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Abstract for an Invited Paper  
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**Interplay between geometry and topology in topological crystalline phases<sup>1</sup>**

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In this talk I will discuss new developments that illustrate the interplay between topology, geometry, and symmetry in topological phases of matter. I will discuss the classification of some topological insulator/superconductor phases via their spatial symmetries and the consequences for topological defects such as disclinations and dislocations. Additionally, I will show how spatial symmetries can protect quantized topological responses in topological insulator phases. If time permits, I will discuss how interactions can generate a spatial protected topological phase in a symmetry class which only has trivial phases in the non-interacting limit.

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