

YALE UNIVERSITY
Department of Astronomy
Colloquium

**“The X-ray AGN Fraction in the Field
and Maybe More”**

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ABSTRACT: A fundamental constraint to all theories modeling the interplay of supermassive black hole accretion and galaxy evolution should be the the fraction of galaxies in the local universe that host actively accreting nuclei, yet that number is poorly known. X-ray emission is the most reliable primary signature of AGN activity. The Chandra Multiwavelength Project (ChAMP) analyzes 323 Chandra fields (about 30 square deg) that overlap the SDSS, characterizing all optical/X-ray matches, employing SDSS and our own ChAMP spectroscopy as well as photometric redshifts. Our detailed volume completeness maps allow us to report here on the AGN fraction as a function of absolute optical magnitude, X-ray luminosity, and redshift, from a parent sample of thousands of SDSS galaxies. Comparison of the field and cluster AGN fraction yields surprising results. If time allows, I will also report on a dazzling binary quasar, and what galaxy merger simulations can tell us about its history.