Bockrath group's research interests focus on the electronic properties of two-dimensional (2D) van der Waals materials. Individual atomic planes of the bulk crystal can be exfoliated, with the extracted monolayers often having surprising new properties compared to the bulk material. Our current efforts are focused on three main areas: **Topological Electronic States.** Many 2D materials exhibit electronic states with topological properties. These properties can be intrinsic or emerge in conjunction with superconductivity. These states show promise towards topological quantum computing and solid-state manipulation of quantum information. **Proximity Coupling.** An advantage of 2D materials is that the individual layers can be readily stacked to make atomically precise heterostructures. Such heterostructures can be tailored to create synthetic materials that do not appear in nature and exhibit novel phenomena such as enhanced spin-orbit coupling or magnetic properties that can potentially be exploited for novel devices. **Twistronics.** The properties of heterostructures can also be tailored by the interlayer twist angle, giving even more degrees of freedom with which to tune material properties. For example, the spatial interference between the twisted lattices creates a long-wavelength superlattice. This superlattice can profoundly alter the behavior of the materials, producing a plethora of interacting many-body states and correlated phases that exhibit such behavior as tunable superconductivity or magnetic states. This provides an excellent testing ground for theories of interacting quantum states of electrons in materials.