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**SimVascular 2.0: an Integrated Open Source Pipeline for Image-Based Cardiovascular Modeling and Simulation** HONGZHI LAN, Stanford University, JAMESON MERKOW, University of California, San Diego, ADAM UPDEGROVE, University of California, Berkeley, DANIELE SCHIAVAZZI, Stanford University, NATHAN WILSON, Open Source Medical Software Corporation, SHAWN SHADDEN, University of California, Berkeley, ALISON MARSDEN, Stanford University — SimVascular ([www.simvascular.org](http://www.simvascular.org)) is currently the only fully open source software package that provides a complete pipeline from medical image based modeling to patient specific blood flow simulation and analysis. It was initially released in 2007 and has contributed to numerous advances in fundamental hemodynamics research, surgical planning, and medical device design. However, early versions had several major barriers preventing wider adoption by new users, large-scale application in clinical and research studies, and educational access. In the past years, SimVascular 2.0 has made significant progress by integrating open source alternatives for the expensive commercial libraries previously required for anatomic modeling, mesh generation and the linear solver. In addition, it simplified the across-platform compilation process, improved the graphical user interface and launched a comprehensive documentation website. Many enhancements and new features have been incorporated for the whole pipeline, such as 3-D segmentation, Boolean operation for discrete triangulated surfaces, and multi-scale coupling for closed loop boundary conditions. In this presentation we will briefly overview the modeling/simulation pipeline and advances of the new SimVascular 2.0.

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