



California State University, Northridge Capability Statement

Institution: **CSU Northridge**

DUNS No: **055752331**

Cage Code: **9L024**

NACIS ID(s): **611310**

SIC: **8221**

Federal EIN No: **95-1992732**

Certificates, Registrations, Accreditations: **WASC, ABET**

POC Information: **Dr. Hamid Johari, Interim Dean, College of Engineering & Computer Science**

Address: 18111 Nordhoff Street, Northridge, CA 91330;

Tel: (818) 677-4501 email: hjohari@csun.edu;

OVERVIEW

California State University, Northridge (CSUN) is an urban, comprehensive university that delivers award-winning undergraduate and graduate programs to nearly 40,000 students annually and counts more than 330,000 alumni. Since its founding in 1958, CSUN has made a significant and long-term economic impact on California, and the LAEDC recognized CSUN as its 2015 Eddy Award winner for its positive economic impact. Serving more students on Pell Grants than any other institution in California, CSUN is also a social elevator and one of the most diverse universities in the country. CSUN ranks 13th in awarding bachelor's degrees to traditionally underserved students. The journal *Nature* recently named CSUN a Rising Star for scientific research, and the NSF ranks CSUN in the top five nationally among similar institutions for graduates who go on to earn doctorates in the sciences.

The College of Engineering and Computer Science seeks to be a recognized hub for excellence for baccalaureate and masters education in computer science and in engineering. The College has a renewed interest in research and development projects given the large number of new faculty hires. It is also a partner in the professional communities of computer science and engineering and provides a key link between students' education and professional practice.

RESEARCH CAPABILITIES

Computer Science: Data mining, machine learning, data science; Software testing, formal methods; Accessibility, wearables, and human-computer interaction

Electrical Engineering: CubeSat hardware design and construction; LEO small satellite communications, command, control and data handling; Software-defined radio for space and terrestrial communications; Applied electromagnetics for antenna design, RF/microwave circuit design; Smart grids, micro grids, distributed generation, power electronics, and power systems and control; Control systems for autonomous vehicles

Manufacturing Engineering: High-rate CNC machining; composite materials fabrication; 3D printing

Material Science and Engineering: Characterization of micro- and nanostructure of advanced materials; fracture mechanics; non-equilibrium materials, especially amorphous metallic materials

Mechanical Engineering: Experimental and numerical analysis of composites; low-speed fluid dynamics; heat transfer and thermal management; autonomous systems

FACILITIES

Communications Laboratory- VHF and UHF Satellite Ground Station (S Band planned), with automatic tracking antenna system; CubeSat development, construction, test and operations

Keck Materials Laboratory- Zeiss Ultra 55 FESEM and Oxford EDAX/EBSD, a multi-channel spectroscope system supporting Auger Surface Analysis X-ray Photoelectron Spectroscopy and AUGER electron spectroscopy, a JEOL Scanning Electron Microscope, an atomic force microscope, KEVEX - EDA Microprobe Chemical Analysis System, and Ultrasonic Flaw Detector with 3D scanner

Gene Haas Laboratory- Advanced manufacturing laboratory housing CNC and EDM machines and 3D printers

Robotics Laboratory- Supports the development of autonomous intelligent vehicles with integrated sensors

Fluid Dynamics Laboratory- Flow visualization water tunnel with advanced, laser-based instrumentation; wind tunnel with load cell; heat transfer experimental station

Major & Specialized Instrumentation- 10' autoclave for composite materials processing; fully equipped anechoic chamber for antenna performance measurements; power electronics laboratory with simulators.



PAST PERFORMANCE

CSUNSat1 was a collaboration with the JPL to design, construct, test and operate on orbit a 2U CubeSat. The mission successfully space tested and qualified a new low temperature energy storage system in low earth orbit. The four-year project involved 70 graduate and undergraduate students, many of whom now work in the space and space-related industries, including the JPL.

Development, prototyping and test of an automatic interference cancelling system using software defined radio for the US Navy at Pt. Mugu Naval Weapons Research Center.

Research Partnership with JPL on a four-year interdisciplinary program on “Failure Analysis, Prevention, and Reliability Modeling for Sub-Micron Electronics Technology” with a budget of \$2,000,000, 2000-2005

Several projects with the Department of Defense, including instrumentation acquisition grants, parachute canopy modeling, search and rescue with Artificial Intelligence, and UAV testing environment. Additionally, a number of industry sponsored projects are carried out annually.