Theoretical analysis of variants for random graph generators

<u>Description:</u> I*n a 2019 article, Peter Gracar, Arne Grauer, Lukas Lüchtrath, and Peter Mörters introduced a new probabilistic model for generating random graphs with rich structural properties. This project invites the student to propose and formalize a small variation of their model—such as modifying attachment rules, spatial structure, or aging mechanisms—and to investigate how the known statistical features of the original graph (e.g., degree distributions, clustering behavior, or connectivity characteristics) carry over to the modified setting. A key component of the project will be adapting existing proofs to the new model, identifying which arguments remain valid and where additional techniques are required. This offers an opportunity to blend rigorous probabilistic reasoning with creative model design in modern random graph theory.*