Current and Pending Support

Andrea Shindler

Current

Sponsor:	Michigan State University, Discretionary Funding Initiative
Award Number:	N/A, internal MSU funds
Project/Proposal Title:	Fundamental symmetries from lattice QCD
Total Award Amount:	$50,000
Person-Months:	1 summer
Total Award Period Covered:	12/5/18 – 12/4/19
Location of Project:	Michigan State University
Brief Description of Project:	Software development for the calculation of fermionic disconnected diagrams relevant for the calculation of electric dipole moment and related quantities
Overlap with Proposed Research:	No Overlap

Pending

Sponsor:	Department of Energy
Project/Proposal Title:	From Quarks to Stars; A Quantum Computing Approach to the Nuclear Many-Body Problem
Total Award Amount:	$1,000,000
Person-Months:	0.12 summer
Total Award Period Covered:	10/1/19 – 9/30/22
Location of Project:	Michigan State University
Brief Description of Project:	This proposal aims at studying and applying recent developments of algorithms and methods from quantum computing and quantum information theory to studies of complex and strongly interacting nuclear many-particle systems. The proposal aims at developing new methods for studying systems that span from strong force simulations of quarks and gluons to many-body methods applied to the equation of state of dense matter. The proposal aims at developing interdisciplinary research projects that unites researchers in quantum computing and quantum information theory with theorists working on interacting many-particle methods applied to nuclear physics.
Overlap with Proposed Research:	this is the proposed project

Sponsor:	Department of Energy
Project/Proposal Title:	Fundamental symmetries using lattice QCD with the gradient flow
Total Award Amount:	$649,000

Person-Months:	2 summer
Total Award Period Covered:	5/16/19 – 5/15/22
Location of Project:	Michigan State University
Brief Description of Project:	Calculation, in lattice QCD, using the gradient flow of the nucleon electric dipole moment from all CP-violating source
Overlap with Proposed Research:	No Overlap
Sponsor:	National Science Foundation
Project/Proposal Title:	Fundamental symmetries using lattice QCD with the gradient flow
Total Award Amount:	$679,946
Person-Months:	2 summer
Total Award Period Covered:	5/16/19 – 5/15/22
Location of Project:	Michigan State University
Brief Description of Project:	Calculation, in lattice QCD, using the gradient flow of the nucleon electric dipole moment from all CP-violating source
Overlap with Proposed Research:	No Overlap