

Howard R. Hughes College of Engineering

- Four Departments - Civil and Environmental Engineering and Construction, Computer Science, Electrical and Computer Engineering, and Mechanical Engineering
- Nationally-ranked Graduate Programs in Civil, Mechanical and Electrical Engineering
- 8 BS/BA undergraduate degrees, and 13 graduate degree programs including nuclear materials, bio-medical, and aerospace
- 6 minor programs; including Unmanned Aircraft Systems, Solar and Renewable Energy, Technology Commercialization
- 2,700 undergraduate students; 270 graduate students



Major Research Areas & Capabilities

Battery

- Life prediction for battery design
- Modeling electrochemistry of electrodes
- Fuel cell catalysts/batteries
- Nanostructured Si-based anode materials for Li-ion Batteries
- Ionic-liquid-based energy storage technology

Biomedical Engineering

- Biosensors and actuators design
- Modeling of cardiovascular blood flow
- Lab-on-a-chip technologies for medical diagnostics
- Medical imaging
- Technologies for people with visual impairment

Environmental Engineering and Water Resources

- Remote sensing
- Hydrologic and hydraulic modeling
- Urban thermodynamic and hydrodynamic modeling
- Transport of toxic constituents
- Environmental microbiology

National Security Engineering

- High-speed, high-frequency microelectronics
- Nuclear applications of accelerators
- Radiation detectors
- Structural dynamics, explosives, and impact analysis

Renewable Energy

- Electric power systems and power quality
- Solar power generation
- Design of photovoltaic (PV) systems
- Power plant dry cooling

Transportation

- Intelligent Transportation Systems
- Highway monitoring
- Transportation emergency management
- Transportation Safety Systems
- Traffic and vehicle control systems and sensors.

Unmanned Aerial Systems (UAS)

- Airport ground operations
- Cybersecurity of UAS and ground systems
- UAS data acquisition and management
- Privacy and blinding

Contact

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Points of Pride

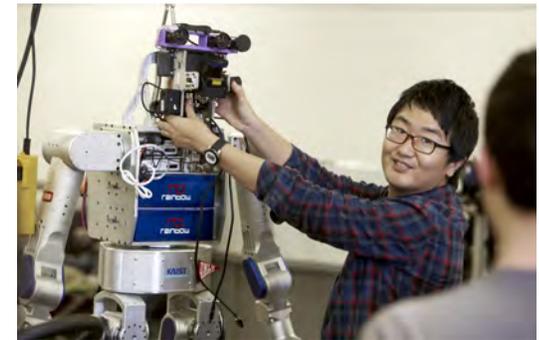
Top Researchers

Dr. Kwang Kim, a leading expert in active materials and energy systems, was recently selected by the National Academy of Inventors (NAI) as a NAI Fellow for his many patents, including creating high performance artificial muscles for disabilities and functional coatings for condensers. He has also been recognized with the 2016 Harry Reid Silver State Researcher Award and the 2015 Nevada Regents Top Research Award.



Leaders in Robotics

A team of UNLV researchers and students, led by internationally known roboticist Dr. Paul Oh, competed in the June 2015 Defense Advanced Research Projects Agency, (DARPA) Challenge Finals, an elite competition of robots and their human supervisors. UNLV was one of just 25 teams worldwide to participate and came in 8th in the world.



Solar-Water Nexus

UNLV researchers, partnering with other state institutions, are leading the Solar-Water Nexus. The focus of the project is to investigate the link between solar power generation and the limited water resources in the west. The goal is to achieve solar energy conversion to electricity, while minimizing its negative impacts on water usage and the environment. The project is funded by the National Science Foundation (NSF).



Solar Decathlon

In 2020, UNLV is once again participating in the U.S. Department of Energy's Solar Decathlon Competition. The international competition explores innovative energy conservation techniques and educates the public about energy-saving residential designs. It requires collegiate teams to design, build, and maintain a sustainable solar-powered home. Prior entries have received top awards in categories such as Innovation and Engineering, as well as overall.



Innovation in Action

UNLV's capstone senior design program is spawning out technology-based companies in Las Vegas. Some of our recent alumni have created Dronesmith Technologies, a leading unmanned aerial vehicle (UAV) company in Southern Nevada. The company focuses on the development of UAVs for scientific and industrial use.

