

Abstract Submitted  
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**Automation for the High Luminosity Large Hadron Collider (HL-LHC) Tracker Forward Pixel (TFPIX) module assembly at The Catholic University of America in Washington, D.C.**<sup>1</sup> CONETT HUERTA, Catholic Univ of America, CMS COLLABORATION — The Upgraded Compact Muon Solenoid (CMS) experiment at the European Center for Nuclear Research (CERN) will explore physics at the high energy frontier in the High Luminosity Large Hadron Collider (HL-LHC). The CMS pixel detector is the first detector to interact with the particles created in the collision; therefore, a hardware upgrade is necessary to maintain tracking performance on account of the increased luminosity. We will present an overview and description of the work being done on the Forward Pixel detector upgrade (TFPIX). The Catholic University of America (CUA), as a part of the US-CMS collaboration, plays an important role in the upgrade-effort through the commissioning of an on-site clean room laboratory (CUA-HEP Lab) with state-of-the-art automation technology. The CUA-HEP Lab is a class 8 clean room, it uses an automated Aerotech gantry - including custom LabVIEW automation software, to assemble pixel modules. A deep understanding of the hardware development and construction processes will be of great use for future data analysis and understanding the physics in the HL-LHC run.

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Conett Huerta  
Catholic Univ of America

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