**Friday, October 4, 2019**

**4:10 – 5:00 PM**

**Barnard Hall (EPS) 103**

**Accretion Disks: From Black Holes to Planets**

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**Department of Physics & Astronomy**

**Abstract:**

From powering the supermassive black holes in the centers of galaxies to forming the building blocks of planets and planetary systems, accretion disks are ubiquitous throughout the universe.  Given this prevalence and parallel advances in computational astrophysics and observational capabilities, now is the quintessential time to understand how these complex systems work in their various guises. In this talk, I will first present an overview of accretion theory, describing the angular momentum transport problem in astrophysical disks and how numerical simulations are being used to solve it.  I will then put this problem within the context of planet formation.  I will describe my work in combining numerical simulations with observations using the Atacama Large Millimeter/submillimeter Array (ALMA) to test current models and build a new paradigm for protoplanetary disk evolution.  Finally, I will discuss theoretical work on the formation of planetary building blocks, called planetesimals, within the gas disk environment implied by observations and how the predicted properties of these planetesimals compare with those observed in the asteroid and Kuiper Belt planetesimal populations.

# Host:

# David Nidever

***\* Refreshments served in the Barnard (EPS) second floor atrium at 3:45 \****