

# Report of the University Program Working Group

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# Our “Charge”

- We are not a HEPAP Subpanel, so there is no charge from the agencies.
- The HEPAP chair did, however, ask us to meet informally to identify problems of concern to the university community.
- Last year, we conducted a survey, the results of which were reported at the October 2009 HEPAP meeting
- This year we decided not to do another survey, but rather to simply solicit written (e-mail) comments from the community.
- In this report, we will attempt to synthesize those comments, in the hope of letting the agencies know where things are working well, and where there are concerns or opportunities for improvement

# The Process

- A letter (see next slides for highlights) was sent to the community, inviting comments.
- We used a list of PI's that was kindly provided by Bill Carithers of the DOE/NSF census group.
- Since many umbrella grants effectively have multiple PI's, recipients were encouraged to pass the letter along to other senior investigators at their universities
- Respondents had roughly 2½ weeks to submit comments.
- We promised anonymity, although the names of the respondents were known to the committee.
- We were mindful of the value of specific and constructive (“actionable”) suggestions, as opposed to complaints and simple calls for additional resources.

# Excerpts from the Committee's Letter to the Community

- “. . . we have appended a list of topics that you may wish to address, but you are welcome to submit comments on any and all matters that you think are important.”
- “. . . comments that simply call for additional funding are unlikely to have much effect. The agencies are well aware of the positive benefits that additional funding would bring and are already doing all that they can to achieve that end.”
- “. . . it is also important to comment on aspects of the program that work well from your perspective.”

# List of Suggested Topics

- The agencies' response to the recommendations of the HEPAP Subpanel on the University Grants Program (chaired by Homer Neal in 2007). Please be specific. The report can be found on the HEPAP web site (see URL: [http://www.er.doe.gov/hep/panels/reports/hepap\\_reports.shtml](http://www.er.doe.gov/hep/panels/reports/hepap_reports.shtml) ). Also the talk in the link in item (2) below provides some comments from the agencies on their responses to the report.
- A summary of the survey carried out last year can be found on the HEPAP web site (see URL: [http://www.er.doe.gov/hep/files/pdfs/HEPAP\\_2009\\_10\\_Eno\\_university\\_report.pdf](http://www.er.doe.gov/hep/files/pdfs/HEPAP_2009_10_Eno_university_report.pdf) ) A somewhat surprising result is that many groups stated that if given extra funding, they would use the funds to hire additional post docs, graduate students, or to support travel, rather than shoring up technical infrastructure.
- The level and nature of support for junior faculty/staff at universities and labs.
- The level and nature of support for students.
- The mechanics of the grant application and reporting processes (specify whether you are talking about DOE or NSF).
- Interactions with the national labs, e.g.—access to lab infrastructure.
- The balance between support for theory and experiment.
- Any other issue that you think important.

# The Results

- We received responses from 33 people (in a few cases two or three people signed the same comment)
- Given the open-ended nature of the question, it is not surprising that a broad range of comments were returned in response.
  - These comments could be merged into ~28 categories (an imprecise exercise)
  - Many of these categories appear just once, while others were mentioned 5 or 6 times.
- In what follows, we proceed through the comments in reverse order of the frequency in which they appeared— i.e., we start with comments made just once and end with comments that appeared most frequently.
- In what follows, the use of quotation marks is significant. Where quotes appear, comments have been transcribed fairly directly, while in other cases, we have paraphrased.

# Single-Comment Issues

- “The additional programs (Early Career, DOE Grad. Fellowship, and URA awards) [project-related work] represent additional paperwork for relatively small amounts of funding”
- It would be helpful if the Chicago office would notify the PI’s [in addition to the SRO’s] when funds have been sent
- There is a funding bias against private religious institutions
- The DOE should increase awareness and enforcement of page limits on grant applications
- Funding coming in the form of supplements late in the year makes it hard to plan

# Single-Comment Issues

- “Funding levels (\$/faculty) vary substantially between different university groups with comparable productivity & quality levels, with historical (decades previous) prominence often appearing to play a significant continuing role.”
- “The relative division of the DOE/HEP research budget between laboratory- and university-based efforts needs careful consideration. For example, just about half of all DOE funding for theory is going to the 5 lab theory groups (FNAL,LBNL,SLAC,ANL,BNL). These groups make valuable contributions, but are they responsible for a comparable share of the most significant work of the entire US HEP theory community?”



# Single-Comment Issues

- “In many groups, a large fraction of grant funding goes to summer salaries for very senior faculty with declining research productivity but the highest salaries. Is it time for a cap on faculty summer salaries charged to HEP grants? NIH does this.”
- “I suspect that there is a bias in reviews, as a large number of people in the field have only limited experience in designing and building detectors and have spent their careers analyzing data on experiments that others have built, and will advocate for more physics and less hardware. The agencies need to understand that there is this bias and to help nurture this creative side of our field.”

# More-Than-One-Comment Issues

- “. . . the recent change in policy requiring junior researchers to apply several times through the Early Career process before being considered to join a University grant places an unnecessary burden on those who are very strong researchers but who may not have had the stars align to receive an Early Career award. Moreover, it sends a mixed signal—are we truly trying to support beginning junior researchers to get moving on their research career or not?”
- High-quality grant monitors are essential
  - “I have been pleased with the competence, judgment, and responsiveness of my past four grant monitors from the program office. It is crucial to have smart, effective physicists in that role.”
  - “. . . it may well be that DOE management are unaware of some of the idiosyncratic statements and judgments made by grant monitors and how these can affect groups.”
  - “It is essential that DOE OHEP not let the demise of the University Program result in a reduction in the generally excellent quality of grant monitors”

# More-Than-One-Comment Issues

- Research scientists are key people in university groups having lab-based research programs. They provide day-to-day guidance and oversight to students and post docs who are also stationed at the labs. They are also an essential element of the technical infrastructure in university groups.
- Project funds are a mixed blessing
  - They have become essential to the maintenance of the remaining university infrastructure
  - They are not predictable, making it hard to plan and to make commitments to the sort of high-quality technical and engineering staff that are needed
  - They are not subject to peer review and are often administered by lab personnel, who may be biased toward supporting lab groups

# More-Than-One-Comment Issues

- The distinction between NSF base support and DOE base support is not helpful
  - The disparity in funding does not seem right
  - Faculty generally like the idea of programs that are open to applicants of all stripes (e.g., NSF CAREER and DOE Early Career) and would like to see this concept extended across the board
  - Further cooperation between DOE and NSF is encouraged
  - see extended comment quotation on following pages . . .

# More-Than-One-Comment Issues

- . . . The distinction between NSF base support and DOE base support is not helpful
  - “Artificial and unnecessary constraints must be eliminated; funding should follow excellence. One particularly egregious constraint is the labeling of university groups as ‘DOE-funded’ or ‘NSF funded.’ While this might have made sense years ago, it no longer serves any useful purpose. In fact, the distinction hurts the field because on average, I am told, NSF groups are funded at a much lower level than their DOE counterparts. If true, I think that the difference in funding does not reflect a difference in quality. It is simply a historical artifact . . .”

# More-Than-One-Comment Issues

- . . . The distinction between NSF base support and DOE base support is not helpful
  - “. . . I would like to propose that HEPAP study whether DOE and NSF should do an experiment and run a single joint interagency program in particle theory. The best proposals would be funded, irrespective of whether the proposing institution was historically NSF or DOE. If the experiment succeeds, the program might be extended to experimental groups as well.”

# Frequently Cited Issues

- Positive comments
  - Respondents applauded DOE Graduate Fellowships
  - Expansion of OJI into Early Career Award was also welcomed
  - A number explicitly acknowledged their appreciation for agency support. For example, one respondent wrote “I have been the PI [of my grant] since June 1994, and am very grateful to the DOE for the continued support throughout these years!”
  - Another wrote “. . . I think that the situation has improved in the past few years; much still needs to be done, but I see a definite willingness of the part of the DOE to improve their operation.”
  - And another “The performance of periodic more rigorous reviews than in the past is I believe a very good change.”

# Frequently Cited Issues

- DOE Early Career Awards (especially theory)
  - The small number of awards means that a relatively few individuals are lavishly funded, while other highly-capable researchers received little or no support. One respondent wrote “DOE's Early Career Research grants do effectively recognize and support some exceptional young faculty, but people who just miss receiving an EC award are also highly deserving of support.”
  - The large awards given to lab investigators are even more out of proportion. To quote one respondent “For lab researchers, the situation is downright absurd. 500k/year exceeds our entire University group of four fully tenured professors.”
  - Another respondent wrote “. . . in the case of lab scientists, the funding supports the majority of the salary of the PI, but the lab theory group funding is not correspondingly reduced. The funding previously used for salary is available for other uses.”



# Frequently Cited Issues

- Concern that the end of an explicit University Program means that the DOE does not value university researchers
- Numerous respondents mentioned the problems caused by the funding delays of last year
  - “It is humiliating, and it compromises the credibility of my group with university administrators. My dean has never seen anything like this before.”
  - “I do not think it is appreciated in the DOE how serious a problem this was from the university perspective and that the consequences are still being felt . . . the absence of any kind of communication until an extremely late stage was inexplicable and irresponsible.”
  - “I wonder if this would have happened, had part of the OHEP been specifically charged with looking out for the universities.”

# Frequently Cited Issues

- The partitioning of funds into what seem like artificial categories (B&R codes) creates more paperwork and reduces flexibility. As one respondent put it “The strict division between program areas (protons, electrons, etc) makes it very difficult to plan redirection of effort based on physics opportunities, interests of entering graduate students, etc. Some mechanism to afford more discretion to the scientists would, I believe, lead to a better program.”

# Frequently Cited Issues

- Maintenance of university infrastructure remains a key concern
  - “The ARRA funds were a much-needed shot in the arm.”
  - “Universities identify and provide training to young people who are passionate about particle physics. This training should be all-around, especially through research projects that not only include post docs and graduate students but also reach down to undergraduate students.”
  - “. . . it would be a big plus with lots of leverage if modest funding could be made available to improve and maintain technical infrastructure and hardware at universities.”
  - “Groups that have significant hardware commitments at existing experiments need to protect their infrastructure (mostly people). Engineers who are well integrated into the group and essential for meeting group commitments should be supported on the base grant. Their funding should not be dependent on the vagaries of project funds. We should treat them as people that we want to be engaged in the field long term, rather than as expendable parts of projects.”

# Summary & Conclusions

- Early Career Awards would benefit from fine tuning
- If the agencies are interested, a discussion of how NSF and DOE funding of theory might be coordinated could be launched
- There is ongoing concern about the level of technical infrastructure at universities and the related issue of the importance the agencies place on ensuring that students and post docs in HEP gain experience with detector hardware
- We did not explicitly look into the extent to which the agencies followed up on the HEPAP University Program subpanel report. This would be a good activity for the coming year.