



**State of the Science Symposia Series:**  
**Recent Advances in Osseointegration**  
**Rehabilitation**

Friday, May 17th, 2019  
0730 – 1700

Henry M. Jackson Foundation Headquarters  
Bethesda, Maryland

*Presented by*

**The Center for Rehabilitation Science Research, Department of Physical Medicine and Rehabilitation at the Uniformed Services University for the Health Sciences**

**Department of Rehabilitation, Walter Reed National Military Medical Center**

**The University of Pittsburgh, School of Health and Rehabilitation Sciences  
Department of Rehabilitation Science and Technology  
Human Engineering Research Laboratories**

**The Department of Veterans Affairs**

**University of Pittsburgh School of Medicine Center for Continuing Education in the Health Sciences**

**State-of-the-Science Symposium: Recent Advances in Osseointegration Rehabilitation**

Friday, May 17<sup>th</sup>, 2019

6720A Rockledge Dr, Bethesda, MD 20817

## State of the Science Symposium: Recent Advances in Osseointegration Rehabilitation

Henry M. Jackson Foundation Headquarters, Bethesda, Maryland ~ May 17, 2019

PRESENTED BY THE CENTER FOR REHABILITATION SCIENCE RESEARCH, THE DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION AT THE UNIFORMED SERVICES UNIVERSITY FOR THE HEALTH SCIENCES; THE DEPARTMENT OF REHABILITATION, WALTER REED NATIONAL MILITARY MEDICAL CENTER; THE HUMAN ENGINEERING RESEARCH LABORATORIES (A VA RR&D CENTER OF EXCELLENCE); AND THE UNIVERSITY OF PITTSBURGH SCHOOL OF HEALTH AND REHABILITATION SCIENCES, DEPARTMENT OF REHABILITATION SCIENCE AND TECHNOLOGY.

### **Course Directors:**

**Rory A. Cooper, PhD:** *Director/CEO, Human Engineering Research Laboratories, VA Pittsburgh Healthcare System Associate Dean for Inclusion, School of Health and Rehabilitation Sciences, University of Pittsburgh*

**Colonel (ret.) Paul F. Pasquina, MD,** *Colonel (ret.), Medical Corps, United States Army Department Chief and Chair, Physical Medicine & Rehabilitation, Director, Center for Rehabilitation Sciences Research, Uniformed Services University of the Health Sciences, Walter Reed National Military Medical Center*

### **Overview and Objectives**

The overall objective of this course is to provide participants with an overview of current techniques utilized and programs implemented in the area of community reintegration after trauma. The course will attain this objective by showcasing research talks regarding the impact of technology, education, vocational skills and driving rehabilitation.

### **Who Should Attend**

The content of the sessions will benefit civilians, veterans, and military service members, their families, care-givers, community-based organizations, government agency personnel, students, residents, and healthcare providers.

We gratefully acknowledge the support of The Paralyzed Veterans of America for this symposium.



**Paralyzed Veterans  
of America**

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## 0730 – 0800 Check-In | Continental Breakfast

### 0800 – 0815 Opening Remarks - Welcome

Paul Pasquina, MD  
*Department Chief and Chair, PMR*  
WRNMMC, USUHS

### 0815 - 0830 Recap of May 16<sup>th</sup>, OI Meeting

Paul Pasquina, MD  
*Department Chief and Chair, PMR*  
WRNMMC, USUHS

Michelle Nordstrom, OTR/L  
*Clinical Research Occupational Therapist*  
Walter Reed National Military Medical Center

### 0830 – 0845 Review of the Devices, Skin Interface, OI Registry

CAPT Jonathan Forsberg, MD, PhD  
*Orthopaedic Oncologist*  
WRNMMC, USUHS, and Johns Hopkins University

### 0845 – 0915 Rehabilitation Outcomes related to OI: Collaborating on Tracking Evidence/Data (Panel for the Rehab...)

Danielle Melton, MD  
*Associate Professor, Dir of Amputee Program*  
Memorial Hermann TIRR

### 0915 – 0945 Psychiatric Considerations Pre, During and Post Osseointegration

Harold Wain, PhD  
*Psychologist*  
Walter Reed National Military Medical Center

### 0945 – 1000 BREAK

### 1000 – 1030 Adaptive Sports

Harvey Naranjo, COTA  
*Adaptive Sports Program Coordinator*  
Walter Reed National Military Medical Center

### 1030 – 1100 OI Pain Management

MAJ Edward Dolomisiewicz, MD  
*Physical Medicine and Rehab and Pain Mgt.*  
Walter Reed National Military Medical Center

### 1100 - 1130 Current and Future Strengths and Challenges with UE and LE Prosthetics

Dave Beachler, CP  
*Lead Prosthetist & Upper Extremity and Osseointegration*  
Walter Reed National Military Medical Center

Courtney Moran, CP, MS  
*Senior Professional Staff*  
Johns Hopkins Univ Applied Physics Laboratory

### 1130 – 1215 Functional Assessments

Michelle Nordstrom, OTR/L  
*Clinical Research OT*  
Walter Reed NMMC

Barri Schnall, MPT  
*PT and Clinical Research*  
Walter Reed NMMC

Bart Gillespie, DPT  
*Amputation Rehabilitation Coordinator*  
G.E. Wahlen Dept of V.A. Medical Ctr, Utah

### 1215 - 1300 LUNCH

### 1300 - 1400 Patient Experience and Questions/Collaboration

Barbara Springer, COL(ret) PT, PhD, OCS, SCS  
*Director of Operations, Quality of Life Plus (QL+)*  
Research Physical Therapist Henry M. Jackson Foundation

Rick Cicero - OPRA  
Michael Frazier - Compress  
James Patrick (JP) McGuire - POP  
Michael R. Huffman - OPL/IPL

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- 1400 - 1445 FDA Perspective on Osseointegrated Orthopaedic Devices**  
Andrew Baumann, PhD  
*Experimental & Computational Biomechanics*  
Federal Drug Administration
- Chen Zhuang, MS  
*Biomedical Engineering*  
Federal Drug Administration
- Heather Benz, PhD  
*Biomedical Engineering*  
Federal Drug Administration
- 1445 - 1500 Biomechanical and functional data on lower limb OI patients**  
Robert Gailey, PhD, PT  
*Professor, Miller School of Medicine, Dept of Physical Therapy*  
*Director of the Neil Spielholz Functional Outcomes Research & Evaluation Center*  
University of Miami
- 1500 - 1515 BREAK**
- 1515 - 1530 Improving Transitional Care Post Osseointegration (Transition Planning)**  
Dixie L. Johnson, MSN, RN, CRRN, CCM  
*Amputee Care Coordinator*  
Walter Reed National Military Medical Center
- 1530 - 1600 Restorative Rehabilitation, A National Effort**  
CAPT Craig Salt, M.D., F.A.C.S  
*Plastic Surgeon, Founder & Director of Project C.A.R.E*  
Naval Medical Center San Diego
- 1600 - 1630 Sensory Restoration in People w/ Lower-Limb Amputation:  
The First Step Toward a Sensory-Enabled Prosthesis**  
Hamid Charkhkar, PhD  
*Cleveland VA Advanced Platform Technology Center*  
Case Western Reserve University
- 1630 - 1700 Warrior Care and Transition**  
COL Matthew St. Laurent, MS, OTR/L, CHT  
*Deputy Chief of Staff, Warrior Care and Transition*  
MEDCOM, U.S. Army
- 1700 Closing Remarks/Adjournment**  
Paul Pasquina, MD  
*Department Chief and Chair*  
WRNMMC USUHS

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### COURSE DIRECTORS:



#### **RORY A. COOPER, PHD**

*Director/CEO, Human Engineering Research Laboratories, VA Pittsburgh Healthcare System  
Associate Dean for Inclusion, School of Health and Rehabilitation Sciences, University of Pittsburgh*

*FISA Foundation/Paralyzed Veterans of America Distinguished Professor, Department of Rehabilitation Science and Technology, University of Pittsburgh*

*Professor, Departments of Bioengineering, Physical Medicine and Rehabilitation, and Orthopaedic Surgery, University of Pittsburgh*

#### **Contact Information:**

Human Engineering Research Laboratories  
VA Pittsburgh Healthcare System  
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**Rory A. Cooper, PhD** earned B.S. and M.Eng degrees in electrical engineering from California Polytechnic State University, San Luis Obispo in 1985 and 1986, respectively. He earned a Ph.D. degree in electrical & computer engineering with a concentration in bioengineering from University of California at Santa Barbara in 1989. He is *Associate Dean for Inclusion* in the School of Health and Rehabilitation Sciences, *FISA & Paralyzed Veterans of America (PVA) Professor* and *Distinguished Professor* of the Department of Rehabilitation Science & Technology, and professor of Bioengineering, Physical Medicine & Rehabilitation, and Orthopaedic Surgery at the *University of Pittsburgh (Pitt)*. Cooper is *Founding Director* and *VA Senior Research Career Scientist* of the *Human Engineering Research Laboratories*, a VA Rehabilitation R&D Center of Excellence in partnership with Pitt. Cooper is an adjunct professor in the Robotics Institute of *Carnegie Mellon University* and the Department of Physical Medicine & Rehabilitation of the *Uniformed Services University of Health Sciences*, and he was awarded Honorary Professor at *Hong Kong Polytechnic University* and *Xi'an Jiatong University* where he was awarded an *Honorary Doctorate*. Cooper has authored or co-authored over 350 *peer-reviewed journal publications*. He has over 25 patents awarded or pending. Cooper is the author of two books: “*Rehabilitation Engineering Applied to Mobility and Manipulation*” and “*Wheelchair Selection and Configuration*,” and co-editor of “*An Introduction to Rehabilitation Engineering*,” “*Warrior Transition Leader: Medical Rehabilitation Handbook*,” “*Promoting Successful Integration*,” and the award winning book “*Care of the Combat Amputee*.”

Dr. Cooper is a former President of RESNA, and a member of the IEEE-EMBS Medical Device Standards Committee. In 1988, he was a bronze medalist in the *Paralympic Games*, Seoul Republic of Korea. He was on the steering committee for the 1996 *Paralympic Scientific Congress* held in Atlanta, GA, and the Sports Scientist for the 2008 U.S. *Paralympic Team* in Beijing, China. In 2013, Cooper was awarded the *International Paralympic Scientific Achievement Award*. He has been a member of the *U.S. Centers for Medicare and Medicaid Services – Medicare Advisory Committee*, *U.S. Secretary of Veterans Affairs Prosthetics & Special Disability Programs Advisory Committee*, *Chair of the National Advisory Board on Medical Rehabilitation Research*, *National Institute of Child Health & Human Development*, *U.S. Department of Defense Health Board Subcommittee on Amputation and Orthopedics*, *Board of Directors of Easter Seals*, *National Academy of Medicine Committee on Assistive Products and Devices*, and *National Academy of Sciences Keck Foundation Initiative on Human Health Span Steering Committee*.

Dr. Cooper is a *U.S. Army veteran* with a spinal cord injury (SCI) and a Director of the Paralyzed Veterans of America Research Foundation. He is a *Civilian Aide to the Secretary of the Army*. He currently serves as a member of the *Honorary Board of Advisors Student Veterans of America*, *Chair Honorary Board of Advisors Disabled Veterans National Foundation*, *NSF Advisory Committee for Education and Human Resources*, *Command Council, Staff Sergeant Donnie D. Dixon Center for Military and Veterans Community Services*, and member of the *World Health Organization GATE Committee*. In 2009, Cooper was featured on a *Cheerios* cereal box for his achievements, and in August 2010, he with one of his robots was the

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centerfold in *Popular Science* for his work in robotics to aid PwD and older adults. In 2014, *PN Magazine* included Cooper as one of the people who have transformed the lives of people with SCI; while *USO On Point* featured Cooper as one of the veterans who have most influenced the lives of veterans through technology. In 2015, *TIME* magazine produced a video on Cooper's work for their on-line magazine (<http://time.com/3975280/robotics-disabled/>). Drs. Cooper and his work have received coverage by *NY Times*, *Washington Post*, *TIME*, *CNN*, *Forbes*, *ESPN*, *NBC*, *BMJ*, *Reuters*, *NPR*, and other national and international media outlets. Cooper also shared his story and provided insights to best-selling author, Mary Ann McFadden, during the writing of her novel "*The Book Lover*." Dr. Cooper was selected by the Gen. James Amos, Commandant of the United States Marine Corps as the *Guest of Honor* for the "*Evening Parade*" hosted on 3 August 2012 by Michael P. Barrett, the 17<sup>th</sup> Sergeant Major of the Marine Corp. On 28 June 2016, Dr. Cooper was the *Guest of Honor* for the "*Sunset Parade*" hosted by Ronald E. Green, 18<sup>th</sup> Sergeant Major of the Marine Corps. He was recognized in the *Congressional Record of the United States Congress on Monday, July 27, 2009* and with a *Proclamation of Rory A. Cooper, PhD Day by the City of Pittsburgh on June 17, 2014* for his contributions to engineering and science on behalf of PwD and personal example. Further, Dr. Cooper's students have been the recipients of over 50 national and international awards. Dr. Cooper's highest awards include the *Samuel E. Heyman Service to America Service Medal*, *Secretary of Defense Meritorious Civilian Service Medal*, *National Guard Bureau "Minute Man Award"*; *AAAS Mentor Award*, *Joseph F. Engelberger Award*, *AIMBE Advocacy Award*, *Herny Viscardi Achievement Award*, *U.S. Army Distinguished Civilian Service Medal*, *U.S. Department of Veterans Affairs Diversity & Inclusion Excellence Award*, *Olin E. Teague Award*, *Pennsylvania Military & Veteran Hall of Fame*, *Order of Military Medical Merit*, *Order of Mercury*, *Order of Saint Maurice*, *Chapel of Four Chaplains Legion of Honor*, *DaVinci Lifetime Achievement Award*, and a member of the inaugural class of the *Spinal Cord Injury Hall of Fame*.



### **PAUL F. PASQUINA, MD**

*Colonel (ret.)*, Medical Corps, United States Army  
*Department Chief and Chair*, Physical Medicine & Rehabilitation  
*Director*, Center for Rehabilitation Sciences Research  
Uniformed Services University of the Health Sciences  
Walter Reed National Military Medical Center

### **Contact Information:**

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**Paul F. Pasquina, MD** is the Department Chief and Chair of the Physical Medicine & Rehabilitation and Director of the Center for Rehabilitation Sciences Research at Uniformed Services University of the Health Sciences, Walter Reed National Military Medical Center. Dr. Pasquina retired from the United States Army Medical Corps in 2012 as Chief of the Department of Orthopaedics and Rehabilitation at Walter Reed National Military Medical Center and the Director of the Center for Rehabilitation Sciences Research (CRSR) at the Uniformed Services University of the Health Sciences (USUHS). He is a graduate of the United States Military Academy at West Point and USUHS. In addition to being board certified in Physical Medicine & Rehabilitation (PM&R), he is also board certified in Electrodiagnostic Medicine and Pain Medicine. He completed a fellowship in sports medicine and remains interested in all aspects of musculoskeletal medicine especially as it applies to individuals with disabilities.

He is the specialty consultant to the Army Surgeon General for Physical Medicine & Rehabilitation and a Secretarial appointee on the Department of Veterans Affairs (VA) Advisory Committee for Prosthetics and Special Disabilities Programs. Dr. Pasquina has authored multiple book chapters, journal articles and policy papers. He has served as the PM&R Residency Program Director and Medical Advisor to the North Atlantic Regional Medical Command for quality healthcare. He has received multiple military awards, as well as awards for teaching and mentorship, including the U.S. Army's "A" Proficiency Designation for academic excellence, the Order of Military Medical Merit, and Honorary Fellow of the Rehabilitation Engineering and Assistive Technology Society of North America (RESNA).

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### GUEST FACULTY AND PRESENTERS



#### **CAPT Jonathan Forsberg, MD, PhD**

Orthopaedic Oncologist  
WRNMMC, USUHS  
Johns Hopkins University  
[jonathan.a.forsberg.mil@mail.mil](mailto:jonathan.a.forsberg.mil@mail.mil)

**Jonathan A. Forsberg, M.D.**, is an orthopaedic oncologist practicing in Maryland and Washington, D.C. He earned his medical degree from the F. Edward Hebert School of Medicine and specializes in treating children and adults with bone and soft tissue sarcomas, including osteosarcoma and Ewing's sarcoma. Dr. Forsberg sees adult and pediatric patients at his clinic in Bethesda and adult patient only at the Sibley Memorial Hospital. In addition, Dr. Forsberg has considerable expertise in the management of metastatic bone disease and metabolic bone disease, as well as blast- and other combat-related wounds, and limb-sparing surgery. He developed the first validated model to help guide surgical treatment of metastatic bone disease and has completed research to further the understanding of soft tissue sarcomas of the extremities.

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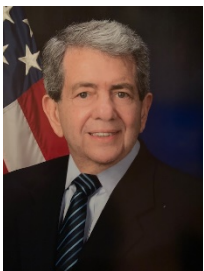


#### **Danielle Melton, MD**

Associate Professor, Dir of Amputee Program  
Memorial Hermann TIRR  
[Danielle.H.Melton@uth.tmc.edu](mailto:Danielle.H.Melton@uth.tmc.edu)

**Dr. Danielle Melton** is board certified in Physical Medicine and Rehabilitation and Associate Professor in the Department of Orthopedic Surgery at McGovern Medical School at The University of Texas Health Science Center at Houston (UTHealth) and the Dir. of the Amputee Program at Memorial Hermann The Institute for Rehabilitation and Research (TIRR). Certified by the American Board of Physical Medicine and Rehabilitation, Dr. Melton specializes Orthopedic Trauma and Physical Medicine and Rehabilitation with an emphasis in rehabilitation of patients after traumatic accidents and non-surgical management of patients with spine and other musculoskeletal disorders often requiring pain management. Dr. Melton's primary focus is the care of people with amputations, encompassing pre-prosthetic management, prosthetic design and prescription, and rehabilitation. She also specializes in bracing and orthotics for patients with peripheral nerve injuries and spasticity. Dr. Melton received her undergraduate degree in Mechanical Engineering from Louisiana State University. She then attended Medical School at Baylor College of Medicine and remained at Baylor, completing her residency in the Department of Physical Medicine.

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#### **Harold Wain, PhD**

Psychologist  
Walter Reed National Military Medical Center  
[haroldwain@nmn](mailto:haroldwain@nmn)

**Dr. Harold Wain** is a psychologist practicing in Washington, DC. Dr. Wain specializes in the treatment of health mental problems and helps people to cope with their mental illnesses. As a psychologist, Dr. Wain evaluates and treats patients through a variety of methods, most typically being psychotherapy or talk therapy. Patients usually visit Dr. Wain because they have been experiencing depression, anxiety, stress or anger for a significant period and are seeking help. Psychologists may perform a variety of exams and assessments to diagnose a mental condition.

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### **Harvey Naranjo**

*Adaptive Sports Program Coordinator*

Walter Reed National Military Medical Center

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**Harvey Naranjo** is the Adaptive Sports Program Coordinator at WRNMMC. Harvey is responsible for overseeing Adaptive Sports programs for service members receiving care at the National Intrepid Center of Excellence (NICOE) and the Military Advance Training Center (MATC). Both centers provide world recognized State of the Art care for severely injured service men and women. Harvey was instrumental in the development and implementation of Adaptive Sports and Community Reintegration programs within the department of rehab. Harvey and his colleagues coordinate over 100 adaptive programs a year. These programs allow medical staff at Walter Reed to harness their patients' competitive and warrior spirit to maximize their rehabilitation and independence post injury.

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### **MAJ Edward Dolomisiewicz, MD**

Physical Medicine and Rehab and Pain Mgt.

Walter Reed National Military Medical Center

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**Major Edward Dolomisiewicz** is an attending physician at Walter Reed National Medical Center with board certifications in Physical Medicine & Rehabilitation and Pain Medicine.

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### **Dave Beachler, CP**

Lead Prosthetist and Upper Extremity and Osseointegration

Walter Reed National Military Medical Center

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**David Beachler** grew up in the Dayton Ohio area and is a graduate of Clemson and California State Universities. He has worked for the past 13 years as a certified clinical prosthetist with the Walter Reed Hospitals WRAMC and WRNMMC. He is currently lead prosthetist and specializes in upper extremity and osseointegrated prosthetics. He has been a contributing clinician in multiple research projects to include the DEKA arm, Modular Prosthetic Limb (MPL), Targeted Muscle Reinnervation (TMR), Implantable Myoelectric Sensors (IMES), Pattern recognition control schemes and currently Osseointegration (OI). In addition, he has worked with the 3D Medical Applications Center to developing 3D printed prosthetic terminal devices and has also been involved with the development of prosthetic/orthotic devices for arm transplant recipients.

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### **Michelle Nordstrom, OTR/L**

Clinical Research Occupational Therapist (OT)

Walter Reed National Military Medical Center

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**Michelle Nordstrom** serves as the Clinical Research Occupational Therapist (OT) at Walter Reed National Military Medical Center, through the Henry M. Jackson Foundation. She also holds a position as Assistant Professor at the Uniformed Services University in the department of Physical Medicine & Rehabilitation. She graduated from the College of St. Scholastica, Duluth, MN with a Masters in Occupational Therapy in 2006 and Commissioned into the US Army from 2007-2016 as an Occupational Therapist. She has since co-authored book chapters describing OT's role in Mental Health and has presented at national



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and international conferences such as American Occupational Therapy Association, Military Health Services Research Symposium and other research specific venues regarding her experience working with osseointegration, advanced prosthetic limbs, mental health, and other forms of integrative medicine as they apply to the rehabilitation of our Service Members.

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**Barbara Springer, COL(ret) PT, PhD, OCS, SCS**  
Director of Operations, Quality of Life Plus (QL+)  
Research Physical Therapist Henry M. Jackson Foundation  
[gmalangamd@hotmail.com](mailto:gmalangamd@hotmail.com)

**Barbara Springer** is currently serving as a research physical therapist with Henry M. Jackson Foundation, working with amputees at Walter Reed National Military Medical Center. Barb is also the Director of Operations for the 501(c)3 Quality of Life Plus (QL+) program. Its mission is to foster and generate innovations that aid and improve the quality of life for those who have served our country. Students from multiple engineering universities, working under the supervision and guidance of experienced faculty; design, develop and deliver innovative technical solutions that improve the quality of life for those who have given so much for freedom. Prior to these opportunities, COL (Ret) Springer served over five years for a non-profit organization that utilizes cycling as an extension of physical and psychological rehabilitation for our healing military Service members and Veterans. She served over 24 years in the U.S. Army and retired out of the Office of The Surgeon General where she was the Director of Rehabilitation and Reintegration Division. She recommended policy and instituted Army-wide standards of care for rehabilitation and transition of wounded, ill and injured Soldiers. COL Springer (Ret) is board certified as both an Orthopedic and a Sports Physical Therapy Specialist.

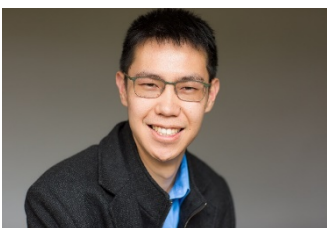
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**Andrew Baumann, PhD**  
Experimental and Computational Biomechanics  
Federal Drug Administration  
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Dr. Andrew Baumann has a background in experimental and computational biomechanics. He enjoys investigating the structure-function relationships of biological tissues and how they interface with medical devices. At the FDA, Andy works with review teams to develop research that advances the mechanical performance evaluation of orthopaedic medical devices.

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**Chen Zhuang, MS**  
Biomedical Engineering  
Federal Drug Administration  
[Chen.Zhuang@fda.hhs.gov](mailto:Chen.Zhuang@fda.hhs.gov)

Chen Zhuang, M.S. has served 5 years as a device reviewer with the FDA in the area of orthopedics. He has a M.S. in Biomedical Engineering from the University of Michigan Ann Arbor and B.S. in Biomedical Engineering from the University of California Los Angeles (UCLA).

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### **Robert Gailey, PhD, PT**

Professor, Miller School of Medicine, Dept of Physical Therapy  
Director of the Neil Spielholz Functional Outcomes Research & Evaluation Center  
University of Miami  
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**Dr. Bob Gailey** is a professor at the University of Miami Miller School of Medicine, Department of Physical Therapy and the Director of the Neil Spielholz Functional Outcomes Research & Evaluation Center. He has also been a Special Advisor to the Department of Defense for amputee rehabilitation. His Doctorate in Prosthetics and Orthotics was received from the University of Strathclyde in Glasgow, Scotland. He has authored over 80 peer reviewed publications and book chapters. Over the years, he has been involved in developing 15 outcome measures, including the Amputee Mobility Predictor and Comprehensive High-Activity Mobility Predictor and continues his research efforts directed toward amputee rehabilitation, prosthetic gait, functional assessment and amputee athletics. He has received numerous honors including ISPO's Forcheimer Prize for Research, AAOP's Researcher Award, an Honorary Member of AAOP and is a Catherine Worthingham Fellow of the American Physical Therapy Association.

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### **Dixie L. Johnson, MSN, RN, CRRN, CCM**

Amputee Care Coordinator  
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Dixie Johnson has been a Registered Nurse since 1990 and completed her MSN in Clinical Nursing Leadership through the University of Arizona in 2016. She has a diverse nursing background which includes pediatrics, adult medical/surgical care, correctional medical care, and case management and care coordination. Dixie served in the U.S. Army for 23 years, 7 of those as an enlisted member working in communications, then after completion of nursing school, received a direct commission and served an additional 16 years as an Army Nurse Corp officer in the U.S. Army Reserves. In 2004-2006 she was mobilized to Landstuhl, Germany, providing care in one of the inpatient acute care wards in support of OIF. In 2008-2011 she was mobilized to Walter Reed Army Medical Center where she served for just over 3 years in the newly stood up Warrior Transition Battalion (WTB) as a nurse case manager, caring for wounded, ill and injured soldiers as they transitioned through care continuum from inpatient to home or back to duty. She served an additional year as a contractor for the WTB, prior to accepting her current position as an Amputee Care Coordinator in the rehabilitation department at Walter Reed National Military Medical Center in January 2012.

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### **CAPT Craig Salt, M.D., F.A.C.S**

Plastic Surgeon, Founder & Director of Project C.A.R.E  
Naval Medical Center San Diego  
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**Dr. Craig J. Salt M.D.** is a native of Annapolis Maryland. Dr. Salt graduated Summa Cum Laude from Saint Francis College in Loretto Pennsylvania with a BS degree in Biology. After obtaining his medical degree in 1991 from the Uniformed Services University of the Health Sciences (USUHS) in Bethesda Maryland, Dr. Salt completed his General Surgery Internship (1992) at the Naval Hospital in Oakland California. From 1997 – 2003 Dr. Salt completed his Integrated Plastic Surgery Residency at the University of Tennessee in Memphis. Since 2003 Dr. Salt has served at the Naval Medical Center in San Diego where he presently holds the rank of Captain and is the senior Board-Certified staff member of his department. He has years of reconstructive surgical experience and has lectured at the national level on extremity reconstruction as a member of the American Society of Plastic Surgeons. In 2008 Dr. Salt expanded the scope of San Diego Naval Medical Center's Rehabilitation Program when he founded Project CARE (Comprehensive Advanced Restorative Effort). The CARE Program is the Military's first ever multidisciplinary program specifically designed to help Wounded Warriors receive state-of-the-art coordinated reconstructive surgical, medical, and emotional health therapy following trauma.

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### **Hamid Charkhkar, PhD**

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**Hamid Charkhkar** received his PhD in Electrical and Computer Engineering in 2015 from George Mason University, Fairfax, VA. He completed his postdoctoral training in 2018 at Case Western Reserve University (CWRU), Cleveland, OH. His PhD and postdoctoral work were focused on developing advanced Neural Interface Technology for central and peripheral nervous systems. He is currently a Senior Research Associate at the Department of Biomedical Engineering at CWRU and an investigator at Advanced Platform Technology Center at Louis Stokes Cleveland VA Medical Center. His research interests include neuromodulation to restore sensation, neural interface design, and neuroprostheses. During his graduate and post-graduate training, he has worked closely with multidisciplinary teams in government, academia, and industry. He has published multiple first-author articles and served as a reviewer in several professional journals and conferences.

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### **COL Matthew St. Laurent, MS, OTR/L, CHT**

Deputy Chief of Staff, Warrior Care and Transition  
MEDCOM, U.S. Army

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**Colonel Matthew St Laurent** graduated from University of New Hampshire in Durham, NH in 1990 with a Bachelor of Arts degree in Psychology and was commissioned a Second Lieutenant, Field Artillery, NH ARNG. He later earned a Bachelor of Science Degree in Occupational Therapy in 1994 and a Masters in Occupational Therapy in 2005 and re-commissioned into the AMEDD, Army Medical Specialist Corps. He currently serves as the Deputy Chief of Staff, Warrior Care and Transition, Office of the Surgeon General, MEDCOM, Arlington, VA; His recent previous assignments included: Chief, Occupational Therapist Service Walter Reed, Bethesda, MD and Assistant Chief Integrated Occupational Therapist, Walter Reed, Bethesda, MD. COL Matthew St Laurent's service education includes Field Artillery Basic Officers Leader Course, AMEDD Officers Basic Course, Army Medical Department Officer Basic Course, Upper Extremity Evaluation Course, Combat Stress Control Course, Army Medical Department Pre-Command Course, Army Medical Department Officer Advance Course, Combined Arms Services and Staff School, Command and General Staff College.

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### Faculty Disclosure

All individuals in a position to control the content of this education activity including members of the planning committee, speakers, presenters, authors, and/or content reviewers have disclosed all relevant financial relationships with any entity producing, marketing, re-selling, or distributing health care goods or services, used on, or consumed by, patients.

The following relevant financial relationships were disclosed:

Michelle Nordstrom, OTR/L is conducting research. W911NF-17-1-0022 Source: USAMRAA 2015 – BA150587 Title of Project: Transhumeral Amputee Osseointegration Study (TAOS)

Hamid Charkhkar receives Grant/Research Support from DARPA N66001-15-C-4038

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