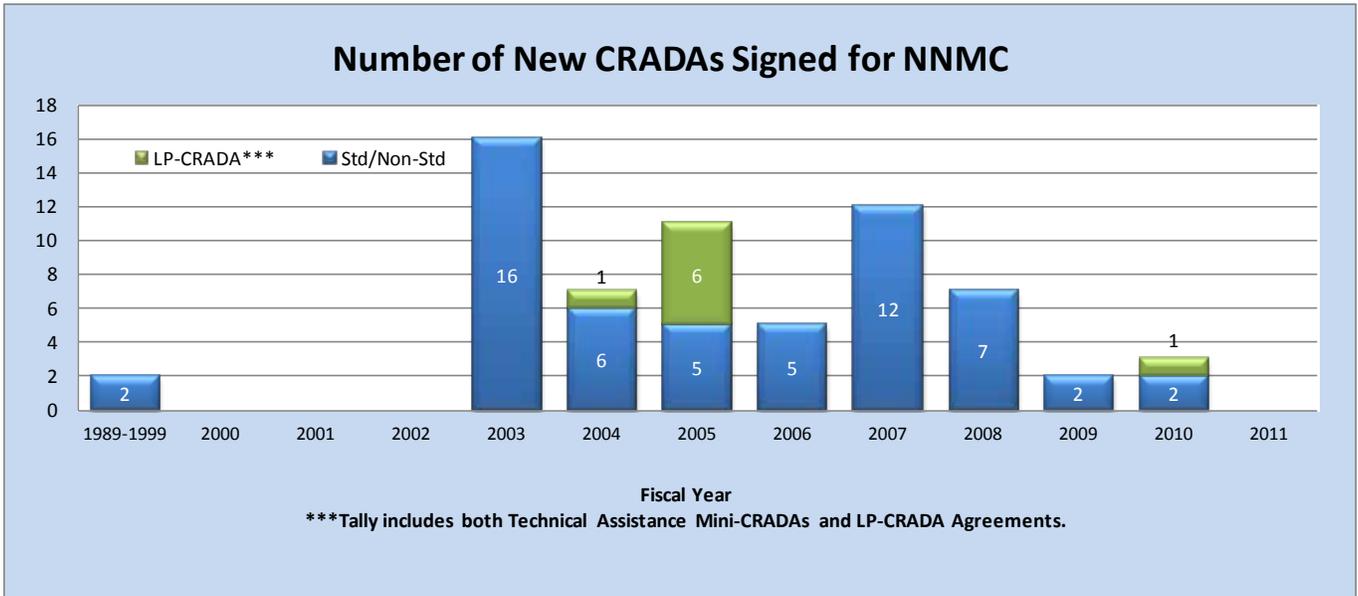
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## National Naval Medical Center (NNMC)



## Naval Air Warfare Center Aircraft Division, Lakehurst (NAWCADLKE)

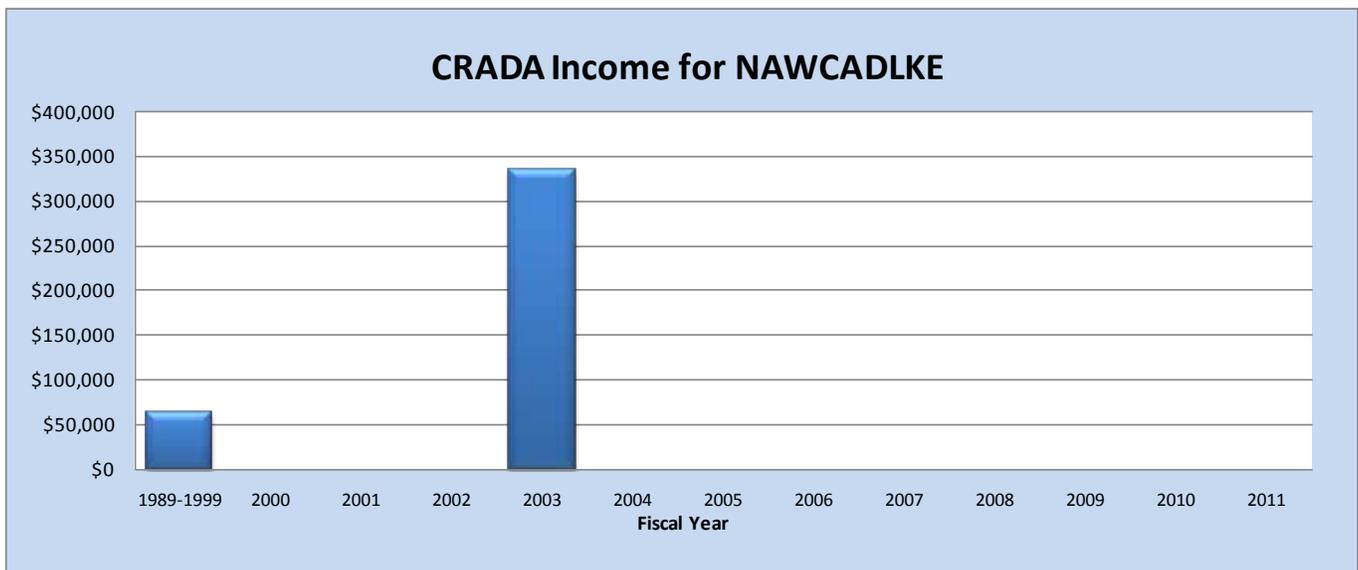
### NAWCADLKE CRADA History\*

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
<b>1989-1999</b>	\$63,300	8	-	8	8
<b>2000</b>	\$0	1	-	1	9
<b>2001</b>	\$0	1	-	1	10
<b>2002</b>	\$0	-	-	-	10
<b>2003</b>	\$335,000	1	-	1	11
<b>2004</b>	\$0	-	-	-	11
<b>2005</b>	\$0	-	-	-	11
<b>2006</b>	\$0	-	-	-	11
<b>2007</b>	\$0	-	-	-	11
<b>2008</b>	\$0	-	-	-	11
<b>2009</b>	\$0	-	-	-	11
<b>2010</b>	\$0	-	-	-	11
<b>2011</b>	\$0	-	-	-	11

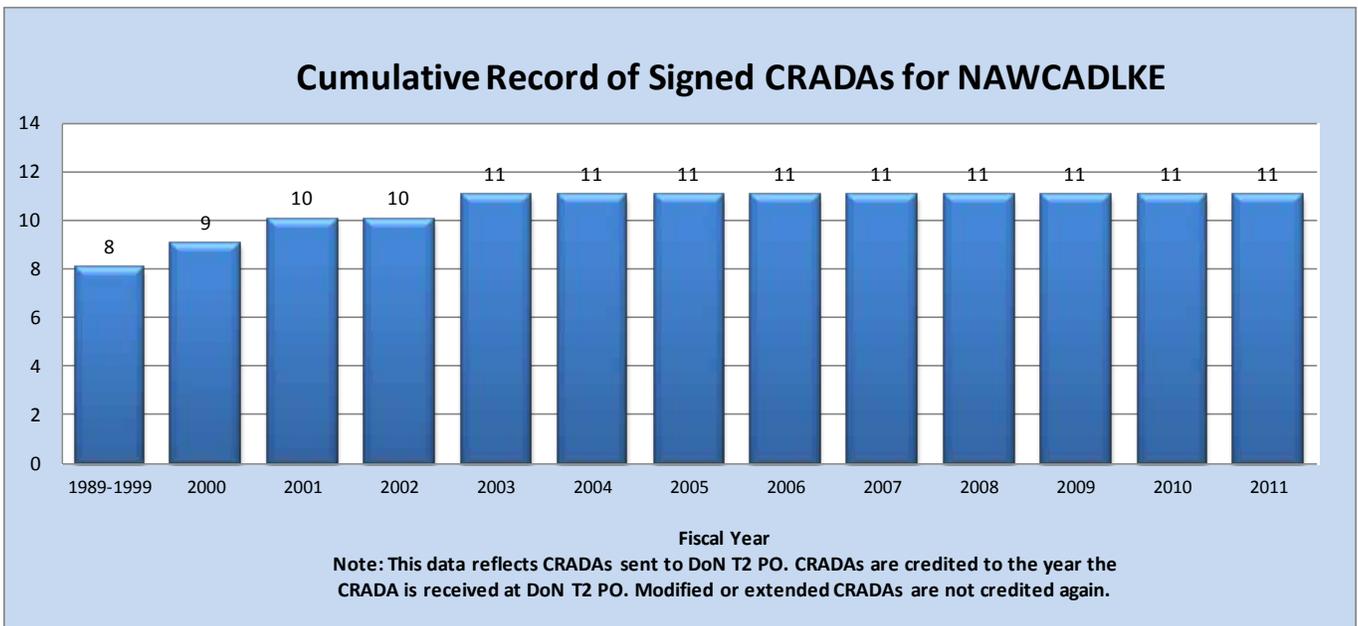
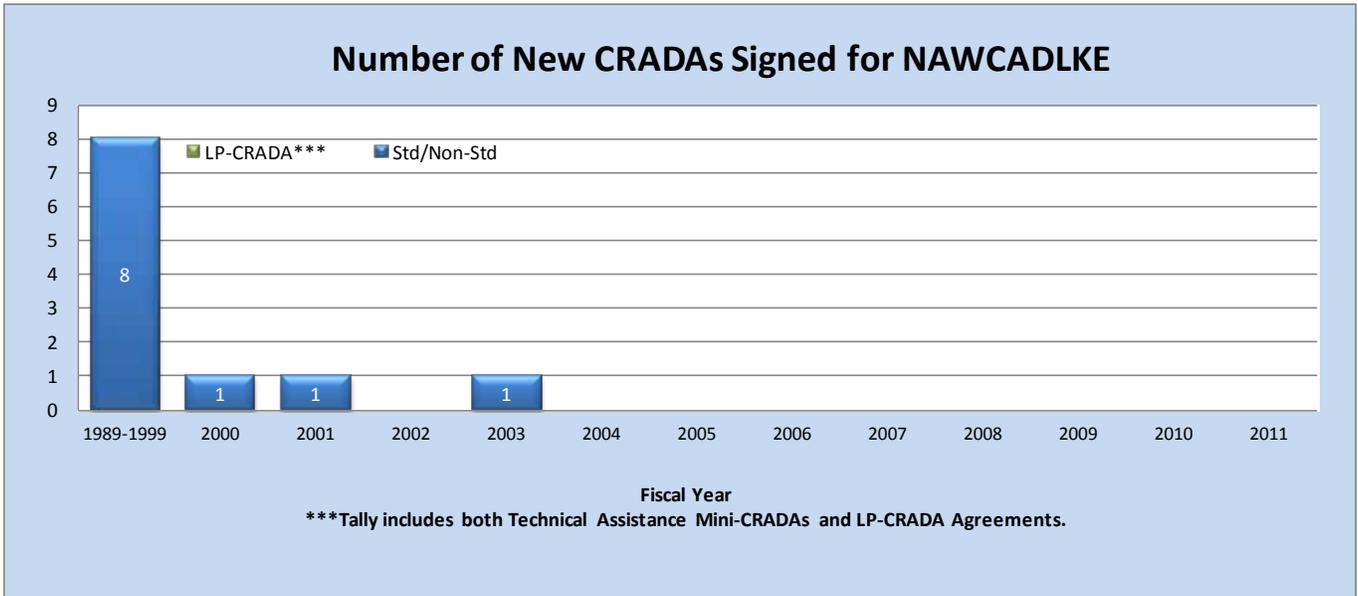
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\*\*\* Tally includes both Technical Assistance Mini-CRADAs and LP-CRADA Agreements.



## Naval Air Warfare Center Aircraft Division, Lakehurst (NAWCADLKE)



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

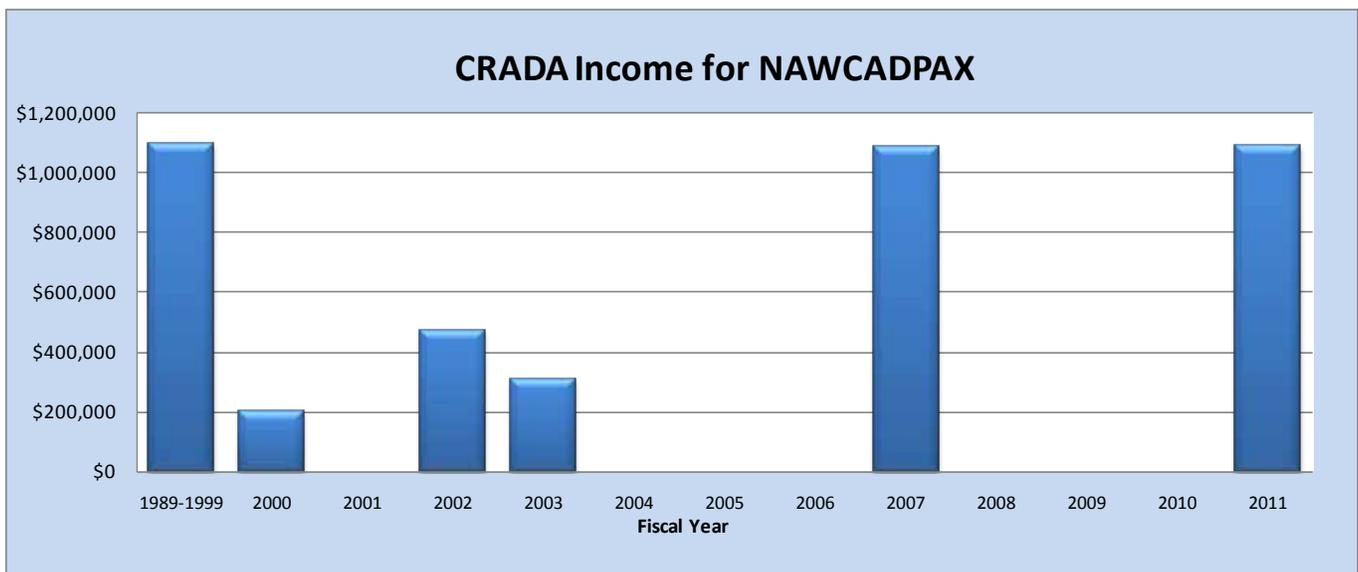
**NAWCADPAX CRADA History\***

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
<b>1989-1999</b>	\$1,094,912	44	-	44	44
<b>2000</b>	\$200,000	1	-	1	45
<b>2001</b>	\$0	1	-	1	46
<b>2002</b>	\$470,000	2	-	2	48
<b>2003</b>	\$310,000	4	7	11	59
<b>2004</b>	\$0	-	3	3	62
<b>2005</b>	\$0	3	6	9	71
<b>2006</b>	\$0	-	11	11	82
<b>2007</b>	\$1,086,000	4	3	7	89
<b>2008</b>	\$0	5	7	12	101
<b>2009</b>	\$0	-	2	2	103
<b>2010</b>	\$0	4	9	13	116
<b>2011</b>	\$1,092,911	8	6	14	130

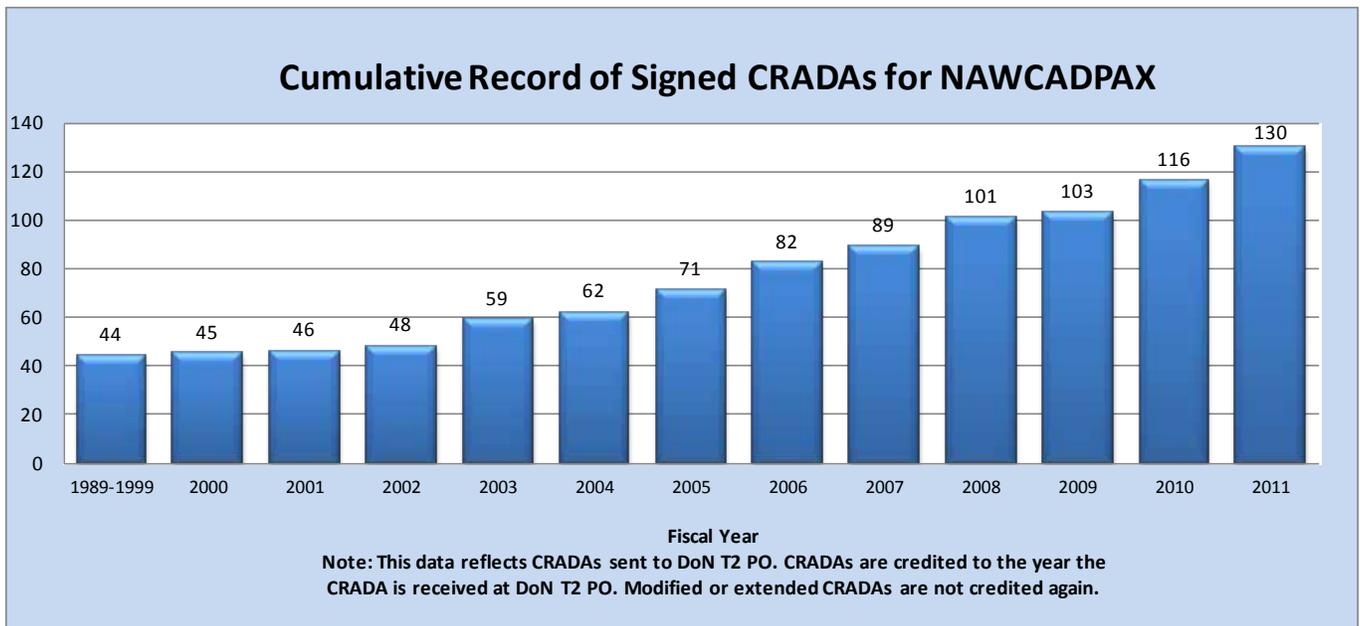
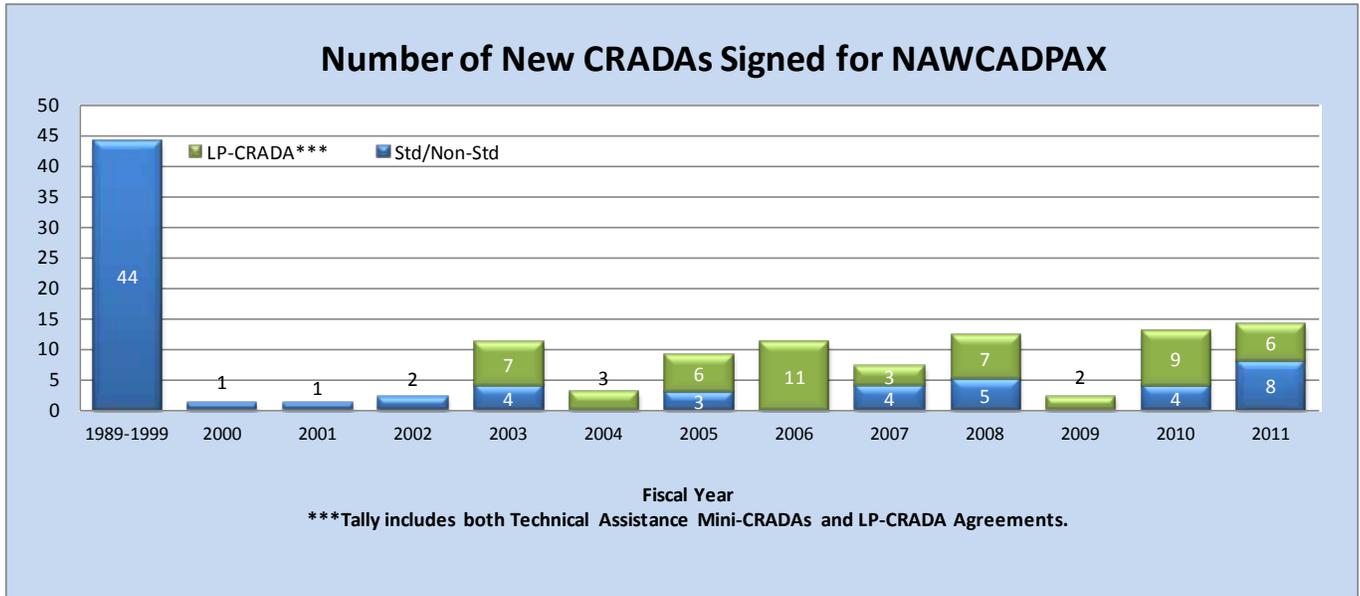
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## Naval Air Warfare Center Aircraft Division, Patuxent River (NAWCADPAX)



## Naval Air Warfare Training Systems Division (NAWCTSD)

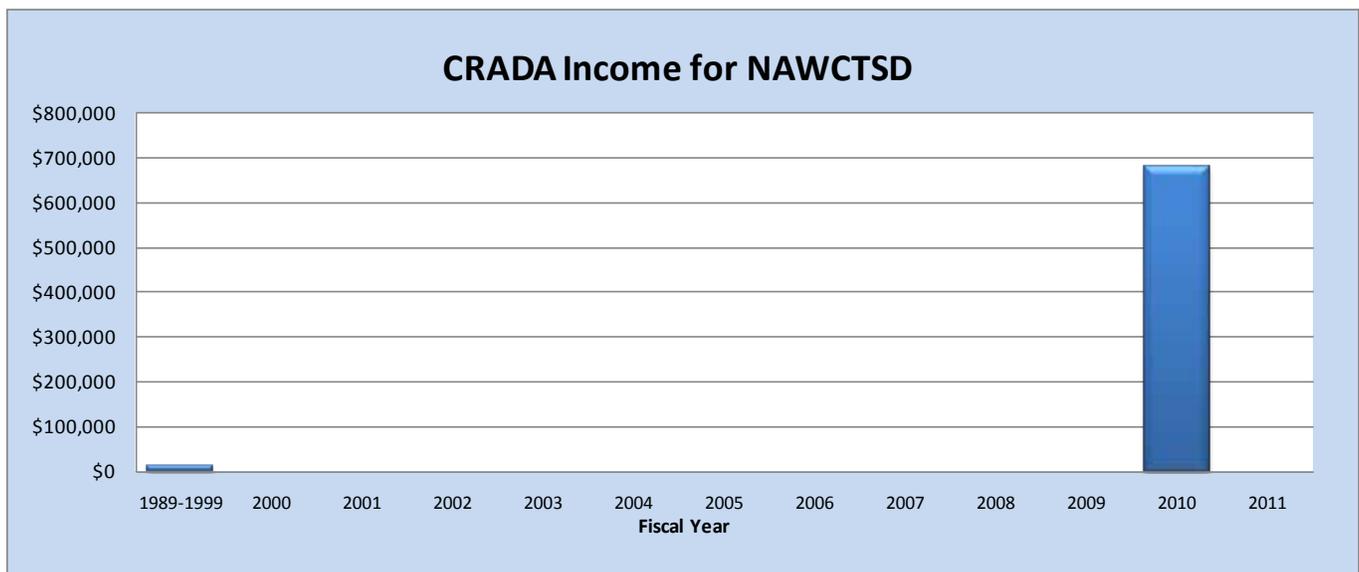
### NAWCTSD CRADA History\*

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
<b>1989-1999</b>	\$13,000	20	-	20	20
<b>2000</b>	\$0	2	-	2	22
<b>2001</b>	\$0	4	-	4	26
<b>2002</b>	\$0	1	-	1	27
<b>2003</b>	\$0	2	-	2	29
<b>2004</b>	\$0	-	-	-	29
<b>2005</b>	\$0	1	-	1	30
<b>2006</b>	\$0	5	-	5	35
<b>2007</b>	\$0	-	-	-	35
<b>2008</b>	\$0	4	-	4	39
<b>2009</b>	\$0	2	-	2	41
<b>2010</b>	\$681,496	4	-	4	45
<b>2011</b>	\$0	-	2	2	47

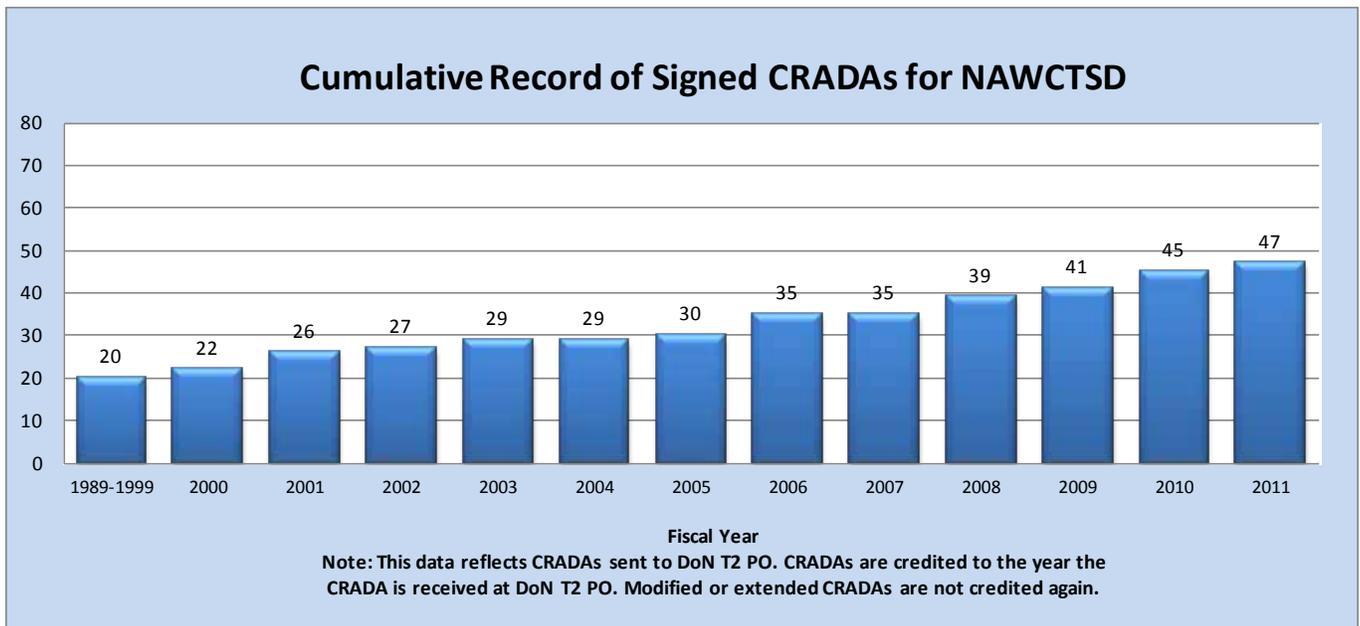
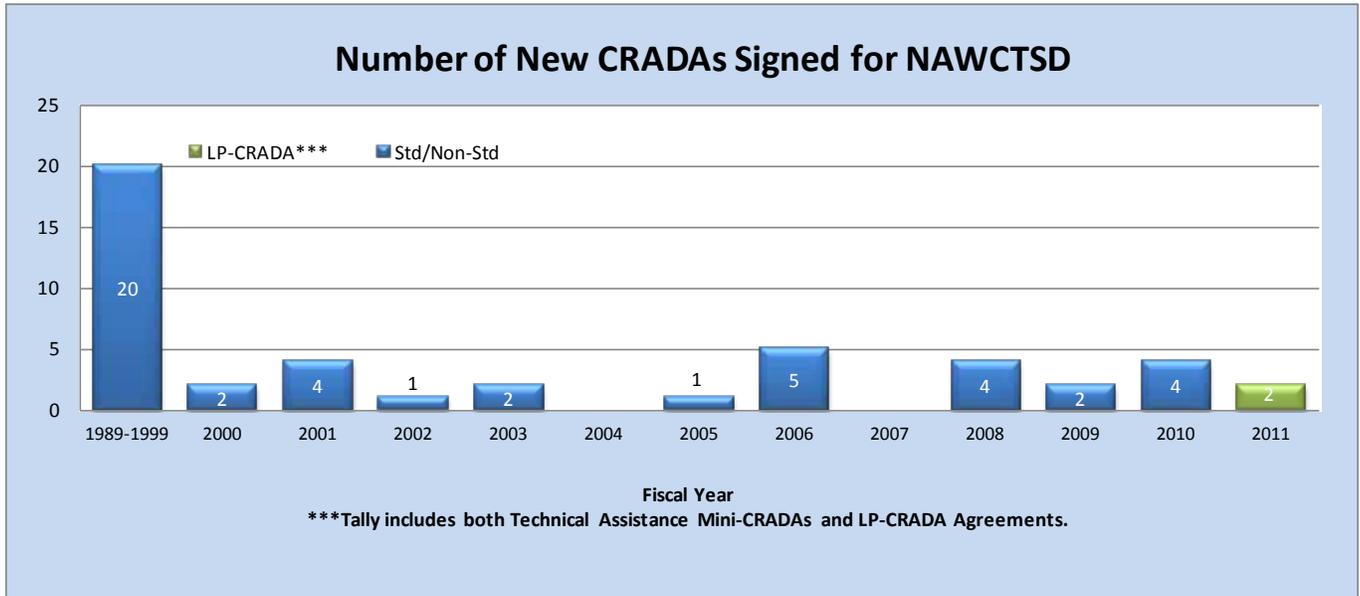
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## Naval Air Warfare Training Systems Division (NAWCTSD)



## Naval Air Warfare Center Weapons Division, China Lake (NAWCWDCL)

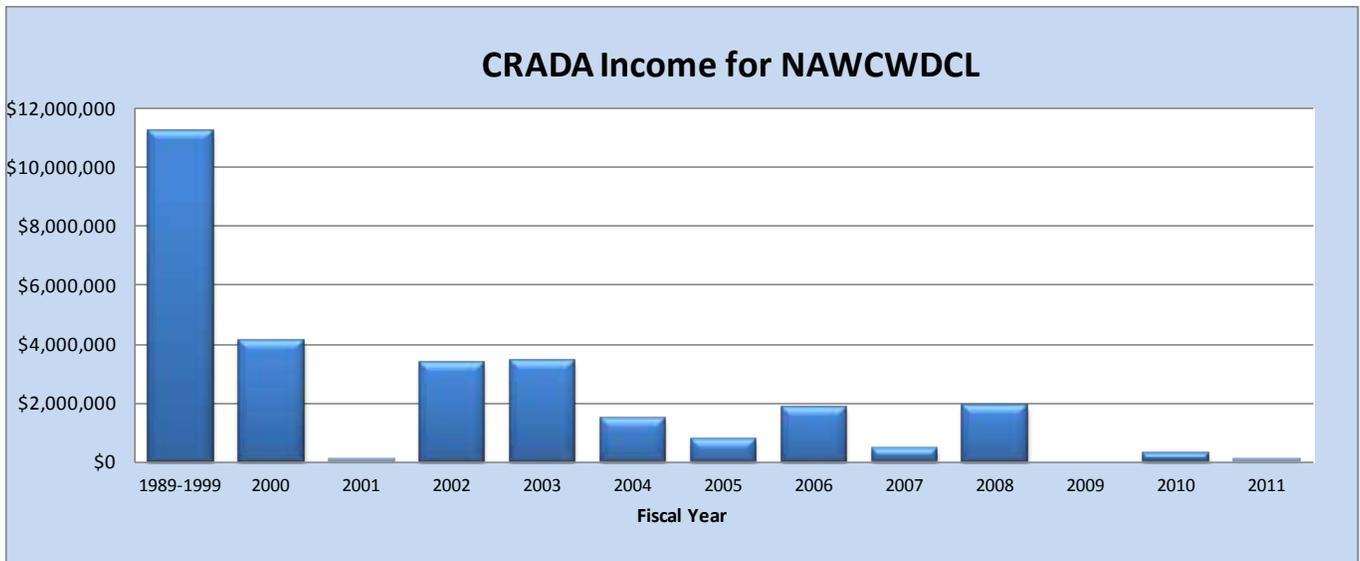
### NAWCWDCL CRADA History\*

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
<b>1989-1999</b>	\$11,238,459	68	-	68	68
<b>2000</b>	\$4,092,048	14	-	14	82
<b>2001</b>	\$47,931	12	-	12	94
<b>2002</b>	\$3,359,714	6	-	6	100
<b>2003</b>	\$3,389,468	19	-	19	119
<b>2004</b>	\$1,446,923	10	-	10	129
<b>2005</b>	\$767,187	10	-	10	139
<b>2006</b>	\$1,848,877	14	2	16	155
<b>2007</b>	\$425,000	13	3	16	171
<b>2008</b>	\$1,895,000	12	1	13	184
<b>2009</b>	\$0	8	-	8	192
<b>2010</b>	\$280,000	9	2	11	203
<b>2011</b>	\$20,000	10	3	13	216

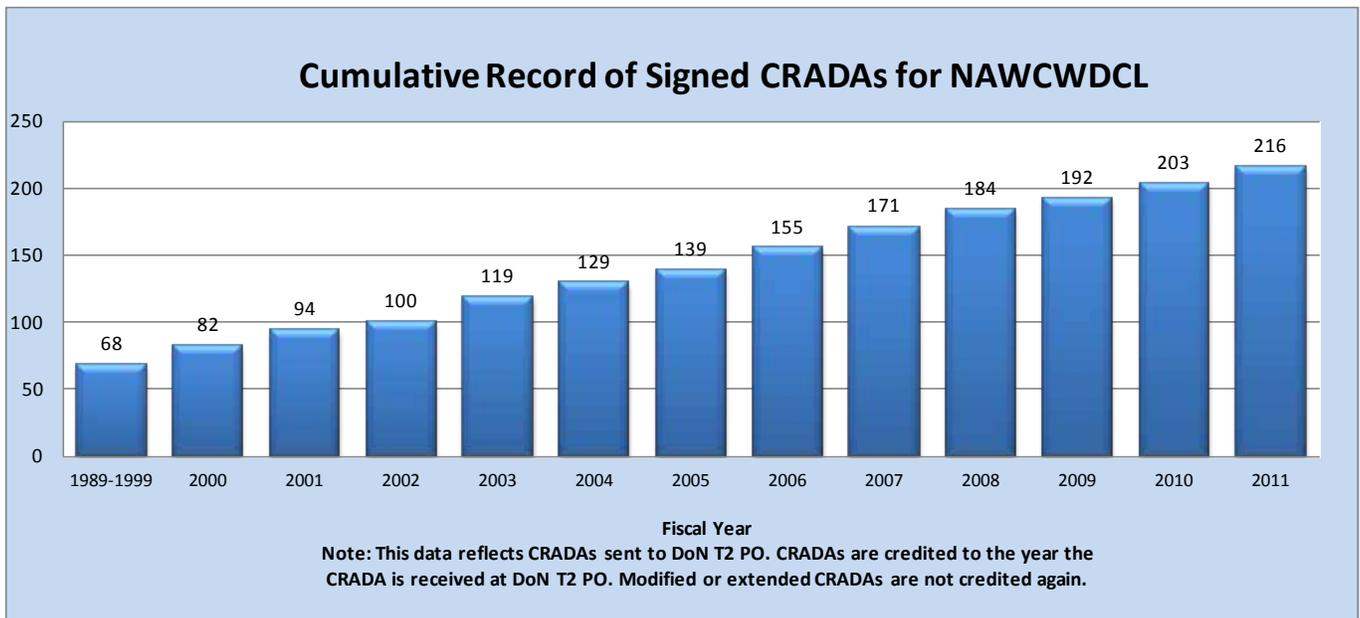
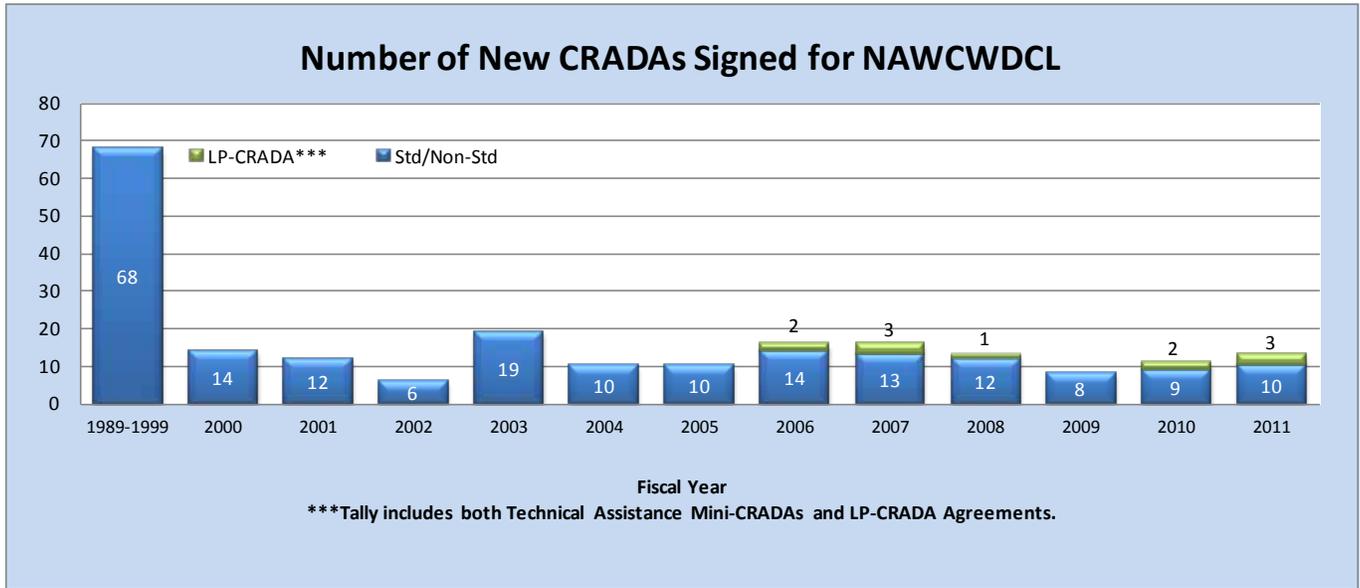
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## Naval Air Warfare Center Weapons Division, China Lake (NAWCWDCL)



## Naval Air Warfare Center Weapons Division, Point Mugu (NAWCWDPM)

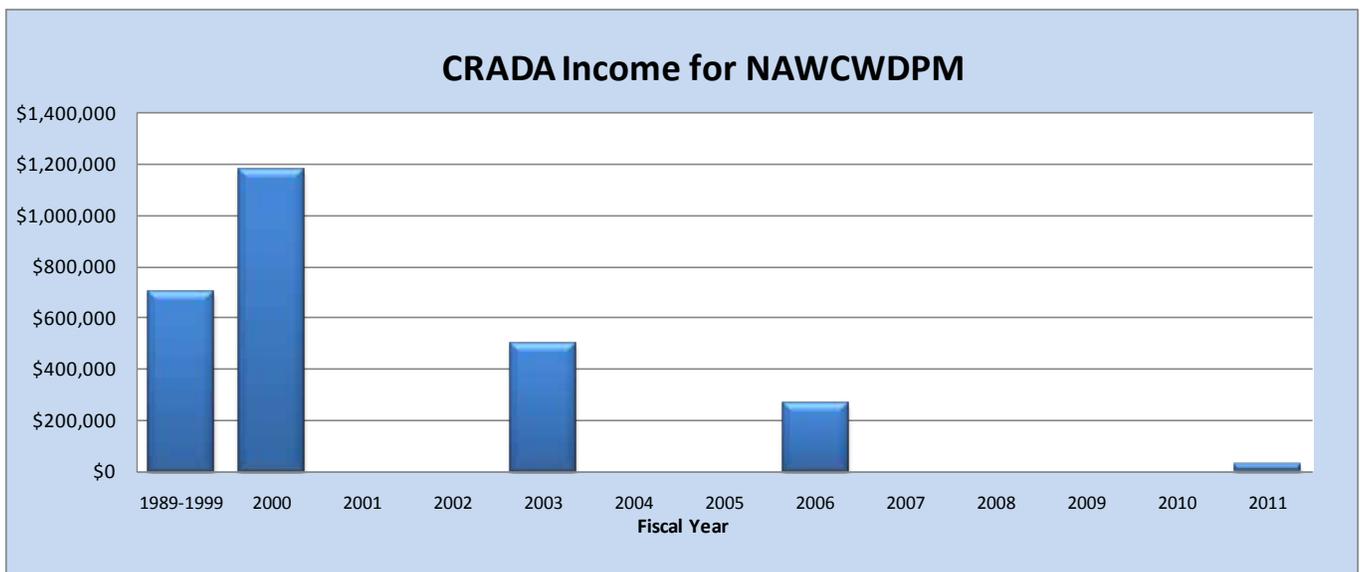
### NAWCWDPM CRADA History\*

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
<b>1989-1999</b>	\$703,000	21	3	24	24
<b>2000</b>	\$1,175,000	7	-	7	31
<b>2001</b>	\$0	-	-	-	31
<b>2002</b>	\$0	1	-	1	32
<b>2003</b>	\$500,000	3	-	3	35
<b>2004</b>	\$0	1	-	1	36
<b>2005</b>	\$0	1	-	1	37
<b>2006</b>	\$267,337	2	-	2	39
<b>2007</b>	\$0	1	-	1	40
<b>2008</b>	\$0	-	1	1	41
<b>2009</b>	\$0	1	-	1	42
<b>2010</b>	\$0	3	-	3	45
<b>2011</b>	\$25,000	3	-	3	48

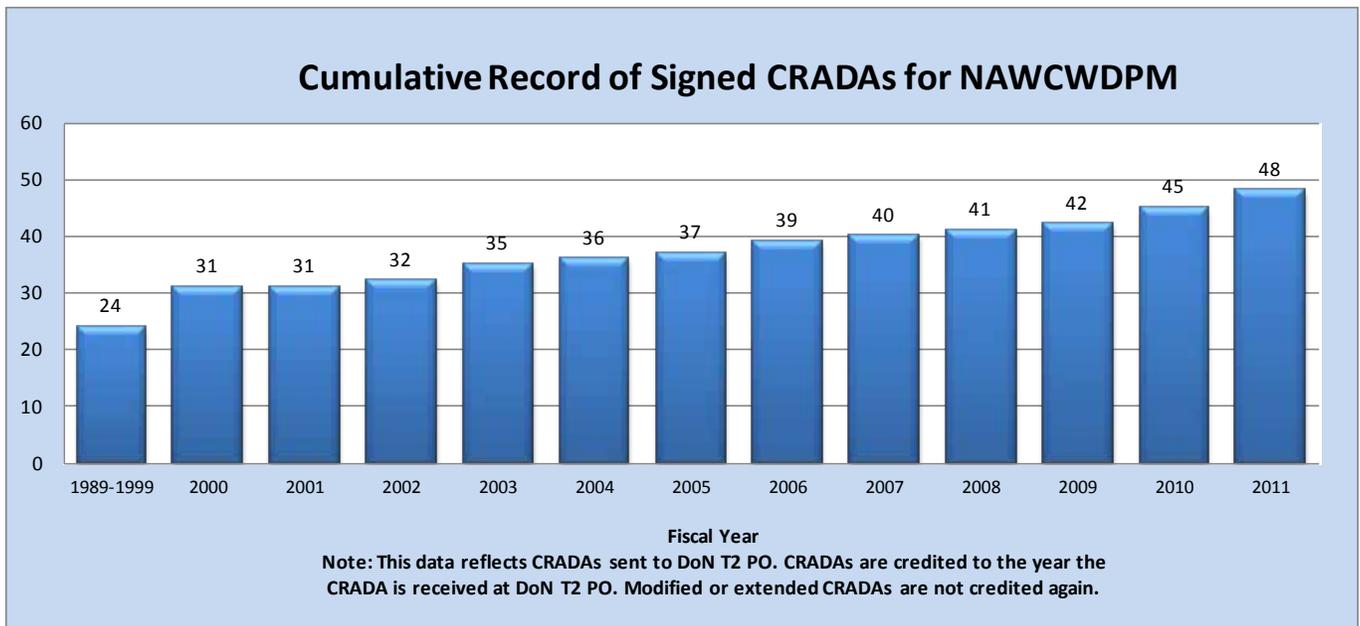
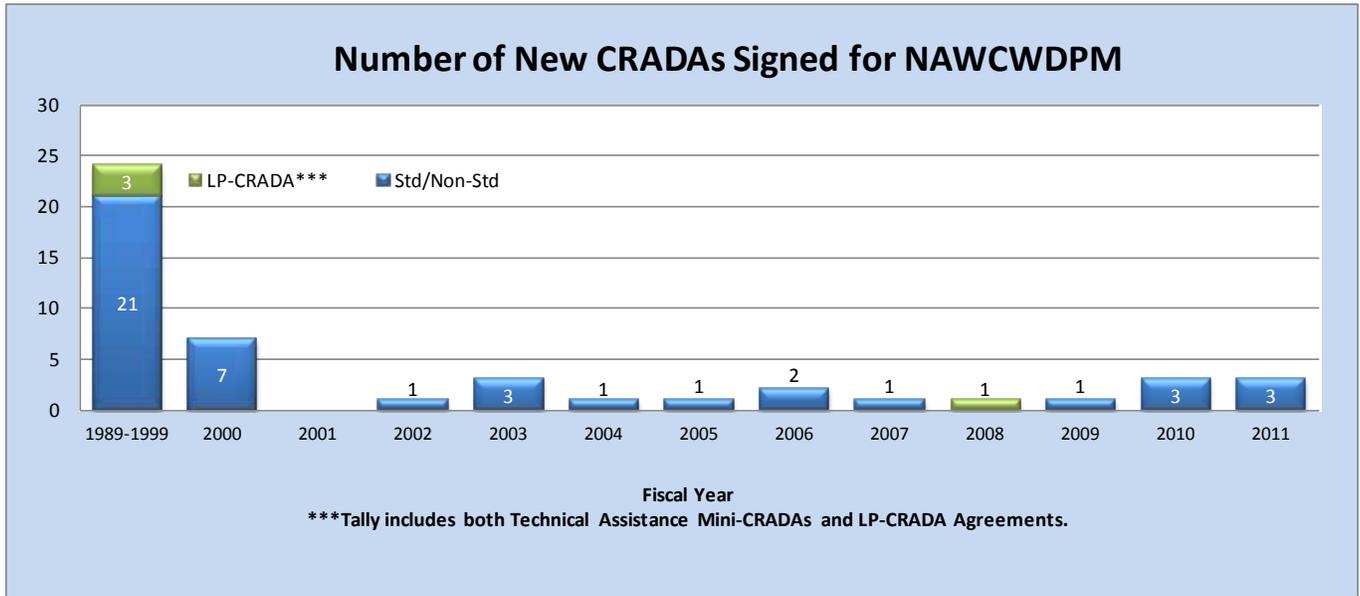
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## Naval Air Warfare Center Weapons Division, Point Mugu (NAWCWDPM)



## Naval Facilities Engineering Service Center (NFESC)

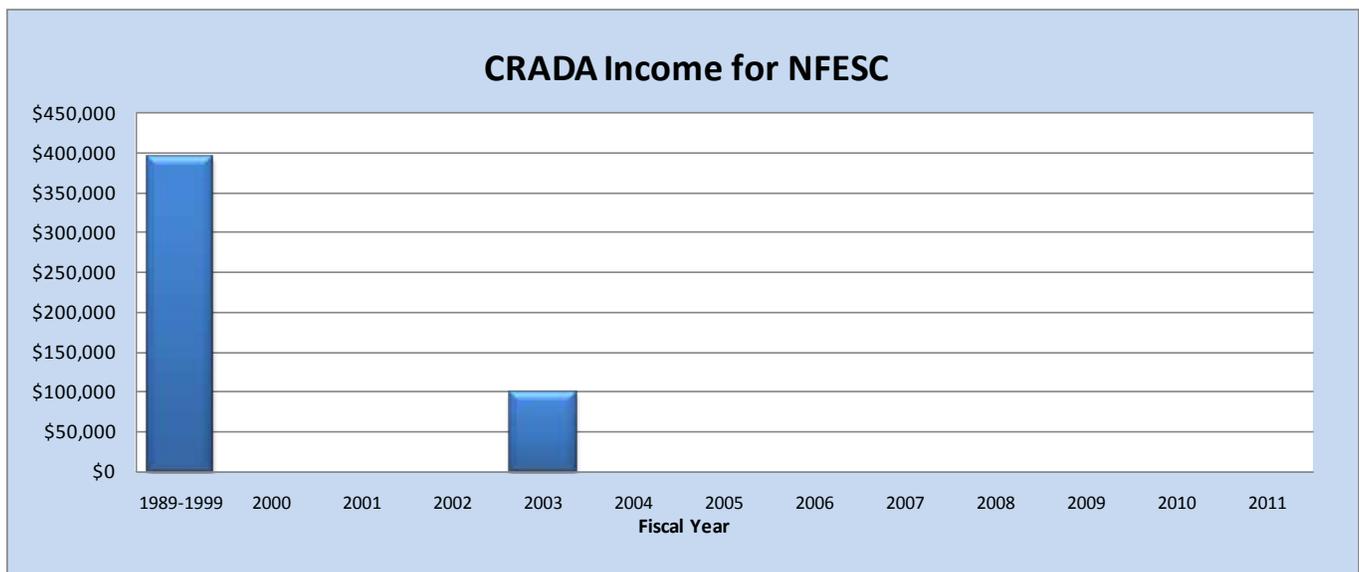
### NFESC CRADA History\*

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
<b>1989-1999</b>	\$395,000	12	-	12	12
<b>2000</b>	\$0	-	-	-	12
<b>2001</b>	\$0	-	-	-	12
<b>2002</b>	\$0	-	-	-	12
<b>2003</b>	\$100,000	2	-	2	14
<b>2004</b>	\$0	-	-	-	14
<b>2005</b>	\$0	-	-	-	14
<b>2006</b>	\$0	1	-	1	15
<b>2007</b>	\$0	-	-	-	15
<b>2008</b>	\$0	-	-	-	15
<b>2009</b>	\$0	8	-	8	23
<b>2010</b>	\$0	1	-	1	24
<b>2011</b>	\$0	-	-	-	24

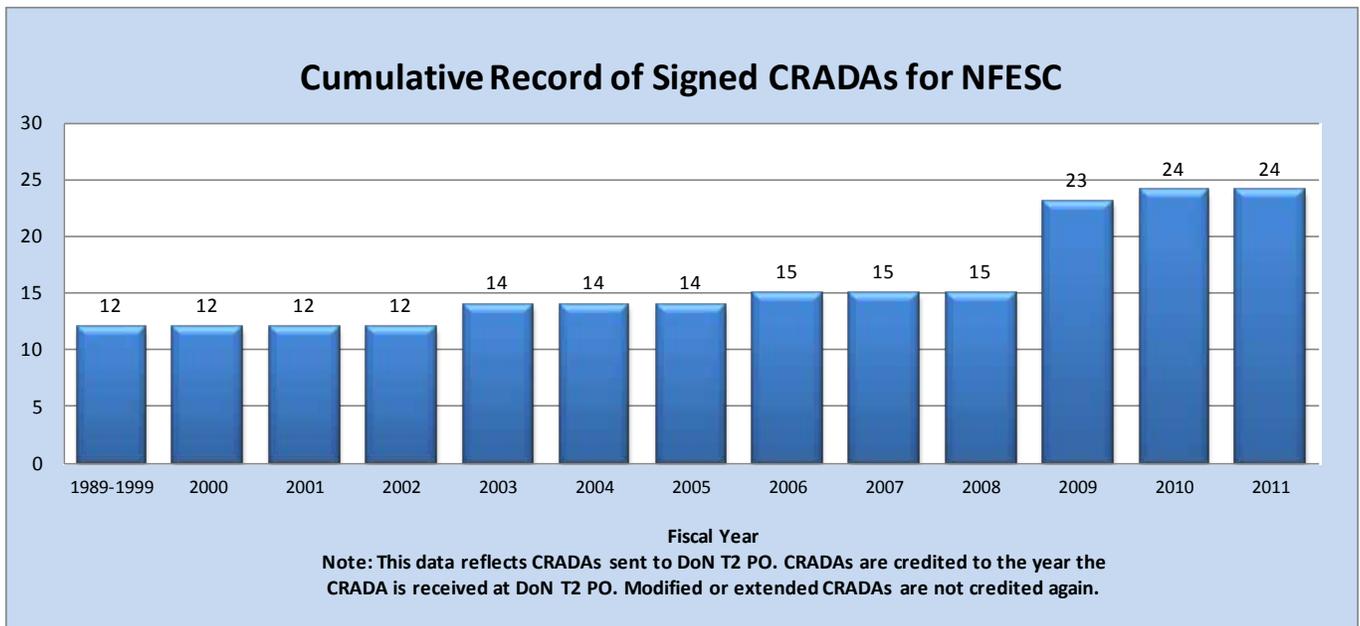
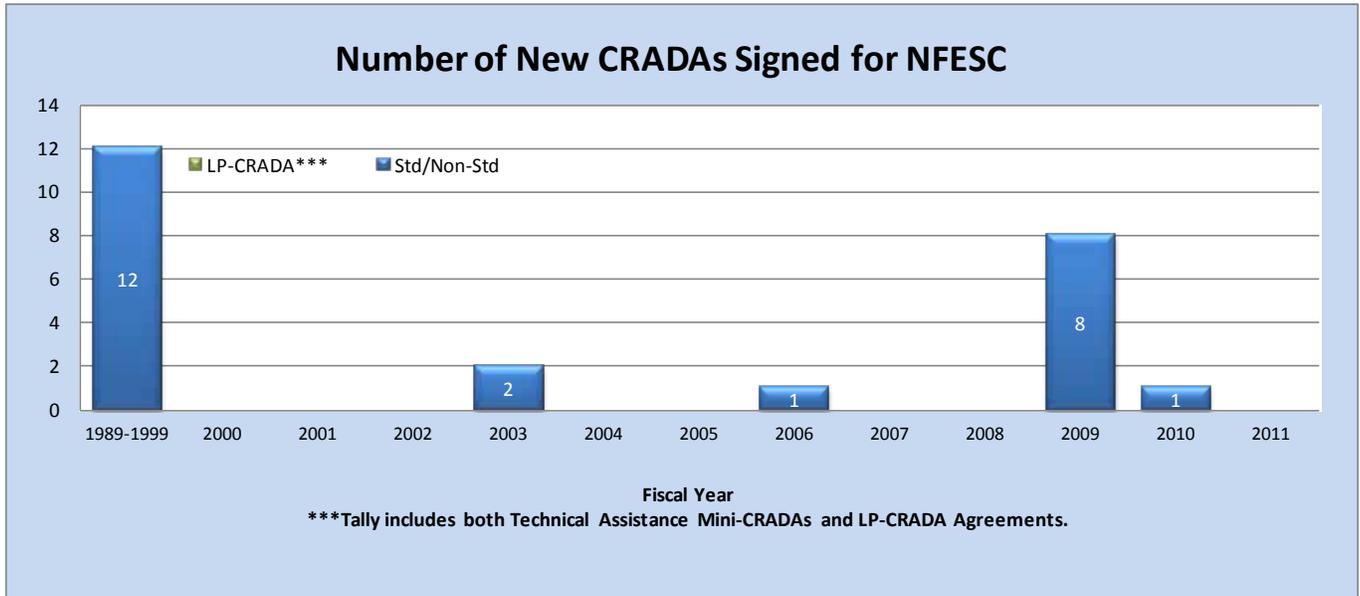
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## Naval Facilities Engineering Service Center (NFESC)

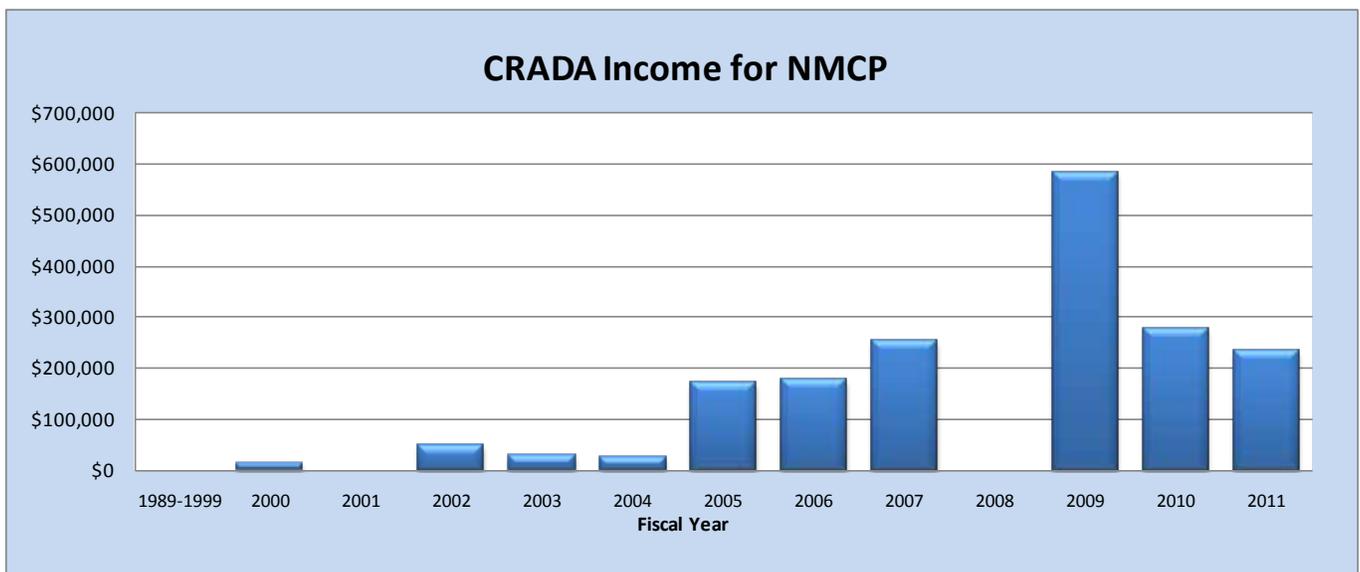


## Naval Medical Center, Portsmouth (NMCP)

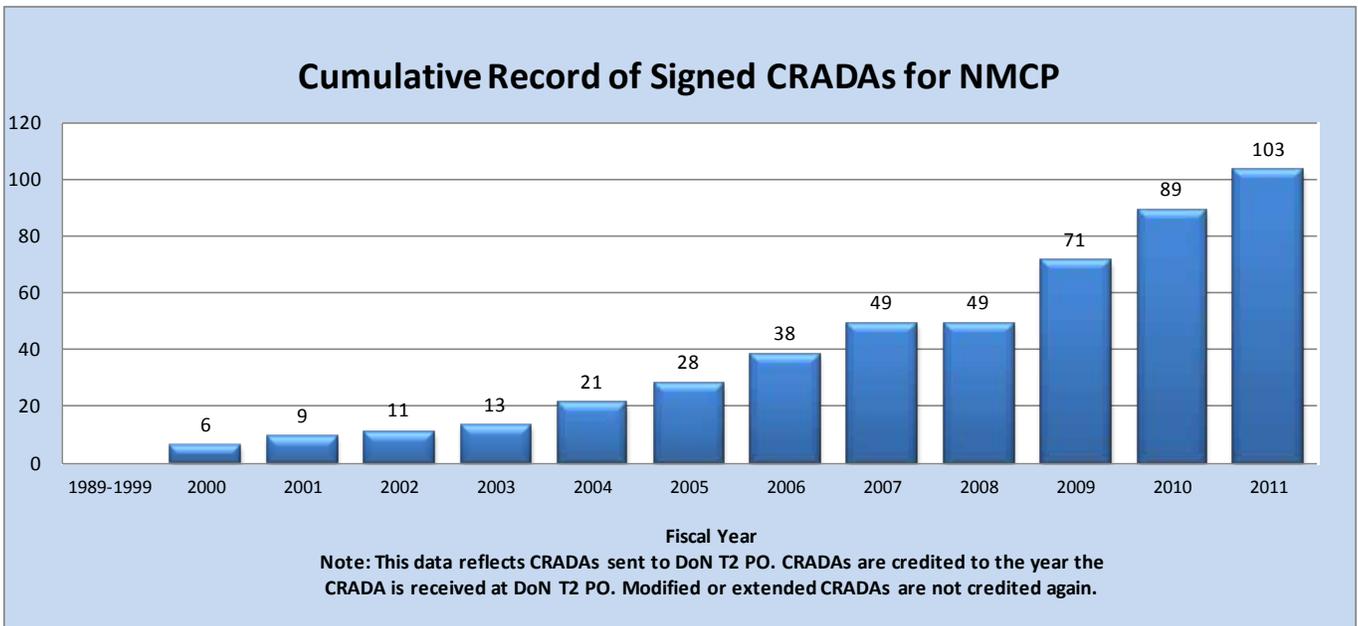
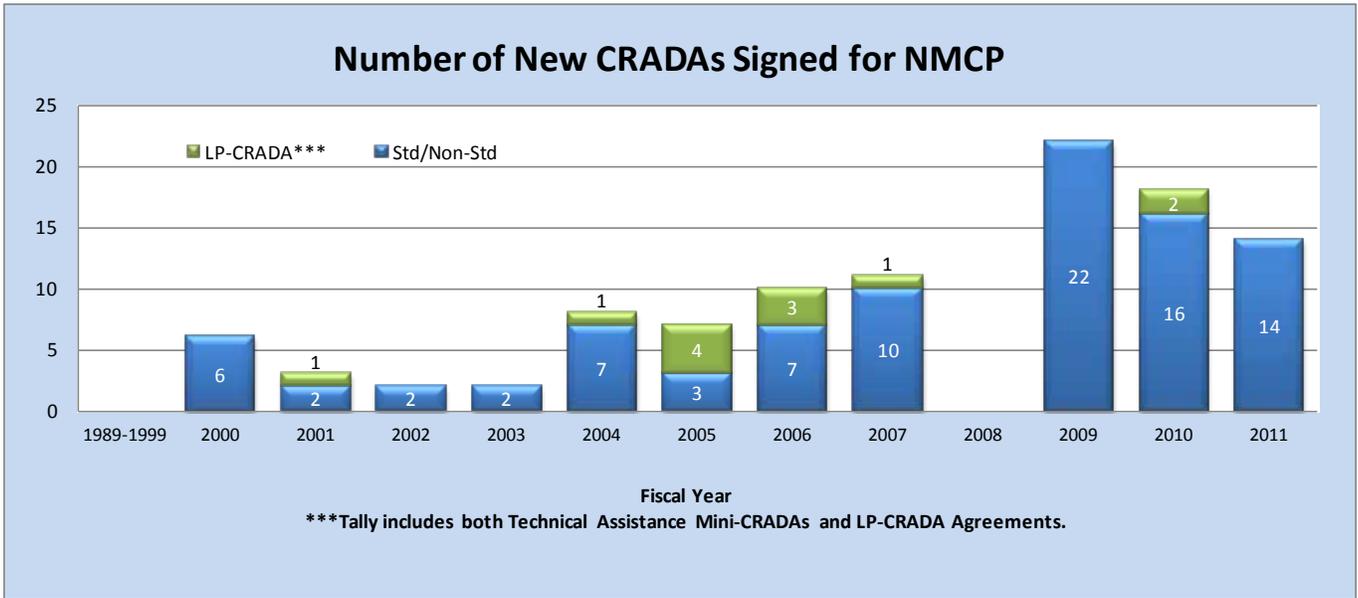
### NMCP CRADA History\*

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
<b>1989-1999</b>	\$0	-	-	-	-
<b>2000</b>	\$12,708	6	-	6	6
<b>2001</b>	\$0	2	1	3	9
<b>2002</b>	\$49,625	2	-	2	11
<b>2003</b>	\$30,000	2	-	2	13
<b>2004</b>	\$26,000	7	1	8	21
<b>2005</b>	\$169,200	3	4	7	28
<b>2006</b>	\$176,602	7	3	10	38
<b>2007</b>	\$252,590	10	1	11	49
<b>2008</b>	\$0	-	-	-	49
<b>2009</b>	\$582,523	22	-	22	71
<b>2010</b>	\$277,690	16	2	18	89
<b>2011</b>	\$235,194	14	-	14	103

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## Naval Medical Center, Portsmouth (NMCP)



## Naval Medical Center, San Diego (NMCS D)

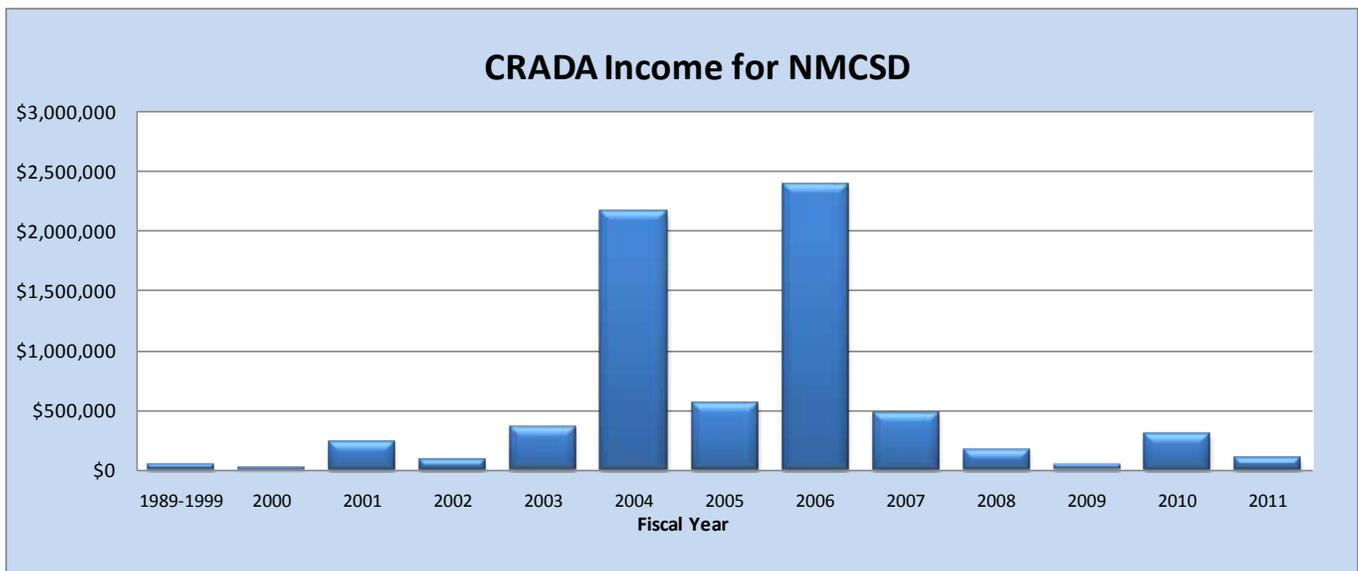
### NMCS D CRADA History\*

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
1989-1999	\$47,724	12	3	15	15
2000	\$24,000	7	-	7	22
2001	\$236,265	13	-	13	35
2002	\$90,000	9	-	9	44
2003	\$351,155	12	-	12	56
2004	\$2,156,587	20	14	34	90
2005	\$550,133	18	12	30	120
2006	\$2,396,166	25	3	28	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

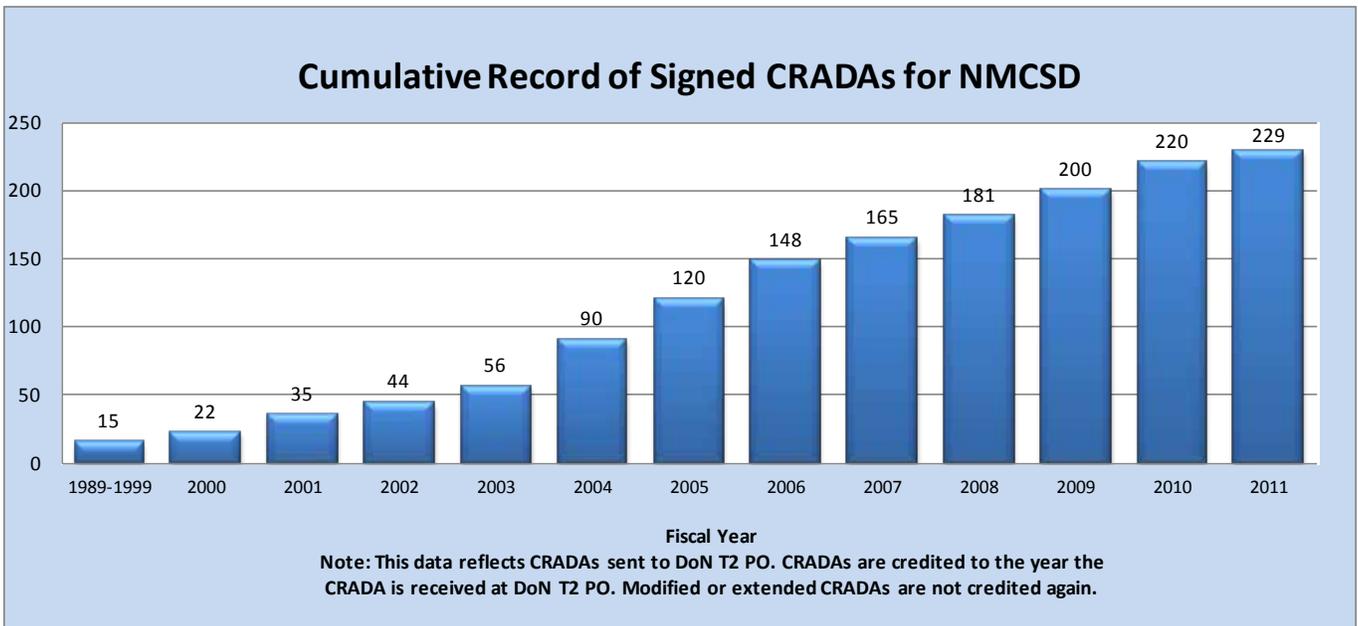
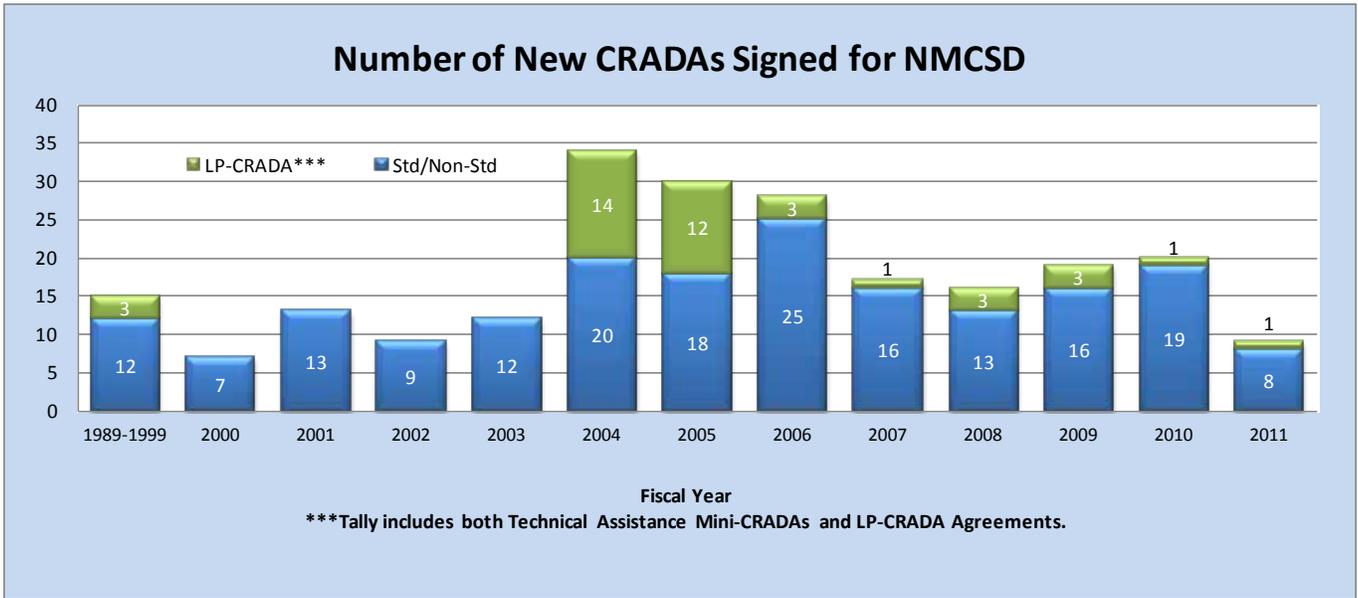
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## Naval Medical Center, San Diego (NMCS D)



Naval Medical Research Center and Naval Health Research Center (NMRC/NHRC)

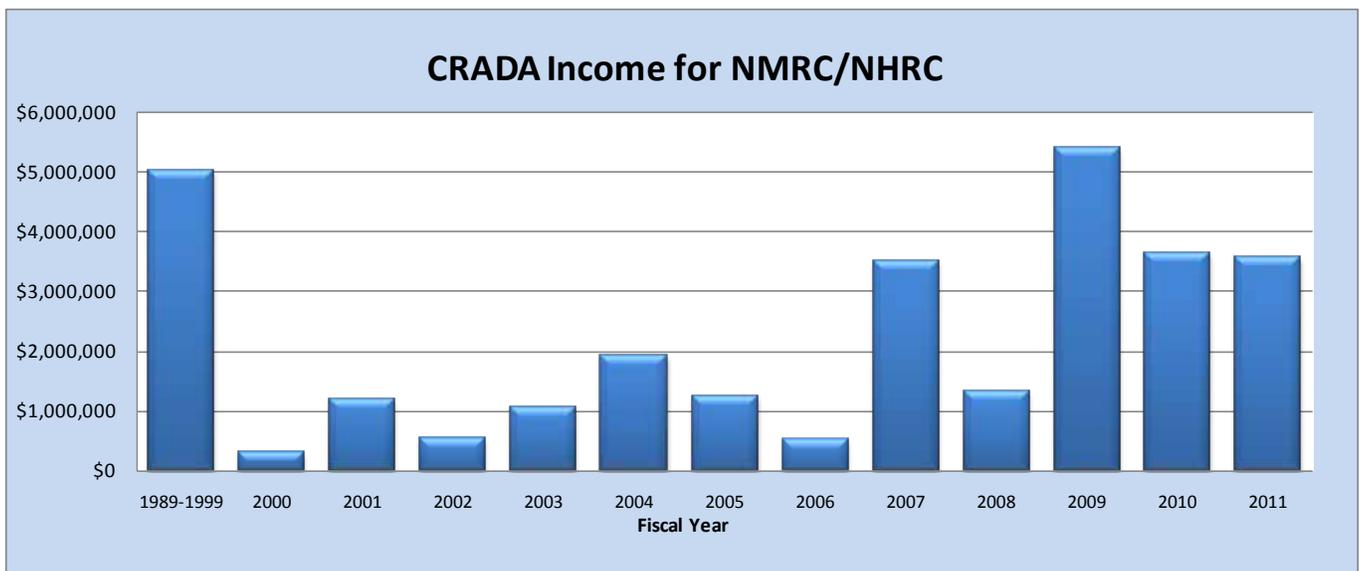
**NMRC/NHRC CRADA History\***

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
<b>1989-1999</b>	\$5,009,985	113	49	162	162
<b>2000</b>	\$312,360	10	19	29	191
<b>2001</b>	\$1,204,932	28	44	72	263
<b>2002</b>	\$545,768	18	24	42	305
<b>2003</b>	\$1,046,924	27	25	52	357
<b>2004</b>	\$1,914,561	19	18	37	394
<b>2005</b>	\$1,261,177	23	12	35	429
<b>2006</b>	\$513,349	22	5	27	456
<b>2007</b>	\$3,499,070	31	15	46	502
<b>2008</b>	\$1,332,666	18	17	35	537
<b>2009</b>	\$5,400,387	31	13	44	581
<b>2010</b>	\$3,646,907	19	17	36	617
<b>2011</b>	\$3,562,950	26	16	42	659

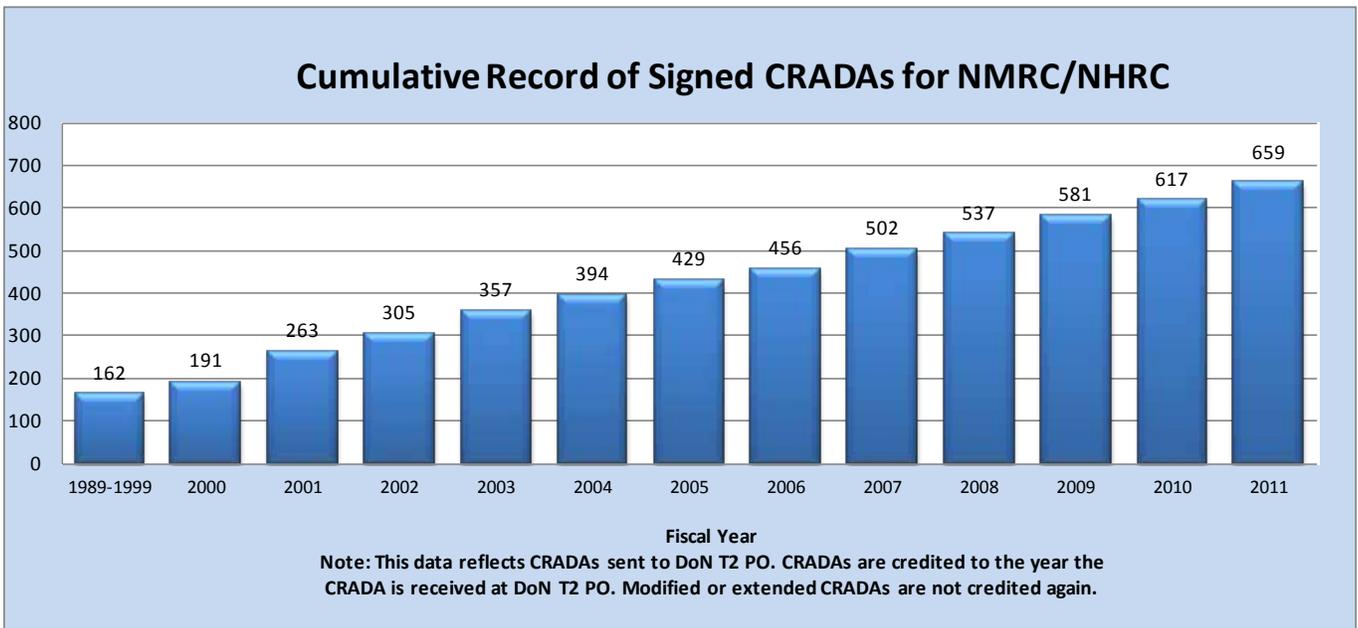
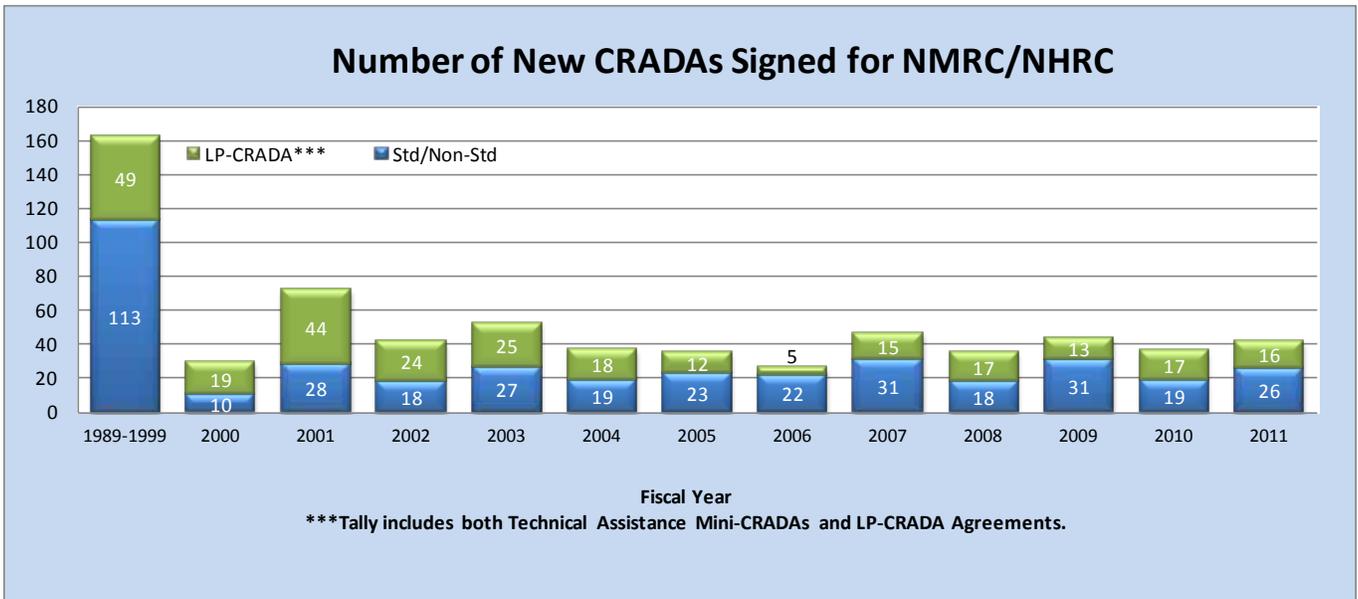
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Naval Medical Research Center and Naval Health Research Center (NMRC/NHRC)



## Naval Meteorology and Oceanography Command (NMOC)

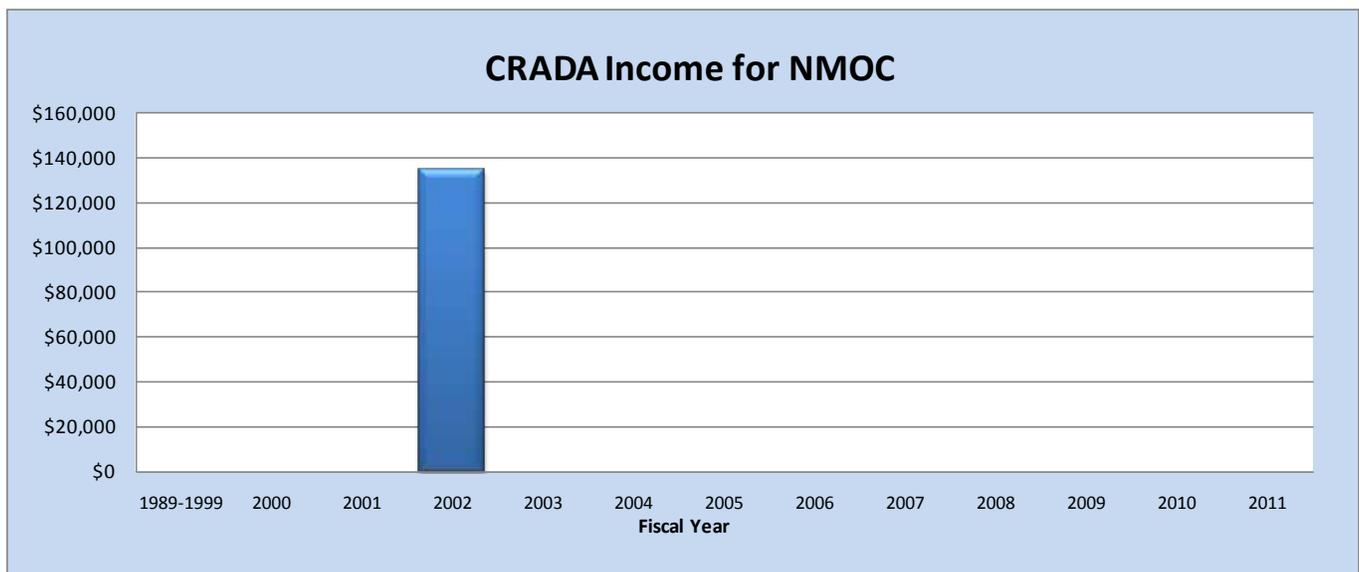
### NMOC CRADA History\*

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
1989-1999	\$0	3	4	7	7
2000	\$0	1	1	2	9
2001	\$0	2	-	2	11
2002	\$134,500	4	1	5	16
2003	\$0	-	-	-	16
2004	\$0	-	1	1	17
2005	\$0	-	-	-	17
2006	\$0	-	-	-	17
2007	\$0	-	-	-	17
2008	\$0	-	-	-	17
2009	\$0	2	-	2	19
2010	\$0	-	-	-	19
2011	\$0	1	-	1	20

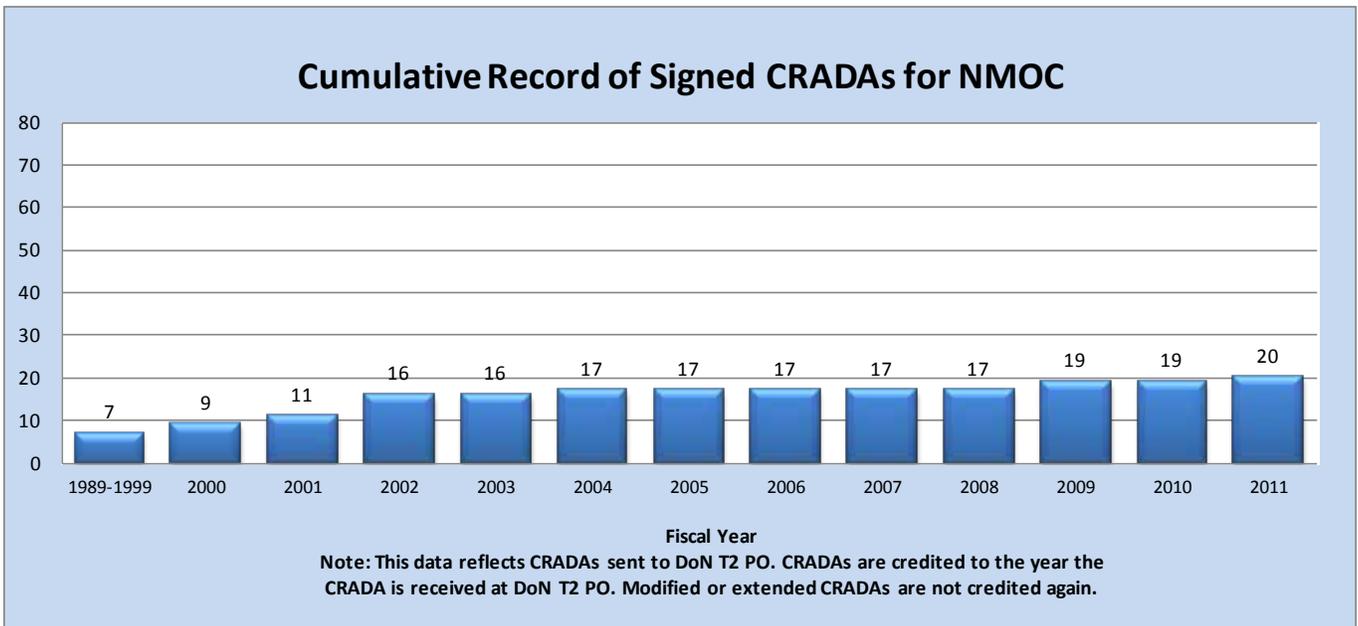
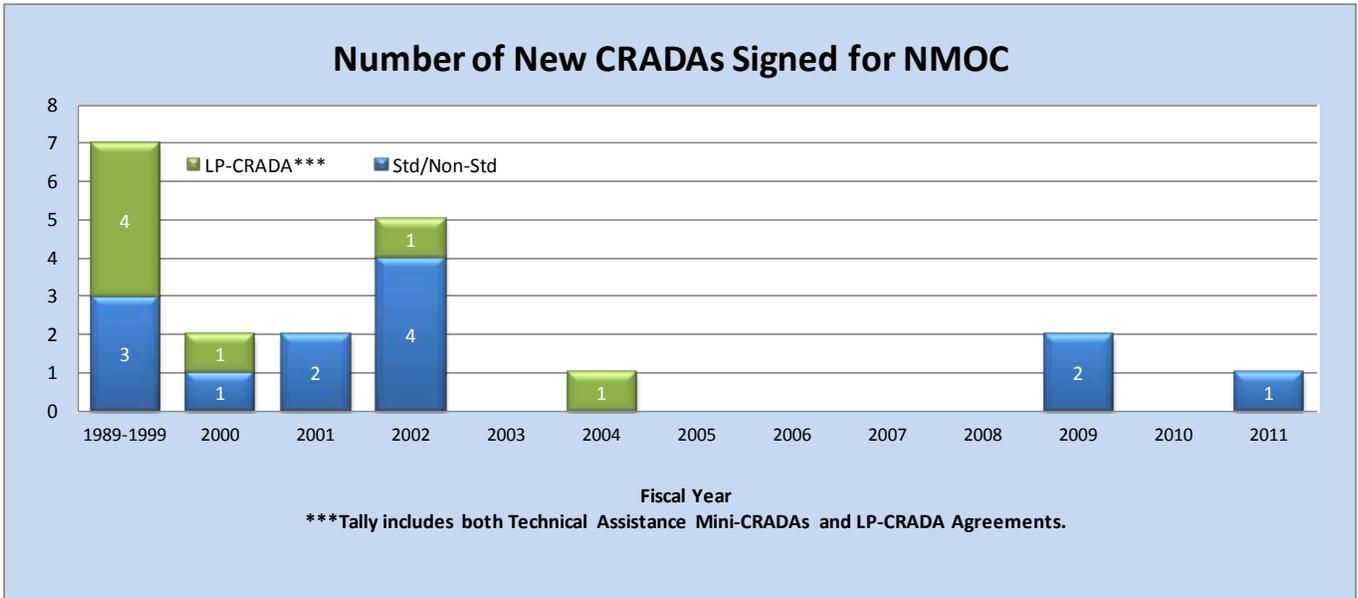
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## Naval Meteorology and Oceanography Command (NMOC)



## Naval Postgraduate School (NPS)

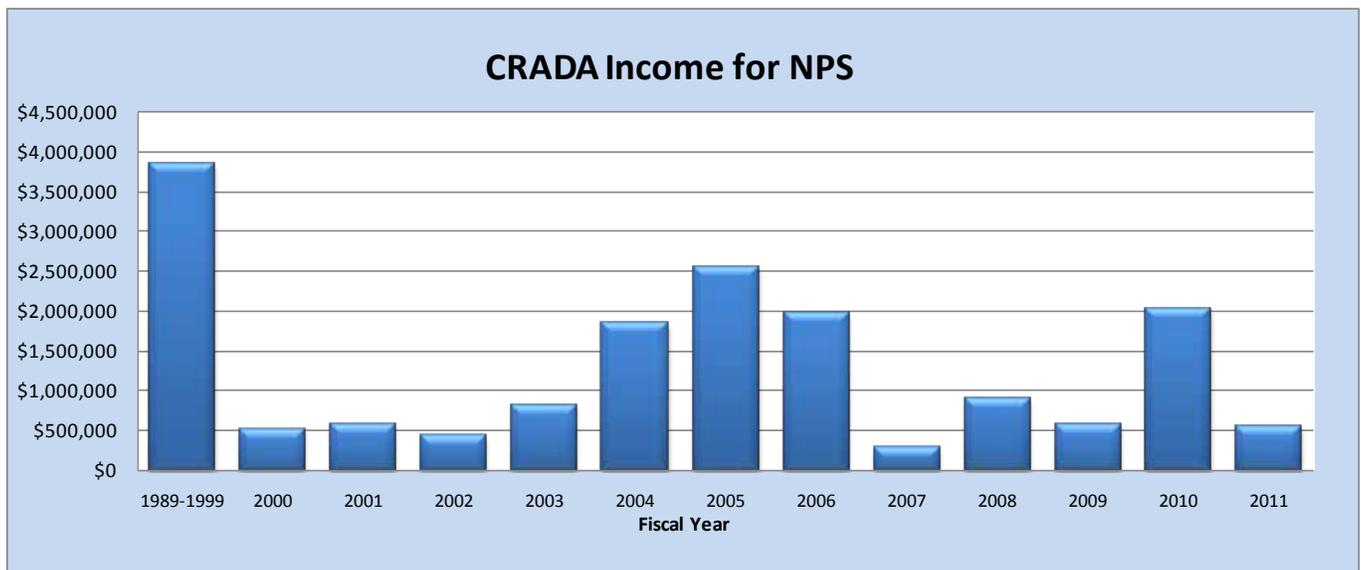
### NPS CRADA History\*

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
<b>1989-1999</b>	\$3,839,005	22	-	22	22
<b>2000</b>	\$503,000	5	-	5	27
<b>2001</b>	\$574,659	5	-	5	32
<b>2002</b>	\$427,261	6	-	6	38
<b>2003</b>	\$805,642	9	-	9	47
<b>2004</b>	\$1,853,567	8	-	8	55
<b>2005</b>	\$2,557,904	10	3	13	68
<b>2006</b>	\$1,976,311	13	15	28	96
<b>2007</b>	\$281,907	8	10	18	114
<b>2008</b>	\$887,399	14	19	33	147
<b>2009</b>	\$566,995	12	9	21	168
<b>2010</b>	\$2,036,811	16	1	17	185
<b>2011</b>	\$547,257	7	4	11	196

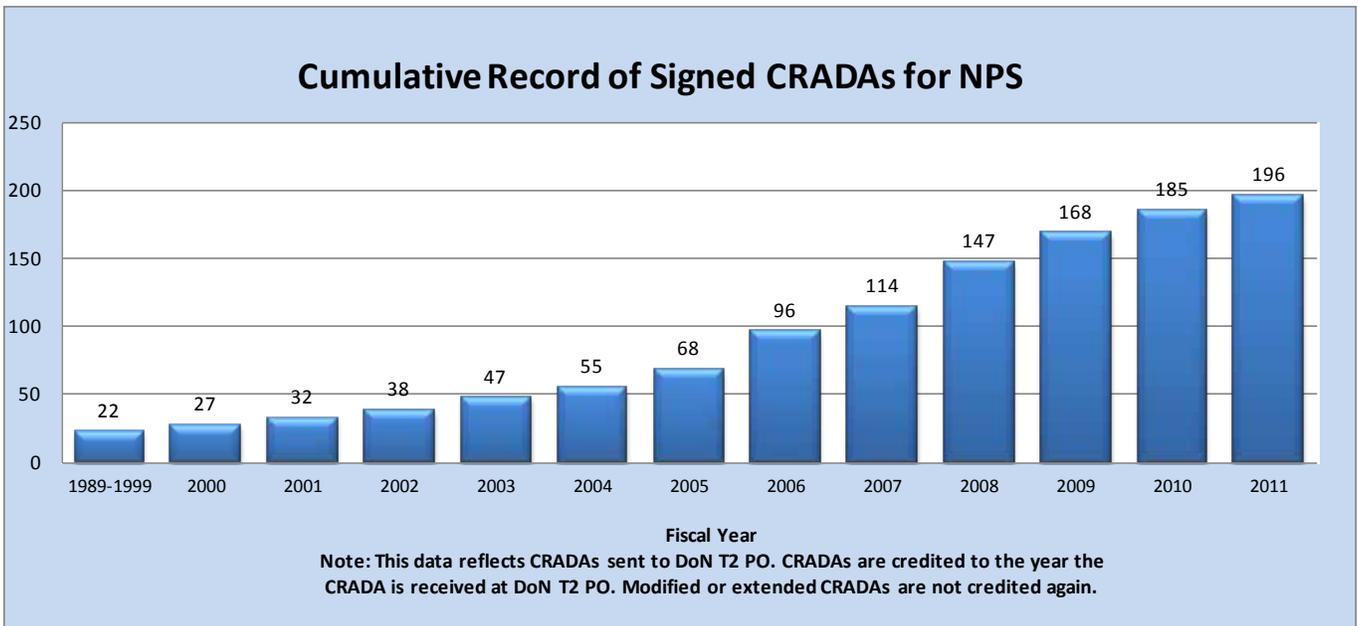
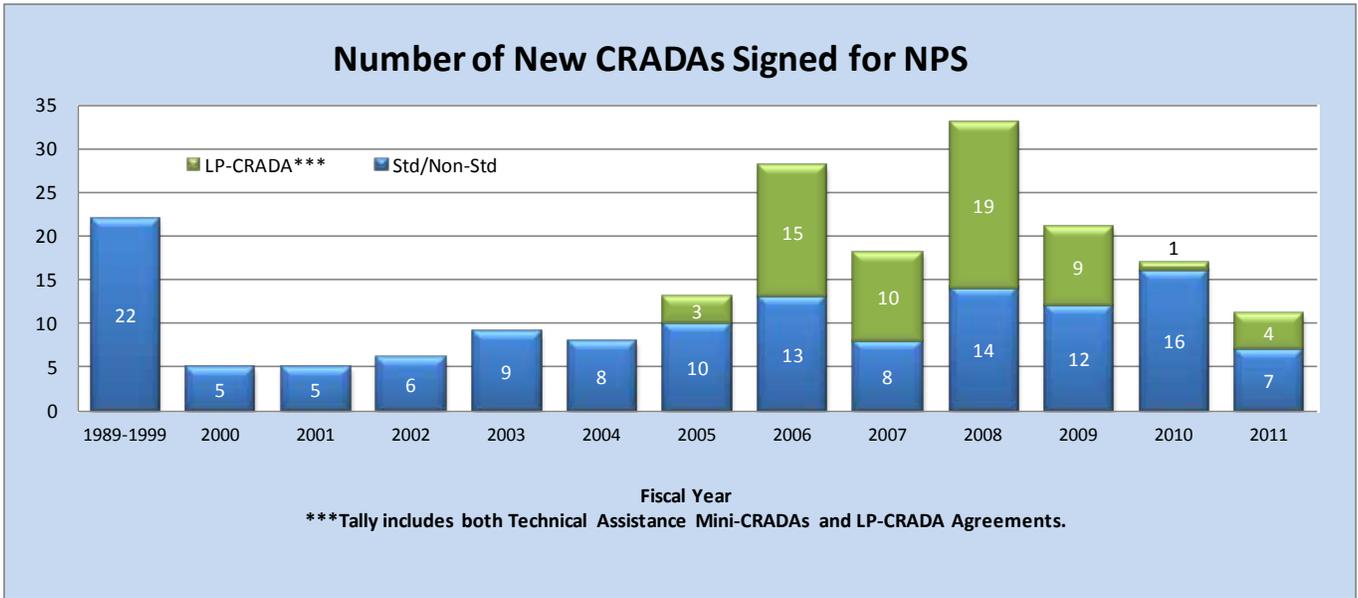
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## Naval Postgraduate School (NPS)



## Naval Research Laboratory (NRL)

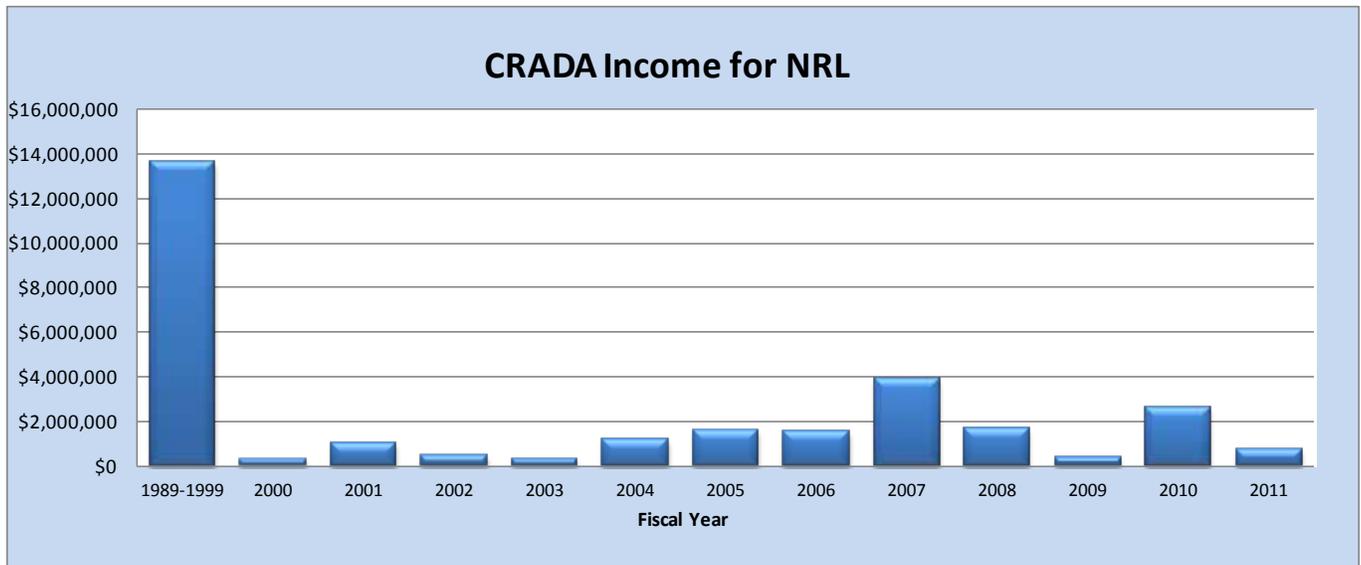
### NRL CRADA History\*

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
<b>1989-1999</b>	\$13,586,819	196	39	235	235
<b>2000</b>	\$301,500	15	-	15	250
<b>2001</b>	\$1,051,000	14	-	14	264
<b>2002</b>	\$460,000	9	-	9	273
<b>2003</b>	\$334,500	8	-	8	281
<b>2004</b>	\$1,187,051	13	2	15	296
<b>2005</b>	\$1,590,640	17	7	24	320
<b>2006</b>	\$1,557,382	16	5	21	341
<b>2007</b>	\$3,928,070	19	2	21	362
<b>2008</b>	\$1,691,238	21	-	21	383
<b>2009</b>	\$371,000	6	-	6	389
<b>2010</b>	\$2,582,067	15	-	15	404
<b>2011</b>	\$735,815	14	-	14	418

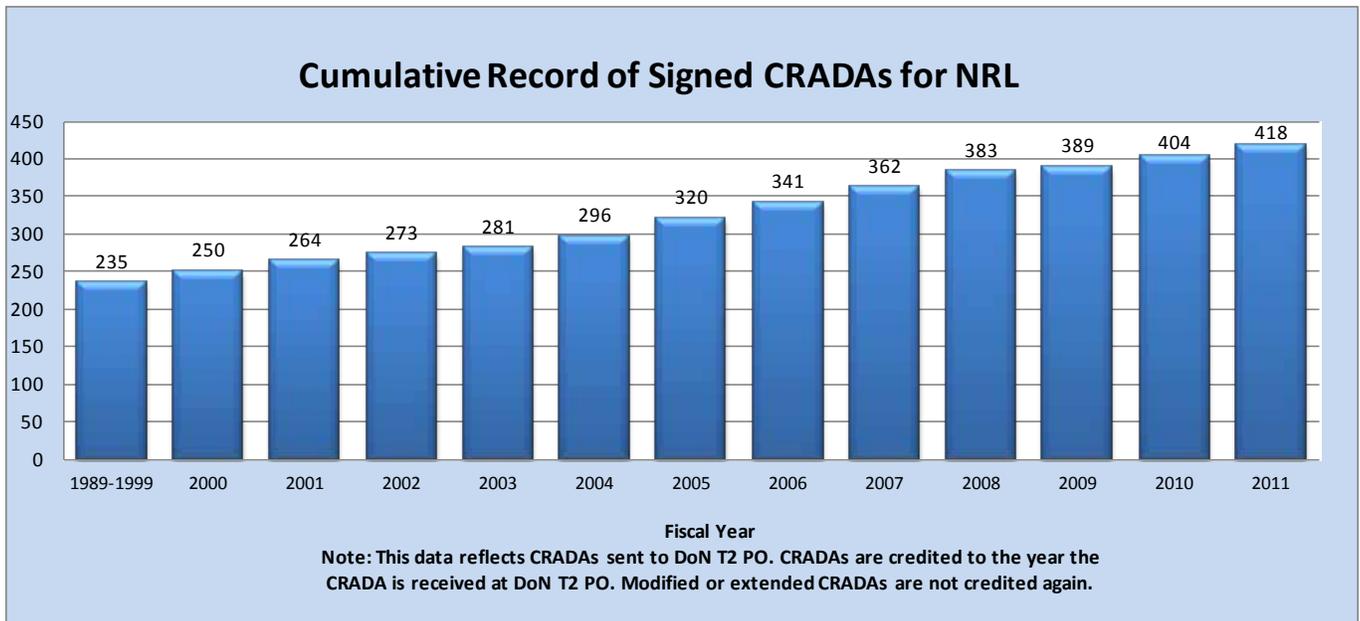
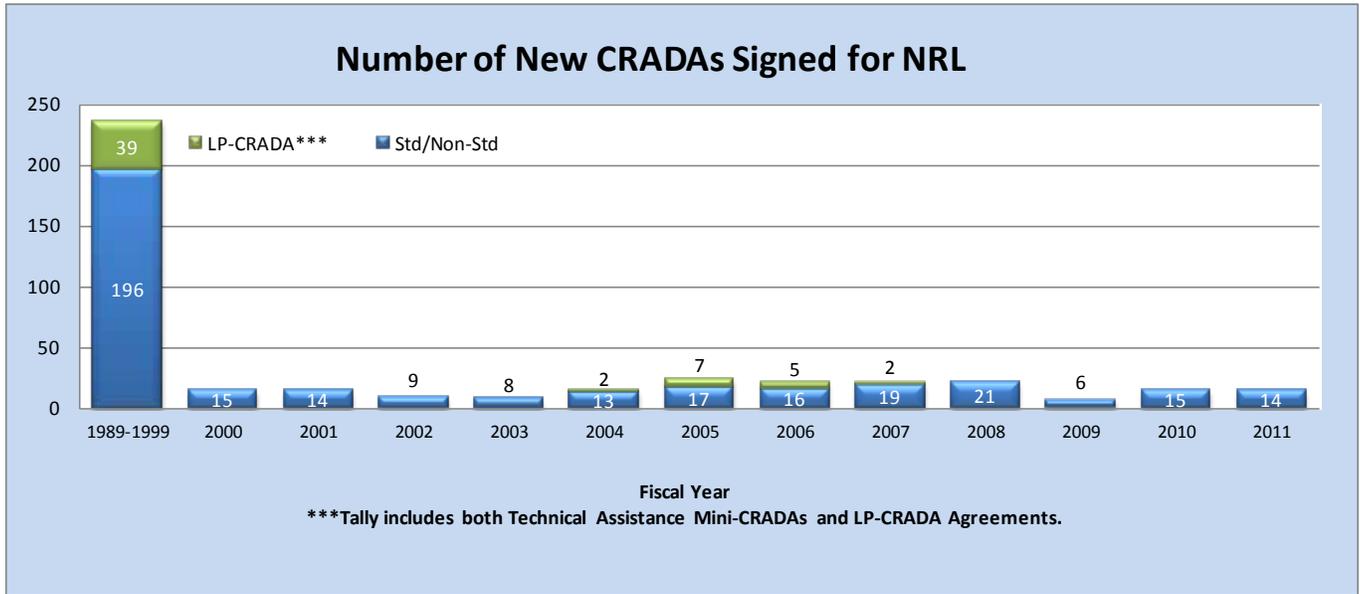
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## Naval Research Laboratory (NRL)



Naval Surface Warfare Center, Carderock Division (NSWC Carderock)

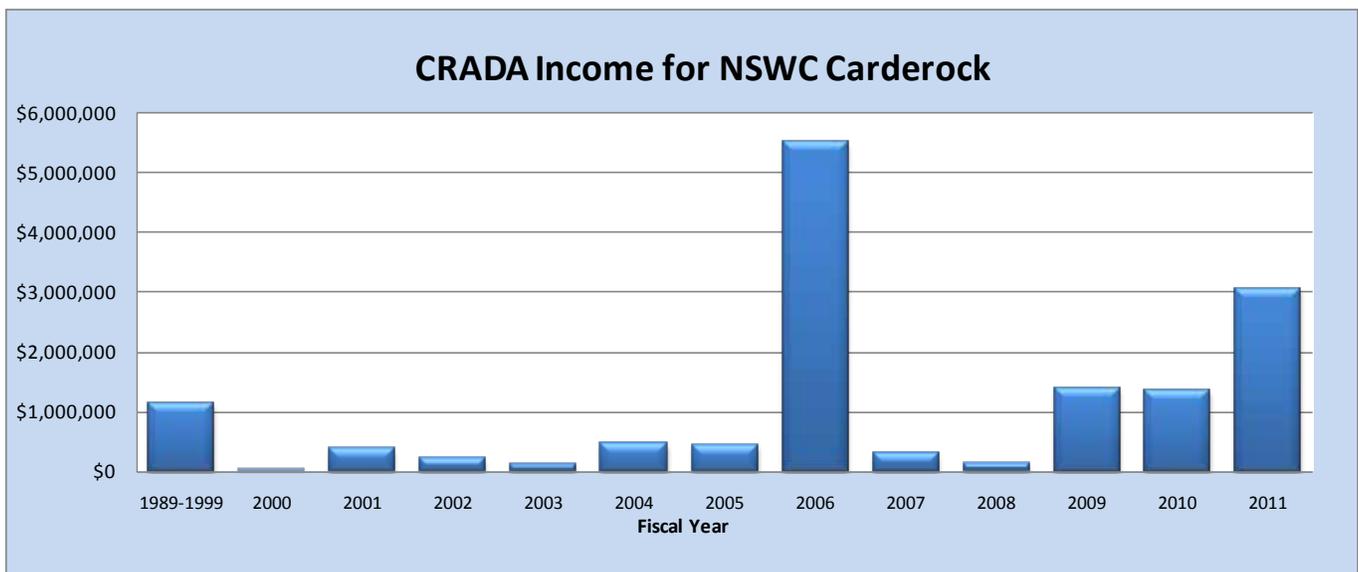
**NSWC Carderock CRADA History\***

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
<b>1989-1999</b>	\$1,141,625	22	13	35	35
<b>2000</b>	\$24,000	5	1	6	41
<b>2001</b>	\$386,000	7	-	7	48
<b>2002</b>	\$229,000	3	1	4	52
<b>2003</b>	\$119,000	4	1	5	57
<b>2004</b>	\$476,000	2	-	2	59
<b>2005</b>	\$439,848	5	-	5	64
<b>2006</b>	\$5,516,000	4	1	5	69
<b>2007</b>	\$316,500	8	1	9	78
<b>2008</b>	\$132,100	3	-	3	81
<b>2009</b>	\$1,378,497	6	-	6	87
<b>2010</b>	\$1,347,700	4	-	4	91
<b>2011</b>	\$3,061,939	9	1	10	101

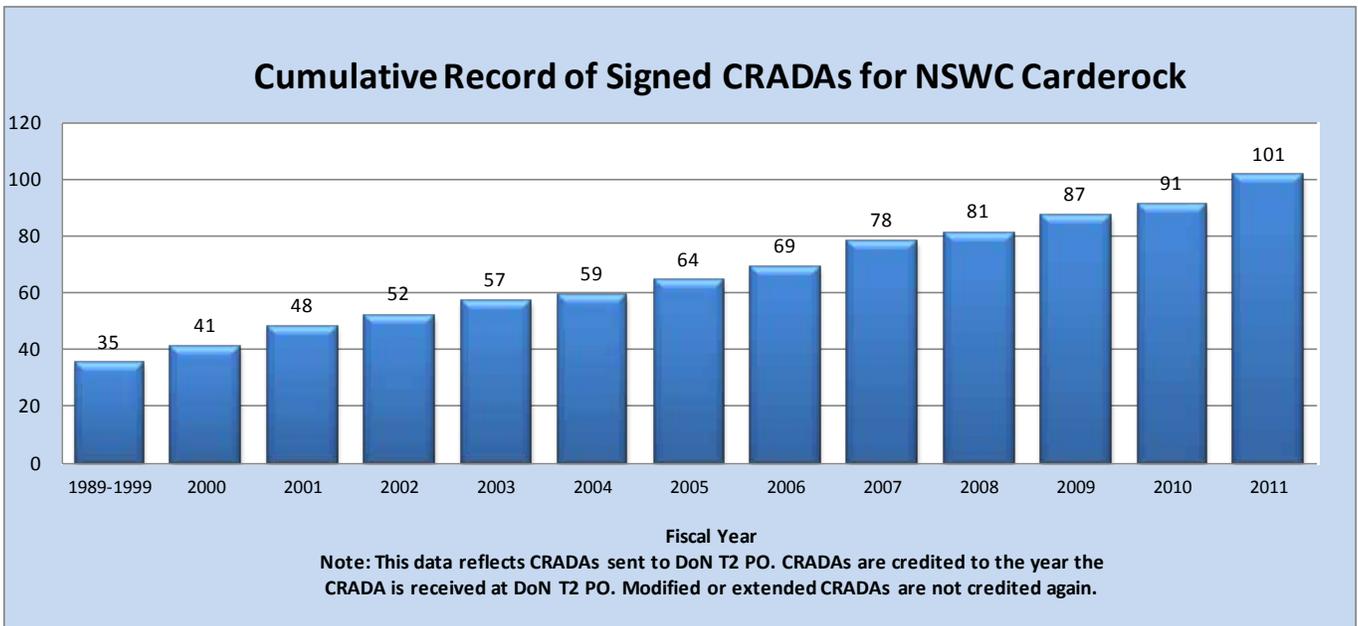
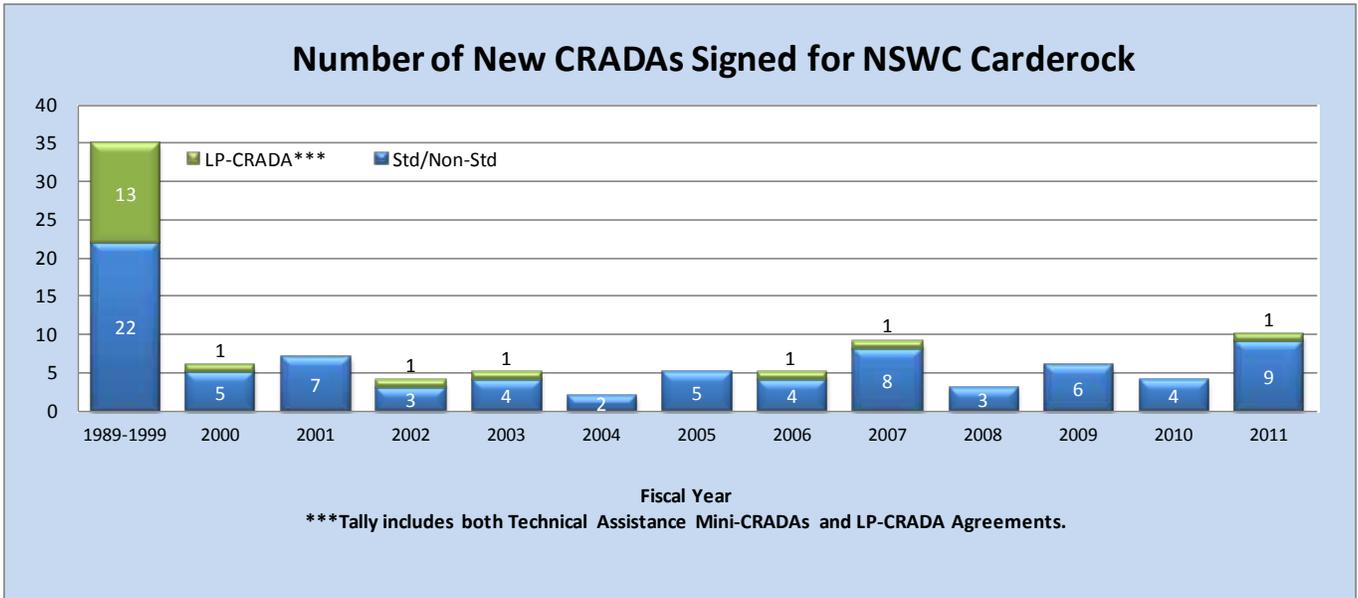
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## Naval Surface Warfare Center, Carderock Division (NSWC Carderock)



## Naval Surface Warfare Center, Crane Division (NSWC Crane)

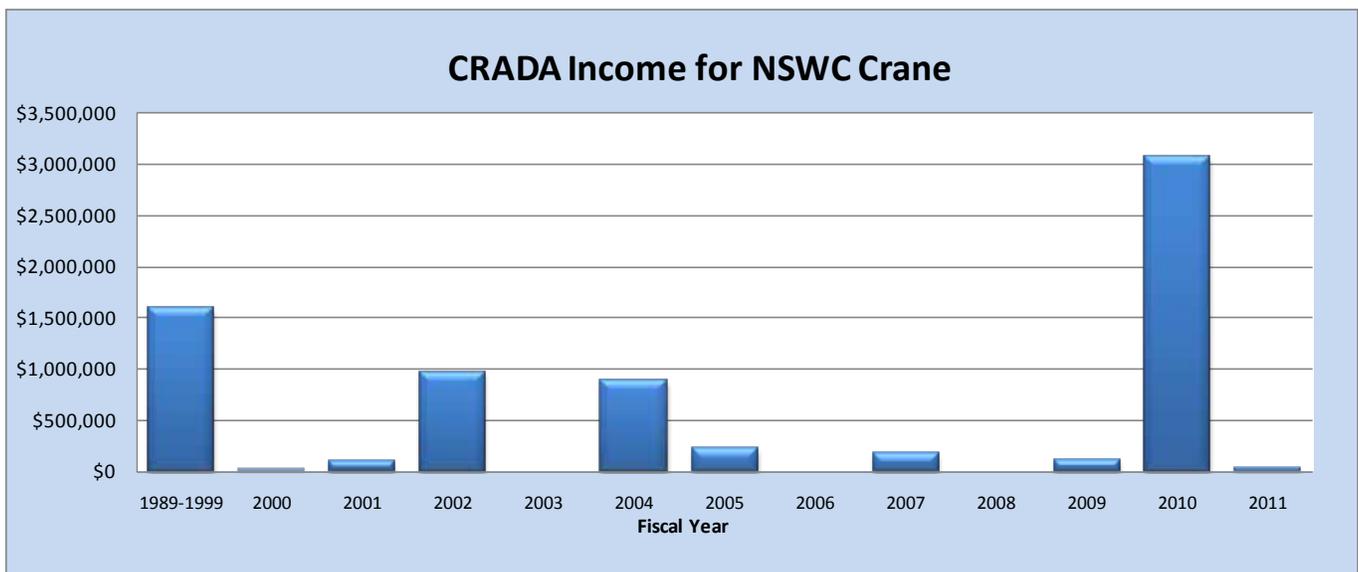
### NSWC Crane CRADA History\*

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
<b>1989-1999</b>	\$1,594,300	13	27	40	40
<b>2000</b>	\$10,000	3	-	3	43
<b>2001</b>	\$100,000	2	-	2	45
<b>2002</b>	\$966,000	2	-	2	47
<b>2003</b>	\$0	1	-	1	48
<b>2004</b>	\$883,000	4	-	4	52
<b>2005</b>	\$224,000	3	1	4	56
<b>2006</b>	\$0	1	-	1	57
<b>2007</b>	\$175,000	2	-	2	59
<b>2008</b>	\$0	2	-	2	61
<b>2009</b>	\$114,912	4	1	5	66
<b>2010</b>	\$3,078,633	7	1	8	74
<b>2011</b>	\$36,200	7	-	7	81

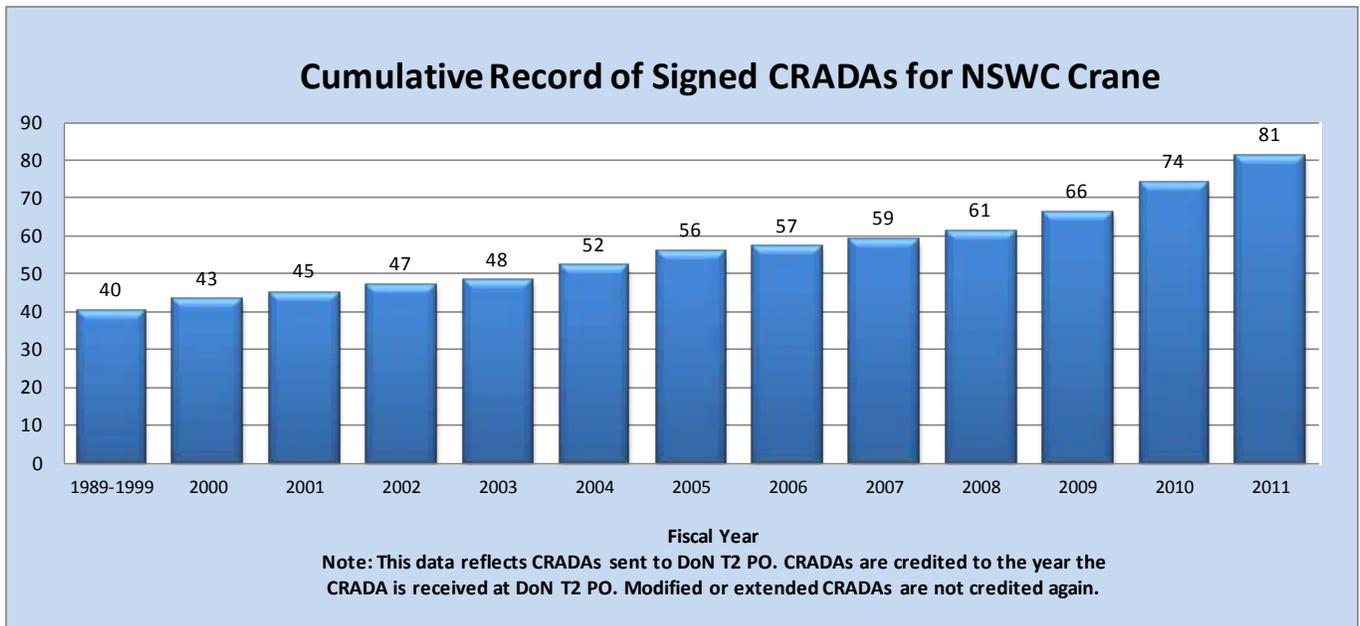
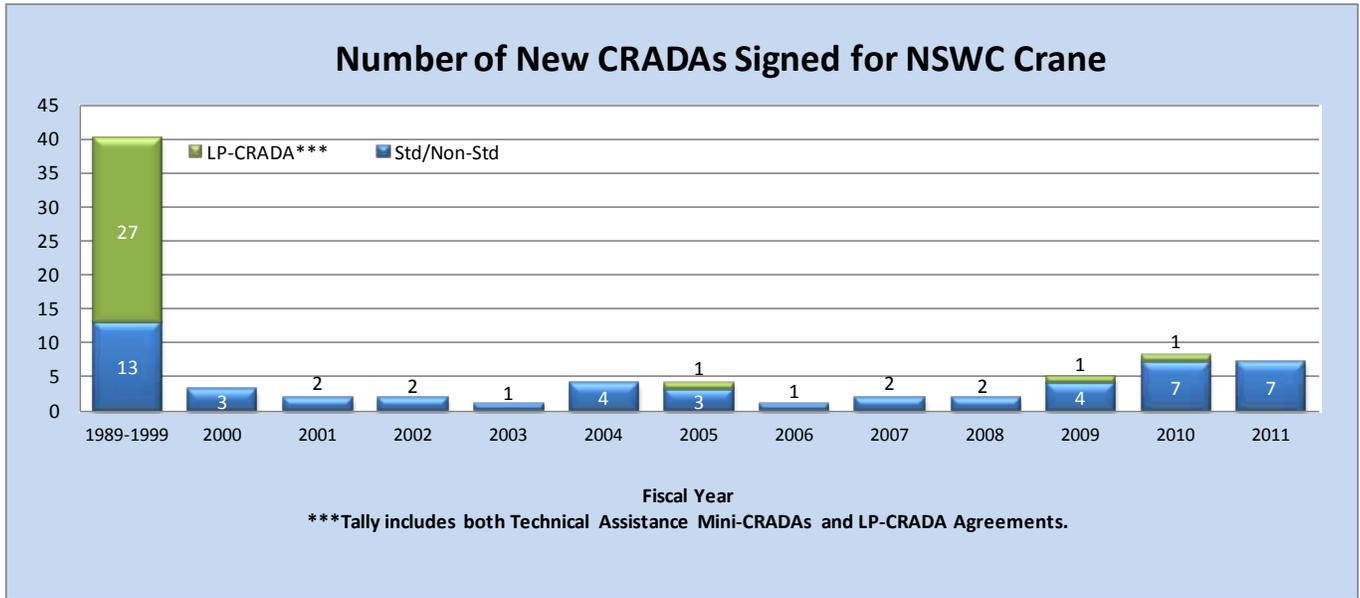
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## Naval Surface Warfare Center, Crane Division (NSWC Crane)



## Naval Surface Warfare Center, Dahlgren Division (NSWC Dahlgren)

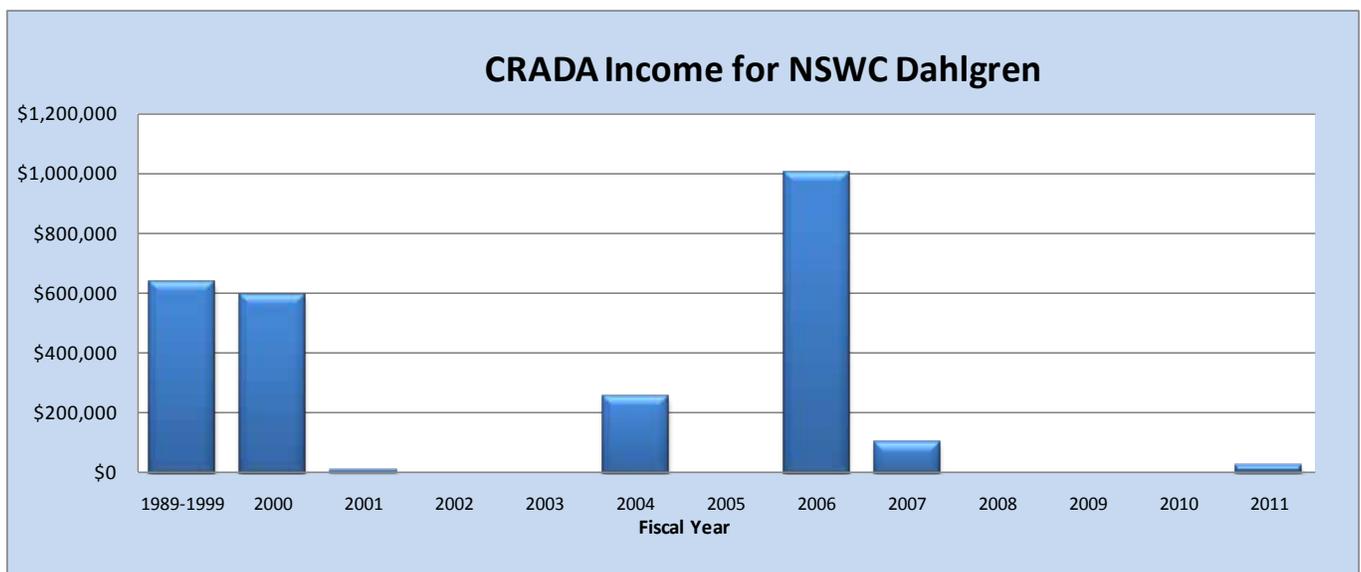
### NSWC Dahlgren CRADA History\*

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
<b>1989-1999</b>	\$634,785	36	1	37	37
<b>2000</b>	\$590,692	9	-	9	46
<b>2001</b>	\$10,000	4	-	4	50
<b>2002</b>	\$0	7	-	7	57
<b>2003</b>	\$0	4	-	4	61
<b>2004</b>	\$250,000	5	-	5	66
<b>2005</b>	\$0	-	-	-	66
<b>2006</b>	\$1,000,000	4	-	4	70
<b>2007</b>	\$100,000	8	1	9	79
<b>2008</b>	\$0	2	-	2	81
<b>2009</b>	\$0	6	1	7	88
<b>2010</b>	\$0	13	4	17	105
<b>2011</b>	\$25,000	12	2	14	119

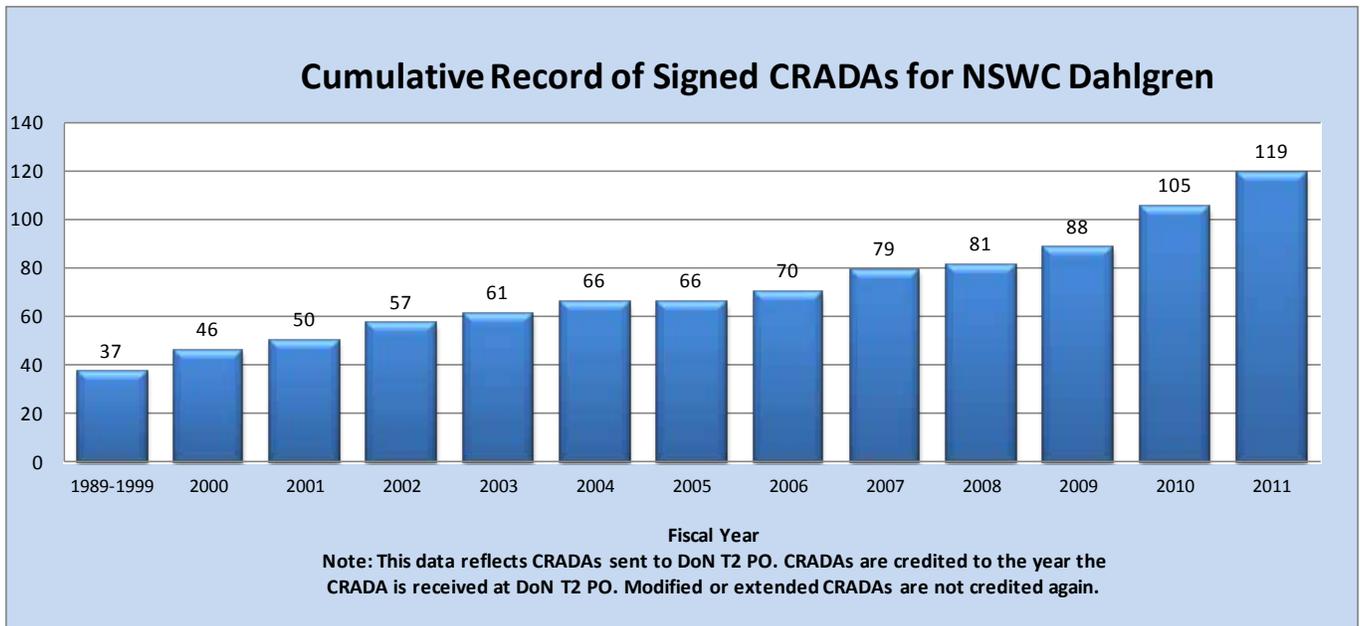
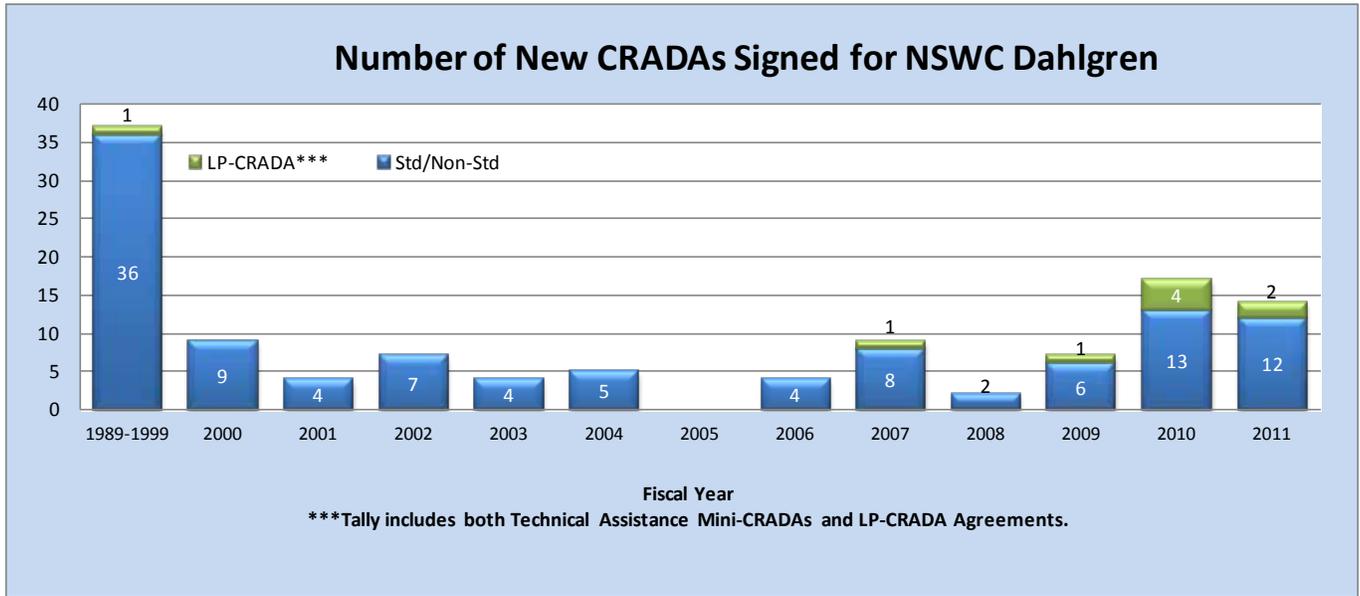
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## Naval Surface Warfare Center, Dahlgren Division (NSWC Dahlgren)



Naval Surface Warfare Center, Indian Head Division (NSWC Indian Head)

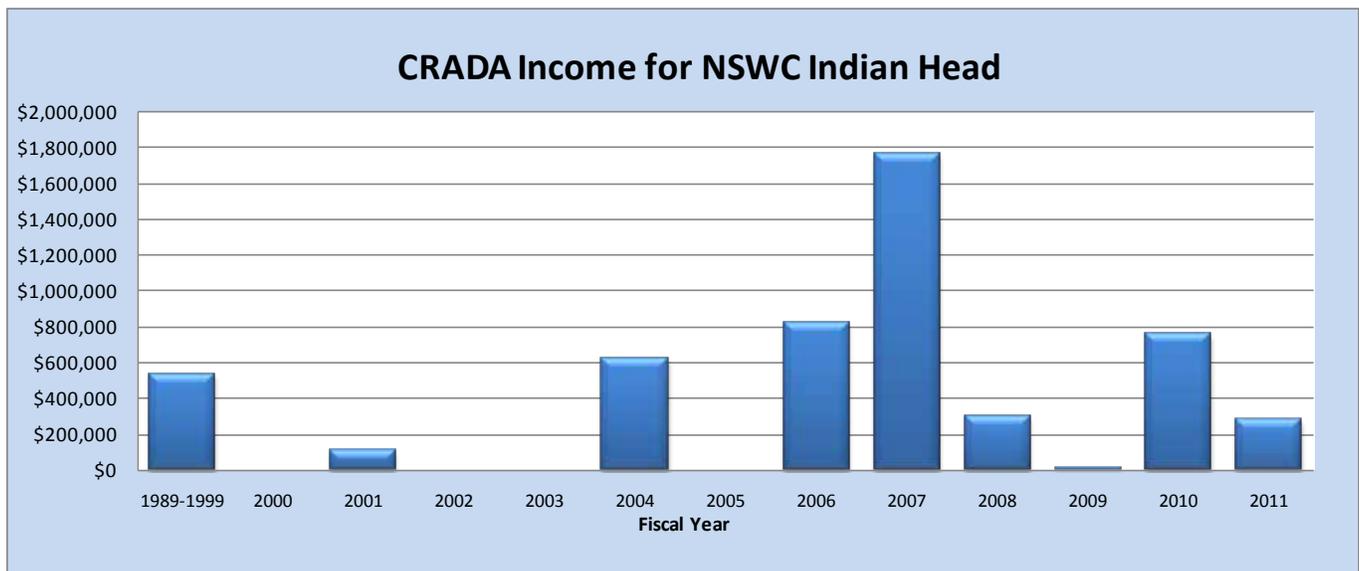
**NSWC Indian Head CRADA History\***

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
<b>1989-1999</b>	\$531,000	20	4	24	24
<b>2000</b>	\$0	4	-	4	28
<b>2001</b>	\$108,300	8	-	8	36
<b>2002</b>	\$0	12	-	12	48
<b>2003</b>	\$0	15	-	15	63
<b>2004</b>	\$622,006	14	-	14	77
<b>2005</b>	\$0	8	-	8	85
<b>2006</b>	\$822,350	12	-	12	97
<b>2007</b>	\$1,761,341	9	-	9	106
<b>2008</b>	\$300,635	14	-	14	120
<b>2009</b>	\$15,000	7	-	7	127
<b>2010</b>	\$760,000	5	-	5	132
<b>2011</b>	\$277,547	14	-	14	146

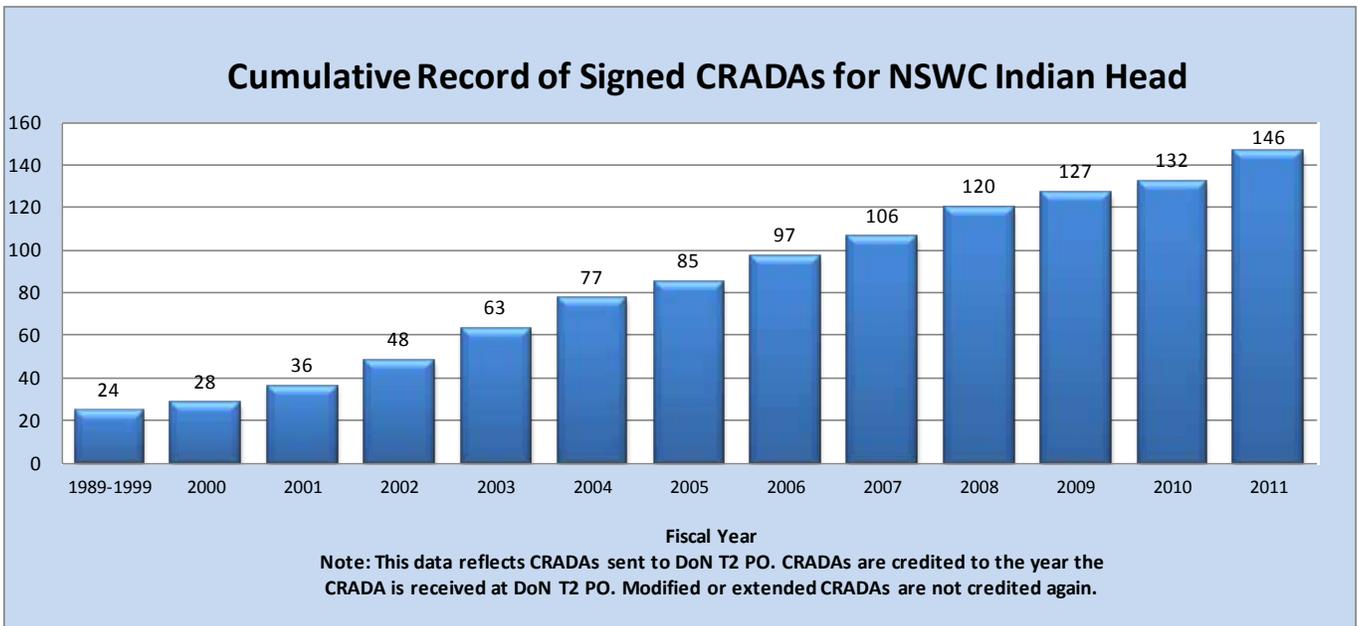
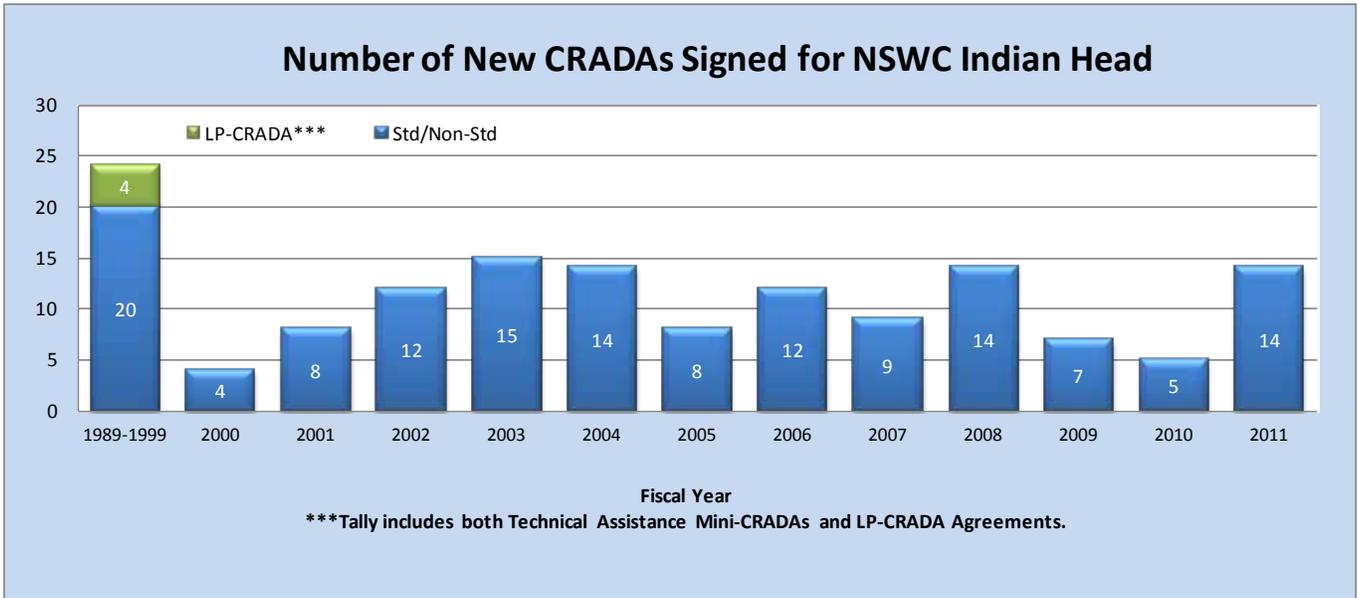
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### Naval Surface Warfare Center, Indian Head Division (NSWC Indian Head)



## Naval Undersea Warfare Center, Division Keyport (NUWC Keyport)

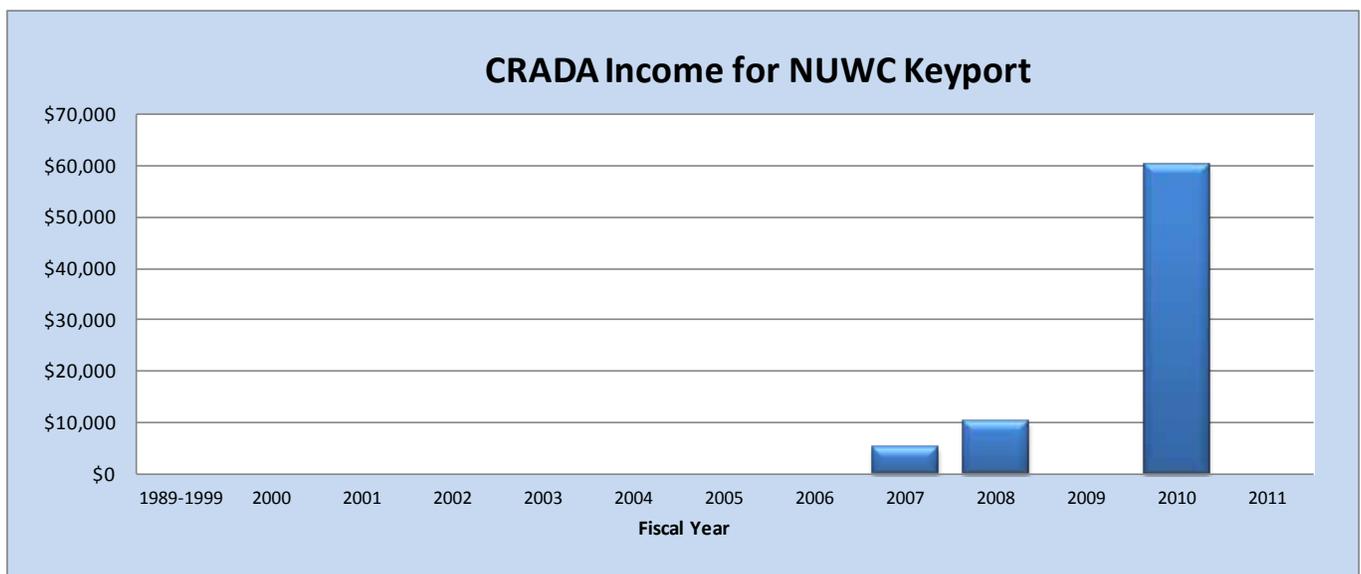
### NUWC Keyport CRADA History\*

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
<b>1989-1999</b>	\$0	5	1	6	6
<b>2000</b>	\$0	-	-	-	6
<b>2001</b>	\$0	-	-	-	6
<b>2002</b>	\$0	-	-	-	6
<b>2003</b>	\$0	-	-	-	6
<b>2004</b>	\$0	-	-	-	6
<b>2005</b>	\$0	-	-	-	6
<b>2006</b>	\$0	-	-	-	6
<b>2007</b>	\$5,000	1	-	1	7
<b>2008</b>	\$10,000	2	-	2	9
<b>2009</b>	\$0	-	-	-	9
<b>2010</b>	\$60,300	2	-	2	11
<b>2011</b>	\$0	-	-	-	11

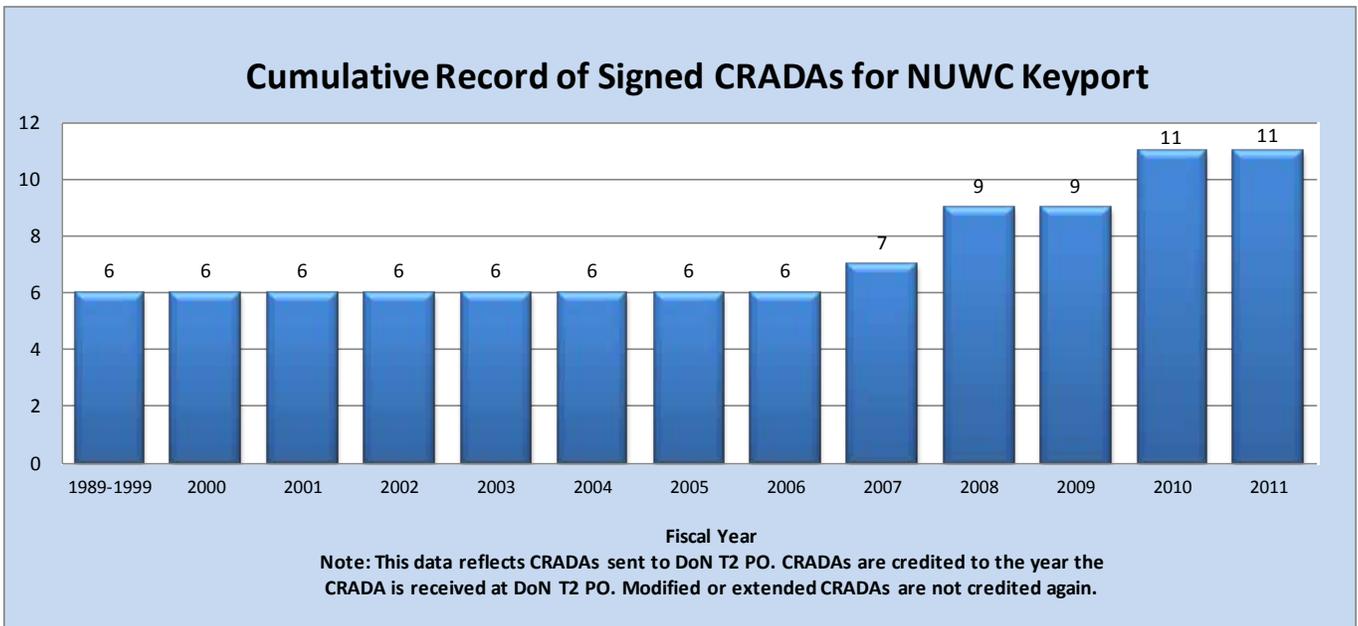
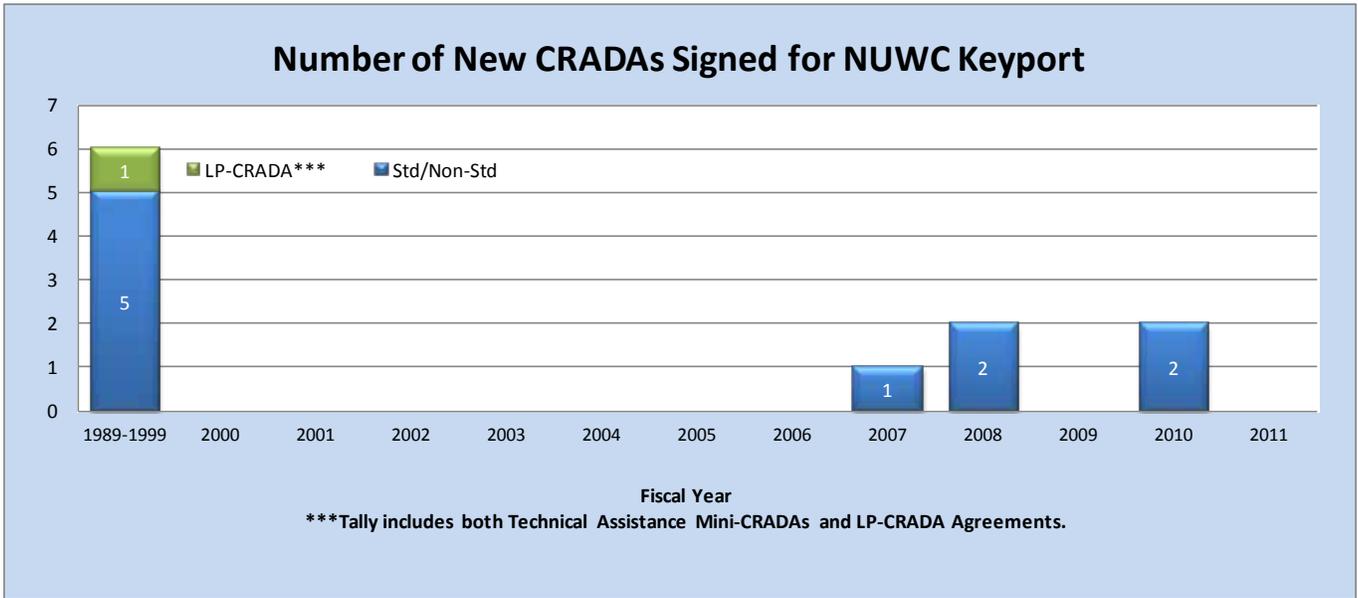
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### Naval Undersea Warfare Center, Division Keyport (NSWC Keyport)



## Naval Undersea Warfare Center, Division Newport (NUWC Newport)

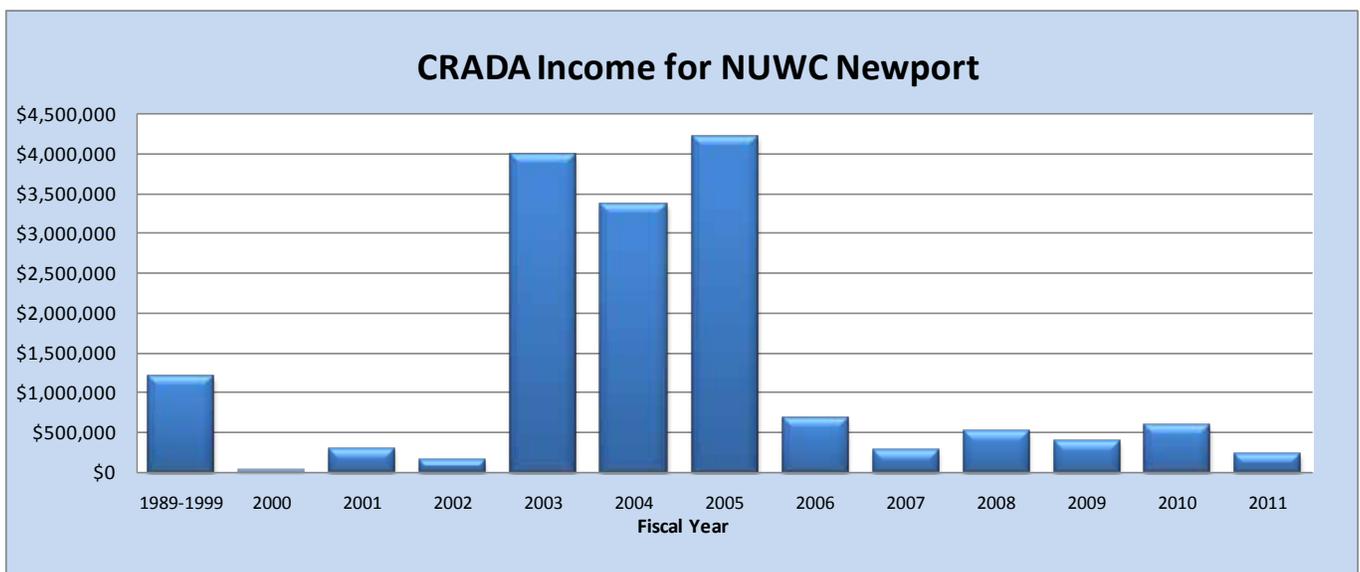
### NUWC Newport CRADA History\*

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
<b>1989-1999</b>	\$1,194,886	46	4	50	50
<b>2000</b>	\$5,000	4	-	4	54
<b>2001</b>	\$287,800	9	2	11	65
<b>2002</b>	\$148,801	13	1	14	79
<b>2003</b>	\$3,994,085	18	1	19	98
<b>2004</b>	\$3,363,470	45	-	45	143
<b>2005</b>	\$4,204,096	15	-	15	158
<b>2006</b>	\$678,400	12	1	13	171
<b>2007</b>	\$265,000	6	2	8	179
<b>2008</b>	\$505,907	15	2	17	196
<b>2009</b>	\$384,500	8	1	9	205
<b>2010</b>	\$583,349	12	-	12	217
<b>2011</b>	\$226,500	8	3	11	228

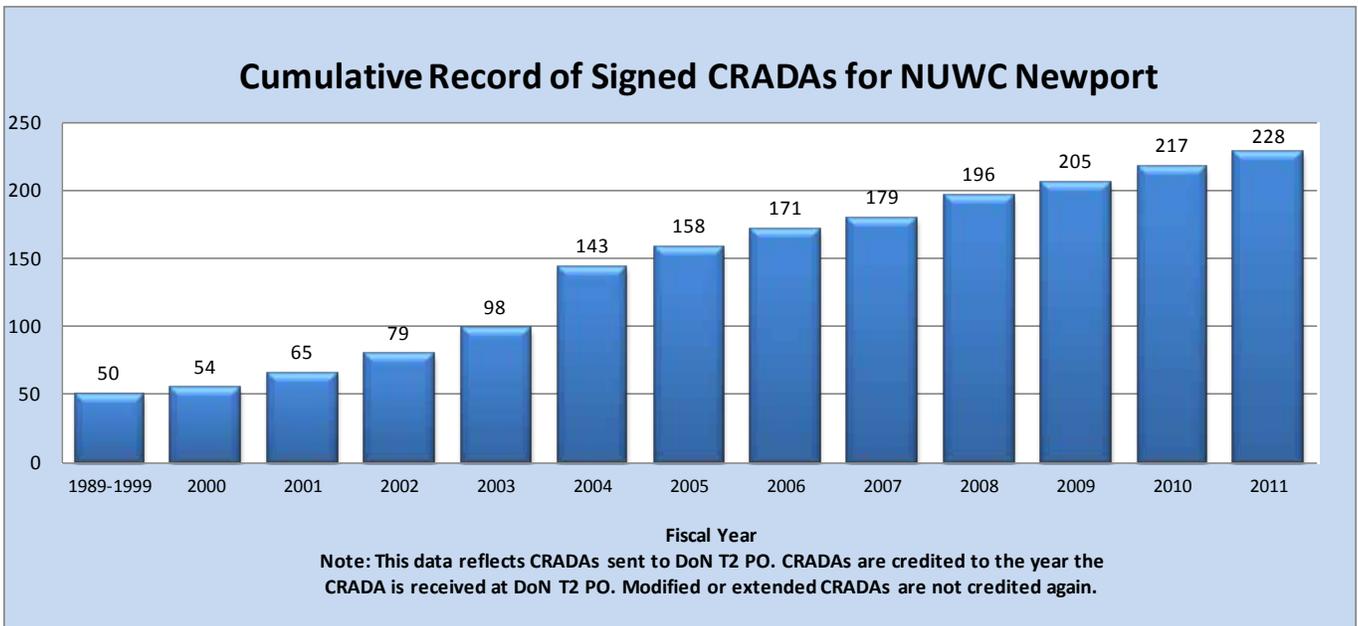
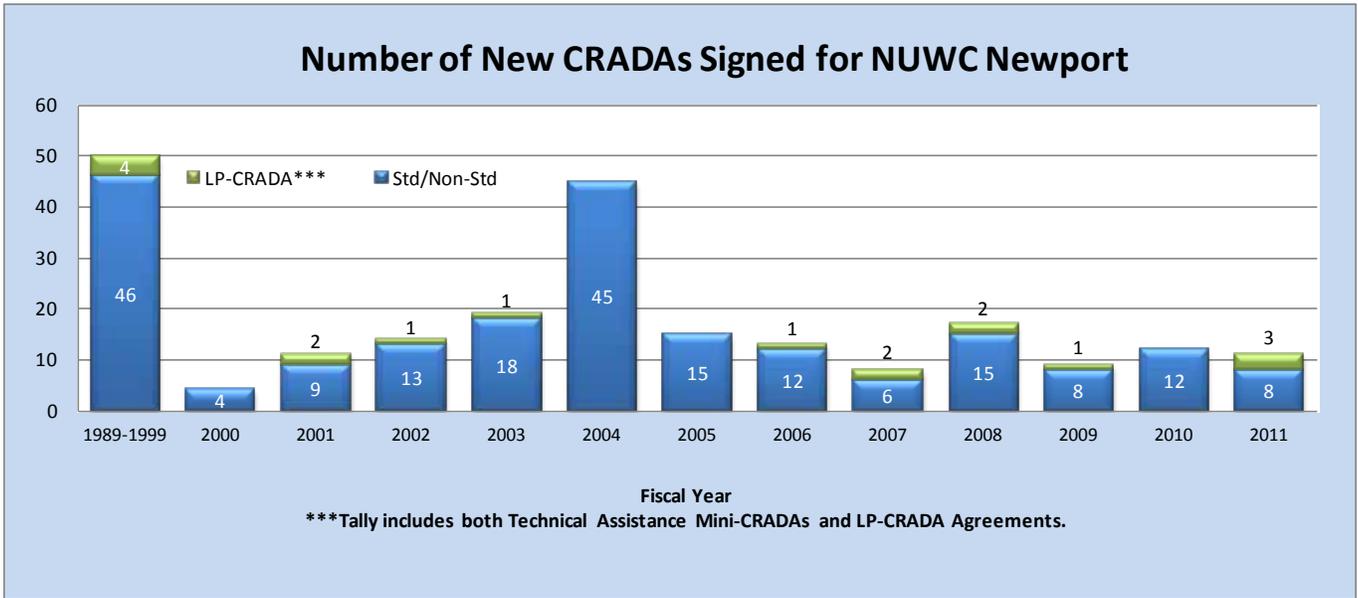
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### Naval Undersea Warfare Center, Division Newport (NSWC Newport)



## Office of Naval Research (ONR)

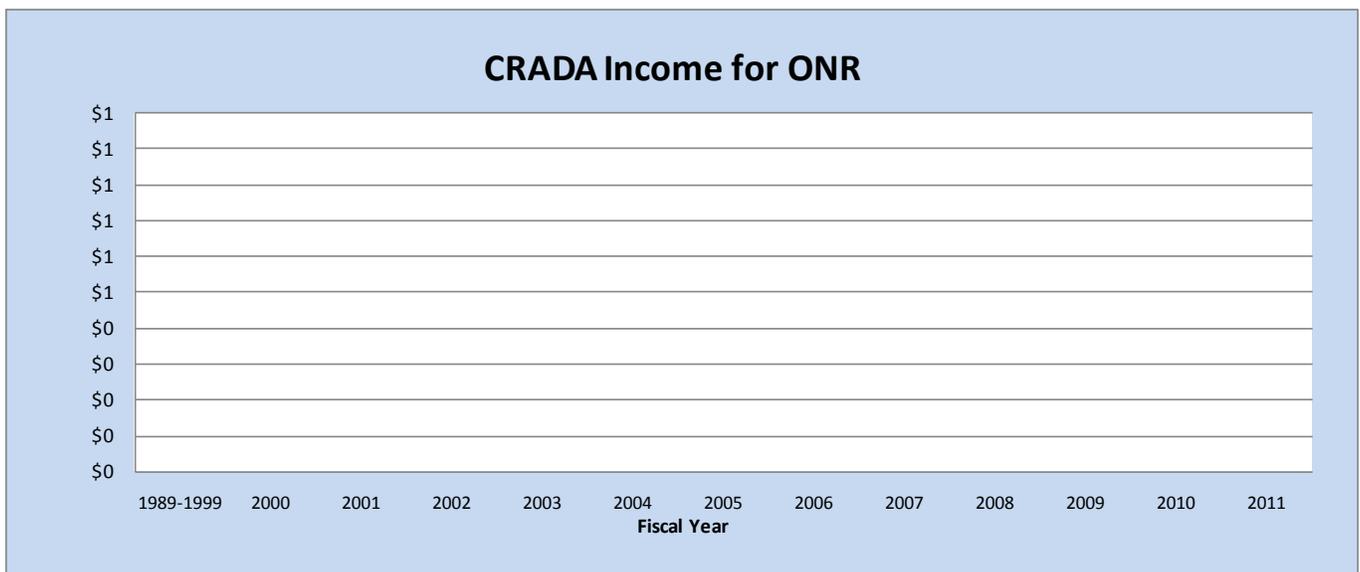
### ONR CRADA History\*

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
<b>1989-1999</b>	\$0	-	-	-	-
<b>2000</b>	\$0	1	-	1	1
<b>2001</b>	\$0	-	-	-	1
<b>2002</b>	\$0	-	-	-	1
<b>2003</b>	\$0	1	2	3	4
<b>2004</b>	\$0	2	-	2	6
<b>2005</b>	\$0	-	-	-	6
<b>2006</b>	\$0	-	-	-	6
<b>2007</b>	\$0	-	2	2	8
<b>2008</b>	\$0	-	1	1	9
<b>2009</b>	\$0	-	-	-	9
<b>2010</b>	\$0	1	-	1	10
<b>2011</b>	\$0	-	-	-	10

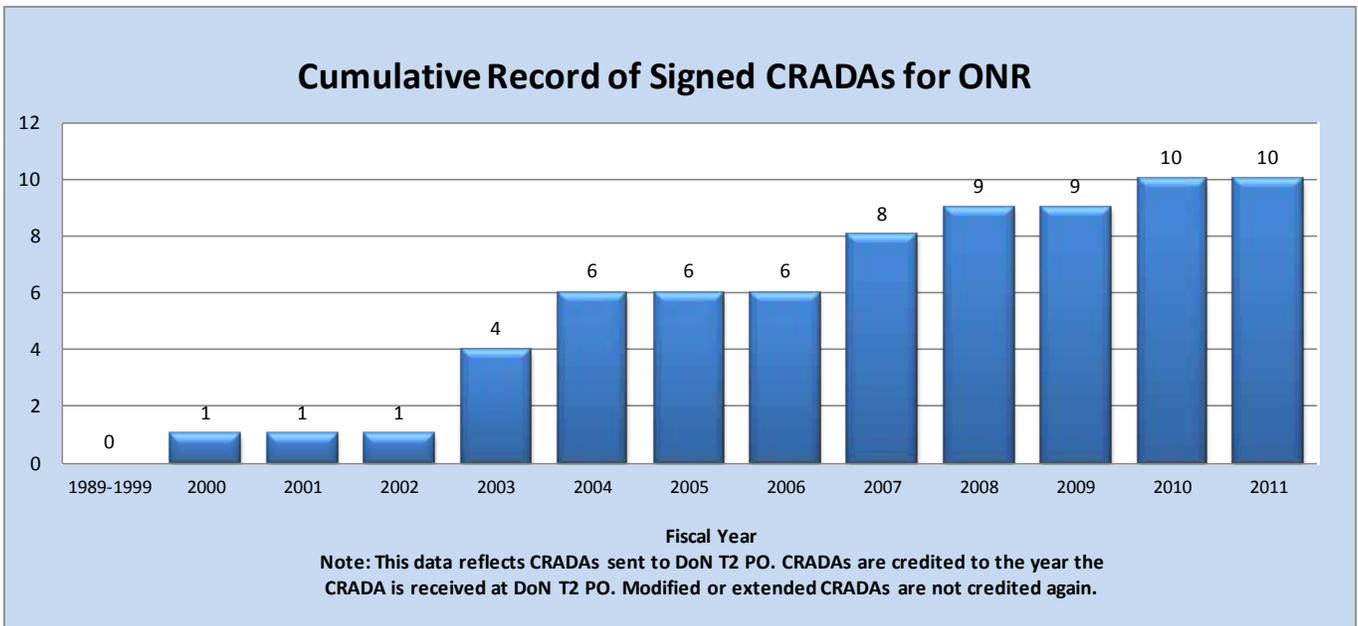
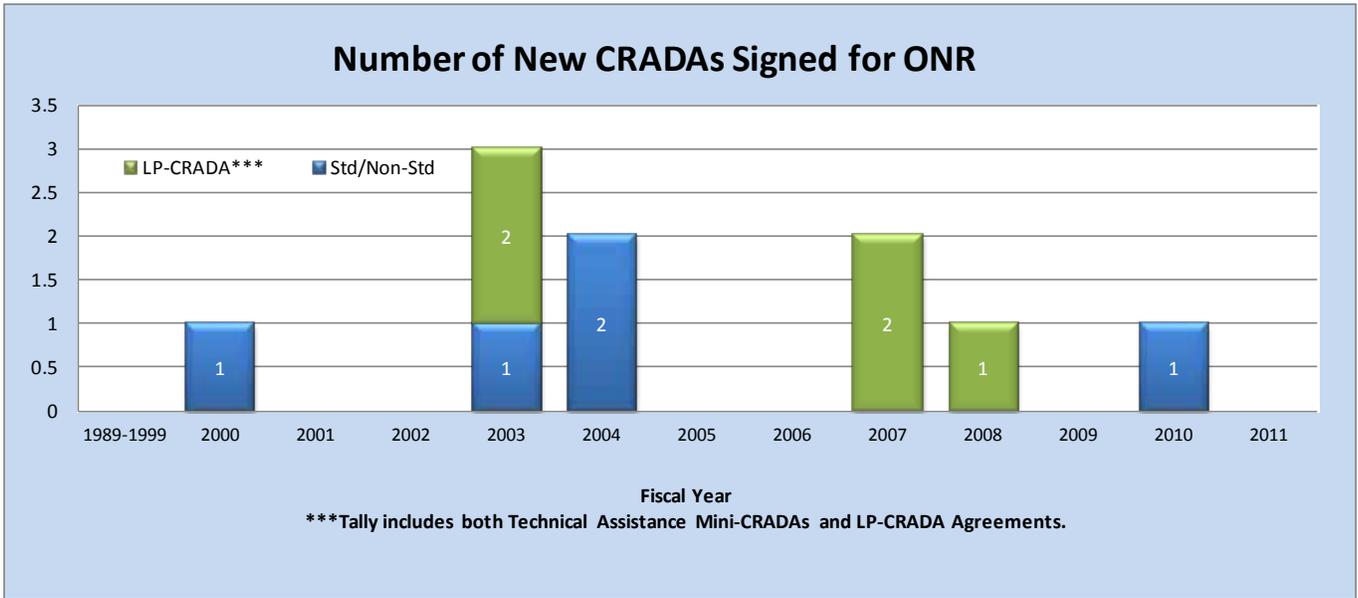
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### Office of Naval Research (ONR)

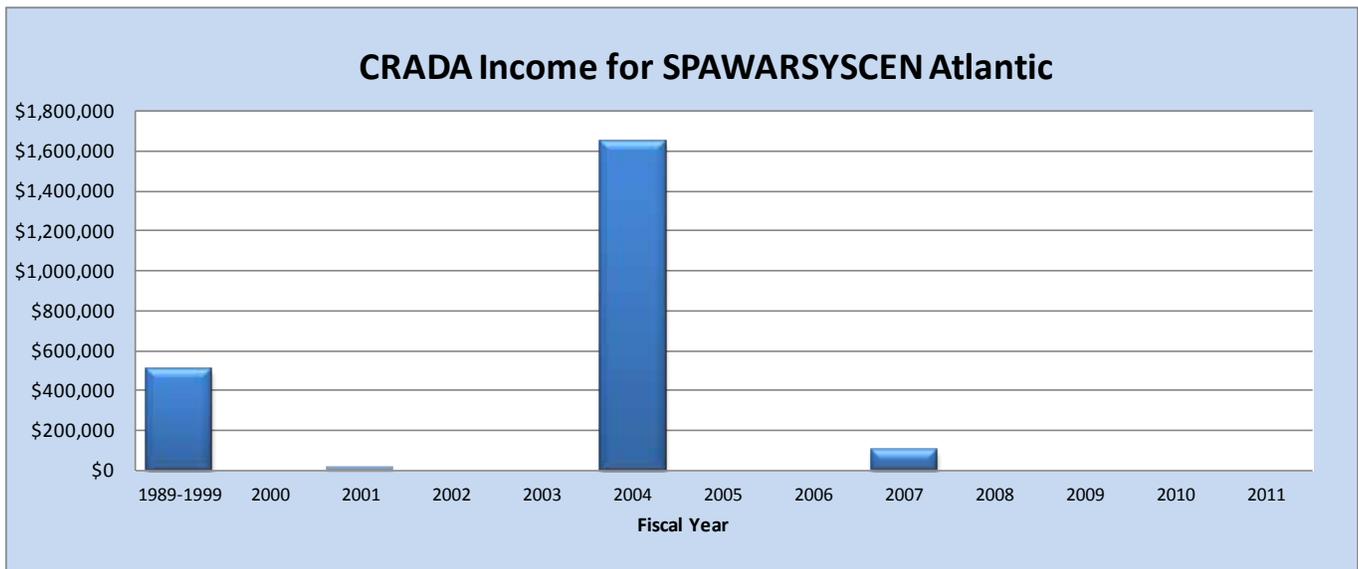


## Space and Naval Warfare Systems Command Systems Center Atlantic (SPAWARSYSCEN Atlantic)

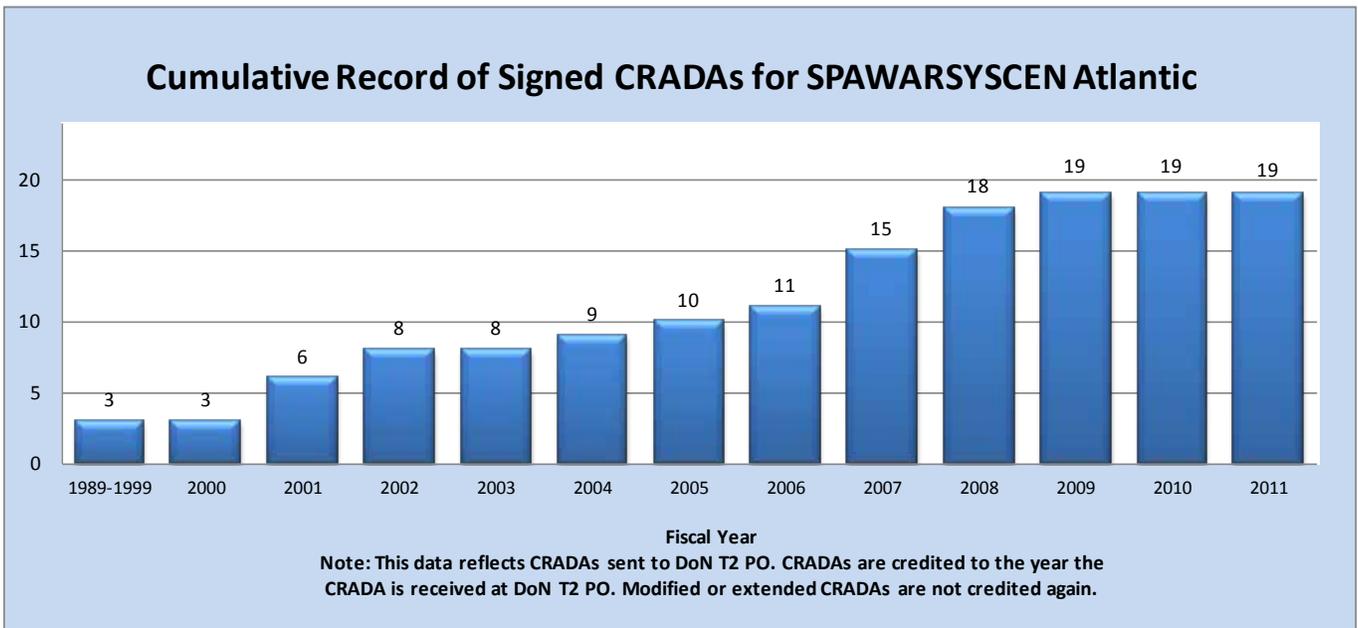
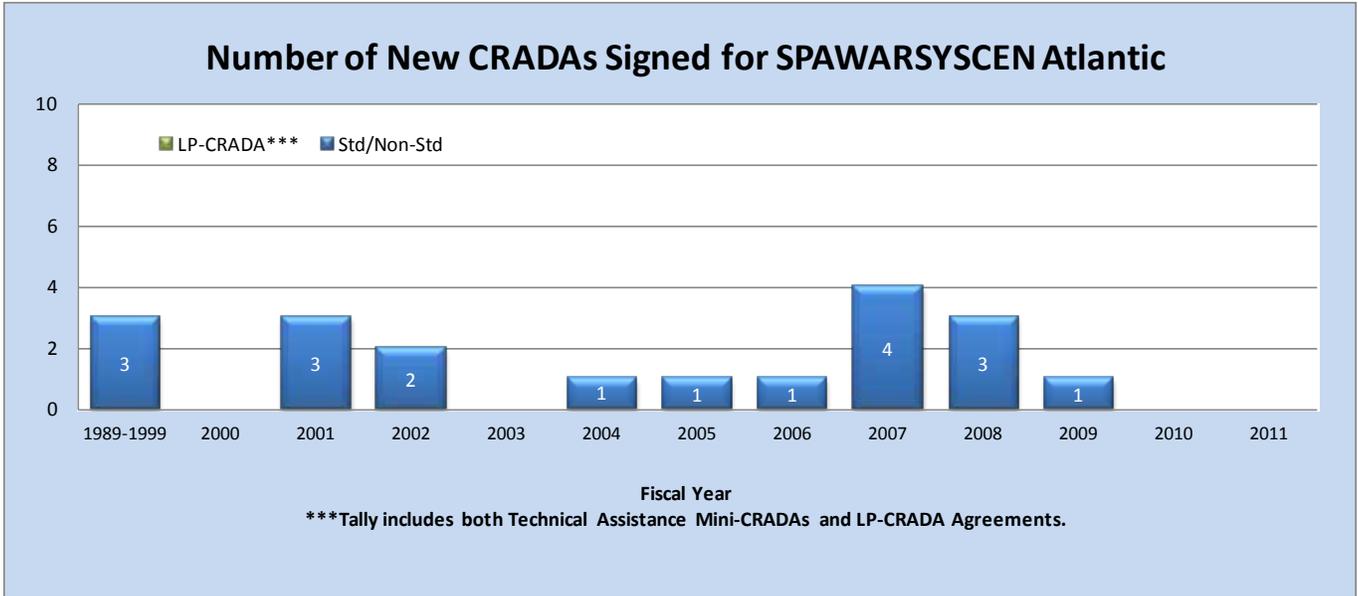
### SPAWARSYSCEN Atlantic CRADA History\*

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
<b>1989-1999</b>	\$500,000	3	-	3	3
<b>2000</b>	\$0	-	-	-	3
<b>2001</b>	\$2,473	3	-	3	6
<b>2002</b>	\$0	2	-	2	8
<b>2003</b>	\$0	-	-	-	8
<b>2004</b>	\$1,644,007	1	-	1	9
<b>2005</b>	\$0	1	-	1	10
<b>2006</b>	\$0	1	-	1	11
<b>2007</b>	\$100,000	4	-	4	15
<b>2008</b>	\$0	3	-	3	18
<b>2009</b>	\$0	1	-	1	19
<b>2010</b>	\$0	-	-	-	19
<b>2011</b>	\$0	-	-	-	19

- \* This data reflects the number of CRADAs sent to DoN T2 PO. CRADAs are credited to the year the CRADA is received at DoN T2 PO. Modified or extended CRADAs are not credited again.
- \*\* The entire income for each CRADA is credited to the year that the CRADA is received at DoN T2 PO. Funds received under any amendments are also allocated to the year the original CRADA is received.
- \*\*\* Tally includes both Technical Assistance Mini-CRADAs and LP-CRADA Agreements.



## Space and Naval Warfare Systems Command Systems Center Atlantic (SPAWARSYSCEN Atlantic)



## Space and Naval Warfare Systems Command Systems Center Pacific (SPAWARSYSCEN Pacific)

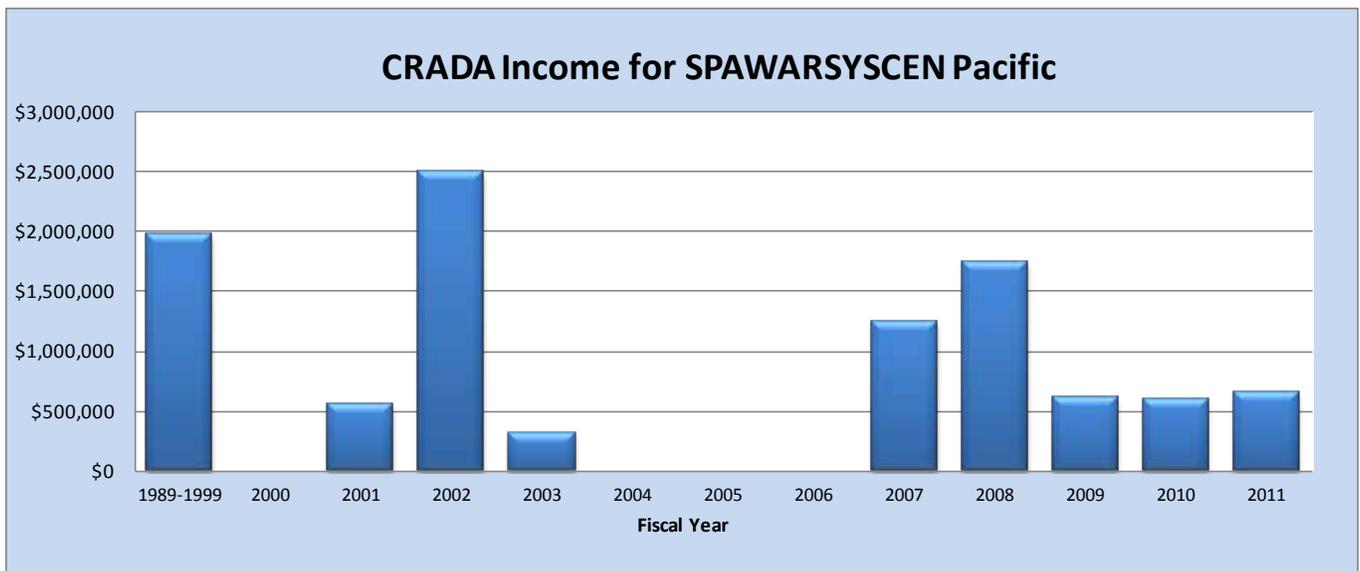
### SPAWARSYSCEN Pacific CRADA History\*

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
<b>1989-1999</b>	\$1,973,500	41	1	42	42
<b>2000</b>	\$0	-	-	-	42
<b>2001</b>	\$560,000	3	-	3	45
<b>2002</b>	\$2,501,370	4	-	4	49
<b>2003</b>	\$309,990	5	-	5	54
<b>2004</b>	\$0	1	-	1	55
<b>2005</b>	\$0	3	-	3	58
<b>2006</b>	\$0	3	-	3	61
<b>2007</b>	\$1,250,000	7	-	7	68
<b>2008</b>	\$1,736,900	9	-	9	77
<b>2009</b>	\$609,613	7	15	22	99
<b>2010</b>	\$601,000	7	11	18	117
<b>2011</b>	\$655,000	8	7	15	132

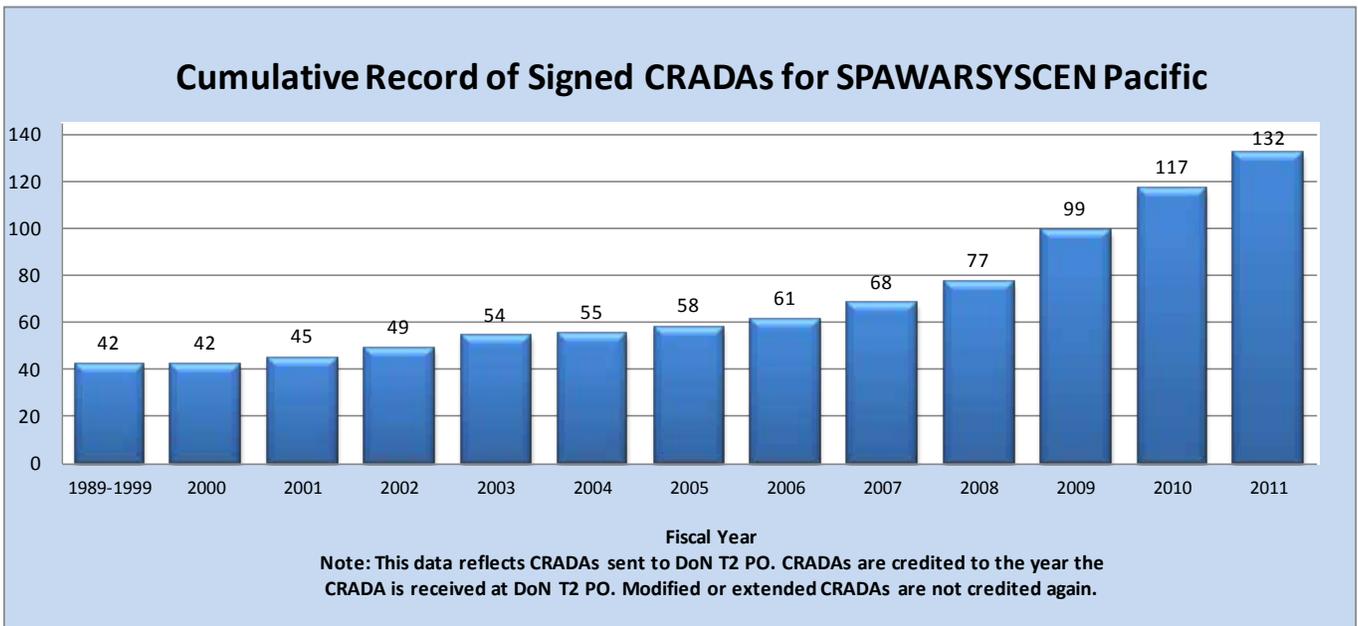
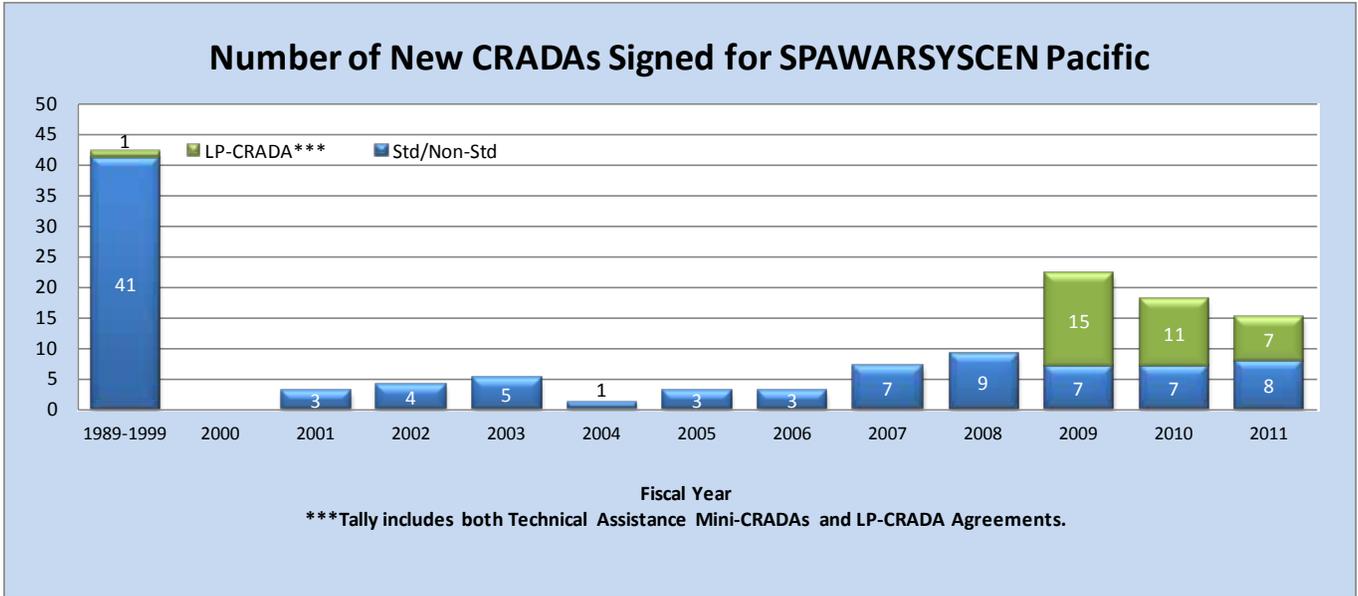
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## Space and Naval Warfare Systems Command Systems Center Pacific (SPAWARSYSCEN Pacific)



## United States Naval Academy (USNA)

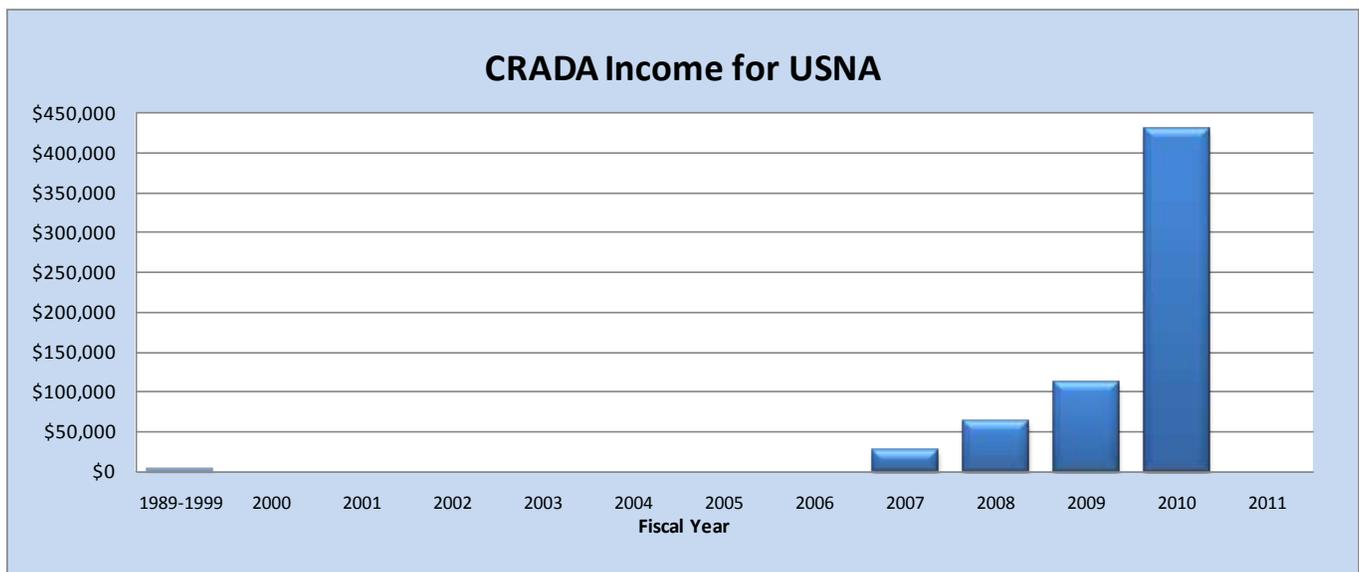
### USNA CRADA History\*

Fiscal Year	CRADA Income**	Numbers of CRADAs Signed			
		Std/Non-Std	LP-CRADA***	Total	Cumulative
<b>1989-1999</b>	\$2,000	3	-	3	3
<b>2000</b>	\$0	-	-	-	3
<b>2001</b>	\$0	-	-	-	3
<b>2002</b>	\$0	-	-	-	3
<b>2003</b>	\$0	-	-	-	3
<b>2004</b>	\$0	-	-	-	3
<b>2005</b>	\$0	-	-	-	3
<b>2006</b>	\$0	-	-	-	3
<b>2007</b>	\$26,000	1	-	1	4
<b>2008</b>	\$62,430	3	-	3	7
<b>2009</b>	\$111,943	3	-	3	10
<b>2010</b>	\$428,197	13	-	13	23
<b>2011</b>	\$0	3	-	3	26

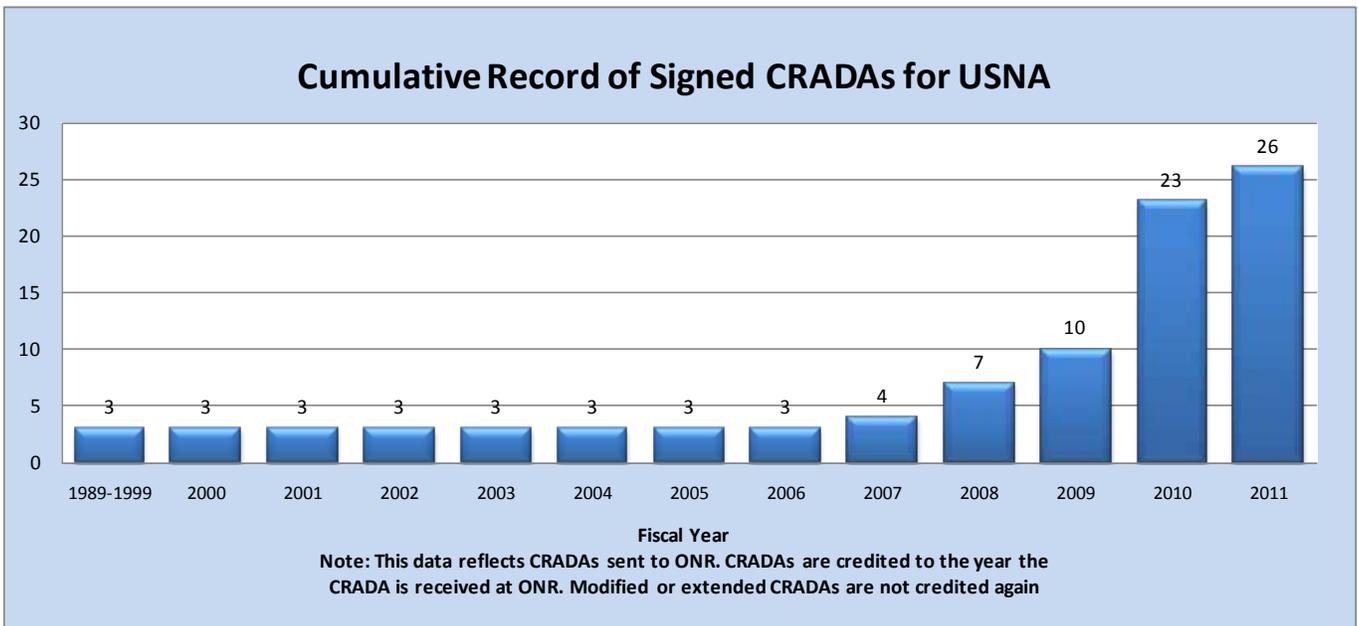
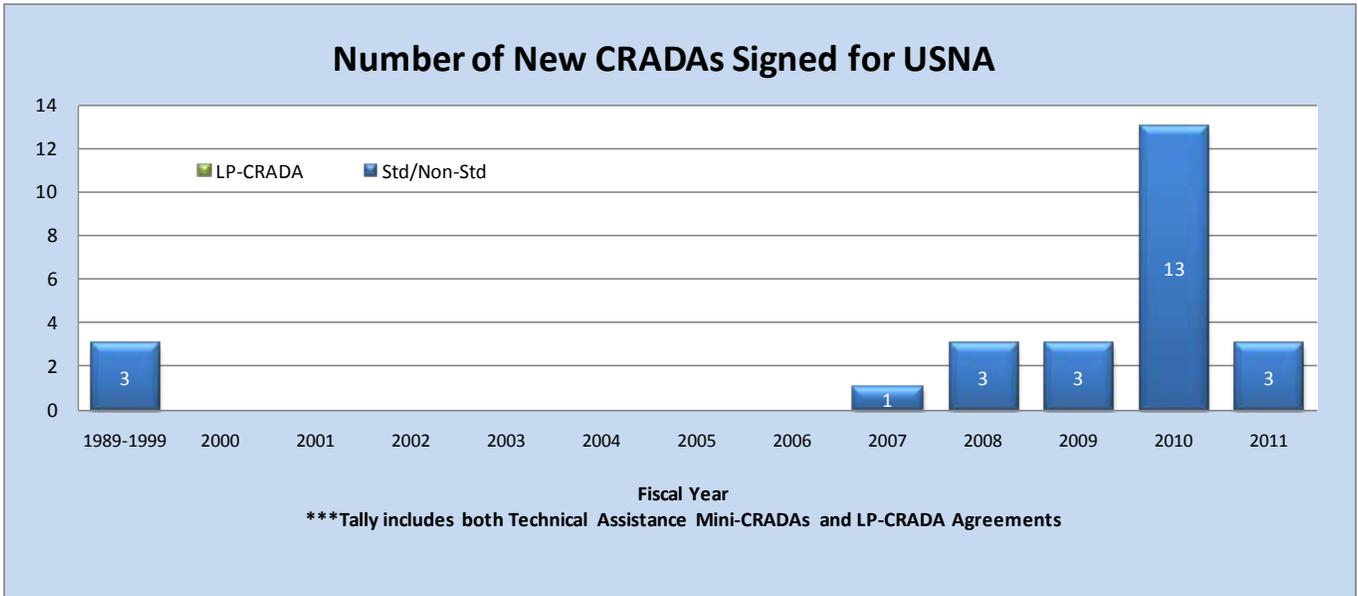
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## United States Naval Academy (USNA)





## Appendix C: FY11 CRADA Listing



## Appendix C: FY11 CRADA Listing

Naval Meteorology and Oceanography Command		
Industry Partner	CRADA Number	Subject
Google, Inc.	NCRADA-COMNAVMETOCOM-11-01	Development of Ocean Data for Goggle Products and Services and Improvement of Navy Data Processing/Retrieval Techniques
Naval Air Warfare Center Aircraft Division, Patuxent River		
Industry Partner	CRADA Number	Subject
ADI Technologies, Inc.	LP-CRADA-NAWCADPAX-10-166	Material Transfer of Information on Liquid Atomizing Nozzle and Adjustable Liquid Atomization Nozzle from NAWCADPAX to ADI Technologies, Inc.
Aging Aircraft Consulting, LLC	LP-CRADA-NAWCADPAX-11-176	Material Transfer of Various Compositions for Conducting Research, Test and Evaluation, Development and/or Engineering Efforts from NAWCADPAX to Aging Aircraft Consulting, LLC
The Boeing Company	NCRADA-NAWCADPAX-10-154	P-8A Poseidon Export Variant Configuration Development
Dysol, Inc.	LP-CRADA-NAWCADPAX-11-185	Material Transfer of One (1) Liter of Siloxane Solvent Compositions (NAVSOLVE™) from NAWCADPAX to Dysol, Inc.
ECOLINK, Inc.	LP-CRADA-NAWCADPAX-11-182	Material Transfer of One (1) Liter of Siloxane Solvent Compositions (NAVSOLVE™) from NAWCADPAX to ECOLINK, Inc.
Johns Hopkins University Applied Physics Laboratory	NCRADA-NAWCADPAX-11-198	Unmanned Systems Autonomous Experiment
Just-In-Case Fire, LTD	NCRADA-NAWCADPAX-11-175	Fine Water Mist Nozzle
Northrop Grumman Aerospace Systems	NCRADA-NAWCADPAX-11-174	Joint Integrated Mission Model
Penetone Corporation	LP-CRADA-NAWCADPAX-11-189	Material Transfer of One (1) Kit Corrosion Inhibiting Mildew Remover Kit; One (1) Liter of Oleaginous Corrosion Resistant Composition; and One (1) Gallon of Siloxane Solvent Composition from NAWCADPAX to Penetone Corporation

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**Naval Air Warfare Center Aircraft Division, Patuxent River**

<b>Industry Partner</b>	<b>CRADA Number</b>	<b>Subject</b>
Safety-Kleen, Inc.	NCRADA-NAWCADPAX-11-183	Field Testing for NAVSOLVE™ as Alternative to MIL-PRF-680/P-D-680
Safety-Kleen, Inc.	LP-CRADA-NAWCADPAX-11-196	Material Transfer of Twenty (20) Gallons of Low-VOC Siloxane Compositions from NAWCWDPAX to Safety-Kleen, Inc.
SRC, Inc.	NCRADA-NAWCADPAX-10-157	Air Surveillance and Bird Strike Radar Studies - Radar and Radar Signal Processing
Terma North America, Inc.	NCRADA-NAWCADPAX-11-173	Research and Development for the Integration of AN/ALQ Electronic Warfare Bus Controller
Wyle Laboratories, Inc. Aerospace Group	NCRADA-NAWCADPAX-11-181	Research and Development of Wyle Developed Mini-Pod on Navy Tactical Unmanned Aerial System

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**Naval Air Warfare Center Training Systems Division**

<b>Industry Partner</b>	<b>CRADA Number</b>	<b>Subject</b>
The Massachusetts State Police	LP-CRADA-NAWCTSD-10-001	Equipment Transfer of One (1) Advanced Use of Force Training System from NAWCTSD to The Massachusetts State Police
North Carolina Justice Academy	LP-CRADA-NAWCTSD-11-002	Equipment Transfer of One (1) Advanced Use of Force Training Systems from NAWCTSD to North Carolina Justice Academy

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Naval Air Warfare Center Weapons Division, China Lake		
Industry Partner	CRADA Number	Subject
Allylix, Inc.	LP-CRADA-NAWCWDCL-11-220	Material Transfer of 250 mL of Valencene and Premnaspirodiene from Allylix, Inc. to NAWCWDCL
Amyris, Inc.	LP-CRADA-NAWCWDCL-11-221	Material Transfer of One (1) Gallon of Sesquiterpenes from Amyris, Inc. to NAWCWDCL
Aurora Aerospace, Inc.	NCRADA-NAWCWDCL-11-226	Unmanned Air System Platform and Sub-systems Research, Test, Development and Engineering
The Boeing Company	NCRADA-NAWCWDCL-11-224	F/A-18E/F and EA-18G Flight Plan Collaboration
Cobalt Technologies, Inc.	NCRADA-NAWCWDCL-10-213	Conversion of Bio-butanol to Bio-jet/Bio-diesel Fuels
JWK International Corporation	NCRADA-NAWCWDCL-11-227	Reactions of Metals Loaded With Low-Z Gases Under High Compression
Lockheed Martin Missiles and Fire Control	NCRADA-NAWCWDCL-11-218	Low Collateral Damage Small Munitions
MBDA, Inc.	NCRADA-NAWCWDCL-11-223	Scaled Munitions Development and Integration
The Paper Battery Company, Inc.	LP-CRADA-NAWCWDCL-11-216	Material Transfer of Ten (10) Grams of Ionic Liquid Battery Electrolytes from NAWCWDCL to The Paper Battery Company, Inc.
The Pennsylvania State University	NCRADA-NAWCWDCL-11-225	Nano-structured Materials for DoD Applications
PPG Industries, Inc.	NCRADA-NAWCWDCL-10-215	Preliminary Studies of TCO Coatings Sputter Deposited onto Polymer Transparencies
Sun Biomedical Technologies, Inc.	NCRADA-NAWCWDCL-10-212	Automated Data Mining and Machine Learning
WinTec Arrowmaker, Inc.	NCRADA-NAWCWDCL-11-217	Improved Flight Characteristics for Small Unmanned Aerial Vehicles

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**Naval Air Warfare Center Weapons Division, Point Mugu**

<b>Industry Partner</b>	<b>CRADA Number</b>	<b>Subject</b>
Electronic Warfare Associates, Inc.	NCRADA-NAWCWDPM-11-222	Development of Target Unmanned Aerial Systems Technologies
KOR Electronics	NCRADA-NAWCWDPM-11-219	Electronic Attack Queuing Demonstration
Raytheon Company	NCRADA-NAWCWDPM-10-214	Advanced Radar EW and EA System of Systems Research

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**Naval Explosive Ordnance Disposal Technology Division**

<b>Industry Partner</b>	<b>CRADA Number</b>	<b>Subject</b>
EADS North America, Inc.	NCRADA-NAVEODTECHDIV-10-002	Unattended Luggage Inspection System Analysis of Explosives Detection Capability and Inert Ordnance Detection Capability
Northrop Grumman Systems Corporation	NCRADA-NAVEODTECHDIV-10-003	JCREW and Related Technology Applications

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**Fleet Readiness Center Southwest**

<b>Industry Partner</b>	<b>CRADA Number</b>	<b>Subject</b>
Surfx Technologies, LLC	NCRADA-FRCSW-11-001	Application of Atmospheric Plasma Technology for Structural Adhesive Bonding

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Naval Medical Center, Portsmouth		
Industry Partner	CRADA Number	Subject
American Academy of Pediatrics	NCRADA-NMCP-08-110	The Needs Assessment of Licensed Child Care Centers: Preparation for a Pandemic Influenza
Carnegie Mellon University	NCRADA-NMCP-11-166	siRNA Delivery by Nano-Structured Polymers to Prevent Heterotopic Ossification
East Carolina University	NCRADA-NMCP-10-141	Vestibular Function After Blast Injuries in Active Duty Service Members
Institute for Human and Machine Cognition	NCRADA-NMCP-10-156	Using Dialog Systems as an Electronic Health Record Interface
Johns Hopkins University	NCRADA-NMCP-10-143	Longitudinal Study of the Impact of Deployment on Military Families
MetroHealth System	NCRADA-NMCP-10-154	Haitian Earthquake Relief: Orthopaedic Care Aboard USNS Comfort
MPEX Pharmaceuticals, Inc.	NCRADA-NMCP-11-176	MPEX-207: A Phase 3, Multi-Center, Multinational, Randomized, Double-Blind, Placebo-Controlled Study to Evaluate the Efficacy and Safety of MP-376 (Lexofloxacin Inhalation Solution; Aeroquin™)
Old Dominion University	NCRADA-NMCP-11-178	NMCP and ODU Research Collaboration
Phoebe Putney Memorial Hospital	NCRADA-NMCP-10-160	Regional Center of Excellence for Post-Traumatic Stress Disorder
Rutgers, The State University of New Jersey	NCRADA-NMCP-11-177	Validating Cognitive Markers of Hippocampal Deficits in Marines with Post-Traumatic Stress Disorder
Teachers College, Columbia University	NCRADA-NMCP-11-157	Pilot Study on Group Interpersonal Psychotherapy for Spouses of Navy Service Members
The Trustees of Indiana University	NCRADA-NMCP-11-168	Preterm Premature Rupture of Membranes: Erythromycin vs. Azithromycin, A Randomized Trial Comparing Their Efficacy to Prolong Latency (PEARCE Trial)
Virginia Clinical Research, Inc.	NCRADA-NMCP-11-169	Electron Microscopic Hair Shaft Analysis in Patients with Ectodermal Dysplasia Syndromes
Walden University	NCRADA-NMCP-11-164	The Nurse's Role in Making Ethical Decisions During Times of Disaster Preparedness

Naval Medical Center, San Diego		
Industry Partner	CRADA Number	Subject
Geneva University Hospital, Switzerland	NCRADA-NMCSD-10-342	NMCSD.2010.0099; Treatment of Fifth Metacarpal Neck Fractures by Reduction and MCP-Extension Cast vs. Soft Wrap/Buddy Taping - A Prospective Multi-Center Study
Massachusetts Eye and Ear Infirmary	LP-CRADA-NMCSD-11-362	NMCSD.2011.0032; Material Transfer of Perioperative Dexamethasone Data from NMCSD to Massachusetts Eye and Ear Infirmary
Otologics, LLC	NCRADA-NMCSD-11-354	NMCSD.NHU.2011.0001; Mechanisms and Mitigation of Hearing Loss From Blast Injury
The Regents of the University of California, Irvine	NCRADA-NMCSD-10-345	NMCSD.2010.0097; A Study of Coping Strategies Utilized by Caregivers of Adult Patients with Inflammatory Bowel Disease
The Regents of the University of California, San Francisco	NCRADA-NMCSD-11-351	NMCSD.2010.0170; The Effect of Antihyperlipidemia Medications on Urinary Stone Formation: A Ten Year Review of Armed-Forces Health Longitudinal Technology Application Database
The Regents of the University of California, San Diego	NCRADA-NMCSD-11-363	NMCSD.2011.0021; Acute Myocardial Ischemia in Adults Secondary to Missed Kawasaki Disease in Childhood: Collaborative Study with University of California, San Diego
San Diego State University	NCRADA-NMCSD-11-361	NMCSD.2010.0129; Effect of Surf Therapy on Vestibular Function in Patients with Traumatic Brain Injury
University of North Carolina at Charlotte	NCRADA-NMCSD-11-353	NMCSD.2010.0139; Strength, Pain and Function in OIF/OEF Amputees: A Nurse Managed Program
Vanderbilt University, by and through its Medical Center	NCRADA-NMCSD-10-346	NMCSD.2010.0121; InterStim Therapy for Urinary Control Database

Naval Medical Research Center and Naval Health Research Center		
Industry Partner	CRADA Number	Subject
Aaron Diamond AIDS Research Center for the City of New York, Inc.	NCRADA-NMRC-09-3188	Evaluation of Adjuvanted Malaria Vaccine Candidates
Advanced Bioscience Laboratories, Inc.	NCRADA-NMRC-10-3613	Evaluation of Rapid Diagnostic Tests for Dengue Fever
Battelle National Biodefense Institute, LLC	LP-CRADA-NMRC-11-3721	Material Transfer of Rickettsial Spotted Fever Group, Typhus Group, and Scrub Typhus Group DNA and/or Whole Cell Antigen and/or Seed Stocks and/or Assays from NMRC to Battelle National Biodefense Institute, LLC
The Board of Supervisors of Louisiana State University (LSU) and A&M College on behalf of the LSU Agricultural Center	NCRADA-NAMRU3-10-3578	Field Evaluation of Novel Methods for the Control of Phlebotomine Sand Flies in Libya
Cellphire, Inc.	LP-CRADA-NMRC-10-3634	Material Transfer of Thrombosome Data from NMRC to Cellphire, Inc.
The Children's Hospital Association	LP-CRADA-NMR-09-3587	Material Transfer of Two (2) Samples of cDNA Derived from Human Tissues from The Children's Hospital Association to NMRC
Department of Chemistry, Georgetown University	NCRADA-NMR-11-3697	The Role of Lysine Methylation of Outer Membrane Protein in the Virulence of Rickettsia prowazekii and the Development of Diagnostic Reagents and Vaccines
The Department of Global Health of the University of Washington	NCRADA-NMRCD-10-3503	Studies of Encephalitis, HTLV Infection and Other Sexually Transmitted Infections in Peru
E-Da Hospital	LP-CRADA-NMRC-10-3566	Material Transfer of Recombinant Protein(s) from NMRC to E-Da Hospital
Entegion, Inc.	LP-CRADA-NMRC-10-3646	Data Transfer of One (1) Copy of the Stasix Data From NMRC to Entegion, Inc.
Electric Boat Corporation	NCRADA-NSMRL-11-3818	Independent R&D Collaboration
Eye-Com Corporation	NCRADA-NHRC-10-3436	Development of Advanced Scuba Eyetracking Technology
The Geneva Foundation	NCRADA-NAMRU-SA-10-3550	Pharmacokinetics of IM, IV and IO Atropine in Normovolemic and Hypovolemic Swine
GenVec, Inc.	NCRADA-NMRC-10-3672	Dengue Vaccines Based on Adenovirus Vectors

Naval Medical Research Center and Naval Health Research Center		
Industry Partner	CRADA Number	Subject
GenVec, Inc.	NCRADA-NMRC-11-3636	Identification and Evaluation of Novel Malaria Vaccine Antigens Using Adenovector-Array Technology and in viro Malaria Models
GenVec, Inc.	LP-CRADA-NMR-10-3659	Material Transfer of Eight (8) Simian Adenovector Constructs and Four (4) Matching Constructs Encoding the PyCSP(-gpi) from Gen Vec, Inc. to NMRC
Hemarina	NCRADA-NMRC-10-3495	Advancing Oxygen Therapeutic Agent Development by Evaluating the Vasoactivity, Oxygen Carrying Capacity, and Effectiveness of HERMARINA-M101 in a Nonclinical Model as a Prehospital Resuscitation Fluid for Traumatic Brain Injury, With or Without Hemorrhagic Shock
The Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc.	NCRADA-NAMRU-3-11-3390	Advocating for Improved Quality of Care for People Living with HIV in Egypt
The Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc.	NCRADA-NMR-10-3312	Campylobacter Vaccine Development: cGMP Cell Paste Production of Campylobacter jejuni 81-176 Producing Capsule at 300L Fermentation Scale
ICHOR Medical Systems, Inc.	LP-CRADA-NMR-10-3637	Equipment and Material Transfer of Electroporation Device for the Antigen Discovery Project from ICHOR Medical Systems, Inc. to NMRC
La Jolla Institute for Allergy and Immunology	NCRADA-NMRC-11-3800	Malaria Antigen and Epitope Identification and Vaccine Development
LigoCyte Pharmaceuticals, Inc.	NCRADA-NMRC-11-3557	Norovirus Vaccine and Epidemiology Investigations
Mayo Clinic	NCRADA-NHRC-11-3673	Population Genetics Analysis Program Study
New York Structural Biology Center	LP-CRADA-NMRC-11-8902	Material Transfer of 100 mg of Each of the Four (4) Dengue Recombinant DNA Vaccine Constructs (D1ME, D2MEL, D3ME and D4ME) from NMRC to New York Structural Biology Center
NuvOx Pharma, LLC	NCRADA-NMRC-10-3515	Advancing Oxygen Therapeutic Development as a Prehospital Resuscitation Fluid for Traumatic Brain Injury With or Without Hemorrhagic Shock by Evaluating the Vasoactivity, Oxygen Carrying Capacity, and Effectiveness of Dodecafluoropentane Emulsion in a Nonclinical Model of TBI
NuvOx Pharma, LLC	LP-CRADA-NMR-10-3656	Material Transfer of 50 ml of Emulsified Dodecafluoropentane from NuvOx Pharma, LLC to NMRC

Naval Medical Research Center and Naval Health Research Center		
Industry Partner	CRADA Number	Subject
Oxygen Biotherapeutics, Inc.	NCRADA-NMRC-10-3583	Advancing Oxygen Therapeutic Agent Development by Evaluating the Vasoactivity, Oxygen Carrying Capacity and Effectiveness of Oxycyte in a Nonclinical Model as a Prehospital Resuscitation Fluid for Traumatic Brain Injury With or Without Hemorrhagic Shock
OxyVita, Inc.	NCRADA-NMRC-10-3573	Advancing Oxygen Therapeutic Agent Development by Evaluating the Vasoactivity, Oxygen Carrying Capacity and Effectiveness of OxyVita in a Nonclinical Model as a Prehospital Resuscitation Fluid for Traumatic Brain Injury With or Without Hemorrhagic Shock
Pfenex, Inc.	LP-CRADA-NMR-10-3655	Material Transfer of CRM 197 for the Synthesis of a Prototype Conjugate Vaccine Against Campylobacter Jejuni from Pfenex, Inc. to The Henry M. Jackson Foundation to NMRC
Program for Appropriate Technology in Health (PATH)	LP-CRADA-NMR-11-3732	Material Transfer of Anti-CSP Repeat Antibody; Sporozoites, De-Identified MAL027 Sera from PATH to NMRC
The Regents of the University of California	NCRADA-NAMRU-6-11-3690	Studies of Malaria in Peru
The Regents of the University of California on Behalf of its Davis Campus	NCRADA-NMRC-10-3630	Integrated Detection of Pathogens and Host Biomarkers for Wounds
Research, Inc.	LP-CRADA-NMRC-11-3874	Material Transfer of 12 mL of Frozen Human Sera and Plasma from NMRC to Research, Inc.
Sangart, Inc.	NCRADA-NMRC-10-3496	Advancing Oxygen Therapeutic Agent Development by Evaluating the Vasoactivity, Oxygen Carrying Capacity and Effectiveness of MP4 (PEGylated human hemoglobin) in a Nonclinical Model as a Prehospital Resuscitation Fluid for Traumatic Brain Injury, With or Without Hemorrhagic Shock
Thomas Jefferson University	NCRADA-NMRC-10-3545	Pilot Study to Evaluate the Effects of a Retinoic Acid Receptor Agonist on Wound Healing
Twin Star Medical	LP-CRADA-NMRC-11-3754	Data Transfer from Animal and Human Studies Evaluating the Data Utility of Near Infrared Spectroscopy and Rheoencephalography from NMRC to Twin Star Medical

Naval Medical Research Center and Naval Health Research Center		
Industry Partner	CRADA Number	Subject
The University of North Carolina at Chapel Hill	LP-CRADA-NMRC-11-3847	Material Transfer of 2 mg of NYS1 Antibodies and 0.5 mg of NYLS3 antibodies from NMRC to The University of North Carolina at Chapel Hill
University of Saskatchewan	LP-CRADA-NMR-11-3730	Material Transfer of Four (4) Plasmids for Cloning of Phage Constructs from University of Saskatchewan to NMRC
University of Texas Health Science Center at San Antonio	NCRADA-NAMRU-SA-10-3375	Antimicrobial Resin and Coating for the Prevention of Infection
University of Texas Health Science Center at San Antonio	NCRADA-NAMRU-SA-10-3448	Antimicrobial Nanoemulsions to Prevent Infections in the Field
University of Texas Health Science Center at San Antonio	NCRADA-NAMRU-SA-10-3446	Proposal to Study the Effects of Acetaminophen on Neuronal Growth and Apoptosis
Variation Biotechnologies, Inc.	LP-CRADA-NMRC-11-8901	Material Transfer of 2 mg of each of the Four (4) Dengue Recombinant DNA Vaccine Constructs (D1ME, D2MEL, D3ME and D4ME) from NMRC to Variation Biotechnologies, Inc.

Naval Postgraduate School		
Industry Partner	CRADA Number	Subject
Battelle Memorial Institute	NCRADA-NPS-10-0150	Exploring Future Unmanned Systems
ImSAR, LLC	LP-CRADA-NPS-10-0061	Equipment Transfer of Two (2) NanoSAR B Devices from ImSAR, LLC to NPS
The Oxnard Harbor District, The Port of Hueneme	NCRADA-NPS-10-0151	Port of Hueneme Emergency Planning and Preparedness Studies
Polystor Energy Corporation	NCRADA-NPS-10-0152	An Ultra-High Energy and Safety Si-Nanowire Nickelate Lithium Battery For Military Portable Power Applications
Rajant Corporation	LP-CRADA-NPS-11-0065	Equipment Transfer of BreadCrumb Radios from Rajant Corporation to NPS
SOLAR STIK, Inc.	LP-CRADA-NPS-0064	Equipment Transfer of One (1) 240008 24V MIL Series Patrol Pak from SOLAR STIK, Inc. to NPS
TBDC, LLC	LP-CRADA-NPS-11-0062	Equipment Transfer of Tire Inflation System from TBDC, LLC to NPS
University Corporation for Atmospheric Research	NCRADA-NPS-11-0154	Probabilistic Ceiling and Visibility Prediction
University of Maryland	NCRADA-NPS-11-0153	Language Evidence for Social Goals: A Linguistic Approach to Persuasion Moves in Discourse
The University of Texas at Austin	NCRADA-NPS-11-0155	Defending Independent Infrastructure Systems
Y-Carbon, Inc.	NCRADA-NPS-10-0149	Carbide Derived Carbons as Anode Material for Li-ion Batteries

Naval Research Laboratory		
Industry Partner	CRADA Number	Subject
Applied Optical Sciences	NCRADA-NRL-11-501	Demonstration of an Ultra-Short Pulse Laser Amplifier Using Lu <sub>2</sub> O <sub>3</sub> Ceramics
Auburn University	NCRADA-NRL-10-486	Laboratory Investigation of Radiation Belt Electron Pitch-Angle Scattering by Electromagnetic Ion Cyclotron Waves
Clemson University	NCRADA-NRL-11-503	Interband Cascade Laser Sources in the 3.0 - 3.5 $\mu\text{m}$ Spectral Range for Coupling into On-Chip Resonators for Sensing
Cree, Inc.	NCRADA-NRL-11-498	Characterization of 4HN-SiC Substrates and SiC IGBT Epitaxial Material
Ebioscience, Inc.	NCRADA-NRL-10-491	Evaluation of Endosomal Escaping Peptides
Euclid Techlabs, LLC	NCRADA-NRL-11-505	Diamond Based Dielectric Accelerating Structures
Hi-Z Technology, Inc.	NCRADA-NRL-10-490	Ultra Thin Quantum Well Materials
Maxion Technologies, Inc.	NCRADA-NRL-10-494	High Performance Interband Cascade Lasers
Mele Associates, Inc.	NCRADA-NRL-10-481	Carbon Dioxide Extraction from Seawater, Hydrocarbon Fuel Synthesis from Carbon Dioxide and Hydrogen and Hydrocarbon Catalyst Development
Rochester Institute of Technology	NCRADA-NRL-11-499	The Mechanisms of Radiation Effects in Carbon Nanotubes
Schultz-Creehan Holdings, Inc.	NCRADA-NRL-11-500	Flight Control Performance Enhancement Using a Miniature Air Data System
Southeastern Universities Research Association, Inc.	NCRADA-NRL-10-493	A Super-Regional Testbed to Improve Models of Environmental Processes on the U.S. Atlantic and Gulf of Mexico Coasts
Sunlight Photonics, Inc.	NCRADA-NRL-10-495	High Efficiency Photovoltaic Solar Cells
The University of Southern Mississippi	NCRADA-NRL-10-489	Photocatalytic Building Materials for Protecting Infrastructure

<b>Naval Surface Warfare Center, Carderock Division</b>		
<b>Industry Partner</b>	<b>CRADA Number</b>	<b>Subject</b>
AirFlow Catalyst Systems, Inc.	NCRADA-NSWCCA-11-101	Thermoelectric Battery Development
Bren-Tronics, Inc.	NCRADA-NSWCCA-10-56	Advanced Battery Development
Dehlsen Associates, LLC	NCRADA-NSWCCA-11-85	Advanced Hydrokinetic Energy Converter Development
Dehlsen Associates, LLC	NCRADA-NSWCCA-10-52	Hydrokinetic Energy Converter Development
Edison Welding Institute, Inc.	LP-CRADA-NSWCCA-11-94	Equipment Transfer of Friction Stir Welding Systems from NSWCCA to Edison Welding Institute, Inc.
E.I. du Pont de Nemours and Company	NCRADA-NSWCCA-11-100	Helmet Development
Etrema Products, Inc.	NCRADA-NSWCCA-10-74	Magnetically Activated Smart Materials
Lockheed Martin Sippican, Inc.	NCRADA-NSWCCA-11-86	Battery Development and Testing
M Ship Company, LLC	NCRADA-NSWCCA-11-83	Buoy Development
SAFT America, Inc.	NCRADA-NSWCCA-11-67	Battery Development

Naval Surface Warfare Center, Crane Division		
Industry Partner	CRADA Number	Subject
Arxan Defense Systems, Inc.	NCRADA-NSWCCD-10-091	Joint Research in Hardware and Software Protection Technologies for Field Programmable Gate Arrays
Ball State University	NCRADA-NSWCCD-11-103	Commercialization of NSWC Crane Invention NC# 99,607 Secure VoIP to Analog and Digital Data, Extra Vehicular
Kollsman, Inc.	NCRADA-NSWCCD-11-104	Multi-Spectral IR Countermeasures Evaluation
PartTec, Ltd	NCRADA-NSWCCD-10-097	Neutron Detector Enhancement
Pro Engage, LLC	NCRADA-NSWCCD-10-099	Commercialization of Thermal Target Patent
Next Wave Systems, LLC	NCRADA-NSWCCD-10-094	Joint Research in Advanced Sensor-Based Surveillance System Integration
Surface Optics Corporation	NCRADA-NSWCCD-10-092	Joint Research on Hyperspectral/Multispectral Imaging Systems

Naval Surface Warfare Center, Dahlgren Division		
Industry Partner	CRADA Number	Subject
Aeroprediction, Inc.	LP-CRADA-NSWCDD-11-127	Aeroprediction Code Development and Transition
Board of Regents of the University of Oklahoma	NCRADA-NSWCDD-11-124	Lung Tissue Exposure to Ames Strain B. Anthracis Spores and Follow-On Analysis of Host Pathogen Responses
College of Arts & Sciences, University of South Carolina	NCRADA-NSWCDD-11-122	Polarimetric Synthetic Aperture Radar Analysis
Dover Networks, LLC	NCRADA-NSWCDD-11-119	Quantum Error Correction Research
Exa Corporation	LP-CRADA-NSWCDD-11-121	Material Transfer of One (1) Copy of Executable Code for PowerFLOW Fluids Software from Exa Corporation to NSWCDD
George Mason University	NCRADA-NSWCDD-11-126	Block-Model Methods for Connectome Analysis
Johns Hopkins University	NCRADA-NSWCDD-11-115	Data Fusion Research
King George County Public Schools	LP-CRADA-NSWCDD-11-129	Equipment Transfer of Computers on Wheels from King George County Public Schools to NSWCDD
Loyola University Chicago, Stritch School of Medicine	NCRADA-NSWCDD-11-116	Studies to Characterize the Protective Structures of the Bacterial Spore
Mountain State Information Systems, Inc.	NCRADA-NSWCDD-11-120	Identification of Target Classes of Populations through Static and Dynamic Biometric Sensor Analysis
Mustang Technology Group, LP	NCRADA-NSWCDD-11-117	57mm ALaMO Projectile Development
Solvay Chemicals, Inc.	NCRADA-NSWCDD-11-105	Solid Oxidizer Development
University of Louisville Research Foundation, Inc.	NCRADA-NSWCDD-11-118	Technological Development of a Nanotechnology-Based Ignition System
University of Vermont and State Agricultural College	NCRADA-NSWCDD-10-113	Particle-Linked Molecules for Bacillus Spore Germination, Detection, and Decontamination

Naval Surface Warfare Center, Indian Head Division		
Industry Partner	CRADA Number	Subject
Accurate Energetic Systems, LLC	NCRADA-NSWCIHD-11-001	Research and Development of Excess Energetic Materials and Energetic Waste Streams for Use in Commercial Products
American Innovations, Inc.	NCRADA-NSWCIHD-11-008	Bulk HME Precursor Test Kit
Chemring Ordnance, Inc.	NCRADA-NSWCIHD-10-014	Research and Development and Manufacture of Breaching Systems, Weapon Subsystems and Systems for Department of Defense Utilization
EaglePicher Technologies, LLC	NCRADA-NSWCIHD-11-007	Development of Extrusion Processes for Hen-12 and Potential Replacement Materials for Hen-12 with Other Solventless Doublebase Propellants
Emerging Science & Technologies (ES&T) Group, Inc.	NCRADA-NSWCIHD-10-008	Investigation of Failure Modes of a Commercial Bridgewire Detonator Due to ES&T's Medusa Disabling Algorithm
Keystone Energy, Inc.	NCRADA-NSWCIHD-11-009	Advanced Research, Development and Proof Testing to Support the Energetic Material Initiation Model Program
Lockheed Martin Missiles and Fire Control	NCRADA-NSWCIHD-11-006	Energetic and Reactive Materials
Lockheed Martin Space Systems Company	NCRADA-NSWCIHD-10-017	Research and Development of MEMS Optical Blocking Technology
Northrop Grumman Systems Corporation, Information Systems Defense Technologies Division	NCRADA-NSWCIHD-11-014	Research, Development, Test and Evaluation of Component Technologies for Force Protection Applications
Resodyn Corporation	NCRADA-NSWCIHD-10-015	Resonant Mixing
RWM Italia Munitions Srl	NCRADA-NSWCIHD-11-005	Insensitive Explosives and Munitions Research and Development
Spectra Technologies, LLC	NCRADA-NSWCIHD-11-017	Research and Development of Innovative Methods for Assembly and Production of Grenades and SOCOM Special Purpose Devices
Universal Propulsion Company, Inc.	NCRADA-NSWCIHD-11-011	Development of Improvement Design, Production and Component Availability for CKU-5C/A Rocket Catapult and F-15 Canopy Remover Applications
University of Maryland	NCRADA-NSWCIHD-11-002	Development of Synthetic Methods for Production of Ligand-Stabilized Metal Clusters

Naval Undersea Warfare Center, Division Newport		
Industry Partner	CRADA Number	Subject
Battelle Memorial Institute	NCRADA-NUWCDIVNPT-10-360	UNDERNET
GCS Holdings, Inc. dba GCS Research	NCRADA-NUWCDIVNPT-11-576	Defense Applications of Geospatial Information Systems
Massa Products Corporation	NCRADA-NUWCDIVNPT-11-363	Sonar Transducer Development
Milkhouse Software, LLC	NCRADA-NUWCDIVNPT-10-356	Tools for Decision Support
Pranalytica, Inc.	LP-CRADA-NUWCDIVNPT-10-357	Equipment Transfer of One (1) Quantum Cascade Laser with Connected Power from Pranalytica, Inc. to NUWCDIVNPT
Progeny Systems Corporation	LP-CRADA-NUWCDIVNPT-10-358	NUWC XP-1 Polyurethane
Rhode Island Economic Development Corporation	NCRADA-NUWCDIVNPT-10-355	Research of Environmental Issues Related to Wind Power
Thales Underwater Systems S.A.S.	NCRADA-NUWCDIVNPT-10-351	Materials Characterization of Ternary PMN-PIN-PT Single Crystals
University Enterprises Corporation at CSUSB	LP-CRADA-NUWCDIVNPT-11-587	Commercial Evaluation of BDRA Software
The University of British Columbia	NCRADA-NUWCDIVNPT-10-345	Materials Testing and Design
University of Kentucky Research Foundation	NCRADA-NUWCDIVNPT-11-595	Assessment and Mitigation of Waterside Attacks on Dams

SPAWARSYSCEN Pacific		
Industry Partner	CRADA Number	Subject
Aplus Mobile, Inc.	LP-CRADA-SSC PACIFIC-10-168	Material Transfer of One (1) Harsh Environment Personal Computer (Model B20-MC) Rugged Mobile Personal Computer from Aplus Mobile, Inc. to SSC PACIFIC
Argon ST, Inc.	NCRADA-SSC PACIFIC-10-173	Exploration in Global Positioning and Navigation Systems
Boston, Massachusetts Fire Department	LP-CRADA-SSC PACIFIC-11-177	Equipment Transfer of One (1) Allen-Vanguard MKII High Risk Robot Equipment Package from SSC PACIFIC to Boston, Massachusetts Fire Department
Bureau of Alcohol, Tobacco, Firearms and Explosives - Seattle Field Division	LP-CRADA-SSC PACIFIC-11-178	Equipment Transfer of the Talon 3B Robot from SSC PACIFIC to Bureau of Alcohol, Tobacco, Firearms and Explosives - Seattle Field Division
The City of San Diego	NCRADA-SSC PACIFIC-10-170	C <sup>4</sup> ISR Interoperability
JWK Corporation	NCRADA-SSC PACIFIC-10-167	Study of Low Energy Nuclear Reactions II
Kansas State University	LP-CRADA-SSC PACIFIC-11-179	Material Transfer of 0.5L of Biological Samples from Atlantic Bottlenose Dolphins from SSC PACIFIC to Kansas State University
MDA Information Systems, Inc.	LP-CRADA-SSC PACIFIC-10-169	Material Transfer of One (1) CD of RAPIER Ship Detection from SSC PACIFIC to MDA Information Systems, Inc.
Medical University of South Carolina	LP-CRADA-SSC PACIFIC-10-171	Material Transfer of Twenty (20) Dolphin and Sea Lion Formalin Fixed Tissues, Blood and Cerebrospinal Fluid from SSC PACIFIC to Medical University of South Carolina
Navatek, Ltd.	NCRADA-SSC PACIFIC-10-172	Exploration in Robotic and Autonomous Capabilities for Unmanned Surface Vehicles
ReconRobotics, Inc.	NCRADA-SSC PACIFIC-11-174	Magnetic Reconnaissance Unmanned Ground Vehicle Test and Demonstration
TORC Technologies, LLC	NCRADA-SSC PACIFIC-11-176	Exploration of Autonomous Capabilities and Navigation Technologies for Use with Robotic Systems

## SPAWARSSYSCEN Pacific

Industry Partner	CRADA Number	Subject
Trex Enterprises Corporation, Inc.	NCRADA-SSC PACIFIC-11-180	Navigation Sensor System Interface Day and Night Celestial Interface
University of Connecticut	LP-CRADA-SSC PACIFIC-11-175	Material Transfer 1200 ml of Whole Blood from Healthy Bottlenose Dolphins from SSC PACIFIC to University of Connecticut
Waterfront Technologies, Inc.	NCRADA-SSC PACIFIC-10-166	Low Bandwidth Wireless Networking

## United States Naval Academy

Industry Partner	CRADA Number	Subject
The Boeing Company	NCRADA-USNA-08-AERO001	Collaborative Educational Activities
Lockheed Martin Corporation	NCRADA-USNA-08-AERO002	Collaborative Educational Activities
University of North Carolina*	NCRADA-NNMC-03-010	B02-080; Epidemiology of Movement Patterns and ACL Injury

\* USNA was the collaborator for this CRADA and received credit. NNMC was identified on the CRADA since it provided Institutional Review Board oversight.