

CSES Currently Funded Projects - FY20

Astrophysics, Cosmology (Focus Lead: Chris Fryer, CCS-2)

PI	Group	Program	Title
Fan Guo	T-2	Student Fellow	Kinetic Processes of Particle Acceleration and Radiation in Relativistic Astrophysical Plasma Outflows
Matthew Mumpower	T-2	Student Fellow	Nuclear Physics for Nucleosynthesis: The Astrophysical Merger of Neutron Stars
Chengkun Huang	T-5	Student Fellow	Machine Learning Framework for Turbulence ³ Sub-Grid Modeling in Core-Collapse Supernovae
Patrick Killian	T-2	Chick Keller PD	Kinetic Studies of Magnetic Turbulence, Dissipation and Particle Energization
Hui Li	T-2	Student Fellow	Addressing New Challenges to Planet Formation Revealed by ALMA
Jonah Miller	CCS-2	Rapid Response R&D	Blue Kilonova from Black Hole-Neutron Star Disks
Peter Bloser	ISR-1	Rapid Response R&D	A Lunar CubeSat Mission for High-Sensitivity Nuclear Astrophysics
Lucas Parker	ISR-2	Rapid Response IPD	Continuing LANL Involvement in the All-sky Medium Energy Gamma-ray Observatory
Joyce Guzik	XTD-NTA	Rapid Response R&D	Analysis of Long Time Series Photometric Data on Bright Stars From the TESS and BRITE Constellation Spacecraft

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

PI	Group	Program	Title
Matthew Maltrud	CCS-2	Student Fellow	Climate System Response as Understood Through a Novel Analysis of Ocean Circulation and Energetics
Scott Elliott	CCS-2	Student Fellow	Arctic River-Delta-Coastal Chemistry in the DOE Hierarchy of Models
Sanna Sevanto	EES-14	Student Fellow	Micron-level Spatial Resolution Gene Expression for Plants
Carolyn Begeman	T-3	Chick Keller PD	Large Eddy Simulation of the Sub-ice-shelf Oceanic Boundary Layer
Ann Junghans	NEN-1	Rapid Response R&D	Influence of proliferation indicators on soil biofilm
Anastasia Piliouras	EES-14	Rapid Response R&D	Thermokarst lake morphology and its impact on heat fluxes in permafrost landscapes

Sara Del Valle	A-1	Rapid Response R&D	Mosquito tracking using data from the upcoming NASA SWOT Mission
Tarun Verma	CCS-2	Rapid Response R&D	Deep Learning Forecasting of High-Latitude Climate Variability

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

PI	Group	Program	Title
William Daughton	XTD-PRI	Student Fellow	Comparative Studies of Magnetic Reconnection in Kinetic Simulations, Laboratory Experiments and Magnetospheric Observations
Kataryna Yakymenko	T-5	Chick Keller PD	Wave-Particle interactions in the near-Earth environment
Gian Luca Delzanno	T-5	Student Fellow	Kinetic plasma turbulence at low electron beta
Andrew Walker	ISR-3	Rapid Response R&D	Analysis of DREAM Reconstructed Fluxes
Oleksandr Koshkarov	T-5	Rapid Response R&D	Global magnetospheric simulations of Ganymede with fluid-kinetic models
Darrel Beckman	ISR-4	Rapid Response R&D	High Voltage High Power Development for Space Based Instruments
Steven Morley	ISR-1	Rapid Response R&D	Reconstructing and modeling a benchmark space weather event
Gian Luca Delzanno	T-5	Rapid Response IPD	Cold-plasma-physics SMEX NAC Series

Geophysical (Focus Lead: Charlotte Anne Rowe (Char), EES-17)

PI	Group	Program	Title
Youzuo Lin	EES-17	Student Fellow	Next Generation Microseismic Event Detection
Artaches Migdissov	EES-14	Student Fellow	REE in Hydrothermal Systems: From Ore Formation to Industrial Extraction
Christopher Ren	ISR-3	Chick Keller PD	Earthquake Interaction
Esteban Rougier	EES-17	Large University	Correlating Damage, Fracture and Permeability Enhancement in Rocks subjected to High Strain Rate Loading

Christopher Alcorn	EES-14	Rapid Response R&D	Hydrothermal Transport of RadioIodine and Implications in the Detection of Clandestine Underground Nuclear Events
Neill Symons	EES-17	Rapid Response R&D	Formulating seismic association for efficient solution with quantum computers
Juan Castorena	CCS-3	Rapid Response R&D	Context-based Multi-modal Data Fusion for UAV Monitoring

Planetary (Focus Lead: Lisa Danielson, ISR-2)

PI	Group	Program	Title
Carene Larmat	EES-17	Student Fellow	How hard should Mars be hit so Insight SEIS can unravel its hidden history?
Amanda Evans	B-11	Rapid Response R&D	Continuous Flow Biocatalytic Production of Green Propellant Fuel from Biowaste for Deep Space Travel
Daniel Coupland	ISR-1	Rapid Response R&D	Neutron lifetime analysis on the Lunar Prospector data
Wendy Caldwell	XCP-1	Chick Keller PD	Modeling Impacts on Rocky Asteroids for Potentially Hazardous Object Mitigation
Julie Jung	T-1	Rapid Response R&D	Unraveling exoplanetary atmospheres: Ab initio calculations of the electronic transitions in FeO
Katherine Mesick	ISR-1	Rapid Response IPD	Influencing future planetary science priorities through contributing decadal white papers
Mike Holloway	ISR-4	Rapid Response IPD	WISE – Exploding Stovepipe Series: Workshop for Interdisciplinary Space Exploration
Reiner Friedel	NSEC	Rapid Response IPD	NASA Matisse Proposals and Review
Reiner Friedel	NSEC	Rapid Response IPD	NASA Dali Proposals and Review

Special Rapid Response – Research in Microgravity R&D Projects

PI	Group	Program	Title
Erik Hanschen	B-10	Special Rapid Response R&D	Using Genetic Sequencing to Detect Radiation Induced Mutations and Alternate Transcriptions Response Arabidopsis thaliana
Jennifer Hollingsworth	MPA-CINT	Special Rapid Response R&D	Shooting for the Stars: Opening New Dimensions for Metal-Organic Frameworks

Hau Nguyen	B-11	Special Rapid Response R&D	Development of A Quick and Accurate Method to Diagnose Urinary Tract Infections in Space
------------	------	----------------------------	--