



## DEPARTMENT OF EARTH AND ENVIRONMENTAL ENGINEERING

COLUMBIA UNIVERSITY SCHOOL OF ENGINEERING AND APPLIED SCIENCE  
HENRY KRUMB SCHOOL OF MINES

Enabling the sustainable and equitable use Earth's resources is the dominant challenge of our time. Global population growth, urbanization and industrialization led to an improved human development index. But this *ad hoc* growth has rapidly consumed natural resources and resulted in extensive waste and environmental degradation. Despite the successes of the modern era, increased productivity and growth now threaten human health and catalyze climate change. Needed are better engineering solutions for a planet with sustained and equitable human development that treat classic "externalities" as first-class design goals.

The Department of Earth and Environmental Engineering (EEE) is a small, diverse, and outwardly facing team actively researching and developing solutions to these complex and multidisciplinary problems. EEE reconciles a deep concern for the environment with the needs of a global industrialized society. Through conscientious stewardship of our finite natural resources: minerals, energy, water, air and land, EEE pioneers crucial new environmental initiatives.

**Water:** Water Systems Analysis; Hydroclimate Forecasting; Earth Systems Analysis

**Mass:** Scaling Decarbonization; Sustainable Extraction and Reuse; Extraterrestrial Resource Exploration

**Energy:** Energy Storage, Distribution, and Efficiency

These problems require an "all-hands" approach. Each thrust has teamed with the School and Engineering and Applied Science and Columbia Earth Institute to reach across the University to best address critical needs. This outreach occurs via:

THE LENFEST CENTER FOR SUSTAINABLE ENERGY  
THE COLUMBIA WATER CENTER  
THE COLUMBIA ELECTROCHEMICAL ENERGY CENTER  
THE EARTH ENGINEERING CENTER

Masters of Science Fall 2020 Applications Due February 15th, 2020

[HTTPS://GRADENGINEERING.COLUMBIA.EDU/ADMISSIONS](https://gradengineering.columbia.edu/admissions)

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