THE CATHOLIC UNIVERSITY OF AMERICA
Washington, DC 20064

SEMINAR IN FUNCTIONAL ANALYSIS

AND RELATED AREAS

Wednesday, October 25, 2023

4:45 p.m. - 5:55 p.m.

SPEAKER: Joshua Sparks

George Washington University

TITLE: Multicolor Affine Urn Models with Multiple Drawings

ABSTRACT: The urn model has a rich history in representing probabilistic phenomena within the real world. Many results have come from the study of these structures that evolve from a single ball drawn at a given stage, but difficulties arise with the analysis when we take the leap from one ball to multiple balls sampled during a single event. A class which navigates around this hurdle is that of the *affine urn model*, a structure where the replacement criteria is based on a linear combination of the balls sampled within each draw. In this talk, we explore the affine urn model and its inherent "core matrix", which dictates the urn's progression through its linear replacement criteria and provides a path of study similar to its single-draw analogue. We address this relationship for when the core matrix *index* is "small" and "critical", while distinguishing the paths created when the index is "large", and connect our results to real-world structures.

The presentations will be given via Zoom. The corresponding link is as follows

https://cua.zoom.us/j/87627066209?pwd=cWxxTlpIVko5YitkbVo2V0crMXk3QT09

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