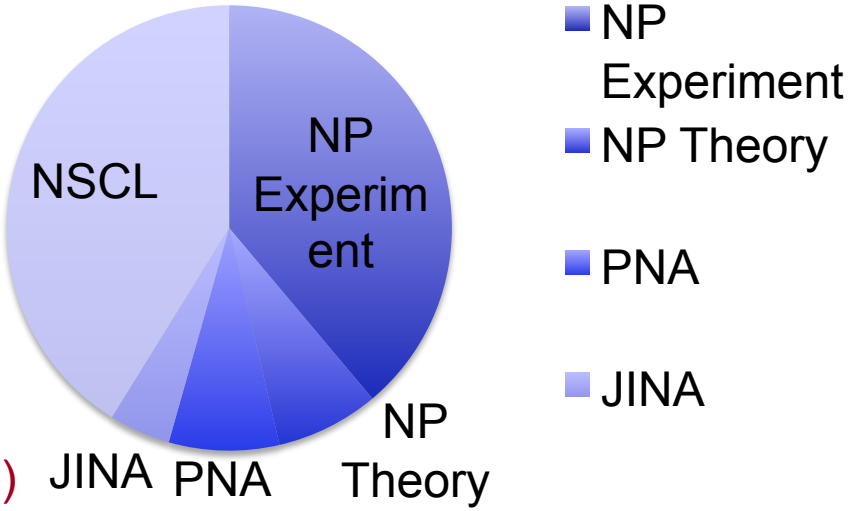
Nuclear Physics at NSF

- NP Experiment
  - Structure
  - Heavy Ions
  - Symmetries
  - Hadrons and QCD
  - Astrophysics (Notre Dame, FSU)
- NP Theory
- Particle and Nuclear Astrophysics
  - Neutrinos (Borexino, ββ, ϑ_{13})
- Frontier Center (Joint Institute for Nuclear Astrophysics)
- NSCL
- FY2010 total: $49M



FY2011 R&RA Budget Request

R&RA Funding
(Dollars in Millions)

	FY 2009 Omnibus Actual	FY 2009 ARRA Actual	FY 2010 Estimate	FY 2011 Request	Change over FY 2010 Estimate Amount	Change over FY 2010 Estimate Percent
Biological Sciences	$656.62	$260.00	$714.54	$767.81	$53.27	7.5%
Computer & Information Science & Engineering	574.50	235.00	618.83	684.51	65.68	10.6%
Engineering	664.99	264.99	743.93	825.67	81.74	11.0%
Geosciences	808.53	347.00	889.64	955.29	65.65	7.4%
Mathematical & Physical Sciences	1,243.88	474.97	1,351.84	1,409.91	58.07	4.3%
Social, Behavioral & Economic Sciences	240.56	84.97	255.25	268.79	13.54	5.3%
Office of Cyberinfrastructure	199.23	80.00	214.28	228.07	13.79	6.4%
Office of International Science & Engineering	47.45	13.98	47.83	53.26	5.43	11.4%
Office of Polar Programs[1]	473.55	171.89	451.16	527.99	76.83	17.0%
Integrative Activities	241.58	129.85	275.04	295.93	20.89	7.6%
U.S. Arctic Research Commission	1.50	-	1.58	1.60	0.02	1.3%
Total, R&RA	**$5,152.39**	**$2,062.64**	**$5,563.92**	**$6,018.83**	**$454.91**	**8.2%**

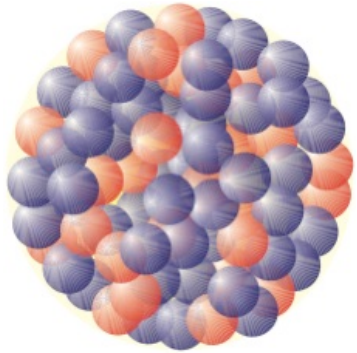
Totals may not add due to rounding.

[1] Funding for FY 2010 excludes a one-time appropriation transfer of $54.0 million to U.S. Coast Guard per P.L. 111-117.

FY2011 Status

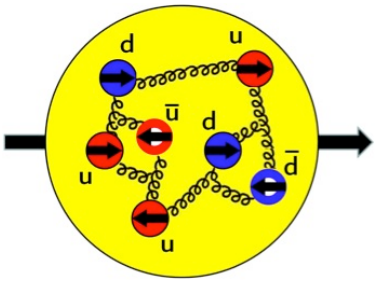
- NSF appropriation: R&RA down 1%
- NP and most other programs down 3%
- continue managing ARRA funding impact from FY2009

Highlights Overview



NSF and research.gov

- all highlights to **research.gov/seeinnovation**
- final report synopsis for public viewing



examples:

- doubly magic ^{132}Sn
- ramping to W physics in RHIC spin program
- possible missing supernovae
- undergraduate participation at LHC

FY2012 R&RA Budget Request

R&RA Funding
(Dollars in Millions)

	FY 2010 Omnibus Actual	FY 2010 ARRA Actual	FY 2010 Enacted/ Annualized FY 2011 CR[1]	FY 2012 Request	Change over FY 2010 Enacted Amount	Change over FY 2010 Enacted Percent
Biological Sciences	$714.77	$0.35	$714.54	$794.49	$79.95	11.2%
Computer & Information Science & Engineering	618.71	-	618.83	728.42	109.59	17.7%
Engineering	775.92	-	743.93	908.30	164.37	22.1%
Geosciences	891.87	0.40	889.64	979.16	89.52	10.1%
Mathematical & Physical Sciences	1,367.95	15.70	1,351.84	1,432.73	80.89	6.0%
Social, Behavioral & Economic Sciences	255.31	0.25	255.25	301.13	45.88	18.0%
Office of Cyberinfrastructure	214.72	-	214.28	236.02	21.74	10.1%
Office of International Science & Engineering	47.84	0.10	47.83	58.03	10.20	21.3%
Office of Polar Programs[2]	451.77	2.23	451.16	477.41	26.25	5.8%
Integrative Activities	274.89	420.15	275.04	336.25	61.21	22.3%
U.S. Arctic Research Commission	1.58	-	1.58	1.60	0.02	1.3%
Total, R&RA	**$5,615.33**	**$439.17**	**$5,563.92**	**$6,253.54**	**$689.62**	**12.4%**

Totals may not add due to rounding.

FY2012 MPS Budget Request

MPS Funding

(Dollars in Millions)

	FY 2010 Omnibus Actual	FY 2010 ARRA Actual	FY 2010 Enacted/ Annualized FY 2011 CR	FY 2012 Request	Change Over FY 2010 Enacted Amount	Change Over FY 2010 Enacted Percent
Division of Astronomical Sciences (AST)	$246.53	-	$245.69	$249.12	$3.43	1.4%
Division of Chemistry (CHE)	233.68	15.70	233.73	258.07	24.34	10.4%
Division of Materials Research (DMR)	302.57	-	302.67	320.79	18.12	6.0%
Division of Mathematical Sciences (DMS)	244.92	-	241.38	260.43	19.05	7.9%
Division of Physics (PHY)	301.66	-	290.04	300.91	10.87	3.7%
Office of Multidisciplinary Activities (OMA)	38.58	-	38.33	43.41	5.08	13.3%
Total, MPS	**$1,367.95**	**$15.70**	**$1,351.84**	**$1,432.73**	**$80.89**	**6.0%**

Totals may not add due to rounding.

FY2012 Physics Division Budget Request

PHY Funding
(Dollars in Millions)

	FY 2010 Omnibus Actual	FY 2010 Enacted/ Annualized FY 2011 CR	FY 2012 Request	Change Over FY 2010 Enacted Amount	Change Over FY 2010 Enacted Percent
PHY	**$301.66**	**$290.04**	**$300.91**	**$10.87**	**3.7%**
Research	**178.72**	**177.97**	**214.12**	**36.15**	**20.3%**
CAREER	*8.76*	*5.60*	*7.43*	*1.83*	*32.7%*
Centers Funding (total)	*5.68*	*5.68*	*1.14*	*-4.54*	*-79.9%*
STC 2002: Cntr. For Bio. Sci.&Tech.	*3.28*	*3.28*	*-*	*-3.28*	*-100.0%*
Nanoscale Sci. and Eng. Ctrs.	*2.40*	*2.40*	*1.14*	*-1.26*	*-52.5%*
Education	**8.14**	**9.42**	**8.44**	**-0.98**	**-10.4%**
Infrastructure	**114.80**	**102.65**	**78.35**	**-24.30**	**-23.7%**
Large Hadron Collider (LHC)	*18.00*	*18.00*	*18.00*	*-*	*-*
Laser Inteferomter Grav. Wave Obs. (LIGO)	*28.50*	*28.50*	*30.40*	*1.90*	*6.7%*
Nat'l Superconducting Cyclotron Lab (NSCL)	*21.00*	*21.00*	*21.50*	*0.50*	*2.4%*
IceCube	*2.15*	*2.15*	*3.45*	*1.30*	*60.5%*
Pre-Construction Planning (total)	*40.69*	*29.00*	*-*	*-29.00*	*-100.0%*
Deep Underground Sci. & Engr. Lab (DUSEL)[1]	*40.69*	*29.00*	*-*	*-29.00*	*-100.0%*
Research Resources	*4.47*	*5.00*	*5.00*	*-*	*-*

[1] DUSEL FY 2010 Actual includes $11.74 million in carryover funding from FY 2009.

Additional Funding Sources

- Major Research Instrumentation (MRI)
  - small (<$1M); large ($1-4M)
  - *FY2011 deadline passed*
- Cyber-Enabled Discovery and Innovation (CDI)
  - 5-year initiative begun FY2008
  - *FY2011 deadline passed*
- Petascale Computing Resource Allocations (PRAC)
  - testbed access for Blue Waters code development
  - *FY2011 deadline passed*
- DHS Domestic Nuclear Detection Office
  - multi-year initiative begun FY2007
  - *FY2011 deadline passed*
- Physics Frontiers Centers (PFC)
  - final decision phase

NSAC Charges

- Neutron science
  - NSF and DOE are partners to charge
  - nEDM
  - neutron decay parameters, HPV
- Data Management
  - DOE charge
  - NSF very interested in outcome: feedback to policy

People

- NSF Director: Subra Suresh
- NSF Deputy Director: Cora Marrett
- MPS Acting Assistant Director: Ed Seidel
- Physics Division Director: Joe Dehmer
- Nuclear Physics:
  - BDK (expt and theory)
  - Kyungseon Joo (and astro, underground lab)