Journal of Biomechanical Engineering

Editorial

Society Awards 2017

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 Wayne State University and is named in honor of Professor H. R. Lissner of Wayne State University for his pioneering work in biomechanics that began in 1939.

The 2017 Lissner Medal winner is Dr. Gerald A. Ateshian, Ph.D. Dr. Ateshian received his B.S. (1986), M.S. (1987), and Ph.D. (1991) degrees in Mechanical Engineering at Columbia, pursuing his doctoral research in the Department of Orthopaedic Surgery. He stayed on as a faculty member at Columbia where he is currently the Andrew Walz Professor of Mechanical Engineering. Dr. Ateshian has been a longstanding member of the Bioengineering Division of ASME (BED), having served on multiple committees and rising to the position of Division Chair in 2006. He has mentored 25 Ph.D. students, 42 M.S. students, and 61 B.S. students to date. He has received the Great Teacher Award from the Society of Columbia Graduates in 2002 and the Columbia Engineering Alumni Association Distinguished Faculty Teaching Award in 2012. Dr. Ateshian's research has addressed many different facets of osteoarthritis research with an experimental focus on cartilage mechanics and tissue engineering, while also making significant theoretical and computational advances in the field of continuum mechanics. He was awarded the Y. C. Fung Young Investigator Award from the BED in 1997 and the OARSI Basic Science Award from the Osteoarthritis Research Society International in 2013. He has published over 200 peer-reviewed full-length manuscripts, with 19,000 citations and an h-index of 71. Dr. Ateshian is also a co-developer of the FEBio finite element open-source software suite, which addresses the specific needs of the biomechanics community. Currently, there are more than 5100 registered FEBio users; since its initial release in 2007 there have been more than 110,000 software downloads.

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 bioengineering research to clinical application, to improve the 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. Arthur G. Erdman, P.E. Dr. Erdman is the Richard C. Jordan Professor and a Morse Alumni Distinguished Teaching Professor of Mechanical Engineering at the University of Minnesota, specializing in mechanical design, bioengineering and product design. In July 2007, he was selected as the Director of the Medical Devices Center at the U of M and is also the Co-Editor of the ASME Journal of Medical Devices. He received his BS degree at Rutgers University, his MS and Ph.D. at RPI. Dr. Erdman has published over 370 technical papers, three books, is co-inventor of over 45 patents, and shares with his former students nine Best Paper Awards at international conferences. Dr. Erdman has had research collaborations with numerous health sciences faculty including those in Ophthalmology, Neuroscience, Epidemiology, Cardiology, Urology, Orthopedics, Surgery, Dentistry, Otolaryngology, Veterinary Medicine, and Sports Biomechanics. He has consulted at over 50 companies in mechanical, biomedical and product design, including Xerox, 3M, Andersen Windows, Proctor and Gamble, HP, Rollerblade, Sulzer Medica, St. Jude Medical and Yamaha. He has received a number of awards including ASME Machine Design Award, the ASME Outstanding Design Educator Award, and the U of M Outstanding Service Award. Erdman is a Fellow of ASME and a Founding Fellow of AIMBE. Dr. Erdman has served as chair of the Publications committee, the Design Division, and the Bioengineering Divisions of ASME. He has

also been the Chair of 15 Design of Medical Devices Conferences, which are held next to the University of Minnesota each April. In April 2013, he received the Academy of Medical Device Innovators Award from the University of Minnesota and the Institute for Engineering for Medicine. Dr. Erdman was selected as a "Titan of Technology" in the Technology Advocate category October 2014 by the Minneapolis/St. Paul Business Journal. In 2017, he received the ASME Savio L.-Y. Woo Translational Biomechanics Medal, for "translating meritorious bioengineering science to clinical practice through research, education, professional development, and with service to the bioengineering community."

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 ten and twenty years prior to June 1 of the year of the award. The award was established by the Bioengineering Division in 2004.

The 2017 Van C. Mow Award winner is Dr. Richard R. Neptune, Ph.D. Dr. Neptune earned his Ph.D. in Mechanical Engineering from the University of California, Davis. He held postdoctoral positions at the University of Calgary and the VA Palo Alto Rehabilitation Research and Development Center. He has served on the Department of Mechanical Engineering faculty at UT Austin since 2001. His research integrates musculoskeletal modeling, computer simulation and experimental analyses to identify the neuromotor and biomechanical mechanisms that contribute to locomotor impairments in those with movement disabilities including lower-limb amputees, stroke patients, and wheelchair users. His research also seeks to improve the performance of orthotic and prosthetic devices using advanced additive manufacturing techniques. His research has been supported primarily by the Department of Veteran's Affairs, National Science Foundation, and National Institutes of Health. He has received the American Society of Biomechanics Young Scientist Award and CAREER award from the National Science Foundation. He is also the recipient of the Da Vinci Award from the Engineering Society of Detroit and National Multiple Sclerosis Society and the Outstanding Young Scientist Award from the Houston Society for Engineering in Medicine and Biology. He recently received the Joe and Bettie Branson Ward Endowed Excellence Award from the University of Texas at Austin for his teaching and research that has contributed to changes of positive value to society. He also received the Lockheed Martin Aeronautics Company Award for Excellence in Engineering Teaching and was elected Fellow of the American Society of Biomechanics. He has served ASME in a number of capacities including organizing and chairing conference sessions and as an Associate Editor for the Journal of Biomechanical Engineering. He is currently the Chair of the Department of Mechanical Engineering and a Provost Teaching Fellow, and holds the John T. MacGuire Professorship in Mechanical Engineering.

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 2017 Fung Award winner is Kristin Myers, Ph.D. Dr. Myers is an Associate Professor in the Department of Mechanical Engineering at Columbia University in the City of New York. She received her Mechanical Engineering doctorate (2008) and masters (2005) degrees from MIT under the mentorship of Dr. Simona Socrate and her bachelors (2002) degree from the University of Michigan under the guidance of Dr. Alan Wineman. In 2010, she completed postdoctoral research in the field of ocular biomechanics mentored by Dr. Thao (Vicky) Nguyen at Johns Hopkins. In 2010, she founded the Myers Soft Tissue Lab at Columbia, which uses experimental, theoretical, and computational mechanics to solve problems in Women's Health and Reproductive Biomechanics. With clinical translation in mind, her lab is uncovering the structural antecedents of preterm birth. Through the experimental interrogation of nonpregnant and pregnant cervical tissue and multiorgan finite element models of pregnancy, her work has: (1) quantified the nonlinear and time-dependent material behavior of the cervix, (2) measured the evolution of cervical collagen crosslinking throughout a murine pregnancy, identifying the key gestational time points of collagen network remodeling, (3) established an anisotropic material model for human cervix informed by collagen directionality data, (4) quantified and visualized the loading environment of human pregnancy to uncover the load-sharing capability of the uterus, fetal membranes, and cervix, and (5) demonstrated the structural role of the cervical collagen fiber architecture and collagen fiber strength in preventing early cervical deformation. Dr. Myers' work is funded by the NIH, NSF, and the March of Dimes, including the NSF CAREER award to develop the framework to model hormone-mediated tissue growth and remodeling of the uterine cervix during pregnancy.