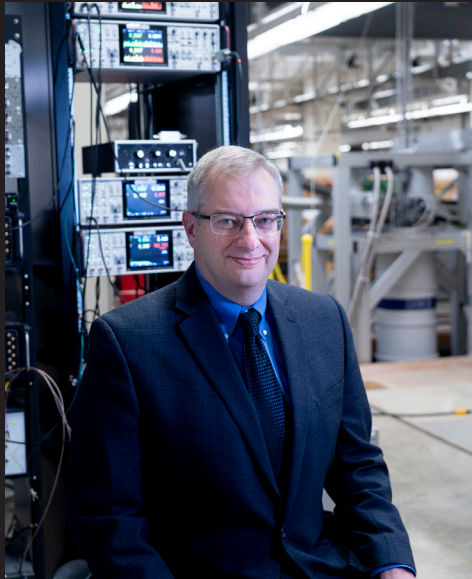


**HOVDE DISTINGUISHED LECTURE**

# *FRACTIONALIZATION OF CHARGE AND STATISTICS IN TWO DIMENSIONS*



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**THE BILL AND DEE O'BRIEN DISTINGUISHED  
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A basic tenet of quantum theory is that all elementary particles are either bosons or fermions. Ensembles of bosons or fermions act differently due to differences in their underlying quantum statistical properties.

Starting in the early 1980's it was theoretically conjectured that excitations that are neither bosons nor fermions may exist under special conditions in two-dimensional interacting electron systems. These unusual excitations were dubbed "anyons" by Frank Wilczek. Anyons have fractional charge and fractional statistics, however directly probing these properties presents experimental challenges.

This lecture will focus on the development of experiments that allow the first direct observation of anyonic braiding statistics in the fractional quantum Hall regime. The connection between development of new theoretical concepts and the behavior of a humble transistor will be emphasized.

**SEPT. 29 • 3 P.M.**

**EVENT BEGINS WITH REFRESHMENTS AND NETWORKING IN THE HELP CENTER, PHYS 290**



**LECTURE STARTS PROMPTLY AT  
3:30 P.M. IN PHYS 112**

