NSI | CENTER FOR
NATIONAL SECURITY INITIATIVES

High-impact national security research and workforce development enabled by top research scientists and state-of-the-art facilities

The **Center for National Security Initiatives (NSI)** at the University of Colorado Boulder has established core research capabilities across campus, engaging with **over 60 research faculty** to advance Department of Defense and Intelligence Community priorities. NSI also provides advanced training for the next-generation national security workforce.

CU Boulder fosters seamless, on-demand collaboration among technical experts in the aerospace and defense sectors, driving innovation and strategic advancements.

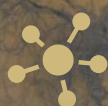**Applied and fundamental research** supporting national security priorities

Access to intellectual capital through world-class faculty, specialized academic programs and topical studies

Workforce development including student projects, internships and clearances

Missions Supported

Dynamic Space Operation

Cybersecurity

Decision Making

Space Domain Awareness

LEO and VLEO Operations

Missile Warning & Defense

Core Research Capabilities

- ✓ Autonomous Systems
- ✓ Cybersecurity & Microelectronics
- ✓ Geospatial Data Analytics
- ✓ Human & Sociotechnical Systems
- ✓ Hypersonics
- ✓ Materials for Extreme Environments

- ✓ Position, Navigation & Timing
- ✓ Quantum Technologies
- ✓ Remote Sensing
- ✓ RF Engineering
- ✓ SmallSat Platforms & Payloads
- ✓ Space Domain Awareness

CU University of Colorado **Boulder**

CU Boulder National Security Capabilities: Highlights

Space Domain Awareness

Missions: Space operations, launch detection, anomalies, cis-lunar
CU Strengths: Astrodynamics, sensor tasking, autonomy, detection, estimation, characterization
NSI Research Lead: Dr. Greg Furlich (✉ greg.furlich@colorado.edu)

RF Engineering

Missions: Communications, EW, spectrum operations
CU Strengths: 5G/XG, antennas, power amps, filters, AI/ML, photonics
NSI Research Lead: Dr. Alan Brannon (✉ alan.brannon@colorado.edu)

Hypersonics

Missions: Missile warning, missile defense
CU Strengths: Aerothermodynamics, materials, structures, propulsion, trajectories, signatures
NSI Research Lead: Dr. Iain Boyd (✉ iain.boyd@colorado.edu)

Remote Sensing

Missions: TacSRT, PNT
CU Strengths: GNSS, microwave radiometry, small satellites, commercial imagery, AI/ML
NSI Research Lead: Dr. Angie Crews (✉ angie.crews@colorado.edu)

Human & Sociotechnical Systems

Missions: C2, education and training, human-systems integration
CU Strengths: Responsible human-AI teaming, cognitive security, space human factors
NSI Research Lead: Dr. Chad Tossell (✉ chad.tossell@colorado.edu)

Cybersecurity & Microelectronics

Missions: Data assurance, system resilience, space operation
CU Strengths: Space components, secure/resilient systems integration, autonomy and robotics
NSI Research Lead: Dr. Calvin Chan (✉ calvin.chan@colorado.edu)

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Be Boulder.

↗ colorado.edu/center/nsi