



College of the

# Environment

## College-Wide Strategic Direction 2012–2017

### VISION

In our local communities and around the globe, we are increasingly aware of the fundamental, inextricable links between our own health and well-being, and a healthy environment. New knowledge is vital to inform decision-making that fosters sustainable interactions between the two, allowing ecosystems to thrive while continuing to deliver the goods and services that humans want and need. Inclusion of all voices from the greatest diversity of disciplines, cultures, and approaches to problem-solving is necessary to better understand these linkages, and safeguard these ecosystems and resources that flow from them.

The University of Washington is committed to playing a major role in advancing our understanding of the environment and our interactions with it, and in developing innovative approaches to address environmental problems. To achieve that goal, the UW created the College of the Environment.

The College of the Environment is an unparalleled hub of environmental scholarship, innovation, and education. Its unique strength is the combination of outstanding faculty studying the Earth's atmosphere, land, and water systems with those studying human dimensions of the environment, the application of engineering and technological solutions to environmental problems, and the impact of policy on environmental change. No other university has brought together this breadth and depth of expertise.

#### **The UW College of the Environment will...**

- advance our understanding of the Earth's environment and human interaction with the environment, and apply this understanding to meet present and future challenges.
- be known regionally, nationally and internationally as a leading innovator in environmental research and teaching because of the unparalleled strength and breadth of its faculty with environmental expertise and culture of cross-disciplinary collaboration.
- create a climate of engagement, actively seeking to enlarge the boundaries of diversity, and highlighting the crucial roles that under-represented groups play in experiencing, documenting, understanding, and solving environmental challenges.
- excel in educating future environmental leaders and experts needed to meet environmental challenges, and in improving environmental literacy and a critically educated citizenry.
- engage external communities in participatory communication.

## FIVE OBJECTIVES/FIVE YEARS

### Hands-On Learning

Experiential learning is at the core of a robust undergraduate education. College of the Environment students blend classroom, laboratory, and field learning to build crucial experience working towards solutions for real-world challenges.

### Graduate Education

Accelerating the frontiers of discovery, our graduate students arm themselves with disciplinary strength and interdisciplinary breadth, through initiatives like Program on Climate Change and NSF-funded research traineeships in ocean acidification and bioenergy.

### Geoengineering

Geoengineering is the deliberate modification of the Earth's climate to counteract the effects of climate change. College experts, in partnership with academic colleagues across the globe, are conducting a rigorous interdisciplinary evaluation to determine the purpose, need, and ethical implications of geoengineering research, the direction it should take, and how it might be funded and governed going forward.

## 1 Deepen and stretch disciplinary strengths to enhance our understanding of how the world works.

### Why?

- Exploration by quantitative and qualitative investigation—from microscopic to planetary scales—requires innovation and leadership in scale, scope, reach, and resolution of our ability to observe earth and environmental systems.
- Synthesis of observation requires the ability to develop new capacity to curate and extract meaning from data streams of rapidly increasing size, complexity, and variety.
- Interpretation of our natural and built world requires new methods of modeling and manipulating data with sophisticated tools, enabling us to understand complex dynamics and forecast threshold events as well as long-term trends.

### How?

- Develop strategies to fund investments in technologies for observation and experimentation and in methods for integration, modeling, and visualization.
- Extend insights gleaned from disciplinary research to interdisciplinary endeavors to gain new understanding of complex interactions among Earth's linked biological, chemical, physical, and geological systems.
- Find new ways to engage with and support scientists, engineers, and policy experts outside the College whose disciplinary scholarship critically informs our work.
- Integrate social science disciplines into the College, recognizing their foundational contributions to the understanding of coupled human–environmental systems.
- Incentivize collaborations and research perspectives that are beyond the expertise contained within the College and University.

## 2 Advance and incentivize interdisciplinary scholarship.

### Why?

- Complex and urgent environmental challenges require an interdisciplinary scope and accelerating pace of research.
- Research that will translate to effective solutions demands early and persistent engagement of key stakeholders.
- High-risk/high-impact research requires creative initiatives and venture capital to catalyze new collaborations and less conventional partnerships.



### **How?**

- Create substantive interdisciplinary inquiry based on disciplinary foundational and emerging knowledge.
- Promote high-risk, high-reward initiatives.
- Identify emerging environmental issues, and strategically position the College for leadership as those issues become more widely recognized.
- Explore novel partnerships across campus, throughout the Northwest, and nationally.
- Establish substantive and strategic international collaborations.

## **3 Enhance rigorous and responsive educational programs that encompass disciplinary depth and interdisciplinary breadth.**

### **Why?**

- Our students need access to rich and focused environmental scholarship arising out of disciplinary exploration.
- The next generation of environmental specialists needs training in cross-cutting interdisciplinary academic programs that engage them directly in team-based problem solving.
- Our alumni and external constituents seek life-long learning opportunities.

### **How?**

- Strengthen current disciplinary programs by supporting continuing innovations in experiential learning.
- Create incentives for interdisciplinary teaching and learning at the undergraduate and graduate level.
- Provide strong linkages and networks to agencies, non-profit organizations, industry, and community organizations so that all students have the opportunity to apply classroom and field learning to real-world environmental challenges.
- Provide opportunities for all faculty, postdoctoral fellows, and graduate students to further their teaching and mentoring skills, and reward creativity and excellence.
- Leverage existing programs by partnering with units across UW.

### **Ocean Observatories Initiative**

The College is establishing an undersea automated observatory off the Northwest coast, allowing for scientific exploration and real-time dissemination of digital information about the deep ocean to researchers, classrooms, aquaria, museums, and the general public.

### **Early Earthquake Warning Project**

College scientists are leading an effort to advance our monitoring, computational, and communication capabilities to provide early warning of large earthquake events, mitigating the loss of lives and destructive economic impacts as a result.

### **Bioenergy**

Multi-faceted research and partnerships are leading to new sources of clean energy—such as biofuels and marine renewables—transforming our green economy through bioenergy innovation and technology in a practical and sustainable manner.

Photos, left to right:  
College of the Environment Archives,  
John Meyer, Debi Bishop/photos.com,  
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## Ocean Acidification

The global oceans are changing, which includes waters that are acidifying. The College is at the forefront of understanding this change and its effects on ecosystems and economies through a robust network of internal and external research partners.

## Salmon Program

Our long research history directly informs and supports natural resource management decisions and deepens our understanding of complex salmon lifecycles, allowing for robust and resilient wild fish populations that continue to supply us with safe and sustainable seafood.

## Climate Impacts Group

Through rich partnerships, we are developing science-based climate forecasts and planning tools for resource managers in the Pacific Northwest and around the world, helping strengthen the long-term management and resilience of natural and social systems in the face of climate change.

Photos, left to right:  
College of the Environment Archives,  
John Meyer, [garethkirklandphotography.com](http://garethkirklandphotography.com),  
College of the Environment Archives

## 4 Explore, evaluate, and effect dynamic solutions and policies in response to environmental challenges.

### Why?

- Solutions to complex environmental issues need to be underpinned by robust science.
- Science should support communities and decision-makers in assessing environmental and human impacts of alternative approaches to environmental problems.
- Influencing how humans interact with the environment requires identifying practical, adaptable, and scalable pathways towards sustainability.

### How?

- Strengthen existing collaborations and build new partnerships that catalyze the movement of research into practice.
- Promote a culture that stimulates creativity, inclusiveness, and opportunities for developing solutions.

## 5 Engage and communicate with a broad range of stakeholders.

### Why?

- As a publicly supported institution, we are obligated and committed to transfer understanding and solutions to citizens, communities, governmental agencies, non-profit organizations, and resource management institutions.
- Discovery of effective solutions to environmental challenges requires new modes of collaboration in defining research and educational directions.
- Frontline stakeholders require critical information and insights.
- A scientifically literate public is critical to 21st century sustainability.

### How?

- Establish the College's reputation as a reliable and relevant resource for environmental decision-making.
- Engage with diverse communities to gain insight into societal constraints, traditional knowledge, and perspectives that inform our understanding of environmental issues.
- Deepen partnerships with government, industry, non-profit organizations, and media.
- Use strategies that work across the communication spectrum, via contemporary and traditional media.

