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Abstract for an Invited Paper
for the APR14 Meeting of
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Determining the equation of state via microscopic simulations¹

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I will provide an overview of the status of modern nuclear theory, especially in connection with the determination of the equation of state of nucleonic matter. I will also discuss the relevance of microscopic simulations to the study of strongly interacting nucleons. Starting with some general points on the underlying theory of Quantum Chromodynamics (QCD), I will then go over the efforts toward connecting QCD with many-nucleon studies (via chiral Effective Field Theory [EFT]). I will also introduce a recent local reformulation of chiral EFT, which makes it possible to use such modern potentials within the framework of Quantum Monte Carlo (an essentially exact type of microscopic simulation method).

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