

# Oregon Bio 2013: Conference Addendum



## Day One, Track III: Presenting Companies Guide *Profiles and Schedule*

*With special thanks to Evan Eichelberger, this year's  
presenting companies program coordinator.*

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## UbiVac

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UbiVac is a privately held clinical stage immunotherapy company, founded and based in Portland, Oregon, and engaged in the research and development of therapeutic vaccines to combat cancer. UbiVac has licensed platform technologies from three research Institutions in Oregon and is working with the inventors and NCI-trained clinical investigators to rapidly translate and evaluate the effectiveness of these immunotherapy strategies in patients with cancer.

UbiVac's leading platform technology, Autophagosome-enriched DRibble vaccine (DRibbles), having been used in a National Cancer Institute (NCI) funded Phase I clinical trial for non-small cell lung cancer (NSCLC) is now accruing patients to an NCI funded, multi-center Phase II clinical trial for this disease. This comes after preclinical studies demonstrated it to be more effective than other vaccines at inducing tumor regression and increasing survival. The lead DRibble immunotherapy product, DPV-001, contains at least six cancer antigens rated highly by an [NCI panel](#) and agonists for five toll-like receptors (TLRs). UbiVac is currently exploring with their collaborators in the USA and Europe, the potential application of DPV-001 as immunotherapy for colon cancer, head and neck squamous cell carcinomas (HNSCC) and prostate cancer and plans to add two Universities in the Netherland as clinical sites for studies in HNSCC. UbiVac is reaching out to large pharma partners to combine DRibble technology with immune-modulating monoclonal antibodies that should augment efficacy of both agents.

UbiVac has recently received an NCI phase I SBIR to develop a nanotechnology-based vaccine for HPV-induced cancers, including cervical and HPV+ HNSCC. The technology, published by our collaborators in the prestigious *Nature Nanotechnology*, represents an exciting advance in nano-based vaccines. This project is a collaboration between the Portland State University and the Earle A. Chiles Research Institute, and seeks to initiate a phase I clinical trial in 2015.

UbiVac is also working closely with colleagues at OHSU, Thomas Jefferson University and the Earle A. Chiles Research Institute on the development of CMV-based vaccines to eliminate cancer. This strategy utilizes a disabled CMV virus (that is not able to replicate) to deliver cancer antigens and exploits the ability of the CMV virus to induce potent immune responses against its payload.

As platform technologies these therapies can be applied to multiple cancers and infectious diseases and may be combined to increase efficacy. UbiVac is working in collaboration with academic centers to further the development of its technologies in the areas of breast, colon, hepatocellular, cervical, neuroblastoma, prostate, NSCLC and head and neck cancer.

## School of EECS VLSI Research Group

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**Location:** Corvallis, Oregon

**Founded:** 2008

**Employees:** Neil Glover, Vahid Behravan

**Stage of Development:** Public

**Funding:** Accepting all levels of funding as well as corporate collaboration.

**Website:** (<http://eeecs.oregonstate.edu/research/vlsi/>)

Future implantable and external medical electronics are limited antagonistically by both energy-efficiency and robustness. Energy efficiency results in reduced overhead in battery maintenance and smaller form factor, while system robustness is required to guarantee safe and reliable use. We are currently building medical sensors that can adaptively achieve both requirements.

The current device in development is based on a miniature flexible platform that combines a custom System-on-Chip, or SoC, with an array of sensors. The device is similar in size to a stick of chewing gum, and its flexible substrate allows it to be contoured to most parts of the human body. The SoC consists a custom low power analog to digital converter, multiple energy-efficient radios and a low-power digital portion for post processing which will be able to run several useful algorithms such as QRS detection, encryption and power spectrum analysis. A small battery can power the SoC; however it also has the ability to harvest RF energy via one of its radios allowing it to operate entirely battery-less. Some of the sensors that have been integrated into the system include: miniature two lead ECG, pedometer, skin temperature, broad-spectrum UV and CO<sub>2</sub>.



## MedRock

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MedRock was formed to develop and market a pioneering product (HipTrac™) to meet a major unmet medical need among patients undergoing physical therapy (PT) and/or chiropractic treatment of hip osteoarthritis (hip OA). Patients with hip OA are usually on a slow path of physical and functional decline that will eventually lead to the need for hip replacement surgery. During this period, many patients receive conservative treatments to reduce pain, increase mobility and improve overall function. Modern non-pharmacological conservative treatment consists of manual therapy, therapeutic exercise and education. One major component of this conservative treatment is *manual long axis traction* - essentially pulling on the lower leg of the affected hip joint to decompress the hip, relieve pain and "loosen the joint".

Patients will benefit from this treatment in the long term, in combination with an appropriate exercise routine. However, there is growing pressure on both the provider and the patient to move quickly towards discharge from treatment. There are limits on the number of PT or chiropractic visits insurance will reimburse in any one year as well as rising costs to the patient. Currently, there are no products or devices on the market that can replicate this treatment easily, independently and effectively at home.

This is a huge market opportunity as the prevalence of hip OA in US adults is 8%. According to research presented at the 2006 American College of Rheumatology annual meeting, about 25% of Americans can expect to develop OA of the hip during their lifetime. The healthcare costs associated with the pain and substantially decreased mobility experienced by many hip OA patients are huge. HipTrac™ is a durable, lightweight, and ergonomically efficient device developed to address this major market need. MedRock launched the HipTrac™ in late June, 2013 at the American Physical Therapy Association annual conference and received numerous patient testimonials since that time.



## AbSci, LLC

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**Location:** OTRADI Bioscience Incubator

**Founded:** August 2011

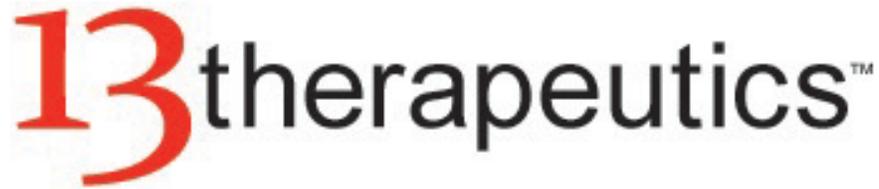
**Employees:** 7

**Stage of Development:** Product testing

**Website:** [www.ab-sci.com](http://www.ab-sci.com)

AbSci, LLC has developed a proprietary bioengineered *Escherichia coli* (*E. coli*) expression system that allows for easily optimizable and scalable production of soluble recombinant antibodies and other proteins. Our game-changing core technology allows proteins (including antibodies and enzymes) to be produced at a fraction of their current cost, without any corresponding loss in performance characteristics. These proteins and antibodies are used in a wide variety of applications, such as cancer and hormone therapies, biofuels, agriculture, industrial manufacturing, and others.

There is an urgent need to reduce the cost while increasing the yield in producing antibodies and other recombinant proteins. The major hurdle for conversion from expensive mammalian expression systems to simpler, less expensive bacterial protein expression systems is the formation of inclusion bodies. Inclusion bodies markedly reduce the quantity and quality of the recombinant protein produced in bacteria, and thus increases the cost of producing these much-needed proteins. New bioengineering methods are needed to circumvent this problem. AbSci has created a uniquely engineered, proprietary *E. coli*-based expression system that eliminates the formation of inclusion bodies altogether, while being robust and flexible enough to produce a wide variety of soluble proteins and antibodies.



## 13therapeutics

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**Location:** OTRADI Bioscience Incubator, Portland, OR

**Founded:** 2009

**Stage of Development:** Pre-clinical

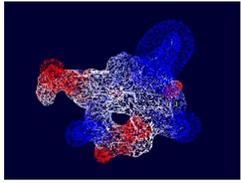
**Funding:** Currently funded by NIH-SBIR grants (~\$7M). Seeking investment and/or partnerships to move lead peptide into clinical trials

**Website:** [www.13therapeutics.com](http://www.13therapeutics.com)

13therapeutics is a research and drug development company identifying and characterizing novel anti-inflammatory peptide 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, which impact the immune system. 13therapeutics spun out of the Oregon Health and Science University (OHSU) and has exclusively licensed peptides on a worldwide basis. Numerous patents have been issued that protect both the composition of the peptides and their use in all inflammatory conditions involving Toll Like Receptor (TLR) signaling. The company is capable of performing all *in vitro* testing in house and subcontracts with OHSU and other academic institutions for animal model testing.

The Company's lead peptide, **P13**, has application in treating multiple inflammatory diseases. **P13** is postulated to have several competitive advantages over current anti-inflammatory therapeutics, including a unique targeting mechanism (inhibition of intracellular TLR signaling), enhanced safety (based on initial studies), oral and topical bioavailability, ease of manufacturing, and low COGS.

The Company is initially focusing **P13** as a topical (ear drop) treatment for Auditory Disorders. **P13** has shown pre-clinical efficacy in murine models of Noise Induced Hearing Loss, Age Related Hearing Loss, and Otitis Media with Effusion (OME). Fifteen percent (26 million) of people in the US between the ages of 20 and 69 have Noise Induced Hearing Loss, which can result from a variety of noise exposures including loud music, military combat, and work environments. Worldwide over 200 million people have an Age Related Hearing Loss with resulting high frequency threshold shifts and associated reductions in speech perception. Over 2 million cases of OME occur each year in the U.S. and can lead to hearing loss, delayed speech and language development, recurrent infections, and often result in costly ear tubes. An effective therapeutic like **P13** has the potential to generate over \$1 billion in worldwide annual sales.



# REDONO LLC

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## Redono, LLC

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**Location:** Central Point, Oregon

**Founded:** 2008

**Employees:** 2

**Stage of Development:** Angel or Venture Capital

**Funding:** First round investment or grant

Redono founders Roy Garvin, who has been actively involved in multiple sclerosis (MS) research for over 30 years and Alasdair Burns, entrepreneur, cofounder and CEO of the laboratory products company Microstein, share a common interest in developing novel treatments for MS. An inflammatory, immune mediated, neuro-degenerative disease of the central nervous system.

The focus of our research has been the modulation of acute and sub-acute inflammation in MS. With special emphasis on the role of sex hormones on inflammation, course and severity of disease. Recent results have identified abnormalities in the structure and function of the sex hormone, relaxin. These changes alter the receptor binding ability of relaxin in MS. Since relaxin is an important modulator of both inflammation and the immune system, these changes highlight a role for relaxin in MS.

Using relaxin alone or in combination with other therapies could provide a novel treatment for the disease. Reducing inflammation and modulating the immune system to slow or halt progression of the disease. In addition, administration of high dose relaxin during acute inflammatory episodes in MS would reduce inflammation and modulate the immune system. Leading to a decrease in symptoms and long-term disability.

Redono has filed a PCT for the use of relaxin in MS and has obtained an option on a relaxin like small molecule developed at the NIH. And engaged with Onarach Ltd., Dundee, Scotland to oversee a clinical trial of relaxin or the relaxin like small molecule to treat acute exacerbations in MS. The Edinburgh Royal Infirmary has agreed to conduct the study onsite. And Dr. Sam Yue of the Minn. Pain Clinic is providing recombinant relaxin for the study.



## JettStream

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**Location:** Bend, Oregon

**Founded:** 2008

JettStream is a Bend-based medical device company that has developed a hands-free, mask-free device for efficiently delivering nebulized medication to children with asthma. The company has paired the device with a smartphone application that engages the patients and their caregivers and leverages the information they provide to improve the care and management of children with asthma.

JettStream is working towards partnerships with Oregon stakeholders to target children with persistent asthma who are covered by the Oregon Health Plan, with the goal of achieving improved patient outcomes while reducing healthcare costs in this vulnerable population, through improving the administration of control medication and engaging patients and caregivers to better self-manage the disease. The Affordable Health Care Act of 2010 is forcing changes to the financial structure of healthcare. Pioneering payers (insurance companies) are testing new partnerships directly with innovators, to see how health and economic competitive advantages can best be delivered in capitated environments. Patient engagement and patient outcomes are a key feature of this landscape. JettStream has a system which delivers both engagement and outcome, and is working to develop a new mutually agreed “shared value” payment model with selected payers. The company believes that it can “start narrow” and demonstrate a model that can be replicated across any chronic condition. JettStream is placing its bet on being a national first mover and business model pioneer, and is positioning to partner with pioneering payers and networks. As a national first mover, JettStream believes the major value created for shareholders will be as a pioneer and in its business “knowhow” and pioneering business model.

JettStream has raised \$500,000 in the last year and has been a finalist at 2 venture conferences. Currently the JettPak is in a pilot study that has IRB approval. Soft tooling and V1 of the App have been developed. We are patent pending in the US and have filed our international patents as well.



## Wello, Inc

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**Location:** Portland, OR

**Founded:** March 2012

**Employees:** 15

**Funding:** Internally funded

**Website:** [www.wello.com](http://www.wello.com)

Wello™ is part of, and backed financially by the Cambia Health Solutions family of companies, which brings nearly a century of experience in developing and providing health solutions to consumers. Wello™ puts a powerful retail healthcare application in the consumer's pocket. The application connects to a powerful point of sale solution for providers to give consumers and providers access to the information they need to complete healthcare transactions at the time of service. Our Vision is to bring a mobile retail experience to health care. Our mission: By delivering premier mobile retail solutions for healthcare, Wello will enable consumers with cost and quality information while they shop, compare and pay for healthcare services. Our solutions connect consumers to providers and health plans in new ways to draw down the cost of health care, while realizing benefits for providers related to their cash flow.



## Oregon Systems Infrastructure Research and Information Security Laboratory

**Location:** Department of Computer and Information Science, University of Oregon, Eugene, OR

**Founded:** Fall 2010 by Prof. Kevin Butler

**Researchers:** 1 faculty, 4 PhD students, 3 MS and undergraduates

**Funding:** Looking for collaborators to pursue funding from federal sources (e.g., NSF, NIH, DARPA), industry partnerships, industrial gifts

**Website:** <http://osiris.cs.uoregon.edu>

The Oregon Systems Infrastructure Research and Information Security (OSIRIS) Laboratory is a part of the Department of [Computer and Information Science](#) at the [University of Oregon](#). Founded by Professor Kevin Butler in the Fall of 2010, the OSIRIS Lab's mission is to discover new research methodologies, technologies, and systems that address timely and important issues in securing computer systems and networks. The scope of our work ranges from individual embedded systems to national-scale infrastructure, and from theoretical models to deployed hardware. We pursue collaborative and multidisciplinary research, and our work has appeared in the top journals, conferences, and workshops in security.

Some of the specific recent projects pursued within the OSIRIS lab include investigating security in communications networks and the Internet, cloud computing security, securing the lineage of data, privacy on mobile phones, and security in storage and embedded systems.

The lab has received funding and donations from the National Science Foundation, from whom Prof. Butler received the CAREER award in 2013, as well as the Defense Advanced Research Projects Agency (DARPA), Air Force Research Laboratories (AFRL), MIT Lincoln Laboratories, Battelle, Qualcomm, Microsoft Research, and Ellisys Corporation.



## Biomedical Innovation Program

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**Founded: 2012**

**Projects Awarded: 5**

**Stage of Development: Projects are in Development, Seed and Angel Stage**

**Funding:** We are looking for both funding for our program and funding for our selected projects. The program funding would go to development of projects that are selected by the review committee. The funding for selected projects can be as a sponsored research agreement or a license.

**Website:** [www.ohsu.edu/octri/bip](http://www.ohsu.edu/octri/bip)

### **OHSU Biomedical Innovation Program**

*An overarching goal of the program is to improve patient care and accelerate the delivery of healthcare technology from academia to the marketplace.*

### **Program Objectives & Investment Emphasis:**

- To support the translation of an idea to proof of concept stage and enable the transfer of technology from the academic institution to a commercial entity.
- Follow-on support for product development and commercialization, either as a license or a start up business, is the goal of any project.
- The practical application of research to solve an identifiable clinical problem or clinical unmet need.
- Projects that take advantage of collaborations between clinician scientists and bioengineers.
- Projects likely to lead to commercially relevant translational technologies within a 3-5 year period.

### **Funding Opportunity:**

The Oregon Clinical & Translational Research Institute is now accepting letters of intent to apply for Biomedical Innovation Program funding. This funding mechanism is offered in close collaboration with the School of Medicine Research Roadmap but is open to all OHSU faculty.

**Deadline:** Letters of intent due November 28, 2013

**Amount:** Up to \$40,000 over one year

Critical elements of successful proposals will be a well-developed idea or vision for the end product and collaboration between clinician scientists and bioengineers. The collaboration will help identify a significant clinical problem, an innovative idea for a device to address the problem, bioengineering approaches for device development, and early clinical validation of device effectiveness. For more information please visit the OCTRI funding opportunities page: [www.ohsu.edu/octri/funding](http://www.ohsu.edu/octri/funding)

### **Multidiscipline Scientific Review Committee**

The Oversight Committee will review proposals, make recommendations on funding priority and follow the progress toward product goals and execution. Committee expertise includes that of university faculty, physicians, business development, venture capital and technology transfer.

### **BIOMEDICAL INNOVATION AWARDEES**

OCTRI funded five projects designed to identify and foster creative bioengineering solutions for important health care problems. Well-developed ideas and visions of the end products, as well as collaboration between clinician scientists and bioengineering led to these innovative solutions. Collaboration allows the identification of a significant clinical problem, an innovative idea for a device to address the problem, bioengineering approaches for device development, and early clinical validations of device effectiveness.

Major funding for the Biomedical Innovation Program comes from OCTRI, with supplemental support from the Oregon Translational Research and Development Institute (OTRADI) and in collaboration with OHSU Technology Transfer and Business Development.

**Summer Gibbs** "Nerve-Specific Fluorophores to Guide Nerve-Sparing Prostatectomy"

**Michael Hutchens** "Electronic Device to Prevent Central Line Infections" [Abstract](#)

**Dennis Koop, Andrew Chitty, Amira Al-Uzri** "Designing a Convenient and Precise Device for Home Dried Blood Spot Collection"

**Theresa Koppie, Trevor Levin** "Development of a Urine Based Bladder Cancer Recurrence Diagnostic Using a Genomic Disease Signature"

**Neil Roundy, Rachel Drelinger** "Bio-Absorbable Clip for Watertight Closure of Human Tissues"