

# **Accreting binary populations from billions of years ago to today**

Dr. Ann Hornschemeier/GSFC

While the bulk of the cosmic X-ray background is made by AGN and clusters of galaxies, the deepest Chandra surveys have revealed the most numerous X-ray emitting extragalactic population: normal and starburst galaxies. As expected based on e.g., the X-ray-Star Formation Rate (SFR) correlation in the nearby universe, the universe is teeming with X-ray binary populations. This talk will cover our recent work on galaxies in the deepest X-ray surveys, extending up to  $z \sim 4$ , moderate redshift work on a sample of Lyman Break Analogs and detailed X-ray binary studies of local galaxies. I will also describe our work on theoretical modeling of binary populations via accreting binary population synthesis combined with the latest in galaxy evolution models. Finally, some sneak preview for what might be expected from the NuSTAR mission, due for launch around June 2012, will be given.