

## Smart X-ray Detectors for Coherent Applications

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Modern electronic fabrication offers many more attractive x-ray detector possibilities to the coherent x-ray community than are currently available. Some novel x-ray detectors that are being considered or being developed at Cornell University and elsewhere are discussed. These include multi-port, deeply-depleted CCDs, and CMOS-based Pixel Array Detectors (PADs) in which each pixel performs relatively sophisticated signal processing. Ideas include PADs with time correlators in each pixel, pixels with multiple gains for wide signal span, and imagers capable of framing on submicrosecond time-scales. In the spirit of the workshop, I hope to outline what is technically possible and then collectively explore what is desirable for various x-ray applications.