

Colloquium

Inaugural Lecture | Vivian Kuperberg & Carla Fernández-Rico

Vivian Kuperberg & Carla Fernandez-Rico

Host:

Vivian Kuperberg |Bias in Prime NumbersThe prime numbers have the curious property that, while they are precisely determined by their definition, they seem to be rather “random" in their distribution. That is to say, they behave in almost the same way as a randomly chosen sequence of integers. The key word “almost" is the focus of this talk! We will discuss what it means for the prime numbers to look random and some surprising ways in which they do not, as well as exploring some open questions in this research area._____Carla Fernández-Rico |Designing Structure across Scales in Soft and Biofabricated MaterialsFrom biological tissues to synthetic materials, properties and function often emerge from structures organized across multiple length scales. Understanding how such organization develops from individual building blocks, and how to control it, is a central challenge at the interface of soft matter physics, materials science, and biology. In this talk, I will discuss how colloidal assembly, phase separation, and biological growth can generate and propagate order across scales in soft matter. I will first show how particle curvature directs exotic liquid-crystalline phases, how phase separation creates mechanically robust bicontinuous structures, and how bacterial growth and biomaterial production generate liquid-crystalline order across multiple length scales. These ideas motivate our work at ISTA, where we aim to uncover the physical principles behind the emergence of structural order, and use them to design new, adaptive, and sustainable materials.

Monday, November 16, 2026 11:30am - 12:30pm

ISTA | Central Building | Raiffeisen Lecture Hall

This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station. Please find a schedule of the ISTA Shuttle on our webpage: https://ista.ac.at/en/campus/how-to-get-here/ The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.