# OSU Research Office

## FY18 ANNUAL REPORT

Cynthia Sagers, Vice President for Research
OREGON STATE UNIVERSITY | A312 KERR ADMN CORVALLIS OR

**RESEARCH OFFICE MISSION**

Oregon State University is entrusted to build a future that is smarter, healthier, more prosperous and more just. Research is foundational to that vision. It provides transformational educational experiences for our students, intellectual challenges for our faculty, and a means to broaden our impact through the world. The mission of the Research Office (RO) is to ensure that our research investments are sound, that our researchers are well equipped to advance their fields of study, and that the work of our faculty, students and staff has impacts in Oregon and beyond.

**RESEARCH OFFICE VISION**

We envision a research enterprise that is fully integrated into the communities we serve, that is driven by a fundamental quest for knowledge, that inspires creativity and innovation, and that is renowned for delivering outcomes that matter.

**RESEARCH OFFICE VALUES**

We welcome opposing opinions, invite a diversity of perspectives, advocate transparency in all aspects of office business, and create a community of care and respect.

# RESEARCH OFFICE ANNUAL REPORT FY18

*EXECUTIVE SUMMARY*

**BACKGROUND**

The Research Office (RO) provides an annual report to the President and other university executives to assist with their governance and oversight responsibilities.

The RO serves as a key resource to Oregon State University, providing leadership on issues concerning the research enterprise, including research development, commercial activity, research integrity and sponsored programs. The RO Work Plan 2018-2023 is provided in Attachment 1. RO statements of mission, vision and values and staffing details are provided in Attachment 2. Implementation Matrices of strategic initiatives are provided by each business unit in Attachment 3.

**MAJOR AREAS OF FOCUS FOR FY18**

Major areas of focus for the RO in FY18 fell into several categories:

- *Business processes* – The last decade has been an era of expansion for the institution, with remarkable growth of the research mission. From 2007 to 2017, research awards grew 91%, In 2017, OSU was the single largest recipient of National Science Foundation (NSF) funding, making OSU the largest research university in Oregon for the first time. As the number and size of awards grew, so did federal compliance and reporting requirements. Efforts to update business policies and practices were hampered by the dissolution of the Oregon University System (OUS) and subsequent internal restructuring. In FY16, the RO began substantial improvements in business systems, including electronic reporting, research compliance administration, and development of a RO policy manual. These efforts were informed by external reviews, including evaluations by Baker-Tilly (2014) and NCURA (2017).

- *Infrastructure* - Like many public research institutions, OSU researchers are advancing 21$^{st}$ century research agendas in early mid-century facilities. The RO is partnering with the Division of Finance and Administration to develop strategies and tools to improve the quality and availability of research space on and around the Corvallis campus. Projects designed, constructed or acquired in FY18 will yield more than 465,000 sq ft of new and renovated space.

- *Strategic partnerships* – In a flat funding environment, the RO is reaching out to partners in business, industry and federal agencies to grow programs, create opportunities for students, and provide stability in areas of research funding. In FY18, RO finalized formal collaborative agreements with Pacific Northwest National Labs (PNNL), Oak Ridge National Lab (ORNL), Idaho National Lab (INL), CleanTech Alliance, Department of Energy (DOE), and National Oceanographic and Atmospheric Administration (NOAA). RO is further collaborating with the OSU Foundation to staff a position to accelerate the creation of industry partnerships. Locally, the RO has partnered with the College of Engineering to join the Oregon Manufacturing and Innovation Center (OMIC), positioning OSU to engage with multiple industry partners, while keeping to our core mission.

- *Innovation and entrepreneurship* - OSU's Advantage Accelerator is recognized as the most mature university accelerator in Oregon. FY18 saw Advantage staff take the lead in expanding university commercialization activity statewide. Business Oregon and the remaining public institutions of higher education have become valuable partners in this initiative. In tandem, the legislative affairs committee (LAC) of each campus is working closely with the Senior Research Officer Council (SROC), chaired by VPR Sagers, to submit a $17.3MM request to the legislature in the next biennium for programmatic support. In addition, the RO partnered with the College of Engineering to join the Oregon Manufacturing and Innovation Center, positioning OSU to engage with multiple industry partners, while keeping to our core mission.

- *Reputation* - OSU is home to globally-ranked programs in forestry, engineering and earth sciences. OSU boasts excellent research productivity as gauged by number and quality of publications, size and continuity of research awards, and impacts through invention and commercialization. Recognition of OSU as a leading research institution reaches just beyond the Cascades, however. The RO is designing strategy to advance the national and global reputation for OSU research and has made substantial gains in recent weeks. RO's initial attempt to garner national recognition for faculty excellences was successful when Dr. Jane Lubchenco was recognized by the National Science Foundation as its 2018 recipient of the Vannevar Bush Award.

Each of these categories is described in more detail in subsequent pages.

## RO LEADERSHIP

**Cynthia Sagers** has served as the Vice President for Research at Oregon State University since August 31, 2015. As Vice President, Sagers provides leadership to OSU's vast research enterprise, which last year brought in $382 million in research grants and contracts in areas including agriculture, forestry, marine sciences, public health, and engineering. Sagers also works with academic leaders and the University community to expand OSU's entrepreneurial and economic development activities with industry and other public and private partners. Joining OSU in 2015, she has marshalled steady growth of the research enterprise, including three successive years of record research awards. She currently serves on a number of advisory boards for research and economic development entities in the region.

**Staci L. Simonich** is OSU's Associate Vice President for Research and Professor of Chemistry and Environmental & Molecular Toxicology. As AVPR, she leads the Office of Research Development, assists in daily operations of the RO, and fosters RO collaboration with research active faculty and students. Staci has a passion for bringing together groups of people to solve real-world, trans-disciplinary problems, in a highly collaborative environment. She has brought in over $9M in federal research funding from NSF, NIH, DoD, and Department of Interior, has published over 100 peer reviewed publications, and mentored more than 30 graduate students in her OSU laboratory.

**Brian M. Wall** is OSU's Assistant Vice President for Research, Commercialization and Industry Partnerships. In this role, he leads a strategic priority of OSU, the OSU Advantage, to connect business with faculty expertise, student talent and excellent facilities to research solutions, bring ideas to market and launch companies.

He also chairs the OSU Venture Development Fund Advisory Council. Working collaboratively with the OSU Foundation, raising over $6M in gap funding, and supporting 30+ projects inside and outside of OSU over the past seven years.

**Patricia A. Hawk** is the Assistant Vice President for Sponsored Research and Award Administration at OSU. Pat has been involved in research administration for more than 30 years. Pat joined the Office of Sponsored Programs in 2005 as Assistant Director and took over as Director in July 2007. In 2015, OSU combined its pre- and post-award offices into the Office for Sponsored Research and Award Administration, and chose Pat to lead this new office. Pat has been an active member in the National Council of University Research Administrators (NCURA) during her research administration career, as a presenter and a program committee member. Pat will receive NCURA's Distinguished Educator Designation in August 2018.

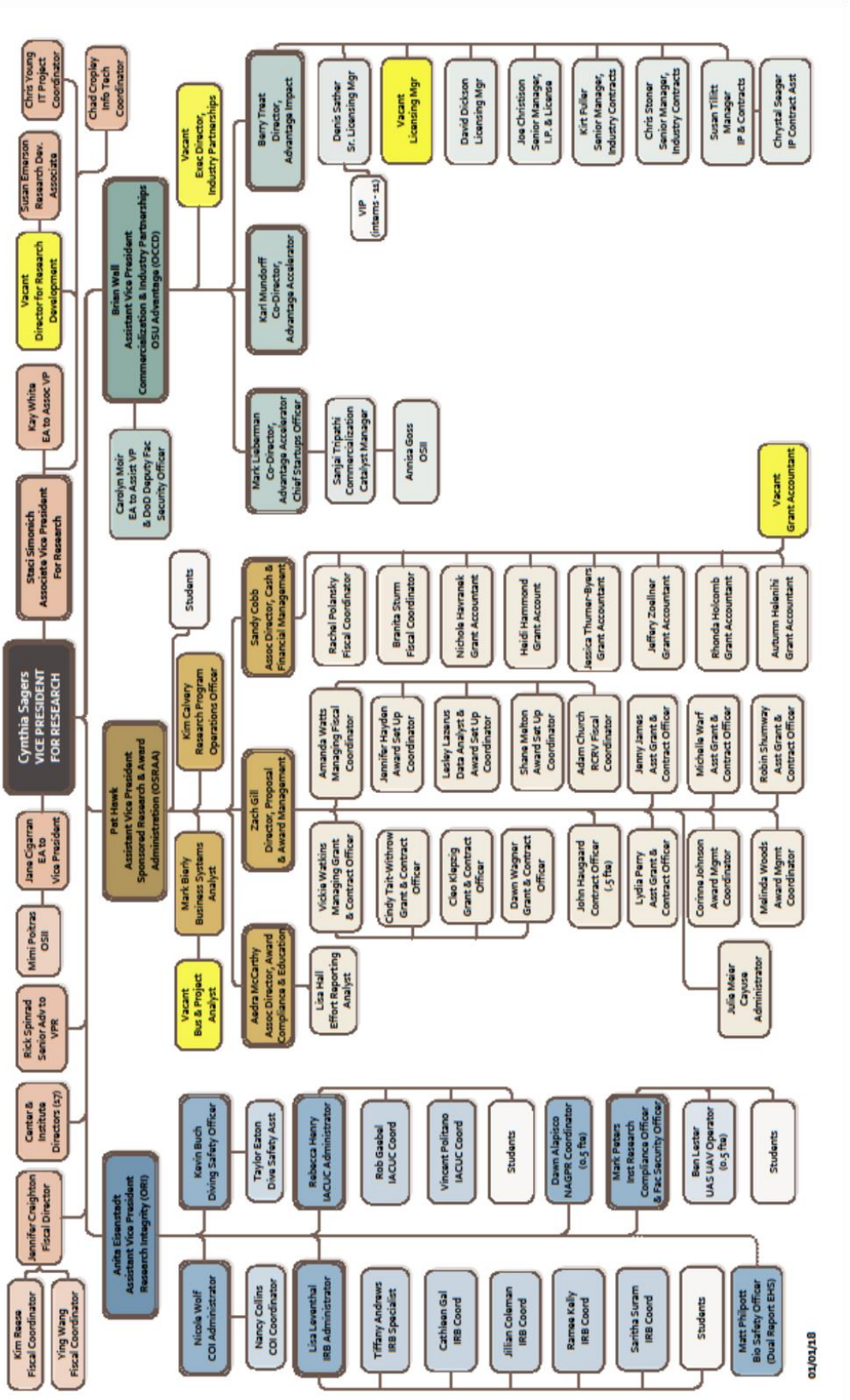
**Anita Eisenstadt**, Assistant Vice President for the Office of Research Integrity, oversees compliance for the protection of human subjects, animal welfare, scientific diving and boat safety, export controls, classified research, and international research. Anita served as Assistant General Counsel at the National Science Foundation where she served as a legal expert on research compliance, legislation, and international scientific cooperation. Following her tenure at NSF, Anita served as a Senior Foreign Affairs Officer in the U.S. State Department's Office of Science and Technology Cooperation, where she negotiated and managed international science and technology agreements to facilitate bilateral cooperation in research. Anita earned her B.A. in Asian Studies and Anthropology from University of Michigan and her J.D. from Wayne State University.

**Jennifer Creighton** is the Fiscal Director for Research. In her role, she is responsible for administrative guidance and operational execution and oversight of the Research office overall fiscal and human resource functions. She works with the Vice President for Research to develop and execute the overall fiscal strategic planning and forecasting for the Research Office. Jenn also teaches on campus for the College Student Services Administration Graduate Program, Budget and Finance. She also designed the course working with Ecampus, which will be offered online this fall. Jenn has a passion for continuous learning and continuous process improvements.

**Kay White** is the Executive Assistant to the Vice President for Research. In her role, she is responsible for providing proactive leadership, managerial, administrative, supervisory, professional, and/or technical support within the Office of Research**.**

Kay is action driven and has an interest in ongoing education and continuous improvement of process to support an active and engaging office environment.

## RO ORGANIZATIONAL CHART



## KEY STRATEGIC ACCOMPLISHMENTS FY18

### MODERNIZING BUSINESS PROCESSES

- The RO is developing and implementing a new electronic research administration system for research integrity to streamline the process for OSU researchers. RO completed configuration of and launched the conflict of interest module in August 2017. RO teams are currently designing and implementing an Animal Welfare Model (scheduled to launch in September 2018 and Protection of Human Subjects Module (scheduled to launch in January 2019).
- RO is working closely with the Office of University Compliance to update OSU-wide policies for which RO serves as the lead. In conjunction with this effort, RO has developed a policy manual which compiles RO's policies and procedures into one location. RO will update its webpage to enable the OSU research community to access readily these policies.
- Created a comprehensive RO C&I list that includes alignment of all C&I's. The list includes: C&I designation of board oversight, Core Facilities, federally funding, budget allocation, directors supervision, direct FTE, contact information, foundation accounts, and etc. Shared with stakeholders as needed; including Provost Office.
- Streamlined HR processes in partnership with multiple HR staff and C&I's for implementation of a new salary increase and annual renewal process. Worked with VPR to update all Directors evaluations and position descriptions.
- The Research Office took on oversight of OSU's security clearance program in July of 2017. The program was inspected by Department of Defense (DOD) that month, and through the work of the Research Office, OSU received passing grades on oversight of the program. The office has expanded the staffing to include not only a lead Security Officer but also a deputy who can provide support and backup for the program. The program has expanded as additional researchers in College of Engineering explore funding from DOD. The Research Office is leading conversations on how to best manage and leverage OSU's unique position as only one of just over 100 cleared Universities and position research faculty for additional federal funds.
- In 2017, the RO appointed a Native American Graves Protection and Repatriation Act (NAGPRA) Coordinator and launched a NAGPRA Office. RO subsequently transitioned the NAGPRA function to OSU's Office of Institutional Diversity.
- The Research Office instituted a Research Risk Committee, which is co-chaired by the Vice President for Research and the Vice President for Finance and Administration. One of the committee's first tasks was the development of a Large Project Policy. The Large Project Policy establishes a consistent structure for OSU's identification and management of large projects. These large projects are agreed upon by the Vice President for Research and the Vice President for Finance and Administration, and it is recognized that these major research projects must have a more robust oversight component. This oversight also ensures that OSU has identified appropriate administrative support to ensure the projects are successfully managed.
- OSU became a signatory to the SMART IRB Agreement, a national reliance agreement between over 435 universities designed to avoid duplicative institutional reviews of human subjects research projects involving collaborators across multiple universities.
- OSU and OHSU signed an agreement to streamline procedures for the review of collaborative research involving human subjects, animal subjects, or biological materials.

- OSU executed an agreement with USDA/ARS to facilitate compliance for USDA researchers conducting biological research on OSU's campus. This agreement deepens the already strong partnership between OSU and USDA/ARS.

**STRENGTHENING RESEARCH INFRASTRUCTURE**

- The Research Office led an expansion of approximately 27,000 square feet of space at OSU's Advanced Technology and Manufacturing Institute (ATAMI). This buildout supports high-growth startups, the College of Engineering faculty, and creates a long-term home for the OSU Advantage Accelerator.
- The Research Office supported the acquisition of the building formerly known as the "Sarepta" Building in Corvallis. This acquisition enables a more efficient renovation of Cordley Hall. During the transition period, OSU will develop a research and innovation focused biotechnology strategy similar to the Advanced Technology and Manufacturing Institute at HP's campus. The size of the building and the functionality of the space create the potential for an innovation hub in the biological and chemical sciences - a world-class research facility that integrates industry, academia and startups.
- The Marine Geology Repository (MGR) at OSU is an NSF supported curation facility for marine rock and sediment samples. Collaboration among NSF, OSU's College of Earth, Ocean, and Atmospheric Sciences (CEOAS) and the RO resulted in renovation of 52,000 cubic feet of cooled and chilled space for the preservation and distribution of marine geological samples for scientific research and education.

**LEVERAGING PARTNERSHIPS**

- OSU and Pacific Northwest National Laboratory (PNNL) under the joint leadership of the RO and the Graduate School entered into an MOU to establish a PNNL-OSU Distinguished Graduate Research Program. The program will engage five students per year in a joint program in which OSU and PNNL share the responsibilities and costs of training.
- OSU is a member of Idaho National Lab's National University Consortium. OSU and the RO are currently represented on the consortium by Dr. Wade Marcum, School of Nuclear Science and Engineering. Engagement by the RO the school in INL operations led INL in 2017 to designate OSU a "Strategic Partner." Efforts to establish joint faculty and graduate students programs with INL are underway.
- Under the leadership of the RO, OSU joined the Oak Ridge Association of Universities, a consortium of more than 100 research institutions dedicated to strengthening the nation's science education and research agenda. Membership allows access to ORNL expertise and facilities, and ensures a voice in determining future research investments.
- Representatives from National Oceanographic and Atmospheric Association (NOAA), US Environmental Protection Agency (US EPA), US Fish & Wildlife Service (USFW), and Oregon Department of Fish and Wildlife (ODFW) met with OSU researchers to discuss renewing historical research strengths in aquaculture and fisheries. A two-day workshop led by HMSC staff was funded by industry, including Pacific Seafood, and will generate a design and business plan for the center.

- OSU has established close ties with the Department of Energy through the joint effort to establish a wave energy testbed off the Oregon coast. The project, resident in CEOAS and led by Dr. Burke Hales, will be the United States' premier wave energy test facility and is the largest project yet to be funded by the DOE Office of Energy Efficiency and Renewable Energy.
- VPR Sagers was elected chair of the Senior Research Officers Council (SROC), the collective of chief research officers of Oregon's seven public universities, and appointed to the board of Business Oregon to represent the four major research institutions in the state.

**ADVANCING INNOVATION AND ENTREPRENEURSHIP, COMMERCIAL ACTIVITIES**

- Pursue non-traditional sources of research funding (industry, business, foundation) to support mission-critical research
- Simplify the process of setting fees and collecting revenue for service
- Improve efficiency and transparency of business operations and generate and atmosphere of client service through the Research Office
- Renovate, rent or build quality research space for OSU scientists and engineers
- Align research priorities and innovation programs of OSU with state development agencies to translate research outcomes into economic development
- Grow the culture of research and innovation within OSU
- Systematically promote researchers for awards and national recognition

**ENGINEERING A GLOBAL REPUTATION FOR RESEARCH**

- The Research Office worked collaboratively with representatives from Human Resources, Business Operations, OSRAA, and Information Services to deliver our first set of data to the IRIS Consortium. We cleared a significant hurdle when we received approval from HR, Business Operations, and the Data Security teams to transmit the data IRIS requested. IRIS has supplied the first of three expected reports based on OSUs data submission, the Spending report, and our initial validation efforts indicated that we captured approximately 90% of vendor and subaward spending. Data delivered in the spending report includes the breakdown of spending by U.S. county and congressional districts, the number and type of employees supported by research, the type of employees supported by funding agency, and comparators with other IRIS member institutions. Further analysis OSUs data submission indicates we will be able to improve significantly the accuracy of our next submission in November 2018. We expect that the full set of reporting will help us transform the way we talk about the impact of research spending at OSU.
- The National Science Board awarded Jane Lubchenco, distinguished university professor and marine studies advisory to the president of OSU, its 2018 Vannevar Bush Award. The RO advanced Jane's candidacy in its efforts to acknowledge faculty excellence and advance OSU's reputation for research.
- OSU and the RO joined the Clean Tech Alliance, a trade group based in Seattle, WA. CleanTech interests align with OSU's energy research portfolio and provides networking opportunities to OSU faculty and staff. At the RO's suggestion, CleanTech Alliance hosted Belinda Batten at its

breakfast series on May 9, 2018 to discuss commercialization of wave energy technologies. OSU holds a gold membership and a seat on the CleanTech board.

- The RO is actively engaging with OSU faculty to enhance its support of global research. The RO looks forward to working with the Senior Advisor to the Provost for International Affairs and the University International Strategies Committee to promote international research activities and OSU's international research reputation.

**ADDITIONAL ACHIEVEMENTS**

- Strategic plan/Implementation plan developed and underway
- Leadership recruitment:
    - Staci Simonich, Associate Vice President for Research – start date January 1, 2018
    - Anita Eisenstadt, Assistant Vice President for Research Integrity – start date August 15, 2018
    - Jennifer Creighton, Research Office Fiscal Director – start date June 17, 2018
    - Richard van Breemen, Director, Linus Pauling Institute – start date January 1, 2018
    - Bryson Robertson, Director, Pacific Marine Energy Consortium – start date Oct 17, 2018
    - Rick Spinrad, Senior Advisor to the VPR (PMEC development) – start date October 16, 2017
    - Melissa Haendel, Director, Translational Data Science, CGRB – start date April 30, 2018
- In April 2018, OSU reached resolution on a two-year audit by the NSF Inspector General (IG). The audit reviewed more than $11M covering a four-year period. The IG recommended a repayment of approximately $320,000, and OSU resolved the audit findings with a $2,426 repayment. NSF's IG also engaged OSU in an incurred cost audit in April 2018, covering a three-year period. NSF is reviewing more than $158 M.
- Center and Institute Reviews: University Stable Isotope Mass Spectrometry Facilities (3); Institute for Natural Resources (INR), Institute for Water and Watersheds (IWW)

## STRATEGIC ACCOMPLISHMENTS FY18, BY UNIT

### OFFICE OF SPONSORED RESEARCH AND AWARD ADMINISTRATION (OSRAA)

- Implemented a Research Risk Committee, co-chaired by Cindy Sagers and Mike Green. Representatives from Offices of Audit Services, Institutional Compliance, Risk Management join the Office of Research Integrity, Sponsored Research and Award Administration and OSU's Controller.
- Completed a Large Project Policy that will allow OSU to identify and administratively manage large transformational projects that are often accompanied with greater financial, reputational and compliance risk. Two such projects are the NSF-funded Regional Class Research Vessel award and the DOE-funded Wave Energy Test Facility award.
- Established the Associate Deans for Research as an internal advisory group to the Office for Sponsored Research and Award Administration (OSRAA). OSRAA also has established internal advisory groups with Business Center Managers and College-level Pre-award Support Staff.
- Implemented a "Fast Track" process that simplifies award acceptance and set-up for low-risk awards with standard terms and conditions. The process was begun using just awards from the NSF and the National Institutes of Health (NIH).
- Implemented a weekly office hours schedule within OSRAA for faculty/staff to drop by with questions or ask for help. The Office of Research Integrity (ORI) has followed a similar model for IRB protocols since 2014, and the Office for Commercialization and Corporate Development has implemented office hours as well.
- Zach Gill, OSRAA's Director of Proposal and Award Management, is serving on the Program Committee for the National Council of University Research Administrators (NCURA) 2019 Pre-award Research Administration Conference.
- Pat Hawk, OSRAA's Assistant Vice President, is serving on the Program Committee for NCURA's 2019 Financial Research Administration Conference. In addition, Pat will receive NCURA's Distinguished Educator designation in August 2018.
- OSRAA is working with the Associate Deans for Research in developing faculty focus groups and feedback opportunities for OSRAA's sponsored project reconciliation tool and sponsored project reconciliation policy/procedures. This tool is a key component in moving OSU to an annual project-level payroll certification on federally funded sponsored projects.
- OSU will have another successful year in research funding. FY18's award total was $382.6M. This is only second to FY17, OSU's record-breaking year for sponsored awards.
- Finalized audit resolution with NSF on the Inspector Generals' audit of ship operations. While NSF's Inspector General advised that OSU return more than $320,000, successful partnering with the Office of Audit Services and NSF's Audit Resolution Branch resolved the audit with only a $2,426 repayment to NSF for incorrectly charged student wages, fringe benefits and associated F&A costs. OSRAA also collaborated with CEOAS and the Office of Audit Services to create a new specialized services facility model for ship operations.
- OSU received its first increment of funding for building vessel #1 in the Regional Class Research Vessel. In addition, OSU was the top recipient of NSF awards in 2017.

## OFFICE OF COMMERCIALIZATION AND CORPORATE DEVELOPMENT (OCCD)

**Pursue non-traditional sources of research funding (industry, business, foundation) to support mission-critical research**

Promote SBIR and STTR activities. Hold workshops; bring in external resources to explain the process and services available to faculty. *Held two workshops and brought in experts from Oregon BEST to share best practices, the process to secure grants and resources available throughout the state.*

*Brought investors and industry representatives to campus to meet researchers across campus to help find alignment between research and commercial applications.*

*Continued Implementing and improving a new model supporting industry sponsored research, providing companies the ability to secure exclusive IP rights up front when available.*

**Simplify the process of setting fees and collecting revenue for service**

Improve licensing revenue and reimbursement collections; coordinate the invoicing of license milestones, royalties, and reimbursements*. Implemented a significant transition of distributing internal licensing revenues from departments to colleges/units according to new policy. Collaborated with the college of agricultural sciences to provide greater transparency and timeline certainty for major agricultural variety licensing reports and distribution of revenues.*

**Improve efficiency and transparency of business operations and generate and atmosphere of client service through the Research Office**

Support the colleges, centers and institutes to increase engagement in innovation, commercialization and with industry. *Presented to the college of engineering leadership on OSU Advantage capabilities and offered examples and support for further engagement. Participated in COE new faculty workshop on industry research and commercialization. Launched a trial Innovation Day in collaboration and for college of pharmacy - brought in external and internal speakers to discuss inventions, protection, licensing, conflict of interest and startups. Served on the hiring committee for the new director of the Center for Healthcare Innovation. Supported the PI of the Manufacturing USA RAPID grant through strategic planning for industry engagement, partially through the use of Accelerator interns. Supported LPI with the recruitment of a new faculty member who is creating a company to monetize predictive analytics for improved healthcare outcomes.*

Provide accelerator-focused outreach and educational programs in key colleges. *Presented to faculty in person and provided specialized Accelerator programming for the college of agricultural sciences and business. Contracted with PACE and placed the Accelerator program Iterate online to make it available to students and faculty across campus, as well as expanded its use to include OSU Cascades. Coordinated the participation of faculty in Cleantech Alliance breakfast meetings held with the VPR in the VPRs office furthering collaboration and the pursuit of funding opportunities.*

Lead the state on commercialization. Utilize Innovate, Collaborate, Oregon to drive engagement with other universities and entities. *Lead the development of an innovation-based proposal with colleagues from OHSU, PSU and UO; gained agreement by the Vice President's for Research and the President's Council to proceed. Was one of two Oregon universities chosen to partner with the American Jobs Initiative to create the Oregon Jobs advanced manufacturing plan that was delivered to Governor Brown. Led and spoke at numerous university and industry innovation and entrepreneurship conferences.*

**Renovate, rent or build quality research space for OSU scientists and engineers**
*Supported the buildout of ATAMI through leveraging state dollars supporting the Accelerator, though leasing space to high-growth OSU-based startups and in collaboration with the college of engineering.*

**Align research priorities and innovation programs of OSU with state development agencies to translate research outcomes into economic development**
*Supported key Colleges and faculty efforts to secure high impact opportunity grants through Business Oregon leading to the receipt of two major grants.*

**Grow the culture of research and innovation within OSU**
*Leading an initiative to explore the alignment of resources and branding to increase innovation & entrepreneurship programs, access and branding across the OSU footprint.*

**Systematically promote researchers for awards and national recognition**
*Nominated Chris Hagen for the Lemelson-MIT prize. Maintained National Academy of Inventors sponsorship (recognition of OSU faculty entrepreneurial inventors). Submitted multiple university IP to a national organization for evaluation. This led to three researchers being singled out as having research with national or global impact.*

**OFFICE OF RESEARCH INTEGRITY (ORI)**

Secure New Revenue to Advance the Research Mission

- Successfully transferred oversight of classified research program to the Research Office and completed a DOD review of the OSU program.
- Developed proposal for support of onsite classified work on Corvallis Campus and also at HMSC.
- Assistant Diving and Safety Officer (ADSO) Taylor Eaton provided contract scientific diving and shipboard maritime support to a United States Geological Survey and National Park Service project in Glacier Bay, AK, generating funds that were used to support professional development
- IACUC review fees are currently established in the fee book for outside entities. Instituting IACUC review fees for industry-sponsored projects with OSU principal investigators is currently under consideration.

Modernize Research Infrastructure and Business Processes

- Revised the Research Conflict of Interest Policy in anticipation of new electronic research administration (eRA) system, including narrowing scope to better align with federal regulation
    - Completed configuration and launched COI Module
- Designing and implementing Human Subjects Research and Animal Care and Use modules in OSU's eRA; Animal care and use is scheduled to launch in September, 2018 and Human Subjects is scheduled to launch in January 2019.Prepared the University to be in compliance with substantial changes to the federal regulations pertaining to research with human subjects
- Significant Improvement in IACUC Protocol approval turn-around time
- Implemented training for all employees with security clearances

- Reduced burden on OSU Board of Trustees by implementing management group eliminating need for Trustee Chair to receive security clearance.
- Initiated development of annual classified research training via the Bridge Learning Management System for future integration in OSU wide training tools
- Developed proposal for support of onsite classified work on Corvallis Campus and also at HMSC.
- Supervised re-instatement of OSU research vessel *Kalipi* to active duty (with MSI and CEOAS partners), giving OSU a valuable nearshore small research vessel asset. Small Boat Program now oversees operation, scheduling, and logistics for the vessel
- Facilitated donation of small utility boat through OSU Foundation

Leverage Partnerships to Broaden the Impact of University Research

- Signed Reliance Agreement with OHSU to streamline IBC, IACUC and IRB compliance requirements for collaborative projects
- Signed SMART IRB Agreement to facilitate oversight of human subjects research involving multiple universities
- Provided contract scientific diving and shipboard maritime support to USGS and NPS project in Glacier Bay, AK, continuing our strong partnership with USGS and NPS
- Provided OSU scientific divers to ODFW Marine Reserves Program and 2017 MATE ROV student competition
- Established small boat safety working group ("HARBOR") at HMSC with OSU and regional partners
- HRPP Administrator serves as a member of the Institutional Review Board for the Central Oregon Community College
- Participation on multiple search committees and university-wide committees outside of compliance

Take Research to the Communities that Need it

- ORI Team conducted outreach and training at Cascades Campus
- ORI Team participated in Fall 2017 and Winter 2018 instruction of Graduate Program on Responsible Conduct of Research
- Provided training and education to over 50 OSU faculty and staff to become certified drone pilots.
- Developed online drone training with PACE for future training of OSU community.
- Certified over 100 OSU staff and students in CPR/First Aid/AED and Emergency Oxygen Administration
- Supported OSU 150 and Sea Grant with exhibit and presentation at Port Orford Field Station
- Scientific diving and boating exhibit at OSU Marine Science Day featuring R/V *Kalipi*
- HRPP Team gave invited presentations to over two dozen classes and faculty meetings

Build a Global Reputation that Communicates our Accomplishments and Conveys our Culture

- AVP Eisenstadt and Compliance Officer Peters presented at national export compliance conference regarding new regulations on Controlled Unclassified Information
- Compliance Officer Peters appointed to the Oregon Board of Aviation for OSU's work with Drones
- OSU DSO Kevin Buch elected to American Academy of Underwater Sciences (AAUS) national Board of Directors
- OSU DSO Buch presented at the bi-annual 2017 Pacific NW Dive Safety Officers meeting.
- Joined NWBAR; AVP for Research Integrity serves on the Board and HRPP Administrator serves on the conference planning committee
- ADSO Eaton represented OSU at annual Scientific Boating Safety Association (SBSA) meeting
- HRPP Administrator facilitated a panel presentation at a regional conference the Northwest Association of Biomedical Research
- HRPP Administrator presented a session for the University of Southern California based coalition for regulatory flexibility
- HRPP Administrator and IRB Vice Chair co-presented on a national roundtable hosted by Public Responsibility in Medicine and Research (PRIM&R)
- HRPP Administrator serves on the Institutional Review Board for the Abramson Center for Jewish Life and the Polisher Research Center, North Wales, Pennsylvania
- OSU Human Research Protection Program (HRPP) policies have been adopted by several US institutions, including Washington State University, University of Southern California, University of New Hampshire, Angelo State University, James Madison University, Northern Kentucky University, College at Brockport, and Purdue University. Internationally, the Universidad San Francisco de Quito in Ecuador modeled their Institutional Review Board on the OSU program.
- OSU Animal Care and Use Committee (IACUC) co-sponsored a regional IACUC/Animal Care and Use Program compliance conference in Portland, OR on June 13-14, along with OHSU, UO, Portland VA.

**OFFICE OF RESEARCH DEVELOPMENT (ORD)**

- Organized "Ignite" program across campus twice per year to create collaborative cross/inter/trans disciplinary research.

- Helped researchers identify internal collaborations.

- Provided Pre-award support to select Centers and Institutes

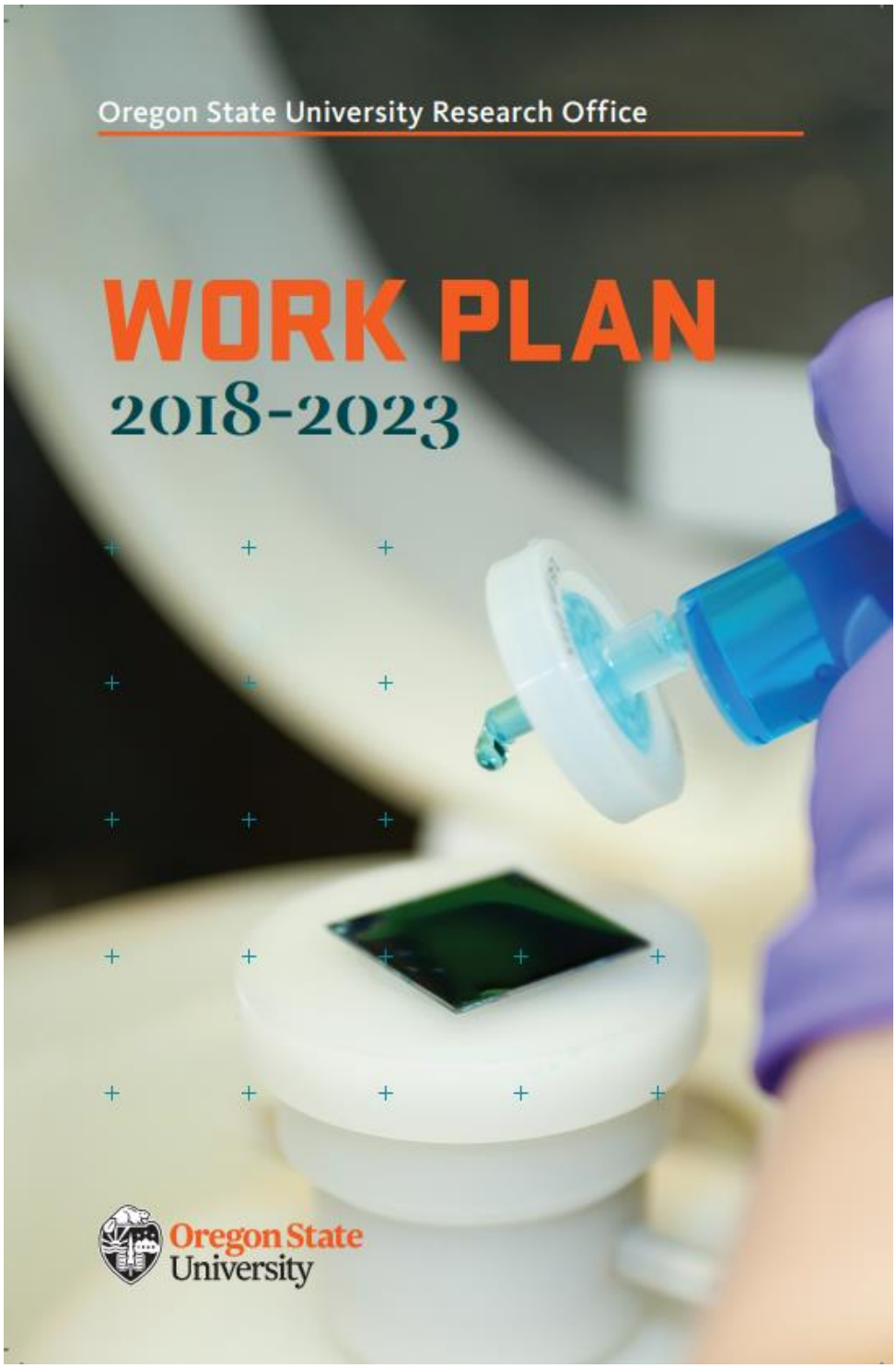
- Developed a Policy for the Limited Submission process

- Developed a pool of faculty to review Limited Submission Proposals

ATTACHMENT 1

# RO WORK PLAN 2018-2023

HTTPS://RESEARCH.OREGONSTATE.EDU/STRATEGIC-PLAN



ATTACHMENT 2

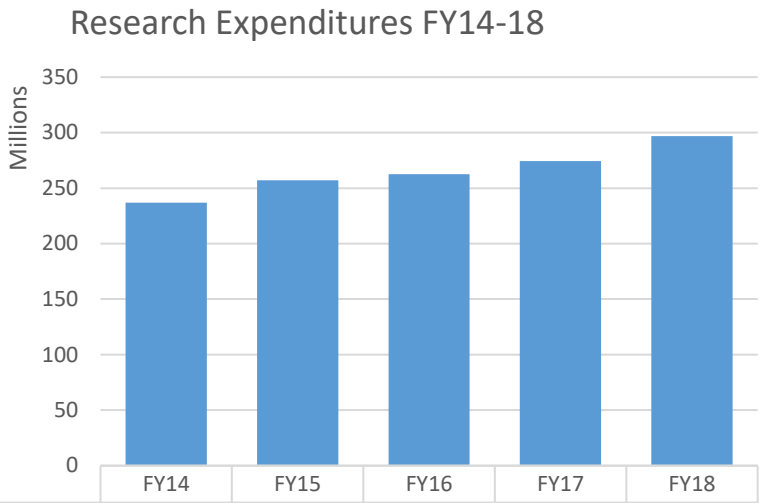
# METRICS ASSOCIATED WITH INSTITUTIONAL MISSION AND GOALS

NOTE: Real time dashboards of research productivity FY11-18 is in Beta testing will go live in the next 10 days. (President Ray and Provost Feser can view Research Dashboards at: https://core.oregonstate.edu/reports/DDB5201)

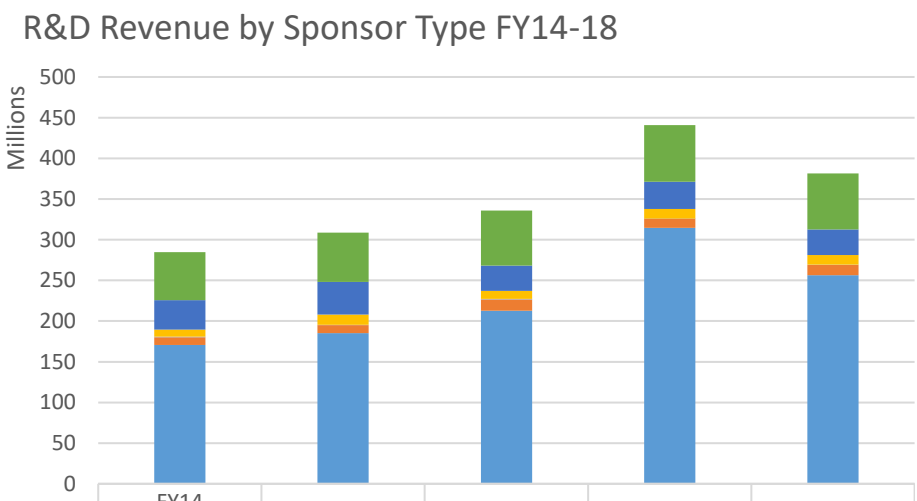
Oregon State University

## Top Funded Principal Investigators - FY 2018

| Principal Investigator | College | Department | Amount |
|---|---|---|---|
| Bailey, Demian | Earth, Ocean & Atmo. Sci. | RCRV | 88,000,000 |
| Bowman, Sally | Public Health & Human Sciences | Extension Famility/Comm. Health | 7,089,316 |
| Lamerdin, Stewart | Earth, Ocean & Atmo. Sci. | Ship Operations | 4,968,639 |
| Banks, Michael | RO Center/Institute | CIMRS | 4,063,218 |
| Behlrenfeld, Michael | Ag. Sciences | Botany & Plant Pathology | 3,141,221 |
| Dever, Edward | Earth, Ocean & Atmo. Sci. | OOI | 3,790,962 |
| Walker, Shelby | RO Center/Institute | Sea Grant | 3,462,705 |
| Aduviri, Amas | VP/Dean Undergraduate Studies | | 2,823,450 |
| Cox, Daniel | Engineering | Hinsdale Wafe Laboratory | 2,784,172 |
| Daly, Christopher | Engineering | Electrical Engr. & Comp. Sci. | 2,750,000 |
| Anderson, Kim | Ag. Sciences | Environmental & Molecular Tox. | 2,651,384 |
| Carnahan, Stephanie | Enrollment Management | Gear Up Program | 2,600,000 |
| Hayes, Patrick | Ag. Sciences | Crop & Soil Science | 2,265,238 |
| Perez, Viviana | RO Center/Institute | Linus Pauling Institte | 2,221,446 |
| Marcum, Wade | Engineering | Nuclear Engineering | 1,916,626 |
| Higgins, Chad | Ag. Sciences | Biological & Ecological Engr. | 1,913,032 |
| Cowen, Robert | RO Center/Institute | Hatfield Marine Science Center | 1,908,925 |
| Minu-Sepehr, Aria | Public Health & Human Sciences | Health and Human Sciences | 1,690,462 |
| Dallas, David | Public Health & Human Sciences | Biological & Population Health Sci | 1,664,353 |
| Keszler, Douglas | Science | Chemistry | 1,472,500 |

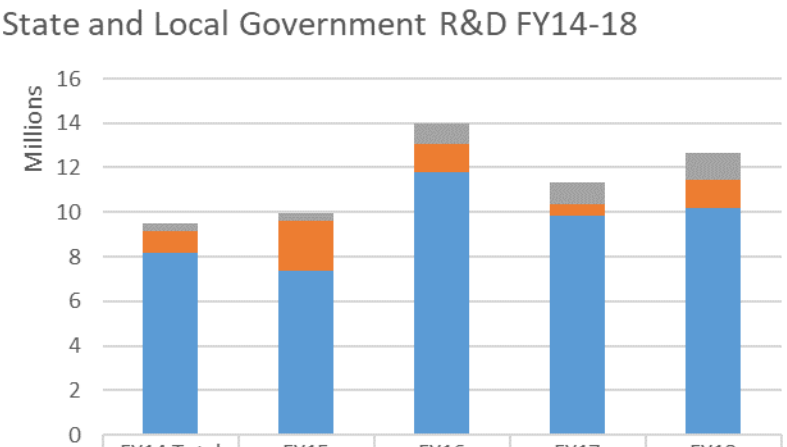



| | FY14 | FY15 | FY16 | FY17 | FY18 |
|---|---|---|---|---|---|
| TOTAL EXPENDITURES | 236,965,934 | 256,956,731 | 262,667,639 | 274,496,383 | 296,966,535 |

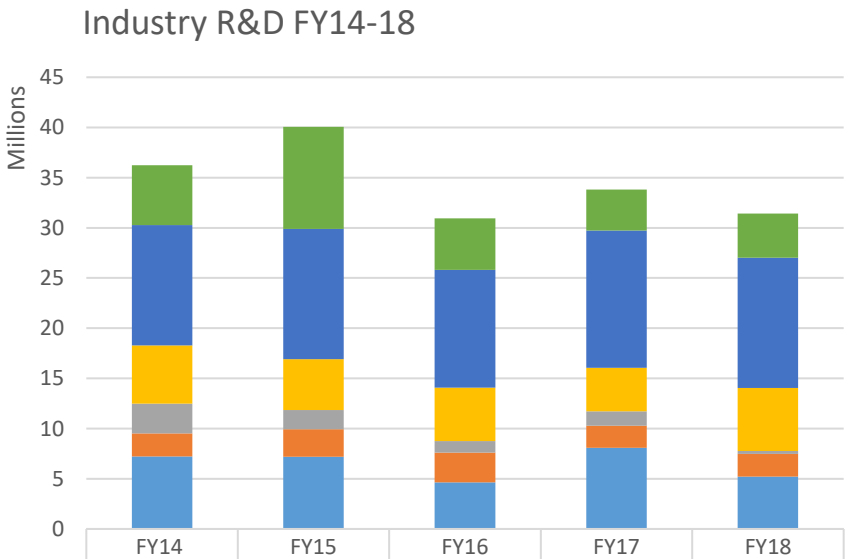



| | FY14 Total | FY15 | FY16 | FY17 | FY18 |
|---|---|---|---|---|---|
| Land-Grant Formula Funding | 58,829,591 | 60,879,153 | 67,960,520 | 69,365,267 | 69,134,602 |
| Industry | 36,226,833 | 40,067,733 | 30,949,876 | 33,813,112 | 31,432,999 |
| Non-Profit | 8,550,522 | 12,388,688 | 9,798,540 | 11,557,609 | 11,737,836 |
| Foreign Government | 979,033 | 388,514 | 801,167 | 219,280 | 197,150 |
| State/Local Government | 9,485,376 | 9,969,644 | 13,958,295 | 11,339,400 | 12,677,044 |
| Federal Agencies | 170,547,940 | 185,163,879 | 212,554,329 | 314,512,397 | 256,450,159 |

*All amounts displayed in this chart represent funding coming into OSU in support of the research enterprise.
**Federal awards represent those received directly from the Federal Government and those received through subawards from other entities as a result of Federal funding

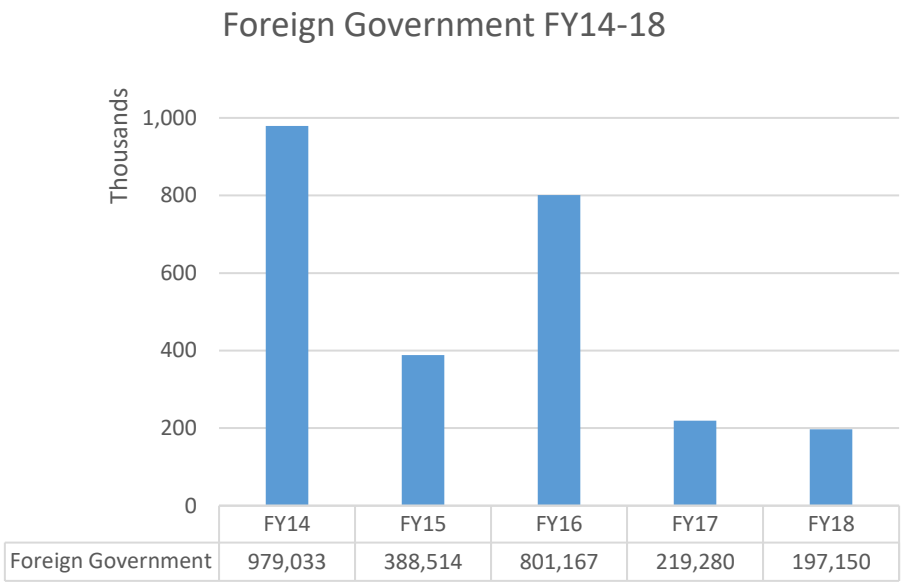



| | FY14 Total | FY15 | FY16 | FY17 | FY18 |
|---|---|---|---|---|---|
| Other States | 358,688 | 371,528 | 907,964 | 1,007,484 | 1,215,327 |
| Local Governments | 930,460 | 2,215,361 | 1,247,424 | 480,627 | 1,259,823 |
| Oregon | 8,196,228 | 7,382,755 | 11,802,907 | 9,851,289 | 10,201,894 |

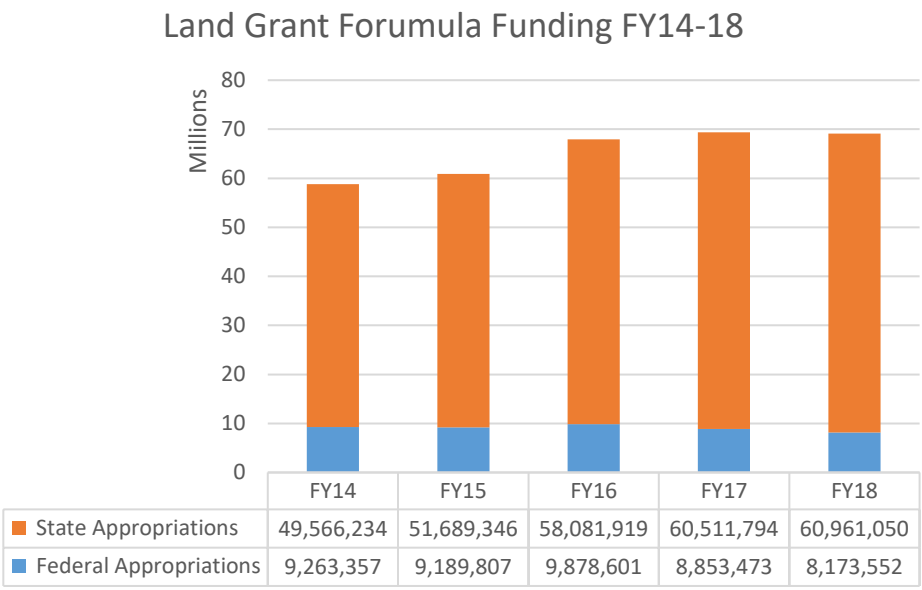



| | FY14 | FY15 | FY16 | FY17 | FY18 |
|---|---|---|---|---|---|
| Licensing /Royalty Income | 5,938,676 | 10,180,409 | 5,144,438 | 4,078,251 | 4,401,187 |
| Testing | 12,015,840 | 12,981,482 | 11,726,297 | 13,681,564 | 12,984,450 |
| Ag. Research Foundation awards (from Ag. Industry Groups) | 5,786,446 | 5,047,308 | 5,319,561 | 4,344,213 | 6,293,308 |
| OSU Foundation gifts in support of research | 2,954,162 | 1,916,505 | 1,163,861 | 1,420,365 | 259,031 |
| Research Cooperatives | 2,296,916 | 2,749,633 | 2,951,019 | 2,202,129 | 2,267,838 |
| Sponsored Contracts and Agreements | 7,234,793 | 7,192,396 | 4,644,700 | 8,086,590 | 5,227,185 |

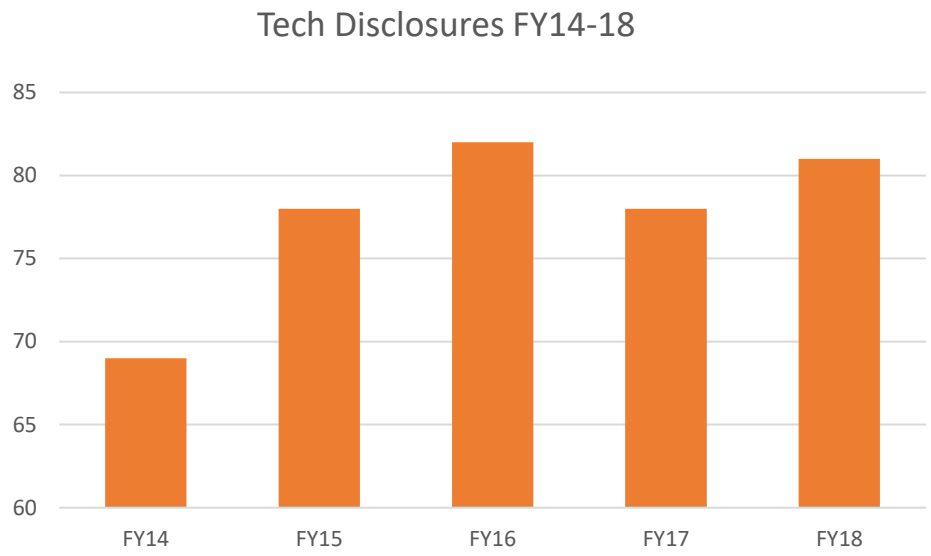
***Testing represents activities performed at OSU that are in support of business and industry.




| | FY14 | FY15 | FY16 | FY17 | FY18 |
|---|---|---|---|---|---|
| Foreign Government | 979,033 | 388,514 | 801,167 | 219,280 | 197,150 |




| | FY14 | FY15 | FY16 | FY17 | FY18 |
|---|---|---|---|---|---|
| State Appropriations | 49,566,234 | 51,689,346 | 58,081,919 | 60,511,794 | 60,961,050 |
| Federal Appropriations | 9,263,357 | 9,189,807 | 9,878,601 | 8,853,473 | 8,173,552 |



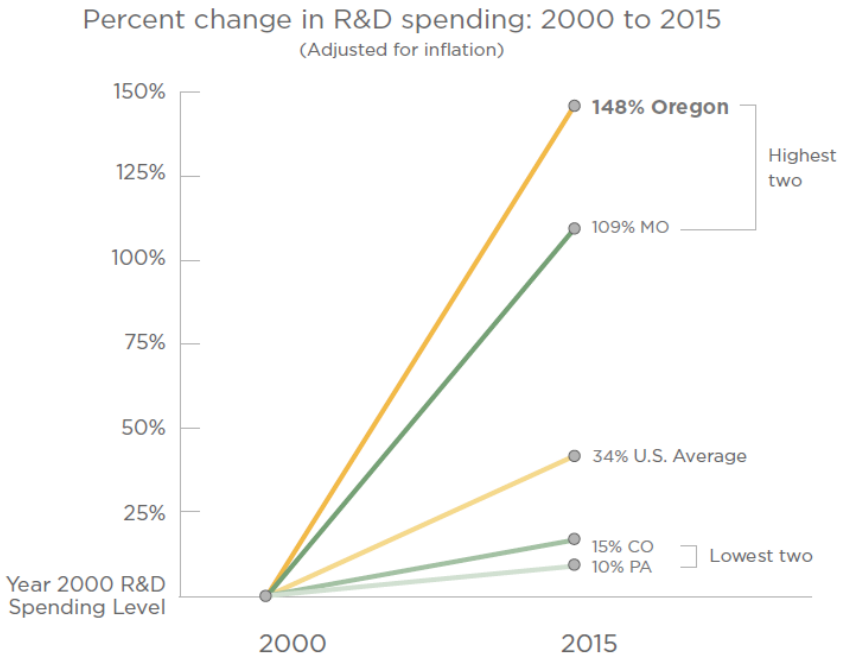

## Real Change in Research & Development Performed

Research and development (R&D) spending is a driver of innovation. Investing in science and technology today has ripple-effect benefits throughout the economy over the long term.

Annual state performance in R&D varies considerably, from $253 million (WY) to $125 billion (CA). Oregon is one of 15 states that performs between $5-$15 billion per year in R&D. In this figure, Oregon's percent change in R&D spending is compared to the second highest state and the two lowest states within this group.

**Total 2015 Research and Development Performed**

**OR** $7.2B
**U.S.** $495.1B




**Source:** NSF, National Center for Science and Engineering Statistics, National Patterns of R&D Resources

ATTACHMENT 3

## KEY ACCOMPLISHMENTS OF UNIVERSITY-WIDE CENTERS AND INSTITUTES

- ADVANCED TECHNOLOGY AND MANUFACTURING INSTITUTE (ATAMI)
- CENTER FOR HEALTHY AGING RESEARCH
- CENTER FOR GENOMIC RESEARCH AND BIOCOMPUTING
- CENTER FOR THE HUMANITIES
- COOPERATIVE INSTITUTE FOR MARINE RESOURCE STUDIES
- ELECTRON MICROSCOPY FACILITY
- HATFIELD MARINE SCIENCES CENTER
- INSTITUTE FOR WATER AND WATERSHEDS
- LAB ANIMAL RESOURCE CENTER
- LINUS PAULING INSTITUTE
- PACIFIC MARINE ENERGY CENTER
- SEA GRANT
- STABLE ISOTOPE MASS SPECTROMETRY CENTER
- SUPERFUND PROGRAM

## Advanced Technology and Manufacturing Institute (ATAMI) 2018 Highlights
## Sam Angelos, Director

ATAMI's $12.75M Lab expansion completion done Oct 2018

- Inpria (OSU Spinout): 9.3K sq ft
    - Supports ramp production and advanced R&D for a $2T semiconductor industry
- Valliscor (OSU Spinout): expanding into 3.9K sq ft
    - Supports ramp production and advanced R&D for pharmaceutical industry
- COE: New 4.5 K sq ft Lab Space
- Home OSU Advantage Accelerator, Jan 2019
- Commercial Labs: New 2.5K sq ft Lab Space (collaborative industry partners)

Home to OSU's RAPID Program

- RAPID is a 5 year $70M funded DOE program, total program exceeds $210M
- OSU is one of 6 focus area leads
- Responsible for the development of module manufacturing processes, technologies and industry road mapping

ATAMI's Metal Additive Manufacturing Research Focus

- Development of new additive manufacturing technologies for process intensification applications
- Selective alloying of metals
- Integrated technologies: powder bed laser sintering combined with selective jetting of materials into the bed
- Development of colloidal metal nanomaterials which can be jetted
- Additive manufacturing tool design combining laser and jetting technologies (Murdock grant May 2017)

Center for Healthy Aging Research (CHAR)

Carolyn Aldwin, Jo Anne Leonard Endowed Director

Highlights 2017-2018

**Grant Activities**

- Received funding from the Large Program Development Program from the Research Office for a study entitled: "The Long-Term Effects of Military Service." Deans from CPHHS and COS also provided support. We have a team of nine faculty working on this project, as well as various post-docs and both graduate and undergraduate students. The questionnaire has been developed and approved by IRB, and we are now in the field collecting data. This pilot data will provide the basis for either a large R01 or a P01 to be drafted next year.

- Submitted a K07 Career Development Award grant proposal to NIA entitled "Stress, Resilience, and Healthy Aging in Military Veterans." The purpose of this proposal is to develop a new infrastructure to support research, teaching, and mentorship for faculty and students interested stress and coping processes in late life, and in older military veterans in particular. This received a good score (27), but is probably outside of the fundable range We are in the process of preparing the revision to be submitted in July, 2017. Two additional CHAR faculty are participating in this, in addition to the nine faculty from the first bullet.

- Submitted an R01 to NIA entitled "Regulation Processes and Optimal Aging." Scored but unlikely to be funded. We are in the process of revising this for a July submission, and have added another CHAR faculty from to this project.

**Student Research Support**

- CHAR supports undergraduate students from CHAR faculty with $1,000 match for summer research. Five students from last summer presented their research at a CPHHS research colloquium winter quarter. Held a competition and funded four more students for 2018 summer research.

**Faculty Research Support**

- CHAR manages the LIFE Registry, which is pool of about 800 Oregonians aged 50+, who are willing to participate in research projects. Six research projects utilized this service this year.
- CHAR director is beginning negotiations with OHSU to access their population pools to increase the diversity of the LIFE Registry.
- CHAR director participated in the Oregon Partner for Alzheimer's Research (OPAR) committee, which determines who will receive pilot grant funding from the Oregon Tax Checkoff for Alzheimer's Research, run by the OHSU Layton Aging & Alzheimer's Disease Center. Successfully argued for funding for a pilot project in CPHHS entitled, "Racial, Ethnic, and Sexual Gender Minority Caregivers' Views of Alzheimer's Disease and Long-Term Services and Supports" (Dr. Carolyn Mendez-Luck, PI).
- CHAR director and faculty are also collaborating with Dr. Elizabeth Eckstrom of Oregon Center for Translational Research Institute (OCTRI) at OHSU to address an immanent change at NIA,

which will be requiring either lifespan samples or, if older adults only, significantly older age ranges (e.g., 80+), as well as a greater focus on rural and minority samples in all grant proposals submitted.

- Conducted retreat for faculty beginning Spring Quarter to update everyone on CHAR activities, to have both new faculty and faculty with new projects present their research, and to discuss possible collaboration opportunities.
- CHAR faculty, students, and post-docs participated in a previously-funded R24 project, which produced a 2018 book entitled, *Long-term effects of military service: The health and well-being of aging veterans.* American Psychological association, A. Spiro, R. A. Settersten, & C. M. Aldwin, editors.

**Engagement and Outreach**

- Visited with Mrs. Judy Winkler and secured donation to help support LIFE Scholars and CHAR operations.
- CHAR organized a "Healthy Living Institute" with the Foundation for the Multnomah Athletic Club, which was very well received. We are exploring the possibility of long-term collaboration.
- Five CHAR faculty (including the director) participated in the OSU Gerontology Conference in April.
- Wrote summer and winter newsletters for distribution to CHAR faculty, supporters, and the LIFE Registry.

**Center for Genomics Research and Biocomputing (CGRB), Brett Tyler, Director**

**Brag sheet 2018**

The mission of the CGRB is to increase the competitiveness of genome- and data-driven life and environmental sciences research at OSU though leadership, services and training.

*Leadership*

One of the most important roles of the CGRB has been to coordinate and coalesce campus-wide research and education efforts in the areas of genomics, bioinformatics and biocomputing. Increasingly, this role has expanded more generally into the areas of high performance research computing, data science, and workforce training. In addition to promoting campus-wide collaboration, it has also expanded to leading regional collaboration efforts. Some specific efforts planned for the upcoming year in this area are outlined below and in the following sections.

• Stimulate and support the efforts of Denise Hynes and Melissa Haendel to build research, services and training programs in health-related data sciences

*Research partnerships*

My efforts over the last 6-7 years to grow the capabilities of the CGRB, and of the OSU faculty generally, in the areas of bioinformatics and data science, have now laid a strong foundation for pursuing large scale research collaboration and funding opportunities. I will be pursuing these in several areas:

• Large research center grants. There are numerous opportunities in this area. The most immediate is to support a proposal from Richard van Breeman in the LPI to NIH's Biomedical Technology Research Resource (P41) program, entitled "National Resource for Affinity Selection-Mass Spectrometry". The budget would be $800,000 direct costs per year for 5-years, renewable for another 5 years. There are also likely to be funding opportunities emerging from the conference on "The Cooperative Extension System and Data Science: A Strategy for Boosting Rural Economic Prosperity" and, more broadly, from new investments from USDA in Agricultural Big Data; efforts in these areas will likely benefit from partnerships with EECS, Statistics and Mathematics. Additional opportunities at NIH should also emerge through the efforts of Denise Hynes and Melissa Haendel.

• Collaboration with industry. There continues to be excellent potential to grow our research partnerships with industry. These include continuing to expand our collaborations with IBM (especially), Amazon and Nimbix, as well as adding new relationships with companies such as Google and Microsoft. There may also be potential to provide computing, analytics and health data services to small Oregon businesses (early conversations are underway with several).

• Collaboration with regional universities. We already have multiple collaborations with UO, OHSU, PSU, and WOU in the areas of research, education and workforce training. There are excellent opportunities to add new collaborations in this area, for example in precision medicine and environmental informatics.

• Collaboration with government agencies. We already serve clients in USDA-ARS, USFS, USGS, EPA, NOAA and ODFW, especially in the areas of genomics and bioinformatics. There will be many

opportunities to continue to expand these partnerships, for example with the Veterans Administration, through Denise Hynes' joint appointment with the Portland VA. A recent new collaboration with the Boise VA is also starting up.

*Data science education and workforce training*

Big data is rapidly transforming not just research but all aspects of society, creating a burgeoning knowledge economy in numerous domains. Nationally, the number of available job openings in this area is doubling every year. This trend demands that we act energetically to infuse our curricula with data science, and collaborate across the whole pipeline of data science workforce training from schools to employers. This will be an active focus area for the CGRB over the next year or more, both on campus and through regional partnerships. It is strongly aligned with OSU's missions as a land grant university, and especially its goals in outreach and engagement, student success, and equity, inclusion and diversity. Some specific activities will be:

• Continue to direct and support the Graduate Minor in Biological Data Sciences

• Continue to assist with the undergraduate major in Bioinformatics and Data Sciences

• Continue to assist with the re-invigoration of the Ph.D. program in Molecular and Cellular Biology as a more data-centric program.

• Continue to expand CGRB's bioinformatics and data science training activities into online formats to promote accessibility to all learners, and to meet the re-training needs of industry and education professionals.

• Continue to build the network of universities, community colleges, and school districts that comprise the Oregon Big Data Learning Community (OBDLC).

• Continue to seek funding for the activities of the OBDLC from agencies, foundations, and philanthropy. Specifically, this will include seeking funds for a component of OBDLC entitled "Increasing Equity in the Computer Science Career Path for Oregon Students".

*Research Services and Infrastructure*

The critical added value we provide to our clients on and off the campus in the services that we provide is that we are aggressive about staying on the cutting edge, reducing costs, and customizing our services. In the upcoming year, a couple of areas of focus will be lowering the cost of genomics services through automation, partnering with the biomolecular mass spectrometry center to meet their bioinformatics needs in the area of metabolomics, and increasing the capabilities of our computing services through partnerships with industries such as IBM, and cloud providers such as Amazon and Nimbix.

*Administration*

A major goal for the upcoming year will be to complete the re-alignment of our budget so that we have the resources to sustain existing services and training programs that are most valued by our research community, and to continue the innovation efforts required to bring the most cutting edge capabilities to our community. A particular focus will be to move our training programs further towards cost sustainability.

A second major administrative goal will be to prepare for and successfully complete a five year of the Center in spring 2019.

**OSU Center for the Humanities Year-End Report**

**July 2018**

---

We have had an excellent AY 2017-2018 year at the Center for supporting fellows and faculty. We have brought more students and members of the community into the Center as part of our public programs and co-sponsored programs. We hosted several dozen scholarly talks and participated in nearly one hundred campus and Oregon-wide events. In May 2018, our efforts culminated as the Center hosted, organized, or sponsored ten events, which ranged from fellows' talks to graduate research presentations to community events to hosting the Provost's Office celebrations of OSU writers and editors.

Building on some of the ideas developed in the external reviews of the Center (the last one was completed in May 2016) and based on the vision statement laid out as part of the director search in late 2016, in 2017-18 the CftH began a number of new programs and partnerships, such as with the Provost's Office (for support of dynamic new interdisciplinary research clusters and book manuscript workshops, among many other programs), along with an array of new fundraising, outreach, and engagement activities. Our new fundraising efforts resulted in a 50% increase in internal funding (via the PO) and the best external development year on recent record (in 15 years), though overall

I continue to meet and talk with directors and leadership at other comparable and aspirational Humanities Institutes and Centers (such as University of Oregon, Stanford, Rochester, Iowa, Illinois, UPUI, etc.) to get a better sense of their operations and new ideas or approaches. In summer 2018 I will have a series of meetings and will visit several more such centers to continue gathering knowledge about best practices.

What follows are select AY 2017-2018 CFTH accomplishments.

**Personnel**

- Christopher Nichols, Director of the CFTH (as of January 1, 2017)
- Joy Jensen, Research Program Coordinator (promoted as of January 1, 2017)
- *New part-time hire:* Colleen Johnson, new Graduate Research Assistant (at .49FTE), former OSU engineering graduate now in the MFA program, beginning Sept. 1, 2018 (Note: we have not hired new fulltime staff as part of strategy conserve funds to support new programs)

**Program Partnerships**

- Partnership with the Provost's Office for a three-year pilot program for faculty excellence ($30k per year for three years, 2017-18, 2018-19, 2019-20). To be assessed via outcomes annually.
- Continue to host a table at the State of the University event in Portland (February 2018). Last year invited Executive Directors of several major OR nonprofits to join us (OPB, OHS, OR Hum), this year we invited great OSU faculty humanists and brought numerous books

and articles by OSU humanities faculty (CftH fellows) for a great booth and banner to raise visibility about the Center

- Year Two working with the Provost's Office, the Center hosted two "Celebrating OSU Authors and Editors Events" in May 2019 (the plan is to continue and enhance this collaboration)
- Worked with Oregon Public Broadcasting, Think Out Loud with Dave Miller, June 12, 2018, live hour-long taping of "community town hall" event in Portland, Elephant's Restaurant, on Multigenerational Perspectives on Citizen Activism, co-sponsored with Senior Advocates for Generational Equity. (Roughly 50,000 listeners on June 13, 2018 broadcast)
- Working with the Oregon Historical Society and Literary Arts (among others) about possible future collaborations and new public humanities activities in Corvallis, Portland, and across the state.

***Washington Post***

- Successful partnership began June 26 2017, with the OSU Center for the Humanities as a lead sponsor of "Made by History," a new informed content section of the *Washington Post* online.
  The Center logo is prominently displayed on the side bar of every piece in the section (see MbH "about" page): https://www.washingtonpost.com/news/made-by-history/wp/2017/06/26/welcome-to-made-by-history/?utm_term=.82921ab725f3)
- June 26, 2017- June 26, 2018: there have been over *6 million unique visitors to MbH pages*.
- This sponsorship opens a direct path for Center Fellows -- and other OSU faculty -- to pitch their work for *WaPo* publication, with exclusive access to the main editors to assist them in placing their work. Five OSU faculty have already published in the series (as many as from any university in the nation) and several more are in the works.

**Postdoctoral Fellowship**

- Partnered with the OSU School of Writing, Literature, and Film to search for and hire a postdoctoral fellow in film studies—who was housed at the Center for the Humanities in 2017-18. The position entailed modest teaching along with research support and an office at the Center. Dr. Tamas Nagypal was the first film studies postdoctoral humanities fellow and his time at OSU was a major success (in teaching, completing scholarship, and enhancing a growing area at OSU).
- The hope is to add a "diversity" postdoctoral fellowship in 2019, or after CftH renovations (to be determined). That idea has been pitched to several units in CLA and to the Provost's Office.

**International Institute Collaboration**

- Partnered with German Institute at Hamburg University to support a joint OSU Center Fellowship for Philosophy Assistant Professor Barbara Muraca in 2017-18 (in residence at OSU year-round, in Hamburg winter term 2017-18)

**OSU Foundation**

- Building on 2017 audits of all OSUF accounts, examined policies for endowments and best practices moving forward, including a new strategy to conserve funds by not yet hiring new full-time faculty
- Established a new set of connections to do fundraising through the Foundation via dedicated staff and researchers (now sending regular mass email blasts each term, continue to do rounds of tours and conversations with prospective donors)
- Began comprehensive development plan (internal, national, state funders, private philanthropy)
- New effort to engage statewide private foundations underway in winter 2018 (Autzen, OCF, and others), meetings ongoing.

**Conference sponsorships**

- NWRECS Symposium (Fall 2017, Northwest Romanticism & Eighteenth Century): at Autzen House
- SPENW Conference (Fall 2017, Society for Photographic Education Northwest)
- FEMMSS (August 1-5, 2018) – lead sponsor of annual meeting in Corvallis of the Association for Feminist Epistemologies, Methodologies, Metaphysics, and Science Studies

**New Program – Interdisciplinary Research Clusters (Partnership with PO)**

2017-18 -- five groups selected from competitive applicant pool, involving over fifty faculty, staff, and graduate students, from six colleges and a dozen disciplines, including Outreach and Engagement, these are: Engaged Scholarship at OSU, OSU Disability Studies Network, Technology and the Environment, Film Studies, Junior Women Writers

*Note: for 2018-19 we have had six strong cluster applications all of which warrant support.*

**New and continued co-sponsorships of a wide range of events and activities, such as:**

- New Celebration meet-and-greet event for graduate students in the humanities with university fellowships (additional graduate humanities student events)
- SWLF-SHPR Undergraduate Research Conference
- MFA Readings and Conversations
- Ethnic Studies Undergraduate and Graduate Student Conference
- Citizenship and Crisis Initiative Events, Outreach, and Engagement
- American Studies Working Group
- International Film Festival
- *Look & See: A Portrait of Wendell Berry* — film screening & seed swap in partnership with
- The Spring Creek Project and the Small Farms Conference – LaSelles Stewart Center
- *Freedom on My Mind* –screened documentary about Freedom Summer
- Magic Barrel: A Reading to Fight Hunger

- OSU Holocaust Memorial Week
- ADVANCE Seminars
- Q&A with Former OSU President John Byrne on the publication of his memoir *Undercurrents*
- Several events with the OSU Press
- NEH Summer Seminar (summer 2017)
- Additional Community Partnerships include: Greenbelt Land Trust, Willamette Valley Photo Arts Guild, Corvallis Symphony, and more

**Art Exhibits**

- AU17: *Hiking the Cascades: Photos from the Pacific Crest Trail* | Ed Pabor
- WI18: *Cuba: In the Balance* | Susie Morrill
- SP18: *Character* | OSU Space Grant Astronomer-in-Residence Randall Milstein

**Prizes**

- Established two new humanities undergraduate awards: 1) Best Humanities Honors College Thesis Poster; 2) Best Humanities Honors College Thesis (2018)
- Second annual "OSU Center for the Humanities Art Purchase Prize" (alongside Dean, Provost, and Presidential Purchase Awards) – awarded June 2018, (art showcased in Center permanent collection)
  **Awards:** Senior Art Purchase Award: Claire Moore, "Portrait of My Mother (Camille Adair-Norwick)"

  Honors College Humanities Thesis Award: Ryan Khalife (Political Science, Economics)

  Honors College Humanities Poster Award: Catherine Mina (Sociology)

**Faculty**

- Offered and awarded numerous small grants and co-sponsorships supporting faculty working in humanistic research, broadly defined
- Continued to support faculty research for fellows; second year of May "Spring into Writing" series of writing salons on Fridays (which we will expand in 2018-19 to include monthly writing salons)
- Recruitment Initiatives, ongoing. Offered tours and conversations to all CLA Schools for prospective job candidates, toured and met with a number of prospective faculty, including helping to recruit one diversity target of opportunity

**Renovations**

- Feasibility study and plan completed in fall 2017 (with support from CLA and the RO)
- Numerous meeting with possible internal funders over the course of 2017-18 re: support details

- Working with Jenn Creighton on pro forma document now as agreed to in a May 2018 meeting

**Select Research Fellow Publications**

- Ehren Pflugfelder - *Communicating Technology and Mobility: A Material Rhetoric for Transportation,* Routledge Studies in Technical Communication
  - "Explain Like I'm Five: Technical Descriptions in the Wild." *Technical Communication Quarterly* 26, no. 1 (2017): 25-41.

- Jon Lewis, *Hard-boiled Hollywood: Crime and Punishment in Postwar Los Angeles*, University of California Press

- Kara Ritzheimer*, Trash, Censorship, and National Identity in Early Twentieth-century Germany,*
  Cambridge University Press

- Geoff Barstow, *Food of Sinful Demons: Meat, Vegetarianism, and the Limits of Buddhism in Tibet*, Columbia University Press
- Elena Passarello, *Animals Strike Curious Poses*, Sarabande Books, "Passarello presents biographies of famous animals, from an ancient mummified mammoth to Mr. Ed and Cecil the Lion." —*The New York Times*, *"100 Notable Books of 2017"*

**Fellowships cycle (completed spring 2018 on new timeline)**

- Three news members joined the CftH Advisory Board (representing all but one school in CLA), three rotating off
- 20 applications were received
- Selected eight new OSU faculty fellows, from a wide array of fields, who will be in residence 2018-2019, as follows:

Tekla Bude | SWLF | *Bodies of Silence in Medieval Literature*
Julie Green | SAC | *First Meal*
Trina Hogg | SHPR | *Law and Trade in Southern Sierra Leone, 1861-1915*
Karen Holmberg | SWLF | *Essays: Letterpress Printing and Walter Hamady's* Gabberjab
Allison Hurst | SPP | *Revisiting the Age of Affluence: How Post-War Social Science Misread the World*
Cari Maes | SLCS | *The Politics of Maternal and Infant Health and Nation Building in Vargas-Era Brazil*
Kara Ritzheimer | SHPR | *Nazi Girl: Girls and Girlhood in Hitler's Germany*
Stuart Sarbacker | SHPR | *The Noble Eightfold Path: A Handbook for Living Buddhist Philosophy*

Megan Ward | SWLF | *Virtual Collection from the Victorian Novel to the Digital Archive*

Shawn Rowe, Oregon Sea Grant, was awarded the first new "CftH Fellowship in Humanistic Science" (partnership with PO) for his project *Dialogic Encounters of Official and Vernacular Science*.

## APPENDIX

***Washington Post* "Made by History" Section Sponsor Section Screenshot**

# OSU and NOAA's Cooperative Institute for Marine Resources Studies (CIMRS)

## – a one page overview of a 37 year collaboration

Michael A. Banks, Director 2006 - current

CIMRS's main mission is to bring together, inspire and enable research partners from Oregon State University's full variety of Research Units, Colleges and Departments to assist their NOAA colleagues in sustainable study, use, and conservation of everything marine. We have a tremendous opportunity as a consequence of where we are poised at the center of complex biological and physical factors exercising their forces in and upon the Pacific Northwest, and thrive because of sustained vision and commitment of leadership at NOAA, OSU. Our collaborations involve several hundred investigators from diverse backgrounds including the fishery, tribes, general public, high school, undergrad, graduate and post-doctoral students, university researchers, faculty, state and federal scientists. We are well renowned globally because of key discoveries in volcanology, acoustics and fishery science publicized in high profile journals including *Science* and *Nature*.

Increasing synergies realized over the past few years include:

1) a marked expansion in *distribution of research findings* - 67 publications featured in our most recent annual report, from a team of ~20,
2) noted *research impacts* - such as: Our founding development of sub-marine technologies in acoustic electronics and software to monitor sound, now used globally in marine security, agency and commercial operations. Or our long-term monitoring of regional weather and climate effects on ocean productivity, now used as key information for hydropower, fishery, and coastal economic predictions, along with critical human health warnings attained from our research and monitoring of harmful algal blooms,
3) *consistent competitiveness* - indicated by increasing NOAA grant funding leveraged with matched support from external partners (NSF, ONR, and others), totaling ~$9 million for FY18,
4) *diversification* of faculty and students we matriculate and their active recruitment to advanced professional working contexts in industry, and at leading universities and NOAA labs both nationally and globally - we released new fellowships in FY18 in association with the OSU Marine Studies Initiative to further advance this success, 5) a*ctivity in the human dimension and social science arena* – such as a seven Principal Investigator project valuing ecosystem services from natural infrastructure (sea-level rise), and related project advancing the analysis of Pacific Basin coastal flood sensitivity under a changing climate,
6) *outreach* principally through websites offering real-time access to undersea research using remotely operated underwater vehicles, research blogs, NOAA webpages, and interactive displays at the HMSC visitors center, and our

7) *success in pooling of minds and resources* from a broad range of disciplines to achieve transdisciplinary solutions for current research problems in science, sustainability and future vitality of the largest habitat on earth!

## Electron Micro Facility (EMF), Peter Eschback, Director

## FY18 Brag Sheet

- The electron microscope facility was a presenter at the Saturday Academy Midsummer conference at OSU. The facility hosted some 60 high school students that had interests in electron microscopy. Groups of 15 students rotated through the facility every hour where they were treated to three hands on sessions on three different electron microscopes. Station one involved biological materials such as aphids, beetles, stink bugs, and spores with Teresa Sawyer, station two featured Pete Eschbach examining semiconductors in the electron microscope, and station three examining electron tomography was hosted by former Intel electron microscope director Barb Miner. Here are some of the student comments: “fantastic, “ and “Loved the hands on workshop.”

- We set a revenue record for the fourth quarter in our facility. This offset a slow start to the fiscal year and allowed us to finish up again with carryover in our index. Big shout out to all of our industrial partners for their continued use of the facility.

# Hatfield Marine Science Center, Robert K. Cowen, Director

***Year in review – 2017-2018***

As Director of HMSC, and with heavy involvement in the Strategic Planning and now implementation of the Marine Studies Initiative, my activities cover four separate endeavors: i) HMSC management (proper), ii) MSI implementation, iii) Community activity (university Service, coastal community interactions, state and Federal agency partnerships), and iv) Research. A brief synopsis of my activities on these fronts during the last year is given below.

**i) HMSC Management**

a. Facilities improvement
    i. IT infrastructure upgrade (RO BUC, NSF FSML, and OSU funding model)
    ii. Upgrade to Mechanical and Seawater systems
b. Space usage improvement
    i. Complete Space use policy revamp
    ii. Initiate Guidance Policy on maintenance and Best Practices of live marine specimens for classes and researchers
c. Improve Facility Service to HMSC community
    i. Complete revised position descriptions for Facilities maintenance, Research facility coordinator, and IT Director – to better oversee and allocate services.
    ii. Develop new PDs for Operations Manager, Strategic Initiative Manager, and
    iii. Impose new planning/coordination meetings among Director's key staff
d. Promote science programs both within agencies (NOAA, EPA, USDA, ODFW) and OSU
    i. Visits with Regional and National leadership of Agencies
    ii. State and Federal government relations (Salem and Washington DC, as well as via local visits of elected officials – e.g. Bonamici, Schrader, Wyden, Merkley)

**ii) MSI Implementation**

a. Site specific and programmatic oversight of Marine Studies Building *and* new dormitory planning
b. Participation in planning with Jack Barth on Marine Studies Program development (Committee establishment, activities, follow-up retreat, and reporting)
c. Fund-raising activities for Marine Studies Building

**iii) Community activity**

a. Member of Boards (YBEF, EDALC, YBOOI, OCAq, OR Coast STEM Hub), Water Planning Board, Newport Airport Planning Committee
b. Regular speaker about HMSC/MSI updates (e.g., Rotary [Newport and Lincoln City], Newport City Council, Lincoln County Commissioners, Chamber of Commerce, Coastal Caucus)
c. President – National Association of Marine Labs (NAML)

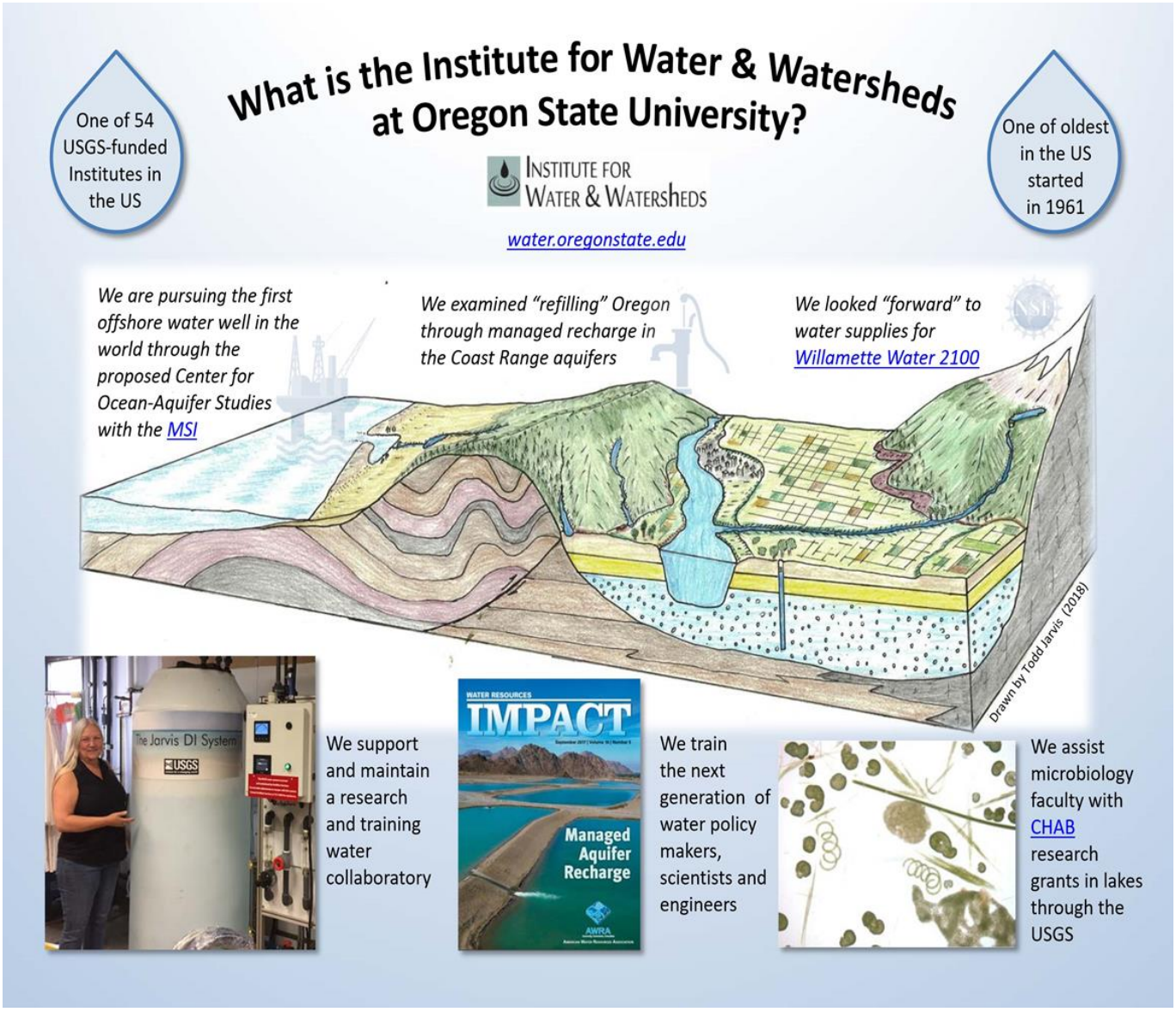
d. Appointed – Governor's Maritime Workforce Development task force
e. Appointed (by Governor) – NERRS South Slough Commissioner

**iv) Research**

a. Project mgmt/PI on grants
    i. NOAA – Pulley Ridge (Lead PI, 35 co-PIs)
    ii. NSF – OSTRICH SOF program (co-PI w/ Su Sponaugle)
    iii. GOMRI – CONCORDE program (co-PI)
    iv. NSF – MEZCAL (OR/CA) (co-PI w/ Su Sponaugle)
b. Grant proposals –
    i. NSF – Rhizoselenia (ISIIS study) – (co-PI with Tracy Villareal @ UT) - DECLINED
    ii. GOMRI – CONCORDE II data analysis supplement (lead PI, Biol. Oceanogr.) – PENDING
    iii. Belmont Proposal – World Wide Web of Plankton Image Curation – (Lead US PI) – PENDING

## Institute for Water and Watersheds, Todd Jarvis, Director

## 2018 Brag Sheet



# Laboratory Animal Resource Center, Helen Diggs, Director

# 2018 Brag Sheet

The **Laboratory Animal Resources Center (LARC)** functions as a service center for campus faculty who use animals as an adjunct to their biomedical research endeavors in LARC-managed facilities.

*The goal of the Center is to ensure quality husbandry and veterinary oversight for animals used for biomedical research. This is accomplished through the provision of humane and responsible animal care and support, training, education, partnerships and collaborations and by maintaining a collegial, respectful work environment.*

For fiscal year 2018, LARC continued to provide excellent care for all vertebrate animals used or held in LARC-managed animal facilities. LARC staff and veterinarians assisted faculty in their efforts toward meritorious research by serving as a resource on all matters relating to protocol design and implementation and animal model selection and appropriate use.

**Regulatory and Accreditation Status**

- Continued full **AAALAC International** accreditation granted March 19, 2018.
- No non-compliances cited by the **United States Department of Agriculture (USDA)** for LARC managed animal facilities.
- Continued full compliance with the **U.S. Public Health Service (PHS)** Policy on Humane Care and Use of Laboratory Animals.
- Policies and procedures adhered firmly to the recommendations of the **Guide for the Care and Use of Laboratory Animals** (NRC 2011).

**Budget:**

The Center remained fully staffed with respect to the animal census and service expectations. The Center employs four veterinarians (for 2.6 FTE), seven animal technicians and one Executive Support Specialist. The Center has been financially stable for multiple years including FY18 and ended this fiscal year in the black with a modest carryover.

**Facility Improvements:**

- Upgraded surveillance security cameras for Linus Pauling Science Center and the Research Animal Isolation Laboratory. This surveillance is now visible by Public Safety.
- Upgraded internet access for all Research Animal Isolation Laboratory buildings.
- Upgraded the LARC animal transport vehicle.

# LINUS PAULING INSTITUTE BRAG SHEET FY2018

## Richard van Breemen, Director

- New director, Richard B. van Breemen, expert in natural products, botanical dietary supplements and biomedical mass spectrometry joined the LPI in January 2018
- New faculty member, Melissa Haendel, expert in translational data science, joined the LPI in April 2018
- The LPI Micronutrient Information Center had 1,986,056 page views and 982,124 users and the updated Spanish language version had 336,984 page views and 191,314 users during FY18
- The LPI Healthy Youth Program reached nearly 1200 children and families in Benton and Linn counties and engaged 213 volunteers during FY18
- Philanthropic fund raising for the LPI was $2,359,560 in FY18
- Collaboration was initiated with Shimadzu Scientific Instruments, the 3rd largest scientific instrument manufacturer in the world with an instrument factor in Canby, OR. In FY18, this agreement provided the LPI with 2 new biomedical mass spectrometry instruments (value to OSU of $500,000)
- LPI core research facilities recovered 50% more services fees in FY18 than in FY17
- LPI investigators submitted 90% more grant proposals than in FY17
- LPI grant expenditures were $1,207,952 in FY18
- LPI investigator Viviana Perez received a new 5-year RF1 grant from the NIH National Institute on Aging providing $438,402/year to study causes and prevention of Alzheimer's Disease
- LPI investigator David Williams received a new 5-year R01 grant from the NIH National Institute of Environmental Health Sciences of $580,890/year to study risks of exposure to polycyclic aromatic hydrocarbons and cancer prevention
- 3 Patents issued; 3 Patents filed; and 2 Invention Disclosures filed in FY18
- Working with OSU Office for Commercialization and Corporate Development to patent and trademark protect new canine chemoprevention initiative that is joint with College of Veterinary Medicine
- LPI investigators published 65 papers
- LPI hosted and trained 30 undergraduate students; 17 predoctoral trainees; and 4 postdoctoral fellows
- The new LPI Director submitted a training grant in natural products to the NIH with the College of Pharmacy that will increase number of graduate students at the LPI
- The new LPI Director initiated monthly professional development and mentoring meeting with graduate students, postdoctoral trainees, staff, and junior faculty
- The LPI hosted its 9th biennial Diet and Optimum Health Conference in Corvallis, OR, during September 2017

## Pacific Marine Energy Center Activities / Accomplishments FY2018, Mick Haller, interim Director

- **Rebranding effort** – What was formerly the Northwest National Marine Energy Center went through a major rebranding effort during 2017-2018. Through a multi-institutional effort between the three partner institutions (OSU, UW, and UAF) that included outreach to our faculty members, to federal agencies, and to industry stakeholders, NNMREC was rebranded as the Pacific Marine Energy Center. Simultaneously, the project to develop the south Newport wave energy testing facility (formerly PMEC-SETS) also was rebranded as PacWave. PacWave also hired a new Director and transitioned their OSU organizational home. The rebranding of PMEC and PacWave has been well received and we believe has clarified our identity both within and without of OSU.

- **Professor Merrick Haller assumed the duties of PMEC Director at OSU.** After a transitional period from longtime Director Belinda Batten and a brief appointment of Pedro Lomonaco, Merrick became Interim Director on Nov. 8, 2018. Merrick is one of the original group of PIs that created NNMREC in 2008 and he agreed to serve as Interim Director until an external search for a permanent Director could be successfully completed.

- **The external search for a permanent PMEC Director was completed!** Bryson Robertson (PhD) is the Program Manager for the West Coast Wave Initiative and an Adjunct Professor at the University of Victoria. He will take over as Director of PMEC on October 15th, 2018. Dr. Robertson will also hold an Associate Professor appointment in the School of Civil & Construction Engineering.

- **PMEC was awarded $2,000,000 of new federal (DOE) funding for the ALFA-Lab Collaboration Project.** The ALFALCP will run July 1, 2018 to June 30, 2021 and is a collaboration with three DOE National Laboratories that will accelerate the development of next-generation marine energy conversion systems. This along with the $35 million of new funding allocated to the PacWave project signifies the importance that DOE places on OSU marine energy capabilities.

- **Outreach activities, mainly in support of OSU150 (and spearheaded by Brenda Langley) include:**
    - *OSU150 Portland Reception*, 2/12/2018; Ocean Sciences Meeting, 2/13-2/16/2018; *OSU150 Kickoff Event*, 2/12/2018; *Tabling at Hinsdale Wave Research Lab during tours*, 2/15/2018; Tabling at Hatfield Marine Science Center, 2/17/2018; Tabling at LaSells / Jane Lubchenco & Saving Atlantis pre-view, 2/20/2018; Tabling at Hinsdale, 2/23/2018; *Youth Science Camp at HMSC* – July 2018; *daVinci* Days 2018, 7/20/2018

- **PMEC All-Center Meeting Planning – we are in the midst of planning for the Annual PMEC All-Center Meeting.** As usual, this meeting will be held immediately before the Ocean Renewable Energy Conference (OREC; https://pacificoceanenergy.org/orec2018/) on Monday September 17th. It will be

held at the Leftbank Annex in Portland and will involve faculty and grad student researchers, DOE technical managers, and industry partners. The PMEC Advisory Board Meeting will also be held in Portland on September 20th. Below is a photo from the *2017 PMEC All-Center Meeting.*

Group photo from 2017 PMEC All-Center Meeting, Sept. 15, 2017 Portland, OR.

# 2017–18 Annual Report Highlights

**$13,262,835**

Economic benefits from Oregon Sea Grant activities

**150,740**

People engaged in Oregon Sea Grant-supported informal education

**39,035**

Preschool through 12th-grade students reached directly or through Oregon Sea Grant-trained educators

**16,064**

Hours contributed by volunteers and citizen scientists

**53**

Products, technologies, educational materials, and models created with funding from Oregon Sea Grant and used by others

**37**

Higher-education degrees awarded to Oregon Sea Grant-funded scholars

**34**

Oregon Sea Grant-funded student scholars who landed jobs related to their degrees within two years of graduating

# Oregon Sea Grant
# 2017–18 Select Achievements

### Providing Collaborative STEM Opportunities

Students engaged in immersive research develop interest and competence in science, technology, engineering, and math (STEM), but few such opportunities exist along the Oregon coast. Oregon Sea Grant-funded researchers worked with students at a coastal high school to manufacture enhanced sensors usable by fishermen to measure water temperature, depth, and salinity. In addition to supporting STEM experiences for students, this collaborative effort enhanced existing relationships between researchers and fishermen. bit.ly/2Fiu8Qw

### Supporting Local Economies

Since 1965, the Oregon Sea Grant-operated Visitor Center at Hatfield Marine Science Center has been teaching children and adults about marine science through fun, hands-on exhibits. In 2017, Oregon Sea Grant contracted with an Oregon State University Extension economist to study the Visitor Center's economic impacts. The study determined that the Visitor Center annually supports $5.4 million in income, $9.7 million in sales, and 133 jobs for local residents—impacts that are more than 10 times the Center's operating costs. bit.ly/2JxZBnW

### Protecting Coastal Residents

Scientists say there's a 30 percent chance of a massive earthquake and tsunami striking the Pacific Northwest in the next 50 years. Oregon Sea Grant organized workshops bringing educators, state parks personnel, researchers, and emergency management experts together to discuss how to help communities prepare for a tsunami by creating Tsunami Quests—fun, clue-directed hunts that teach people how to respond to an earthquake or tsunami while walking an evacuation route. Watch a video about the project: bit.ly/2JMEzOx

### Reducing Pollution and Waste

Pollution prevention helps reduce, eliminate, or prevent pollution at its source, also known as source reduction. In its pilot year, the Oregon Applied Sustainability Experience enabled five Oregon Sea Grant students to gain industry experience in pollution prevention practices and yielded measurable impacts for host businesses. If the interns' recommendations are implemented, host businesses could reduce water use by 60 million gallons, eliminate 8.5 tons of solid or hazardous materials, and save more than $900,000 a year. bit.ly/2Grktfg

### Establishing a Microplastics Baseline

Microplastics are contaminants of emerging concern, partly due to the toxicity of plastics, and also because other organic contaminants attach themselves to these materials. Oregon Sea Grant-supported researchers measured microplastic concentrations in the tissues of commercially valuable Pacific oysters and razor clams to establish the state's first baseline. Preliminary results indicate that every oyster site sampled contained organisms with microplastics. Public education aimed to reduce source pollution is underway. Video: bit.ly/2lc0wfr

# Oregon State University Stable Isotope Mass Spectrometry Center

**Mission:** To facilitate broad access to state-of-the-art instrumentation and expertise in stable isotope mass spectrometry, while providing for experiential learning in a laboratory setting and encouraging innovation in the application of stable isotope technologies in a range of fields.

**Structure and Status**

- Director – OSU Distinguished Professor Alan C. Mix
- Globally known research center for stable isotopes of oxygen, carbon, hydrogen, nitrogen
- Oversight by director (Distinguished Professor Alan C. Mix)
- Advisory committee (no direct funding from facility)
- Internal Review (Annual), External Review (2018)

**Financial**

- Average annual operating budget FY13-FY18 ~ $230,000 per year.
- Average annual user fees FY13-FY18 ~ $110,000 per year.
- OSU externally funded grants supported FY13- FY18 ~$15.5 Million.

**Research Users and Experiential Education**

- Growth of annual investigators from FY07 (11) to FY18 (71); 109 total FY13- FY18 (53 OSU, 34 non-OSU in US, 19 International, 3 Industry).
- OSU Investigators (53) from five colleges (45% College of Earth, Ocean, and Atmospheric Sciences, 23% College of Agricultural Sciences, 20% College of Forestry, 8% College of Science, and 2% College of Liberal Arts)
- 106 student + postdocs FY13-FY18 (75 OSU, 31 other).

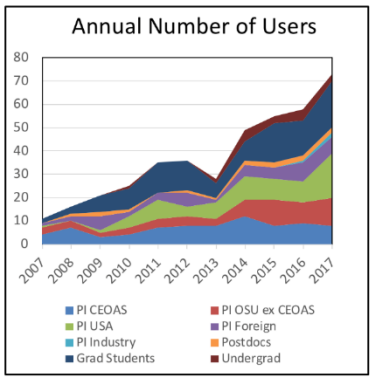
**Output**

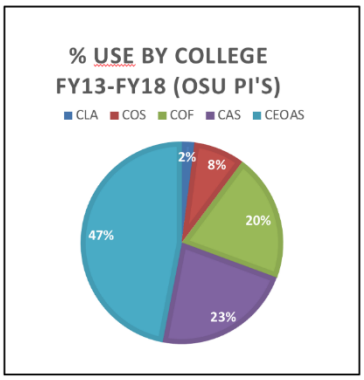
- 144 papers total (2009-2018) - 20 in Nature, 4 PNAS, 2 in Science
- ~20 press releases.
- 50 theses or dissertations.

**Honors**

- 3 Distinguished Professors, 3 Early Career Awards, 8 Fellows (AAAS, AGU, GSA), 2 IPCC Appointments, 1 Society President, 7 others.

User Community




**Issues**

- Challenges: aging equipment, limited laboratory space, understaffing, inflationary cost

increases relative to flat or declining baseline support, short-term federal funding weakness.

- Opportunities: Adding 2 new instruments (Murdock Charitable Trust), development of new methods for new instruments, seed-money program to grow user base, expected growth in applications for stable isotopes in research.

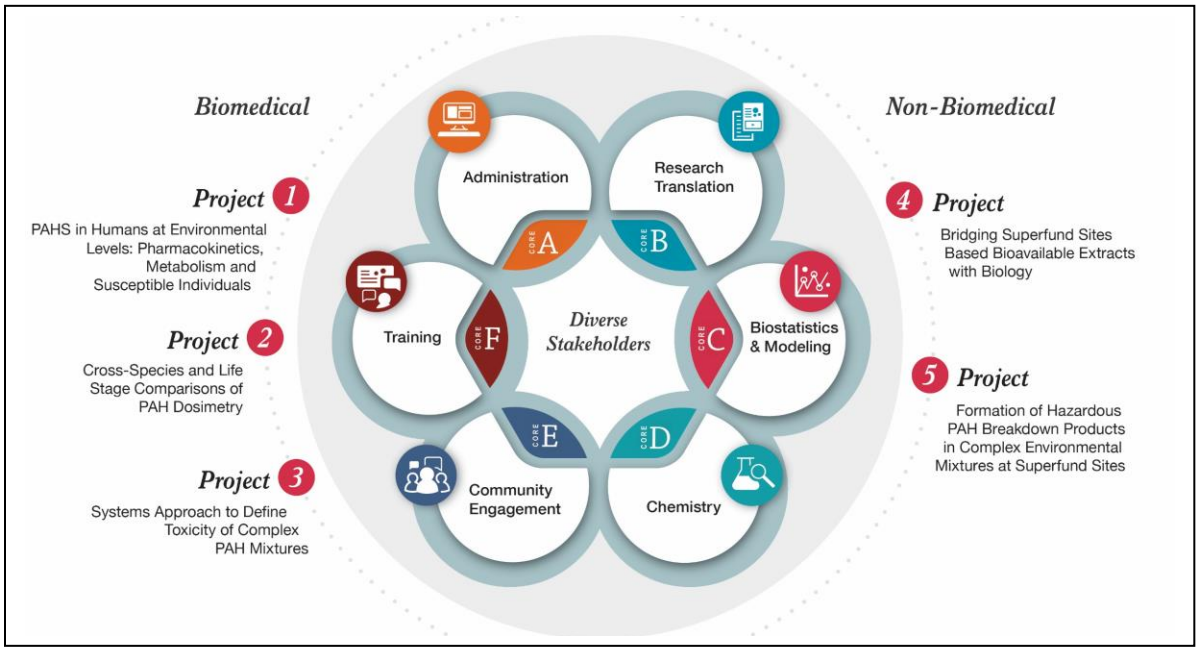
## Oregon State University Superfund Program Impact Summary

### Mission and Summary

The overall mission of our Superfund Research Program is to identify and characterize the chemical toxicities of polycyclic aromatic hydrocarbons (PAHs) commonly found at Superfund Sites. We seek to develop new technologies to study polycyclic aromatic hydrocarbons (PAHs) found at many of the nation's Superfund sites and assess the risk they pose for human health. The partnership between Oregon State and the Pacific Northwest National Laboratory (PNNL) brings together a multidisciplinary team with expertise in analytical chemistry, statistical modeling and molecular toxicology. This program has received continuous funding from the National Institutes of Environmental Health Sciences Since 2009 with an annual direct cost budget of $2.2 million annually. Our center consists of five well-funded research projects and six critical support cores that include research translation and community engagement. This highly integrated and coordinated center is designed to advance basic science while simultaneous solving critical environmental health problems. The leadership team brings the necessary complimentary expertise from the Pacific Northwest region to tackle these complex challenges.

### The SRP Leadership Team

| Leader | Role | Institution | College/Department |
|---|---|---|---|
| Kim Anderson | Research Project | OSU | CAS/EMT |
| Andrew Buermeyer | Training Core | OSU | CAS/EMT and COE/CBEE |
| Stacey Harper | Translation Core | OSU | CAS/EMT and COE/CBEE |
| Molly Kile | Engagement Core | OSU | CPHHS/BPHS |
| Craig Marcus | Training Core | OSU | CAS/EMT |
| Diana Rohlman | Translation Core | OSU | CPHHS/BPHS |
| Staci Simonich | Project Lead | OSU | CAS/SCIENCE/EMT |
| Jordan Smith | Project Lead | PNNL | Chem Bio & Exposure |
| Justin Teeguarden | Project Lead | PNNL | Chem Bio & Exposure |
| Susan Tilton | Project Lead | OSU | CAS/EMT |
| Robert Tanguay | Director | OSU | CAS/EMT |
| Katrina Waters | Deputy Director | PNNL | Earth & Biological Sciences |



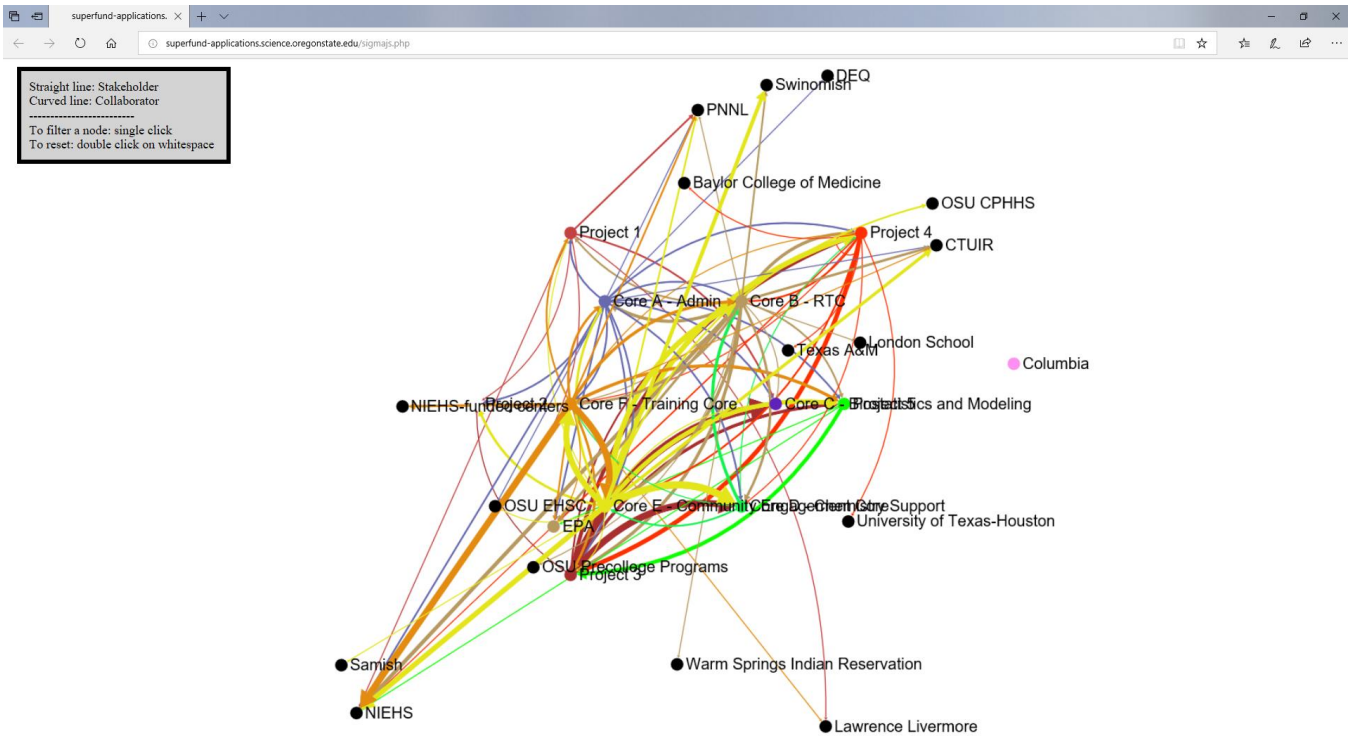

## Training 21st century multidisciplinary scientists

The SPR Center has a record of accomplishment in recruiting and training the next generation of trans-disciplinary scientists to address critical, complex problems of hazard assessment, environmental monitoring, and human health risk assessment for chemical mixtures and other contaminants, and to prepare them for future independent careers. This is accomplished by providing diverse training activities customized to the needs of individual trainees, which include, but are not limited to: didactic coursework, challenging SRP-related interdisciplinary laboratory research (thesis) projects, seminars, webinars, customized experiential learning activities, and a large menu of professional development learning modules. The SRP Center continues to actively recruit a diverse cadre of new trainees and matriculate all Trainees through the Training Core program. Since the inception of our Center. We have trained several postdoctoral scientists and have successfully trained over 20 PhDs that now work in the commercial, non-governmental organizations, governmental and academic sectors. The research projects also provides training opportunities for dozens of undergraduate student researchers enriching their OSU experience.

Productivity and Impact

A major goal our program is to engage with and support various stakeholders from state and federal governmental agencies, community members, and Tribal Nations. In many cases, these partners are co-authors on peer reviewed manuscripts. Over the past 10 years, our Center has published NNNN manuscripts, and the majority of these are collaborative efforts between two or more Center members. Below is a link to an interactive map illustrating interactions between SRP Center Members and stakeholders.

http://superfund-applications.science.oregonstate.edu/sigmajs.php




## Increased OSU Research Awareness through Steady Stream of Press Releases

***2018***

- Science influencers: PNNL scientists among world's most highly cited
- Understanding How Pollutants Change During Remediation
- Harvey victims wear wristbands to track chemical exposure
- Harvey victims wear wristbands from OSU to track chemical exposure
- Wristbands given out to test for chemical exposure from Harvey floodwaters
- Study to determine toxins Harvey washed ashore
- Wristband tracks chemicals you're exposed to, and how they affect you
- PCBs, dioxins a no show in wristbands
- Harvey community exposures
- Hurricane Harvey damage
- Hurricane Harvey Coalition
- Military Base Cleanup
- Researchers find and fix toxicity of nanomaterials
- Green nanomaterial studies
- Genes-environment interactions discovered

***2017***

- Globe-trotting pollutants raise some cancer risks four times higher than predicted
- Mt. Bachelor readings verify pollution's longer travels
- Lung Cancer Risk Raises by Four Times due to Shield-Protected Pollutants
- On the move pollution more health-impacting that once thought, study reveals
- Toxic fumes from cars, power plants raise 'ageing brain' risk
- Dangerous Drifting Particles
- **Dr. Kim Anderson**'s wristbands have been utilized to track poverty and access previously hard-to-collect data in parts of Africa. Listen to the Science in Action podcast
- Researchers find link between social behaviors among children and exposure to flame retardants
- Flame retardant chemicals may affects social behavior of young children
- Flame retardants may lead to aggressive behavior in children says study
- Teeguarden Part of a Report Offering Novel Paths to Assessing Health Risks
- Benzopyrene exposure linked to learning, memory deficits
- Arsenic Levels in Bagaces Drinking Water Improving, But Still a Concern

***2016***

- Snow Cones Fresh From The Sky: Listeners Share Recipes
- New Study Explains Why You Probably Shouldn't Eat Snow
- Snow Storm Season: 3 Things NOT to do with Snow
- PNNL puts bacteria and bugs to work
- OSU study: Your driveway could be toxic
- Driveway, parking lot pavement sealcoats more toxic than thought
- Coal-tar based sealcoats on driveways, parking lots far more toxic than suspected
- A simple way to track your everyday exposure to chemicals
- Sunbaked pavement sealcoat may release toxic compounds
- Editorial Board of Chemical Research in Toxicology's Favorite Articles
- Chemical Research in Toxicology - Favorite Papers of the Last Two Years

***2015***

- Common chemicals may act together to increase cancer risk, study finds
- New Research On Carcinogenic Chemicals Combinations
- Common chemicals may act together to increase cancer risk, study finds

- Senator Jeff Merkley Addresses Dangers Of Daily Chemical Exposure
- Chemical bracelet detects toxic, banned substances
- OSU study: Mercury scrubbers at Oregon power plant lower other pollution too
- Mercury Scrubbers On Power Plants Clean Up Other Pollutants, Too
- An Interview with Robert Tanguay|Project 1 Highlight
- Arsenic and health to be focus of Corvallis Science Pub
- Zebrafish Highlights Appreciating Zebrafish
- Nano consortium concludes five years of scientific advances and collaboration
- Fracking may affect air quality and human health, OSU study finds
- OSU scientists develop improved way to assess cancer risk of pollutants
- Fracking Activities Pollute Nearby Air With Carcinogenic Hydrocarbons
- Snow is Delicious, But is it Good to Eat
- Full sprectrum eating

***2014***

- Taking a deeper look: Technology tracks carcinogens in the body
- New technology tracks carcinogens as they move through the body
- Tribes partner with OSU to study clam contamination
- Undergrad takes part in fight against cancer
- Childhood asthma linked to lack of ventilation for gas stoves, OSU study shows
- Toxicity Tools Coming of Age
- Oregon State University Superfund program completes pilot assistance project
- Do health apps really matter?
- The Pollution Inside of Us
- New Wristbands Provide More than Just Slogans
- Silicone wristbands facilitate exposome study
- Rubber wristbands show pollution in air, water and food
- Wristband developed at OSU detects daily toxins
- OSU Develops Wristband That Detects Pollutants
- Armed with arm candy: Bracelets can detect people's chemical exposures
- A wristband for a different kind of cause - environmental health
- A New Use for Your Old Livestrong Bracelets: Monitoring Pollutants
- High-throughput screening examines multiple effects of 1060 compounds on zebrafish
- Study identifies novel compounds more mutagenic than parent PAHs
- New compounds discovered that are hundreds of times more mutagenic

- KVAL news video story

***2013***

- How Tiny Fish Could Reveal Effects of Chemical Exposure (Yale e360)
- Zebrafish developmental assays test the safety of new chemicals
- NTP talk explores zebrafish as a vertebrate model in toxicity screening
- OSU to test new tools to assess health risk from Superfund sites From Zebrafish to You: A story and podcast interview with Robert Tanguay about the research at SARL.
- Aquatic Vigil – Labs go to extraordinary lengths for fish and other water dwellers
- Model examines nanotoxicity in different ionic strength media
- Residents Near Chinese E-Waste Site Face Greater Cancer Risk

***2012***

- Corvallis Science Pub to focus on pollution in the western U.S.
- Environment: Toxic effects
- Something in the Air: A chemist travels the globe tracking airborne chemicals that end up in us.
- Is the Coast Clear? Researchers assess Gulf water and air

*It has been a privelege and an honor to serve as OSU's Vice President for Research. I have great trust that OSU will continue to thrive as a prominent research institution. Best of luck to its students, graduates, faculty and staff. Go Beavs!*

*Cindy*