

Sustainability Research Initiative

a. Description. This proposal would advance inter-campus and inter-disciplinary research collaborations related to sustainability to attract and leverage additional investments from non-state sources and further economic development. One of the greatest challenges facing Oregon and the world is how to live on Earth sustainably. The Oregon Business Plan recognizes that sustainability is Oregon's greatest competitive advantage and opportunity. The Academic Excellence / Economic Development Working Group recognized this and the Board of Higher Education has taken the lead on developing a sustainability initiative within the Oregon University System (OUS).

A recent report by the Interacademy Council, representing the national science academies of more than 90 countries, recently released their report, *Lighting the Way* (October 2007), which calls making a transition to a sustainable energy future "one of the central challenges of this century." To do this requires understanding the Earth as a natural system and creating models and tools to support sustainable decision making. The Environmental Protection Agency (EPA) embraced this challenge in its recently adopted *Sustainability Research Strategy* (October 2007), its research roadmap. EPA recognizes that sustainability can only be achieved in a "systems-based and multimedia context" requiring integrating decision support tools and supporting data and analysis.

Since 2001 the Oregon Legislature and Congress have created three new multi-institutional interdisciplinary research institutes focused on natural resources and sustainability within the Oregon University System: the Institute for Natural Resources (INR) (<http://inr.oregonstate.edu>); the Oregon Transportation Research and Education Consortium (OTREC) (www.otrec.us); and the Oregon Climate Change Research Institute (OCCRI). In addition, OSU created the Institute for Water and Watersheds (IWW; water.oregonstate.edu) to coordinate and facilitate water activities at OSU. Led by the IWW, faculty at OSU, PSU and UO have developed a proposal for a new Oregon Water Institute (OWI) aimed at positioning OUS to assume a leadership role in addressing water problems. These four efforts can and should be aligned and integrated across OUS in order to provide the institutional framework and foundation for interdisciplinary research needed to put Oregon at the forefront of sustainable solutions to the great natural resource, environmental and energy problems we face.

These four institutes address the fundamental underlying Earth systems science, data integration and access and systems analysis thinking needed to support the invention of sustainable development technologies by the existing Bio-Economy and Sustainable Technology Center. They focus on the fundamental threats to human well-being: climate change, water, bio-diversity conservation and the integrated systems approaches needed to make the transition to a sustainable future. All four institutes are committed to research addressed to solving major public problems and developing new, long-term strategies for sustainability.

INR and OCCRI receive appropriations from the Oregon Legislature; however, the existing state funds (\$231,500 annually for INR and \$180,000 annually for OCCRI) are

insufficient to cover both core administrative support costs and the salaries of key personnel. OTREC is funded at \$15 million in Federal funds over five years, but each federal dollar must be matched by a local, non-Federal dollar. The IWW receives no governmental support, save for about \$92,000 annually from the U.S. Geological Survey, most of which must be matched two-for-one (non-Federal to Federal dollars).

This proposal would fund: (1) shared administrative support services for all four of these OUS-level collaborative research partnerships; (2) research seed funds and development of research roadmaps to leverage additional federal, state and private funds for new multi-institutional collaborations; (3) data management and access, including an integrated natural resources digital library, a climate change clearinghouse and a biodiversity database; and (4) technical assistance to federal, state and local government and Oregonians.

b. Need. Today these four institutes all receive some support from the state, individual campuses or the federal government; however, they are all too small to afford the full-time administrative staff support they need for office management, grants and contracts administration, information technology and web services and communications and outreach. They also lack common space and communication services needed to facilitate interdisciplinary communications and collaborations across colleges and campuses. Opportunities to leverage available federal funds are limited by lack of state matching funds and lack of state seed money limits opportunities for young faculty to develop new interdisciplinary approaches to sustainability. Data management services and new methods of data integration and access are essential to provide critical information and technical assistance to researchers, public agencies and the general public.

c. Benefits and Value. The overarching benefit and value of this proposal is positioning Oregon to be at the international forefront in addressing the sustainability challenges of the 21st Century by accelerating basic research on climate change and water, making critical data about sustainability and natural resources available to policy makers and citizens and providing technical assistance needed to transform the way we live. More specifically, the proposal will: (1) leverage additional non-state funds; (2) catalyze new faculty teams and support them as they seek new funding; (3) attract and hire high quality staff and improve communications and outreach; (4) enhance communication and collaboration between researchers across OUS in furtherance of positioning and branding OUS in sustainability and natural resources; and (5) develop needed statewide indicators of sustainability.

d. Performance Indicators. Specific performance measures for the four OUS-wide sustainability interdisciplinary research institutes will need to be developed; however, this proposal supports and aligns with the following existing performance indicators for

- Sponsored Research Funding from Grants and Contracts
- Philanthropy and Private Support of OUS Research
- Research Dollars per Faculty
- Customer Service

Two additional indicators may be appropriate:

- New collaborative research partnerships across OUS schools
- Cost savings compared to stand alone institutes

e. Budget and Cost Distribution.

A. Core Support and Space

Core administrative support funding and combined with co-location at a central site in Portland	400,000	General Funds for the FY 2009-2011 Biennium (4.5 FTE) Funds would support an office manager, 2 executive assistants, a grants and contracts technician, and an IT-web technician, as well as remodeling and furnishing of new shared space
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Core Support and Space Total	\$400,000	
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B. Research Seed Funds

Climate Change fellowship support for postdoctoral researchers and young faculty	400,000	General Funds Recurring Annually in fellowship support for postdoctoral researchers and young faculty to develop new partnerships and research concepts and leverage other funds would also be provided
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Water Research Seed money grant program	800,000	General Funds Recurring Funds will support a competitive, collaborative “seed money” grants program among OUS institutions to match anticipated Federal contributions of approximately \$180,000
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Water research roadmap	150,000	General Funds Non-Recurring Funds will support multi-institutional workshops aimed building a water research roadmap for Oregon in cooperation with
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government and the private sector.

OTREC	1,000,000	General Funds Recurring Funding will support faculty, students and programs at PSU, UO, OSU and OIT.
Research Seed Funds Total	\$2,350,000	
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C. Data Management and Access		
Climate Change Information Clearinghouse	175,000	General Funds Non-Recurring Provide funding needed to create a climate change information clearinghouse in conjunction with the Oregon Climate Service and ODOE
Oregon Explorer Digital Natural Resources Library	500,000	General Funds Non-Recurring Funding would support completion of core architecture and content
Oregon Natural Heritage Information Center	200,000	General Funds Recurring Increased funding is necessary due to reduction and anticipated elimination of federal and private support and to support agency development of legislatively mandated on-line tools to streamline permitting which requires free access to this information.
2010 State of the Environment Report and Indicators	250,000	General Funds Non-recurring The 2000 State of the Environment Report (SOER) was written by OUS faculty working with the Oregon Progress Board. The SOER needs to be updated as a foundation for

Data Management and Access Total	\$1,125,000	
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D. Technical Assistance: Connecting Science to Policymaking		
Ecosystem Services Marketplaces	60,000	General Funds Non-Recurring Funds would support the development of a coordinated OUS research initiative on development of ecosystem service markets
Climate Change Technical Assistance	265,000	General Funds Recurring Provide full-time support for the institute director to support Global Warming Commission and provide technical assistance to local governments, prepare an annual assessment of the state of climate change science and support the
Water Collaboratory	225,000	General Funds Recurring Support the OSU-administered Water Collaboratory, an open analytical laboratory available to all OUS institutions
Technical Assistance Total	\$525,000	

Total for biennium: \$4,425,000

f. Connection to Board Goals, Operating Guidelines and Strategic Priorities. The Board has long recognized the importance of interdisciplinary research institutes as a way to foster interdisciplinary activities in pursuit of basic and applied research and instruction, attract non-state funding, motivate faculty, and create flexibility needed to respond to new challenges and opportunities (Ch. 13 Board Policies).

The Research Council is specifically charged by the Board to:

- Advance intercampus and interdisciplinary research collaborations and resulting grants and funding; and
- Enhance the infrastructure within Oregon to facilitate excellence in research and technology transfer, including supporting faculty efforts in grant proposal development, scholarly communications, and entrepreneurial activities.

This proposal furthers both of these directives by supporting both intercampus and interdisciplinary research in critical areas for Oregon.

The Board's new Long Range Plan calls for better alignment of programs, approaches and services within OUS. A key strategy is to manage OUS as portfolio to deliver optimally overall outcomes for the benefit of all Oregonians. The Plan recognizes sustainability and natural resources as a strategic research focus. Providing core administrative support services for research on climate change, natural resources, transportation and water furthers this focus.

The proposal also furthers two key goals in the Long Range Plan, specifically:

- Creating shared administrative services to improve cost efficiency and effectiveness
- Integrating institutional efforts to develop competitive advantage for OUS and Oregon, particularly for priority areas of research focus (e.g., nanoscience and microtechnologies, sustainability and natural resources, neuroscience and biomedical research)