



## Photonics Forum

June 5, 2019

11:45 a.m. -  
1:15 p.m.

9th Floor

Room 901

Photonics Center

8 Saint Mary's Street

Lunch will be served!



## Dr. Steven Johnson, University of Glasgow (UK)

### Applications of Single-Pixel Imaging

Single-pixel imaging enables the photography of phenomena that would be impossible with a traditional camera. Most images are captured with pixelated-arrays such as a CCD or CMOS sensors; whereas single-element detectors can be manufactured to be sensitive to wavelengths outside the visible spectrum or have very fast response times. By using a detector with high temporal resolution, events occurring on the order of nanoseconds can be imaged. Using a digital micro-mirror device and a pulsed laser, Dr. Johnson has applied single-pixel imaging methods to many applications, including: LIDAR to create 3D videos of a scene, imaging the light-in-flight of a multimode optical fibre, and fluorescence lifetime imaging.

Steven joined the Optics Group at the University of Glasgow from e2v technologies. His research interests span the field of computational imaging, ultra-fast phenomena imaging, and optical fibres. He studied for his Ph.D. at the University of Birmingham (UK), developing ultra-stable lasers, optical cavities, and ultra-cold atom systems. After his Ph.D., he moved into industry, working for e2v technologies on the development team for CCD and CMOS imaging sensors for space-based applications. At e2v, he worked on devices for the JUICE mission to Jupiter's moons and ground-based telescopes.