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Shelly M McGee* (mcgee@findlay.edu), Department of Mathematics, 1000 N Main St, Findlay, OH 45840. *A sixth-order compact finite difference method for Navier-Stokes in cylindrical coordinates*. Preliminary report.

A model will be proposed to simulate the Navier-Stokes equation for incompressible fluid flow in a cylindrical channel using a sixth-order compact finite difference method. The finite difference discretization will be combined with the semi-implicit method for pressure link equations revised (SIMPLER). Blood flow will be simulated using the model. (Received September 22, 2011)