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Abstract for an Invited Paper  
for the MAS17 Meeting of  
the American Physical Society

**Single qubit gates for neutral atom quantum computers<sup>1</sup>**

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I will outline an approach to quantum computing using neutral atoms trapped in a 3D optical lattice. In particular, I will describe in detail experiments that address the quantum information at any site in a 125 site lattice with high fidelity and low cross talk, as well as ongoing work to fill vacancies in the 3D array.

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