RISE Talks Series

Who?	Melania Nynka, Postdoctoral research fellow in X-ray Astronomy at McGill University
What?	The Electromagnetic Counterparts of Gravitational Wave Events: Using X-ray Astronomy to Study the Neutron Star Merger GW170817
When?	12:00-1:00 on Thursday, March 22
Where?	Hall of Sciences, **Room 308**

The era of multimessenger astronomy has arrived: Dr. Melania Nynka returns to Drew from her talk in 2012 on the design, construction and launch of the NuSTAR X-ray telescope.

On August 17, 2017, the LIGO observatory detected the first ever gravitational wave emission of a neutron star merger and dramatically changed the landscape of astrophysics. This collision is to date the only detection that was accompanied by both gravitational and electromagnetic radiation. Light from every wavelength - radio, IR, visible, UV, X-ray and gamma-ray - dramatically erupted in the sky, and a third of the professional astronomer community and 70 observatories in space and around the globe raced to capture a detection.

While certain wavelengths brightened immediately after the collision, there was no detectable X-ray emission from the neutron star merger until 9 days after the event. Dr. Nynka will describe her experience as part of a small team that has been tracking the X-ray evolution from the beginning. Combined with other wavelengths, the emission at higher energies allows us to probe the physical processes involved in the collision between two neutron stars. Nynka details the astrophysical implications that have been uncovered, as well as the unanswered questions we are still trying to answer.

Bio:
While obtaining her PhD at Columbia, Melania Nynka helped design, assemble, and calibrate the X-ray optics currently in the space-based telescope NuSTAR. She has been involved in observational X-ray astronomy ever since, studying a wide arrange of objects like supermassive black holes, supernova remnants and neutron stars. Dr. Nynka is now a postdoctoral fellow at McGill University where she uses several X-ray satellites to explore the high-energy universe.