



**Wednesday**

**November 14**

**4:00 P.M.**

**Rm 118 NSH**

## Search for the limits of the elements and their isotopes

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How many elements exist in nature? Surprisingly, we do not know the answer. The number of known elements is currently at 118 and the number of known isotopes of these elements is around 3100. The search is on experimentally and theoretically to find out how many more are possible. Considerable progress has been made recently on all aspects of this problem, from expanding the region of known isotopes, to new approaches to calculate nuclear forces and nearing completion of new accelerator facilities like the Facility for Rare Isotope Beams, FRIB. The next generation of nuclear research facilities, like FRIB, will vastly expand the range of nuclides that can be made and will provide key insight for nuclear theory to reliably extrapolate the limits. This talk will explore our understanding of how many elements might exist in nature and the limits of their isotopes. Included will be an outlook for how far we expect to get in the next decade.