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SPEAKER INFO

RSI - CPO2H DISTINGUISHED LECTURE 2026

Details:

Date: Tuesday, April 28, 2026

Time: 4-5 PM, reception to follow

Location: Brockman Hall for Physics
Room 101, Rice University



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The Solar System as a Peculiar Outcome of Planet Formation

Decades of exoplanet observations have confirmed one of humanity's (and all teenagers') worst fears: we are strange. Even though Jupiter is the only Solar System planet detectable with present-day technology, the Solar System is quantifiably unusual among exoplanet systems at the ~1% level. Instead, roughly half of main sequence stars host close-in "super-Earths" or "sub-Neptunes", and ~10% have Jupiters on non-Jupiter-like, eccentric or close-in orbits. In this talk I will explore how the Solar System fits in a larger context by addressing key steps in planetary system formation. I will present models to explain the diversity of observed planetary systems and show how Earth-sized can sometimes be very non-"Earth-like", with extreme compositions, orbits and climates. While many unanswered questions remain, it seems clear that, when they form, giant planets play a decisive role in the sculpting of their planetary systems and that Jupiter was central to shaping our unusual Solar System.