Daniel Krashen: **Field patching and higher dimensional local-global principles**

Abstract: Local-global principles have played a prominent role in understanding the interplay between the structure of algebraic objects and the arithmetic of fields. The problem of understanding the behavior of quadratic forms and central simple algebras over finitely generated fields remains a central issue with connections to a many other problems in mathematics. In this talk I will describe some progress and open problems in the technique of field patching, and the development of "higher dimensional" local-global principles to approach these and related algebraic structures.