

# **BaBar University Program**



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# Outline



- Information Sources
- BaBar Status
- How BaBar Runs
- Basic Problem
- General Reaction
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  - Coping Mechanisms
- Specific Concerns

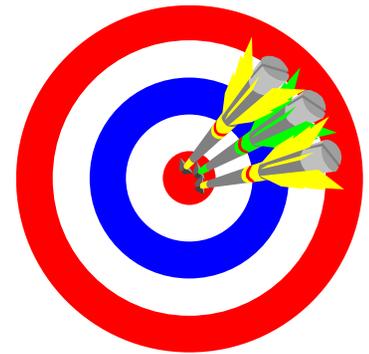
# Information Sources



- US (DoE, NSF) BaBar PI's
  - Range of Large, Medium and Small groups responded
- BaBar/SLUO Data-Base
- BaBar Leadership
- **Caveat**
  - Opinions are my own

# BaBar Program

- BaBar Physics program will be described in some detail by Stew
  - Exceeding Expectations
  - Integrating over 200 pb<sup>-1</sup>/day
- Planning/need upgrades/replacements for key detector components
  - IFR
  - SVT
  - DCH



- Long Extended Runs

- Plan to run non-stop to July 2001 ( $\sim 75 \text{ fb}^{-1}$ )
- Pressure to keep detector up
- Pressure on computing
  - Reconstruction
  - Simulation
- Pressure on analysis groups
  - Push Systematics
  - Develop new analyses



# Common Tasks

- BaBar has a list of “Common Tasks” which are shared amongst the collaboration
  - Detector operations/maintenance, data taking, data production, calibrations etc
  - 160 FTE positions (decreasing over time)
    - 30% FTE/collaborator
    - About 80% filled
    - US “holding its own”
      - SLAC does more than its share
      - Decreases in (students+post docs)/faculty balance will make it harder for US University groups

# BaBar Staffing

	Non-US	SLAC	US, non SLAC
Faculty	87	7	68
Grad Students	81	7	49
PhD Staff	68	34	41
Post Doc	41 (109)	13 (47)	43 (84)
Engineers	27	11	16
Total	277 (304)	61 (72)	201 (217)

# Notes on table

- Number in parentheses on Post Doc line is sum of post-docs and PhD's (not everyone classifies in same way)
- Number in parentheses on Total line includes engineers
- Doesn't include small number of undergraduates, programmers, non-PhD staff, administrators...

# Ratios



	Non-US	US, non-SLAC
Grad/faculty	.93	.72
Phd/Faculty	.78	.60
Post Doc/Fac	.47	.63
All PHD	1.25	1.23
Engineers/Fac	.31	.23

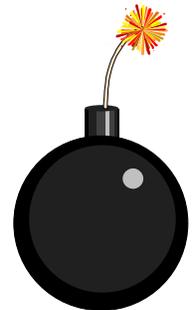
# Leadership



- Key Positions currently held by
  - Spokesperson - Stew Smith (US-University)
  - Technical Co-ordinator - Yannis Karyotakis (Non-US)
  - Computing Co-ordinator - Jim Smith (US-University)
  - Physics Analysis Co-ordinator - Gautier Hamel de Monchenault (Non-US)

# Basic Problem

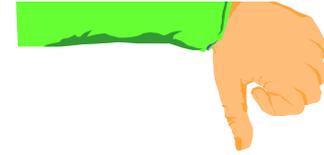
- University budgets are dominated by salary costs.
  - Many of these costs are determined by institutions
    - Student stipends
    - Tuition
    - Faculty salaries
  - Loosing competitiveness for post-docs
  - **Flat-Flat or Worse** funding is eroding staffing levels
    - Very few university groups now have direct access to technical support



# Consequences

- Discretionary spending disproportionately affected (just like for Government budgets!)
- Choices determined by best guesses as to future
  - Gilman panel recommended increase. Reasons for increase haven't changed
  - Wish to preserve student base, post-docs so can take advantage of new opportunities.
    - Educational Mission

# Feeling is

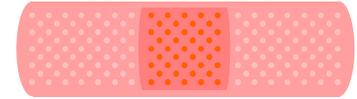


- Have been fairly successful at delivering message of the importance of lab funding to exploit opportunities available at current machines
- Have not made clear that to maximize benefits from that investment need a healthy university program
  - University funding was 17% of total and is now 13.5%

# Morale Issues

- Universities have been complaining of funding situation for a long time now
  - Crying Wolf?
    - Long slide but still have a university program
    - **Note - little boy was finally eaten by wolf....**
- System is not linear, another “small” cut can have a devastating effect
  - Beginning to see exodus of talent from field?
    - Many universities report decline in number of grad students
    - Decrease in pool of post-docs

# Coping Mechanisms



- Have to balance budgets
  - Gaps in employment period between postdoc leaving and hiring a replacement
  - Moving people away from labs (if university on/off campus rates make this cost effective)
  - Less travel so fewer opportunities for interactions, talks
    - Opportunities for undergraduates declining
    - Post-docs need talks
    - Faculty need to give talks (promotion/tenure)
  - Fewer Students, less summer hires for trial periods...

# General Comment

- Many University Departments have “Recruitment Plans”
  - That is, have decided how to replace faculty who retire
  - Will not necessarily replace like with like
  - Factors in decision
    - Relevance of field to overall goals
    - Demand
      - Graduate student level
    - Funding growth

# Specifics

- Two of largest university groups have managed to keep a technical support base
  - Have received significant infrastructure grants, university support to build up state of the art facilities.
    - Large Capital Investment
- Both have work for technical staff to do on BaBar
  - 2002 SVT disassembly
  - IFR - Resistive Plate Chambers
    - Remediation studies important for other HEP experiments including LHC, OPERA

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- These facilities are also a resource for other fields and experiments which pay to use them such as MAP, Borexino
  - They are an educational resource for training students in cutting edge techniques.
  - Both groups expect to lose key technicians if funding cut.
    - Loss of funding agency support makes it hard to maintain university support - double loss
    - Loss of support from departmental colleagues who have also benefited from facilities.

# Medium Groups

- For a “medium” sized group the funding cut is about the cost of a graduate student or two-thirds of a post doc.
  - Make it harder to cover “service” activities, decrease time that can spend on analysis.
  - Decreases “job satisfaction”
  - Spend more time focused on ensuring coverage of immediate needs, less time in long term planning, development
  - ***Stress***

# Small

- Not much left to cut.
  - Grad students etc are quantized
    - Cannot cut 10% of a student
    - Cut summer salaries?
      - Will lead to some faculty teaching in summer rather than working full time on research
  - Will find it hard to do share of service activities
    - Will put a heavier load on post-docs - decreasing time they can spend on analysis



# Want v Need

- Will never have a budget that gives all universities what they want.
- Do we have a budget which gives universities what they need?
  - Are we using what we get effectively?
    - Comparative Reviews
    - Agency Guidance
  - Do we get done what we need to get done in a timely manner?
    - Is it a problem if results get delayed?

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- Are we in a stable condition?
    - Doesn't mean that want funding to be guaranteed
    - Does mean that if **meet or exceed expectations** can expect funding to continue at a level that will allow continuity
    - Feeling is we are in decline
      - Not in terms of intellectual excitement, challenges
      - But in terms of ability to be full participants in those challenges
        - And in ability to include next generation in those challenges...

# Summary



- University groups are currently on survival rations.
- Cannot continue forever to do more with less.