Introduction

HEPAP Meeting

December 1, 2016

Gaithersburg, MD

Andrew J. Lankford

HEPAP Chair

University of California, Irvine

Announcements

Next meeting: **Date not yet set.**

- **Likely to be an *in-person* meeting in the March-May timeframe in the DC area. Working on dates now.**
- **Possibly a teleconference meeting in advance if *in-person* meeting falls late in that timeframe.**
- (Recall that HEPAP will now typically meet twice per year in person and twice per year via teleconference.)

~1/3 of HEPAP membership rotates each year.
This meeting will be final *in-person* meeting for following members:

- **James Buckley** (Washington U.)
- **Bruce Carlsten** (LLNL)
- **John Carlstrom** (Chicago)
- **JoAnne Hewett** (SLAC)
- **Hitoshi Murayama** (LBNL)
- **Gabriella Sciolla** (Brandeis)

BIG THANK YOU TO YOU FOR YOUR SERVICE TO HEP

Overview of Agenda

Day 1 – Thursday Dec 1st	
Thursday AM	Agency Reports
Thursday PM	DOE HEP Committee of Visitors HEPAP discussion (theory letter)
Day 2 – Friday Dec 2nd	
Friday – Session I	FNAL Facilities Operations Review
Friday – Session II	Reports • FNAL Intensity Frontier Program • HEP Cosmic Frontier Program • Cosmic Visions – Dark Energy
Friday – Session III	Reports • LARP & HiLumi • DOE HEP Funding Opportunities HEPAP Discussion

Following adjournment on Day 1, there will be a DOE-HEP event.

End of Introduction

DOE HEP Committee of Visitors

Every 3 years, HEPAP is charged by the Office of Science to assemble a Committee of Visitors (COV) to review the management processes and outcomes of the DOE HEP program.

- **The COV is a subcommittee (subpanel) of HEPAP.**
- **It is chaired this year by Sally Dawson (BNL).**
- **The review was conducted Sept. 27-29, 2016.**
- **The COV was able to review proposal folders in order to evaluate the award/decline/monitor process.**
- **The COV report was sent to HEPAP for review on Nov. 12th .**

Today:

- **Mike Procario – a summary of material presented to COV**

  Questions to Mike
- **Sally – a summary of COV report**
- **Glen Crawford – questions from DOE HEP**
- **HEPAP discussion of report and of its approval**

End of COV Introduction

"Theory Letter" – Rec'd 11/18/2016

LETTER RE. US HIGH ENERGY THEORY SUPPORT

Andrew J. Lankford
Chair, High Energy Physics Advisory Panel (HEPAP)

Dear Professor Lankford:

We are writing to express our alarm about recent cuts in DOE support of the US High Energy Theory program. While there have also been cuts to other parts of the DOE Research program, since 2011 the University Theory subprogram has been cut 30%, as part of a very damaging 17% cut to the overall Theory program. We believe that such large cuts jeopardize the world-leading standing of the US theory community.

The US theory community has unquestionably been the world leader, historically, in theoretical High Energy Physics. Many aspects of the "Standard Models" that explain our universe, both in particle physics and cosmology, have come from US theorists, as have developments in our understanding of gravity. Eleven of the nineteen Nobel laureates in these areas since 1965 have been US theorists. US theorists have received numerous other accolades, and have been leaders in the exploration of the structure of possible new physics beyond these Standard Models. The DOE has been a primary steward of this program.

With many big outstanding questions in High Energy Physics and Cosmology, theory is expected to play a key role going into the future. The vitality of this research is recognized by other countries in Europe and elsewhere, who continue to support new research initiatives. The declining US investment stands in marked contrast to this vision.

In particular, DOE figures appear to indicate that 25% of DOE-supported University theorists have had their support terminated in the last four years, and that cuts at a comparable rate continue into the second round of comparative review, cutting DOE-recognized productive theorists. Further information is needed, but the cuts appear especially severe for postdoctoral fellows, whose number is estimated to have decreased by about 30%. This has inflicted serious losses on a whole generation of creative scientists, and is expected to damage the field further over the long term.

These cuts come at a time of continued public fascination with particle physics, cosmology, and gravity. Our universities see strong growth in numbers of physics majors. And recent studies — such as by the European Physical Society — have highlighted the very positive economic impact of physics, which includes growing practical applications of data science.

The P5 report states that "a thriving theory program is essential for both identifying new directions for the field and supporting the current experimental program." The broader High Energy effort is thus threatened by these cuts to Theory, which conflict with the P5 recommendation that Research cuts should be planned with care and have their potential damage assessed.

We formally request that a subpanel of HEPAP be formed to investigate and better understand this damaging trend and to make recommendations to address its consequences and restore a thriving Theory program, and we strongly urge that HEPAP support measures to rebuild and maintain the prominent and world-leading standing of US High Energy Theoretical Physics.

Sincerely,

Michael Dine, U. of California, Santa Cruz
Steven B. Giddings, U. of California, Santa Barbara
Howard Haber, U. of California, Santa Cruz
Jeffrey Harvey, U. of Chicago
Shamit Kachru, Stanford University
Michael E. Peskin, SLAC, Stanford University
Jeffrey D. Richman, U. of California, Santa Barbara
Nathan Seiberg, Institute for Advanced Studies
Eva Silverstein, Stanford University
David Stuart, U. of California, Santa Barbara
Scott Thomas, Rutgers University
Laurence Yaffe, University of Washington
Lisa Randall, Harvard University
Igor Klebanov, Princeton University
Juan Maldacena, Institute for Advanced Studies
Scott Tremaine, Institute for Advanced Studies
Robert Dijkgraaf, Institute for Advanced Studies
David Shih, Rutgers University
Yuri Gershtein, Rutgers University
Thomas Banks, Rutgers University
Edward Witten, Institute for Advanced Studies
Daniel Friedan, Rutgers University
Donald Marolf, U. of California, Santa Barbara
Chiara Nappi, Princeton University
Sumit Das, University of Kentucky
Andrew Strominger, Harvard University
Shih-Chieh Hsu, University of Washington

and many more

"Theory Letter" – Rec'd 11/18/2016

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This letter will be discussed by HEPAP on Thu Dec 1st

To introduce the discussion, Laura Reina (HEPAP member) will summarize the letter.

HEPAP will discuss the contents and intent of the letter, as well as what response is appropriate.

If time does not permit a full discussion, then discussion will be continued at a future meeting.

Thomas Banks, Rutgers University
Edward Witten, Institute for Advanced Studies
Daniel Friedan, Rutgers University
Donald Marolf, U. of California, Santa Barbara
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University of Washington

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The letter can be found here:
https://drive.google.com/file/d/0B3IXprj4oX2sU0VvczR6VzdheDQ/view .

End of Theory Letter Introduction