



# Editorial

## Society Awards 2016

The Bioengineering Division of ASME reviews and selects recipients for the following special recognition awards:

### H. R. Lissner Medal

The H. R. Lissner Medal recognizes outstanding achievements in the field of bioengineering. These achievements may be in the form of (1) significant research contributions in bioengineering; (2) development of new methods of measuring in bioengineering; (3) design of new equipment and instrumentation in bioengineering; (4) educational impact in the training of bioengineers; and/or (5) service to the bioengineering community, in general, and to the Bioengineering Division of ASME, in particular. The Bioengineering Division of ASME established the H. R. Lissner Award as a divisional award in 1977. It was upgraded to a society award in 1987, made possible by a donation from the Wayne State University and is named in honor of Professor H. R. Lissner of the Wayne State University for his pioneering work in biomechanics that began in 1939.

The 2016 Lissner Medal winner is Dr. Roger C. Haut, Ph.D. Dr. Haut is a University Distinguished Professor in the Departments of Radiology and Mechanical Engineering at the Michigan State University (MSU). He received his B.S. degree (cum laude) in Mechanical Engineering from MSU in 1967 and his M.S. and Ph.D. degrees also from MSU in Engineering Mechanics in 1968 and 1971. After graduation, he started a career in trauma biomechanics at the General Motors Research Laboratories. He was named the first Chairman of the Industrial Liaison Committee for the ASME Bioengineering Division and has served on the Honors and Y. C. Fung Young Investigator Committees. In 1986, Dr. Haut moved to MSU in the Department of Biomechanics in the College of Osteopathic Medicine. He founded and is currently the Director of the Orthopaedic Biomechanics Laboratories in the college. Dr. Haut has made it a priority during his academic career to train students in the basic principles of engineering science during their bioengineering research projects. He has mentored 80 Ph.D., M.S., and B.S. dissertations and theses over his career. Dr. Haut has published over 150 manuscripts in peer-reviewed, archival journals which have been cited more than 5000 times in the scientific literature. He currently serves on the Editorial Advisory Board of the *Journal of Biomechanics* and as an associate editor of the *International Journal of Vehicle Safety*. His research in Sports Medicine has been honored with H. Ed Cabaud and O'Donahue Awards from the American Orthopaedic Society of Sports Medicine. He has also earned Innovation and Research Excellence awards from the MSU College of Osteopathic Medicine resulting him in receiving an MSU Distinguished Faculty Award.

### Van C. Mow Medal

The Van C. Mow Medal is bestowed upon an individual who has made significant contributions to the field of bioengineering through research, education, professional development, leadership in the development of the professor, as a mentor to young bioengineers, and with service to the bioengineering community. The individual must have earned a Ph.D. or equivalent degree between 10 and 20 years prior to June 1 of the year of the award. The award was established by the Bioengineering Division in 2004.

The 2016 Van C. Mow Award winner is Dr. Beth A. Winkelstein, Ph.D. Dr. Winkelstein received her B.S.E. in Bioengineering from the University of Pennsylvania in 1993 and her doctorate in Biomedical Engineering from the Duke University in 1999. After completing a Postdoctoral Fellowship at the Dartmouth College, she joined the faculty at the University of Pennsylvania in 2002. She is a Professor of Bioengineering and Neurosurgery and is a Vice Provost for Education overseeing the academic portfolios of the four undergraduate schools and also the 12 graduate and professional schools. Dr. Winkelstein's research focuses on elucidating the mechanisms of subfailure spine and joint injuries and the cellular events surrounding the etiology of chronic pain. She takes a hierarchical approach to understand the underlying pathomechanisms at the joint, tissue, and cellular levels. Her work is multidisciplinary, melding engineering and biology to bridge the gaps between basic neuroscience, tissue biomechanics, and clinical application. In support of her research, Winkelstein has been awarded grants from NIH, DoD, NSF, U.S. Army, and private foundations and industry partners. She has been recognized by an NIH Career Award, a Whitaker Foundation Young Investigator Research Award, an NSF Career Award, and the ASME YC Fung Young Investigator Award. Recently, she was elected as a Fellow of ASME and AIMBE. She has mentored more than 14 doctoral students in her own lab and overseen research for over 75 additional fellows and graduate and undergraduate researchers. She edited a book on Orthopaedic Biomechanics, which was published in 2012. She has been active with ASME and its Bioengineering Division, serving on its Student Paper Competition Committee, the Education Committee, the Solid Mechanics Technical Committee,

and most as Co-editor of the *ASME Journal of Biomechanical Engineering*. Since assuming this post, Dr. Winkelstein has been instrumental in working to reduce the review time and broadening the diversity of the Associate Editor Board.

### **Savio L.-Y. Woo Medal**

The Savio L.-Y. Woo Translational Biomechanics Medal was established in June 2015 as a society-level award and recognizes a sustained level of meritorious contributions in translating quality of life. This award is named in honor of Savio Lau-Yuen Woo, Ph.D., Distinguished University Professor of Bioengineering and the Founder and Director of the Musculoskeletal Research Center (MSRC), a diverse multidisciplinary research and educational center in the Department of Bioengineering at the University of Pittsburgh. Beyond pioneering and world-renowned scholarly contributions, Professor Woo has made an enormous impact in 40 years of translational research that has significantly contributed to the delivery of healthcare. Any member of ASME who has demonstrated a sustained level of outstanding achievement in translating bioengineering findings to the clinical community may be eligible for this medal.

The Savio L.-Y. Woo Translational Biomechanics Medal winner is Dr. Baruch Barry Leiber, Ph.D. Dr. Lieber is the inaugural recipient of the 2016 Savio L.-Y. Woo Translational Biomechanics Medal. Translating research discovery to clinical utilization is precisely what Barry has done his entire career, and his work in flow diversion to treat brain aneurysms is a perfect example. Barry went beyond what is typically expected of a bioengineering professor in terms of research, service, and teaching. While performing all of his duties as a university professor and serving our community, particularly the ASME BED (Chair of the Executive Committee 2009–2010, Conference Chair 2008 SBC, Associate Editor to JBME Conference Chair 2008 SBC, and Associate Editor to JBME 2005–2010), he was also a Chief Science Officer and Member of the Board of Surpass Medical. The devices he invented received regulatory approval in Europe, and the U.S. FDA trial was initiated when Surpass Medical LTD was purchased by medical device giant Stryker in 2013. Realizing that technology is only as good as the training and skills of the operating physician, he embarked to build a realistic model of the human circulatory system for training programs for neurointerventional fellows and attending physicians to hone their technical skills prior to using new technology in people. He is the Chief Science Officer of his latest start-up, Vascular Simulations, which sells to medical device companies and hospitals the Replicator that duplicates the cardiac cycle with a functional left atrium and ventricle with mechanical mitral and aortic valves. This Replicator is used by multiple companies to train physicians on new devices prior to enrolling into clinical trials. Barry's work has served to improve the lives of patients suffering from cerebrovascular disease. Flow diversion has been used to treat more than 50,000 aneurysms worldwide. The Replicator has become the standard for training endovascular neurosurgeons and has provided incalculable benefit for patients.

### **Y. C. Fung Young Investigator Award**

The Y. C. Fung Young Investigator Award is given to a young investigator who is under age 36 on or before June 1 of the year of the nomination and has received a Ph.D. or equivalent bioengineering degree within 7 years prior to their nomination. The individual must be committed to pursuing research in and have demonstrated significant potential to make substantial contributions to the field of bioengineering. Such accomplishments may take the form of, but are not limited to, design or development of new methods, equipment or instrumentation in bioengineering, and research publications in peer-reviewed journals. The award was established by the Bioengineering Division in 1985 and operated as a division award until 1998 when it was elevated to a society award.

The 2016 Fung Award winner is Dr. Triantafyllos Stylianopoulos, Ph.D. Dr. Stylianopoulos is an Assistant Professor of Mechanical Engineering and the Head of the Cancer Biophysics Laboratory at the University of Cyprus. He received a Diploma in Chemical Engineering from the National Technical University of Athens, Greece (2003) and a Ph.D. also in Chemical Engineering from the University of Minnesota (2008) working with Dr. Victor H. Barocas. Subsequently, he performed his postdoctoral training with Dr. Rakesh K. Jain at the Department of Radiation Oncology at the Harvard Medical School and Massachusetts General Hospital (2008–2010). Dr. Stylianopoulos has co-authored 50 peer-reviewed articles in the fields of biomechanics, drug delivery, cancer nanomedicine, and tumor micro-environment. He has secured more than \$2.4M for funding his research, including a highly selective \$1.6M Starting Grant from the European Research Council. Dr. Stylianopoulos' research focused on the (1) development of therapeutic strategies to re-engineer solid tumors in order to improve cancer therapy, (2) mathematical modeling of the fluid and solid mechanics of cancer, (3) investigation of specific genes that are related to cancer metastasis in relation to tumor stiffness, and (4) response of stromal cells to mechanical stimuli. His laboratory consists of five senior scientists and postdoctoral fellows, four Ph.D. students, and two Master students. Dr. Stylianopoulos is the recipient of the 2014 Young Investigator award by the Research Promotion Foundation of Cyprus and the 2013 Most Cited paper award of the *Annals of Biomedical Engineering Journal* by the Biomedical Engineering Society (BMES).