Resource Sharing

Sharing of computational knee models (and relevant data) as resource has been conducted through the "Downloads" section of the project website at https://simtk.org/home/openknee. All download packages are disseminated using the Creative Commons Attribution-ShareAlike 3.0 Unported (CC BY-SA 3.0) license, see http://creativecommons.org/licenses/by-sa/3.0/). This license allows anyone to share (to copy, distribute, transmit the work), to remix (to adapt the work), and to make commercial use of the work under the following conditions: i) attribution – one must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work); ii) share alike – if one alters, transforms, or builds upon this work, one may distribute the resulting work only under the same or similar license to this one. This licensing scheme provides utmost dissemination and promote open science. It also does not restrict any type of use, academic or commercial.

Package. Open Knee - Generation 1 version g1-s1-v1.0.1.202

Release Date. January 5, 2011

Release Description. This package contains the Open Knee model, data (mri, geometry, mesh), scripts to generate the model, sample simulation results, and the User's Guide. The Open Knee aims at the development and dissemination of a finite element representation of the knee joint.

Download Location. https://simtk.org/frs/download.php?file_id=2593

Downloads. 407 unique downloads; 542 (total downloads), as of April 7, 2014.

Impact of Resource Sharing

Dissemination of Open Knee(s) data and models enabled the following studies conducted by investigators beyond the Open Knee(s) development team:

1. Westermann, R. W., Wolf, B. R. and Elkins, J. M. (2013) Effect of acl reconstruction graft size on simulated lachman testing: a finite element analysis, Iowa Orthop J, 33, 70-77.
2. Wangerin, S. (2013) Development and validation of a human knee joint finite element model for tissue stress and strain predictions during exercise, M.Sc. Thesis, California Polytechnic State University, San Luis Obispo, California, USA.
3. Guo, H. and Spilker, R. L. (in press) An augmented Lagrangian finite element formulation for 3D contact of biphasic tissues, Comput Methods Biomech Biomed Engin.
4. Valkeapää, A., Kłodowski, A., Rantalainen T. and Mikkola A. Knee cartilage surface loading during stationary bicycling, Computer Methods in Mechanics, May 9-12, 2011, Warsaw, Poland.
5. Tichon, D. J. (2011) Finite element analysis of the effect of low-speed rear end collisions on the medial meniscus, M.Sc. Thesis, University of Connecticut, Storrs, Connecticut, USA.
6. Heydon, R. (2011) Finite element analysis of knee articular cartilage, M.A.Sc. Thesis, Ryerson University, Toronto, Ontario, Canada.