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OCTRI Innovation Programs & Awards

Oregon Clinical & Translational Research Institute

The Oregon Clinical and Translational Research Institute (OCTRI) is one of 50+ Clinical and Translational Science Award (CTSA) awardees working together to improve the translational research process across the country. Housed at Oregon Health & Science University (OHSU), OCTRI’s mission is to get more treatments to more patients more quickly. We do this by funding and managing programs that catalyze translational research, cultivate innovation, foster collaborations, develop the translational workforce, and enhance partnerships with communities.

OCTRI is funded primarily through the National Institutes of Health (NIH) National Center for Advancing Translational Sciences (NCATS). Additional funding sources include institutional commitment from OHSU and direct payment for services provided to researchers. OCTRI also receives collaborative support from our regional partner institutions: University of Oregon, Oregon State University, Portland State University, Pacific Northwest National Labs, OCHIN, and VA Portland Health Care System.

OCTRI Innovation Programs & Awards

OCTRI Innovation Programs & Awards supports translational research with the goals of fostering exciting science, providing support for preliminary data generation, and stimulating the development of new methodologies, OCTRI pilot awards provide investigators with funding and resources to advance their research. Outcomes include follow-on funding, publications, and technologies and drugs. To further support this effort, OCTRI offers a portfolio of educational programming targeting innovation, invention, and entrepreneurship.

Awards Program Evaluation

All OCTRI pilot awardees are required to participate in reporting and measurement of project outcomes including publications, new grant funding, and commercialization outcomes that are derived from OCTRI pilot funding. Most awardees also report qualitatively on project impact and list other forms of results dissemination. Investigator feedback and project outcome data are used to improve program management and guide decisions about future program iterations and initiatives.

OCTRI Strategic Goals

OCTRI Innovation Programs & Awards span all five of OCTRI’s strategic goals:

1. Catalyze translational research
2. Cultivate innovation in research
3. Foster and support scientific collaboration
4. Develop a translational workforce
5. Enhance partnerships with communities
Current Award Types

Biomedical Innovation Program
Now beginning its seventh year, the Biomedical Innovation Program (BIP) is designed to foster the development of devices, diagnostics, software, and therapeutics that provide solutions to important health care problems. The therapeutic, or “drug discovery” funding track was added in fiscal year 2016, after three successful cohorts of device, diagnostic, and software projects. The BIP cultivates, evaluates, and funds promising translational projects with the objective of moving innovative technologies to clinical applications through commercialization. In addition to providing seed funding for promising projects, the BIP supports awarded PIs with dedicated project management, professional mentors, and numerous innovation and entrepreneur education opportunities.

The BIP is offered in partnership with OHSU Office of Technology Transfer & Business Development (TTBD) with additional support from the OHSU Foundation, GE Healthcare, and Hillrom. BIP also has developed important alliances with the State of Oregon’s signature research centers: Oregon Translational Research and Development Institute (OTRADI), Oregon Nanoscience and Microtechnologies Institute (ONAMI), and VertueLab.

Strategic Vouchers
Through OCTRI’s Strategic Vouchers programs, applicants may request $1,000 to $5,000 to be used for OCTRI Research Services only. This funding is primarily intended to support early or mid-career OHSU faculty members for studies associated with current or prior mentored career development awards.

Participant & Clinical Interactions (PCI) Management
This funding (up to $20,000) may be used for Clinical & Translational Research Center (CTRC) services, specifically, nursing, study coordination, bio-nutrition, or lab services. It supports early career faculty members from OHSU as well as OCTRI Partners for studies associated with current mentored career development awards.

Pathways to Independence
Pathways to Independence is intended to fund early career investigators to advance their research to compete for independent Research Project Grants (RPG). Award funds support and further research completed as part of a career development award, such as additional analyses, exploration of related hypotheses, or collection of additional observations.

Future Award Types

Biomedical Innovation Program: Digital Health
The BIP will expand to include a third track of funding specifically aimed at digital health projects. Digital health is a rapidly expanding area in healthcare where technologies often face fewer barriers to entry and shorter development times.

Strategic Investment
OCTRI’s Strategic Investment Awards will target translational projects that represent a compelling opportunity that requires a small investment to realize significant return. It is specifically intended to provide critical support for projects that are close to achieving independent funding.

Past Award Types

Community Research Coalition Grants
In 2016, OCTRI’s Community Research Coalition Grants (CRCG) program funded projects from community organizations within three regional research coalitions in Oregon. The CRCG supports local efforts to plan, implement, and evaluate research projects that address local health and wellness issues. It also cultivates and strengthens collaborations between OHSU investigators and statewide community partners. These collaborations improve local health outcomes by supporting research best practices and data driven decision-making.

Catalyzing Translational Research Opportunities
Between 2012 and 2017, OCTRI, with substantial investment from the School of Medicine, supported 21 awardees (2-4 per year) to facilitate novel, collaborative, multidisciplinary studies that will lead to further research and funding in translational research. This funding was specifically intended to enable the development of compelling new grant applications that will sustain the proposed research activity in the following categories:
1. Large, transdisciplinary grant development
2. Research cohort development
3. T1 translational research/first in human studies
13 Years
4 Funding Partners
145 Principal Investigators
46 Departments
$6.9M Invested

171 Projects

222 OHSU Collaborations
203 External Collaborations
187 Publications
$140.6M Follow-on Funds
16 Patent Applications Filed
3 Issued Patents
8 Start-up Companies
PILOT AWARDS PROGRAM OUTCOMES

Application Process
In 2018, new awardees (n=8) were asked to provide feedback regarding the Pilot Awards application process.

Application process overall
Professionalism of OCTRI Awards staff
Responsiveness of OCTRI Awards staff
Clarity of RFA
Turnaround time
Fair and impartial review
Reviewer feedback

Follow-on Funding and Publications over the Last Five Years

<table>
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<tr>
<th>Years Since Award Date</th>
<th>Count of Projects</th>
<th>OCTRI Investment</th>
<th>New Funding</th>
<th>Basic ROI*</th>
<th>Publications</th>
</tr>
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<tbody>
<tr>
<td>&lt;1</td>
<td>4</td>
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<td>$0</td>
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<tr>
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<tr>
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<td>$383,318</td>
<td>$15,974,183</td>
<td>41.7</td>
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*Return on Investment
ROI=For each OCTRI dollar invested, the dollars returned in new funding. Sources of new funding include federal, industry, and foundation grants. New funding is reported by each OCTRI principal investigator and verified by OCTRI evaluation staff. Basic ROI is routinely reported by CTSAs and other NIH-funded institutes.

Projects Take Time to Show Results

Average time to first follow-on grant: 21 months
Average time to first publication: 28 months
Oregon Business Development Department (Business Oregon) SBIR/STTR Phase 0
Since 2015, OCTRI has partnered with the State of Oregon’s economic development agency, Business Oregon, to offer an SBIR/STTR application support program (Phase 0) to small businesses in the state developing healthcare technologies. The program has assisted 10 companies in successfully securing over $3.4 million in SBIR/STTR Phase I, Phase II, and Fast-track funding.

Oregon has the highest SBIR/STTR funding success rate in the United States at 29%.
Funding success rate among Phase 0 participants is 47%.

OCTRI Partner Council
The OCTRI Partner Council was established to foster and support scientific collaboration at a regional level. These partnerships were chosen strategically to complement and extend OCTRI’s clinical and translational research portfolio and are designed to build a dynamic and synergistic regional network in the Pacific Northwest. Our regional partners include:
- Portland State University
- Oregon State University
- University of Oregon
- OCHIN
- Veterans Affairs Portland Health Care System
- Pacific Northwest National Laboratory

Northwest Microbiome Network
In early 2018, OCTRI, OSU, PSU, U of O, and PNNL came together to discuss ways to leverage their diverse and innovative expertise and capabilities to advance microbiome research in Oregon, Washington, and beyond. These discussions gave rise to a larger, collaborative endeavor called the Northwest Microbiome Network.

On March 16, 2019, OCTRI and PSU jointly hosted the first Microbiome Mixer at the Robertson (Collaborative) Life Sciences Building, which attracted over 120 scientists and clinicians from around the region – with the goal of building a robust microbiome research community. The overwhelming interest in fostering regional collaborations surrounding microbiome research has prompted the founding member institutions to evaluate methods for future development of joint funding opportunities.

OHSU Department of Surgery
OCTRI has partnered with the Department of Surgery to create an Innovation Manager position. The Innovation Manager will work collaboratively with the OCTRI Innovation Programs & Awards team to identify, drive and support innovation and entrepreneurial activities.
Oregon Bioscience Incubator (OBI)
The Oregon Bioscience Incubator (OBI) has collaborated with OCTRI on many initiatives, including the Biomedical Innovation Program (BIP). Members of OBI’s executive staff have served as advisory and review committee members and worked closely with awardees to meet the challenges frequently encountered during early-stage technology development. Additionally, OBI and OCTRI have co-sponsored and led numerous talks, workshops, and seminars pertaining to entrepreneur education and commercialization.

GE Healthcare
Since 2016, GE Healthcare has supported the Biomedical Innovation Program with funding for awarded projects and by participating on the review committee.

Hillrom
Welch Allyn and parent company Hillrom have collaborated with OCTRI on a number of initiatives. Senior Hillrom engineers and managers serve on the BIP review committee and help mentor applicants and awardees. Hillrom also provided funding and in-kind services for several BIP-awarded projects, which continue to move toward commercialization.

An externship program, started in 2018, was created to enhance OHSU physicians’ ability to effectively collaborate with industry partners and to apply a commercial lens to the formation of research questions. OHSU physicians were given in-depth exposure to the decision-making processes in various business units at Hillrom, ranging from new product development to mergers and acquisitions.

UVDF and the OHSU Foundation
The University Venture Development Fund (UVDF) via the OHSU Foundation has provided funding for 9 promising technology and drug development projects awarded through the BIP.

OHSU EIR Program
Members of OHSU’s Executives-in-Residence (EIR) program have been active collaborators and mentors to BIP applicants and awardees. EIRs have frequently participated in entrepreneur education programs sponsored by OCTRI, such as INVENT, fastPACE, and the Innovate Challenge.
This is a very unique source of funding that allows researchers to take risks on commercializable ideas. This grant helps bridge the gap between idea/concept and obtaining a larger grant like SBIR/STTR.

-BIP Awardee

Without this funding we would have had no chance to develop our ideas for translation of our basic science findings to a clinical application. These funds were critical to getting our project “off the ground.”

-BIP Awardee

Video Spotlight
Visit https://youtu.be/7tTfdKI9j2M to hear from some of our past BIP awardees.
**PROJECT HIGHLIGHTS**

**BIP Device, Diagnostic & Software Track**

**OmnEcoil Instruments, Inc.**

Fergus Coakley, M.D.
Professor and Chair, Diagnostic Radiology

In February 2017, Dr. Fergus Coakley was awarded a BIP grant to develop a device that allows an entirely new “single stop” pathway for combined diagnostic prostate MRI and MRI-targeted biopsy. The proposed device combines a fixed curved array multichannel endorectal biopsy template with a fully incorporated coil for MRI signal reception.

Since receiving BIP funding, Dr. Coakley and medical science technology entrepreneur Duffy Dufresne co-founded OmnEcoil Instruments, Inc., with intellectual property licensed from OHSU. The initial funding paid for preliminary concept development, engineering, and design services. The company has since gone on to raise over $435,000 in non-dilutive grant funding from the M.J. Murdock Charitable Trust, Business Oregon, and through the National Science Foundation's Small Business Innovation Research (SBIR) program as well as $275,000 in dilutive funding from the Oregon Nanoscience and Microtechnologies Institute (ONAMI) Launch and Gap Funding mechanisms.

The company is now working closely with an MRI coil manufacturer to develop a proof-of-concept device. Venture capital funding rounds and a multi-center clinical trial will follow in 2019.

**Wearable Mental Health Device for Suicidality**

David Sheridan, M.D.
Assistant Professor, Emergency Medicine

In January 2017, Dr. David Sheridan was awarded a BIP grant to develop a wearable wrist device that objectively monitors physiologic parameters shown to be significantly dysregulated in patients with a history of suicidality. By identifying trends in these parameters early, the device can serve as an early warning system for stress dysregulation in patients who are at high risk for suicidal behavior.

Through an innovative partnership between OHSU and medical device company Welch-Allyn, Inc., a prototype of the wearable mental health device has been developed and a patent application has been filed. Clinical trials have been ongoing since July 2017 to test the device among adolescents in the OHSU Emergency Department presenting with suicidal thoughts or attempts. These trials will provide some preliminary analysis to apply for an NIH R21 grant.

**BIP Drug Discovery Track**

**Novel lamin-binding ligands for the treatment of triple negative breast cancer**

Xiangshu Xiao, Ph.D.
Associate Professor, Physiology & Pharmacology, Knight Cancer Institute

Of the approximately 240,000 new breast cancer cases reported in the U.S. in 2016, 15% to 20% were attributable to Triple Negative Breast Cancer (TNBC). Currently, no targeted therapies exist for TNBC. The only systemic therapies are conventional cytotoxic chemotherapies, which have limited efficacy and present safety issues to patients.

After identifying a compound, lamin-binding ligand (LBL1), that selectively kills TNBC cells without harming normal cells in vitro, Dr. Xiao received BIP Drug Discovery funding to complete further testing. Dr. Xiao’s BIP funding allowed him to synthesize pharmacologically relevant concentrations of LBL1 and demonstrate safety and efficacy results in vivo.

These in vivo studies represented a critical milestone toward commercializing the compound and led to significant follow-on funding from the National Institutes of Health. In parallel, Dr. Xiao is working closely with TTBD to identify partners for licensing and co-development.
Pantothenate kinase-associated neurodegeneration (PKAN) is a rare neurologic disease that affects both children and adults. The illness is particularly cruel in childhood, when uncontrollable twisting movements can be extreme, causing pain and even bone fractures. Awareness is not affected, making the suffering imposed by the disease especially poignant. Many children with PKAN die before the age of 10.

In 2016, principal investigator Dr. Penny Hogarth was awarded a BIP Drug Discovery grant to build on promising initial research for a therapeutic to treat PKAN-afflicted patients. With guidance and encouragement from the FDA to pursue an approach that would expedite an otherwise onerous regulatory path, Dr. Hogarth’s team and a group of collaborators in the Netherlands have achieved critical project milestones. Minimum dosing studies have been successfully completed, a chemical synthesis process has been developed, and a potential biomarker of disease state and response to treatment has been identified.

During the award period, Dr. Hogarth and her team established a 501c3 funding raising entity called Spoonbill Foundation and filed a provisional patent for the biomarker of their compound. The team has been awarded follow-on funding from the Collins Foundation and the Friends of Doernbecher Foundation. Most recently, Dr. Hogarth received a very favorable score on an R01 proposal to conduct a clinical trial in patients with PKAN.

Dr. Penny Hogarth continues development of a new therapeutic drug to help patients with PKAN, a rare neurologic disease.

**Fast-track CoACT**

Penelope Hogarth, MD
Associate Professor, Molecular and Medical Genetics

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**Community Research Coalition Grants**

**Collection of Feasibility Data on Existing Obesity Prevention Programs and Built Environments in Coos County**

Florence Pourtal-Stevens
Public Health Administrator, Coos Health and Wellness

In 2015, when Coos Health and Wellness applied for OCTRI Community Research Coalition Funding, 30% of the Coos County population was considered obese, and the county ranked 29 out of 36 counties in Oregon for overall health outcomes.

The project sought to determine existing strengths and areas for improvement in the community strategies for Healthy Eating and Active Living (HEAL) and to contribute to the obesity reduction and prevention goals of the Community Health Improvement Plan (CHIP).

With the help of a consultant, the team conducted focus groups using the CDC Change Tool questions and used what they learned to develop priority strategies for HEAL in 3 focus areas. The HEAL subcommittee reviewed the results from the focus groups and developed priority strategies to guide their work in creating supportive environments to promote healthy eating and active living in Coos county for 2016-2019.

**Exploring Risk Factors and Trends Associated with Low Birthweight in Klamath County**

Community Partners: Stephanie Machado, MPH, Oregon Tech; Chantelle Smith, BS, Klamath County Public Health

OHSU Partner: Amy Laird, PhD, Biostatistician, OHSU/PSU School of Public Health

In 2016, Klamath County ranked 35 out of 36 counties in Oregon for health outcomes, primarily attributed to low birth weight. With Community Research Coalition funding, principal investigator Stephanie Machado and her team performed a multivariate analysis of Klamath County Vital Record data to determine which maternal risk factors are associated with low birthweight deliveries in Klamath County.

Looking at 4407 mother/child pairs from 2010-2015, the project team identified several modifiable risk factors for low birthweight including tobacco use, hypertension, and the number of prenatal provider visits.

These results also used to create a subsequent community-engaged research project to address one of the identified risk factors: Smoking Cessation Interventions for Pregnant Women.
Catalyst Awards

Practical and Cost-effective Multiplexed Immunohistochemistry for Comprehensive immune Complexity Analysis of Solid Tumors
Takahiro Tsujikawa, MD, PhD
Adjunct Assistant Professor, Cell, Developmental and Cancer Biology

Immune-based therapies are a promising approach to treat cancer, but cancer tissues respond differently to therapies based on biomolecular characteristics. The traditional approach to identify specific biomarkers typically utilizes one tissue section per biomarker evaluated and thus requires large quantities of precious tissue.

To get around this limitation, principal investigator Takahiro Tsujikawa and his team acquired OCTRI Catalyst funding to develop a new method to enable simultaneous evaluation of up to 12 biomarkers in one section of formalin-fixed paraffin-embedded (FFPE) tissue using immunohistochemistry (IHC) methodologies. The developing imaging method and computational image analysis platform will significantly impact clinical studies in which biomarkers are used for risk stratification, tumor subtyping, and evaluating response to therapy.

This approach has piqued interest from the OHSU community, leading to collaborations across nine labs and departments in OHSU, and will lead to significantly expanding the use of biomarker evaluation in cancer research to guide therapy.

Long-term DENV Immunity in a Human Cohort
Bill Messer, MD, PhD
Assistant Professor, Department of Molecular Microbiology and Immunology and the Department of Medicine, Division of Infectious Diseases

Dr. Messer received an OCTRI Catalyst Award to pilot a recruitment protocol to identify and enroll study subjects with a reported history of dengue virus infection. Over the first year of the study, Dr. Messer identified and enrolled 92 subjects. Since then, the protocol has been expanded in response to the global chikungunya and Zika virus epidemics and recent yellow fever outbreaks in Latin American and Africa and has grown to include 218 subjects.

Preliminary data generated from the cohort were used to apply successfully for an NIH NIAID R21 in 2017 to formally compare and contrast dengue immunity in endemic and non-endemic cohorts, a study that is now underway in collaboration with Ponce Health Sciences University in Ponce, Puerto Rico. Additionally, Takeda Vaccines became interested in the cohort as a means to better understand how dengue vaccine-induced immunity may evolve in non-endemic settings, leading to an Investigator-Initiated Scientific Research (IISR) award for the cohort in 2017. Since initiating the cohort, Dr. Messer has shared coded subject samples with scientists at Stanford, the University of Washington, the University of Rhode Island, and Seoul National University in Korea.

Dr. Tsujikawa and the team at the Coussens lab use a new imaging method to analyze 12 cancer biomarkers using just one piece of tissue.
INVENT!

INVENT! is a bioscience innovation and entrepreneurship seminar series that provides information on translating and commercializing discoveries in health and life sciences. Designed to provide a detailed account of the steps involved in taking research outcomes to the healthcare marketplace, experienced innovators and business professionals were asked to speak about critical topics in the translation journey. The goal of this program is to help guide innovations from university to market and to introduce OHSU’s students, investigators, clinicians, faculty, and the Oregon bioscience community to innovation and commercialization concepts.

In 2015, OCTRI Innovation Programs and Awards team partnered with the Division of Management to host a comprehensive seminar series covering the foundational components of innovation and commercialization. This series attracted community sponsorship from OHSU’s Technology Transfer and Business Development office, OHSU Knight Cardiovascular Institute, Center for Developmental Health, Oregon Bioscience Incubator, Oregon Nanoscience and Microtechnologies Institute, OHSU School of Medicine, Portland State University, Oregon Bioscience Association, Oregon Entrepreneurs Network, and the Device Design Interest Group.

In 2017, the OCTRI Innovation Programs and Awards team collaborated with the Oregon Bioscience Incubator (OBI) and OHSU’s Technology Transfer & Business Development office to host an additional series of experiential workshops with the aim of supporting bioscience innovation and entrepreneurship within the community. The collaborators received a $10,000 mini-grant from the OHSU School of Medicine to offer this series. Presented to aspiring entrepreneurs in the regional bioscience ecosystem, INVENT! selected regional experts to lead three dynamic workshops covering topics identified by entrepreneurs and aspiring entrepreneurs at OHSU.

- 98% of participants found the information useful
- 92% said it increased their confidence
- 100% said that they were interested in attending more programming like this

Incredibly useful workshop and applicable to the research world as well! Scientists are notoriously bad at explaining their science in a short and accessible manner – this helped me so much!

– INVENT participant

Biomedical Innovation Program fastPACE

The BIP fastPACE (Program Accelerating Commercialization Education) is a 4-week biomedical commercialization course designed for the busy medical academician with an early-stage project. Modeled after the successful National Science Foundation I-Corps program, and the University of Michigan’s own fastPACE, the course launched in Fall 2018, and featured a cohort of 10 teams from OHSU and the regional bioscience community. The program blends in-person and online experiential education to help faculty researchers and clinicians learn the basic components of biomedical commercialization and prepare a successful business case to secure funding and partnerships.

- 100% of participants increased their knowledge of innovation and commercialization
- 100% said that they would recommend fastPACE

The BIP fastPACE launched in Fall 2018 with 10 teams from OHSU and the regional bioscience community.
**FastPACE was a huge help for crystalizing a few of our ideas and really forcing us into the nitty gritty of a lot we don’t have much experience with.**

– 2018 fastPACE participant

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**Innovate Challenge & InventOR**

Innovate Challenge is a student idea and prototype competition, designed to encourage innovation and entrepreneurship among OHSU’s student population. Participants received individualized mentorship and training to develop an effective business pitch, understand the basics of bringing a concept from idea to market, and fundamentals of life science innovation.

2019 Finalists:
- Ryan Thrower, DMD Candidate and Aisha Saradi, DMD Candidate
  - *FUNject, a kid-friendly injection device*
- Geoffrey Schau, BME Candidate and Erik Burlingame, BME Candidate
  - *SHIFT, an artificial intelligence-powered technology for detecting cancer*

Innovate Challenge is OHSU’s preliminary competition leading into InventOR, a statewide collegiate competition led by Portland State University and the Lemelson Foundation. Finalists receive an initial prototyping grant, additional business case and prototyping training, and compete for the chance to win up to $25,000. InventOR finals will be held on June 28, 2019.

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**I learned more than I thought that I ever would. Even though I did not advance to the finals, it was such an excellent opportunity and even fueled me to continue working on my idea.**

– 2019 Innovate Challenge participant

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**Additional Programming**

**SBIR/STTR Workshops**

OCTRI offers regular Small Business Innovation Research (SBIR) and Small Business Technology Transfer Research (STTR) workshops to provide in-depth and hands-on guidance for individuals targeting this federal funding. In 2018, OCTRI partnered with the Oregon Bioscience Incubator and OHSU’s Technology Transfer and Business development to host a 2-day comprehensive workshop with consultant Becky Aistrop of BBC Entrepreneurial Training & Consulting. In 2019, our continued partnership hosted Dr. Jim O’Halloran of ScienceDocs for a half-day experiential workshop, including one-on-one meetings with SBIR experts. Annual workshops cover essential components of SBIR/STTR proposals, including crafting a competitive proposal, budgeting, commercialization planning, strategic planning, and submission guidelines.

100% of participants surveyed found the workshop increased their preparedness and confidence for writing an SBIR/STTR proposal.

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**Workshop format was perfect – so useful – very specific and constructive.**

– SBIR/STTR Workshop participant

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**Women in Science Panel**

In a collaborative event to celebrate and support women entrepreneurs, OCTRI, VertueLabs, OBI, and Women in Science hosted an evening panel and networking event featuring four of Portland’s influential female entrepreneurs.

**OCTRI co-hosted a Women in Science event to celebrate and support women entrepreneurs.**

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SBIR Road Tour

The SBIR Road Tour is a national outreach effort by the U.S. Small Business Administration to convey the non-dilutive technology funding opportunity provided through the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs. Federal and State program managers, including those from the NIH, NSF, and DOD, representing $2.5 billion in early stage funding were invited to present their programs and meet one-on-one with innovators, entrepreneurs, and researchers interested in taking advantage of this opportunity. Hosted in collaboration with Vertue Labs and Portland State University, OCTRI served on a panel addressing the local resources available to aid proposal development and funding opportunities for entrepreneurs and innovators.

Education Program Partners

University of Michigan
OHSU Office of Technology Transfer & Business Development (TTBD)
Oregon Business Industry (OBI)
VertueLab
OHSU School of Medicine
Women in Science

As part of the SBIR Road Tour, OCTRI served on a panel addressing local resources for entrepreneurs and innovators.
Biomedical Innovation Program

**Development of Devices, Diagnostics & Software**

Erin W. Gilbert, M.D., M.C.R., Assistant Professor of Gastrointestinal and General Surgery

*Eliminating retained surgical items using an embedded detector system*

Gregory Landry, M.D., Professor of Surgery Vascular Surgery, Knight Cardiovascular Institute

*Remote endarterectomy device*

John Muschler, Ph.D., Research Associate Professor of Biomedical Engineering

*Developing novel bioconjugates for the detection and treatment of bladder disease*

Fergus Coakley, M.D., Professor and Chair of Diagnostic Radiology

*Novel targeted MRI-guided prostate biopsy device*

James Dolan, M.D., M.C.R., F.A.C.S., Associate Professor of Surgery

*An improved enteral access device for surgical patients*

Theodore Hobbs, D.V.M., M.C.R., Surgery Unit Head, Oregon National Primate Research Center

*Blood volume determination using an intravenous optical fiber*

David Huang, M.D., Ph.D., Peterson Professor of Ophthalmology, Professor of Biomedical Engineering

*Dry Eye Treatment Device*

David Sheridan, M.D., Department of Emergency Medicine

*Wearable Monitoring for Mental Health Patients*

David Simons, M.D., Ph.D., Glaucoma Fellow, Casey Eye Institute

*Glaucoma Tube Implant with Modulated Flow*

Luiz Bertassoni, D.D.S., Ph.D., Assistant Professor of Restorative Dentistry

*EndoGel: A smart-material system for regenerative dental applications*

Kimberly Hutchison, M.D., Associate Professor of Neurology

*Novel mouth sealer to decrease oral leakage and improve compliance with nasal CPAP for the treatment of obstructive sleep apnea (OSA)*

David Sheridan, M.D., Assistant Professor of Emergency Medicine

*HydraSense: Non-invasive dehydration monitoring*

Mark Engelstad, D.D.S., M.D., M.H.I., Associate Professor of Oral & Maxillofacial Surgery

*Software Applications with Medical Knowledge Can Improve Health Care Education*

Leo Han M.D., M.P.H., Assistant Professor, of Obstetrics and Gynecology

*Development of a Rapid Bedside Test to Detect the Presence of a Copper-IUD*

Young Hwan Chang, Ph.D, Assistant Professor of Biomedical Engineering and Computational Biology

*paradigmSHIFT: Speedy Histopathological-to-Immunofluorescent Translation of Clinical Images Through Deep Learning*

Michael Chiang, MD, Professor and Vice-Chair of Ophthalmology

*Optimization of the i-ROP DL System for Commercial Development*

**Drug Development**

Penny Hogarth, M.D., Associate Professor of Molecular & Medical Genetics

*Fast-track CoACT*

Xiangshu Xiao, Ph.D., Associate Professor, Physiology & Pharmacology, Knight Cancer Institute

*Novel lamin-binding ligands for the treatment of triple negative breast cancer*

Monika Davare, Ph.D., Assistant Professor of Pediatric Hematology & Oncology

*Development of a ‘hit to lead’ compound as a therapeutic agent to treat Ewing’s sarcoma and subsets of hematological malignancies*

Beth Habecker, Ph.D., Professor of Physiology & Pharmacology & Michael Cohen, Ph.D., Associate Professor of Physiology & Pharmacology

*Novel compositions targeting protein tyrosine phosphatase sigma for nerve regeneration*

Martin Kelly, Ph.D., Professor of Physiology and Pharmacology

*Novel Alzheimer’s disease drugs and their targets*

R. Stephen Lloyd, Ph.D., Professor of Molecular and Medical Genetics

*Development of agonists for the prevention of obesity and obesity-related diseases*

Arthur Vandenbark, Ph.D., Professor of Neurology and Molecular Microbiology & Immunology, Senior Research Career Scientist, VA.

*Novel CD74 decoy peptides for treatment of progressive Multiple Sclerosis*
Strategic Vouchers

Melinda Davis, Ph.D., Associate Professor of Family Medicine

Using Context to Improve Implementation of Evidenced-based Interventions for Colorectal Cancer Screening in Rural Primary Care (Precise CRC)

Nicole Marshall, M.D., Assistant Professor of Obstetrics and Gynecology

Maternal Body Composition Regulates Placental Function and Fetal Growth

Cathy Emeis, Ph.D., C.N.M, Assistant Professor, School of Nursing

CNM Data Repository

Katharine Zuckerman, M.D., M.P.H., F.A.A.P., Associate Professor of Pediatrics

REAL-START: Early Access to Care

Andrew Riley, Ph.D., Assistant Professor of Pediatrics

Parent and Provider Perceptions of Well-Child Visits

Michelle Cameron, M.D., P.T., M.C.R., Associate Professor of Neurology

LA Crossover Trial

Cydni Williams, M.D., Assistant Professor of Pediatrics

Neurocognitive Outcomes in Pediatric mTBI

Laurie King, Ph.D., P.T., M.C.R., Associate Professor of Neurology

VAPORHCS/OHSU J: Can Early Initiation of Rehabilitation with Wearable Sensor Technology Improve Outcomes?

Timeline of concussion care: A retrospective chart review

Sarah Feldstein Ewing, PhD., Professor of Psychiatry

ROAM

Martina Mancini, Ph.D., Assistant Professor of Neurology

Walking automaticity in PD

Pathways to Independence

Miranda Lim, M.D., Ph.D., Staff Physician, Portland VA, and Assistant Professor, Departments of Neurology, Medicine, and Behavioral Neuroscience

A Feasibility Study of BCAA dietary supplementation in Veterans with TBI

Community Research Coalition Grants

Venus Fromwiller, North Coast Coalition

Get your rear in gear: A community-based colorectal cancer screening campaign

Stephanie Machado, South Coast Coalition

Exploring risk factors and trends associated with low birth weight in Klamath County

Florence Pourtal-Stevens, South Coast Coalition

Collection of feasibility data on existing obesity prevention programs and built environments in Coos County

Gracie Smith, North Coast Coalition

The Fitbit wellness program

Novel Research Methodology Grants

Yiyi Chen, Ph.D., Assistant Professor of Biostatistics, Knight Cancer Institute

A Novel Bayesian Adaptive Clinical Trial Design to Determine Optimal Timing of Pin Removal for SCH Fractures in Children

Julie Saugstad, Ph.D., Professor of Anesthesiology and Perioperative Medicine, Professor of Molecular and Medical Genetics

Development and Dissemination of Criteria for CSF MicroRNA RT-qPCR Studies

Guanming Wu, Ph.D., Assistant Professor of Medical Informatics & Clinical Epidemiology

A Novel Probabilistic Graphical Model-based Pathway Analysis Approach of Differential Omics Data Sets
Catalyst
Joshi Alumkal, M.D., Associate Professor, Knight Cancer Institute
*Bromodomain Inhibition for The Treatment Of Lethal Prostate Cancer*
Willi Horner-Johnson, Ph.D., Associate Professor, Institute on Development and Disability, School of Medicine
*Reproductive Health of Women with Disabilities Initiative*
Stephen Lloyd, Ph.D., Professor, Oregon Institute of Occupational Health Sciences
*DNA Glycosylases: Novel Targets for Small Molecule-induced Synthetic Lethality*
William Messer, M.D., Ph.D., Assistant Professor of Medicine
*Long-term DENV immunity in a human cohort*
Alison Hill, Ph.D., Associate Professor, Computer Science & Electrical Engineering
*An automated, multi-modal tool for quantifying the autism phenotype*
Sandra Rugonyi, Ph.D., Associate Professor, Biomedical Engineering
*Predicting treatment outcomes of infants with cyanotic heart disease using computational modeling*
Takahiro Tsujikawa, M.D., Ph.D., Adjunct Assistant Professor, Cell, Developmental & Cancer Biology
*Practical and cost-effective multiplexed immunohistochemistry for comprehensive immune complexity analysis of solid tumors*

Nicole Weiskopf, Ph.D., Assistant Professor of Medical Informatics & Clinical Epidemiology
*Development and evaluation of an EHR data quality assessment tool*
Craig Dorrell, Ph.D., Oregon Stem Cell Center, Department of Pediatrics
*Assessment of anti-cancer drugs against patient-specific pancreatic cancer organoid cultures*
Peter Jacobs, Ph.D., Assistant Professor, Biomedical Engineering
*iPancreas: Internet based on-demand artificial pancreas app-generator to accelerate clinical trials research*

Participant & Clinical Interactions (PCI)
Rahel Nardos, M.D., Adjunct Assistant Professor of Obstetrics and Gynecology
*Urinary Microbiomes: Do they play a role in Urgency Urinary Incontinence?*
Elise Erickson, Ph.D., C.N.M., Assistant Professor, School of Nursing
*Oxytocin Receptor and Postpartum Outcomes*
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Report Produced by the OCTRI Office of Research Impact

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