

NSF Elementary Particle Physics

NSF EPP-PA Available Numbers

Presentation for HEPAP Meeting

Washington DC

April 19, 2004



Jim Whitmore

Marv Goldberg

Jim Stone

- “The US HEP program has embarked on an ambitious set of experiment responsibilities. If we trace the planned and ongoing accelerator based programs from 2000 to 2010, it significantly increases in size, complexity and scope. Include non-accelerator activities, and that expansion is even more striking.”
- PREMISE: “The US experimental program cannot succeed without a vigorous, flexible, faculty-driven university-based research program [..... with] entrepreneurial, supported faculty who decide how best to deploy their efforts and how best to spend their salary money within those efforts.

Primary Question:

- “CAN WE DO WHAT WE HAVE AGREED TO DO?”
- “What we would like to understand from the NSF and DOE presentations [is] the answer to this PRIMARY QUESTION.”
- “Specifically, [this] encompasses three issues”:

Issue #1

- Have resources for the university program matched this planned expansion of experimental program responsibilities in the last few years?
- There has been a 60% increase in EPP+PNA resources from 2000 to 2003
- And, as Marv has discussed, other project support is also available.
- To help answer the issues, provide a few 'quantitative metrics'

Metric #1: Total \$

	EPP Expt	PNA Expt	Total
• FY85	\$~20.1M	---	
• FY00	\$25.08M	---	\$25.08M
• FY01	\$22.77M	\$10.28M	\$33.05M
• FY02	\$21.89M	\$10.67M	\$32.56M
• FY03	\$28.49M	\$11.70M	\$40.19M
• FY04	In progress		
• All numbers exclude the Cornell Lab			

Issue #2

- Will resources for the university program match the expanded planned program in the next few years?
- ??

Issue #3

- If the answer to #1 is 'no', can the out-years' support, #2, be counted on to fix the problem?
- ??

Metric #2: Scaled \$

- As of **February 26-28, 2003 (for the NSF COV)**
- Averaged over all “open” awards (ie 2000-2002):
- 52 EPP total Awards [from now on, I exclude (9) = Cornell, LHC Ops, Suppl. and R&D awards]
- 43 EPP groups at 34 universities
- 33 PA (not incl. NA) groups at 19 universities
-
- | | EPP | PA |
|---------------------|---------------|---------------|
| • \$/PI = | \$208K | \$120K |
| • \$/Sr Physicist = | \$140K | \$ 93K |

Metrics #3,4: Total & detailed effort

- “Total number and kind of supported people”
- About 15% are Women/Minority PIs
- (Excl. QuarkNet) **EPP** **PA**
- Senior physicists 135 70
- Post docs 71 28
- Graduate Students 103 44
- Undergrads 50 44
- **Totals** **359** **186**

Metric #5: Experiment distribution

Experiment	Sr Phys	\$	\$\$	DOE%
• Tevatron	40	5,319K	20.9	33
• Neutrino	12	2,128K	8.4	--
• LHC	39	5,697K	22.5	28
• DESY/CERN	8	1,368K	5.4	--
• BNL/TJNAL	9	1,230K	4.8	1
• CESR	10	1,474K	5.8	1
• SLAC	3	504K	2.0	19
• Other	14	1,173K	4.6	3
• Particle AstroPhys	70	6,475K	25.5	15

Derivatives?

- Based on the February 2003 COV numbers, I do not have any derivatives, except for the overall totals which we have shown.
- With some effort, we could if the issues warrant it and if the quantities requested are well defined.
- But also consider where project support to university groups should weigh in?

Setting Priorities, Conclusions

- Funding for EPP, PNA has increased
- PIs “tell us” what they want to do –
Proposals to NSF
- Peer (merit) reviews, including Panels of external experts in the field to give us advice and to help us set priorities