

Education

- Ph.D. Physics, 1996, University of Wisconsin, Madison, Wisconsin
B.S. Math/Physics, 1991, Carnegie Mellon, Pittsburgh, Pennsylvania

Current Position

Smithsonian Astrophysical Observatory, Cambridge, Massachusetts	
Associate Director – Science	2022 – present
Associate Director – High Energy Astrophysics Division	2021 – 2022
Senior Astrophysicist	2014 - present
Astrophysicist	2008 - 2014

Interests

I help lead the development of new X-ray observatories such as Arcus Probe, Athena, and XRISM. My research focuses on processes in the interstellar medium and on an atomic database (AtomDB) that is used to model the X-ray spectra of hot collisional plasmas. I lead the SAO EBIT and microcalorimeter lab to measure emission lines and fluxes from similar plasmas. I also work on other topics involving X-ray spectroscopy, including the warm-hot intergalactic medium, dust grains, and accretion processes in compact objects from black holes and neutron stars to symbiotic stars.

Professional Responsibilities

Chair Line, High Energy Astrophysics Division of American Astronomical Society	2020-present
Vice-Chair, COSPAR Panel on Capacity-Building Workshop Program	2019-present

Mission Development Efforts

PI, Arcus Probe (2014-present): Leading international effort of 100+ people with goal of developing an Explorer-class (now Probe-class) X-ray grating observatory to measure the formation and evolution of structure in clusters, galaxies, and stars.

US Representative to the Athena Science Study Team (2013-2022): Advised ESA on issues relevant to the science case for the Athena mission, including representing US interests. Collaborated closely with NASA and the US X-ray community.

Co-I, Soft X-ray Spectrometer on the Japanese XRISM mission (2017-present): Part of team of ten scientists that authored the original science justification.

Selected Recent Papers

1. Atomic Data Needs for Understanding X-ray Astrophysical Plasmas”, Smith, R. K. & Brickhouse, N. S., 2014, *Advances in Atomic, Molecular, and Optical Physics*, 63, 271
2. “Spectral Implications of Atomic Uncertainties in Optically Thin Hot Plasmas”, Heuer, K, Foster, A. R. & Smith, R. K. 2021, *Astrophysical Journal*, 908, 3
3. “Ionized outflows from active galactic nuclei as the essential elements of feedback” Laha, S., et al. 2021, *Nature Astronomy*, 5, 13
4. “Roadmap on Cosmic EUV and X-ray Spectroscopy”, Smith, Randall, Hahn, Michael, Raymond, John, et al. 2020, *Journal of Physics B*, 53, 092001