### 1. Introduction

This survey is being undertaken by the HEPAP University Subpanel to collect data on the High Energy Physics University Program to provide guidance to DOE and NSF. To see the charge and membership of the University Subpanel, <u>click here</u>.

We are especially interested in the current state of University infrastructure, in the level of support for students, and in the management of the HEP University Program. As the PI of an NSF or DOE university contract, your input is particularly important.

The survey should take about 25-30 minutes of your time. We are interested in the big picture, not in precise numerical values, so approximate answers are fine.

Your response will be confidential, and quantitative results will only be reported in aggregate. Open-ended comments may be quoted in the final report, but without attribution.

Click "Next" to get started with the survey. If you'd like to leave the survey at any time, just click "Exit this survey". Your answers will be saved and you may return at a later time to complete the survey.

\* 1. University:

\* 2. Pl's name:

\* 3. What agency provides the majority of your group's funding?

DOE NSF

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### 2006 HEPAP University Subpanel PI Survey

Please provide us with information about the technical infrastructure your group has for experimental research, and the source(s) of the funding support you received during FY06.

Grant support is the annual funding provided by DOE or NSF to a university group in response to the university proposal process, while project transfer support is tied to specific experiments and is generally controlled at the project level.

If your group does not carry out experimental research, skip to the next section.

# 4. Provide an estimate for the level of technical infrastructure in your group by fraction of full-time effort (FTE) and source of support those personnel supported at least in part by grants for which you are responsible as PI. Round to the nearest selection in the drop-rounding, the sum may not exactly equal the value you enter in "Total FTE". If your group has no personnel in these categories, skip

|                                     | DOE Grant | DOE Project<br>Transfer | NSF Grant | NSF Project<br>Transfer | Other Federal Universit |
|-------------------------------------|-----------|-------------------------|-----------|-------------------------|-------------------------|
| Electrical & Mechanical Technicians | •         | -                       | -         | -                       | -                       |
| Electrical Engineeres               | •         | -                       | -         |                         | -                       |
| Mechanical Engineers                | •         | -                       | -         | -                       | •                       |
| Computing Support Personnel         | -         | -                       | -         | -                       | -                       |
| Other                               | -         | -                       | -         | -                       | -                       |

5. How has the availability of technical personnel at your institution for the design, construction and operation of experiments changed over the past ten years?

| Much Reduced | Somewat | About the | Somewhat | Much     |
|--------------|---------|-----------|----------|----------|
|              | Reduced | Same      | Improved | Improved |
| 0            | 0       | 0         | 0        | 0        |

6. Please summarize the physical facilities your group can access for the construction and operation of experiments, such as machine shops, clean rooms, high bay areas, computing clusters, etc. Include any detailed information that is readily available, such as approximate square footage, number of CPUs or percent time available to your group. If detailed information is not easily available, a general description is fine.

If your group does not have access to any physical facilities, skip to the next question.



7. How have the facilities available to your group for construction and operation of experiments changed over the past ten years?

| Much Reduced | Somewat | About the | Somewhat | Much     |
|--------------|---------|-----------|----------|----------|
|              | Reduced | Same      | Improved | Improved |
| 0            | 0       | 0         | 0        | 0        |

8. For new faculty appointments, are start-up packages provided by your university a significant source of new infrastructure? How do startup packages now compare to those of ten years ago?

9. What area(s) of R&D does your group work on? Select all R&D topics you are currently working on, and those you expect to be working on in five years.

Current R&D R&D in 2012

| ILC Detectors                    |     |
|----------------------------------|-----|
| LHC Detector Upgrades            |     |
| Neutrino Detectors or Sources    |     |
| Astrophysics/Cosmology Detectors |     |
| Generic Detectors                |     |
| Accelerator R&D                  | - E |

10. Please share any additional comments or concerns you may have regarding the technical infrastructure at HEP universities, including policies and practices for supporting infrastructure by the funding agencies, and any suggestions you have to preserve, strengthen and make the best use of these important resources.



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#### 3. Students

Please provide us with some information on the number of students in your group, and the source(s) of their funding support in FY06. Include only those students for whom you are responsible as Pl. Grant support is the annual funding provided by DOE or NSF to a university group in response to the university proposal process, while project transfer support is tied to specific experiments and is generally controlled at the

project level.

# 11. Provide an estimate of the number of students in your group and their source of support in FY those students for whom you are responsible as PI. Round to the nearest selection in the drop dow rounding, the sum may not exactly equal the value you enter in "Total FTE."

|                           | DOE Grant | DOE Project<br>Transfer | NSF Grant | NSF Project<br>Transfer | Other Federal | Non-Federal<br>University |
|---------------------------|-----------|-------------------------|-----------|-------------------------|---------------|---------------------------|
| Exp'tal Undergraduates    | -         | •                       |           | -                       | -             |                           |
| Theory Undergraduates     | -         | •                       |           | -                       | -             |                           |
| Accelerator Undergraduate | -         | •                       |           | -                       | -             |                           |
| Exp'tal Grad Students     | -         | •                       |           | -                       | -             |                           |
| Theory Grad Students      | -         | •                       |           | -                       | -             |                           |
| Accelerator Grad Students | -         | •                       | •         | -                       | -             |                           |

# 12. What is your general impression of student interest in high-energy physics, compared to five years ago?

| Much Higher | Somewhat<br>Higher | About the<br>Same | Somewhat<br>Lower | Much Lower |
|-------------|--------------------|-------------------|-------------------|------------|
| 0           | 0                  | 0                 | 0                 | 0          |

13. How does the availability of funding limit the number of graduate students in your group? Indicate the number of interested, qualified students you typically evaluate, on average, for each PhD thesis student accepted into your group.

| 3 or more | 2 | 1.5 | All Qualified<br>Students |
|-----------|---|-----|---------------------------|
| 0         | 0 | 0   | Accepted                  |

14. Please share any additional comments or concerns you may have regarding undergraduate and graduate students in HEP university groups. In particular, we are interested in the relative use of TA's and RA's to support students in experiment and theory, and how this may have changed over the past ten years.



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#### 4. Demographics

For normalization purposes, please provide us with some information on the rest of your group and their sources of support. Grant support is the funding provided by DOE or NSF to a university group in response to the annual university proposal process, while project transfer support is tied to specific experiments and is generally controlled at the project level.

### 15. Provide an estimate of the number of postdocs in your group and their source of support in F<sup>1</sup> only those postdocs for whom you are responsible as PI. Round to the nearest choice in the dropdue to rounding, the sum may not equal the value you enter in "Total FTE."

|                       | DOE Grant | DOE Project<br>Transfer | NSF Grant | NSF Project<br>Transfer | Other Federal | Non-Federal ,<br>eg University |
|-----------------------|-----------|-------------------------|-----------|-------------------------|---------------|--------------------------------|
| Experimental Postdocs | -         | -                       | -         | -                       | -             | -                              |
| Theory Postdocs       | -         | -                       | -         | -                       | -             | -                              |
| Accelerator Postdocs  | -         | -                       | -         | -                       | -             | -                              |

# 16. Provide an estimate of the faculty and senior research scientists in your group in FY06. Round choice in the drop-down menu; due to rounding, the sum may not equal the value you enter in "Tota

|                             | DOE Grant | DOE Project<br>Transfer | NSF Grant | NSF Project<br>Transfer | Other Federal | Non-Federa<br>eg Universi |
|-----------------------------|-----------|-------------------------|-----------|-------------------------|---------------|---------------------------|
| Exp'tal Faculty             | -         | -                       |           | -                       |               |                           |
| Exp'tal Sr. Res. Scientists | -         | •                       |           | -                       |               |                           |
| Theory Faculty              | -         | •                       | •         | -                       | -             |                           |
| Theory Sr. Res. Scientists  | -         | •                       | •         | -                       | -             |                           |
| Accel. Faculty              | -         | •                       | -         | -                       | -             |                           |
| Accel. Sr. Res. Scientists  | -         | -                       | -         | -                       | -             |                           |

# 17. Please offer any comments you have on the policies and practices of agency support for Senior Scientists/Research Faculty.



18. How many HEP faculty retirements do you anticipate in your department in the next five years?

| None | One | Two | Three | Four | Five or more |
|------|-----|-----|-------|------|--------------|
| 0    | 0   | 0   | 0     | 0    | 0            |

19. How many new HEP faculty positions do you anticipate in your department in the next five years?

| None | One | Two | Three | Four | Five or more |
|------|-----|-----|-------|------|--------------|
| 0    | 0   | 0   | 0     | 0    | 0            |

20. The field of High Energy Physics has evolved over time towards larger experiments and longer time scales, with major facilities often located far from participating university groups, and students and postdocs often based at remote sites. How has this affected the status of HEP in your own department? Are you confident or concerned about the future? Please be explicit and make suggestions about how to approach the future of HEP in the academic setting.

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### 5. Program Management

We would like your input on the peer review processes used by DOE and NSF to manage the HEP university program.

# 20. As PI for your HEP university grant, how well do you feel the current peer-review process is working?

Very well OK Not very well

21. If you have reviewed grant proposals for DOE or NSF, or have been involved in any DOE or NSF panel reviews or site visits, please give us your opinion *as a reviewer* on how well the peer review process works.

|     | Very well | OK | Not very well | N/A |
|-----|-----------|----|---------------|-----|
| DOE | 0         | 0  | 0             | 0   |
| NSF | 0         | 0  | 0             | 0   |

22. Please provide any further comments or suggestions on the peer review process for university grant management by DOE and/or NSF. Be sure to indicate to which agency your comment refers.



23. Please comment on your experiences with inter-agency barriers or with working in areas of research that span management divisions across or within agencies (e.g., interdisciplinary research).

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6. Current and Future Research Directions

### 25. Current and projected experimental research effort:

Estimate the total FTE's in your group (faculty, postdocs and students) for each general experimental area listed below now, and five years from now. For faculty, use fraction of research time, and for all others use fraction of full time effort (FTE).

|   | Estimated<br>Current FTE FTE in 2012 |
|---|--------------------------------------|
| Tevatron (CDF, D0)  | -                                    |
| LHC (ATLAS, CMS)  | -                                    |
| ILC   |                                      |
| B and C physics (BaBar, Belle, LHCb, CLEO)                                      | -                                    |
| Neutrino physics (accelerator, solar, reactor)                                  | -                                    |
| Underground physics (dark matter search, double beta decay, proton decay, etc.) | -                                    |
| Astrophysics (cosmic rays, gamma rays, galactic neutrinos, gravity waves, etc.) | -                                    |
| Observational cosmology (CMB, SNe, weak lensing, etc.)                          | -                                    |
| Other (eg g-2, EDM, atomic parity violation, axion searches, etc)               | -                                    |

26. Current and projected distribution of theoretical research effort:

Estimate the total FTE's in your group (faculty, postdocs and students) for each general area listed below now, and five years from now. For faculty, use fraction of research time, and for all others use fraction of full time effort (FTE).

|                          | Current FTE | Estimated<br>FTE in 2012 |
|--------------------------|-------------|--------------------------|
| Particle phenomenology   | -           | -                        |
| QCD/Lattice QCD          | -           | -                        |
| Model building           | -           | -                        |
| String theory            | -           | -                        |
| Field theory             | -           | -                        |
| Astrophysics & Cosmology | -           | -                        |

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7. Your Thoughts and Comments

26. Please share any general comments or concerns you have about the HEP University program. What is working, what could be improved? Your feedback is important and confidentiality will be respected.

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### 8. Thanks!

We appreciate your feedback. The aggregate results will be made available to the HEP community and included in the report of the 2006 HEPAP University Subpanel.

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