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Innovation Advisory Committee Meeting

Monday, March 21 | 12 – 1:15 p.m. | MRB 310

Agenda

PHASE I SMALL BUSINESS TECHNOLOGY TRANSFER GRANT Awardee

~The National Science Foundation~

David Farrell, Ph.D., Martin Schreiber, M.D. and David Eastman, MS

Grant recipients and Department of Surgery faculty David Farrell, Ph.D., Martin Schreiber, M.D. and David Eastman, MS discuss the research and development of their design for a fast-acting hemostatic gauze for hemorrhage prevention.

ENTREPRENEUR-IN-RESIDENCE (EIR) PROGRAM

Richard (Dick) Rylander, M.B.A. and Robert (Bob) Masterson, Ph.D.

EIRs Dick Rylander, M.B.A. and Bob Masterson, Ph.D. discuss the program, its purpose and how they can bring your ideas for life science and healthcare-related products and services to commercial reality.
TRAUMA IS THE LEADING CAUSE OF DEATH for all persons between the ages of 1 and 44 years. Despite the availability of hemostatic dressings such as Combat Gauze, hemorrhage still accounts for 80 percent of early trauma deaths. Clearly, there is a pressing need for more rapidly acting and effective hemostatic agents for use in trauma. Our preliminary data in a swine hemorrhage model shows that a prototype recombinant tissue factor-impregnated gauze dressing, trademarked “GammaTF,” can cause complete hemostasis of a femoral artery puncture wound in two minutes. Dr. David Farrell and Dr. Martin Schreiber have received a Phase I Small Business Technology Transfer grant from the National Science Foundation through Dr. Farrell’s company, Gamma Therapeutics. This grant will allow them to optimize the amount of tissue factor in the gauze to achieve rapid hemostasis in this swine injury model, and compare blood loss and secondary outcomes between Combat Gauze, GammaTF, and Kerlix gauze using this model.

DAVID FARRELL, PH.D., OHSU Professor of Medicine, is the founder and Chief Scientific Officer of Gamma Therapeutics. He has 31 years of experience in the field of blood coagulation research, with 17 of those years as a Principal Investigator. Dr. Farrell graduated with a BS in Biochemistry from UCLA and completed his Ph.D. in Biological Sciences at the University of California, Irvine. Prior to his arrival at OHSU, he was Assistant Professor of Biochemistry and Molecular Biology at Pennsylvania State University College of Medicine. Dr. Farrell is also the former Chair of the SBIR grants study section for the National Institutes of Health.

MARTIN SCHREIBER, M.D.’s special areas of interest are trauma surgery and surgical critical care. He received his medical degree in 1988 from Case Western Reserve University in Cleveland, Ohio. Dr. Schreiber completed his internship at Madigan Army Medical Center in Fort Lewis, Wash., and his residency training at the University of Washington in Seattle. His trauma and critical care fellowship was completed at the University of Washington.

DAVID F. EASTMAN, MS is Chief Executive Officer for Gamma Therapeutics and the former CEO of Yecuris Corporation. He has 25 years of experience in developing biotechnology and medical device go-to-market strategies, business development, strategic relationships and venture funding with leading medical companies such as Becton Dickinson, Cordis Dow Medical, Fresenius and 24 medical start-ups. David received his master’s degree in marketing from the University of Oregon and UCLA.
ENTREPRENEUR-IN-RESIDENCE (EIR) PROGRAM
Richard (Dick) Rylander, MBA and Robert (Bob) Masterson, Ph.D.

MOVING IDEAS FROM CONCEPT TO REALITY can be a long and difficult road. Finally seeing people benefit from your idea is both professionally and personally fulfilling and may be financially rewarding as well.

Developing your idea, creating prototypes, raising money (through grants or investors), negotiating the regulatory path, assessing the market opportunity, identifying potential competitors and defining your unique value proposition and ultimately commercializing it is a different set of skills and knowledge than most medical personnel gain in their schooling, training and day-to-day work. Who do you turn to in order to help you deal with the myriad of challenges?

In September 2015, OHSU and the Tech Transfer Group added a new service: Entrepreneurs-in-Residence. Their first EIRs, Bob Masterson and Dick Rylander, bring decades worth of experience in the drug, device, diagnostics and digital industries. EIRs are tasked with finding ways to assist existing and new start-ups. They evaluate and execute the creation and development efforts that will bring life science and healthcare-related products and services to commercial reality.

DICK RYLANDER, M.B.A.
rylander@ohsu.edu
650 759-7107
LinkedIn profile: bit.ly/1R8Lb6g

Dick has over 40 years of experience in pharmaceutical and biotech covering a wide range of areas including: sales, management, marketing, training, operations, market research and IT to name a few. His ground breaking work creating the specialty distributions systems for Tracleer® and Zavesca® became the basis for the FDA’s REMS program. He is also an inventor and patent holder. His device development work in diabetes combined several technologies for a unique product.

Having launched several Orphan drugs Dick is well versed in identifying unique market niche’s as well as dealing with managed care, pricing, reimbursement, Medicare and Medicaid. He has also created call center support systems including a unique software system for managing high risk patients. He has been involved in multiple start-ups and has consulted for companies evaluating new products. He has extensive experience in contract negotiation and management, performance review systems and incentive planning.

FINDING THE RIGHT PATH ONLY HAPPENS IF YOU:
1. Define what success is
2. Find the people
3. Raise enough money
4. Fill a commercial need
5. Have a great business plan
6. Pursue with passion

BOB MASTERSON, PH.D.
masterro@ohsu.edu
206 432-2848
www.linkedin.com/in/robertvmasterson

Bob’s cultivation of innovative ideas has led to two life science start-ups and multiple biotechnology and consumer products. His entrepreneurial expertise spans product idea generation, development, and commercialization; start-up business models and leadership; and presentations and messaging for investors to secure angel and venture capital backing.

Under his leadership as founder, CEO, and CSO of Tessera Diagnostics, the company attracted millions in funding to explore cancer diagnostics (now Onconome, Inc.). In 2006, he co-founded and served as CEO of medical device company Prevencio, Inc., advancing its technology through the development stage. He is currently leading the company’s commercialization and business development activities.

...Masterson bio continued on page 4
Bob earned a Bachelor of Science in Microbiology from the University of Washington and a Ph.D. in Molecular, Cellular and Developmental Biology from Iowa State University. A postdoctoral fellow at the Max Planck Institute in Cologne, Germany, he received a rare promotion to Group Leader, directing a molecular and cellular research program.

Giving back to the Northwest life science community aligns seamlessly with his past history of collaborating with fellow scientists in basic research, and in encouraging fellow entrepreneurs to commercialize applied research. Robert has been a member of the Washington State Biotechnology & Biomedical Association (WBBA) since 1994.

The Biomedical Innovation Program is designed to accelerate innovative pilot projects that address significant healthcare problems. The BIP is a collaboration between OCTRI and Technology Transfer & Business Development, and funding support for the BIP comes in part from the Oregon Translational Research & Development Institute.

2016 BIP Awardees

**AN IMPROVED ENTERAL ACCESS DEVICE FOR SURGICAL PATIENTS**

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

Our project proposes to significantly improve the safety and cost of current jejunal feeding access devices used in gastrointestinal surgery. Such devices are used worldwide to allow patients who cannot take oral intake to receive hydration, nutrition and medicines. Commonly, this process involves placement of four independent T-fasteners to fix a segment of bowel (usually the jejunum) to the inside of the abdominal wall. A flexible feeding tube is then inserted through the abdominal wall and through this fixed area into the lumen of the bowel. However, various problems have been identified with this technique and devices, especially in obese patients. The fasteners have broken and necessitated surgical intervention to salvage the jejunostomy, the fixation devices cause pain and have also promoted skin infections at the jejunostomy site. These complications lead to poor patient outcomes and increased healthcare costs. Our current method of jejunostomy placement takes over 25 minutes of expensive operating room. Our novel product will improve upon the current system and enhance the stability and safety of the device.

Summer Innovation Interns **Younes Jahangiri, M.D. and Niloy Ghosh, B.S.E., B.A.** worked in collaboration with Dr. James Dolan toward product and technology development and acquisition of grant funding.
“The Biomedical Innovation Program meets a critical need at OHSU by funding promising early stage and potentially marketable technologies,” said OCTRI Director David Ellison, M.D. “This funding, along with project management and mentorship, helps move the needle substantially, to put these technologies in the best possible position for commercialization where they can ultimately improve patient outcomes. We are very excited to fund these new technologies for 2016, and look forward to working closely with the investigators.”

Program

the movement of healthcare technologies from academia to the marketplace. In 2016, OCTRI will fund three collaborative, innovative pilot projects that address significant healthcare problems. The BIP is a collaboration between OCTRI and Technology Transfer & Business Development, and funding support for and Development Institute.

BLOOD VOLUME DETERMINATION USING AN INTRAVENOUS OPTICAL FIBER

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

Accurate blood volume determination is essential for case management in critical care as well as for patient evaluation throughout chronic disease states such as heart disease. However, the current methods of objective blood volume assessment are time-consuming, involve exposure of patients to radioactive substances, and require special licensing and handling of these radioactive substances. For these reasons, total blood volume determination occurs rarely and mostly in the domain of large medical research institutions. As a result, common clinical practice relies upon indirect clinical indicators of blood volume (e.g. heart rate, blood pressure, hematocrit, and hemoglobin) even though these may yield conflicting or misleading information. To improve the patient care, we are developing a prototype point-of-care analyzer to determine total blood volume within a few minutes without blood draws, radioactive substances, or outside laboratory processing. The rapid acquisition of patient blood volume will allow clinicians to utilize this information for immediate decision making as well as enable progressive monitoring of blood volume through therapeutic interventions. This technology promises to deliver a safe, reliable point-of-care device at a low cost that will take objective blood volume assessment from the domain of large medical research facilities to the front lines of clinical practice.

NOVEL TARGETED MRI-GUIDED PROSTATE BIOPSY DEVICE

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

Approximately one million prostate biopsies are performed every year in the U.S., typically after a screening prostatic specific antigen (PSA) level or digital rectal examination is considered abnormal, and about 20% are positive. The current standard-of-care, ultrasound-guided biopsy, often misses cancer or underestimates cancer aggressiveness. Substantial evidence from multiple centers indicates MRI-targeted biopsy can transform baseline cancer evaluation, but this requires two distinct procedures for the patient (MRI followed by biopsy). We propose to develop a device combining a novel, targeted endorectal biopsy template with a fully incorporated coil for MRI signal reception. The product allows an entirely new “single stop” pathway for combined diagnostic prostate MRI and MRI-targeted biopsy. No such device is currently available. During the initial phase, we will use the BIP funding to develop a proof-of-concept device and plan to contemporaneously file for patent protection. Given that prostate cancer is a well-funded disease topic (over $1 billion in NIH funding, in the last four years) and with an abundance of research to build on, moving this device from proof-of-concept to bedside is possible within a five-year time frame.
Introducing Joie Eckert
Department of Surgery Grant and Contract Coordinator

Joie Eckert was born and raised in Allentown, Pennsylvania. She moved to the San Francisco Bay area in 2000 where she managed a distribution center that specialized in sports/orthopedic bracing and mastectomy products for six years. In 2006 she was recruited to Stanford University in the Institute for Stem Cell Biology and Regenerative Medicine as a Grant Coordinator. Her work at Stanford covered both pre- and post-award activities which included proposal preparation, policy interpretation, budgeting, account management, review and approval of expenditures on sponsored projects, management of labor distribution, and allocation of core service expenses.

In 2013, Joie moved to Tampa, Florida where she was hired at the University of South Florida as a Sponsored Research Administrator in the central grant and contract office. In this role, Joie developed her skills further in conducting contract negotiations, internal compliance oversight and technology transfer in conjunction with the basic role of reviewing, submitting and executing grants and contracts on behalf of the University.

Now serving as the OHSU Department of Surgery Grants and Contracts Coordinator, Joie’s role is to provide assistance with preparation of grant applications, as well as interpret and implement the policies and guidelines of the Department, the University and external sponsors in regards to sponsored projects. She can assist in locating funding opportunities for those who are interested in applying for funding or who have specific projects in mind. She also helps to prepare, edit and review documents, provide guidance of the OHSU systems and help with IRB and IACUC protocol submissions.

Joie’s 10 years of research administration experience and her previous roles in both a departmental and central office environment enable her to fully support the versatile needs of the research community within the OHSU Department of Surgery.

Joie Eckert
503 494-3454
eckerjo@ohsu.edu

Upcoming RFA Due Dates:

APRIL 1 | OCTRI CATALYST AWARD:
This year, Catalyst funds will support the efforts of investigators to develop and disseminate consequential, novel research methodology.

APRIL 14 | BIP DRUG DISCOVERY/THERAPEUTICS TRACK:
Receive funding for drug discovery platforms and therapeutic technology projects through the Biomedical Innovation Program.

Application details at www.ohsu.edu/xd/research/centers-institutes/octri/funding/

RECEIVE WEEKLY FUNDING ALERTS
Email funding@ohsu.edu and request to be added to the mailing list
Portland State University Business Strategy Capstone Program

Team up with PSU Senior Business Students for Free Consulting Services

In the fall of 2015, vascular surgeon Greg Landry, M.D. partnered with a team of 12 PSU senior business students for an 11-week consultancy-modeled Capstone Program, during which time the team analyzed the market for Dr. Landry's remote endarterectomy device.

Interested in partnering together with PSU students for a similar project? Here's what you need to know.

BA 495 Program in a Nutshell

PSU's Business Strategy (BA 495) Capstone Program is an intense 11-week project (Summer Term is 8 weeks) that is offered only to senior business students (between 700-750 business students annually) every term (summer, fall, winter, and spring).

Since the program’s inception in 2011 we have served over 250 clients. According to the clients who have participated, the quality of the business services they have received from student project teams has been outstanding. We know this because of our extensive post-project client experience surveys (over 90 percent response rate) where clients consistently rate meeting their project goals (84 percent), quality of project (81 percent), participation in the program again (94 percent), and recommending our program to another client (90 percent).

Most importantly all services we provide are entirely free of charge despite clients rating the value of the services they receive at $3,200.

We model the program as a consultancy where student teams (usually 10-12 students) representing seven business concentrations (marketing, advertising, finance, accounting, HR, supply logistics, management) work on a project that is defined by the client. They derive value through application of their academic course work (taken over the previous four years) where they “test” their core business competencies under “real-world” project conditions with a “real-world” client. We essentially want students to experience and respond to the same risks and uncertainties that their client faces on a daily basis. The students are not completely on their own, however, as the projects take place under the guidance of the course instructor who often has professional consulting experience and can address the issues that typically occur with consultant projects.

We strongly believe that our projects are successful due in part to our diverse student-body, which is unusual for most senior college students. The average age of our senior business students is nearly 28 (ranging from early 20s to late 50s). This is about six years older than typical college seniors. Further, nearly 70 percent of our students work, most full-time. What this means is that our students bring to the classroom and our projects a wide range of experience (professional, personal, social, etc.) and maturity that can only enhance the project’s value.

...continued on page 8
Continued: BA 495 Program in a Nutshell

Program Highlights

NUMBER OF CLIENTS VARIES BY TERM AND NUMBER OF SECTIONS OFFERED

- Fall term: 12-18 clients
- Winter term: 12-18 clients
- Spring term: 24-30 clients
- Summer term: 12-15 clients

CLIENT APPLICATION SUBMISSION INCLUDES:

- Description of business/organization
- Description of project services requested

CLIENT OPTION FOR NON-DISCLOSURE AGREEMENT

- An NDA protects client from disclosure of confidential and sensitive information by student team and instructor

CLIENT SELECTION PROCESS

- Application review and selection occurs approximately one month before each term begins
- When selecting clients, our goal is to select as diverse a range of clients/projects as possible. No one criterion will exclude a potential client. The following are qualitative guidelines to guide client selection:
  - Prioritize under served client population: inability to afford professional business consulting services, certified W/MBE
  - Clients who can afford professional consulting services or may not be a W/MBE may still participate based upon the other selection criteria
  - Corporate organization: unincorporated, for-profit, NPO, public agency, public authority, etc.
  - Business cycle: range from start-up to a business/organization seeking an exit strategy
  - Size: employees, number locations, revenue, etc.
  - Specific services requested by applicant
  - Expertise of instructor (professional and/or scholarly)

PROJECT PROCESS

- Team size: though team size is 10-12 students, the team is organized with a Project Coordinator who is the client’s single point of contact
- Project Scope of Work (SOW): project team works with the client to prepare SOW based on the client’s goals and term length
- The SOW will focus on immediate next steps that need to be taken based on client’s current position and ultimate goal(s)
- The SOW will identify specific tasks to be accomplished, deliverables (products) to be sent to client, and a schedule for completing the project

CHECK OUT THE FOLLOWING VIDEO LINKS OF CLIENTS FOR WHOM STUDENTS HAVE COMPLETED PROJECTS:

- capstone.unst.pdx.edu/courses/business-strategy-ba-495-for-sba-majors
- pdx.edu/insidepdx/textbooks-meet-reality
CLIENT EXPECTATIONS

- Communication Strategy: client and team agree to a communication strategy that fits the client’s schedule and time
- Types of client engagement:
  - Respond to email correspondence from the Project Coordinator
  - Review draft documents (very few) including draft final report.
  - Meet with students (by conference call and/or in-person)
  - Student team to visit the client’s place of work
  - Attend in-class presentations up to five times (the average is about three):
    - Each in-class attendance is approximately 45 minutes
    - First presentation (takes place second class of term): client presents to students what they do and what they are seeking from the student team.
    - Second – fifth presentations are made by the student team to the client on their work

PROGRESS REPORT

- Client receives weekly emailed progress report from Team based on approved SOW
- Addresses what was accomplished during the previous week and what is anticipated to be accomplished following week

EXAMPLES OF DELIVERABLES/PRODUCTS

- Market Plan
- Advertising strategy
- Finance plan
- Business plan
- Feasibility study
- Accounting set-up
- Supply chain set-up: import/export
- Market entry plan
- Market assessment/forecast
- Product development strategy
- Exit strategy
- Go to market strategy
- Business expansion strategy

Dr. Greg Landry’s student team delivered to him an analysis of potential markets around the world for his remote endarterectomy device

**Domestic Market:** USA and Canada

**Competitive Market:** France, Germany, Japan and the U.K.

**Emerging Market:** Brazil, China and Singapore

Assessment of project outcomes is an important part of our program. We actively seek feedback from clients as a way to improve the program. Data based on statistical analysis from surveying the over 200 clients we have had to date indicates that clients are overwhelmingly satisfied with the project work that the students complete for their client.
<table>
<thead>
<tr>
<th>SPIN-OFF COMPANY</th>
<th>WHAT IT DOES</th>
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<tbody>
<tr>
<td>Yecuris Corp.</td>
<td>Portland-based Yecuris was formed in 2007 to commercialize transgenic mouse technology developed in Grompe’s lab at OHSU. FRG mice are a model of Hereditary Tyrosinemia Type 1, a severe genetic liver disease. The liver of FRG mice can be completely replaced with human liver cells, providing a platform to study human liver function in a small rodent model.</td>
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<tr>
<td>Valliscor</td>
<td>A smart chemical manufacturer of fluorinated building blocks for pharmaceutical and agrochemical industries.</td>
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<tr>
<td>NeuroVia, Inc.</td>
<td>NeuroVia, according to Scanlan, is working to develop sobetirome, a selective thyromimetic agent discovered in Scanlan’s academic lab, for the treatment of X-linked adrenoleukodystrophy (X-ALD), a rare genetic disease that primarily affects pre-adolescent boys and young men with a spectrum of debilitating neurological symptoms and deficits.</td>
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**Markus Grompe, M.D.**
OHSU  
Professor of Pediatrics and Molecular and Medical Genetics, SoM  
Ray Hickey Chair of Pediatric Research and Director of the Papé Family Pediatric Research Institute, DCH  
Director, Oregon Stem Cell Center at OHSU

**Rich G. Carter, Ph.D.**
Oregon State University  
Professor and Chair  
Department of Chemistry

**Thomas Scanlan, Ph.D.**
OHSU  
Professor of Physiology and Pharmacology, SoM  
Director, OHSU Program in Chemical Biology
Recently, the Portland Business Journal highlighted the work of professors-turned-entrepreneurs. This special report included profiles of four academics who helped launch start-ups from within the halls of academia. What follows is a look at the work of three more Oregon professors, all of whom work within the world of medical research.

The Portland Business Journal presents the latest breaking business news from the Portland metro area. Find the journal online at www.bizjournals.com/portland/news

### A Look at Three Oregon Health Care Professors-turned-Entrepreneurs

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<th>CAPITAL RAISED</th>
<th>HOW YOUR WORK TURNED INTO A COMMERCIAL BUSINESS</th>
<th>BIGGEST CHALLENGE TO BEING AN ACADEMIC ENTREPRENEUR</th>
<th>BIGGEST REWARD</th>
</tr>
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<tr>
<td>$2.5 million</td>
<td>“Seed funding was used to hire key employees and move the business into our own facility. The production of FRG mice with highly humanized livers was optimized and early adopter pharmaceutical companies tested the model. Consistent success has resulted in a steady increase of paying customers making our model the industry standard.”</td>
<td>“Investing energy in a business venture can detract from grant writing and other academic activities. Incentives from the University for taking this career risk are minimal. Venture funding in Oregon is poorly developed. No help from state or regional government.”</td>
<td>“1) Creating new family-wage jobs in Oregon ex nihilo (out of nothing). At this point, we have made over 10 well-paying jobs that would otherwise not exist here, or anywhere. 2) Significant acceleration of malaria and hepatitis research that would be impossible without our model.”</td>
</tr>
<tr>
<td>ONAMI GAP grantee, self-funded</td>
<td>“Valliscor was founded by myself and Mike Standen based on ideas from both of us. It was a concept that Mike initially came up with — bromofluoromethane (BFM) — that turned out to be our big success. BFM is a key ingredient in the synthesis of the active ingredient (fluticasone propionate) in Flonase and Advair.”</td>
<td>“Early on, there are headwinds that academics face in entering the business/start-up world. Several people definitely wondered what a chemistry professor was doing as CEO of a start-up. The key is to believe in what you are doing and stay focused on your goals. OSU, ONAMI and Oregon RAIN created a wonderful, supportive environment that helped to make it possible.”</td>
<td>“There is tremendous satisfaction in knowing something we make goes into a drug that really helps improve people’s lives. I still take great pride every time a new shipment goes out or we hire a new employee. I still remember the day that we finally figured out the large-scale commercial process — 6:30 p.m. on a Saturday night.”</td>
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<td>$12.45 million ($1 million seed; $11.45 million series A equity financing)</td>
<td>“My academic lab created a novel thyromimetic drug, sobetiromine, that was able to penetrate into the brain and central nervous system from an orally administered dose. We then studied the basic pharmacology of this drug in biological model systems related to X-ALD and found that the drug acted in a way that could be therapeutically beneficial.”</td>
<td>“First is the challenge of obtaining the funding required for the academic basic science research needed for the initial discovery. Second is knowing if and when an academic project has commercial potential. Third is finding the right people needed to help commercialize the technology.”</td>
<td>“Being a successful academic scientist is a rewarding career. However, translating an academic discovery into something that has the potential to help people, especially people afflicted with a horrible disease like X-ALD, is incredibly rewarding, and difficult — if not impossible — to do in academia.”</td>
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What’s Happening in the Oregon Bioscience Community?

Governor Kate Brown announces grant support for small businesses, potentially boosting biotech

Kate says she “wants small businesses to thrive in Oregon.”

As such, she’s allocated $400,000 toward that end. The Small Business Innovation Research Grant Support Program will provide individual grants of $125,000 to four Oregon companies participating in a companion federal grant program, which is potentially good news for bioscience start-ups.

Several federal agencies, including the National Institutes of Health, provide grants to small businesses for research and development under the Small Business Innovation Research Program (SBIR) and the Small Business Technology Transfer Program.

But those programs leave gaps, and earlier-stage companies are often courted by other states as they consider where to scale. The idea is to leverage federal dollars and prevent the flight of promising companies. SBIR/STTR matching grants are a tool used by 16 other states.

“This support encourages more small businesses to stay and grow in Oregon,” Brown said in a statement announcing the program.

The Oregon Innovation Council will review applications and recommend award recipients. While they could come from a variety of realms, those in the biosciences would be likely candidates.

In 2015, the National Institutes of Health awarded $17.5 million in SBIR grants to 24 Oregon companies. Any company with a phase 2 grant could apply for the state funding. Those companies are past the phase of proving the science and are at the point of producing a commercialization plan, said Jennifer Fox, Ph.D., executive director of the Oregon Translational Research and Development Institute and the OTRADI Bioscience Incubator.

“At a crucial time, that (funding) could make a big difference,” Fox said. “If you’re talking about building out your own space after you leave the incubator, it could be huge. More importantly, it’s that (the state is) listening to the needs of these companies.”

Dennis McNannay, executive director of the Oregon Bioscience Association, said the state support is something he’s been advocating for over the past three years.

“It’s great to see that first step, to get on that path,” McNannay said. “Obviously, we would like to see it grow. We know the demand and the need for these funds will grow. As more research begins to percolate out, the need will only get larger.”
The Oregon Translational Research and Development Institute (OTRADI) was initiated in 2007 with a mission to translate scientific research developed in the state of Oregon's research laboratories into commercial ventures. The word “translational” refers to this task: transforming research into industry.

From university-driven basic research, through grant-awarded funding, to proof-of-concept and industry partnerships, OTRADI provides assistance at all stages to help move medical discoveries through the journey to market or commercialization.

In 2013 OTRADI initiated another “bricks and mortar” phase to provide the support start-up bioscience companies need to be successful. The first phase of the state's only bioscience incubator, OTRADI Bioscience Incubator (OBI), opened in a 13,000 square foot facility on Portland's South Waterfront. Within weeks OBI was 100 percent full and offering lab and office space in addition to professional expertise and guidance to the new bio start-ups. Two Entrepreneurs-in-Residence are on site at OBI, complemented by a BioMentoring program that offers access to free advice from 100 specialists who “have been there before.”

See page 14 for a complete list of OTRADI Bioscience Incubator client companies

WHAT WE OFFER

INDIVIDUAL BIOMENTORING
- Meet with a BioMentor in person, over the phone, or via Skype
- Meetings typically last one hour

WORKSHOPS
Are you an entrepreneur looking for free advice or assistance from an expert?
The OBI regularly hosts workshops and educational seminars geared towards life science
- Pitch-Training
- SBIR/STTR boot-camp
- Lunch and Learn series

PEER MENTOR SPACE AND EVENTS
- The OBI has two conference rooms that can be used for peer-to-peer mentoring
- We host a monthly lunch for Life Science CEOs seeking advice on their start-up ventures from their peers
<table>
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<th>CLIENT COMPANIES</th>
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<td><strong>13therapeutics</strong> is a research and drug development company identifying and characterizing novel anti-inflammatory therapeutics for unmet medical needs with high commercial potential. The company has an innovative platform for isolating novel peptides from immunoregulatory proteins produced by pathogens that impact the immune system. 13therapeutics is moving its lead peptide, P13, forward for the prevention/treatment of noise-induced hearing loss. <a href="http://www.13therapeutics.com/">www.13therapeutics.com</a></td>
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<td><strong>BV Biomed</strong> is a research driven company dedicated to the discovery of novel therapeutic compounds for use in treating inflammatory autoimmune and neuro-degenerative and diseases. We are currently developing two lead compounds based on our research into the role of relaxins in disease. The first of these compounds has applications in treating neurodegenerative diseases, such as multiple sclerosis. <a href="http://www.bvbiomed.com">www.bvbiomed.com</a></td>
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<td><strong>AbSci</strong> developed a proprietary micro-engineered Escherichia coli (E. coli) expression system that will allow for an easily optimizable and scalable production of soluble recombinant monoclonal antibodies, as well as other therapeutic proteins. These therapeutic proteins and antibodies are used in cancer and hormone therapies, as well as autoimmune and blood disorder therapies. <a href="http://www.ab-sci.com">www.ab-sci.com</a></td>
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<td><strong>Costanoan Biotechnologies</strong> is bringing personalized therapeutics to patients with cancer. A development stage biotechnology company recently relocated to Portland, Costanoan is commercializing a unique bionanoparticle platform which produces custom, fully functionalized biocompatible plastic nanoparticles in bacteria. The technology has been used as a vaccine against infectious diseases and is now being targeted at cancer, where its ‘tunability’ can modify the immune system for a patient’s specific tumor type. <a href="http://www.costanoanbio.com">www.costanoanbio.com</a></td>
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<td><strong>Aronora</strong> is engaged in the commercial development of proprietary therapeutics. Rational design of its innovative therapeutic agents is expected to result in products that may be able to reduce the growth of life-threatening blood clots without the detrimental bleeding side effects characterizing antithrombotic drugs. Its products are intended for difficult-to-treat, severe, rapidly progressing, or catastrophic thrombotic blood clotting diseases. <a href="http://www.aronorabio.com">www.aronorabio.com</a></td>
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<td><strong>Oregon-based Floragenex</strong> is a privately owned biotechnology company providing innovative solutions for genomic analysis in the life sciences. Since 2007, Floragenex has delivered impact results in hundreds of genomics studies focused on answering fundamental questions in genetics, ecology, evolutionary biology and biomedical research. Floragenex technologies permit investigation of genomes at unprecedented levels for academic, governmental and commercial researchers worldwide. <a href="http://www.floragenex.com">www.floragenex.com</a></td>
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<td>Company</td>
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<tr>
<td>GammaTherapeutics</td>
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<tr>
<td>Northwest Technology Ventures</td>
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<td>Sonivate Medical (SMI)</td>
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<td>OregonHeart</td>
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<td>Sympano</td>
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<td>Neuralexo</td>
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<td>Senju Pharmaceutical</td>
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<td>TomegaVax Inc.</td>
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The Oregon Translational Research and Development Institute has announced the launch of the first interactive Oregon Bioscience Ecosystem and Map. The comprehensive database and searchable map showcases the breadth and diversity of Oregon’s thriving bioscience industry.

The interactive map is accessible for updates by those not yet represented on the site. The direct link to the map is otradi.org/bioscience-map.

“Oregon’s growing bioscience industry is driving innovations that will save lives and improve healthcare, while at the same time, creating valuable jobs across the state,” said OTRADI executive director Jennifer Fox, Ph.D. “This interactive map is a powerful tool for accelerating the growth and success of Oregon’s bioscience throughout the state. It will function as a resource for companies relocating to Oregon, for investors interested in specific industry sectors, and for companies looking for partnerships or assistance as they grow.”

The launch of the ecosystem map comes on the heels of Oregon Governor Kate Brown’s announcement of a program designed to keep small business in Oregon. The program included a fund of $400,000, to be distributed in grants of $125,000 maximum each. A part of the Small Business Innovation Research Grant Support Program, businesses participating in the Small Business Innovation Research Grant (SBIR) and the Small Business Technology Transfer (STTR) are eligible to apply for funds distributed by the program.

Building on the nearly 200 unique entries, OTRADI will continue to update and evolve the map to Oregon’s bioscience sector as it continues to grow. “The ongoing involvement of partners across the state will help maximize the value of this tool and insure that it accurately represents the state’s expanding bioscience sector,” Dr. Fox added.
How exactly do you form a company at OHSU?

The Office of Technology Transfer and Business Development has developed a resource just for you.

View the 18-page guide at www.ohsu.edu/xd/research/techtransfer
2016 OHSU Startup Symposium - Fireside Chat
Investment trends and capital solutions in the life science sector

Overview

On the evening of Wednesday, March 30th, the office of Technology Transfer & Business Development (TTBD), in partnership with the Department of Surgery, will host a Fireside Chat with regional and national investors. This event serves as a pre-event to the Fourth Annual OHSU Startup Symposium on March 31st. The discussion topic of the Fireside Chat is Investment trends and capital solutions in the life science startup sector.

The goal is to encourage academic and physician scientists, fellows, and students who are interested in investment and innovation, and invite them to this discussion. TTBD will host workshops following the Fireside Chat, which is opened to OHSU faculty and invited guests. Workshop topics will include Starting a Company: Lessons Learned and Angel investors: How They Impact the Entrepreneurial Ecosystem. The evening will conclude with an opportunity to network with other Fireside Chat clinician and investor participants. Food and drinks provided.

Event Details

Wednesday, March 30, 2016
4:30pm - 8:00pm
OHSU Doernbecher Children’s Hospital
Vey Auditorium, 11th floor
700 Southwest Campus Drive. Portland, OR 97239
2016 OHSU Startup Symposium - Fireside Chat
Investment trends and capital solutions in the life science sector

Agenda

4:30pm - 5:00pm  Registration and Networking
5:00pm - 6:00pm  Fireside Chat: Investment Trends and Capital Solutions in the Life Science and Startup Sector
6:00pm - 7:00pm  Workshop #1: Starting a Company: Lessons Learned
                  Workshop #2: Angel Investors: How they Impact the Entrepreneurial Ecosystem
7:00pm - 8:00pm  Refreshments and Networking

Panelists for the Fireside Chat:

Alex de Winter
Director of GE Healthcare Ventures

Leon Chen
Venture Partner at OrbiMed

Bill Kelly
CEO and Co-Founder of ReelIDX
Overview

Oregon Health & Science University will be hosting its Fourth Annual OHSU Startup Symposium on Thursday, March 31, 2016 in the Collaborative Life Sciences Building (CLSB) on the South Waterfront in Portland, Oregon. The event will be convening the region’s most prominent and relevant life science investors, business, and community members to meet, greet, and discuss the most pressing issues in the life science community and healthcare innovation today. This year’s event, focusing on Connecting the Pacific Northwest Life Science Ecosystem, will include early and late stage investors from San Francisco to Vancouver BC.

We are also pleased to announce the President and CEO of GE Healthcare, John L. Flannery, as this year’s keynote speaker. For more information, please visit the 2016 OHSU Startup Symposium webpage.

Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7:30am-8:15am</td>
<td>Breakfast and Registration</td>
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<tr>
<td>8:15am-9:00am</td>
<td>Welcome</td>
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<tr>
<td>9:05am-9:45am</td>
<td>Keynote Speaker - President &amp; CEO of GE Healthcare, John L. Flannery</td>
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<td>9:45am-10:10am</td>
<td>Break</td>
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<tr>
<td>10:15am-11:30am</td>
<td>Corporate VC Panel/Reverse Pitch</td>
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<td>11:30am-12:45pm</td>
<td>Lunch</td>
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<td>12:45pm-2:00pm</td>
<td>OHSU Company Showcase - Sponsored by OTRADI</td>
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<tr>
<td>2:00pm-3:15pm</td>
<td>Investor Panel/Reverse Pitch</td>
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<td>3:15pm-3:40pm</td>
<td>Break</td>
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<tr>
<td>3:45pm-5:00pm</td>
<td>Workshops &amp; Informal 1:1 Meetings</td>
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<tr>
<td>5:00pm-5:10pm</td>
<td>Closing Remarks</td>
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<tr>
<td>5:15pm-7:30pm</td>
<td>Reception &amp; OHSU Company Poster Session - Sponsored by GE Healthcare</td>
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Thank you to our Sponsors!

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GE Healthcare

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Lane Powell

Portland General Electric

OHSU's office of the Senior VP for Research

OHSU & Doernbecher Foundations

WhiteSummers
Upcoming Events

INVENT 2016

*OHSU Innovation and Entrepreneurship Education in the Health and Life Sciences*

Wednesdays, April 6 - May 4 | 5:30 - 7 p.m.

OHSU Collaborative Life Sciences Building

Attendance is free. Registration is required.

KEYNOTE: Brendan Rauw, Vice-President, OHSU Technology Transfer and Business Development | Register

April 6, 5:30 - 7 p.m.

Overview: Concept-to-Launch | Register

April 13, 5:30 - 7 p.m.

Design for Innovation Workshop | Register

April 20, 5:30 - 7 p.m.

Business Model Innovation Workshop, Part I | Register

April 27, 5:30 - 7 p.m.

Business Model Innovation Workshop, Part II | Register

May 4, 5:30 - 7 p.m.

For more information and to register, visit www.ohsu.edu/management

Brendan Rauw, M.B.A.
Vice President, TTBD

INVENT Keynote Speaker | April 6

Brendan Rauw, M.B.A. has recently joined OHSU as Vice President of Technology Transfer and Business Development, a division of OHSU’s research mission that supports technology commercialization, industry collaboration, and entrepreneurship.

Rauw comes to OHSU from UCLA where he served as associate vice chancellor and executive director of entrepreneurship. In this role at UCLA he was responsible for leading a variety of programs designed to advance innovation, entrepreneurship, and the transfer of intellectual property into real-world applications. He also guided the establishment of a separate, nonprofit 501(c)(3) corporation – Westwood Technology Transfer – to oversee technology transfer and industry-sponsored research, and served as the founding CEO.

The Department of Surgery Innovation Program is a proud sponsor of the INVENT lecture series and Fireside Chat
SBIR 101: How to Create a Competitive SBIR Grant Application
Oregon Bioscience Association | David Farrell, Ph.D. | Course Description | Register
**Tuesday, March 29 | 1 – 4 p.m. | OTRADI Incubator | 4640 SW Macadam Ave #200, Portland, OR 97239**

Bio on the Rocks by Oregon Bioscience Association | Register
**Tuesday, March 29 | 6 – 9 p.m. | Punch Bowl Social | 340 SW Morrison St, Portland, OR 97204**

OEN Angel Oregon 2016 | Oregon Entrepreneurs Network (OEN) | Register
**Wednesday, April 13 | 11 a.m. – 5 p.m. | The Gerding Theater | 128 NW 11th Ave, Portland, OR 97209**

PDX Summit IV: The Global Edition | Register
**Monday and Tuesday, May 2 – 3 | Holocene | 1001 SE Morrison St, Portland, OR 97214**

Innovation Advisory Committee Meeting
**Monday, May 16 | 12 – 1:15 p.m. | OHSU Medical Research Building 310**

Faculty Presenters:
Karen Brasel, M.D. (left) and Kelly Haisley, M.D. (right)
“Procedure Feedback Mobile Application for Surgical Residents”

Innovation Partner Presenter:
Trina Voss, TTBD Technology Development Manager
“Copyright and Licensing 101”

Innovation Advisory Committee Meeting
**Monday, August 29 | 12 – 1:15 p.m. | Location TBD**

Innovation Advisory Committee Meeting
**Monday, December 5 | 12 – 1:15 p.m. | Location TBD**
Summer Innovation Interns arrive in June!

Have you ever been frustrated by the limitations of a surgical tool or healthcare technology? Have a fresh idea for improvement? Our innovation interns are passionate about healthcare innovation and here to provide expert support.

The Department of Surgery's Innovation Internship Program is a project-based experience for students with a passion for entrepreneurship and a commitment to improving healthcare through medical technology. Each team consists of an engineer and an M.D. who are partnered with a faculty mentor. Our summer interns will join the OHSU Innovation Program this June - August and are here full-time to partner with YOU.

Contact Sharon Kryger, Department of Surgery Innovation Manager, to discuss your project and interest in working with this year's Summer Intern Team.

krygers@ohsu.edu | tel. 503 494-7477

Innovation Interns Shalini Gautam, Ph.D. and Maksuda Hossain, M.D. are available to support projects now through May 31

Shalini Gautam, Ph.D. gautash@ohsu.edu
Maksuda Hossain, M.D. hossain@ohsu.edu

Our mission is to facilitate, drive and manage the innovation process for busy surgeons
Contact Innovation Manager Sharon G. Kryger, C.C.R.P., C.C.R.A., M.S.
krygers@ohsu.edu | tel. 503 494-7477