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New Directions in International Masterclasses

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International Masterclasses (IMC) have developed since their introduction in 2005. Masterclasses for International Day of Women and Girls in Science (IDWGS) and World Wide Data Day (W2D2) are innovations that began two years ago and are going well. With IDWGS masterclasses, a new pathway has been opened for high school girls to be encouraged in physics. W2D2 establishes new ways to bring masterclass activities directly to high school classrooms. More recently, IMC has experimented with masterclasses exclusively for university-level students. New masterclass measurements beyond those for the LHC have been developed and tested, notably the MINERvA Neutrino Masterclass, which is the first IMC offering in neutrino physics and the first based on a Fermilab experiment. In the MINERvA measurement, students are able to study interactions of a neutrino beam with carbon nuclei, using conservation of momentum to draw conclusions. Other masterclass measurements related to Belle II and medical imaging are also in the testing stage. More neutrino masterclasses are in development as well, especially for MicroBooNE. A longer-term goal is the creation of a DUNE masterclass measurement as that facility reaches the data-taking stage.

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