



Editorial

Journal of Biomechanical Engineering—Legacy Paper

The *Journal of Biomechanical Engineering* has been in continuous production since 1977. To honor papers published at least 30 years ago that have had a long-lasting impact on the field, we present a paper starting from the early years of the journal that has had lasting impact, as assessed by metrics such as the total number of citations accumulated since publication. Following on last year's legacy paper, "Biphasic Creep and Stress Relaxation of Articular Cartilage in Compression: Theory and Experiments," by V. C. Mow, S. C. Kuei, W. M. Lai and C. G. Armstrong (*JBME* **102**(1):73, 1980), we present this year's choice for the Legacy paper:

"A Joint Coordinate System for the Clinical Description of Three-Dimensional Motions: Application to the Knee," by E. S. Grood and W. J. Suntay, *ASME Journal of Biomechanical Engineering*, **105**(2): 136, 1983.

This seminal paper presented a joint coordinate system that provides a simple description of the three-dimensional rotations and translations of the knee related to clinical terms, providing an

important engineering bridge to biomedical research problems. This approach adopted clinical terminology for use with mathematical definitions, enabling common descriptions across both engineering and clinical fields. This pioneering work has enabled others to integrate engineering in a meaningful way to describe, understand and model normal joint function as well as altered function in disease and/or injury states.

With nearly 1,300 citations, the paper was and is still of tremendous impact for a wide range of biomechanical studies. In the last year, it received over 120 citations by papers ranging in topic from knee biomechanics to ligament fiber mechanics to gait and posture to spine mechanics and pathology. The great breadth of application of the authors' approach and methodology across a variety of biomechanical problems, and across a range of length scales, further points to the great utility and importance of this work. We are proud to honor Grood and Suntay (1983) as the 2015 *ASME Journal of Biomechanical Engineering* Legacy paper.