日時：平成29年7月5日（水）14:35～16:05
場所：理学部 E209 講義室
講師：Oliver Steinbock 教授（Florida State University, USA）
演題：Self-organization and complexity: The origin of macroscopic order from microscopic processes
要旨：Simple rules can create complex patterns and dynamics. This connection is routinely used by living systems to create complex rhythms, spatio-temporal structures, and high-performance materials with design features at meso- and macroscopic length scales that seem to defy their molecular origins. In my lecture, I will present several examples that illustrate this point and demonstrate that many phenomena that appear to be unique to life processes actually occur in non-biological, often simple chemical systems. Specifically, I will discuss nonlinear wave patterns in reaction-diffusion media and examples of life-like structures in chemical reactions that form polycrystalline or amorphous solids. The unexpectedness of some of these universalities has profound consequences in a wide range of scientific disciplines ranging from the misidentification of early microfossils to deadly cardiac arrhythmias.

References: