First International Symposium on Innovations in Amputation Surgery and Prosthetic Technologies

May 12-13, 2016

Prentice Women's Hospital, 250 East Superior Street, Chicago, IL

Day 1: Thursday May 12, 2016 (9 AM-5 PM)

	8:00	Registration and Continental Breakfast
10 min	9:00-9:10	Introduction to IASPT & Overview of Content *Presenter*: Todd Kuiken, MD, PhD, Director, Center for Bionic Medicine, Rehabilitation Institute of Chicago

IMPLANTABLE SENSORY MOTOR SYSTEMS

50 min 9:10-10:00

Keynote Speaker: Dustin Tyler, PhD, Associate Professor of Biomedical Engineering at Case Western Reserve University and Associate Director of the Cleveland Advanced Platform Technology Center

Keynote Presentation: ***Long-term, Stable Neural Interfaces Connect Patient to Prosthetic***

All oral platforms will last for 10 minutes (8 minutes for presentation; 2 minutes for Q&A)

Session Moderator: Todd Kuiken, MD, PhD

10 min	10:00-10:10	Decoding Hand Movements via Regenerative Peripheral Nerve Interface (RPNI) *Presenter*: Zachary Irwin, PhD Candidate, University of Michigan
10 min	10:10-10:20	Optogenetics as a Means of Achieving a Non-Invasive Peripheral Nerve Interface with Neuron level specificity *Presenter*: Richard F. Weir, PhD, Director, Biomechatronics Development Laboratory, University of Colorado Denver
20 min	10:20-10:40	Break

NEW ADVANCES FOR AMPUTEES – TECHNOLOGY AND PATIENT DESCRIPTIONS

Session Moderator: Todd Kuiken, MD, PhD

10 min	10:40-10:50	Targeted Muscle Reinnervation & Osseointegration for Enhanced Prosthesis Control *Presenter*: Benjamin Kyle Potter, MD, FACS, Walter Reed National Military Medical Center
10 min	10:50-11:00	Osseointegration for the Transfemoral Amputee *Presenter*: Rickard Brånemark, MD, PhD, MS, Visiting Associate Professor at the Department of Orthopedic Surgery, University of California, San Francisco
10 min	11:00-11:10	Implantable Myoelectric Sensors (IMES) for Transhumeral Amputees *Presenter*: Oskar Aszmann, MD, Associate Professor of Plastic and Reconstructive Surgery at the Medical University of Vienna
10 min	11:10-11:20	Taking Control: A First-in-Man Demonstration of Intuitive Control Using Implantable Myoelectric Sensors (IMES) *Presenter*: Paul Pasquina, MD, Colonel in the United States Army Medical Corps and Chief of the Integrated Department of Orthopaedics and Rehabilitation, Walter Reed National Military Medical Center
10 min	11:20-11:30	Modified Angulation Osteotomy for Improved Prosthetic Suspension and Rotational Control in the Transhumeral Amputee *Presenter*: Jason Souza, MD, LCDR MC USN, Staff Surgeon, Plastic and Reconstructive Surgery, Walter Reed National Military Medical Center
10 min	11:30-11:40	Transfemoral Amputee with Innovative Thighplasty Procedure *Presenter*: Todd Kuiken, MD, PhD, Director, Center for Bionic Medicine, Rehabilitation Institute of Chicago
10 min	11:40-11:50	Control of Powered Lower Extremity Prostheses *Presenter*: Levi Hargrove, PhD, Neural Engineering for Prosthetics & Orthotics Lab, Rehabilitation Institute of Chicago
10 min	11:50-12:00	Targeted Sensory Reinnervation in a Transhumeral Amputee *Presenter*: Ajay Seth, MD, Hand and Upper Extremity Surgeon, Spectrum Orthopaedics
10 min	12:00-12:10	Novel Limb Lengthening Device for Amputees *Presenter*: Todd Kuiken, MD, PhD, Director, Center for Bionic Medicine, Rehabilitation Institute of Chicago

50 min	12:10-1:00	Lunch Break (Lunch Provided)

BREAKOUT SESSIONS & CASE PRESENTATIONS

3 hours 1:00-4:00 Cadaver simulations and patient surgeries will be briefly explained. The attendees will break out into mixed groups and rotate through the following activities:

Patient Demonstrations

- Igor Spetic (Guest of Dustin Tyler) – Mr. Spetic has a transradial amputation and will demonstrate FINE Array Sensory Feedback.
- Johnny Matheny (Guest of Todd Kuiken) – Mr. Matheny has a transhumeral amputation. He received the Targeted Muscle Reinnervation procedure and also uses the Zimmer-Biomet implant system.
- Johnny Maikeh (Guest of Oskar Aszmann) – Mr. Maikeh is a transhumeral amputee who has undergone Targeted Muscle Reinnervation and uses an Implantable Myoelectric Sensors (IMES) system. The patient will demonstrate use of the IMES system.
- Erik Ax (Guest of Rickard Branemark) – Mr. Ax has a transfemoral amputation. He will demonstrate the OPRA osseointegration system.
- James Sides (Guest of Paul Pasquina) – Mr. Sides has a below-elbow amputation and will demonstrate an Implantable Myoelectric Sensors (IMES) system.
- Ernestine Martir (Guest of Todd Kuiken) – Ms. Martir lost her leg above the knee decades ago due to cancer. In 2015, she received a thighplasty procedure that markedly increased her prosthesis function and patient satisfaction.
- Hope Lewellen (Guest of Levi Hargrove) – Demonstration of transfemoral patient with powered leg.
- Melissa Loomis (Guest of Ajay Seth) – TMR/TSR demonstration.

Cadaver Lab with demonstrations on osseointegration, TMR, angulation osteotomy and residual limb lengthening.

- Oskar Aszmann, MD, Associate Professor of Plastic and Reconstructive Surgery at the Medical University of Vienna – TMR for Enhanced Prosthesis Control
- Terrance D. Peabody, MD, Chair, Department of Orthopaedic Surgery, Northwestern University – Cadaver demo of RIC limb lengthener device
- Jason Ko, MD, Assistant Professor, Northwestern University, Division of Plastic and Reconstructive Surgery and Department of Orthopedic Surgery– TMR for Treatment of Painful Neuromas
- Jason Souza, MD, Staff Surgeon, Walter Reed National Military Medical Center– A new method for angulation osteotomy in transhumeral amputees

State-of-the-Art Review

Session Moderator: Todd Kuiken, MD, PhD

20 min	4:00-4:20	State-of-the-Art Review on Current Upper Limb Prostheses William Hanson, MS, Liberating Technologies, Inc. • **Please note that this presentation does not qualify for *AMA PRA Category 1 Credit(s)™.***
20 min	4:20-4:40	State-of-the-Art Review on Current Lower Limb Prostheses *Presenter*: Hans-Willem van Vliet, PhD, Otto Bock Healthcare Products • **Please note that this presentation does not qualify for *AMA PRA Category 1 Credit(s)™.***
20 min	4:40-5:00	State-of-the-Art Review on Current Control of Prostheses *Presenter*: Levi Hargrove, PhD, Rehabilitation Institute of Chicago
90 min	5:00-6:30	Poster Session Wine & Appetizer reception with exhibitors and poster session Generously sponsored by Ottobock Healthcare Products

Day 2: Friday May 13, 2016 (8:30 AM – 4:30 PM)

	8:00	Check-in and Continental Breakfast

OSSEOINTEGRATION & OTHER SURGICAL ISSUES

Session Moderator: Benjamin Kyle Potter, MD, FACS

60 min	**8:30-9:30**	**Keynote Speaker: Rickard Branemark, MD, PhD, MS** **Keynote Presentation: *Developments in Osseointegration*** • **Please note that this presentation does not qualify for *AMA PRA Category 1 Credit(s)™.***
10 min	9:30-9:40	About Osseointegrated, Percutaneous Implants for Rehabilitation Following Above-Knee Amputation *Presenter:* Dora-Lisa Juhnke, MD, Martin Luther Hospital, Germany
10 min	9:40-9:50	Osseointegrated Percutaneous Implants for Rehabilitation Following Below- Knee Amputation

		Presenter: Horst Aschoff, MD, Clinic for Plastic, Hand and Reconstructive Surgery at SANA Kliniken Lubeck in Lübeck, Germany
10 min	9:50-10:00	24-Month In Vivo Evaluation of a Distally Loading Percutaneous Osseointegrated Prosthetic System in a Translational Sheep Amputation Model *Presenter*: James Peter Beck, MD, Orthopaedic Research Laboratory, DVA SLC HCS, Salt Lake City, UT
20 min	10:00-10:20	Break
10 min	10:20-10:30	The Good, the Bad and the Ugly of Bone-Anchored Prostheses: Guidelines to Assess True Clinical Outcomes *Presenter*: Laurent Frossard, PhD, Queensland University of Technology,Brisbane, Australia
10 min	10:30-10:40	New Method of Distraction Implantation in Direct Skeletal Attachment *Presenter*: Mark Pitkin, PhD, DSc, Professor of Physical Medicine and Rehabilitation, Tufts University School of Medicine
10 min	10:40-10:50	In-vitro and in-vivo evaluation of the effect of PVD silver coating on resistance to infection in transdermal SBIP implants with deep porosity *Presenter*: Maksim Shevtsov, MD, PhD, Russian Academy of Sciences
10 min	10:50-11:00	Post Limb Reconstruction Strategy for Post Traumatic Amputees (OGAAP-2) *Presenter*: Munjed Al Muderis, MD, Adjunct Clinical Associate Professor University Of Notre Dame Australia School Of Medicine Sydney
10 min	11:00-11:10	The Osseointegration Group of Australia Accelerated Protocol (OGAAP-1) for Two-Stage Osseointegrated Reconstruction of Amputees *Presenter*: Munjed Al Muderis, MD, Adjunct Clinical Associate Professor University Of Notre Dame Australia School Of Medicine Sydney
10 min	11:10-11:20	Improvement in Walking Abilities in Femoral Amputees with a Distal Weight Bearing Implant *Presenter*: Lluis Guirao, MD, PhD, Service Rehabilitation Hospital of Mataro, Barcelona, Spain
10 min	11:20-11:30	Hand Transplants – Immunomodulatory Protocol for Hand Transplantation *Presenter*: W.P. Andrew Lee, MD, Professor of Plastic and Reconstructive Surgery, Johns Hopkins Medicine

10 min	11:30-11:40	A Case Series Study of Pattern Recognition for Upper-Limb Prosthesis Control *Presenter*: Jack Uellendahl, CP, Hanger Inc.
10 min	11:40-11:50	A comparison of pattern recognition control and direct control of a multiple degree-of-freedom transhumeral prosthesis *Presenter*: Laura Miller, CP, PhD, Center for Bionic Medicine, Rehabilitation Institute of Chicago
10 min	11:50-12:00	Heterotopic Ossification Presenter: Benjamin Kyle Potter, MD, FACS, Director, Musculoskeletal Oncology & Orthopaedic Research Department of Orthopaedics, Walter Reed National Military Medical Center
60 min	12:00-1:00	Lunch Break (Lunch Provided)

TARGETED REINNERVATION/BIONIC SURGERY

Session Moderator: Jason Ko, MD, Assistant Professor, Northwestern University, Division of Plastic and Reconstructive Surgery and Department of Orthopedic Surgery

60 min	1:00-2:00	**Keynote Speaker: Oskar Aszmann, MD** **Keynote Presentation: *'Bionic Reconstruction' Surgery for Transradial Amputees***
10 min	2:00-2:10	TMR for Post-Amputation Neuroma Pain *Presenter*: Gregory Dumanian, MD, Chief of the Division of Plastic Surgery, Northwestern University
20 min	2:10-2:30	Prosthetic Limbs that Feel: Advances in Clinical Translation Through Bi-Directional Multi-Modality Perceptual Integration *Presenter*: Jacqueline Hebert, MD, FRCPC, Director of the BLINC Lab, University of Alberta and Paul Marasco, PhD, Associate Staff, Cleveland Clinic Lerner Research Institute
10 min	2:30-2:40	Targeted Muscle Reinnervation in a Skeletally Immature Pediatric Patient with Six Independent Sites *Presenter*: Brian T. Carlsen, MD, Reconstructive Microsurgeon and Hand Surgeon, Mayo Clinic
10 min	2:40-2:50	A Novel Muscle Transfer for Independent Digital Control with Myoelectric Prosthesis *Presenter*: Bryan J. Loeffler, MD, OrthoCarolina

10 min	2:50-3:00	Break
10 min	3:00-3:10	Utilization of Pattern Recognition with Patients Initially Contraindicated for Myoelectric Control in Upper Limb Prostheses *Presenter*: Chris Baschuk, MPO, CPO, LP, Prosthetist, Handspring
10 min	3:10-3:20	Targeted Reinnervation for the Amputee: A Multi-Cohort Analysis *Presenter*: J. Byers Bowen, MD, Independent Plastic Surgery Resident/The OSU Wexner College of Medicine, Department of Plastic Surgery
		Final Wrap-Up Topics
10 min	3:20-3:30	High Performance Lower Limb Amputee Rehabilitation: Canadian Armed Forces Lessons Learned 2008-2015 *Presenter*: Captain Pauline Godsell, BSc (PT), Canadian Forces Health Services Group, Ottawa, Ontario
30 min	3:30-4:00	Issue Discussion: How to Facilitate Prosthetists Referring Patients to Surgeons
30 min	4:00-4:30	Wrap-Up Discussion & Final Thoughts

Exhibitors

Coapt, 222 W Ontario St #220, Chicago, IL 60654

Liberating Technologies, Inc., 325 Hopping Brook Road, Suite A, Holliston, MA, 01746

Motion Control, Inc., 115 N. Wright Bros. Drive, Salt Lake City, UT

Ottobock, 11501 Alterra Parkway, Suite 600, Austin, TX 78758

Touch Bionics Inc., 35 Hampden Road, Mansfield, MA 02048