### UNIVERSITY OF OREGON

# Federal Priorities

Policy, Budget, and FY2010 Appropriations April 2009

Office of Public and Government Affairs



#### **UO ALUMNI BOARD OF DIRECTORS**

The board of directors is the governing body of the University of Oregon Alumni Association. It is composed of twenty-four geographically selected regional directors from Oregon, four regional directors from areas outside the state, twelve directors-at-large, three faculty representatives, a representative each from the College of Education and the School of Law, and ex-officio members selected from various campus departments and organizations.

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#### **UO FOUNDATION BOARD**

The Board of Trustees is comprised of up to sixty-five members who donate considerable time and effort in the interest of helping the foundation and the university grow and prosper. They are selected for their professional expertise and consistent support. The board's main responsibilities include hiring the foundation's president and CEO, and overseeing the management and administration of the foundation and its assets. Board members are advocates for the university, and serve as volunteers in a variety of fulfilling roles. Members serve three-year terms on the board.

#### **Officers**

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#### MESSAGE FROM THE PRESIDENT



April 2009

We appreciate the Oregon congressional delegation's commitment to higher education and the University of Oregon's strategic priorities. We ask you to be ever mindful that federal research programs and federal student aid programs are essential to the health and well-being of Oregonians. Federal support for higher education is significantly more important to the state of Oregon than almost anywhere in the country because Oregon is unable to invest in its education systems as most states do.

This summary provides quick facts about the university, our federal budget and policy priorities, and the University of Oregon's connections to federal programs that support students and research. We also include a special pull-out update on Campaign Oregon, our capital campaign that is historic in both ambition and impact. The campaign closed at the end of 2008, having raised more than \$853 million to support student scholarships, faculty endowments, and facilities, well in excess of our \$600 million goal.

Higher education plays a significant role in defining and developing Oregon's future workforce. Over the next ten years, nearly 80 percent of high-wage job openings in Oregon will require at least a bachelor's degree. Access, affordability, and quality of higher education are absolutely essential if Oregon is to remain competitive in an economy that is no longer defined by borders.

We provide you with this information as Congress and the Administration begin FY2010 budget deliberations, having made historic commitments to student aid and research in the stimulus package. Those investments are well justified. Consider two key federal connections—student aid and research:

**Student Aid**—Federal student aid funds are the bedrock upon which the state's access efforts rest. Altogether, more than 11,000 University of Oregon students borrow or receive approximately \$115.3 million in federal loans and aid. I am proud that the University of Oregon provides approximately \$16 million per year in institutional scholarship aid. And, this spring, the university was able to make up shortfalls in the state's need-based Oregon Opportunity Grant program for spring term.

Federal Research Funds—Without federal funds for research there would be no significant public research activity occurring within the state of Oregon—and the loss to our state would be enormous. Together, Oregon's research universities bring almost *half a billion dollars a year* to Oregon through federal research grants. This is research activity that in turn creates knowledge, addresses societal problems, trains the next generation of researchers, represents high-wage jobs, and generates economic activity through the transfer of technology to products, goods, and services.

In these economic times, the University of Oregon will help drive the state's recovery while continuing to fulfill our mission of preparing the next generation of Oregon's leaders. I appreciate your support.

Dave Frohnmayer President

Dave Johnmayer

Dave Frohnmayer will retire as president in June 2009 after serving the University of Oregon in that role for fifteen years. He formerly served as dean of the University of Oregon School of Law, as Oregon's attorney general, as a member of the Oregon House of Representatives, and as a law professor and legal counsel to the president of the university.

Richard Lariviere will become the next UO president on July 1, 2009. He is currently executive vice chancellor and provost at the University of Kansas and previously served as dean of the College of Liberal Arts at the University of Texas.

#### ABOUT THE UNIVERSITY OF OREGON

#### **UNIVERSITY OF OREGON MISSION STATEMENT**

The University of Oregon is a comprehensive research university that serves its students and the people of Oregon, the nation, and the world through the creation and transfer of knowledge in the liberal arts, the natural and social sciences, and the professions. The University of Oregon is a student-centered research university that offers 133 majors within seven schools and colleges—architecture and allied arts, business, arts and sciences, education, journalism and communication, music and dance, and law.

#### **AMONG THE BEST**

Of more than 4,000 institutions of higher education in the country, the University of Oregon is one of only sixty-two public and private institutions in the United States and Canada selected for membership in the exclusive Association of American Universities (AAU). The University of Washington and the University of Oregon are the only institutions in the entire Pacific Northwest and northwestern United States that hold membership in the AAU. The AAU is an invitation-only association of research universities that includes Stanford, Berkeley, Harvard, MIT, and other world-leading universities.

#### **OUR FACULTY**

The quality of faculty research is a point of pride at the University of Oregon, which consistently ranks high among research universities in attracting research grants, offering fellowships, and producing scholarly articles.

In fiscal year 2007–8, UO faculty members secured \$115.3 million in grants, contracts, and other competitive awards.

The University of Oregon is proud of its list of distinguished faculty members, past and present, including 132 Fulbright scholars, forty-five Guggenheim fellows, thirty-six National Endowment for the Humanities fellows, one recipient of a "genius grant" from the McArthur Foundation, five elected to the National Academy of Sciences, and eleven elected to the American Academy of Arts and Sciences, not to mention the hundreds of other fellowships, awards, and medals.

Two faculty members were among 190 Canadian and U.S. artists, scientists, and scholars selected as Guggenheim fellows for 2008. Guggenheim fellows are appointed on the basis of distinguished achievement in the past or exceptional promise for future accomplishments. The 2008 winners were chosen from a pool of 2,600 applicants and represent seventy-five disciplines and eighty-one different academic institutions.



Shawn R. Lockery, who studies how the nervous system controls behavior by analyzing neural networks and the nematode C. elegans, was one of two fellows chosen in the neuroscience field in the natural sciences. His research has led to a new imaging method that now allows for research that he will pursue while on sabbatical in a laboratory of one of the founders of microfluidics at Harvard University.



Philip W. Scher was one of four scientists chosen from applicants in the social sciences whose concentration is on anthropology and cultural studies. Scher, also a Fulbright scholar, will use the Guggenheim funds while on sabbatical to explore political and economic processes that lie behind the protection and preservation of cultural heritage in the Caribbean, specifically the World Heritage site proposed for Bridgetown, Barbados, the capital city, and its historic military garrison.

#### STUDENT AND ALUMNI PROFILE

#### THE UNIVERSITY OF OREGON TODAY

Current Enrollment (fall 2008)	21,507
Freshman Incoming Average GPA	3.48
Freshman Average SAT Score	546 verbal, 554 math
UO Enrollment	29 percent of OUS
UO Bachelor's Degrees Conferred	29 percent of OUS
UO Graduate and Professional Degrees Conferred	31 percent of OUS
UO Portion of OUS Budget	22 percent (2007-8)
State Funding Portion of UO Budget FY06	13.7 percent

#### **UO Freshmen from Oregon's Top Feeder High Schools, Fall 2008**

South Eugene	82	Central Catholic (Portland)	50	Century (Hillsboro)	29
Sunset (Beaverton)	76	Lincoln (Portland)	47	Mountain View (Bend)	29
Jesuit (Portland)	68	Tualatin	45	Willamette (Eugene)	29
Sheldon (Eugene)	67	Churchill (Eugene)	39	Crescent Valley (Corvallis)	28
Lake Oswego	62	Tigard	37	Douglas (Portland)	28
Southridge (Beaverton)	58	Summit (Bend)	35	Liberty (Hillsboro)	27
Lakeridge (Lake Oswego)	56	Sprague (Salem)	33	Wilsonville	27
Westview (Beaverton)	55	Beaverton	32	Cleveland (Portland)	26
Grant (Portland)	53	South Salem	32	Saint Francis (Bend)	26
West Linn	53	Marist (Eugene)	31		
Wilson (Portland)	52	Clackamas	30		

#### **SOME DISTINGUISHED UO ALUMNI**

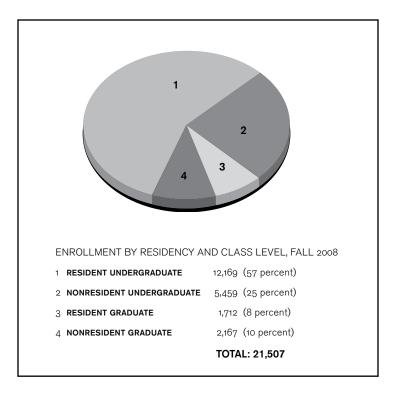
U.S. Senator Ron Wyden Congressman Peter DeFazio Congressman Greg Walden Senator Suzanne Bonamici Senator Ginny Burdick Senator Ted Ferrioli Senator Mark Hass Senator Bill Morrisette Senator David Nelson Senator Vicki Walker Rep. Phil Barnhart Rep. Scott Bruun Rep. David Edwards Rep. Tim Freeman Rep. Tina Kotek Rep. Nancy Nathanson Rep. Arnie Roblan Rep. Jefferson Smith Rep. Suzanne Van Orman Rep. Brad Witt Portland Mayor Sam Adams

#### **SUCCESS AFTER GRADUATION**

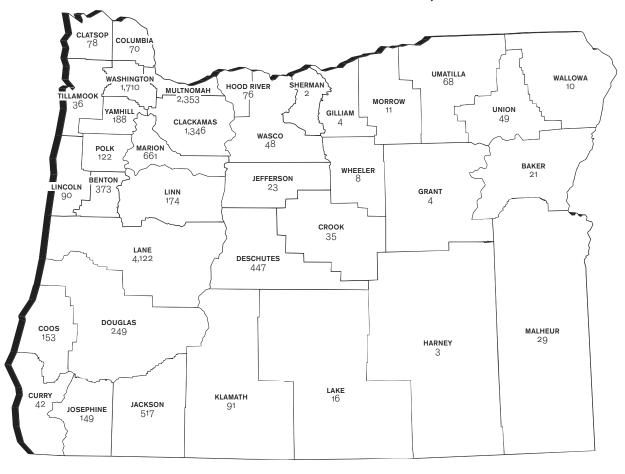
Nobel Prize Winners	2
Pulitzer Prize Winners	10
Rhodes Scholars	19
Marshall Scholars	2
Oregon Governors	8
U.S. Senators	7
U.S. Representative	11
U.S. President's Cabinet Members	2
Generals	39
Admirals	5
Olympic Athletes in Track and Field	
since 1890	74

#### **OUR STUDENTS**

Students from across the state, nation, and world come to the University of Oregon for its academic reputation, the physical beauty of the campus and surroundings, and its size. It is a small public research university by national standards, but provides students with the learning opportunities of a major research university. The University of Oregon's reputation as a student-centered research university means that students receive individual attention from dedicated faculty members. The fall 2008 enrollment was 21,507. This includes one of the most prepared freshman classes ever with an average entering grade point average of 3.48 and among the highest average SAT scores for a UO entering class.



# UO RESIDENT ENROLLMENT BY COUNTY (FALL 2008) TOTAL OREGON ENROLLMENT: 13,378



#### THE UNIVERSITY OF OREGON

#### **Enrollment by School or College and Student Level Fall 2008**

School or College	Undergraduate	Graduate	Total
School of Architecture and Allied Arts	1,071	508	1,579
College of Arts and Sciences	10,913	1,174	12,087
Lundquist College of Business	2,999	242	3,241
College of Education	672	587	1,259
Graduate School	0	66	66
School of Journalism and Communication	1,401	88	1,489
School of Law	0	569	569
School of Music and Dance	302	152	454
Other	270	493	763
Total	17,628	3,879	21,507

# Top 10 States by UO Enrollment Fall 2008

# **Top 10 Countries by UO Enrollment Fall 2008**

States	Students	Countries	Students
California	2,837	Republic of Korea	202
Washington	905	People's Republic of China	188
Colorado	336	Japan .	162
Hawaii	250	Taiwan (ROC)	147
Idaho	176	Saudi Arabia	82
Alaska	160	Canada	62
Illinois	152	Thailand	26
Arizona	119	Hong Kong	24
Texas	112	India	24
Nevada	111	Germany	22

#### **Out-of-State Tuition Dollars**

- The UO's out-of-state students bring millions of dollars to Oregon and receive no support from Oregon taxpayers
- In FY2008, nonresident undergraduate students paid \$71.8 million in tuition and fees that, combined with nonresident graduate tuition, was more than the university's state appropriation
  - International students alone paid more than \$22 million in tuition and fees in FY2008
- Out-of-state students pay more than three times the tuition charged to in-state students and account for 61 percent of all undergraduate tuition revenue, helping support in-state students

#### **ALUMNI**

#### Where UO Alumni Live Today

Total Number of Alumni: 206, 648 Total Number of Living Alumni: 165,009



#### **ACCESS AND AFFORDABILITY**

The University of Oregon provides a high-quality education to a large number of Oregonians at an affordable price. In fall 2008, a record number of freshmen who were accepted chose to attend the UO, and 2009 admissions inquiries are outpacing current enrollment figures. The University of Oregon receives less state funding per full-time equivalent student than any other OUS institution. This is contrary to flagship institutions in other states, which are typically funded at a higher amount than their counterparts. The comparison to similar state institutions across the country in terms of state funding as well as tuition rates indicates that the UO is less expensive and receives less state funding than many of its peers.



#### PathwayOregon is a model program

The University of Oregon is committed to providing more students than ever the financial boost they need to study at the state's flagship university. A cornerstone of our effort to keep the university affordable is PathwayOregon—our promise that qualified students of all economic backgrounds will have access to the UO's world of academic achievement. PathwayOregon—the first program of its kind in Oregon—provides financial aid and academic support for qualified Oregonians from lower-income families.

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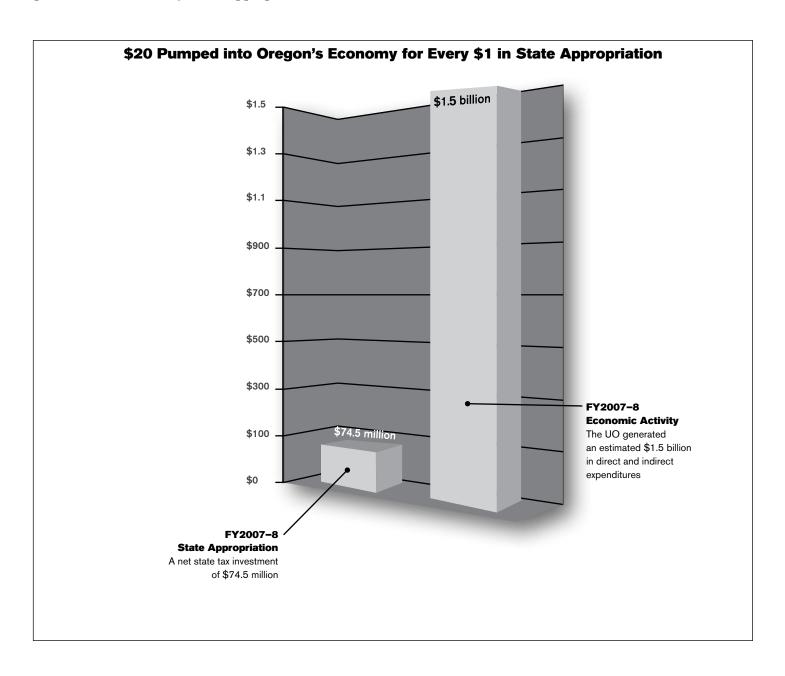
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PathwayOregon ensures that qualified Oregonians from lower-income families will have their tuition and fees paid while also receiving comprehensive guidance in academic, career, and even social planning. The highest-achieving students in the program have the opportunity to be selected for a grant to cover housing costs as well. More than 415 students participated in the first year of PathwayOregon.

#### ECONOMIC IMPACT

#### AN OUTSTANDING RETURN ON INVESTMENT

The university's state appropriation in FY2007–8 was \$74.5 million, 13 percent of the UO budget. Direct and indirect expenditures by the University of Oregon in FY2007–8 are estimated to have resulted in nearly \$1.5 billion in spending. In other words, the UO generated \$20 in expenditures for every \$1 in state appropriation. These expenditures yield approximately \$66 million in additional income tax revenue annually, which alone offset 92 percent of the university's state appropriation.



#### IN GREAT COMPANY

- The University of Oregon is one of the largest and most stable employers in the state with about 4,230
  employees, plus another 1,200 paid graduate teaching fellows. This is roughly the same number of employees
  as Nike or Hewlett-Packard
- In addition to 4,230 faculty and staff members, university spending generates an additional 9,000 jobs within the state
- The University of Oregon pays more than a quarter of a billion dollars in wages each year, yielding almost \$13.7 million in state income tax. That's nearly one-fifth of the university's entire state appropriation in FY2007–8
- The university spent almost \$542 million in FY2007–8, with an additional \$197 million in off-campus expenditures by UO students
- Ninety percent of the university's vendors last year were small businesses

#### **RESEARCH AND TECHNOLOGY: CREATING OPPORTUNITIES FOR OREGONIANS**

- Per research dollar, the University of Oregon is one of the top research universities in the nation for translating basic discoveries into practical applications.
- The amount of money generated from technology transfer has grown more than twenty-fold over the last eight years, from \$313,000 in FY2000 to more than \$6.8 million in FY2008—the university's thirteenth consecutive record year
- UO research has generated ninety-one U.S. patents and 263 technology out-license agreements since 1992
- UO researchers disclosed 126 new inventions since FY2006
- Of the U.S. patents issued to the UO since 2001, 92 percent (twenty-four of twenty-six) have been optioned or licensed to private-sector firms
- The UO's Innovation and Entrepreneurship programs continue to spin-out promising new companies with connection to UO faculty members, students, and research. These new ventures include Perpetua Power Source Technologies Inc.; MitoSciences Inc.; Avant Assessment LLC; Dune Sciences LLC; FloraGenex Inc.; Insignia Health LLC; Life Technologies LLC; Electrical Geodesics Inc.; ParaTools Inc.; Kaibridge Inc.; Eugene Software Solutions Inc.; On Time Systems Inc.; Imagination International Inc.; Artifice Inc.; Crystal Clear Technologies Inc.; and TakeShape LLC
- The university secured \$681.7 million in research awards between FY2000 and FY2007

#### FEDERAL POLICY ISSUES FOR 111TH CONGRESS

The University of Oregon supports stable and robust funding for research and education. We appreciate support for student aid and research received through FY09 funding and the American Recovery and Reinvestment Act. We urge members of Congress to continue to champion and expand the federal government's critical role in supporting research, graduate education, and student aid. Here are some brief recommendations for the new administration and the 111th Congress:

#### **GENERAL RECOMMENDATIONS FOR THE 111TH CONGRESS AND NEW ADMINISTRATION**

#### 1) Reaffirm and strengthen the government-university partnership.

- The federal investment in university-based research should continue to serve two vital national purposes: first, supporting critical research and, second, educating the next generation of scientists, engineers, and scholars.
- Research projects should be selected based upon scientific merit as judged by leading scientists in a particular field, rather than based on political or geographical considerations.
- Universities must ensure that research is conducted responsibly and with integrity by those who receive
  government funding.
- Because the federal government invests in university-based research to benefit the public through the knowledge it yields and the students it educates, the federal government should provide its share of the costs of that research; this includes its portion not only of the direct costs of conducting the research but also of the necessary costs of research facilities, infrastructure, and regulatory compliance.
- Federal regulations should be designed to foster effective compliance but should not be unnecessarily burdensome or extend beyond their appropriate purview into institutional governance, which should remain a core responsibility of the university's trustees, faculty, and administration.

#### 2) Provide sustained and balanced growth for basic scientific research.

- Increase investments in federally funded scientific research in both the physical and biomedical sciences that are systematic, reliable, and long-term; include full funding of the America COMPETES Act.
- Make the R&D tax credit permanent, with removal of the current penalty for supporting R&D outside of the company, including at universities.

# 3) Harness the federal government's innovation and scientific and engineering resources to address the major energy challenges facing our nation.

- Support new funding for a government-wide, multiagency scientific initiative aimed at addressing our national energy production and self-sufficiency challenges in a sustainable and environmentally sound manner.
- Create, as part of that initiative, new programs to encourage high-risk, high-reward research in energy-related fields.
- Tap into the tremendous resources and talent at our universities, federal laboratories, federal agencies, think tanks, and corporations to develop solutions to our short- and long-term energy needs.

# 4) Expand and nurture U.S. talent in science, technology, engineering, and mathematics (STEM) to create a workforce for the innovation challenges of the twenty-first century.

- Enhance K-12 STEM education, increase graduate fellowships and traineeships, and expand the Defense Department's National Defense Education Program.
- Aim to attract underrepresented minorities and women to studying and undertaking careers in STEM fields.
- Create new sources of competitive federal research funding targeted to exceptional young scientists and engineers, such as the National Institutes of Health's Pioneer Awards.
- Improve the H-1B and employment-based visa programs to attract highly skilled talent to enhance competitiveness.

# 5) Strengthen the government's commitment to the humanities and social sciences to better prepare the nation and its citizens to understand and solve global issues.

- Strengthen the capacity of the National Endowment for the Humanities to support teaching and scholarship in these areas.
- Increase funding for social sciences research at the National Science Foundation and other appropriate agencies, including the Defense Department's Minerva initiative.

### 6) Expand access to higher education to provide opportunities for all students to acquire the knowledge and skills they will need to succeed in the competitive global environment of the twenty-first century.

- Increase funding of student aid programs newly reauthorized by the Higher Education Act.
- Improve federal education tax credits and tuition tax deductions.
- Continue efforts to enhance student loan borrower benefits to help ensure that all students are able to pay for their college experience and manage their debts.

### 7) Strengthen international education by encouraging U.S. students to study abroad and increasing enrollment of international students at U.S. colleges and universities.

- Ask Congress to create clear pathways to permanent residency and U.S. citizenship for talented international students who earn U.S. academic degrees.
- Streamline the process for outstanding international scientists and engineers who are teaching and conducting research in the U.S to achieve similar status.
- Support the Abraham Lincoln Study Abroad proposal and other efforts to create incentives for U.S. students to study abroad in a wide array of nations and regions.
- Strengthen existing HEA-Title VI and Fulbright Hays international programs at the Department of Education to better prepare our citizens for a global workplace.

#### SPECIFIC RECOMMENDATIONS FOR THE 111TH CONGRESS

#### **Federal Student Aid Programs**

The University of Oregon appreciates the increased support for student aid authorized by the Higher Education Opportunity Act (HEOA) and the American Recovery and Reinvestment Act. The University of Oregon asks that Congress provide the funds to fully support the authorization. The United States has made great progress in providing educational opportunity for all. Since 1973, the share of the nation's workforce with a college degree or higher has doubled. This growth would not have been possible without the paartnership between the two largest sources of financial support for college students: the federal government and postsecondary education institutions. The U.S. economy requires that an increasing share of the workforce has an undergraduate or advanced college degree. In order to meet that need and to overcome existing inequalities in college access, the nation must invest greater resources in federal need-based grant aid for low-income students.

The University of Oregon and higher education associations support a broad array of student aid programs funded by the Department of Education. These include Pell Grants, Supplemental Educational Opportunity Grants (SEOG), Perkins Loans, Federal Work-Study, LEAP, TRIO, and GEAR UP.

Federal and State Student Aid—University of Oregon—2007–08			
Aid Type	Students	Total Dollars	
Pell Grants	3,639	\$ 10,436,622	
Oregon Opportunity Grants	1,884	\$ 2,842,656	
Academic Competitiveness Grants	466	\$ 366,156	
SMART Grants	118	\$ 351,559	
Federal Work-Study Program	1,344	\$ 1,603,007	
Federal Supplemental Education Opportunity Grants	2,005	\$ 1,399,300	
Perkins Loans	2,353	\$ 6,601,755	
Federal Ford Direct Loans	8,999	\$ 92,418,614	
Total number of students receiving federal and state financial aid in 2007–08 9,847			
Percent of UO undergraduates and graduates receiving need-based federal financial ai			
Percent of resident undergraduates receiving maximum Pe	ll Grant	8.2%	
Percent of resident tuition and fees covered by maximum I	Pell Grant amount	65.4%	
Average percent of resident tuition and fees covered by Pel	ll Grant	47.1%	

#### **International Education**

The nation should maintain its international educational capacity in order to effectively meet its economic competitive needs and its national security goals. The University of Oregon is an international university that has made a significant and sustained investment in language study and international education programs. The University of Oregon strongly supports the Paul Simon Study Abroad bill and other efforts to encourage the exchange of scholars and students.

Participation in study and internship abroad programs at the UO has doubled over the past decade. A record number of students—more than 1,000—participated in study and internships abroad in 2008, with more than fifty students in global internships. Currently, around 25 percent of undergraduates at the UO study abroad during their undergraduate careers, making the University of Oregon one of the most international public universities in the country.

The University of Oregon sponsors more than 150 study-abroad programs in more than eighty countries. According to the Open Doors 2007 Report on International Educational Exchange (published by the Institute of International Education), the UO ranks among the top twenty public research institutions for the percentage of undergraduates who participate in study-abroad programs.

The UO also welcomed more international students (1,187) to campus last fall than any year since 2001 when visa regulations were tightened. About six percent of the UO's student body is international, coming from nearly ninety countries.

Less commonly taught languages are a critical component in our efforts to promote proficiency in an increasingly interconnected and globalized world. Only nine percent of postsecondary students study less commonly taught languages such as Arabic, Chinese, Hebrew, Hindi, Indonesian, Korean, Persian, Portuguese, Russian, Swahili, or Yoruba, among many others. Considering the social, cultural, and economic importance of these languages, Congress should increase the percentage of U.S. students studying them by bolstering support for Title VI International Education programs. Funded by the National Security Language Initiative, the University of Oregon is leading the effort to increase language fluency with the establishment of the Chinese Flagship program, a partnership with the Portland Public School District.

#### Federal Research Programs Fuel Oregon's Research Enterprise

Federal research agencies are the primary funder of research that occurs at the University of Oregon. Of the more than \$115 million in sponsored research that took place at the University of Oregon in 2007–8, more than 90 percent was funded by federal agencies (\$101.6 million).

The National Science Foundation (NSF), National Institutes of Health (NIH), Department of Energy (DOE) Office of Sciences and other federal research agencies are important funders of university research. The National Science Foundation, for example, plays a key role in funding discoveries that drive the nation's economy, improve our quality of life, and enhance national security. NSF investments reach faculty members throughout an institution, which gives the agency broader impact on university campuses than any other federal agency. NSF is also an important supporter of graduate education programs, including its Graduate Teaching Fellows in K-12 Education (GK-12) program. DOE is the leading source of federal funds and facilities for research in the physical sciences, providing more than 42 percent of the federal investment in these disciplines. In subfields such as high-energy physics, DOE is the primary government sponsor. The agency also ranks high in support for research in computational science and sponsors significant research and user facilities for the biological and environmental sciences. NIH-supported scientists are ready to spark the next revolution in health care.

#### NSF in Action: GK-12 Science Outreach Program Serves Oregon's Schools

#### 2008-9 Partner Schools

Desert View Elementary, Hermiston
Highland Hills Elementary, Hermiston
Rocky Heights Elementary, Hermiston
Sunset Elementary, Hermiston
West Park Elementary, Hermiston
Lincoln Primary, Pendleton
McKay Creek Elementary, Pendleton
West Hills Intermediate, Pendleton
Condon Elementary, Condon
Arlington Elementary, Arlington

#### **Education Service District Partners**

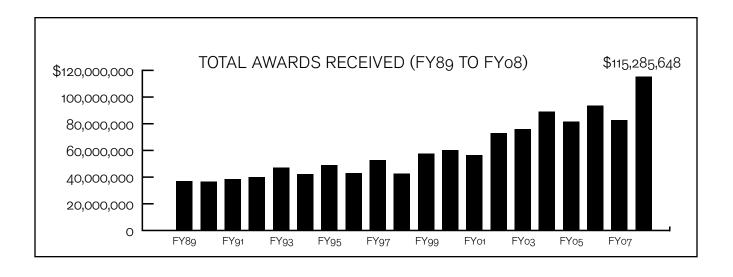
Umatilla/Morrow ESD, Pendleton North Central ESD, Condon Lane ESD, Eugene High Desert ESD, Bend

#### **Past Partner Sites by Town**

Eugene (7)
Crow (2)
Veneta (2)
Creswell (2)
Cottage Grove (4)
Elmira (1)
Bend (3)
Junction City (3)
Lorane (1)
Lowell (1)
Madras (1)
Springfield (2)
Sisters (1)
Pleasant Hill (1)
Redmond (1)

The University of Oregon's GK-12 Science Outreach Program, supported by the National Science Foundation, the Department of Education Graduate Assistance in Areas of National Need (GAANN) program, and the Oregon Engineering and Technology Industry Council (ETIC), provides fellowships for fifteen graduate students from the chemistry and physics departments. In return these GK-12 fellows serve as resources for teaching hands-on physical science and mathematics in partnering Oregon elementary and middle schools.

The 2008–9 program is focused on working with schools within the Umatilla-Morrow ESD and the North Central ESD, 300 miles northeast of the university in Eastern Oregon. The graduate fellows spend two weeks per term as scientists-in-residence, assisting with a variety of in-school activities centered on the use of nationally developed, inquiry-based science kit curricula.



#### **AWARDS RECEIVED FY 2007-08**

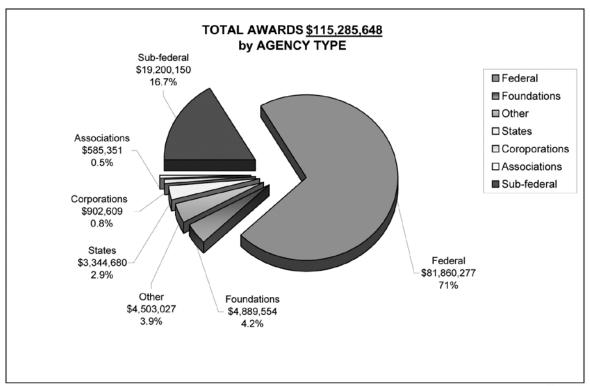


Figure 1

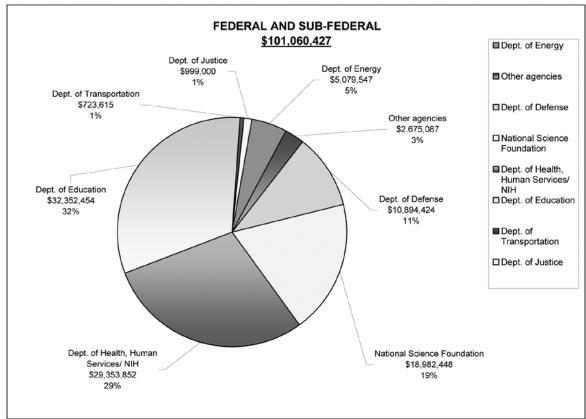


Figure 2

#### Federal Support for Education Research is a Top UO Priority

The University of Oregon College of Education is one of the nation's leading education programs, renowned for the quality of its research. The University of Oregon College of Education focuses on improving the effectiveness of educational and social systems for all children and youths, including students with special learning challenges. All fifty states, more than 6,000 school districts, and eighteen countries currently use University of Oregon education research and outreach services to transform schools and community agencies, as well as the larger social, educational, and justice systems they comprise.

Citizens, state and federal agencies, and professional organizations look to University of Oregon College of Education faculty for technical assistance in elevating teaching and learning performance, including the learning performance of youths with disabilities. In 2007–8, the federal government awarded this research and these outreach efforts with \$34.3 million of external funding, making UO College of Education faculty again number one as the most productive of the top thirty-five educational research faculties in the nation.



#### **Green Chemistry and Safer, Greener Nanoscience**

Recent sessions of Congress have seen the introduction and movement of a number of bills aimed at promoting "green chemistry" and green chemistry education. We encourage continued efforts to make green chemistry and green chemistry education a federal research priority.

Green chemistry is the deliberate design of new products and manufacturing processes where the design eliminates or reduces the use or generation of hazardous substances. By eliminating hazards, green chemistry promotes public safety, homeland security, and environmental protection. Green chemistry promotes economic development and competitiveness by minimizing the amount of revenue that must be spent on health care, security measures, and environmental remediation.

The University of Oregon is a world leader in green chemistry and safe nanotechnology that is helping direct the course of this emerging field. The UO's innovative Green Organic Chemistry Laboratory curriculum and wide range of research programs that focus on developing new materials and processes for making materials safer have attracted international attention. Examples of the leading research efforts of UO research teams include low-temperature

manufacturing routes to new materials, development of polymers that degrade into harmless by-products in the environment, and new agents for cleaner processing and cleanup of nuclear waste.

The University of Oregon has played a major role in developing new products and processes that minimize or eliminate the negative impacts of chemicals on human health and the environment. Cutting-edge research programs are developing greener products and processes that are technologically and economically superior to current technologies.

#### **Tax Policy and Higher Education**

Federal tax policy is a key focus of the 111th Congress. The Administration's economic and policy initiatives have both direct and indirect tax implications for research universities. Tax policy involves student-centered benefits such as Hope and Lifetime Learning tax credits, section 117(d) qualified tuition reductions, section 127 employer-provided education assistance benefits, and student loan interest deductions. Institutional issues affected by tax policy include considering the treatment of university endowments and proposals that may adversely affect charitable giving.

The IRA charitable rollover works. The University of Oregon appreciates the renewal of the Individual Retirement Account (IRA) charitable rollover that permits individuals over the age of fifty-nine to contribute IRA funds to charities, including universities, without having to pay income tax on their gifts. The individuals and communities served by the nation's charitable sector benefit from the change because it encourages new contributions from individuals who would no longer have to pay tax on a charitable gift. In 2007, the University of Oregon Foundation received more than \$1 million in IRA charitable rollover contributions, ten times the amount received in 2006.



#### CONGRESSIONAL INTEREST PROJECTS



#### **Oregon Nanoscience and Microtechnologies Institute (ONAMI)**

The Oregon Nanoscience and Microtechnologies Institute is Oregon's first Signature Research Center for the purpose of growing research and commercialization to accelerate innovation-based economic development in Oregon and the Pacific Northwest. It is also an unprecedented and powerful collaboration involving Oregon's three public research universities—Oregon State University, Portland State University, and the University of Oregon; the Pacific Northwest National Laboratory (Richland, Washington); the state of Oregon; and the world-leading "Silicon Forest" high technology industry cluster of Oregon and southwest Washington.

#### **SUMMARY**

#### **OREGON NANOSCIENCE AND MICROTECHNOLOGIES INSTITUTE (ONAMI)**

- 1. ONAMI Miniature Tactical Energy Systems (Army)
- 2. ONAMI Safer Nanomaterials and Nanomanufacturing (Air Force)
- 3. ONAMI Nanoelectronics and Nanometrology Initiative (Navy)

**Source of Federal Funds:** Department of Defense, Research, Development, Technology, and Evaluation accounts for Army, Air Force, and Navy

**Project History:** ONAMI is a collaboration involving Oregon State University, Portland State University, and the University of Oregon, their industry partners, and other entities such as the U.S. Department of Energy's Pacific Northwest National Laboratory.

Project Request: \$5 million for each project

#### **ONAMI Miniature Tactical Energy Systems Development**

ONAMI researchers are fabricating microsystems that accelerate, miniaturize, and distribute energy, chemical, and biomedical processes. This work is based on the principle that mass and heat transfer are best accomplished in microchannels. These potentially revolutionary results can be applied to military energy, medical devices, and other specialty chemical products. The research initiative is affiliated with the Pacific Northwest National Laboratory (PNNL) and uses capabilities being established at PNNL and ONAMI to miniaturize a wide range of tactical energy systems. ONAMI and PNNL are working with Fort Belvoir (Army) to provide tactical energy systems for a range of Army applications.

#### **ONAMI Safer (Greener) Nanomaterials and Nanomanufacturing**

The goals of the Safer Nanomaterials and Nanomanufacturing Initiative (SNNI) are to develop new nanomaterials and nanomanufacturing approaches that offer a high level of performance, yet pose minimal harm to human health or the environment. The initiative brings together chemists, biologists, materials scientists, and engineers from ONAMI to pioneer new approaches to the design, production, and use of nanomaterials. Areas of activity include rational design of inherently safer and greener materials based upon unique properties found at the nanoscale, systematic assessment of the biological impacts, and development of technology for high-volume manufacturing of high-performance nanomaterials. The applications include energy production and storage, nanoelectronics and

nanophotonics, medical diagnostics and therapeutics, drinking water purification, and environmental monitoring and remediation systems. The initiative has increased its focus on energy because of the essential role that nanotechnology will play in addressing the nation's energy problems. SNNI has been developed in partnership with the Air Force Research Laboratory.

#### **ONAMI Nanoelectronics and Nanometrology Initiative**

ONAMI's strong industrial and academic experience in microscopy, analytical tools, and test and measurement comes together to meet the challenges of accurate measurement at the nanoscale. The challenges of nanoscale metrology are particularly important for future generations of semiconductor electronics.

ONAMI's shared facilities include state-of-the-art metrology equipment, including:

- Transmission electron microscope (the region's most advanced)
- Scanning electron microscopes
- Dual-beam focused ion beam microscopes
- Photoelectron microscopes
- Near field scanning optical microscopes

Research projects include breakthrough advances in field-enhanced microscopy, electron optics, and high-resolution quantitative materials characterization. Since FY 2006, Congress has directed \$11 million to ONAMI Nanoelectronics and Nanometrology.



#### **Brain Safety Net**

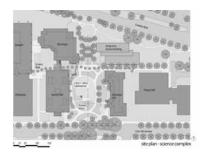
Integrates the University of Oregon's internationally recognized strengths in cognitive neuroscience, molecular biology, and medical imaging technologies to investigate the fundamental processes of the human brain and mind. Improves human lives based on understanding how genes and experience shape neural networks.

#### **SUMMARY**

**Source of Federal Funds:** Department of Defense, Army Research, Development, Technology, and Evaluation (RDTE) account

**Project Request:** \$3 million

Brain Safety Net is a spin-off of the Brain, Biology, and Machine Initiative (Applied). This project is focused on neurorehabilitation and associated medical applications. The University of Oregon seeks to develop and optimize evidence-based treatments of soldiers and civilians suffering from amputations, traumatic brain injuries (TBI), and neurological disorders such as epilepsy. A distinguishing feature of this interdisciplinary project is the use of techniques ranging from state-of-the-art brain imaging (functional and structural MRI and dense array EEG) to genetic and behavioral analyses, to advanced computational modeling. These combined capabilities are the foundation of a consolidated effort to increase our ability to harness the brain's remarkable capacity to respond adaptively to change (neuroplasticity). These include responses to bodily (e.g., amputation) or brain (e.g., TBI or stroke) injuries, as well as to stimulation provided by effective therapeutic interventions.



#### **Equipping the Integrative Science Complex Phase II**

The Robert and Beverly Lewis Integrative Science Building will be a high-performance research facility that provides new opportunities for interaction and integration across scientific disciplines. The building will connect to others in the Lokey Science Complex and provide expanded facilities for research focused toward understanding brain function, improving human health, developing safe technology, and achieving sustainability. The building will include research laboratories, faculty offices, common areas, shared resources, an imaging center that will house an fMRI, facilities to study effects of gene transplantation on behavior, and a neuroinformatics center for data processing and analysis.

#### **SUMMARY**

Source of Federal Funds: Financial Services (Small Business Administration, Section 621)

Project Request: \$750,000

The University of Oregon seeks \$750,000 for the technological aspects of the \$65 million next phase of the Lorry I. Lokey Integrative Science Complex. The new facility, known as the Robert and Beverly Lewis Integrative Science Building, will address critical space needs and significantly enhance the university's leading educational and research programs in the sciences and the UO's existing capacity as a high-tech extension service for Oregon industry and beyond. The facility will provide specialized laboratories as well as major research instrumentation and research laboratories for magnetic resonance imaging (MRI) and other brain imaging technologies, genomics and proteomics, microscopy, materials and chemical analysis, and advanced computation. The Phase 2 project will complement the Phase 1 facilities, Lorry I. Lokey Laboratories, which are expanding the UO's integrative nanoscience research and industry-outreach associated with ONAMI. Construction of both buildings will catalyze the further development of the UO's leading-edge science to support U.S. competitiveness in the twenty-first century knowledge-based economy. If available, congressional interest funds will equip key facilities with state-of-the-art instrumentation.





#### **Archaeological Transportation Research Laboratories**

Many Oregon roads lead to the University of Oregon's Museum of Natural and Cultural History, making the University of Oregon an essential partner in every road and bridge project that occurs within the state of Oregon. Since the 1970s, the museum has had an agreement with the Oregon Department of Transportation (ODOT), using the tools of archaeology to identify, interpret, and preserve artifacts found during highway projects. The museum's

Research Division operates with an ODOT contract of about \$2 million for archaeological work—most of it related to highway, bridge, and other transportation-related projects. When the university's storage facilities reached capacity, Congress directed \$2.5 million to expand the museum's ability to house more than 500,000 artifacts uncovered by road and public works projects dating back to the construction of dams on the Columbia River.

#### **SUMMARY**

**Source of Federal Funds:** 2009 Highway bill, U.S. Department of Transportation (Federal Highway Administration)

**Project Request:** \$4.75 million from 2009 Highway bill for a 9,100-square-foot research and laboratory facility dedicated to interdisciplinary and transportation-related research in the state of Oregon. The entire renovation project will consolidate research operations, which are scattered across at least ten buildings, into an efficient research center to facilitate planning, construction, and environmental compliance for highway and other transportation projects (e.g., bridges) throughout the state of Oregon.

The University of Oregon's Museum of Natural and Cultural History collections storage facilities. Looking forward, the university now seeks funds to consolidate and improve its research laboratories with a special emphasis on facility efficiencies related to federally mandated archaeological research on transportation projects. The university will construct a research facility that includes offices, labs, a workshop, and equipment storage areas. These facilities will provide planning and field support to ensure timely construction of transportation and compliance of such projects with state and federal laws.

Under the leadership of Jon Erlandson, museum director and professor of anthropology, the University of Oregon broke ground in August 2008 on a new storage facility that will add about 7,000 square feet to the existing museum building. The project is the first of three phases planned to expand and update the museum's research laboratories, collections facilities, and public exhibit spaces. The University of Oregon seeks funds from the Oregon State Legislature and in the 2009 highway spending bill for expanded research laboratory space. The museum has also begun fundraising for new exhibit space.

When completed, the new collections facility will allow the UO to continue to fulfill its responsibility as the official state-mandated repository for archaeological and paleontological collections found on public lands. The

museum also provides consulting services and curation support for other local, state, and federal agencies—including forensic work for law enforcement entities—and private sector corporations.



- 1 New Collections Center
- 2 New Exhibit Hall
- 3 New Research Wing



#### East 13th Avenue Axis—'De-streeting' a Multimodal Connector

The central area of campus is largely used as a pedestrian zone, with the East 13th Avenue Axis (from Kincaid to University streets) also serving as an access point for public safety vehicles, service vehicles, and after-hours transit. Once a busy city arterial, a section of East 13th Avenue was closed in 1971 by agreement between the university and the city of Eugene. A gradual transformation of the avenue is occurring as many street features associated with the axis, like the curbs, parking strips, sidewalks, and roadbed, are altered as the avenue continues to evolve into a bicycle and pedestrian mall.

#### **SUMMARY**

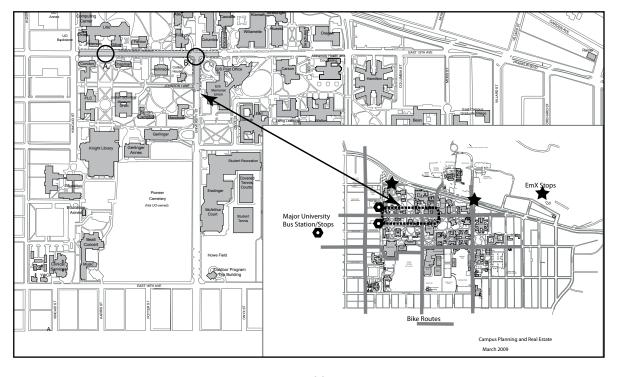
Source of Federal Funds: 2009 Highway bill, U.S. Department of Transportation (Federal Highway

Administration)

**Project Request:** \$2 million

Since the 1980s, the University of Oregon identified the nonmotorized portion of East 13th Avenue ("the East 13th Avenue Axis") as an area for beautification and improvements. Beautification of the heart of campus will allow the university to continue de-streeting improvements that have already occurred in front of Lillis Hall and at the intersection of University and East 13th, near the Erb Memorial Union (EMU). It would also help address bicycle parking and storm-surface water mitigation needs (resulting in savings that can be applied to other projects).

The federal interest in East 13th Avenue Axis: As the heart of the University of Oregon campus, East 13th Avenue must be maintained as a multimodal corridor used largely by pedestrians, bicyclists, and skateboarders that must be preserved for public safety vehicles, service vehicles, and off-hours transit. It will be a model that demonstrates the conversion of existing auto-oriented hardscapes to a multimodal corridor that uses paving, planters, curb removal, and similar actions to improve the functionality of the corridor.



#### **Oregon Transportation Research And Education Consortium (Otrec)**



OTREC is dedicated to stimulating and conducting collaborative multidisciplinary research on multimodal surface transportation issues, educating a diverse array of current practitioners and future leaders in the transportation field, and encouraging implementation of relevant research results.

#### SUMMARY

Source of Federal Funds: 2009 Highway bill (U.S. Department of Transportation)

**Project History:** OTREC brings together Portland State University, the University of Oregon, Oregon State University, and the Oregon Institute of Technology to sponsor education, research, and technology transfer projects.

Project Request: \$16 million from 2009 Highway bill

OTREC is one of ten top-tiered national university transportation centers (UTC). OTREC differentiates itself through its set of themes—healthy communities, integration of land use and transportation, and advanced technology—that guide the research and educational efforts. In addition, OTREC itself offers a unique national organizational model through its collaborative structure as a partnership between the University of Oregon, Portland State University, Oregon State University, and the Oregon Institute of Technology.

The University Transportation Center (UTC) program was created to develop internationally recognized centers of excellence within institutions of higher learning. It is part of the USDOT's Research and Innovative Technology Administration (RITA).

OTREC is a five-year, \$33 million (\$16.5 federal and \$16.5 nonfederal match) program supported through the 2005 Safe, Accountable, Flexible Transportation Equity Act-Legacy for Users (SAFETEA-LU) federal transportation legislation. Congressman Peter DeFazio connected the national legislation to this Oregon effort.

At the University of Oregon, OTREC has been a catalyst for a multidisciplinary approach to sustainable transportation and sustainable city design. About \$1 million of project funding through OTREC's first three years has supported complementary research, teaching, and service learning work in the fields of city and regional planning, architecture, landscape architecture, and public policy, including the projects listed on the following page.

This OTREC-inspired work at the University of Oregon is leading to the development of an integrated research, teaching, and education program in sustainable cities, which 1) synthesizes existing faculty research work under a single theme; 2) serves as a catalyst for expanded research and teaching endeavors; 3) markets this expertise to scholars, funders, potential clients, and project partners; and 4) works to synthesize and sponsor academic courses and certificates. This program's aim is to be a national leader in retrofitting American cities into a model of sustainability from green architecture to green community design to green policy making.

A list of OTREC projects headed by UO researchers and administrators follows on the next page.

#### **OTREC PROJECTS HEADED BY UO RESEARCHERS AND ADMINISTRATORS**

Active Transportation, Neighborhood Planning and Participatory GIS

Marc Schlossberg

Active Transportation, Neighborhood Planning and Participatory GIS, Phase 2

Marc Schlossberg

Closing the Gap: Developing a Transportation Curriculum for the Oregon Young Scholars Program
Carla Gary

DesignBridge: Integrating Transportation into Service Learning Design Build Project
Nico Larco

**Expanding Service Learning Models in Transportation** 

Robert Parker

From Arterial to Asset: Examining the Role of the Multi-Way Boulevard in Coordinated Transportation and Land Use Planning

Mark Gillem

Healthy Communities and Urban Design: A Multi-Disciplinary National Analysis of Travel Behavior, Residential Preference, and Urban Design

Jessica Greene

Increasing Capacity in Rural Communities: Planning for Alternative Transportation

Megan Smith

Linking Experiential Learning to Community Transportation Planning

Robert Parker

Overlooked Density: Re-thinking Transportation Options in Suburbia

Nico Larco

Overlooked Density: Re-thinking Transportation Options in Suburbia, Phase 2

Nico Larco

The Influence of Community Walkability and Safety on Active Transportation Among Low Income Children

Jessica Greene

Transferring GIS/Community-Based Transportation Assessment Tools Nationwide

Marc Schlossberg

Understanding School travel: How Residential Location Choice and the Built Environment Affect Trips to School

Yizhao Yang



# Project TREK: Making Public Transportation Available to Persons with a Cognitive Impairment

Bringing together University of Oregon's College of Education researchers and Department of Computer and Information Science faculty members, this research activity is helping to identify what supports are needed to ensure people with cognitive impairments are able to access communities through public transportation.

#### **SUMMARY**

Source of Federal Funds: 2009 Highway bill (U.S. Department of Transportation United We Ride)

Project History: Phase 1 supported by \$1 million in 2005 SAFETEA-LU (United We Ride)

Project Request: Phase 2 supported by \$1 million 2009 Highway bill

The University of Oregon seeks research funds to support continued research and demonstration activities that focus on the capacity and resources of public transportation systems to address the needs, barriers, and desires for travel of people with cognitive impairments. University of Oregon education professor McKay Sohlberg and computer and information science professor Stephen Fickas, working with the federal United We Ride program, are examining whether certain tools and devices can help people with cognitive impairments access mass transit.

Phase 1 Accomplishments. In the first phase of the project, researchers and developers identified the problems and corresponding solutions. A comprehensive model of transportation was developed that was inclusive of a specific population: travelers with cognitive impairments. This population is often left out of transportation support systems. The result of the project was a new model called ACTS: Activities of Community Travel. The ACTS model defines the fine-grained activities or steps that one must complete to successfully travel in a community. Further, the model specifies the knowledge and skills a person needs for each step. The model is the first of its kind and has been validated nationwide by a consortium of travel trainers and paratransit transportation workers. The model has been disseminated through its own website, allowing travel trainers across the country to make use of it. It has guided subsequent experimental work evaluating methods for orienting and supporting travelers with cognitive impairments when they are out in the community.

Phase 2 Objectives. Phase 2 efforts will link model solutions to actual mobile devices accessible to travelers. Research and development will be carried out in the area of travel prompts delivered by assistive technology. Particular attention will be paid to technology that is both affordable and usable by persons with a cognitive impairment.

In summary, Phase 1 built the model necessary to generate travel solutions for people with a cognitive impairment: it pointed the way towards community access through the use of public transportation. Phase 2 now proposes to actually link the model with assistive technology. With the completion of phase 2, a care provider, clinician, or travel professional will be able use the ACTS model to assess an individual and then close the loop by delivering a travel-prompting system that is personalized to the traveler. Sohlberg and Fickas have field-tested results that show that this is a highly viable approach to public-transportation accessibility by people with a cognitive impairment.



# Sustainable Cities: Green Transportation Research and the Highway Bill

For the first time in human history the majority of humans live in cities. As a result the human experience, whether urban or rural, has become metropolitan. This unprecedented migration has been accompanied by equally unprecedented changes in the relationship between humanity and the global ecosystem.

#### **SUMMARY**

Source of Federal Funds: Research title, 2009 Highway bill, Research title

Project Request: Consider authorizing opportunities in the research title of the highway bill

Researchers at the University of Oregon have developed the Sustainable Cities Initiative to fundamentally alter the way cities and regions evolve and develop into forms of ecological, social, and economic sustainability. While this is a campus-based initiative, research activity associated with the initiative could come from transportation research agencies as well as collaborative efforts such as OTREC. University of Oregon faculty members are interested in accessible and sustainable city design at a range of spatial and decision making scales. Expertise includes the core disciplines of Planning, Public Policy and Management, Architecture, and Landscape Architecture, along with strategic partnerships with key colleges, departments and centers across campus, including Business, Environmental Studies, International Studies, Law, Journalism, the Labor Education and Research Center, the Community Service Center, and the Institute for a Sustainable Environment. Research questions include:

How can key environmental challenges be met through sustainable city design?

How can urban centers and rural regions mutually support each other through sustainable development?

How can we prepare the next generation of leaders who will lead on these critical issues?

How can these questions be answered in an applied setting where ideas are put into practice and in the service of communities, policy makers, government agency staff members, and private-sector organizations ready for any and all new good ideas in this area?



#### **Examples of UO Research in Sustainable Cities**

#### **Suburban Transformation**

One of the core challenges for global and especially U.S. cities is how to transform the suburban development pattern into a more sustainable structure. While there is beginning to be some research on this topic, a large challenge will be how to get the new ideas and approaches into the hands of local administrators. Building on current work on developing a best-practices guide to such suburban reformulation, we see an increasingly robust opportunity to work with individual cities to help confront these challenges.

#### **Green Cities**

Green cities research explores the transition to the sustainable city region from the context of power and history to the implementation of innovative ecological design approaches that intertwine natural and human systems. The investigation of social and ecological forces has been separated by disciplinary silos, but understanding their interplay and applying an integrated approach are crucial for recasting the public narrative. This includes the role of nature in cities as well as designing the new building and landscape technologies that actually allow human settlement to add to the natural environment rather than extract from it.

#### **Military Base Redesign**

The military is the nation's largest developer and not surprisingly, develops its army bases in similar style to the predominant civilian pattern of an unsustainable pattern of sprawl. SCI sees an enormous opportunity to make a global impact through the redesign of these military bases and communities into more sustainable models. SCI Assistant Professor Mark Gillem was recently given a national award for one such redesign of Fort Lewis in Washington. Applying sustainable city design principles in that project, it is forecasted that the base alone will see a VMT (vehicle miles travelled) reduction total of 11.4 million miles annually, carbon dioxide emission reductions of 12.9 million pounds per year, and per family savings due to reduced auto expenses totaling \$1,500 per year. SCI is currently seeking "3 percent for sustainability" in the recent allocation of \$3.6 billion for military housing to implement these ideas on military bases across the globe.

#### **Walking and Biking Research**

Transforming our city-regions from car-dominant to multimodal is an enormous task; it took this nation seventy years to build our current transportation infrastructure, but we do not have the luxury of seventy more years to figure out a more sustainable transportation model. The University of Oregon is currently known as a national leader in research on the connection between sustainable city form and active transportation (walking and biking). The nation's first community mapping assessment tools in this area were created at the UO.

Source: Sustainable Cities Initiative





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