Supermassive black holes, millions to billions of times the mass of our Sun, live in the center of every massive galaxy. When they grow via the process of accretion, they are observed as Active Galactic Nuclei (AGN). In addition to being among the most energetic sources in the Universe, AGN seemed to be intrinsically linked to the galaxies in which they reside. By surveying regions of the sky, we can discover AGN from early cosmic times to the present day, thereby learning about supermassive black hole growth and evolution and the role they may play in shaping their host galaxies. Currently, we are missing an important piece of the puzzle in AGN evolution - luminous obscured black hole growth. To this end, I am leading a wide area X-ray survey: by probing a large volume of the Universe, a representative sample of rare objects are detected, and X-rays pierce through dust that obscures optical light, recovering AGN missed by optical surveys. By executing this survey in the Stripe 82 region of the Sloan Digital Sky Survey which contains rich multi-wavelength coverage, we have the ancillary data necessary to characterize the AGN and their host galaxies. In this talk, I will give an overview of this “Stripe 82X” survey, summarize the properties of the objects we have detected thus far, discuss what we are planning to learn from this dataset in the coming years, and how we can these data to develop best-effort practices to push into new discovery space with upcoming missions like JWST, WFIRST, LSST, and eROSITA. I will highlight a peculiar source I discovered in this survey which has now become a burgeoning subfield in AGN physics, providing unique insight into AGN lifetimes and black hole fueling.

Bio: Stephanie LaMassa received her Bachelor’s degree in astronomy and physics from Boston University at 2003. She then went on to work at the Harvard-Smithsonian Center for Astrophysics as a Mission Planner for the Chandra X-ray Observatory. Stephanie began graduate school in 2006 at The Johns Hopkins University, earning her PhD in 2011. From 2011 to 2015, she was a postdoc at Yale University, and then a NASA Postdoctoral Program Fellow at NASA Goddard Space Flight Center from 2015 to the beginning of 2017. Stephanie is now a Support Scientist at the Space Telescope Science Institute.