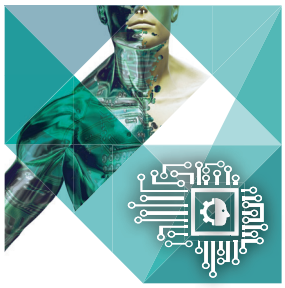
April 6-7, 2016
Washington D.C. USA



Medical Bionics Summit 2016

Designing a New Generation of Medical Devices to Rehabilitate, Restore Function and Cure Disease

Expert Speakers Include:

Dr. Douglas Weber
Program Manager
DARPA

Tim Denison
Technical Fellow
Neuromodulation
Medtronic

Larry Jasinski
CEO
ReWalk Robotics

Chad Bouton
Vice President, Advanced Engineering & Technology
The Feinstein Institute for Medical Research

Magnús Oddsson
Director of R&D, Prosthetics, Research & Development
Össur

Tom Looby
President & CEO
Ekso Bionics

Exhibition Partners:

e-Manufacturing Solutions

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Tel: +1 212 537 5898 | **Email:** info@hansonwade.com Medical Bionics

Researched & Developed By:
hansonwade
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Welcome to Medical Bionics Summit 2016

A unique event dedicated to the design, development and commercialization of medical devices that adapt and augment the human body.

At a time when an increasing range of 'bionic' technologies are being deployed to restore the human body, the existing **medical, technical and regulatory challenges** continue to hamper the widespread adoption and use of these devices.

The Medical Bionics Summit 2016 is your opportunity to join an **interdisciplinary speaker faculty of academics, clinicians, scientists, engineers** and **business leaders.** This event is specifically designed to find collaborative solutions to shared challenges faced across the different technologies including **advanced prosthetics, wearable robotics, prosthetic organs, neural implants, bioelectronics and neuromodulation.**

By **uniting the companies and institutions developing these technologies with the regulators, healthcare payers, patient advocates and the supply chain serving the industry**, this first of its kind summit will offer unrivalled networking, learning and benchmarking opportunities. Join this unique discussion of critical topics and the latest science impacting the design, development and commercialization of these breakthrough medical technologies.

Top 10 Reasons to Attend Medical Bionics Summit 2016

1. **Discover breakthroughs** in materials, components and manufacturing technologies
2. Find **solutions to critical engineering challenges**
3. Explore the **latest science in neurophysiology** to enhance neural interface technologies
4. Meet peers working across a wide range of related disciplines to **find new ways of tackling common challenges**
5. Learn from **successful case studies in neuromodulation**
6. Meet vendors with the capabilities to support your custom design and development requirements
7. Identify **new opportunities for collaboration** on emerging projects
8. Understand **what regulators and healthcare payers need** to see to support a market for your technology
9. Access **new sources of R&D funding** – from federal and private investment
10. Learn to **unlock the commercial potential** in developing bionic technologies

Speakers

Dr. Douglas Weber
Program Manager
DARPA

Magnús Oddsson
Director of R&D, Prosthetics, Research & Development
Össur

Chad Bouton
Vice President, Advanced Engineering & Technology
The Feinstein Institute for Medical Research

Jay Martin
CP, LP, FAAOP
Martin Bionics

Bruce Simon
PhD, Vice President of Research
Electrocore LLC

Tim Swift
Co-Founder
Otherlab Orthotics

Erik D. Engeberg
Ph.D. Assistant Professor, Ocean & Mechanical Engineering
Florida Atlantic University

Chuck Carignan
President & CEO
BionX Medical Technologies

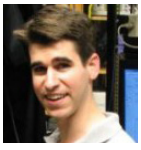
Elizabeth Tyler-Kabara
MD, PhD, Associate Professor of Neurological Surgery & Bioengineering
University of Pittsburgh

Larry Jasinski
CEO
ReWalk Robotics

Peter Bloch
CEO
Bionik Laboratories Corp

Tim Denison
Technical Fellow Neuromodulation
Medtronic

Karen Rommelfanger PhD
Director, Neuroethics, Assistant Professor, Neurology
Emory University



Gene Civillico PhD
Neuroscientist, Center for Devices & Radiological Health
FDA

Tracy Cameron PhD
VP of Clinical & Regulatory Affairs
Neurotechnology Innovations Translator

Stéphane Bédard,
President, CEO & Chairman of the Board
B-TEMIAI

Tom Looby
President & CEO
Ekso Bionics

Sam Kesner, PhD
Principal Engineer & Research Project Manager
Myomo, Inc.

Conference Day One, April 6, 2016

9.00	**Chair's Opening Remarks**	**Elizabeth Tyler-Kabara, MD, PhD,** Associate Professor of Neurological Surgery & Bioengineering, **University of Pittsburgh** **Co-Chair:** **Chad Bouton,** Vice President, Advanced Engineering and Technology, **The Feinstein Institute for Medical Research**
	The Developing Market for Medical Bionics	
9.10	**Update & Insight from DARPA – Advancing Research in Bionic Technologies** • New programs coordinated by DARPA – showcasing current projects • Early results from active programs and implications for future research • Collaboration opportunities - approaching and working with DARPA	**Dr. Douglas Weber**, Program Manager, **DARPA**
9.40	**CDRH & Medical Device Innovation** Premarket review of innovative medical devices • Presubmission process • Early feasibility studies • Clinical study designs Regulatory science support of device innovation • Biological model systems • In silico model systems • The science of patient input • Medical Device Innovation Consortium	**Gene Civillico PhD,** Neuroscientist, Center for Devices & Radiological Health, **FDA** **Michael Hoffmann,** Division of Neurological and Physical Medicine Devices, Center for Devices & Radiological Health, **FDA**
10.10	**Panel Session: What do Stakeholders Need to be Doing to Move Bionic Technologies into the Mainstream?** • Establishing better clinical data to demonstrate the benefits of bionics • Working with regulators to secure approvals • Educating payers and making the case for coverage • Identifying opportunities for collaboration to solve common challenges – in science, regulation, payer acceptance and engineering of devices • Does the growth of the neuromodulation market offer a model for the development and adoption of other technologies?	**Dr. Douglas Weber**, Program Manager, **DARPA** **Larry Jasinski**, CEO, **ReWalk Robotics** **Chuck Carignan**, President & CEO, **BionX Medical Technologies** **Peter Bloch**, CEO, **Bionik Laboratories Corp.**
11.00	**Refreshments & Speed Networking**	
	Design, Materials, Manufacture	
12.00	**Rethinking Exoskeletons – Using High Strength Fabrics & Air to Revolutionize Exoskeleton Design** • Using High Strength Fabrics to develop high specific power exoskeleton infrastructure • Achieving significant cost and weight savings over conventional techniques • Enabling performance benefits not demonstrated by existing devices	**Tim Swift**, Co-Founder, **Otherlab Orthotics**

12.30 **Case Study: NASA Robotics Research Advances Modular Prosthetic Interface Designs**

- Re-designing the man/machine interface – advantages of fabric vs. rigid sockets
- The path from NASA and DoD exoskeleton research to transformational prosthetics
- Implications for the next generation of prosthetics

Jay Martin, CP, LP, FAAOP, **Martin Bionics**

13.00 **Using EMG-controlled Orthotics to Restore Volitional Control & Functional Ability to Paralyzed Upper Limbs.**

- Using myoelectric control of orthotics return volitional movement to people with paralysis
- Myomo proprietary technology – enabling the use of weakened or impaired EMG signals to control a powered device
- Presenting examples of how we use a range of EMG signals to enable movement
- How we solved the challenges of adding multiple DOF of EMG control to our device, allowing a paralyzed arm to both reach and grasp
- Case studies: How this tech has helped patients restore function in their impaired arms, live independently and safely at home, and return to work

Sam Kesner, PhD, Principal Engineer & Research Project Manager, **Myomo, Inc.**

13.30 **Networking Lunch**

14.30 **Case Study: Additional Dexterity with an Artificial Hand Provides Functional Improvements in Activities of Daily Life for Upper-Limb-Absent People**

- Comparing performance of a dextrous (research) artificial hand with commercially available prosthetics
- Evaluating the impact of additional actuated joints for patients' task performance and perception of difficulty
- Results and the implications for the improvement of commercially available prosthetics

Erik D. Engeberg, Ph.D. Assistant Professor, Ocean & Mechanical Engineering, **Florida Atlantic University**

15.00 **Miniaturization Challenges in Bionic Devices**

- Minimizing weight when every gram counts
- The market for miniaturized motors, batteries and components – are vendors able to supply your demand?
- Overcoming power and signalling challenges for miniaturised devices
- Designing for energy efficiency

Chuck Carignan, President & CEO, **BionX Medical Technologies**

15.30 **Refreshments & Networking**

The Ethics of Developing & Deploying Bionic Technologies

16.00 **Examining the Ethical Landscape of Bionic Technologies**

- Cognitive Enhancement and Augmentation: What should the aspirations and limits be to interventions?
- Cybersecurity and Big Data Collection: How do we protect neural privacy?
- Prosthetics and Personal Identity: Can technologies change who you are?
- Safety: What are the physical and nonphysical benefits and harms of short and long-term use of these technologies?
- Beyond the clinical research: Can we serve as responsible stewards of these technologies as they inevitably move into legal and national security domains or even direct-to-consumer and DIY domains?

Session Leader
Karen Rommelfanger PhD, Director, Neuroethics, Assistant Professor, Neurology, **Emory University**

17.30 **Chair's Closing Remarks**

Conference Day Two, April 7, 2016

8.50	**Chair's Opening Remarks**	**Elizabeth Tyler-Kabara, MD, PhD,** Associate Professor of Neurological Surgery & Bioengineering, **University of Pittsburgh** **Co-Chair:** **Chad Bouton,** Vice President, Advanced Engineering & Technology, **The Feinstein Institute for Medical Research**
	Human / Machine Interfaces	

9.10	**Panel Session: Evaluating Advances Human / Machine & Human / Computer Interfaces**
	• Invasive vs. non invasive technologies
	• Breakthroughs in reading neural signals
	• Determining the optimal interface for each application
	• Designing control systems for prosthetics and implants
	  • Balancing safety, autonomy and patient control
	  • Interpreting and incorporating device feedback
		Magnús Oddsson, Director of R&D, Prosthetics, Research & Development, **Össur**
		Chad Bouton, Vice President, Advanced Engineering & Technology, **The Feinstein Institute for Medical Research**
		Tim Denison, Technical Fellow, Neuromodulation, **Medtronic**
		Tom Looby, President & CEO, **Ekso Bionics**

10.30	**Refreshments & Networking**	
11.00	**Case Study: Implanted Electrodes as Proportional Control for Lower Limb Prosthetics** • Using implanted electrodes as the primary means of capturing user intent when making control decisions for lower limb bionic devices • Presenting early results from on-going experiments with this method • How patient control and artificial intelligence control can co-exist without interference	**Magnús Oddsson**, Director of R&D, Prosthetics, Research & Development, **Össur**
	Neuromodulation - the Electroceutical Future	
11.30	**Cracking the Neural Code & the Future of Bioelectronic Medicine** • Decoding brain signals to restore movement in paralyzed patients • Adapting neural decoding to the field of Bioelectronic Medicine for treating a wide variety of diseases and conditions - without drugs	**Chad Bouton**, Vice President, Advanced Engineering & Technology, **The Feinstein Institute for Medical Research**
12.00	**Exploring the Translation of Bi-Directional Brain-Machine Interfacing Technology** • Summary of the state-of-the-art and needs • Future technology concepts motivated by need to better treat neurological conditions • First: using BMI to research and better understand neural dynamics and modulation concepts • Second: future, potentially apply this learning to better therapies, from modulation to prosthesis? • Discussion of the remaining hurdles and possible next steps	**Tim Denison**, Technical Fellow, Neuromodulation, **Medtronic**
12.30	**Networking Lunch**	
13.30	**Getting Neuromodulation Devices to Market: Clinical & Regulatory Considerations** • Insights into successful trial design and execution • Achieving product approval through direct negotiation with regulatory bodies • Understanding and navigating clinical and regulatory concerns specific to neuromodulation	**Tracy Cameron**, PhD, VP of Clinical & Regulatory Affairs, **NIT**

14.00 **The Future of BCI: From Current State of the Art to Clinical Tools**

- Best of EEG, ECoG and Microarray Technology
- Best Interfaces to Assistive Technology
- Technical challenges
- Regulatory challenges
- Payor challenges
- Strategies for Success

Elizabeth Tyler-Kabara, MD, PhD, Associate Professor of Neurological Surgery & Bioengineering, **University of Pittsburgh**

14.30 **Non-Invasive Vagus Nerve Stimulation in the Treatment of Primary Headache: Mechanism of Action & Clinical Results**

- Evidence that nVNS can stimulate action potentials in the cervical vagus nerve
- What we have learned from nVNS in animal models of headache, stroke and bronchoconstriction
- Initial clinical results in asthma, migraine and cluster headache with nVNS
- Future potential application of nVNS in central and peripheral disorders

Bruce Simon, PhD, Vice President of Research, **Electrocore LLC**

15.00 **Refreshments & Networking**

Designing the Future: Towards Widespread Adoption of Bionic Technologies & Therapies

15.30 **Panel Session: Designing a Future for the Industry – Medical Bionics in 2026**

- What key challenges remain to be overcome?
- How can the wider industry collaborate to address these?
- A roadmap from the lab to the clinic... and beyond
- The non-medical potential for bionic technologies

Stéphane Bédard, President, CEO & Chairman of the Board, **B-TEMIA**

Magnús Oddsson, Director of R&D, Prosthetics, Research & Development, **Össur**

Chad Bouton, Vice President, Advanced Engineering & Technology, **The Feinstein Institute for Medical Research**

16.15 **Chair's Closing Remarks**

"The difference between this event and others is that this allows us to exchange ideas with those with whom we share many common challenges."

Abbvie, Past Attendee, Hanson Wade Event

"An excellent forum. I liked the fact that it was an intimate and engaging experience."

Toronto Central Community Care Access Centre, Past Attendee, Hanson Wade Event

Partnership Opportunities

Exhibition Partners

e-Manufacturing Solutions

EOS

EOS is the world's leading technology and quality leader for high-end solutions in the area of additive manufacturing (AM). The company, which was founded in 1989, is a pioneer and global leader in the area of direct metal laser sintering, and also a provider of a leading polymer technology. For these industrial 3D printing processes, EOS offers a modular solutions portfolio that consists of systems, software, materials, as well as technical and AM consulting services

EOS Medical

Additive Manufacturing for Medical Devices

EOS' industrial 3D printing technology allows to produce specialised surgical instruments and medical devices quickly and cost-effectively.

Every person is unique. Therefore, optimal patient care in dentistry, orthopaedics and implantology requires medical products that provide a perfect fit. There is a high demand for one-off components and components produced in small production runs whose materials and manufacturing standards have to fulfil extremely stringent quality requirements.

www.eos.info/en
www.3dmicroprint.com

Become a Commercial Partner

Delegates attend this summit actively seeking outside expertise, collaborators and partners to help them with a range of challenges.

Attendees are actively seeking solutions in:

- 3D printing / additive manufacturing
- Contract Manufacturing
- Design and control software
- Batteries and power
- Motors
- Components
- Microprocessors
- Materials / biomaterials

If you have a product or service that would help this audience, Medical Bionics Summit 2016 is the perfect opportunity to showcase it. By sponsoring or exhibiting you **get access to your market** at a time when they are engaged in evaluating solutions and selecting partners.

Network, make contacts, demonstrate your technology and establish your credibility in the market. We can tailor a sponsorship option that meets your commercial needs. Contact us to discuss your requirements.

Contact

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Commercial Manager

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Email:
sponsor@hansonwade.com

Media Partner

International Neuromodulation Society

The International Neuromodulation Society (INS)

The International Neuromodulation Society (INS) is a non-profit group of clinicians, scientists and engineers dedicated to the scientific development and awareness of neuromodulation - the alteration of nerve activity through the delivery of electrical stimulation or chemical agents to targeted sites of the body. Founded in 1989, INS educates and promotes the field through its conferences, MEDLINE-indexed journal, Neuromodulation: Technology at the Neural Interface, and website. INS has over 2,100 members and 20 regional chapters.

www.neuromodulation.com

*The INS and the Medical Bionics Summit both strive for improved technology to improve patient lives. The INS has not endorsed the Medical Bionics Summit, but applauds the efforts of the summit to advance the field.

Venue & Pricing

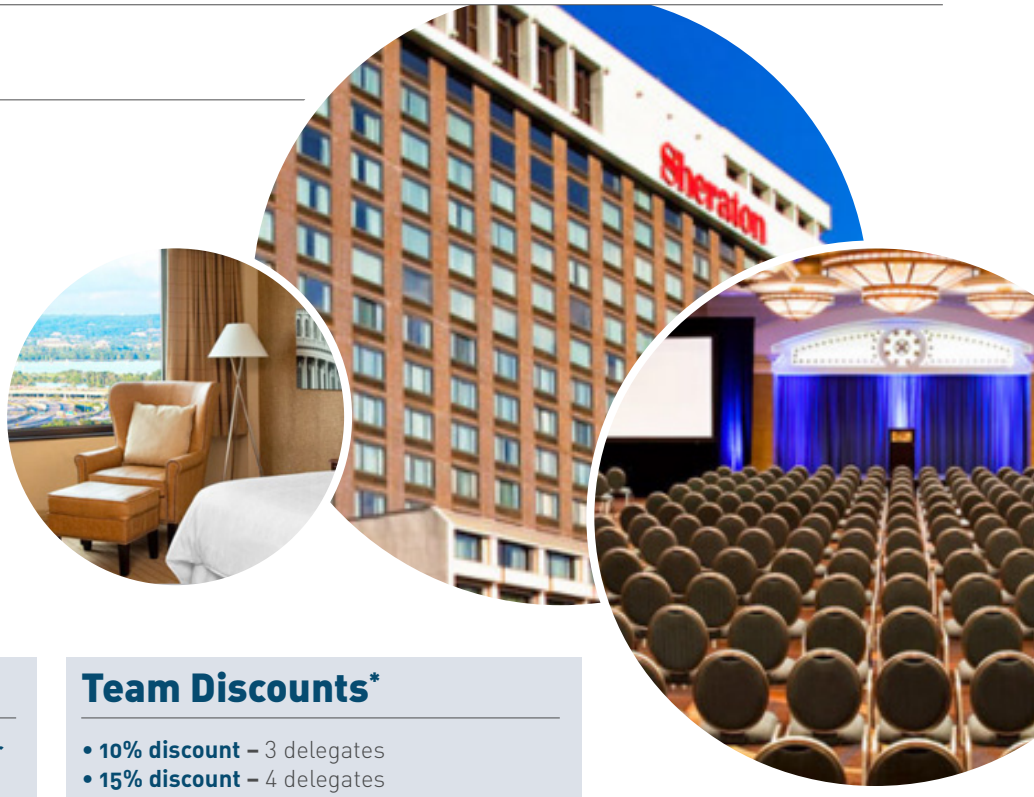
Venue

Sheraton Pentagon City Hotel

900 South Orme Street
Arlington,
Virginia
22204
United States

Tel: +1 703 521 1900

Accommodation: Overnight accommodation is not included in the registration fee.



Register

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Team Discounts*

- **10% discount –** 3 delegates
- **15% discount –** 4 delegates
- **20% discount –** 5 or more delegates

Please note that discounts are only valid when three or more delegates from one company book and pay at the same time.

Event Prices

	Standard Prices
Academics	$900
Medical Device Companies	$1,500
Vendors	$3,000

Terms & Conditions

Full payment is due on registration. Cancellation and Substitution Policy: Cancellations must be received in writing. If the cancellation is received more than 14 days before the conference attendees will receive a full credit to a future conference. Cancellations received 14 days or less (including the fourteenth day) prior to the conference will be liable for the full fee. A substitution from the same organisation can be made at any time.

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