

## Genetically engineered bacterial cells ‘talk’ to each other

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When cells cooperate, they achieve the otherwise impossible, something that could eventually lead to smart cancer therapies.

Instead of engineering cells to work as tiny individuals, researchers are working on a new class of cellular machines that “talk” to each other – and behave in more sophisticated ways. Put simply, synthetic biology is going multicellular.

The latest example comes from a team led by [Matthew Bennett](#) at Rice University in Houston, Texas. They developed a system that at its simplest encourages cooperation between two distinct populations of *Escherichia coli*. One produces an “activator” signalling molecule that triggers the bacteria in the second population to produce a “repressor”. This signal can travel the other way and turn off production of the activating molecule.

The team also engineered the *E. coli* so they would fluoresce depending on the strength of the signals. What’s interesting is the sophisticated way the two populations respond. They found that about every two hours, the cells in both populations fluoresced more and more, before gradually fading away again ( *Science*, [doi.org/66b](https://doi.org/66b)).

“If you grow just one of these strains by itself, nothing happens,” says Bennett. Only when the two populations communicate does this oscillating behaviour appear. Such an oscillator could be used as a molecular timer but more significantly, it is proof of principle of the complexities that emerge when cells – whether mammalian or microbial – are persuaded to communicate.

**Read full, original post:** [Chatty cellular machines take synthetic biology to the next level](#)