This talk is an overview of the detector R&D effort at BNL’s Photon Science Division. The main part is dedicated to monolithic imaging detectors with fast readout, e.g. X-ray Active Matrix Pixel Sensor (XAMPS) for the X-ray Pump Probe (XPP) instrument at the Linac Coherent Light Source (LCLS), SLAC. The uniqueness of the LCLS opens the way to many new experiments and at the same time requires the development of challenging, innovative and sophisticated detectors; detectors dedicated to single experiments, which is a non-typical photon-science approach. I will then discuss the development of fast imaging sensors for X-ray Photon Correlation Spectroscopy (XPCS) based on vertical integration as well as our progresses in the field of detectors for soft and hard x-rays.

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