## Atoms, Molecules, and Radiation in the Interstellar Medium

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I will present an overview of interstellar photon-dominated regions (PDRs), and X-ray dominated regions (XDRs), in which atoms and molecules interact with radiation fields in the interstellar medium, with impact on the physical and chemical properties of star-forming regions and galactic evolution. I will discuss recent observations, and associated theory, with emphasis on basic atomic and molecular processes.