A Strategy to Increase Externally Sponsored Research at the University of Oregon

Introduction

Over the past two years, the University of Oregon has made considerable investments to enhance research, including an increase in the number of tenure track faculty, competitive startup packages, extensive laboratory renovations, a high performance computing facility, and high-speed internet connectivity. In addition, the UO is launching the Knight Campus for Accelerating Scientific Impact (KCASI), a $1 billion initiative that will add additional faculty and new research buildings, laboratories, and instructional spaces.

To capitalize on this transformational opportunity, the Office of the Vice President for Research (OVPRI) has developed this strategic plan focused specifically on actions to increase externally sponsored research funding. There are several reasons for focusing explicitly on external funding. First, external funding allows for research impact that would not otherwise be possible in many disciplines. Second, the quantity of externally funded support, especially from federal agencies, is a key metric used to rank research universities. Third, the increase in externally funded research we experience over the next several years is a measure of the return on investments we are currently making. Fourth, externally sponsored projects contribute to our regional economy through direct expenditures, through discoveries and innovations with commercial value that lead to the formation of new companies or licensing of technologies to industry, and through application of research findings to policy and practice.

Increasing externally sponsored research is not an end in itself. It is the discoveries and advancement of knowledge and creative expression enabled by external funding that are the true measure of excellence. As a proxy of the quantity, quality, and diversity of scholarship on a given campus, externally sponsored awards are a convenient metric, but one that works far better in some disciplines than in others. This plan, however, focuses solely on increasing externally sponsored projects, with the full acknowledgement at this is only on one ingredient in research and scholarship excellence.

A first draft of this plan was initially created by the OVPRI Executive Team. Next, it was reviewed by various campus groups including the Dean's Council, the Research Core Facility directors and their Faculty Advisory Committees, the directors and faculty of OVPRI's Centers and Institutes, and the Research Advisory Board. We thank all of these groups for valuable comments that led to significant improvements in the final version. We envision this as a living document that will evolve to address emerging priorities campus-wide, and as we learn more about which strategies have the greatest return on investment.

Overarching Principles

1. Prioritize external support for research campus-wide.
2. Use data to benchmark and evaluate progress.
3. Recognize and reward success and provide incentives to increase competitive proposal numbers and prestigious awards.

4. Reduce bottlenecks and administrative burdens and adjust workloads so that faculty can focus more time on research.
5. Diversify funding sources by expanding external university/agency/industry partnerships and philanthropy, including external support for the arts, humanities, and other non-science/technology disciplines.
6. Identify emerging areas of research aligned with the priorities of the federal funding agencies where the UO can achieve national prominence.

Goals

I. Research Excellence

A. Vigorously support faculty capacity to submit competitive proposals.

Our goals in this area are three-fold: (1) Increase the number of major center or other large multi-PI grants; (2) Diversify and expand our federal funding base; and (3) Accelerate the rate at which career faculty apply for awards and enhance their competitiveness. OVPRI will develop a detailed strategy and set of tactics to achieve these goals. This effort will require careful mapping of the strengths of UO faculty onto the opportunities for external support, development of new programming, and an expansion of our Research Development Services (RDS) office. We anticipate our strategy will include the following:

Actions:

- Develop and implement new programming and outreach strategies to convene and engage groups of faculty in large proposal writing in content areas where we are likely to be highly competitive for securing external funding.
- Expand proposal development support across disciplines by providing staffing and financial resources for the planning, organizing, and writing of large proposals.
- Establish a formal early career faculty training program in disciplines with sponsored funding potential.
- Employ data analytic and technical assistance strategies to support and encourage faculty to expand and diversify their funding portfolios to include new sources and more high value opportunities.
- Explore investing in an online tool such as PIVOT to help identify new funding opportunities and potential collaborators within UO and at other institutions. For example, PIVOT facilitates more focused funding searches than are currently possible through our Funding Opportunities newsletter.
- Increase the number of NSF GRF Fellowships by providing campus-wide training and mentorships in terms of preparing the application for all graduate students and publicize the awardees each year.
- Increase the number of NIH diversity supplements awarded to graduate students on existing NIH grants.

B. Establish goals, measure results and communicate outcomes related to research productivity.

This goal aims to provide metrics to benchmark and measure our success and improve the visibility and recognition of our research accomplishments.

Actions:

- Develop a consistent set of **research and innovation metric data** (see appendix) and provide it to leaders of research and academic units (e.g. departments, institutes, schools, colleges, Provost, President) on a regular basis.
- Meet regularly with individual units with high potential for funding to discuss their research productivity in comparison to their peers and strategies for expansion of support.
- Use IRIS/UMetrics data to measure economic impact of research and track students supported on grants as they enter the work force.
- Deliver a UO "State of Research" address annually. Use event to provide campus community with data about research, scholarship, creative activities, and innovation accomplishments; set campus goals; announce new initiatives; recognize high-achieving units; and congratulate major award winners.
- Continue to support campus-wide events that celebrate research and innovation, such as the Undergraduate Research Symposium, the Graduate Research Symposium, and the Innovation Summit.
- Work with academic units and the UO Communications Office to better publicize research accomplishments.

C. Work jointly with the Office of the Provost and Academic Affairs to ensure that research, scholarship, and creative activity and the funding thereof is incentivized at all organizational levels.

The OVPRI and Office of the Provost and Academic Affairs (OPAA) must work closely together to enhance research. The following are a set of actions that OVPRI will take to support OPAA.

Actions:

- Encourage academic leaders to use sponsored project awards metrics in performance evaluations for merit raises, promotion, and tenure as appropriate in those disciplines where funding is available.
- Encourage adjustments in faculty workload in accordance with external funding to create further incentives for faculty to seek external research. Review salary savings and course buy-out policies to identify further opportunities to incentivize research.
- Provide the provost, deans, and departments information on trends in federal funding priorities so that faculty hiring plans are in tune with emerging areas of funded research. In those disciplines where sponsored research funding is available,

encourage the use of research metric data in developing faculty hiring plans and as selection criteria used by search committees to rank candidates.

- Encourage the recruitment of faculty in ways that create synergies that foster team science. A strategic hire may significantly increase the funding potential of the team in a way that is significant beyond their individual funding potential (e.g., NIH is emphasizing team science as an approach to funding large projects).
- Champion the accomplishments and support the needs of NTTF research faculty.
- Work with the College of Arts and Sciences (CAS) and other academic units to support their plans to "top off" prestigious external grants in the arts and humanities in a manner that is consistent with current university policy.

D. Increase the number of prestigious faculty awards and honors.

Prestigious awards and honors enhance the reputation of the UO in the eyes of external sponsors. The UO does not currently have an organized system ensuring that our faculty are nominated for prestigious honorary awards. In some cases, nominations must come from the institution, typically the Provost, while in other cases nominations can be submitted only from previous honorees (e.g., National Academy members, AAAS Fellows).

- Work with OPAA to develop an institutional plan for nominating our faculty for honorary awards including process for identifying potential honorees and capacity to support nominations.
- Use electronic databases such as Academic Analytics to identify faculty who fit the profile of particular award recipients.
- For honors where nominees must come from current honorees, reach out and encourage current members to nominate their UO colleagues and provide staffing support to get nominations written.

II. Infrastructure to Support Research

A. Reduce the burden of compliance with federal, state and other regulations.

It has been documented through national surveys that faculty spend far too much time on research administration rather than actual research activities. While we must enforce federal rules and regulations regarding the conduct of research, we aim to streamline the process and thereby ease the burden.

Actions:

- Work continuously to ensure that research administration and compliance functions of the OVPRI are service oriented, and are designed and organized to support research that is conducted in a compliant fashion.
- Ensure that research administration and compliance systems are scalable so that, as sponsored activity expands on the main and Knight Campus, the compliance and

research administration units can meet those needs without increasing turnaround times or reducing service focus.

- Strengthen performance metrics for research administration and compliance units and use them as self-improvement tools to guide internal regulatory systems and processes.
- Review compliance systems and research administration to identify areas where we are imposing burden beyond what is required by regulations and take action to reduce that burden.
- Adopt electronic processes for research compliance functions such as IRB, IACUC, COI, IBC, and Radiation Safety.

B. Increase effective utilization and quality of lab space.

Growth of our research enterprise is becoming limited due to a shortage of lab space. Allocation of space is done sometimes with limited regard to the external funding faculty using the space and much of it has significant deferred maintenance needs. OVPRI will work with OPAA, the Vice President for Finance and Administration (VPFA), CAS, and Campus Planning and Facilities Management (CPFM) to improve (1) space allocation procedures; (2) the system for addressing deferred maintenance; (3) efficiency and effectiveness of renovation projects to better meet research needs.

Actions:

- Work with OPAA, VPFA/CPFM, colleges, and other campus stakeholders to improve the system by which lab space is allocated to increase focus on research productivity, increase adaptability of space and their allocations to better respond to changes in researchers needs, including the potential to expand or contract in response to external support.
- Supply research metric data specific to support allocation processes.
- When spaces are renovated, work closely with CPFM and the researchers to ensure that project goals and challenges are well understood by all concerned, disruption to research is minimized, and PIs are full informed of the renovation schedule well in advance of any impacts on research.

C. Provide cutting-edge facilities and research infrastructure.

Research core facilities provide vital research equipment and services in a cost-effective manner to faculty. Their success requires continual improvement and investment to remain cutting edge and focused on faculty needs.

Actions:

- Undertake a strategic plan for core facilities ensuring that research core facility capacity, business models, and support is well-aligned to support the research growth areas of the university, including the Knight Campus.

- Increase the number of NSF MRI proposals, Murdock, and NIH equipment proposals and provide matching funds to these proposals.
- Work with OPAA to create stronger incentives for faculty to write major instrumentation proposals.
- Create an internal equipment opportunity fund to allow research core facilities to compete for funds to support routine equipment expansion and refreshing.
- Provide high speed (100 gig) network connection to outside networks such as the Western Regional Network (WRN) and the Pacific Research Platform (PRP).

III. External Partnerships and Philanthropy

Partnerships have the potential to expand our research capacity, but investments in partnership development need to be strategic as their development requires substantial investment of staff resources. We anticipate focusing our efforts in the following areas:

A. Build new external institutional partnerships to enhance funding.

- Expand new OHSU/UO alliance focused on joint research projects involving faculty, graduate students, and postdocs across campuses.
- Explore possibilities for expanding joint appointments with the Pacific Northwest National Laboratory (PNNL) with a focus on jointly funded research projects.
- Leverage new Corporate Relations staff person in the Advancement Office to make new connections with industry.
- Work with early-stage investment groups/funds (e.g., Breakthrough Energy Ventures) to find support for UO research efforts with strong innovation potential.
- Ensure that UO researchers are aware of translational and early-stage company/innovation funding through the Oregon Signature Research Centers and other groups.

B. Engage in philanthropic support for research.

- Develop fundraising goals focused on "grand societal challenges" (see below).
- Attract gifts to the University Venture Development Fund (UVDF) as a means to support training and research efforts that may lead to commercialization.
- Tie to efforts around the science communication, so that development officers and donors understand the importance of research and its processes and people.
- Prioritize fundraising for endowing research core facilities.

IV. Launch new interdisciplinary and disciplinary initiatives that have high potential to attract external funding and community impact

Launching of major new initiatives in areas that dovetail with the priorities of federal and other funding agencies is one way to enhance external support. The UO used a cluster hiring initiative in recent years in part for this purpose. Other universities are now using a “grand challenge” strategy to increase visibility and impact of research and attract external support. Still others are promoting “Highly Integrative Basic and Responsive (HIBAR) Research”, a call for universities to “improve research and increase benefits to society through deepening engagement with external partners.” The Data Science Initiative is one such area now underway. Examples of other interdisciplinary areas under discussion but not yet developed include resiliency, climate change, entrepreneurship, and others that might emerge in collaboration with OHSU.

Appendix: Sponsored project and innovation metrics

There are potentially numerous measures of research excellence and impact. Currently, there are various academic units working with OPAA on developing disciplinary-specific metrics of excellence and impact in research, scholarship, and creative activity. OVPRI's goals in providing metrics are narrower: (1) to provide academic units and OPAA data about sponsored projects and innovation that can be part of a larger portfolio of metrics; and (2) to track progress related to this plan for increasing external research funding. We fully acknowledge that metrics that focused only external awards track progress on a key input variable (money) but are not a direct measure of the outcomes derived from research accomplishment or impact. Hence, below we also list metrics that involve our innovation portfolio and potentially reflect impact. The list below consists of metrics that OVPRI tracks and will make available to academic units.

- Number of proposals submitted to external sponsors
- $ Value of proposals submitted to external sponsors
- Number of awards received from external sponsors
- $ Value of awards received from external sponsors
- $ Value of federal awards received
- Total external research expenditures
- Total federal research expenditures
- $$ supporting and number of grant-funded graduate students
- $$ supporting and number of grant-funded postdoctoral scholars and fellows
- Number of NSF Graduate Research Fellows
- Number of consultations and innovation disclosures (innovation activity)
- Percentage of patents filed from inventions disclosed
- Number of licenses/option agreements, MTAs, DUAs, and CDAs executed
- Licensing revenue
- Number of spin off businesses
- Number of jobs and revenue of UO's spinoff businesses