

USC Dornsife

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The great acceleration in the design and discovery of novel materials



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Wednesday, March 10, 2021

12:00p.m.

Zoom Link

Meeting URL: <https://usc.zoom.us/j/98052669977>

Meeting ID: 980 5266 9977

Materials are at the core of our technological advances, and are needed to address many of our societal challenges: from energy to information, from food to medicine. I'll highlight the great strides made in the last few years in the design and discovery of novel materials, where computational simulations can now precede, streamline, or accelerate experiments. This acceleration is driven by the central paradigm of computational science (doubling performance every 14-16 months), combined with powerful and predictive quantum simulation techniques, and by the convergence of data mining and machine learning towards materials simulations. I'll also underscore the IT requirements needed to perform calculations in a reproducible, shareable, high-throughput mode. A case study will be our computational exfoliation of all known inorganic materials, leading to ~3,500 promising candidates, for which I will discuss some highlights for quantum spin Hall insulators and superconductors.



The Department of Physics and Astronomy hosts its Colloquium on
Wednesday afternoons through the academic semester at 12:00pm.

See full schedule at <http://physics.usc.edu>

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