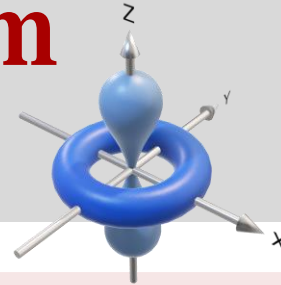




Department of Physics Colloquium

October 3, 2022



3:00 PM

**Leveraging local symmetry breaking to engineer
novel materials properties**

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The 20th century has been dominated by the realization that symmetry and symmetry breaking influence the forces that govern our universe and are keys to much of the novel phenomena observed in materials today. Recently it has been realized that, even if the global symmetry of a system is retained, a local symmetry breaking can still drive a variety of novel fascinating behaviors. In this talk I will present the effect that local breaking of inversion, translational and rotational symmetry can have in defining fundamental properties of matter from topological phases to superconductivity and how it can be used as a tuning parameter to control novel properties in van der Waals heterostructures.

Alessandra Lanzara is the distinguished Charles Kittel Professor of Physics at the University of California, Berkeley. She is best known for her original contributions to the studies of quantum materials such as high-temperature superconductors, topological phases of matter, and two-dimensional materials. She is an elected fellow of the American Academy of Art and Science (2022), the European Academy of Science (2022), and the American Physical Society (2008). In 2015, she was identified as one of the 'Leading Scientists of the World' by the International biographical center in Cambridge. She has received numerous prizes, among which the Fibonacci Prize (2016) and the Marie Goeppert-Mayer Award of the American Physical Society (2009).



**This colloquium will be held in-person, at SERC 116
unless announced otherwise.**