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**Recent results on materials aspects of the investigation of new topological states of matter<sup>1</sup>**

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Investigation of the electronic states of matter that are determined by topological physics has exploded in recent years through parallel progress in theory, experimental characterization, device fabrication and new materials development. In our group working in this area, the speaker has been responsible for the development of new materials to allow the experimentalists to probe the emergence of new topological properties, and to help embody the concepts of our theorists in real materials. The field is fast-moving, with particular thrusts at the present time toward Weyl and Dirac semimetals, and in this talk I will describe the materials aspects of our work in the past year in these areas, specifically as they are related to our strong collaborations with the groups of N.P. Ong, A. Yazdani, and B.A. Bernevig at Princeton, T. Valla and J. Tao at Brookhaven, and A. Vishwanath at Berkeley.

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