

Abstract Submitted
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Cooperation and cheating in microbes JEFF GORE, Massachusetts Institute of Technology — Understanding the cooperative and competitive dynamics within and between species is a central challenge in evolutionary biology. Microbial model systems represent a unique opportunity to experimentally test fundamental theories regarding the evolution of cooperative behaviors. In this talk I will describe our experiments probing cooperation in microbes. In particular, I will compare the cooperative growth of yeast in sucrose and the cooperative inactivation of antibiotics by bacteria. In both cases we find that cheater strains—which don't contribute to the public welfare—are able to take advantage of the cooperator strains. However, this ability of cheaters to out-compete cooperators occurs only when cheaters are present at low frequency, thus leading to steady-state coexistence. These microbial experiments provide fresh insight into the evolutionary origin of cooperation.

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