Report from the NSF Division of Physics

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HEPAP
August 27, 2012

People

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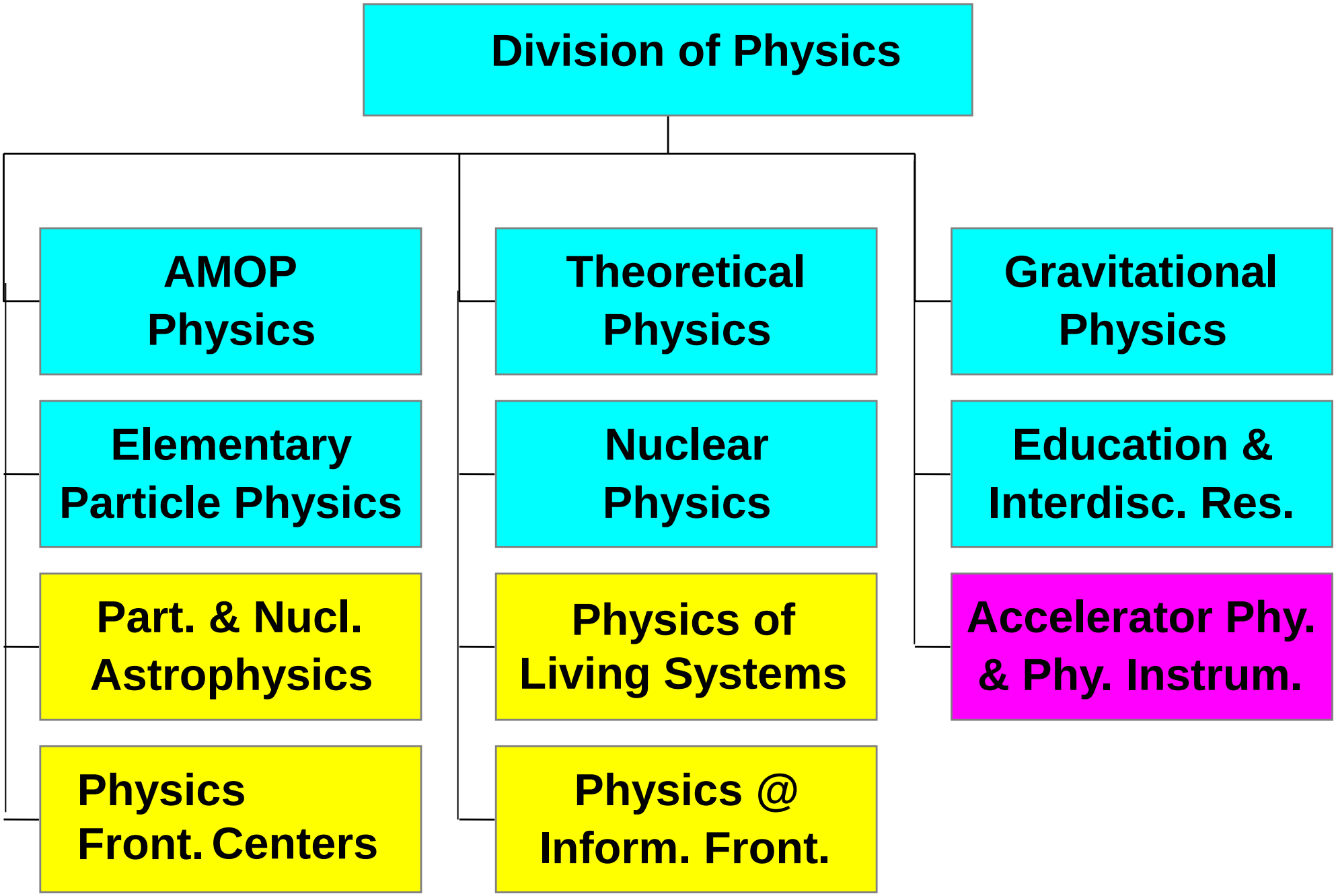
Division of Physics
AMOP Physics
Theoretical Physics
Gravitational Physics
Elementary Particle Physics
Nuclear Physics
Education & Interdisc. Res.
Part. & Nucl. Astrophysics
Physics of Living Systems
Accelerator Phy. & Phy. Instrum.
Physics Front. Centers
Physics @ Inform. Front.

Personnel on Awards (FY 11)

- Senior Personnel 1,422
- Active awards 1,302
- Postdocs 534
- Other Professionals 1,198
- Graduate Students 1,208
- Undergraduate Students 672*

*Plus about 444 at REU Sites

Facilities

- LIGO/AdvLIGO (construction to end in FY2015)
- LHC (began operating in FY 2010)
- IceCube (began operating in FY2011)
- NSCL (to be succeeded by FRIB)
- ~~DUSEL~~ (MREFC project cancelled in FY2011)
- ~~CESR/CLEO~~ (Phased out in FY2009)
- Midscale: ACT, SPT, Auger, CDMS, XENON, LUX, WARP, ZEPLIN, CoGeNT, COUPP, DArkside, DRIFT, MiniLens, Borexino, Double Chooz, Daya Bay, CUORE, Majorana, QUIET, ~~HiRES~~, TA, ~~Milagro~~, HAWC, ~~Stacey~~, Veritas, MiniBoone, MicroBoone, Numi/MINOS, RHIC end-cap calorimeter, university based NP accelerators, several MRI projects, etc.

R&RA 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
Biological Sciences	$712.27	$712.38	$733.86	$21.48	3.0%
Computer & Information Science & Engineering	636.06	653.59	709.72	56.13	8.6%
Engineering	763.33	826.17	876.33	50.16	6.1%
Geosciences	885.32	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.

[1] Funding for FY 2011 Actual excludes a one-time appropriation transfer of $54.0 million, less the 0.2% rescission, to the U.S. Coast Guard per P.L. 112-110.

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%

Totals may not add due to rounding.

Underground Physics DCL

- **NSF PHY has redirected its future-generation, facility investments in underground research to the site-independent, nearer-term development of individual underground experiments and experimental techniques. (HEPAP, March 2012)**
- **Dear Colleague Letter (DCL) on Underground Physics http://www.nsf.gov/pubs/2012/nsf12043/nsf12043.pdf**
- **DCL review is complete and issuance of (FY2012) awards is underway**
  - **Received 24 proposals requesting a total of $78M**
  - **Reviewed by a combination of *ad hoc* reviews and two panels**
  - **Currently processing 9 awards totaling $13.6M over two years**
  - **Selected proposals include Dark Matter, Nuclear Astrophysics, Detector R&D, Electronics and Triggering, and common tools for underground physics**
  - **For Dark Matter, support of R&D allows preparation for G2 down-select.**

NSF/DOE Coordination on Dark Matter

- **DOE FOA for G2 DM published; proposal review in September.**
  - **One year of R&D support, followed by down-select for construction.**
    - **http://science.doe.gov/grants/pdf/SC_FOA_0000597.pdf**
- **G2 construction proposals* to be submitted to the agencies in 2013.**
  - **NSF Particle Astrophysics (PA) program (target deadline: Oct 2013).**
  - ***DOE lab FWPs for construction phase (end CY13, open only to those selected in initial round).**
- **NSF & DOE will discuss and, as warranted, coordinate the funding for G2 construction awards. Award decisions will be made independently by each agency.**
  - **NSF/DOE co-review of the proposals under discussion.**

PHY Budget Actions/Plans

- LHC, IceCube, NSCL flat, LIGO up $100K in FY12
- All programs cut 5% initially, with 2% restored when budget finalized
- Investments in BioMaPS, CIF21, SAVI
- Redirect S4 funding to underground science
- Midscale physics instrumentation is a priority for future budget cycles (FY14), and some funds are being applied to seed the activity
- Also discussing accelerator physics research at universities for possible investment in FY14
- The last two bullets express the APPI concept, and the last three bullets should benefit work at the three frontiers of particle physics