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Probing prokaryotic social behaviors with bacterial "lobster traps".

Connell JL, Wessel AK, Parsek MR, Ellington AD, Whiteley M, Shear JB
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Evaluations

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“ **A quorum of one? Or of millions? This paper elegantly shows that population size, while certainly important to the bacterial small molecule signaling that is known colloquially as 'quorum sensing', is just one factor in an equation that includes volume and flow rate (diffusion).**

Using picoliter-sized culture chambers, the authors demonstrate that transport of small molecules by flow is critical to the quorum sensing response of a pure culture bacterial population. Thus, in nature, diffusion rates and the spatial constraints in which organisms live dictate the population size required for a quorum. It becomes easy to conceive, for a single organism, of population size trigger thresholds (so-called quorums) that involve a very few cells and of those requiring large numbers of cells. Throw in different signal flux by different organisms and predictions of signaling outcomes within natural bacterial communities become complex indeed. In nature, the population size required for quorum sensing is a moving target.

Competing interests: None declared

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[Robert Palmer](#)
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11 Nov 2010Rating 10
Exceptional

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