



USC Dornsife Environmental Programs

A Multidisciplinary Approach

USCDornsife

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Academic Planning :

Enhancing Our Core Missions of Scholarship, Teaching, and Service



- Curiosity at Work
- Developing New Methods
- Advancing the Art and Science of Human Well-being
- Safeguarding the Planet for Future Generations
- Exploring Identity and Culture in a Changing World
- Fixing a Broken Political System
- Anticipating the Impact of Innovation
- Confronting Global Challenges



High-Level Theme

Safeguarding the Planet for Future Generations



Selected Examples of Scholarship

Measuring Stresses and Predicting Responses of the Environment

Environmental and remote sensing data in various ecosystems; deep ocean and deep time; urban environmental paradigm; biodiversity conservation; high-dimensional data analytics and machine

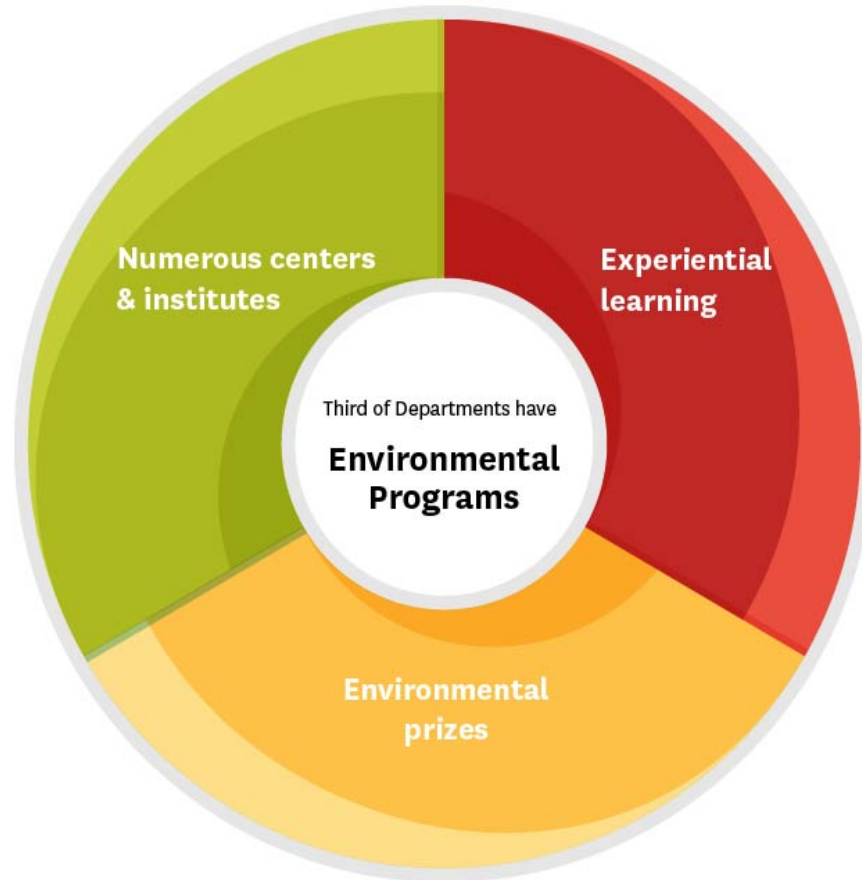
Environmental Aesthetics

Environmental humanities; ecopoetics and the language of nature; art historical response to climate change; Victorian ecology.

Humans and Global Environments

- **Measuring Stresses and Predicting Responses of the Environment**
- **Resilience and Feedback**
- **Implementing Solutions**
- **Environmental Aesthetics**
- **Humans and Global Environments**
- **Urbanism and Sustainability**
- **Politics of the Environment in the U.S.**
- **Addressing Global Environmental Problems and Resource Conflicts**

Environmental Programs Span the Natural Sciences. Social Sciences. Humanities





Examples: Social Sciences

Spatial Sciences



New mapping tools to track global environmental issues such as wildfires, drought conditions, hurricanes, greenhouse gases

Software to predict redistribution of soil mass and soil organic carbon under human disturbance

Program for Environmental and Regional Equity



Produces Environmental Equity Assessment of California's greenhouse gas cap-and-trade program

Created/updates Environmental Justice Screen Method used by the CA Office of Environmental Health Hazard Assessment



Examples: Humanities



History

Rapid growth of Southern California
Environmental impact of shopping malls



Huntington-USC Institute on Calif. and the West

Water and sustainability
Climate change scholarship
Intersections of environmental issues/equity



Examples: Natural Sciences

Loker Hydrocarbon Research Institute



New, clean methods for hydrogen storage

Methanol Economy

Methane capture and conversion into biodegradable plastics

Grid scale battery technology

The USC Wrigley Institute for Environmental Studies



Building 100% sustainable operation on Catalina Island

Developing process to eliminate food waste

Developing kelp as biofuel



Examples: Natural Sciences

Biological Sciences



Exploring potential of “electric bacteria” to generate clean energy and power sustainable wastewater treatment



Chemistry (>50% of faculty working on sustainability issues)

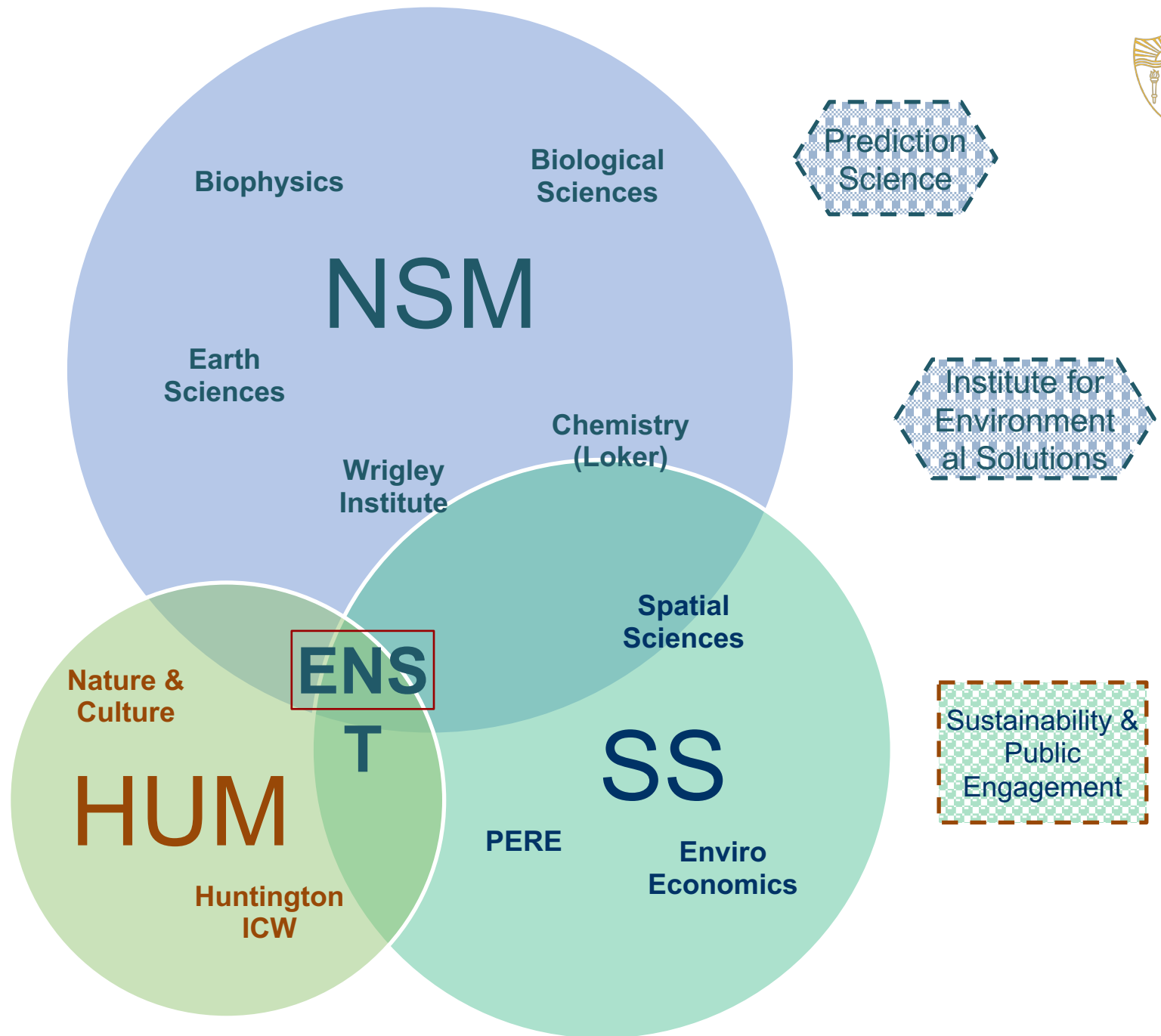
Energy Conservation – new residential and industrial lighting based on OLEDs

Photovoltaics – quantum dot and organics



Brain and Creativity Center

Studying the neural basis for why the brain is more resistant to political arguments



~150
Dornsife
faculty

