

CSES Currently Funded Projects 2019

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

PI	Group	Program	Title
Patrick Harding	P-23	Student Fellow	Searching for Dark Matter in the Galactic Center with HAWC
Kirk Flippo	P-24	Student Fellow	Creating an Astrophysically Relevant Magnetic Dynamo in the laboratory
Mark Paris	T-2	Student Fellow	Quantum Effects of Cosmological Observations as a Probe of BSM & Nuclear Physics
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 Turbulence3 Sub-Grid Modeling in Core-Collapse Supernovae
Shengtai Li	T-5	Emerging Ideas R&D	Tracking the Birth of “Super Earth” Planets in Protoplanetary Disks
Patrick Killian	T-2	Chick Keller PD	Kinetic Studies of Magnetic Turbulence, Dissipation and Particle Energization
Christopher Mauney	CCS-2	Emerging Ideas R&D	Changes in Atmospheric Chemistry due to Asteroid Impacts on Earth
Lucas Parker	ISR-2	Emerging Ideas PD	LANL Involvement in the All-Sky
Hui Li	T-2	Emerging Ideas R&D	Visiting PostDoc from Princeton: Understanding a new dust instability in protoplanetary disks

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

PI	Group	Program	Title
Matthew Hecht	CCS-2	Student Fellow	Climate System Response as Understood Through a Novel Analysis of Ocean Circulation and Energetics
Danielle Ulrich	B-11	Chick Keller PD	Impacts of root associates on plant drought tolerance and carbon sequestration
Adam Collins	EES-14	Emerging Ideas R&D	Plant responses to extreme heat waves
Sanna Sevanto	EES-14	Student Fellow	Micron-level Spatial Resolution Gene Expression for Plants
Michaeline Albright	B-11	Emerging Ideas R&D	Viral Control of Terrestrial Carbon Cycling: An Improvement for Earth System Models
Nathan Urban	CCS-2	Emerging Ideas R&D	Machine Learning emulation of global cloud-resolving models to improve prediction of regional climate extremes

Carolyn Begeman	T-3	Chick Keller PD	Large Eddy Simulation of the Sub-ice-shelf Oceanic Boundary Layer
Ann Junghans	EES-14	Chick Keller PD	Influence of proliferation indicators on soil biofilm
Kurt Solander	EES-16	Emerging Ideas R&D	The Impact of the "hot drought" on water security in the Nile River Basin
Katherine Telfeyan	EES-14	Emerging Ideas R&D	A New Understanding of the Terrestrial-Aquatic Interface in Dynamic Coastal Ecosystems

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
Suzanne Nowicki	ISR-1	Student Fellow	Neutron Scatter Camera Optimization Study for Space Science and National Security Applications
Catherine Plesko	XCP-5	Emerging Ideas R&D	Hydrocode Modeling of Impact Crater Formation on Asteroid 16 Psyche
Philip Fernandes	ISR-1	Emerging Ideas R&D	Characterizing Graphene Foils for Application in Space Plasma Instrumentation
Bruce Carlsten	ADE	Emerging Ideas PD	CONNEX End to End Concept Design
Katherine Mesick	ISR-1	Emerging Ideas R&D	Engagement in LunaH-Map Mini-NS Detector Calibration
Patrick Gasda	ISR-2	Emerging Ideas R&D	Investigating the hydrous and boron-bearing subsurface of Mars using DAN and ChemCam
Ann Ollila	ISR-2	Emerging Ideas R&D	Advancing the Readiness Level of LunaLIBS for Future Exploration of the Moon
Wanyi Nie	MPA-11	Emerging Ideas R&D	Exploring novel perovskite single crystal device for low energy ion beam detection
Katryna Yakymenko	T-5	Chick Keller PD	Wave-Particle interactions in the near-Earth environment
Rebecca Holmes	ISR-2	Chick Keller PD	Building Capabilities for Ultra-Low-Light Optical Communication and Sensing

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

PI	Group	Program	Title
Youzuo Lin	EES-17	Student Fellow	Next Generation Microseismic Event Detection
Vamshi Chillara	MPA-11	Emerging Ideas R&D	Understanding the Acoustic Emissions from Gas Bubble Dynamics: A Signature of CO2 Leaks
Thanh Phong Nguyen	EES-14	Emerging Ideas R&D	Using Methane Isotope Signatures to Evaluate and Improve the Shale Production Curve
Christopher Ren	ISR-3	Chick Keller PD	Earthquake Interaction