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Title: Symmetry in evolutionary dynamics: case studies from medicine to language

Abstract: In this talk I will give an overview of some of my work at the interface between mathematical and life sciences, which highlights the role of symmetry is different scenarios. Examples will include the symmetry of cell divisions in the stem cell compartments; symmetry breaking in establishing population solutions of the color categorization/communication problem; and the role of symmetry in rare mutant fixation dynamics in random environments. While these problems come from different fields, they all present instances of stochastic mathematical modeling of evolutionary dynamics.