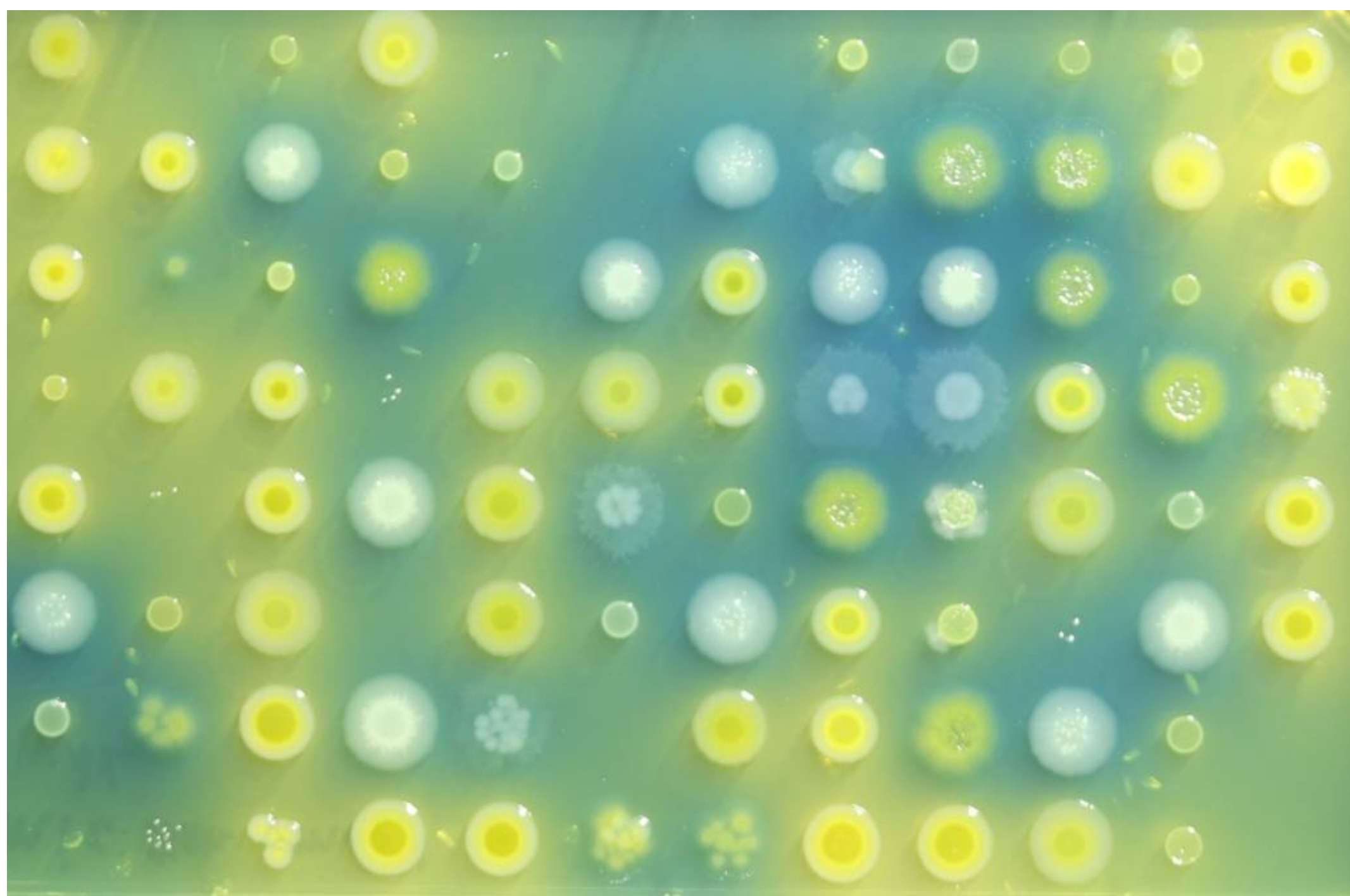


PROF. TOBIAS BOLLENBACH

INSTITUTE FOR BIOLOGICAL PHYSICS
UNIVERSITY OF COLOGNE

Quantitative approaches to antibiotic resistance evolution



The evolution of antibiotic resistance is an increasingly serious concern. At the same time, this phenomenon provides a rare opportunity to observe evolution in real time in the laboratory. The most challenging open questions in this field include how key aspects of drug resistance evolution can be predicted and how this worrying process can be slowed down or perhaps even entirely circumvented. In this talk, I will give an overview of basic research aimed at elucidating and controlling the evolutionary dynamics underlying drug resistance. Physicists have recently played a central role in tackling this problem by developing new quantitative experimental techniques and theoretical concepts. In this context, I will present recent results from my group that enable the systematic identification of perturbations that affect resistance evolution.