CSES Currently Funded Projects - FY23

Astrophysics, Cosmology (Focus Lead: Ingo Tews, T-2)

PI	Group	Program	Title
Gregory Salvesen	XCP-8	Student Fellow	Advancing Black Hole Spin-Orbit Misalignment Measurements
Jonah Miller	CCS-2	Rapid Response	Predicting Which Stars Explode
Matthew Mumpower	T-2	Student Fellow	Quantifying R-process Abundance Uncertainties from Unknown Nuclear Masses
Irina Sagert	CCS-2	Student Fellow	Modeling the Dynamics of Mergers of Compact Stars with Solid Cores
Joyce Guzik	XTD-NTA	Student Fellow	Magnetic Red-Giant Stars in Binary Star Systems: Opening a Window into Stellar Interiors
Soumi De	CCS-2	Rapid Response	Multimessenger inference of the nuclear equation of state

Earth Systems (Focus Lead: Sanna Sevanto, EES-14)

PI	Group	Program	Title
James Lee	EES-14	Rapid Response IPD	The Future of Remote Sensing is in the Air: radiation surveying of legacy contaminated sites
Jon Schwenk	EES-14	Student Fellow	Discerning watershed impacts on streamflow with novel data and machine learning approaches
Eunmo Koo	EES-16	Student Fellow	An Adaptive Mesh Scheme and Ignition-base Fire Model for the Simulation of Megafires
Alexandra Jonko	EES-16	Student Fellow	Chaotic Qualities of Wildland Fires for Better Land Management
Yu Zhang	EES-14	Student Fellow	Coupling Biocrust and Vegetation Dynamics to Improve Predictions of Dryland Change
Richard Fiorella	EES-16	Rapid Response R&D	Testing rainfall controls on net ecosystem exchange with the LANL rainfall simulator
Alice Barthel	T-3	Special Rapid Response	Uncovering Hidden Simplicity in Complex Climate Feedbacks: Identifying Ocean Patterns by SmartTensors AI
Evan Thaler	EES-14	Chick Keller Postdoc	Quantifying the Influence of Permafrost Soil Errosion on the Global Carbon Cycle
Nathan Maier	EES-17	Chick Keller Postdoc	Using Seismicity to Enhance Predictive and Monitoring Capabilities of Ice Masses in the Arctic

Jesse Canfield	XCP-4	Student Fellow	A Lagrangian Pyrocumulonimbus Physics Package in HiGrad
Evan Thaler	EES-14	Chick Keller PD	Quantifying the Influence of Permafrost Soil Erosion on the Global Carbon Cycle
Kurt Solander	EES-16	Rapid Response IPD	GERD Manuscript Development

Space (Focus Lead: Vania Koleva Jordanova, ISR-1)

PI	Group	Program	Title
Heather Quinn	ISR-3	Student Fellow	Quantifying and Identifying Soft-Error Effects in ARM-core Linux Systems
Rebecca Holmes Sandoval	ISR-2	Rapid Response IPD	Fielding an all-sky monitor in Alaska for aurora science and space traffic management
Justin Holmes	T-5	Rapid Response R&D	Testing the Feasibility of Electric Sails Using Scalable Simulations
Xuan-Min Shao	ISR-2	Student Fellow	Understanding lightning physics with LANL's polarized RF mapping and gamma-ray observations
Fan Guo	T-2	Student Fellow	Magnetic Reconnection at the Heliospheric Current Sheet in the Turbulent Solar Wind Close to the Sun
Justin Holmes	T-5	Chick Keller PD	Explaining the Origin of Highly-oblique Whistler Waves in the Inner Magnetosphere
Carlos Maldonado	ISR-1	Rapid Response R&D	Miniaturized Electrostatic Analyzer for Space Plasma Measurements
Gian Luca Delzanno	T-5	Student Fellow	Kinetic plasma turbulence at low electron beta

Geophysical (Focus Lead: Youzuo Lin, EES-17)

PI	Group	Program	Title
Loic Viens Lin	EES-17	Chick Keller PD	Developing Distributed Acoustic Sensing Capabilities at LANL
Mohamed Mehana	EES-16	Student Fellow	Understanding and Predicting Hydrogen Behavior During Geologic Storage.

Zhou Lei	EES-17	Student Fellow	Grain-scale prediction of hypervelocity projectile penetration into terrestrial and extraterrestrial granular materials
Kai Gao	EES-17	Rapid Response R&D	Revealing Fine Structures of One of Earth's Largest Oceanic Plateaus

Planetary (Focus Lead: Ann Ollila, ISR-2)

PI	Group	Program	Title
Ann Ollila, Dan Coupland	ISR-1, ISR-2	Rapid Response IPD	NASA PRISM Proposal Development
Christopher Jeffery	ISR-2	Rapid Response IPD	Coupling DREAM to GeoRad to enable Prediction of Arctic Communication Disruptions
Carene Larmat	EES-17	Student Fellow	How hard should Mars be hit so Insight SEIS can unravel its hidden history?
Phillip Stauffer	EES-16	Student Fellow	From Manhattan to Mars: Applying models of subsurface radionuclide gas seepage from nuclear testing to understand methane release from the Martian subsurface
Hui Li	T-2	Student Fellow	New Opportunities on Understanding Dust and Gas Supplies in Planet Formation in the JWST and ALMA Era
Mihee Kim	MPA-CINT	Rapid Response R&D	Zwitterion-Containing Silicone Polymers for Antimicrobial Coatings on Space Missions
Debarti Das	ISR-6	Chick Keller PD	Using Thermochemistry to Understand the Behavior of Lithium and Boron in Water
Katherine Mesick	ISR-1	Large University	LANL/ASU Student Fellow Partnership in Planetary Nuclear Spectroscopy

Biological Systems (Focus Lead: Jeanne Fair, B-10)

PI	Group	Program	Title
Andrew Bartlow	B-GEN	Rapid Response R&D	Determining the viability of pathogens using signatures of blow fly volatile compounds
Armand Dichosa	B-10	Special Rapid Response	Preventing the Next Pandemic: Biosurveillance of Paleopathogen Release Due to Climate Change
Amanda Evans	B-11	Student Fellow	Continuous Flow ISRU Biocatalytic Generation of Green Propellants for Space Travel
Armand Dichosa	B-10	Student Fellow	Discovering Gut Bacteria Responsible for Degrading Dietary Lignocellulose
Ramesh Jha	B-11	Student Fellow	Engineering of Artificial Enzymes with Transformative Chemical Functionality