

## Overview of Fermilab ASIC Development in Photodetectors and Related Areas

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Fermilab Microelectronics department has a strong effort in a number of areas. Traditionally, we focused on addressing the next challenge for High Energy Physics, including operation in extreme environments including cryogenic and radiation, including developments for DUNE and LHC and dark matter searches. In the last few years, we have expanded our portfolio to use the expertise gained in those areas to chips capable of single digit picosecond timing, AI-on-chip, support for quantum computing and quantum sensing as well as high speed photonics. Some of the highlights will include MIDNA and SPROCKET (readout of skipper CCDs), SParkDream (silicon photonics link at 10Gbps), efforts in cryogenic digital SiPMs and SNSPDs. We have also been developing a wide range of IP, including ADCs and DACs for 4K operation, and radhard/cryogenic Edge AI (using HLS4ML)

### **Do you need a VISA letter for traveling to Canada ?**

No

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