Rong Fu's research aims at understanding the role of the atmospheric hydrological cycle in determining the stability of the Earth's climate using a variety of the satellite remote sensing data, in situ meteorological and micrometeorological observations. In particular, how would atmospheric convection, rainfall, clouds and water vapor, respond to surface climate change, and how would their responses in turn alter the atmospheric circulation and feedback to the surface energy and water budget.

Rong Fu is a recipient of NSF CAREER Award, the NASA EOS New Investigator Award and AGU Editors' Citation for Excellence in Refereeing for Geophysical Research Letter. She has served on national and international panels and programs, e.g., the National Research Council, Committee on "Challenges and Opportunities in Earth Surface Processes", the External Science Advisory Committee, International Pacific Research Center (IPRC), University of Hawaii, the review panels for NASA Carbon Cycle Science program, Cloud and aerosol program, the NOAA Cooperative Institute for Climate Science at Princeton University, the NSF DRYCOM, and the panels for the US and International CLIVAR.