

University Program

HEPAP Meeting

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R. S. Chivukula (and R. Brock, H. Sobel, and J. Kroll)

Perspective

- **University groups are a vital part of the particle physics program, and are central to**
 - **the design, construction and operation of non-accelerator and accelerator experiments***
 - **the analysis of data**
 - **theoretical advancement**
 - **the future: universities provide *all* students!**
 - **The strength of the NSF and DOE University groups is due to grant programs which provide**
 - **“base/core” support of faculty, postdocs, students, staff**
 - **support of centers and project-specific programs**
- “Base/Core” supported activities are at risk:
Students, Postdocs, and Faculty are vulnerable**

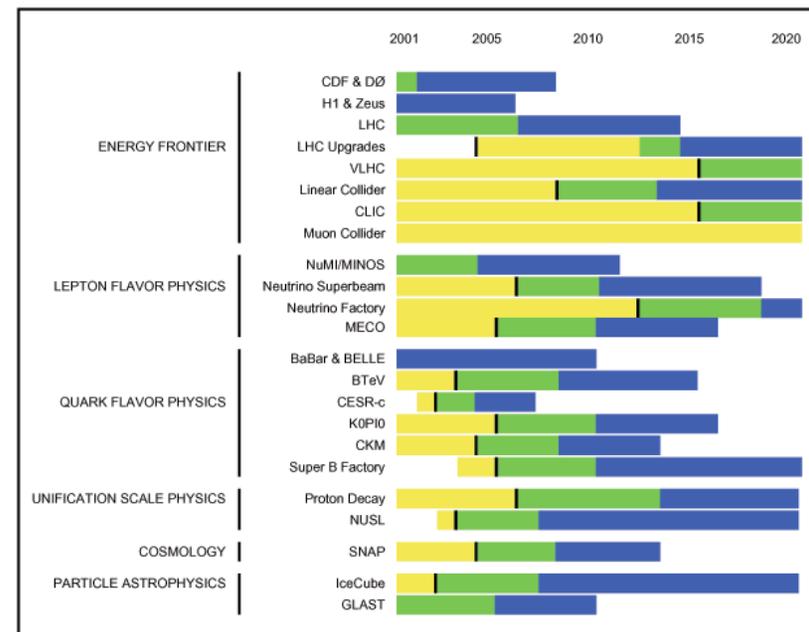
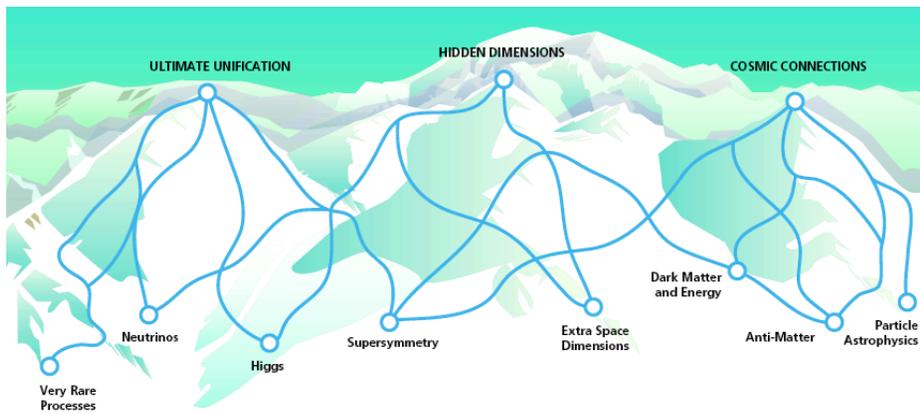
*In the future, they will likely become involved in the design and operation of accelerators

Users?

- **Us·er**: One that uses: *a user of public transportation**, ...
- **Leaves the (wrong) impression that university researchers wait for the labs to call with data after the experiment is done...**
- **... without university students, postdocs, research staff, and faculty, experiments could not be built or operated, data analyzed, and scientific results obtained.**

**The American Heritage® Dictionary of the English Language, Fourth Edition*

We know where we want to go...



Are the resources in the University program matched to its responsibilities in executing the science program?

Physics Opportunities vs. Resources

- **We are at a **challenging** point in our history:**
 - we have **promising ongoing programs**:
SLAC & FNAL, Non-accelerator Physics
 - we must mobilize to exploit **extraordinary new physics opportunities** at the LHC and elsewhere
- **We need to realize the physics potential of the ongoing program, while ramping up the program of the future.**
 - How do we reconcile these competing manpower and financial requirements?
 - At what cost do we “redirect/reprogram” from the Tevatron/BABAR to the LHC/LC?

The Goal

Initiate a discussion:

Is the University-based program matched to the high-energy physics roadmap?

Input:

- information from collaborations
 - information from agencies
- (as feasible)

(data complements DOE/NSF census and COV reports)



Questions asked of DOE & NSF

- For FY01 & FY03:
 1. Funded Effort: Total (FTE) number of supported tenure-track faculty, postdocs, graduate students, and technicians. If possible, the number of senior research personnel (i.e. research faculty, not tenure-track) FTEs for these years.
 2. Funding Information: Total amount of funding available, distribution of grant levels per tenure-track faculty.
 3. Distribution of funding to universities by experiment.

Funding-Based: complementary to DOE/NSF Census

Agency Questions (cont'd)

- A discussion of significant changes between FY01 and FY03.
- An update on FY04 and projected FY05 levels for university program support.
- A statement of general policies regarding support of **senior research personnel** at universities, procedures/programs to support **young faculty**, and **coordination between NSF and DOE**.
- What impact do project funds (e.g. PFC, MRI, etc.) have? Is there a risk to the core PI-based program?

Separate labs (e.g. LANL, Cornell); include EPP and HEP portion of Theory

DOE Questions

1998 Gilman Subpanel Recommendations:

Recommendation on the Level of Funding for the University-Based Program

An important part of the charge concerned the university-based high-energy physics program and its optimization within the overall plan for the next decade. The Subpanel intensively examined the status of high-energy physics research at universities and makes a major recommendation:

The Subpanel recommends that, over a two-year period, the annual DOE operating funds for the university program be ramped up by a total of 10% above inflation. The Subpanel encourages the NSF to make a similar increase in its experimental and theoretical elementary particle physics programs. These increases should be used for activities judged to have the largest impact on physics goals and student training. This would partially restore the losses of the last five years and better prepare university groups to use the new facilities.

To what extent was this implemented?

What are current needs?

1998 Gilman Subpanel Recommendations (cont'd):

Establishing a University-Based Detector R&D Program

The Subpanel recommends that a detector R&D program, funded at an annual level of \$2 million, be initiated to support exceptionally promising projects for future experiments.

Sharing of University Technical Resources

The Subpanel supports the arrangements that universities have made to share infrastructure with other universities and with the national laboratories. We encourage technical collaboration on innovative ideas. The Subpanel recommends that each national laboratory appoint a liaison who can be contacted by outside physicists wishing to explore the possibility of technical laboratory-university projects.

Comparative Reviews of University Groups

We recommend that, on a trial basis, the DOE external peer review of proposals be augmented by direct comparative review of the groups supported by the university program. The physics groups at ANL and LBNL, and eventually BNL, should be included in this review process on a periodic basis.

NSF Questions

1. What were the causes and fallout of the FY02 shortfall in PI-based university funding?
2. To what extent was this “rectified” in FY03?
3. What is the situation in FY04, both in EPP and HEP Theory?

Summary and Outlook

Goal is to initiate a discussion:

Is the University-based program matched to the high-energy physics roadmap?

Agenda:

- DOE/NSF presentations to address questions (as far as possible)
- Manpower Survey Results