

**SYNTHETIC BIOLOGY APPROACHES TO
SUPPRESSION OF ANTIBIOTIC RESISTANCE:
TOWARD MODEL-BASED DESIGN**

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ABSTRACT. Antibiotic-resistant pathogens present an increasing global health concern. Our group is investigating synthetic biology-based strategies for suppression of resistance in environmental bacterial populations. This approach involves the delivery of engineered genetic elements to target microbial populations. We are developing models of the dynamics of these systems, at both the genetic and population level, to be used for model-based design of potential implementations. Analysis of proof-of-principle scenarios and accompanying experimental results will be presented.

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