

# Cologne Evolution Colloquium

Joint Seminar with

## Großes Physikalisches Kolloquium

CRC 1310 Predictability in Evolution

**Rosalind Allen**

Friedrich Schiller Universität, Jena

### **Statistical physics approaches to understanding how antibiotics kill bacteria**

Antibiotics are a mainstay of modern medicine, but there is huge global concern about the emergence of antibiotic resistant infections. Despite their importance, we understand surprisingly little about how antibiotics actually inhibit bacterial infections. This is a complex problem because of the interplay between antibiotic action and bacterial growth, which connects with physics via nonlinear dynamics, mechanics and stochasticity. I will discuss, with examples, how bacteria grow in different scenarios. I will further discuss how statistical physics approaches can provide new understanding of how antibiotics work in the context of growing bacteria, with implications for antibiotic resistance evolution.

Tuesday, January 31, 2023, 16:30

Lecture Hall III

Hosted by Joachim Krug