



October 16-21, 2017

## Departmental Colloquium

**Forging an understanding of Fe-based superconductors in the new Iron Age**

**Peter Hirschfeld**

University of Florida

Host: Ilya Vekhter

**3:30 PM Thursday, October 19, 2017**

**109 Nicholson Hall**

**Refreshments served at 3:10 PM in 232 (Library) Nicholson Hall**

The new iron-based superconductors have occasioned great excitement because transition temperatures are high, and it is hoped that the existence of a second class of such superconductors in addition to cuprates will lead to new insights into the essential ingredients for high temperature superconductivity. I will review what is known about the superconducting state and explain the basis for the near-consensus that almost all such materials display spin singlet, s-wave pair symmetry, but that the order parameter changes sign over the Fermi surface. The electrons that pair also possess an orbital degree of freedom, which plays an unusual role. High-T<sub>c</sub> superconductivity in these unusual multiband materials poses anew the question of how higher temperature superconductivity might be achieved, and offers some new insights.

- < Patent: [LSU Physicist Patents Wearable Device to Protect Doctors Who Use X-rays](#)
- < LSU Media Center: [MONDAY: New Gravitational-wave Discovery to be Announced](#)
- < In Wrkf 89.3: [Hear Prof. Giaime and Nobel winner Rai Weiss talk about LIGO and LSU in Jim Engster's show](#)

- < Due to the game time change, our tailgate event will start at **11:00 am** this Saturday, October 14th.

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