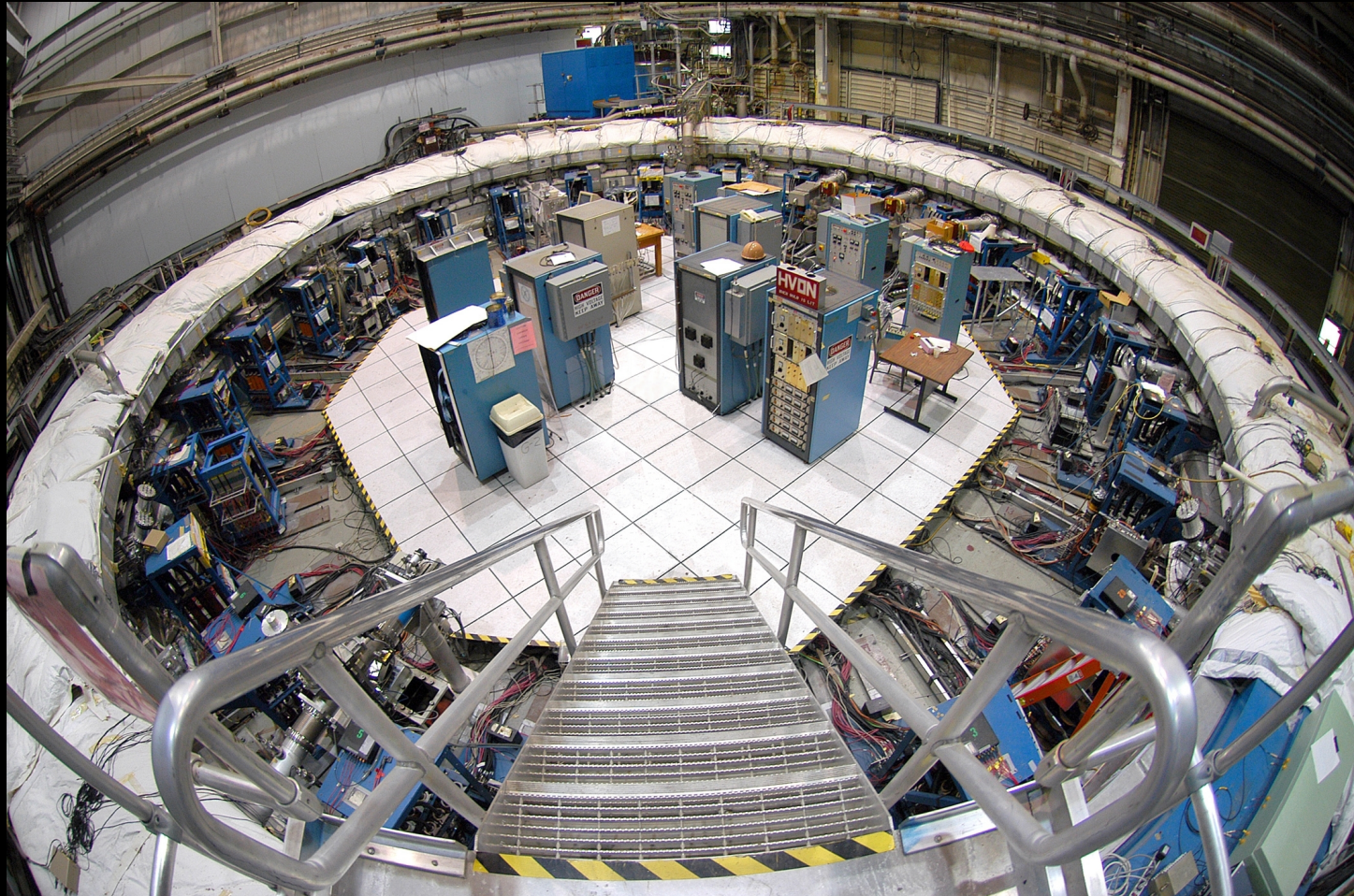


Muon g-2 Status

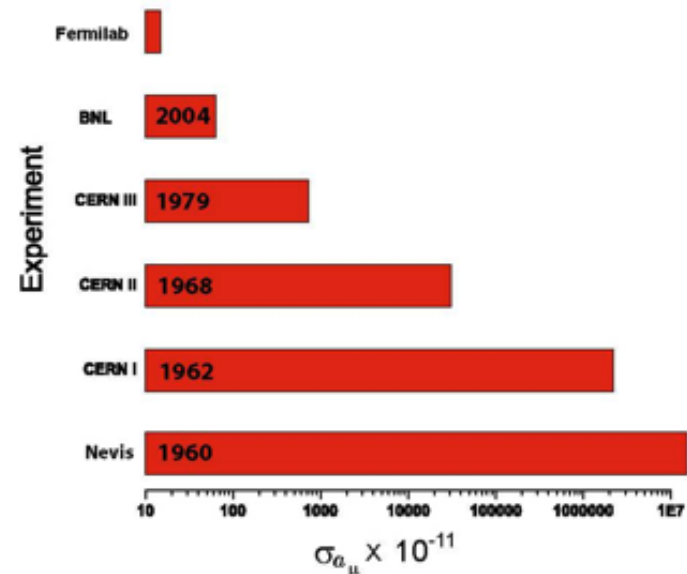
Chris Polly, Fermilab



On the path to approval...

- **March 09:** Proposal presented
 - **PAC recommended independent review of costs**
- **May 09:** Report from independent cost review committee, chaired by Mu2e Project Manager Ron Ray
- **Summer 09:** Collaboration and Fermilab engineering focus on building and accelerator
 - **Building design report, improved accelerator plan,**
- **Oct. 09:** Collaboration's updated cost document to PAC
 - **Ray Committee also reconvened. Costs agree to 5-10%**
- **Nov. 09:** PAC recommends Stage-1 approval
- **Feb. 10:** DOE Briefing
- **April 10:** Written proposal submitted to DOE
- **Aug. 10:** Presentations to review committee in Bethesda

Waiting for results from review and word from DOE on approval/fiscal profile...



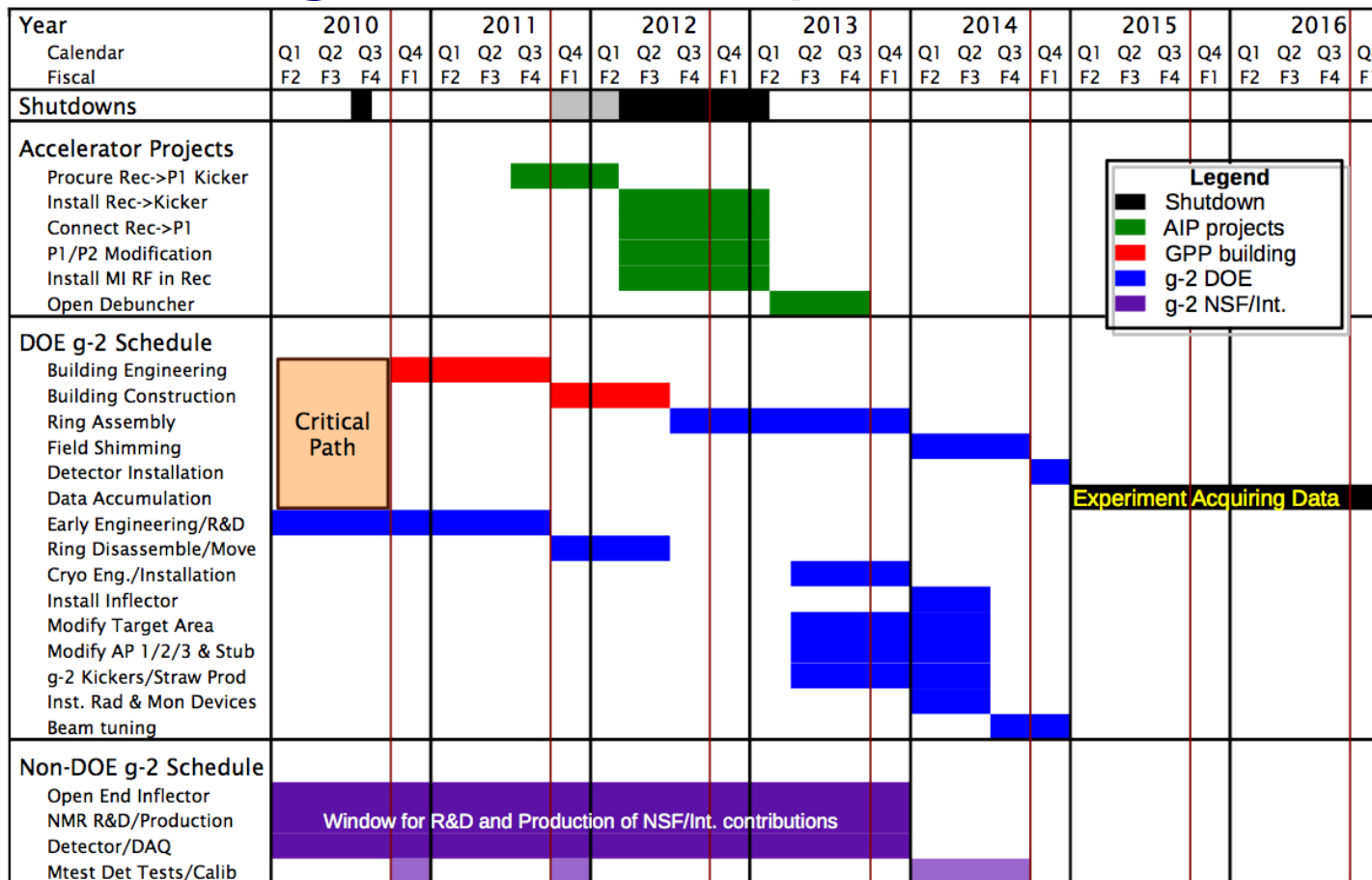
FNAL Personnel Active on Muon g-2

| | FTE* | Dept | Muon g-2 Responsibilities |
|--------------------|-------|------|-------------------------------------|
| Brendan Casey (P) | ~0.5 | PPD | detector development, straw systems |
| Chris Polly (P) | ~0.5 | PPD | storage ring, project management |
| Mike Syphers (P) | ~0.35 | AD | accelerator modifications |
| Mandy Rominski (T) | ~0.25 | PPD | detector development, straw systems |

* My estimations

- Total Head Count: 4, Total FTE: 1.6
- FESS developed Project Definition Report
- Quite a number of personnel contributed a few weeks of their time and expertise in developing the proposal or helping with specific tasks (another 0.7 FTE here):
D. Harding, P. Huhr, A. Klebaner, J. Johnstone, A. Leveling, J-F. Ostiguy, N.V. Mokhov, J. P. Morgan, V. Nagaslaev, D. Neuffer, A. Para, M. Popovic, A. Soha, P. Spentzouris, S.I. Striganov, G. Velez, S. Werkema
- Level of effort needed in 2011 depends on approval (min. 3-4 PhD FTE)

Muon g-2 Technically-Drive Schedule



Key tasks for FY 2011

- ➔ Finalize eng./const. plans for building, order long lead-time items (crane)
- ➔ Incorporate as much Recycler work as possible into 2012 shutdown plans
- ➔ Detailed WBS for ring disassembly

Other FNAL tasks for FY 2011

- ➔ Simulation/planning of accelerator mods, particularly conventional target in APO
- ➔ R&D for improved g-2 storage ring kickers
- ➔ Continue development of straw systems
- ➔ Migrate/develop storage ring simulation

Muon g-2 summary of costs

| Building & Tunnel Connection | Cost | Cont. | Total |
|---|-------------|--------------|--------------|
| <i>g</i> -2 conventional facilities | 5240 | 25% | 6550 |
| Total | 5240 | 25% | 6550 |
| Accelerator Upgrades | Cost | Cont. | Total |
| Recycler RF | 3022 | 17% | 3536 |
| Recycler extraction kicker | 711 | 50% | 1066 |
| Recycler to P1 transfer* | 2043 | 50% | 3065 |
| Prepare P1/P2/AP1 lines* | 850 | 50% | 1275 |
| Open Debuncher aperture* | 250 | 50% | 375 |
| Total | 6876 | 36% | 9317 |
| <i>g</i>-2 Experiment (Other) | Cost | Cont. | Total |
| Detector/electronics/straws/DAQ | 3066 | 30% | 3986 |
| Inflector | 462 | 30% | 600 |
| Field probes | 154 | 30% | 200 |
| Moving ring (BNL D&D) | 571 | 75% | 1000 |
| Total | 4253 | 36% | 5786 |

| <i>g</i>-2 Experiment (DOE-HEP) | Cost | Cont. | Total |
|--|--------------|--------------|--------------|
| New replacement target | 43 | 50% | 64 |
| Li lens (costed) or 2 rad-hard quads | 733 | 50% | 1100 |
| PMAG (pulsed or DC rad hard) | 425 | 50% | 638 |
| Quads in AP2 | 400 | 75% | 700 |
| Debuncher, AP3 & Beamline stub | 1050 | 75% | 1838 |
| Radiological issues | 67 | 50% | 100 |
| Diagnostics | 300 | 50% | 450 |
| Moving ring (\$1M also in D&D) | 2209 | 75% | 3865 |
| Recon ring & maintenance | 3000 | 50% | 4500 |
| Cryo for <i>g</i> -2 experiment | 1270 | 50% | 1905 |
| Inflector installation | 504 | 19% | 600 |
| Kicker modification | 570 | 42% | 809 |
| Fermilab straw detectors | 385 | 30% | 500 |
| Project management | 2000 | 30% | 2600 |
| Total | 12956 | 52% | 19669 |

- Total project cost of \$41M (\$12M in cont & \$6M common to Mu2e)
- Independent cost review agrees with collaboration's to 5-10%