The notion of closure is pervasive throughout mathematics: topology, convex hull, linear span, closure in groups, lattices, projective geometry, Wilson’s closure in design theory, and even Hamiltonian closure in graph theory. Unlike, say, the theory of rings which is based on several powerful algebraic axioms, closures are based on just two rather weak set-theoretic axioms. Hence what can be said about closure systems in general is rather limited. However, these basic facts permeate mathematics. Moreover, there are several specialized types of closure with a particularly rich theory. Topology, linear algebra, and Euclidean convexity are well known examples from classical mathematics. Matroids and antimatroids are more recent types of closure systems which have also had a substantial development and impact. Oversimplifying the history one could say that matroids evolved out of linear algebra and antimatroids evolved out of Euclidean convexity. Moreover, certain problems span the whole breadth of closure theory. The celebrated Eckhoff conjecture and Fraenkl’s half-point problem are probably the most widely known.

All welcome. Research students in particular are strongly encouraged to attend.

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