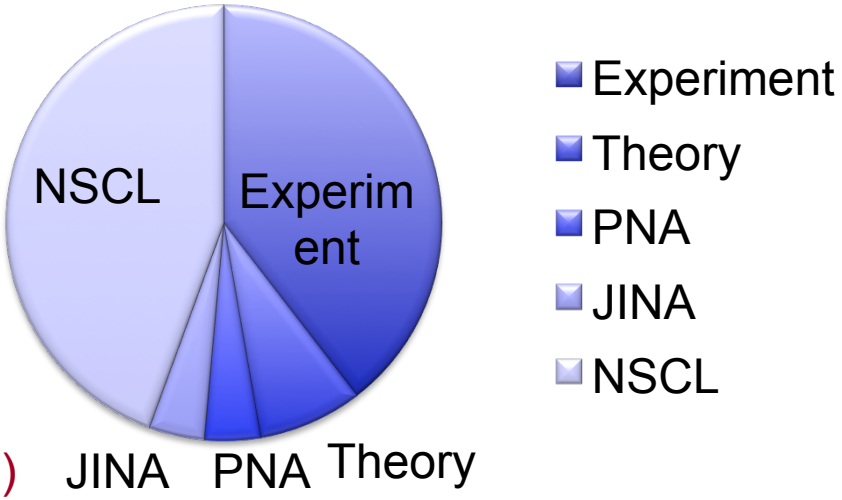
Nuclear Physics at NSF

- NP Experiment
  - Structure
  - Heavy Ions
  - Symmetries
  - Hadrons and QCD
  - Astrophysics (Notre Dame, FSU)
- NP Theory
- Particle Astrophysics and Non-Accelerator Physics (PA)
  - Neutrinos (Borexino, ββ, ϑ_{13})
- Frontier Center (Joint Institute for Nuclear Astrophysics)
- NSCL
- FY2012 total: $48M



FY2012 Final

- NSF appropriation: R&RA up 2.8%
- NP and most other division programs down 3.5% from FY2011 (down 3% from FY2010)
- NSCL flat from FY2011 level
- continue managing ARRA funding impact from FY2009

FY2013 Status

- Continuing Resolution through March 2013
- R&RA Appropriation
  - FY2011: $5,141B
  - FY2012: $5,203B
  - FY2013 request: $5,453B
  - FY2013 House: $5,417B
  - FY2013 Senate: $5,363B

FY2013 R&RA Budget Request

R&RA Funding

(Dollars in Millions)

	FY 2011 Actual	FY 2012 Estimate	FY 2013 Request	Change over FY 2012 Estimate Amount	Percent
Biological Sciences	$712.27	$712.38	$733.86	$21.48	3.0%
Computer & Information Science & Engineering	636.69	653.59	709.72	56.13	8.6%
Engineering	769.33	826.17	876.33	50.16	6.1%
Geosciences	885.62	885.27	906.44	21.17	2.4%
Mathematical & Physical Sciences	1,312.42	1,308.94	1,345.18	36.24	2.8%
Social, Behavioral & Economic Sciences	247.33	254.25	259.55	5.30	2.1%
Office of Cyberinfrastructure	300.75	211.64	218.27	6.63	3.1%
Office of International Science & Engineering	49.03	49.85	51.28	1.43	2.9%
Office of Polar Programs[1]	440.70	435.87	449.74	13.87	3.2%
Integrative Activities	259.60	349.59	431.52	81.93	23.4%
U.S. Arctic Research Commission	1.58	1.45	1.39	-0.06	-4.1%
Total, R&RA	**$5,608.38**	**$5,689.00**	**$5,983.28**	**$294.28**	**5.2%**

Totals may not add due to rounding.

FY2013 MPS Budget Request

MPS Funding

(Dollars in Millions)

	FY 2011 Actual	FY 2012 Estimate	FY 2013 Request	Change Over FY 2012 Estimate Amount	Change Over FY 2012 Estimate Percent
Division of Astronomical Sciences (AST)	$236.78	$234.55	$244.55	$10.00	4.3%
Division of Chemistry (CHE)	233.55	234.06	243.85	9.79	4.2%
Division of Materials Research (DMR)	294.91	294.55	302.63	8.08	2.7%
Division of Mathematical Sciences (DMS)	239.79	237.77	245.00	7.23	3.0%
Division of Physics (PHY)	280.34	277.37	280.08	2.71	1.0%
Office of Multidisciplinary Activities (OMA)	27.06	30.64	29.07	-1.57	-5.1%
Total, MPS	**$1,312.42**	**$1,308.94**	**$1,345.18**	**$36.24**	**2.8%**

FY2013 Physics Division Budget Request

PHY Funding

(Dollars in Millions)

	FY 2011 Actual	FY 2012 Estimate	FY 2013 Request	Change Over FY 2012 Estimate Amount	Change Over FY 2012 Estimate Percent
Total, PHY	**$280.34**	**$277.97**	**$280.08**	**$2.71**	**1.0%**
Research	**189.06**	**193.68**	**196.29**	**2.61**	**1.3%**
CAREER	*7.42*	*7.01*	*7.11*	*0.10*	*1.4%*
Centers Funding (total)	*3.58*	*1.14*	*1.14*	-	-
Nanoscale Science & Engineering Centers	*0.96*	*1.14*	*1.14*	-	-
STC: Cntr.for Bio. Sci.&Tech.	*2.62*	-	-	-	*N/A*
Education	**9.62**	**5.34**	**5.34**	**-**	**-**
Infrastructure	**91.69**	**78.35**	**78.45**	0.10	0.1%
Large Hadron Collider (LHC)	*18.00*	*18.00*	*18.00*	-	-
Laser Interferometer Grav. Wave Obs. (LIGO)	*30.30*	*30.40*	*30.50*	*0.10*	*0.3%*
Nat'l Superconducting Cyclotron Lab. (NSCL)	*21.50*	*21.50*	*21.50*	-	-
IceCube	*3.45*	*3.45*	*3.45*	-	-
DUSEL	*10.19*	-	-	-	*N/A*
Research Resources	*8.25*	*5.00*	*5.00*	-	-

Totals may not add due to rounding.

FY2014 Status

[not submitted to Congress yet]

Additional Funding

- Domestic Nuclear Detection Office (DNDO)
  - FY2013 process not yet started
- Major Research Instrumentation (MRI)
  - FY2013 deadline passed, proposal review started
- Physics Frontier Centers
  - pre-proposal process starts in early fall 2013

Computational and Data-Enabled Science and Engineering (CDS&E)

- NSF-wide
  - resources will depend upon FY2013 actual budget
  - virtual program: implementation specific to division
- Physics Division
  - CDS&E includes ideas at the interface between scientific frameworks and computing capability that enable advances well beyond the expected natural progress of either activity, including development of science-driven algorithms to address pivotal problems in physics and efficient methods to access and mine large data sets.
  - extend/enhance PIF:

target date: November 30, 2012

Data Access

- In place now: NSF data management plan requirement
  - Left to merit review process to evaluate
  - Now in second year of proposals with plans
  - Identification of good practices emerging
  - Practices depend upon specific NP area

People

- NSF Director: Subra Suresh (to Carnegie Mellon)
- NSF Deputy Director: Cora Marrett
- MPS Assistant Director: F. Fleming Crim
- MPS Deputy Assistant Director: Celeste Rohlfing
  Physics Division Director: Denise Caldwell (acting)
- Physics Division Deputy Director: BK (acting)
- Nuclear Physics:
  - BDK
  - Gail Dodge (experiment)
  - Bogdan Mihaila (theory)