Winter Colloquium Series

Symmetry, Graphs, and Algebras Associated to Reflection Groups

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Abstract:

From tilings at the Alhambra Palace to the protein shell of a virus, symmetry abounds in art, science, and mathematics. Capturing symmetries via group actions leads to the notion of reflection groups, which are generated by reflections of real or complex space. In this talk, we will introduce complex reflection groups geometrically and then tour some graph theory and algebra associated with the groups. In particular, we will visit a family of Cayley graphs with integral distance spectra (adding another piece to a graph theory puzzle posed by Harary and Schwenk in the 1970s) and discuss constructions of noncommutative algebras arising from actions of reflection groups on polynomial rings.

Wednesday, February 17, 1:00 - 1:50pm in 3-1639