



TEDU MATH SEMINARS

MATHEMATICS and BIO COMPLEXITY

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Abstract:

Biocomplexity is the multidisciplinary study of the self-organized, complex behaviors of biological and ecological structures. Such complexity is a hallmark of life, from the organization of molecules into cellular machinery, through the organization of cells into tissues, to the organization of individuals into communities. The highly interdisciplinary nature of biocomplexity requires the techniques and concepts from chemistry, geology, physics, engineering, statistics and **applied and computational mathematics** as well as the expertise from microbiology, evolutionary ecology and microbial ecology.

In this talk, mathematical analysis of two very complex systems will be discussed: **MAPK Signaling Pathway** (Molecular and Cellular Biology) and the **Responses of Coral Reefs to Climate Change** (Ecology). Mathematical models that govern the dynamics of these systems will be introduced in terms of nonlinear ordinary differential equations and the preliminary results and biological and ecological interpretations will be presented.

The entire presentation will be accessible by the life sciences faculty as well as the undergraduate and graduate mathematics and life sciences students; they are highly encouraged to attend.

DATE: 20.04.2017

TIME: 16:00

PLACE: TED University, A216