



## BioMedic

An NSERC CREATE Training Program in  
Biomedical Technology Innovation  
& Commercialisation

# 3rd Annual BioMedic Networking Event

May 3rd 2012

Life Science Research Institute,  
Dalhousie University

This event is sponsored by:



innovacorp





## **PROGRAM**

### **4.30 Atrium**

Registration  
Meet & Greet

### **5:00 BioNova Boardroom**

Opening Remarks

Stephen Hartlen  
Assistant Vice President (Industry Relations) &  
Executive Director - Industry Liaison and Innovation

BioMedic Program Overview

Dr. Cheryl Kozey  
Director, BioMedic

Dr David Roach  
School of School of Business Administration

Trainee Highlight

Zahra Torbatian,  
PhD Candidate, BioMedic

Guest Speaker

Dr. Kirby Vosburgh—“Two Decades at General  
Electric & Harvard: What I have learned about  
Academic Industrial Collaboration”

Questions

### **6:00 Atrium**

Networking Session & Student Presentations



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### Who We are

BioMedic is a training program in biomedical device innovation funded through a 5-year \$1.6M grant from the NSERC (Natural Sciences and Engineering Research Council of Canada) CREATE program in June 2009. We were the first CREATE program awarded at Dalhousie and we received support from VP Research Office, Faculty of Engineering as well as external support from BioNova and NRC-IRAP (National Research Council-Industrial Research Assistance Program).

**Objective:** to bridge the training gap between innovation and commercialization by developing skills needed to effectively translate novel research into meaningful health care products.

**Outcome:** skilled graduates that will effectively stimulate research, development and economic growth in biomedical devices. Furthermore we want to bridge the gap between academia, industry and commercialization.

The BioMedic program is part of the School of Biomedical Engineering (SBME) at Dalhousie University with our academic partners in the Faculty of Management and strong clinical links to Capital Health District Authority/IWK.



## **BIOMEDICAL ENGINEERING**

*Dalhousie University*

*Technology for Life*  
Faculties of Medicine and Engineering

### **Facts about SBME**

#### **Commercialization activities in last 3.5 years:**

- 22 Invention Disclosures
- 24 Provisional/Full Patent Applications
- 2 Spinout Companies in Halifax

#### **SBME has stimulated growth in expertise in:**

- Biomedical Technology Development and Commercialization
- Protection and Patenting
- Regulatory Framework and Reimbursement Strategies

#### **NSERC CREATE BioMedic offers:**

- Core Training in Biomedical Engineering Theory and Application
- Training in the Business of Medical Technology
- Certificate in Biomedical Entrepreneurship
- Industrial Placements
- Clinical Needs & Mentoring

#### **Awards**

BioNova BioInnovation Challenge; CFIs (2); AIFs (2);  
NSERC ENGAGE; IRAP.

## **Guest Speaker Biographical Sketch**

### **Kirby G. Vosburgh, PhD**

#### **Background/Experience:**

- BS, MS Engineering Physics, (Cornell), PhD (Rutgers) in Applied Physics and Physics; Post-doc at Princeton in Physics. Many years ago.
- GE R&D 1972-2000. Senior Executive; managed large scale laboratories which developed many products, including medical imaging systems.
- Center for Integration of Medicine and Innovative Technology (CIMIT) 2000-2010, Associate Director. Last 5 years as Director of science peer review, project selection and management.
- In 2011, he received the Satava Award for his contributions to Virtual Reality in Medicine

#### **Current Positions (Brigham and Women's Hospital):**

- Lead research teams to increase the clinical impact of image guided approaches. Support and mentor early career investigators.
- Assistant Professor of Radiology, Harvard; full time 10/2010
- Dr. Vosburgh also serves as Associate Director, Advanced Multimodality Image Guidance Operating Room (AMIGO)
- Research Scientist, Massachusetts General Hospital



### **Current Work:**

Dr. Vosburgh's laboratory brings virtual reality approaches to benefit interventional clinicians: surgeons, gastroenterologists, and urologists. His team provides "GPS for the interventionalist" while not requiring complex radiologic equipment in their procedure or operating rooms. To this end, he has participated in over 20 porcine model surgeries and 25 tests in humans as well as being the Principal Investigator responsible for the scientific direction and administrative processes for these studies. A key contribution of his laboratory has been the development of kinematics-based metrics for operator performance. These have been applied to laparoscopic, endoscopic, and urologic surgery, and most recently to performance characterization in diagnostic examinations such as colonoscopy. His laboratory is focused on demonstrating that high tech approaches to interventions provide more effective and efficacious solutions to acute clinical challenges. More info online at [www.ciglab.org](http://www.ciglab.org).

In 2000, Dr. Vosburgh completed a 28 year career as an industrial R&D manager, reaching the Senior Executive Band of GE. As the manager of several GE laboratories, he led the development of advanced IC process technology, electronic materials and components, lighting systems, software technology, and large scale electronic systems, including MR imaging, ultrasound, and related technologies.

# List of BioMedic Presentations (by Lab)

## Microfabrication Lab

Andre Bezanson (MASc Candidate)

A Compact High Frequency Ultrasonic Phased Array

Zahra Torbatian (PhD Candidate)

A High Frequency Ultrasonic Endoscope for Imaging the Auditory System

Helga Ross (Phd Candidate)

Doppler vibrational measurements of guinea pig inner ear invivo with a high-frequency ultrasound probe

### Researchers:

Dr Manohar Bance, Dr Jeremy Brown, Dr Rob Adamson

## Biomaterial Research Group

Arash Momeni (PhD Candidate)

Developing an injectable in-situ-forming calcium polyphosphate system as a hemostasis agent

Patricia Comeau (PhD Candidate)

Novel Fabrication of a Calcium Polyphosphate Delivery Matrix for Treatment of Osteomyelitis and Bone Regeneration

Brett Dickey (MASc Candidate)

The Development & Mechanical Evaluation of a Novel Material for Minimally Invasive Augmentation of Vertebral Bodies

Nancy Kilcup (Phd Candidate)

Novel material for embolotherapeutic treatment of hepatocellular carcinoma

Victoria Dickinson (MASc Candidate)

Biological evaluation of a new compound for vertebroplasty

**Researchers:** Dr Mark Filiaggi, Dr Daniel Boyd

## Anesthesia Research Group

Florentin Wilfart (PhD Candidate)

Innovative Device for CO2 Removal in Anesthesia

**Researchers:** Dr Don Weaver



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## **Airway Mechanics Lab**

Hamed Hanafi (PhD Candidate)

Airway mechanics monitor for patients under ventilation

Lucas Posada (MASC Candidate)

TremoFlo Lung Diagnostics Device

### **Researchers:**

Dr Geoff Maksym

## **Musculoskeletal/Orthopedics Research Group**

Jennifer Hurry (MASC Candidate)

Bone Quality Attributes and Knee Implant Stability

David Konadu (PhD Candidate)

An Insight into implant failure using Inducible displacement and gait analysis

Andrew Allan (MASC Candidate)

A Biomechanical Investigation of a Novel Implant for the Stabilization of Distal Radius Fractures

Kathryn Young (MASC Candidate)

Post-operative functional gait predictions based on intraoperative joint dynamics and surgical factors

Ian Westhaver (MASC Candidate)

Body composition studies using full body laser scanner

Sean Hurley (MASC Candidate)

Neuromuscular & biomechanical assessment of lifting seat devices during a sit-to-stand transfer task

### **Researchers:**

Dr Janie Astephen Wilson, Dr Michael Dunbar,

Dr Cheryl Hubley-Kozey, Dr John Kozey,

Dr James Ellsmere, Dr William Stanish

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## **BioMedic Administration**

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# BioMedic Partners & Stakeholders



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