



ITA Workshop Future Facility

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Overview

- Current ITA facility at MTA will only operate through 2026. When the linac turns off for the PIP-II upgrade it is not in the lab plans to turn back on again.
- This means that any future irradiation work at FNAL would require a new extraction line and enclosure/facility coming off PIP-II.
- There is strong interest in continuing to support irradiations at FNAL for future colliders.
 - We will have invested years into building the operational expertise.
 - Interest expressed through the Snowmass process, see [white paper](#).
- We need to start planning for this now.

Some Experiment considerations

- For future collider use there would be a desire to reach fluences on the order of 10^{18} protons/cm² in a few days (or less) of beam (factor 100 over ITA)
- Flexibility to scale beam intensity back several orders of magnitude to also support SEU/SEE
- Multiple experiment stations
- Significant infrastructure attached to beam enclosure
 - Counting house with cabling/monitoring/gas support
 - Shielded cold room for short and long-term storage
 - On location dedicated RAF type facility
 - Post irradiation space for users to do bench testing and measurements
 - Robotics for remote handling/retrieval of very hot samples
 - Sufficient beam monitoring and active sample cooling
 - Dedicated safety support team
 - Air handling
- Now over to Eduard on PIP-II capabilities and then back for discussion.

Potential ITA location (possibly with new FTBF) Drawing



Drawing courtesy Tom Kobilarcik