

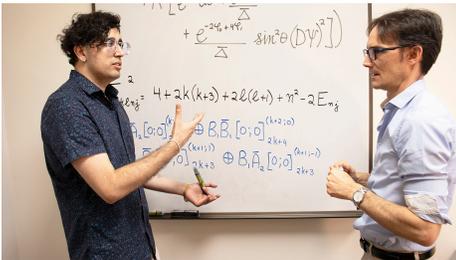
From Superconductors to Black Holes: Two Sides, Same Coin

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Physicists Abhay Katyal and Oscar Varela

ABHAY KATYAL, DOCTORAL STUDENT, USU
DEPARTMENT OF PHYSICS
DR. OSCAR VARELA, ASSOCIATE PROFESSOR, USU
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Date

FRIDAY, January 23, 2026

7 p.m. [Eccles Science Learning Center](#),

Emert Auditorium, Room ESLC 130

Hands-on learning activities, along with refreshments, follow the talk in the Eccles Science Learning Center atrium.

Admission is free and all ages are welcome.

[Directions and Parking Information](#)

Talk Description

A "duality" is something consisting of two opposing ideas. Think "day and night," "up and down," and "left and right." USU physicists Abhay Katyal and Oscar Varela explore dualities in physics, in which two seemingly different phenomena are described by the same underlying physical principles. Consider the everyday example of electricity and magnetism: Power plants generate electricity by using magnets, and running electricity through wires can, in turn, make a magnet.

"Unification" means becoming united as one whole thing. Abhay and Oscar are theoretical physicists exploring the ambitious idea that the rules of the universe can be unified using dualities, so that nature can be described by a small set of physical laws. At Science Unwrapped, they'll discuss how the tiniest subatomic particles secretly behave similarly to immense gravitational systems like black holes.