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Abstract for an Invited Paper
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Maria Goeppert Mayer Award (2021): From quarks to hadrons and nuclei: machine learning for lattice field theory

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With advances in supercomputing, we we have entered a quantitative era in our understanding of hadron and nuclear structure and interactions directly from the fundamental quark and gluon degrees of freedom of the Standard Model. The rapid progress in this field has been largely enabled by new algorithms, but for many key physics problems computational challenges still remain to achieve full systematic control. I will outline how new machine learning tools have the potential to enable currently-intractable calculations to reveal the physics of hadrons and nuclei from the Standard Model.