Development of an Open Source Image-Based Flow Modeling Software - SimVascular[1] ADAM UPDEGROVE, University of California, Berkeley, JAMESON MERKOW, DANIELE SCHIAVAZZI, University of California, San Diego, NATHAN WILSON, University of California, Los Angeles, ALISON MARSDEN, University of California, San Diego, SHAWN SHADDEN, University of California, Berkeley — SimVascular (www.simvascular.org) is currently the only comprehensive software package that provides a complete pipeline from medical image data segmentation to patient specific blood flow simulation. This software and its derivatives have been used in hundreds of conference abstracts and peer-reviewed journal articles, as well as the foundation of medical startups. SimVascular was initially released in August 2007, yet major challenges and deterrents for new adopters were the requirement of licensing three expensive commercial libraries utilized by the software, a complicated build process, and a lack of documentation, support and organized maintenance. In the past year, the SimVascular team has made significant progress to integrate open source alternatives for the linear solver, solid modeling, and mesh generation commercial libraries required by the original public release. In addition, the build system, available distributions, and graphical user interface have been significantly enhanced. Finally, the software has been updated to enable users to directly run simulations using models and boundary condition values, included in the Vascular Model Repository (vascularmodel.org). In this presentation we will briefly overview the capabilities of the new SimVascular 2.0 release.

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