The Division of Earth and Ecosystem Sciences (DEES) is one of three scientific research divisions within DRI. Since its inception in 1999, DEES has grown steadily and built a strong program of research, development, and education in the earth and ecosystem sciences. The DEES research portfolio reflects the interplay between local, state, national, and international environmental issues, the expertise of our faculty, and the availability of research funding.

The mission of DEES is to conduct high-quality basic and applied research in the life and earth sciences, particularly those dealing with the complex interactions of geological processes, organisms, biological communities, and human societies on the earth’s surface. We strive to be responsive to the scientific community through publications and service, to develop the scientific pipeline, and to help inform the general public on issues of vital environmental concern. We address our mission through multidisciplinary research and education, with a highly diverse faculty supported by graduate research assistants and technicians. DEES has approximately 80 ongoing research projects with an annual budget of close to $12 million, primarily derived from external research sponsors.

PHOTO CAPTIONS Top left: Scientists work in the greenhouse at DRI in Reno, Nevada; Top right: Researchers conduct soil sampling in southern California. Bottom right: Scientist uses a UAS to collect images of soil and vegetation in central California.
ARCHAEOLOGY, ANTHROPOLOGY & PALEOECOLOGY
- Cultural resources inventory and management
- Historic preservation of cultural sites
- Study of ancient species, ecosystems & climates

BIOLOGICAL SCIENCES
- Astrobiology
- Biogeochemistry of extreme environments
- Plant and ecosystem ecology
- Environmental genomics
- Microbial ecology and molecular biology
- Ecosystem and agricultural sustainability

GEOLOGICAL SCIENCES
- Geoscience support for military operations
- Dust and aerosol characterization
- Soil science and soil testing
- Geochronology and luminescence dating
- Geochemical modeling
- Quaternary geomorphology

HEALTH SCIENCES
- Genetics and population health
- Bioinformatics and health analytics
- Personalized medicine and wearables

REMOTE SENSING, GIS & VISUALIZATION
- Analytics, informatics, machine learning and data visualization
- Environmental forensic studies
- Species and habitat mapping
- Unmanned aerial systems (UAS) applications and development
- Water resource and water rights mapping

RESEARCH COMMERCIALIZATION
- TuBiomics: Agricultural pharmaceutical company creating organic antifungal chemicals
- Predira: Weather intelligence platform for localized pest and disease forecasts

PROJECT FUNDING SOURCES

FEDERAL SPONSORS
- Department of Energy
- Department of Defense
- Department of Interior
- National Aeronautics & Space Administration
- National Science Foundation
- U.S. Department of Agriculture

STATE SPONSORS
- Nevada Division of Environmental Protection
- Governor’s Office of Economic Development
- Nevada System of Higher Education

LOCAL GOVERNMENT SPONSORS
- Clark County
- Nevada Tahoe Conservation District
- Southern Nevada Water Authority
- Lincoln County

PRIVATE SPONSORS
- Renown Health

PHOTO CAPTIONS
Above: Researcher takes a soil crust measurement in southern Nevada; Top left: DEES researcher measures and catalogues archaeological samples at DRI’s Las Vegas campus; Top right: Researcher measures dust in Israel using a device developed at DRI called the PI-SWERL.