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Abstract for an Invited Paper
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Designing Superconductivity: Manipulating Interactions in Arrays of Superconducting Islands[1]

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One of the most fundamental questions in physics is how the macroscopic properties of matter emerge from complex interactions of microscopic constituents. In this talk, I will discuss a "bottom-up" approach to studying collective effects in matter via nanostructured arrays of superconducting islands. We fabricate large arrays of superconducting islands patterned on normal metal films; by changing the size and configuration of the islands, we can tune the parameters relevant to 2D superconductivity. I will discuss electrical transport measurements of these systems, including showing how we can create unusual superconducting states. Along the way, I will discuss random but related topics such as: the process of coming up with ideas for experiments, why it's hard to let go of the research you did in graduate school, and why it's good to "swim in your own lane."

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