

## Departmental Colloquium

### *Nilsystems in dynamics*

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**Abstract:** The connection between ergodic theory and additive combinatorics dates back to the 1970's, with Furstenberg's proof of Szemerédi's Theorem via ergodic theory. Certain algebraic constraints (arising from nilsystems) play a key role in understanding objects that arise in Furstenberg's proof. More recently, nil-structures have been imported into the finite combinatorial setting, playing a role in finding patterns in the primes. I will give an overview of where nilsystems arise in ergodic theory and topological dynamics, explaining some of the connections to additive combinatorics.

Friday, November 6 at 3:00 PM in SEO 636