

Orthotic and Prosthetic Innovation & Technology Conference

*Driving the Future of O&P –
Connecting Innovators and Investors*



Friday-Saturday October 28-29, 2016
Millberry Union Event & Meeting Center
University of California – San Francisco



University of California
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advancing health worldwide



California Orthotic &
Prosthetic Association

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Consistent with the University of California, San Francisco's drive to advance healthcare, the mission of the O&P Technology and Innovation Conference is to facilitate the birth of new technologies and innovations in the Orthotic and Prosthetic profession by uniting innovators and investors in a diverse and collaborative educational setting.

Conference Aims: Education, Stimulate, Unite

Agenda

Friday, October 28th

7:30-8:00 AM	Registration and Continental Breakfast	
8:00-8:15	Opening Remarks and Introduction	Matthew Garibaldi, MS, CPO
8:20-9:20	10 Health Care Predictions for 2020: Implications for O&P <i>Adjunct Professor, Columbia, Business School and Partner Emeritus, Oliver Wyman</i>	Mike Lovdal, MBA
9:20-9:40	Morning Break with Exhibitors	
9:45-10:45	Evidence and Data to Secure the Future of O&P <i>Scheck & Siress</i>	Michael Oros, CPO, FAAOP
10:50-11:50	This Isn't Your Father's O&P <i>Orthotic Holdings Inc.</i>	Russ Hornfisher
11:50-12:45	Lunch	
12:50-1:50	Mergers and Acquisitions In O&P <i>VGM Group</i>	Mark J. Higley
1:55-2:55	Big Data in O&P <i>OPIE</i>	Paul Prusakowski, CPO, FAAOP
2:55-3:20	Final Break with Exhibitors	
3:25-4:25	The Value, Documentation, and Management of Clinical Outcome Measures In a Patient-Centric, Data-Driven Health Care System <i>Stanford University</i>	Gary Berke, MS, CP, FAAOP
4:30-5:00	ABC's Top 10 Compliance & Accreditation Issues <i>American Board for Certification in O&P - Outreach and Development</i>	Jim Lawson

Saturday, October 29th

7:00-8:00 AM	Registration and Continental Breakfast	
8:00-8:15	Opening Remarks and Introduction	Matthew Garibaldi, MS, CPO
8:15-9:15	Recent Progress Toward High Performance Neural Prosthetics <i>University of Pittsburgh</i>	Andrew Schwartz, PhD
9:15-9:30	Neural Prosthetics Q&A	Andrew Schwartz, PhD
9:30-9:45	Morning Break with Exhibitors	
9:50-10:25	Osseointegration in the US: Indications and Surgical Techniques <i>University of California, San Francisco</i>	Rickard Branemark, MD, MS, PhD Richard O'Donnell, MD
10:30-10:50	Osseointegration in the US: Rehabilitation Protocol <i>University of California, San Francisco</i>	Rami Weinberg, DPT Matthew Garibaldi, MS, CPO
10:50-11:05	Osseointegration Panel Discussion	
11:10-11:25	ProFit Assessment System <i>University of California, San Francisco</i>	Saam Morshed, MD, PhD, MS
11:30-12:00	Electronic Prosthetic Skin <i>Stanford University</i>	Zhenan Bao, PhD
12:00-12:45	Lunch	
12:45-1:15	Cyber Design and 3D-Printing of Custom Ankle Foot Orthoses <i>University of Michigan</i>	Albert Shih, PhD Jeff Wensman, CPO
1:20-1:50	Contoured 3D Printing of Fiber Reinforced Polymer <i>University of Michigan/ University of California, San Francisco</i>	Leo Tse, PhD
1:55-2:15	The Missing Link: Anatomical Design Software <i>Standard Cyborg</i>	Garrett Spiegel
2:15-2:30	3D Printing Panel Discussion	
2:35-3:05	Embodying Robotics and Highly Biomimetic Design in Future Prosthetics <i>University of Washington/ Yale University</i>	Zhe Xu, PhD
3:05-3:35	The Future of Pattern Recognition Turns 50: A Celebration Worth the Wait <i>COAPT</i>	Blair Lock
3:35-4:00	Final Break with Exhibitors	
4:05-4:35	Using Immersive Virtual Reality Environments To Assess and Treat Individuals with Lower Limb Trauma <i>Center for the Intrepid</i>	Riley Sheehan, PhD
4:40-5:00	The Future of Dynamic Sockets <i>LIM Innovations</i>	Garrett Hurley, CPO

Presenter Biographies

Zhenan Bao is a Professor of Chemical Engineering at Stanford University. Prior to joining Stanford in 2004, she was a Distinguished Member of Technical Staff in Bell Labs, Lucent Technologies from 1995 – 2004. She has over 400 refereed publications and over 60 US patents with a Google Scholar H-Index >120. She pioneered a number of design concepts for organic electronic materials. Her work has enabled flexible electronic circuits and displays. In her recent work, she has developed skin-inspired organic electronic materials, which resulted in unprecedented performance or functions in medical devices, energy storage and environmental applications. Bao is a member of the National Academy of Engineering. She is a Fellow of MRS, ACS, AAAS, and SPIE. Bao is a co-founder for two start-ups, C3 Nano and PryAmes.

Gary M. Berke MS, CP, FAAOP is currently an Adjunct Clinical Assistant Professor, Department of Orthopaedic Surgery at Stanford University and owner of Berke Prosthetics and Orthotics in Redwood City. In addition to patient care, he provides Education, Research, Insurance review and Expert witness.

Rickard Brånemark MD, MS, PhD was the Director of the Center of Orthopaedic Osseointegration at Sahlgrenska University Hospital, University of Gothenburg, Sweden, between 1999-2014. Dr. Brånemark has performed more than 200 surgeries using a novel percutaneous osseointegrated prosthetic system for the treatment of amputees. He was the lead surgeon for a team that in 2013 for the first time in the world implanted muscle and nerve electrodes in an amputee with an osseointegrated implant to improve the control of the prosthetic arm. Presently Dr. Brånemark is a Visiting Associate Professor within the Department of Orthopedic Surgery, and Co-Director for the international Center for Osseointegration Research, Education and Surgery (iCORES) at the University of California, San Francisco.

Matthew Garibaldi, MS, CPO serves as an Associate Clinical Professor and as the Director of the Orthotic and Prosthetic Centers for the Department of Orthopaedic Surgery at UCSF. Matthew specializes in upper extremity myoelectric prosthetics, and caters to the needs of high-level and advanced lower extremity prosthetic users. His research is focused on performance and outcomes of prosthetic procedures and devices. Matthew earned his Bachelors of Science degree in prosthetics and orthotics from The University of Washington in 1999. He completed both his orthotic and prosthetic residencies at Northwest Prosthetic and Orthotic Clinic with the affiliation of Harborview Medical Center in Seattle, Washington. Matthew received his Master of Science in Health Administration and Interprofessional Leadership from UCSF in 2015. He serves as the Vice President of the California Orthotic and Prosthetic Association, and is a founding member of the Hospital-Based O&P Consortium.

Mark J. Higley is Vice President of Regulatory Affairs of VGM Group, Inc., a national leader in diverse industries including health care, insurance and finance. VGM provides business solutions to more than 25,000 companies throughout the United States and Canada, positioning them to save money and run more efficiently. Mark's responsibilities include market research and industry analysis of the DMEPOS (Durable Medical Equipment, Prosthetics, Orthotics, and Supplies) market. His current projects include analysis of governmental, regulatory and compliance issues affecting DMEPOS, including national competitive bidding, health care demographics and benchmarks, merger and acquisition trends, and many other current supplier concerns. He sits on the AAHomecare Regulatory Council, on the board of the Healthcare Quality Association on Accreditation (HQAA), and is a regular speaker/panelist/consultant at numerous DMEPOS industry events. Mark received his master of business administration in marketing research from the University of Iowa, and earned undergraduate degrees in Finance and Economics.

Russell Hornfisher has been the O & P Channel Manager at Orthotic Holdings Inc. (OHI), since 2014. Immediately prior to joining OHI, Hornfisher was a 15-year veteran of Becker Orthopedic, Troy, Michigan, where he served as Director of Sales and Marketing. He also served as Vice President for both Orthotic and Prosthetic Group of America (OPGA) and U.S. Rehab. He has served as a board member of the American Orthotic & Prosthetic Association (AOPA) for eight years and as Chairman of its National Assembly Committee for six years.

Garrett Hurley has been a Certified Prosthetist and Orthotist since 2002 and is now the Chief Innovations Officer and Co-Founder of LIM Innovations. Garrett aims to improve prosthetic technology for the benefit of people with amputation and for prosthetic practice. Current research areas include; outcome measures, user-centered design, advanced textiles, and new material innovation.

Jim Lawson manages ABC's outreach Development and in that role he devotes his time to working with business owners, helping them to navigate the accreditation process and improve their businesses. He also works with students and residents to help them be prepared for the ABC certificate board exams. Jim speaks at national, regional, state, and chapter O&P, Pedorthics, and Mastectomy conferences as well as universities and colleges as he represents ABC. He also produces educational video series for ABC. With over 17 years' experience in partnership building, public outreach, and business development, Jim brings to the O&P profession a unique perspective to help business owners succeed.

Blair Lock is Co-Founder and CEO of Coapt, the world's only provider of pattern recognition systems for upper limb prosthetics. Prior to that he was the Operations Director for the targeted muscle reinnervation research group at the Rehabilitation Institute of Chicago along side Dr. Todd. Kuiken. Blair has been dedicated to advancement in the field of upper limb prosthetic and myoelectric control for the past 13 years and hold graduate degrees in engineering and management.

Michael Lovdal is an Adjunct Professor at Columbia Business School where he teaches a course on Innovative Healthcare Models. He is also a Partner Emeritus in the management consulting firm Oliver Wyman where he had over thirty years of experience providing strategic planning and alignment assistance to clients in media, consumer products and healthcare.

Mike started his career as a Certified Public Accountant. Before joining Oliver Wyman, he served on the faculties of the Harvard Business School and M.I.T.'s Sloan School of Management. Mike received a B.S. (with high distinction) from the University of Minnesota and an M.B.A. (with distinction) and a Doctorate from the Harvard Business School.

Saam Morshed, MD, PhD, MPH received his bachelor's degree from Harvard University and completed both medical school and orthopaedic residency at the University of California San Francisco. As an Orthopaedic Research and Education Foundation Clinical Research Training Fellow, he received a Master's of Public Health and PhD in Epidemiology from the University of California Berkeley. Prior to returning to UCSF to join the faculty in the Department of Orthopaedic Surgery, he completed subspecialty clinical training in orthopaedic trauma at Harborview Medical Center in Seattle. Dr. Morshed is an attending orthopaedic trauma surgeon and Director of the Clinical Research Center at the UCSF/San Francisco General Hospital Orthopaedic Trauma Institute (OTI). His clinical practice is focused on skeletal trauma, surgery of the pelvis and acetabulum, and problem fractures including mal-unions and non-unions.

Richard O'Donnell, MD is the Chief of UCSF Orthopaedic Oncology. He provides expert care to patients with a wide variety of bone and soft tissue tumors and tumor-like conditions. Dr. O'Donnell's research is directed towards osseointegration as a means of achieving stable endoprosthetic reconstruction for limb salvage patients and transdermal anchorage for amputee patients. Multidisciplinary approaches to management of soft tissue sarcoma patients are also an area of active interest. Educational efforts include teaching of orthopaedic surgical residents and medical students, as well as direction of international conferences.

After receiving undergraduate and medical degrees from Harvard, Dr. O'Donnell completed a general surgery internship at the New England Deaconess Hospital. He was graduated from the Harvard Combined Orthopedic Residency Training Program in Boston and the Musculoskeletal Oncology Fellowship Program at the University of Washington in Seattle. He joined the UCSF Medical Center Faculty in 1998.

Michael Oros CPO, FAAOP is currently President and CEO of Scheck & Sires; a regional Prosthetic - Orthotic service provider serving Chicago and its' surrounding suburbs. He's the incoming President for AOPA and the past chairman for the National Commission on Orthotic and Prosthetic Education. A graduate of Northwestern's Prothetic and Orthotic program in 1986, Michael is celebrating his 30th year of providing patient care!

Paul Prusakowski is an American Board Certified prosthetist/orthotist and Fellow of the American Academy of Orthotists and Prosthetists. Owner of 2 clinical practices, Founder and CEO of OPIE Software and oandp.com, owner and moderator of OANDP-L (the O&P Listserv), past president of the American Academy of Orthotists and Prosthetists and the National Association for the Advancement of Orthotics and Prosthetics.

Dr. Andrew Schwartz received his Ph.D. in Physiology from the University of Minnesota in 1984. He then went on to a postdoctoral fellowship with Dr. Apostolos Georgopoulos, who was developing the concept of directional tuning and population-based movement representation in the motor cortex. After building research programs in Phoenix and San Diego, he moved to the University of Pittsburgh in 2002. Schwartz' research is centered on the exploration of cortical signals generated during volitional arm movements. This effort showed that a high-fidelity representation of movement intention could be decoded from the motor cortex and enabled technology now being used by paralyzed subjects to operate a high-performance prosthetic arm and hand.

Riley Sheehan, PhD is a Research Biomechanist in the Military Performance Lab at the Center for the Intrepid located on Fort Sam Houston, TX. He earned his MS and PhD in Kinesiology from Pennsylvania State University. His research focuses on quantifying and improving walking function and stability in wounded service members through the use of novel testing and rehabilitation paradigms with a focus on virtual reality.

Albert Shih is Professor in Mechanical Engineering, Biomedical Engineering, and Integrative Systems + Design (ISD) and Interim Chair of ISD at the University of Michigan. He was a manufacturing process development engineer from 1991 to 1998 at Cummins. Dr. Shih's research area is design and manufacturing. He is a pioneer in biomedical manufacturing, the application of manufacturing technologies to advance the safety, quality, efficiency and speed of healthcare service and biomedical science. He has 9 US patents, a textbook in Machining and Machine Tools, and authored or co-authored over 180 archival journal papers, 100 conference papers in manufacturing and biomedical sciences.

Garrett Spiegel is Co-Founder of Standard Cyborg. He studied Biomedical Engineering at Vanderbilt University and worked at the intersection of medical device repair and medical device design in resource-limited clinical settings. Prior to Standard Cyborg, he led the design and development of neonatal medical devices at D-Rev, a San Francisco non-profit product design firm where he supported the early design of a radically affordable polycentric knee. There, he observed the global need for a good fitting socket or orthotic device and began his transition to Standard Cyborg to develop software to aid clinicians in their design of the interface device.

Leo Tse is a Ph.D candidate in the Department of Mechanical Engineering at the University of Michigan. His research focus is on the design and fabrication of advanced additive manufacturing (3D printing) systems. He has designed and built customized 3D printing systems capable of achieving high-resolution 3D printing, biologically compatible extrusion printing, and contoured deposition of fiber reinforced polymers. Applications for these processes range from high-resolution electronic and biological sensors to custom fabricated orthoses and prostheses.

Rami Weinberg, DPT completed his Residency in Orthopedic Physical Therapy and obtained his board certification in orthopedics, then joined University of Southern California as Adjunct Faculty. Dr. Weinberg joined Healing Hands for Haiti in 2010 to administer care for the victims of the disastrous earthquake. He also volunteered for 6 years with the Life Rolls on Foundation to assist people with spinal cord injuries surf in Southern California. He moved to San Francisco in 2012 to join the staff at UCSF. Dr. Weinberg emphasizes functional exercises and patient education to promote a healthy recovery and prevent injury. He focuses on biomechanical influences that impact body function during ambulation and recreational activities.

Jeffrey Wensman is the Clinical/Technical Director of the University of Michigan Orthotics and Prosthetics Center. He is a Certified Prosthetist/Orthotist, certified by the American Board for Certification in Orthotics, Prosthetics & Pedorthics. He has over 20 years of patient care experience in the field of Orthotics and Prosthetics. He received his bachelor degree in Mechanical Engineering from the University of Minnesota. As the Clinical/Technical Director at the University of Michigan, he oversees a large clinical department seeing over 35,000 patient visits per year, provides orthotic and prosthetic residency opportunities and collaborates on research projects in partnership with several University of Michigan departments and private industry.

Dr. Zhe Xu received his Ph.D. degree from the Department of Computer Science & Engineering at the University of Washington in 2015. He is currently a Postdoctoral Associate in the GRAB lab at the Yale University. His research interests are in the areas of bio-inspired robotics, biomedical devices, rehabilitation robotics, control systems, and neurobotics. Trained in Mechanical Engineering, Bioengineering, and Computer Science & Engineering, Dr. Xu aims to bridge the fields of robotics, medicine, and biology in his study of highly biomimetic design of robotic hand.

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