**Bio**

Chris Bartel is a Postdoctoral Scholar at the University of California, Berkeley working with Prof. Gerbrand Ceder on a number of topics related to the computational design of new materials, particularly for energy storage applications. Prior to Berkeley, Chris earned his Ph.D. in Chemical Engineering from the University of Colorado-Boulder (CU), working as an NSF Graduate Research Fellow under the supervision of Prof. Charles Musgrave and Prof. Al Weimer. His Ph.D. focused on predicting thermodynamic properties of solid-state materials using first-principles calculations and machine learning, with applications ranging from ammonia synthesis to optoelectronic devices. In recognition of his doctoral work, he received the Max S. Peters Outstanding Graduate Award in Chemical Engineering at CU. Chris grew up near New Orleans, LA and earned his B.S. in Chemical Engineering at Auburn University.

The William G. Lowrie Department of Chemical and Biomolecular Engineering

Cordially invites you to attend a seminar on

**Data-Driven Descriptors for Solid-State Materials Discovery**

Praesent mauris ante fewda getrw

**Abstract**

Countless technologies are enabled by the development of improved solid-state materials (e.g., layered oxides for Li-ion battery cathodes, nitride semiconductors for light-emitting diodes, and hybrid perovskites for photovoltaics). The transition to an energy portfolio free of fossil fuels demands that the materials used for these applications become cheaper, more efficient, and more sustainably sourced. Quantum chemistry has emerged as a useful tool to computationally prototype new candidate materials before they are tried in the lab. However, the efficient identification of good candidates is made daunting by the broad diversity of chemistries and structures that can be realized in the solid state. This vast design space has motivated the emergence of materials informatics, where computational chemistry and machine learning meet to accelerate the discovery of new materials with emergent properties. No matter the application of interest, materials discovery efforts hinge upon on an essential question — is this candidate material stable? In this talk, I will discuss how we address this question using simple and interpretable models that we call descriptors. Finally, I will show how we are moving beyond the question of stability and towards a new paradigm of predictive materials synthesis.

Please click the link below to join the webinar:

<https://osu.zoom.us/j/93902458885?pwd=L3AvZG5YZ1gvT3JTZEFvTjRMc3dzUT09>

Password: 181054

**Christopher Bartel**

*Postdoctoral Scholar*

*Materials Science & Engineering*

*UC Berkeley*

**Tuesday, February 15**

**11:30 AM**

**Virtual Seminar**

**