FY2011 Nuclear Physics Workforce Survey

Office of Nuclear Physics

This report conveys the results of the October 2011 survey of scientific workforce in the Department of Energy, Nuclear Physics (NP) program. The same procedure as in previous years was used. People were counted in the categories of permanent Ph.D. staff, temporary Ph.D. staff, Ph.D. staff not supported by DOE, DOE-supported graduate students, and graduate students not supported by DOE. Counts of Ph.D.s awarded were also collected. In all cases, people were asked to self-define whether they were primarily doing experimental or theoretical work. Persons who receive support from the National Science Foundation are not included in this survey.

On October 1, 2011, the survey shows that 2,457 supported and non-supported scientists and students were associated with the program. Of this number DOE supported 873 permanent Ph.D. staff, 434 temporary Ph.D. staff, and 550 graduate students. Not supported directly by DOE but associated with the program were an additional 232 Ph.D. staff and 368 graduate students. DOE also supported 86 graduate students who were awarded Ph.D.s.

Summaries of the numerical data for the years 1986 through 2011 are provided as well as separate summary data for the national laboratories and universities, and statistics on the Ph.D.s awarded.

Brenda May

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Results of Nuclear Physics Workforce Surveys

DOE Supported Workforce Data

Workforce Counts on October 1st

SUMMARY OF LABORATORIES & UNIVERSITIES

Both Experimental and Theory

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Permanent Staff	603	658	662	672	666	676	699	707	687	657	689	682	689	690	676	683	702	727	746	742	699	724	733	779	871	873
Temporary Staff	268	271	275	284	275	296	330	375	362	342	346	360	380	394	363	362	364	410	403	388	344	341	365	364	423	434
Graduate Students	343	370	391	382	411	427	422	426	449	418	423	422	415	404	408	408	442	457	473	509	486	472	493	516	538	550
TOTAL	1214	1299	1328	1338	1352	1399	1451	1508	1498	1417	1458	1464	1484	1488	1447	1453	1508	1594	1622	1639	1529	1537	1591	1659	1832	1857
Ph.D.s Awarded	76	79	66	87	70	81	114	99	97	101	96	97	100	95	87	67	100	79	66	80	92	69	89	85	90	86

Experimental

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Permanent Staff	475	518	527	531	525	529	549	556	536	515	536	538	547	551	542	536	554	577	586	582	555	557	574	607	690	677
Temporary Staff	206	210	215	215	205	226	247	280	278	260	263	280	299	298	286	287	277	319	308	295	266	256	266	254	311	314
Graduate Students	271	295	311	304	333	342	336	329	345	320	321	323	323	319	320	319	338	354	361	394	375	348	364	382	400	403
TOTAL	952	1023	1053	1050	1063	1097	1132	1165	1159	1095	1120	1141	1169	1168	1148	1142	1169	1250	1255	1271	1196	1161	1204	1243	1401	1394
Ph.D.s Awarded	48	54	45	64	52	59	88	73	80	78	71	66	67	70	56	48	67	63	45	51	68	48	62	54	63	57

Theory

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Permanent Staff	128	140	135	141	141	147	150	151	151	142	153	144	142	139	134	147	148	150	160	160	144	167	159	172	181	196
Temporary Staff	62	61	60	69	70	70	83	95	84	82	83	80	81	96	77	75	87	91	95	93	78	85	99	110	112	120
Graduate Students	72	75	80	78	78	85	86	97	104	98	102	99	92	85	88	89	104	103	112	115	111	124	129	134	138	147
TOTAL	262	276	275	288	289	302	319	343	339	322	338	323	315	320	299	311	339	344	367	368	333	376	387	416	431	463
Ph.D.s Awarded	28	25	21	23	18	22	26	26	17	23	25	31	33	25	31	19	33	16	21	29	24	21	27	31	27	29

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Results of Nuclear Physics Workforce Surveys

DOE Supported Workforce Data

Workforce Counts on October 1st

SUMMARY OF NATIONAL LABORATORIES

Both Experimental and Theory

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Permanent Staff	317	333	346	353	355	357	359	361	340	323	321	318	320	327	317	316	338	369	384	379	360	382	387	417	499	478
Temporary Staff	99	108	111	122	117	126	139	158	143	145	134	143	147	163	140	137	137	172	175	171	137	134	150	147	179	182
Graduate Students	36	38	45	49	58	58	53	57	65	58	62	63	79	62	53	55	57	77	68	88	97	78	84	85	97	101
TOTAL	452	479	502	524	530	541	551	576	548	526	517	524	546	552	510	508	532	618	627	638	594	594	621	649	775	761
Ph.D.s Awarded	1	4	6	5	9	10	7	13	19	11	10	9	15	0	0	0	0	0	0	0	0	0	0	0	0	0

Experimental

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Permanent Staff	270	284	298	296	297	302	303	314	290	276	278	280	284	290	286	281	301	323	331	324	308	318	330	355	426	402
Temporary Staff	80	89	92	100	92	101	114	128	121	118	110	120	124	129	121	117	111	148	139	130	103	97	108	102	135	131
Graduate Students	35	36	43	46	53	48	47	52	60	53	57	58	70	55	49	48	54	70	60	80	84	65	70	72	86	83
TOTAL	385	409	433	442	442	451	464	494	471	447	445	458	478	474	456	446	466	541	530	534	495	480	508	529	647	616
Ph.D.s Awarded	1	4	6	4	8	9	5	11	18	10	9	6	12	0	0	0	0	0	0	0	0	0	0	0	0	0

Theory

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Permanent Staff	47	49	48	57	58	55	56	47	50	47	43	38	36	37	31	35	37	46	53	55	52	64	57	62	73	76
Temporary Staff	19	19	19	22	25	25	25	30	22	27	24	23	23	34	19	20	26	24	36	41	34	37	42	45	44	51
Graduate Students	1	2	2	3	5	10	6	5	5	5	5	5	9	7	4	7	3	7	8	8	13	13	14	13	11	18
TOTAL	67	70	69	82	88	90	87	82	77	79	72	66	68	78	54	62	66	77	97	104	99	114	113	120	128	145
Ph.D.s Awarded	0	0	0	1	1	1	2	2	1	1	1	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0

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Results of Nuclear Physics Workforce Surveys

DOE Supported Workforce Data

Workforce Counts on October 1st

SUMMARY OF UNIVERSITIES

Both Experimental and Theory

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Permanent Staff	286	325	316	319	311	319	340	346	347	334	368	364	369	363	359	367	364	358	362	363	339	342	346	362	372	395
Temporary Staff	169	163	164	162	158	170	191	217	219	197	212	217	233	231	223	225	227	238	228	217	207	207	215	217	244	252
Graduate Students	307	332	346	333	353	369	369	369	384	360	361	359	336	342	355	353	385	380	405	421	389	394	409	431	441	449
TOTAL	762	820	826	814	822	858	900	932	950	891	941	940	938	936	937	945	976	976	995	1001	935	943	970	1010	1057	1096
Ph.D.s Awarded	75	75	60	82	61	71	107	86	78	90	86	88	85	95	87	67	100	79	66	80	92	69	89	85	90	86

Experimental

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Permanent Staff	205	234	229	235	228	227	246	242	246	239	258	258	263	261	256	255	253	254	255	258	247	239	244	252	264	275
Temporary Staff	126	121	123	115	113	125	133	152	157	142	153	160	175	169	165	170	166	171	169	165	163	159	158	152	176	183
Graduate Students	236	259	268	258	280	294	289	277	285	267	264	265	253	264	271	271	284	284	301	314	291	283	294	310	314	320
TOTAL	567	614	620	608	621	646	668	671	688	648	675	683	691	694	692	696	703	709	725	737	701	681	696	714	754	778
Ph.D.s Awarded	47	50	39	60	44	50	83	62	62	68	62	60	55	70	56	48	67	63	45	51	68	48	62	54	63	57

Theory

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Permanent Staff	81	91	87	84	83	92	94	104	101	95	110	106	106	102	103	112	111	104	107	105	92	103	102	110	108	120
Temporary Staff	43	42	41	47	45	45	58	65	62	55	59	57	58	62	58	55	61	67	59	52	44	48	57	65	68	69
Graduate Students	71	73	78	75	73	75	80	92	99	93	97	94	83	78	84	82	101	96	104	107	98	111	115	121	127	129
TOTAL	195	206	206	206	201	212	232	261	262	243	266	257	247	242	245	249	273	267	270	264	234	262	274	296	303	318
Ph.D.s Awarded	28	25	21	22	17	21	24	24	16	22	24	28	30	25	31	19	33	16	21	29	24	21	27	31	27	29

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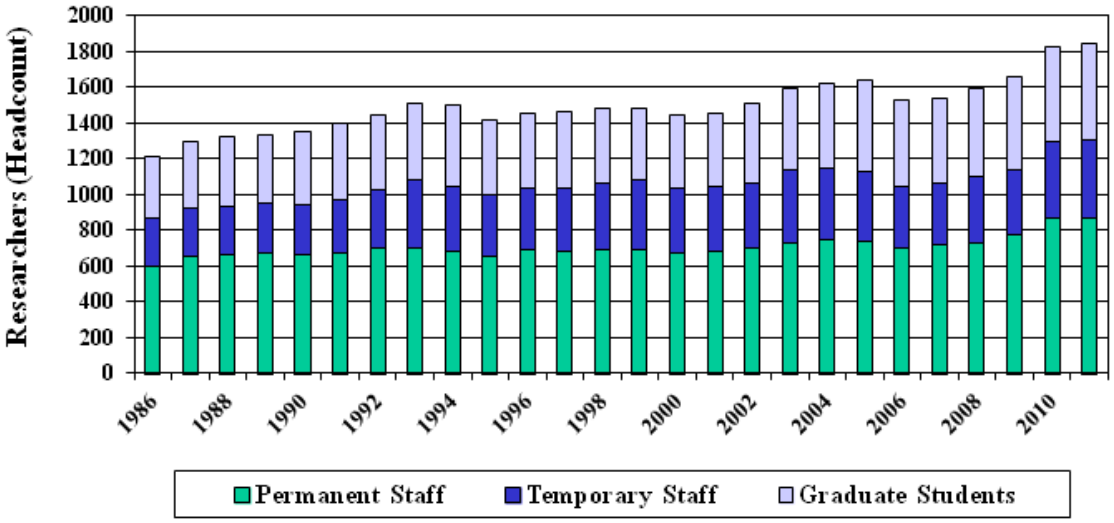
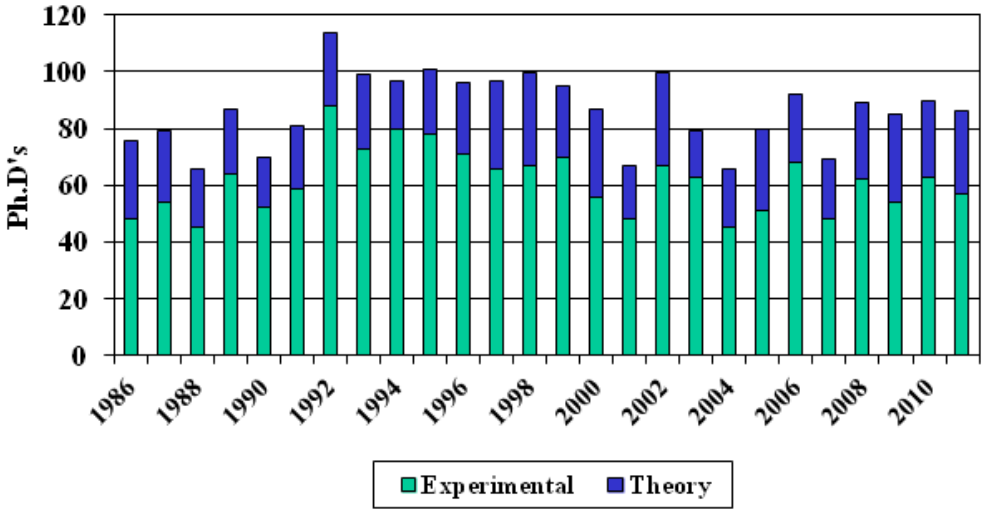
DOE Support Workforce

Laboratories and Universities



FY2011 Nuclear Physics Workforce Survey

Ph.D.s Awarded



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Statistics on Ph.D.s Awarded

*Data Collected Since 2004

- ***Average Number of Years to Obtain a PhD***
  - 5.8 Years (Average Based on 650 data points)
- ***% U.S. Citizen*** 50.3% (% Based on 588 data points)
- ***Males/Females:*** 81.2% / 18.8% (% Based on 650 data points)
- ***Race:*** (% Based on 587 data points)
  - ***White:*** 69.7% ***Asian:*** 25.9% ***Black or African American:*** 1.2%
  - ***Hispanic or Latino***: 3.1%
  - ***Native Hawaiian and Other Pacific Islander:*** 0.0%
  - ***American Indian and Alaska Native:*** 0.2%
  - ***Some Other Race:*** 0.0%

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Statistics on Ph.D.s Awarded

*Data Collected Since 2004

- ***Initial Career Location: USA / Non-USA / Undecided***:
  - 77.9% / 16.0% / 6.1% (% Based on 652 data points)
- ***Initial Career Path:*** (% Based on 652 data points)
  - ***Applied Research/National:*** 3.5%
  - ***Business or Non-Nuclear:*** 7.1%
  - ***Medical School/Hospital:*** 2.8%
  - ***NP Basic Research / National Laboratory:*** 16.6%
  - ***NP Basic Research/ University:*** 35.1%
  - ***NP Teacher / Professor:*** 4.8%
  - ***Other Teacher / Professor:*** 6.1%
  - ***Other Basic Research / National Laboratory:*** 2.1%
  - ***Other Basic Research / University:*** 7.2%
  - ***Research / Nuclear Industry:*** 3.8%
  - ***Non-Profit:*** 0.3%
  - ***Other :*** 1.8%
  - ***Undecided:*** 8.7%