



U.S. DEPARTMENT OF  
**ENERGY**

OFFICE OF  
**SCIENCE**

# High Energy Physics Program

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# Outline

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- **Program status update**
- **Early career awards**
- **Funding Opportunity Announcements**
- **DOE initial response to P5**
  - 1<sup>st</sup> pass elevator speech
  - “rollout” plans and upcoming meetings
- **Webpage**



# Program Status Update

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- **New Assignments**

- Helmut Marsiske (Facilities) taking on additional duties in Detector R&D
- Michael Cooke (AAAS Fellow) taking on additional duties in HEP communications
- Michael Salamon now fully engaged in International issues

- **Comings and Goings**

- Keith Dienes now on board as Theory IPA
- Ross Vosgard (intern) helping out with HEP website and demographics
- Tim Bolton (Intensity Frontier IPA) returning to KSU in August
- More IPA “retirements” in early 2015 (Boehnlein, Kim)
- New IPAs (Cosmic, Theory) coming on board in September
- Additional help welcome to aid with P5 implementation!
  - Interested parties should contact HEP management

# Early Career Selection Procedure

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- **Two-step merit review process:**
  - Stage 1 : three or four specialized written reviews collected for all candidates, followed by down-select of up to top five (some flexibility allowed) per research thrust (Advanced Accelerator R&D, Cosmic Frontier, Detector R&D, Energy Frontier, Intensity Frontier, Theory).
  - Stage 2: panel review of top 26 proposals, with a single panel evaluating all proposals together. Each panel member provided DOE HEP with his or her top ten proposals across all research thrusts.
- **Changes compared to last year:**
  - Lab and university proposals reviewed together.
  - Theory, accelerator, and experimental HEP thrusts reviewed together.
  - Common two-step procedure employed for all thrusts.
  - All proposals reviewed, but only “top third” received panel consideration. Panel pool ~ 5× award total.



# HEP Early Career FY10-14 Demographics

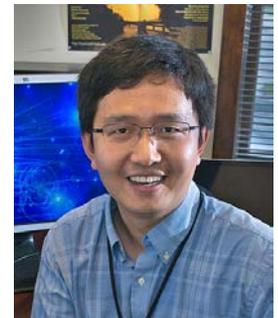
Subprogram Awards	FY10 (L/U)	FY11 (L/U)	FY12 (L/U)	FY13 (L/U)	FY14 (L/U)	Total (L/U)
Energy	3 (1/2)	3 (1/2)	1 (0/1)	2 (0/2)	2 (1/1)	11 (3/8)
Intensity	2 (1/1)	1 (0/1)	3 (2/1)	1 (0/1*)	1 (1/0)	8 (4/4)
Cosmic	2 (0/2)	3 (2/1)	3 (1/2)	2 (1/1)	1 (0/1)	11 (5/6)
HEP Theory	6 (1/5)	4 (0/4*)	3 (0/3)	3 (1/2)	1 (0/1)	17 (2/15)
Accelerator	1 (1/0)	2 (2/0)	2 (1/1)	1 (0/1)	1 (1/0)	7 (5/2)
<b>HEP Awards</b>	<b>14 (4/10)</b>	<b>13 (5/8)</b>	<b>12 (4/8)</b>	<b>9 (2/7)</b>	<b>6 (3/3)</b>	<b>54 (18/36)</b>
<b>Proposals</b>	<b>154 (46/108)</b>	<b>128 (43/85)</b>	<b>89 (34/55)</b>	<b>78 (29/49)</b>	<b>75 (35/40)</b>	<b>524 (187/337)</b>

- Early Career Research Program has become even more competitive
  - Congress enacted legislation requiring Office of Science grants of less than \$1,000K to be fully funded in the year the award is issued.
  - This requires university Early Career grants awarded this year to be fully funded from the FY14 budget.
  - Award rate across Office of Science is now ~5%.



# HEP FY14 Early Career Awards

- **Eric Dahl, *Northwestern University***
  - A Scintillating Xenon Bubble Chamber for Dark Matter Detection
- **Peter Graham, *Stanford University***
  - New Searches for Ultralight Particles
- **Anna Grassellino, *Fermilab***
  - Impurity Doping of Niobium for Ultra Efficient Superconducting RF Cavities
- **James Hirschauer, *Fermilab***
  - Search for new phenomena at the 13 TeV LHC: Fast start and strong finish
- **Stephanie Majewski, *University of Oregon***
  - Search for New Physics with Top Quarks and Upgrade to the ATLAS Liquid Argon Calorimeter
- **Xin Qian, *Brookhaven National Laboratory***
  - Detector Development towards Precision Measurements of Neutrino Mixing



# Funding Opportunity Announcements

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- **During FY2015, DOE/HEP will continue the large-scale comparative review of research proposals submitted by US academic institutions.**
  - This will be the 4th year of such reviews conducted within the HEP research program.
- **DOE/HEP is currently preparing the FY2015 Funding Opportunity Announcement (FOA) for these comparative reviews**
  - Expect it to be issued in next couple of weeks (~by early June 2014).
  - FOA will address suggestions & recommendations raised by the 2013 HEP Committee of Visitors (COV)
- **Deadlines for applicants:**
  - Letter of Intent (strongly encouraged) on overview of research proposals: planned for mid-July 2014
  - Final Application: planned for early-September 2014
  - Exact dates will be provided in the FOA, once issued
- **Independently, an Accelerator Stewardship FOA is planned to be issued synchronously**
  - Specifically for accelerator R&D which predominantly impacts non-HEP applications
  - A letter of intent is required, which will result in an encourage/discourage response
  - Eligibility will include academia, national labs, and industry



# Praise for P5 Report

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- **A final draft of the P5 report was sent to confidential independent peer reviewers in early May. The overall reviews were extremely positive.**
  - We heard this echoed by HEPAP yesterday
- **The community did a huge amount of work in the Snowmass process, establishing the scientific groundwork that P5 built on and initiating the discussions and debates that would lead to a fully participatory process.**
- **The committee did a huge amount of work understanding details, assessing impacts of various decisions, and seriously considering many alternative choices. It shows.**
- **DOE is extremely grateful to P5 and the community for developing a consensus vision**

# Our P5 “Elevator Speech” (1<sup>st</sup> Draft)

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- **This report represents a consensus vision developed bottom-up by the physics community with extensive consultation to identify the most exciting and productive areas of research and how we pursue them.**
- **The report recognizes the reality of a challenging funding landscape, where choices have to be made and resources stewarded carefully, and confronts those challenges head on.**
- **The promise/potential of high energy physics has never been greater – far from “settling” the big questions in high energy physics, the discovery of the Higgs boson and other recent milestones in physics have opened many more doors to exploring and understanding our universe.**
- **Even given funding challenges, much important fundamental work can be accomplished and many tremendous scientific opportunities pursued, if we make the right strategic choices as a community.**
- **This is a time of excitement and intellectual fervor that can engage young scientists and provide directions for a rewarding and fulfilling career.**



# Next Steps

- **Management responsibility to align program along directions of the P5 advice.**
  - DOE engaging laboratory management help
  - This will take some time, many discussions with partners and stakeholders
    - This is not an “on/off” switch but we will move as quickly as feasible (e.g., Dark Matter G2 downselect, Accelerator R&D subpanel)
- **Other critical areas where we need your engagement**
  - Communications to HEP (“P5 plan rollout”)
    - FNAL User Meeting June 11-12
    - HEP PI Meeting June 16-17 (see next slide)
  - Communications outside HEP
    - DPF actively organizing several efforts here
    - recall the “Do’s and Don’ts” from last HEPAP meeting
  - “Broader Impacts” of HEP science and technology
    - The task force reports were just the beginning...

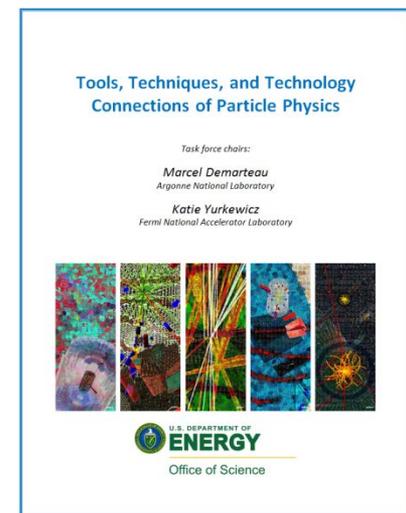
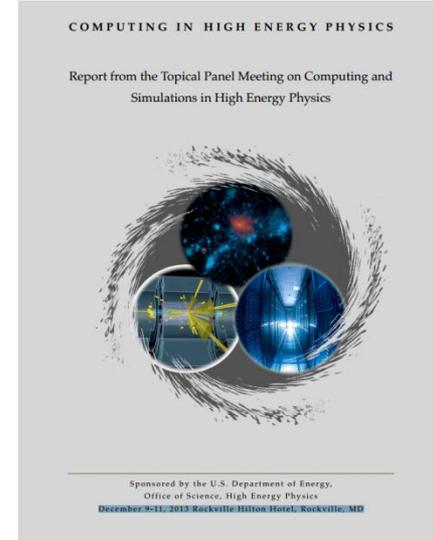
# Announcement: DOE/HEP PI Meeting

June 16-17, 2014 in DC-area

- **Meeting of all HEP Principal Investigators (PIs) including any co-PIs on an existing DOE HEP grant as well as those new [to DOE] PIs interested in applying**
  - Junior Investigators are particularly encouraged to attend
- **Meeting will address the following topics**
  - Overview of the HEP program, the P5 strategic plan in HEP
  - DOE/HEP's initial plan for implementation of the P5 plan
  - Presentations on science and funding opportunities:
    - FY 2015 HEP Comparative Review FOA and Accelerator Stewardship FOA
    - Presentations on major HEP projects and R&D opportunities
    - Presentations by individual DOE Program Managers (PMs) on subprograms, priorities, budgetary factors, and guidance on preparing university grant applications
  - Topical discussions with HEP management
  - Opportunities for scheduled one-to-one and/or small group meetings with PMs
- **Date: Monday – Tuesday, June 16 – 17, 2014**
- **Venue: Hilton Rockville Hotel, Rockville, Maryland (~20 mi. North of Washington, DC)**
- **Registration: No fee, but registration encouraged to assist in logistical planning**
- **Additional information (agenda, registration, etc.): <http://www.orau.gov/heppi2014/>**

# New Reports Available

- **Computing in High Energy Physics**
  - Report from the Topical Panel Meeting on Computing and Simulations in High Energy Physics
  - Addresses the varied yet synergistic needs of computation and simulation across the field of particle physics, including the challenges of rapidly evolving computer architectures and technology
- **Tools, Techniques, and Technology Connections of Particle Physics**
  - Task force chairs:
    - Marcel Demarteau (ANL), Katie Yurkewicz (FNAL)
  - Identifies potential opportunities for advancing scientific discovery and accelerating the pace of innovation in an effective manner by taking advantage of science and technology connections



# DOE HEP Website Update

- New front page format highlights latest news and announcements
  - Weekly update cycle
- Further updates and reorganization planned
  - Content updates to reflect program response to the new P5 report
  - Improve organization of material useful to PIs
    - Community input welcome!

The screenshot displays the DOE HEP website's new front page. At the top, there is a navigation bar with links for 'SC Home', 'Organization', 'Jobs', 'Contact', and 'DOE Home'. Below this is the U.S. Department of Energy logo and the 'Office of Science' branding. A search bar is located on the right. The main navigation menu includes 'Programs', 'Laboratories', 'User Facilities', 'Universities', 'Funding Opportunities', 'Discovery & Innovation', 'News', and 'About'. The current page is 'High Energy Physics (HEP)'. A sidebar on the left lists various sections: 'HEP Home', 'About', 'Research', 'Facilities', 'Science Highlights', 'Benefits of HEP', 'Funding Opportunities', 'Advisory Committees', and 'News & Resources'. The main content area features a featured article titled 'The 'Cosmos' connection' with a 'Read More' button and a navigation indicator '3 of 3'. Below this is a 'Recent News & Announcements' section with two items: 'Sean Hartnoll receives Presidential Early Career Award for Scientists and Engineers' and 'Ten things you might not know about particle accelerators'. On the right side, there are two additional news items: 'HEP PI meeting, June 16-17, 2014' and 'P5 Planning'.



# The Common Goal

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*[this is what we presented several months ago:]*

- **A realistic, coherent, shared plan for US HEP**
  - Enabling world-leading facilities/experiments in the US while recognizing the global context and the priorities of other regions
  - Recognizing the centrality of Fermilab while maintaining a healthy US research ecosystem that has essential roles for both universities and multipurpose labs
  - Articulating both the value of basic research and the broader impacts of HEP
  - Maintaining a balanced and diverse program that can deliver research results consistently

**Are we there yet?**

- **Reception of the HEPAP/P5 plan both in HEP community and more broadly will tell the tale.**

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# BACKUP



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# P5 Rollout Timeline

Date	DOE/HEPAP effort	Date	Other effort
Now	Developing implementation strategies	Now	Media advisories and other P5 “advertising”
May 22-23	HEPAP Meeting (incl press briefing, auxiliary mtgs)		Press release (?); emails to community
Late May	Key stakeholder briefings	Late May	Letters from DPF exec, CERN
	Request lab P5 responses	June 2	Ritz community presentation
Early June	Meet with DPF exec?	June 4-6	DPF Congressional visits
	Lab SC briefings	June 10	House Science hearing
June 11-12	FNAL User Meeting		
June 16-17	HEP PI Meeting (Rockville)	June 18	PI Congressional visits
June 23-24	Funding Agency Mtg (Paris)		
Mid-July	HEP lab meeting (DC)	July 15/16	DPF Capitol Hill event “Future of US particle physics”
August	FY15 initial finplan	August	Congressional visits (in home districts)



# Some Communication Do's and Don'ts

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- **Do:**

- Provide your unvarnished feedback on your opinions about the P5 report to NSF, DOE, Chair of HEPAP, Chair of P5, Director of FNAL, and/or DPF Chair line
  - We are constantly in contact and will be monitoring views of the community through all of these channels.
- Familiarize yourself with the P5 supplemental materials that will be provided and will be vetted by communications professionals for clarity and impact
- Take careful note (*listen!, don't lecture*) of how the folk you talk to react to the P5 story and pass those reactions back to NSF and DOE so we can adjust our messages about P5 to have maximum positive impact.
- Put yourself in the position of an outside observer of HEP, and ask yourself:
  - Do these strange people look like they know what they are doing?
  - Do they have their act together?
  - Do they have a clear and compelling message?

- **Don't:**

- Ever speak to someone outside our field and transmit a sense of our entitlement to support due to the glorious nature of Particle Physics research, past Nobel prizes, etc. This mistake can take many forms.
- Ever attack areas of our field in favor of your favored area since 'bickering scientist get nothing'
- Ever diminish other areas of science as somehow less important than HEP. Even if you actually think that.

