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Fermilab's Muon Campus: Status, Experiments, and Future

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The Fermilab Muon Campus, repurposed Tevatron-era Antiproton Source facilities, is currently the home to the $g-2$ and Mu2e muon experiments. Collecting data since 2017, the $g-2$ experiment is wrapping up a final run before the Muon Campus transitions to Mu2e operation. Currently in the commissioning process, the Mu2e experiment is expected to begin calibration and data collection in fiscal year 2024. A majority of the Muon Campus is shared between the two experiments, however the modes of operation for each are significantly different. An 8 GeV primary proton beam strikes a target to produce a 3.1 GeV/c secondary muon beam for $g-2$, while the Mu2e experiment uses the Delivery Ring, formerly the Antiproton Accumulator Ring, for a pulsed, resonantly extracted, 8 kW, 8 GeV proton beam incident on a target in the experiment's target hall to produce a muon beam for the experiment. The design and current state of the Muon Campus and the current and future plans of the $g-2$ and Mu2e experiments, including the transition between operating modes, will be presented.

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Footnotes

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Yes

Primary author: BOI, Steven (Fermi National Accelerator Laboratory)

Presenter: IZZO, Christopher (Fermi National Accelerator Laboratory)

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