

## Fermilab Irradiation Facility Specs:

- Beam specs:
  - 400 MeV proton beam
    - Ionization damage--TID
    - Displacement damage---NIEL
  - 4 second slow spill once per minute
  - $2.7 \times 10^{15}$  protons per hour
  - operate for 12 hours per week
  - Max  $\sim 3 \times 10^{16}$  per round
  - Beam spot tunable 1mm – 2 cm diameter

- Facility Equipment:
  - air compressor/dryer system in the counting house that can supply air into the beam enclosure to operate the vortex chiller Timon proposed to bring
  - box to hold samples
    - 21 card slots
    - 11.02''(280mm) wide, 9.19'' in height, 0.1'' thick.
  - motion table that can move samples vertically and horizontally that the box mounts on and is remotely controllable
  - pneumatic table to move samples out of the beam on pistons (may not be ready in November)
- RG58 SHV terminated, RG58 BNC terminated cables, cat6 cabling that runs between patch panels in the beam enclosure and counting house
- Additional user cables can be pulled
- electronics rack space in both the counting house and beam enclosure
- desktop computer in the counting house that is reachable on the Fermilab public network and can connect via private network to devices in the hall
- security camera in the hall that provides a view of samples in the cave
- Use CERNs IRRAD Data Manager database to use for registering samples
- Provide a set of aluminum tags for dosimetry and the Fermilab counting facility has agreed to count them
  - We may also want to provide our own

## Status

- Construction work is well underway
  - Beamline is under vacuum
  - Cables to counting room in place
  - Counting room equipment is being installed now
- Accelerator Readiness Review Aug 31
  - Signoff of the shielding assessment
- Linac scheduled to turn on week of Sep 28
- Beam commissioning in October
- Users expected to start in November
- Initial schedule: alternate weeks between CMS and ATLAS for at least a few months
  - Jessica M. is the point of contact for ATLAS requests

**Please start thinking about what you would like to irradiate**

**[Irradiation Sign-Up Google Doc](https://docs.google.com/spreadsheets/d/1PYIwe-HBBs5rf1nCvwgBVmW0WgN50Mm0Kd5FvZSwErI/edit?usp=sharing)**

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