



# Secretary of State Audit Report

Kate Brown, Secretary of State

Gary Blackmer, Director, Audits Division

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## State Funds Resulted in Expanded Research at Oregon Health & Science University

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### Summary

The Oregon Health & Science University (OHSU) is in its ninth year of the Oregon Opportunity Program, which is a long-term program to accelerate and expand OHSU's research programs. In 2001, the Oregon State Legislature approved \$200 million in state bonds for the program. OHSU's Oregon Opportunity Plan outlined broad program goals, as well as more specific goals and measurable targets.

The purpose of our audit was to review OHSU's progress in accomplishing Oregon Opportunity Program goals related to the \$200 million state investment and to review the university's measures for assessing program success.

Overall, we found that the Oregon Opportunity Program resulted in expanded research at OHSU. We also found that OHSU met or exceeded its specific goals and measurable targets for the Oregon Opportunity Program. For example, OHSU achieved the following:

- recruited 94 scientific investigators;
- employed more than 175 additional research staff;
- created and expanded research centers and programs;
- achieved top 20 National Institutes of Health (NIH) medical school ranking in 2006;
- received \$177.6 million in research grants awarded to scientific investigators recruited by the program as of the end of fiscal year 2008;
- built the 275,000 square foot Biomedical Research Building; and
- purchased high-tech research equipment, including three magnetic resonance imaging (MRI) machines.

In addition to achieving the above, OHSU created a physicians practice network of 157 rural physicians in 37 communities statewide and assisted in creating a high-speed communications network that will support delivery of telemedicine services to Oregonians. Finally, we concluded that OHSU has consistently tracked a number of performance measures related to the Oregon Opportunity Program.

**The agency response is attached at the end of the report.**



**Biomedical Research Building**  
*Photograph by Cyril "Kent" Anderson*

## Background

Oregon Health & Science University (OHSU) is in its ninth year of the Oregon Opportunity Program. The purpose of this long-term program is to accelerate and expand OHSU's research programs to increase OHSU's ability to:

- become a leading research university;
- discover and capitalize on breakthroughs in medical research;
- become a source for a biotechnology industry in Oregon; and
- translate research into better health care for Oregonians.

The Oregon Opportunity Program has received both public and private funding. In 2001, the Oregon State Legislature approved the Oregon Opportunity Act, which authorized the state to provide \$200 million to OHSU through the sale of bonds. The state is using tobacco settlement monies to pay back the bonds.<sup>1</sup> The state and OHSU signed a grant agreement that contains provisions for using the bond proceeds. The OHSU Foundation raised an additional \$378 million from private donors for the Oregon Opportunity Program.

The Oregon Opportunity Plan, a supplement to the grant agreement, described how OHSU would spend the \$200 million in state funding. Table 1 includes the funding areas identified in the plan, the budgeted amounts, and total spending as of the end of fiscal year 2008. The plan also outlined broad program goals, as well as specific goals and measurable targets.

**Table 1**

<b>Oregon Opportunity Program Budget and Expenditures (in \$ millions)</b>		
<b>Funding Area</b>	<b>Budget Amount</b>	<b>Total Spent as of Fiscal Year 2008</b>
Recruitment	65.0	60.3
Biomedical Research Building	98.0	98.0
Bronson Creek Building/West Campus	12.0	11.3
Research Administration	15.0	15.0
Rural Health <sup>2</sup>	10.0	7.5
<b>Total</b>	<b>200.0</b>	<b>192.1</b>

<sup>1</sup> As part of the Tobacco Master Settlement Agreement, U.S. tobacco companies agreed to make annual payments, in perpetuity, to the states to compensate them for some of the medical costs of caring for persons with smoking-related illnesses.

<sup>2</sup> The rural health funding included partial funding for the Eastern Oregon University Science Building, a rural physicians practice network, and a high-speed communications network.

***Broad goals of the Oregon Opportunity Program***

- Become a research powerhouse
- Attract researchers who increase OHSU's scientific impact
- Create centers of clinical and research expertise
- Ensure the availability of space and equipment
- Maximize the number of commercially viable discoveries
- Grow a biotechnology industry in Oregon

***Specific goals and targets included in the Oregon Opportunity Plan***

- Recruit an initial target of 71 scientific investigators
- Build approximately 200,000 square feet of new research related space
- Build a physicians practice network by contacting at least 100 physicians
- Develop and extend a high-speed communications infrastructure for conducting research, education, and healthcare delivery throughout the state
- Create new and expand existing research centers and institutes
- Expand OHSU's research administration
- Achieve top 20 NIH ranking

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## Audit Results

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Overall, we found that the Oregon Opportunity Program resulted in expanded research at OHSU. OHSU also met or exceeded its specific goals and measurable targets for the program. The program successfully recruited leading researchers, which resulted in increased research and grant funding. Successful recruiting also led to the creation and expansion of research centers and programs. To support the expanded research, OHSU constructed new building space, purchased new equipment, made improvements to existing space, and increased its research administration. OHSU also created a physicians practice network and assisted in creating a high-speed communications network. We concluded that OHSU consistently tracks a number of performance measures related to the Oregon Opportunity Program.

### **Success in Recruiting Leading Researchers Increased Research and Grant Funding**

OHSU was successful in recruiting 94 scientific investigators between fiscal years 2002 and 2009. Of the 94 scientific investigators recruited, 15 were internal promotions or retentions. While some turnover has occurred as it would in any organization, 80 active investigators remained on OHSU's staff as of June 2009. This exceeded OHSU's initial target of recruiting 71 investigators. Additionally, according to OHSU, the recruited investigators employed more than 175 research staff members as of June 2009.

Among the recruits were leading researchers, such as Dr. Sanjiv Kaul and Dr. Patricia Hurn. OHSU recruited Dr. Kaul in 2005 to lead the Cardiovascular Medicine Division. Dr. Kaul is an international leader in cardiovascular imaging, and helped recruit at least two additional researchers to OHSU. OHSU recruited Dr. Hurn in 2003, and four members of her team from John Hopkins University, to build OHSU's Anesthesiology and Peri-Operative Medicine department.

OHSU's success in recruiting scientific investigators led to new areas of innovative research, and allowed existing research programs and centers at OHSU to grow. Specifically, OHSU expanded research in at least 17 program areas, created at least four new research centers, and expanded at least five existing research centers. For example, OHSU created the Oregon Clinical and Translational Research Institute, a partnership between OHSU and Kaiser Permanente. Translational research is the process of accelerating the application of new scientific discoveries to clinical practices.

In addition, the scientific investigators brought in new grant funding. According to OHSU, recruited scientific investigators have received research grant awards that totaled \$177.6 million as of fiscal year 2008. Four additional scientific investigators who received Oregon Opportunity funding to help them create new research centers and programs, were awarded an additional

\$8.9 million in grant funds. Thus, a total of \$186.6 million in grant awards are attributed to the Oregon Opportunity Program as of the end of fiscal year 2008. This includes NIH grants, which helped OHSU achieve its goal of being ranked in the top 20 for NIH medical school funding. OHSU realized this goal in fiscal year 2006 when it was ranked 20th. Table 2 shows, by fiscal year, the cumulative number of scientific investigators recruited to OHSU, OHSU's NIH medical school ranking, and the cumulative grant awards received by the recruits.

**Table 2**

<b>Cumulative Recruits, NIH Medical School Ranking, and Cumulative Grants by Fiscal Year<sup>3</sup></b>			
<b>Fiscal Year</b>	<b>Cumulative Recruits</b>	<b>OHSU's NIH Medical School Ranking</b>	<b>Cumulative Grants Awarded to Recruits (in \$ millions)</b>
2002	25	30	4.8
2003	43	32	15.4
2004	56	23	39.4
2005	68	24	67.8
2006	80	20	103.9
2007	85	24	141.4
2008	90	22	177.6
2009	94	NA	NA

## **New Infrastructure and Research Administration Supported the Growth in Research**

In 2006, OHSU completed construction of the new 275,000 square foot Biomedical Research Building.<sup>4</sup> This building increased the amount of space on OHSU's Marquam Hill campus to accommodate the newly recruited scientific investigators and expanded research programs. The amount of space created by the Biomedical Research Building exceeded the original target for building approximately 200,000 square feet of new space.

The Biomedical Research Building houses three new cutting-edge magnetic resonance imaging (MRI) machines purchased with Oregon Opportunity funds. The MRI machines are part of the newly created Advanced Research Imaging

<sup>3</sup> NIH and cumulative grant award data was not available for fiscal year 2009; cumulative grant award data was provided by OHSU.

<sup>4</sup> In 2006, the Oregon Audits Division conducted an audit that addressed construction of the OHSU Biomedical Research Building. The focus of the 2006 audit was on contracting. See Report No. 2007-08 at <http://www.sos.state.or.us/audits/reports/>.

Center. One of the MRI machines uses a 12 Tesla magnet with a magnetic field 120,000 times stronger than that of the Earth (see photo below). At the time OHSU installed this MRI machine, it was one of only two of its kind. Oregon Opportunity funds also purchased other high-tech research equipment including mass spectrometers and DNA amplifiers.



Researchers working with the 12 Tesla MRI machine

OHSU also used Oregon Opportunity funds to purchase the Bronson Creek Building and fund other research related improvements on the OHSU West Campus. In 2006, OHSU sold the building due to a decision to shift OHSU expansion to the South Waterfront neighborhood in Portland. OHSU then used an amount of money equivalent to the cost of purchasing and renovating the Bronson Creek Building to fund other capital projects. For example, OHSU made capital improvements to the Center for Health and Healing Building, and spent additional money on the completion of laboratory space in the Biomedical Research Building.

OHSU also increased its research administration to support the new investigators and expanded research programs. Research administration expenditures increased by more than 50 percent between fiscal years 2002 and 2008. OHSU funded the increased research administration primarily by using a small portion of the grant awards associated with the federally negotiated indirect cost return.

## **Oregon Opportunity Helped Create Rural Health Care Networks**

OHSU created the Oregon Rural Practice-based Research Network (ORPRN) using program funds. ORPRN is a physicians practice network of 157 rural physician members with clinics in 37 rural communities across the state. The original target was for OHSU to make initial contact with 100 rural physicians. The mission of the physicians practice network is to improve the health of rural populations in Oregon through conducting and promoting health research in partnership with its members. OHSU allocated \$5 million in Oregon Opportunity funds for the physicians practice network. In addition, the network received \$9.4 million in grant awards to fund its research projects.

OHSU also assisted in establishing the Oregon Health Network. The Oregon Health Network is a high-speed communications network designed to support the delivery of telemedicine services to Oregonians. Telemedicine uses communications technology to provide health care services. This includes providing access to off-site databases, linking clinics or physicians' offices to central hospitals, and transmitting x-rays or other diagnostic images for examination at another site. The goal of the network when fully implemented is to interconnect healthcare facilities in rural areas, as well as physicians, health clinics, Oregon hospitals, public health offices, and health education institutions. These entities will be provided subsidized access to a high-speed broadband network with speeds of up to 1 gigabyte per second.

The Oregon Health Network will utilize the Northwest Access Exchange (NWAX). OHSU and Portland State University established NWAX to improve Internet access in the Northwest. NWAX is a regional Internet exchange that enables faster connections and the use of more advanced applications such as videoconferencing and telemedicine services. The Oregon Opportunity Program provided approximately \$800,000 for NWAX.

## **OHSU Measured Program Progress**

Performance measurement and the development of associated targets are important for determining how well an organization is progressing toward achieving program goals, and for building accountability. We found that OHSU developed targets and consistently tracked a number of performance measures related to the Oregon Opportunity Program. The performance measures included:

- annual NIH medical school ranking;
- total grant award amounts;
- number of invention disclosures;
- number of U.S. patent applications; and
- number of start-up companies formed using OHSU research.

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## Objectives, Scope and Methodology

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The purpose of this audit was to review OHSU's progress in accomplishing Oregon Opportunity Program goals related to the \$200 million state investment, and to review the university's measures for assessing program success.

To accomplish our first objective, we interviewed people with knowledge of the program, including current and former scientific investigators, fiscal staff, accounting staff, campus planning staff, and ORPRN staff and physician members. We reviewed the Oregon Opportunity grant agreement, its accompanying plan, and annual reports OHSU submitted to the Oregon State Treasury. We conducted selected walkthroughs of research departments, including two departments in the Biomedical Research Building.

We also obtained data and information from OHSU management related to program accomplishments. Specifically, we

- received financial data reports on program expenditures, grant awards, and research administration costs;
- collected NIH ranking data and summarized OHSU's NIH medical school ranking for fiscal years 2002 through 2008;
- obtained square footage data for the Biomedical Research Building;
- reviewed ORPRN membership information; and
- obtained data on scientific investigator recruitment including a tracking sheet and survey results that identified research staff hired by the recruits.

In addition, we verified the hire data for the 94 recruits by reviewing personnel action hire forms. We selected a random sample of eight recruits to verify that they received Oregon Opportunity Funds as part of their recruitment packages. We found no exceptions with the sample of recruits.

We evaluated the reasonableness and selectively tested the accuracy of the data and information we obtained. We concluded that the information we used in our review was sufficient and appropriate for our audit purposes.

To accomplish our second objective, we interviewed OHSU management to gain an understanding of OHSU's future planning efforts for the program. We also obtained information on the performance measures and targets OHSU has developed for tracking program progress.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

## **Agency response**

The agency response is attached at the end of the report.



January 15, 2010

**President's Office**

Mail code L 101  
3181 S.W. Sam Jackson Park  
Road  
Portland, OR 97239-3098  
tel 503 494-8252  
fax 503 494-8935  
[www.ohsu.edu](http://www.ohsu.edu)

Joseph E. Robertson, Jr.  
MD, MBA  
President  
[robertjo@ohsu.edu](mailto:robertjo@ohsu.edu)

Mary Bianchini  
Executive Assistant  
[bianchim@ohsu.edu](mailto:bianchim@ohsu.edu)

Mr. Gary Blackmer  
255 Capitol Street NE, Suite 500  
Salem, Oregon 97310

Dear Mr. Blackmer:

OHSU would like to thank you for your hard work and diligence during this audit process. We are grateful for the continued partnership with the state and Oregonians. The joint venture of the Oregon Opportunity program has strengthened OHSU's mission to promote the health and well-being of all Oregonians.

OHSU is appreciative of the support the Oregon Opportunity program has provided this institution. This strategic investment by the state enhanced the excellence and expansion of our research mission. The initial support from the state allowed OHSU to raise private donations and to compete successfully for more federal funding in the form of increased National Institutes of Health research dollars. We are very pleased with our increase in NIH ranking and the number of Oregon Opportunity investigators we have been able to recruit and retain.

Significantly, the funds from the Oregon Opportunity have already proven themselves to be a driver for long-term economic development. They were instrumental in our successful application—awarded in the first round—for the Clinical and Translational Science Award, which funds the Oregon Clinical & Translational Research Institute, as referenced in the audit report. Likewise, at a time when funding levels from the NIH have been flat, we have increased our NIH awards.

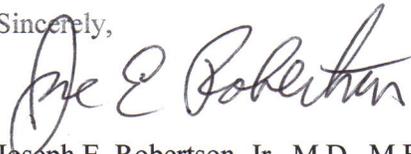
Per the request of the auditing team, I'd like to share updated information from our most recent fiscal year as well as new grants from the federal economic stimulus package. As of fiscal year 2009, the Oregon Opportunity scientific investigators brought in an additional \$39.6 million in awards. This brings the cumulative awards to \$217.2 million. Even more telling, the Oregon Opportunity investment has directly benefited Oregonians by making OHSU extremely competitive for American Recovery and Reinvestment Act (ARRA) funding—not only because of our outstanding investigators but also because of our demonstrated national leadership in building sustainable research facilities, in particular the Biomedical Research Building. We have been awarded more than \$67 million to date in ARRA funds for research and facilities, adding or preserving full and part-time employment for more than 300 Oregonians.

Together, these successes in the face of bleak economic conditions underscore that the Oregon Opportunity investment will provide a strong foundation for the continued development of well-paying, highly skilled jobs.

We have worked hard to ensure that Oregonians' investment has been used responsibly and in a way that benefits all of Oregon. The Oregon Opportunity not only expands our knowledge and promotes better health, it has the secondary benefit of improving Oregon's economic vitality by attracting federal and private money from out of state and creating more job opportunities.

I'm glad that you found our staff helpful and responsive during the audit process. We look forward to a sustained partnership with the state as we continue to promote the health and well being of all Oregonians.

Sincerely,

A handwritten signature in cursive script, appearing to read "Joe E. Robertson".

Joseph E. Robertson, Jr., M.D., M.B.A.  
President

CC: The Honorable Kate Brown, Secretary of State

## About the Secretary of State Audits Division

The Oregon Constitution provides that the Secretary of State shall be, by virtue of his office, Auditor of Public Accounts. The Audits Division exists to carry out this duty. The division reports to the elected Secretary of State and is independent of the Executive, Legislative, and Judicial branches of Oregon government. The division audits all state officers, agencies, boards, and commissions and oversees audits and financial reporting for local governments.

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### **Audit Team**

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William K. Garber, CGFM, MPA, Deputy Director

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James E. Scott, MM, Audit Manager

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Shanda L. Miller, MPA, Senior Auditor

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Alexandra D. Fercak, MPA, Senior Auditor

---

Ashwini Prasad, MBA, Staff Auditor

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This report, a public record, is intended to promote the best possible management of public resources. Copies may be obtained from:

internet: <http://www.sos.state.or.us/audits/index.html>

phone: 503-986-2255

mail: Oregon Audits Division  
255 Capitol Street NE, Suite 500  
Salem, OR 97310

The courtesies and cooperation extended by officials and employees of the Oregon Health & Science University during the course of this audit were commendable and sincerely appreciated.