CSES Currently Funded Projects 2018

Astrophysics, Cosmology (Focus Lead: Hui Li, T-2 & Chris Fryer, CCS-2)

- PI: Patrick Harding Searching for Dark Matter in the Galactic Center with HAWC
- PI: Kirk Flippo Creating an Astrophysically Relevant Magnetic Dynamo in the laboratory
- PI: Mark Parris Quantum Effects of Cosmological Observations as a Probe of BSM & Nuclear Physics
- PI: Fan Guo Kinetic Processes of Particle Acceleration and Radiation in Relativistic Astrophysical Plasma Outflows
- PI: A. Corray/J.Smidt Primordial Explosions and Black Holes: Direct and Indirect Signatures in Deep Sky Image
- PI: Przemek Wozniak Automated Selection and Characterization of Explosive Astrophysical Transients; Modern Data Analytics meets computational physics models
- PI: Emil Mottola Fundamental Physics with HAWC: TeV Gamma-Rays from Extragalactic Sources
- PI: Chengkun Huang Autonomic MHD closure for the turbulent magnetized plasmas in Astrophysics
- PI: Lisa Winter LANL Involvement in the Advanced X-Ray Imaging Satellite NASA Probe Mission

Earth Sciences (Focus Lead: Keeley Costigan, EES-16)

- PI: Dubey Mavindra Scaling Missing State to Predict Properties of Carbonaceous aerosols: From Laboratory to field to Climate Models
- PI: Matthew Hecht Climate System Response as Understood Through a Novel Analysis of Ocean Circulation and Energetics
- PI: Carmela Veneziani High-Resolution Earth System Model (ESM) Simulation
- PI: Kurt Solander The threshold of ignition: changes in wildlife spread tipping points under future hydrology and climate
- PI: Daniella Marias Advancing forest Carbon and water remodeling with plant physiology
- PI: Anastasia Pilionoras Sea ice sediment entrainment during spring flood conditions
- PI: Tirtha Banerjee Modeling disturbance effects on tropical forests
- PI: Devin Goodsman Vegetation-insect Dynamics under global Warming
- PI: Sanna Sevanto Plant Acclimation to Warming Climate
- PI: Alexandra Jonko Can Chaos theory help us better model wildland fires?

Space (Focus Lead: Geoffrey Reeves, ISR-1)

- PI: William Daughton Kinetic Electron Dynamics of Asymmetric Reconnection
- PI: Yue Chen Listen to the Canary: Understanding and Utilizing a Storm Precursor in Low-Earth-Orbit
- PI: Andrew Walker DREAM Capability Demonstration Utilizing Van Allen Probe Space Environment Data
- PI: Herb Funsten IMAP Development
- PI: Suzanne Nowicki Thermal neutron flux characterization at aircraft altitudes with the TinMan Detector
- PI: Katryna Yakymenko Wave-Partial interactions in the near-Earth environment
- PI: Jesse Woodroffe Understanding the Heliophysics Decadel Strategy and its Relationship to LANL Strategic Priorities
- PI: Vania Jordanova Developing a Plan to Meet the Nation’s Space Weather Needs
- PI: Katherine Mesick Engagement in LunaH-Map Mini-NS Detector Calibration
- PI: Rollin Lakis A drone-based gamma ray imaging system for application to Mars
- PI: Kari Sentz Hard and soft data fusion for signature discovery
- PI: Daniel Coupland Analysis of Lunar Prospector data to constrain the neutron lifetime
- PI: Bruce Carlsten Experiments probing the non-linear physics of the interaction between a relativistic electron beam and magnetized plasma
Geophysical (Focus Lead: David Coblentz, EES-17)

- PI: Youzuo Lin  
  Next Generation Microseismic Event Detection
- PI: Satish Karra  
  Enabling Kilometer-Scale Simulations of Thermo-Hydro Mechano-Chemical (THMC) Coupled Processes in Fractured Rock Masses
- PI: P. Johnson  
  Probing the Critical Stress state in Earth’s Crust via induced Seismicity and fluid injection
- PI: C. Rowe  
  3-D Mapping of Shallow Targets Using Microgravity and Cosmic Ray Muons
- PI: Maruti Mudunuru  
  Reduced-Order Models for Subsurface Sensing using internet of Things (IoT) Devices
- PI: C. Rowe  
  Exploring Local Earthquake Detection and Location Using a Seismic Array in Lieu of a Network.
- PI: Artaches Migdissoy  
  Resolving the rare earth crisis:
- PI: Patrick Gasda  
  The Dynamic Albedo of Neutrons (DAN) Instrument