Recipients of the Newton Award for Transformative Ideas during the COVID-19 Pandemic

Proposal Title	PI	Institution
A Microscopic Theory of Entropic Bonding	Sharon Glotzer	University of Michigan
Space-time particle wave packets: New class of matter in motion	Ayman Abouraddy	University of Central Florida
Building Brains Using Synthetic Biology Across Scales	Jennifer Schwarz	Syracuse
Understanding and Re-engineering Epigenetic Cell Memory: A Theory-driven Approach	Domitilla del Vecchio	MIT
Recovering information from behind the black hole horizon	Douglas Stanford	Stanford University
Hyperspectral communication channels for receiving information from fielded natural and engineered microbial sensors	Chris Voigt	MIT
Uncovering Hidden Dynamics by Exploiting the Algebra of Path Signatures	Kavita Ramanan	Brown University
New principles of amplification of ultrashort pulses of coherent light by non-equilibrium free-carrier plasma in semiconductor crystals	Vitaly Gruzdev	University of New Mexico
Thermonuclear Fusion in a Cavitating Fluid Whose Incompressibility Arises From Fermi Repulsion	Seth Putterman	University of California Los Angeles
Pathways to Complexity with 'Imperfect' Nanoparticles, Part I	Nick Kotov	University of Michigan
Pathways to Complexity with "Imperfect" Nanoparticles, Part II	Xiaoming Mao	University of Michigan
Geometric Structure-Preserving Model Reduction for Large-Scale Interconnected Systems: Part I	Melvin Leok	University of California, San Diego
Geometric Structure-Preserving Model Reduction for Large-Scale Interconnected Systems: Part II	Boris Kramer	University of California San Diego