Contribution ID: **20** Type: **not specified**

# The NOvA Test Beam Program Content

*Monday 14 July 2025 17:50 (20 minutes)*

The NOvA (NuMI Off-Axis electron neutrino Appearance) Experiment is a long-baseline neutrino oscillation experiment composed of two functionally identical detectors, a 300 ton Near Detector, and a 14 kton Far Detector separated by 810 km and placed 14 mrad off the axis of the NuMI neutrino beam created at Fermilab. This configuration enables NOvA's rich neutrino physics program, which includes measuring neutrino mixing parameters, determining the neutrino mass hierarchy, and probing CP violation in the leptonic sector. The NOvA Test Beam experiment deployed at Fermilab between 2018 and 2022 used a scaled-down 30 ton detector to analyse tagged beamline particles. The beamline selected and identified electrons, muons, pions, kaons, and protons with momenta ranging from 0.4 to 1.8 GeV/c, as understanding how the detector responds to these particles found in the final state of neutrino interactions is crucial. This talk describes the components of the beamline and their purpose, showing the highlights and challenges of the NOvA Test Beam program that aims to produce results for particle response in NOvA detectors.

**Presenter:** BANNISTER, Emerson (University of Sussex)

**Session Classification:** Student Talks