

CSES Currently Funded Projects - FY24

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	Student Fellow	Predicting Which Stars Explode
Kelly Malone	ISR-1	Student Fellow	Multi-messenger transients using HAWC
Irina Sagert	CCS-2	Student Fellow	Modeling the Dynamics of Mergers of Compact Stars with Solid Cores
Chengkun Huang	T-5	Rapid Response R&D	Enabling machine-learning enhanced modeling toward the interpretation of high X-ray polarization in astrophysical sources

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

PI	Group	Program	Title
Matthew Hoffman	T-3	Student Fellow	Deriving a glacier slip law with debris-bed friction for accurate projections of sea-level rise
Jon Schwenk	EES-14	Student Fellow	Discerning watershed impacts on streamflow with novel data and machine learning approaches
Jesse Canfield	XCP-4	Student Fellow	A Lagrangian Pyrocumulonimbus Physics Package in HiGrad
Eunmo Koo	EES-16	Student Fellow	An Adaptive Mesh Scheme and Ignition-base Fire Model for the Simulation of Megafires
Yu Zhang	EES-14	Student Fellow	Coupling Biocrust and Vegetation Dynamics to Improve Predictions of Dryland Change
Eric Small	EES-14	Rapid Response R&D	Defining Environmental Microbial Behavior Using Epigenetics Analysis
Evan Thaler	EES-14	Chick Keller Postdoc	Quantifying the Influence of Permafrost Soil Erosion 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

Heliophysics (Focus Lead: Gian Luca Delzanno, T-5)

PI	Group	Program	Title
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
Sung Jun Noh	ISR-1	Chick Keller Postdoc	An Empirical Global Model for EMIC Waves in the Earth's Magnetosphere
Carlos Maldonado	ISR-1	Rapid Response R&D	Miniaturized Electrostatic Analyzer for Space Plasma Measurements

Geophysics

PI	Group	Program	Title
Loic Viens	EES-17	Chick Keller Postdoc	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
Michael Pettes	MPA-CINT	Student Fellow	Initiating a TAMU-LANL Collaboration for Understanding Stimulated Granite Geothermal Reservoir Performance
Qinjun Kang	EES-16	Student Fellow	Elucidating Olivine Rock-Brine-CO ₂ Interactions for Subsurface Carbon-Negative Hydrogen Production
Shaowen Mao	EES-16	Rapid Response R&D	Reducing Geomechanical Risks for Underground Hydrogen Storage Using Deep Learning

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

PI	Group	Program	Title
Catherine Plesko	XCP-DO	Student Fellow	A Novel Spatio-Temporal Regime Tracking Method for Impact Simulations
Chris Carr	EES-17	Rapid Response R&D	Distributed Acoustic Sensing applications to meteoroid detection and characterization on planetary surfaces: A case study with OSIRIS Rex

Hui Li	T-2	Student Fellow	New Opportunities on Understanding Dust and Gas Supplies in Planet Formation in the JWST and ALMA Era
Sean Czarnecki	ISR-6	Chick Keller Postdoc	Developing Models for Neutron and Gamma-ray Lab Analysis of Returned Mars Samples
Debarti Das	ISR-6	Chick Keller Postdoc	Using Thermochemistry to Understand the Behavior of Lithium and Boron in Water
	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
Eric Moore	B-IOME	Special Rapid Response	Hyperspectral detection of molecular probes for field scale monitoring of plant pathogens
Zachary Robbins	EES-14	Special Rapid Response	Linking Insect Disturbance and Plant Hydrodynamics with E3SM
Claire Sanders	B-IOME	Rapid Response R&D	Virus Detection and Productivity Effects in Microalgae Ponds
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