1145-92-414   **Nicholas Randolph*** (`nzrandol@ncsu.edu`), 2110 Avent Ferry Rd, Unit 461, Raleigh, NC 27607,
E Benjamin Randall (`ebrandal@ncsu.edu`), 3745 Yorktown Pl, Raleigh, NC 27609, and **Mette Olufsen**. *Global sensitivity analysis and model selection of a neurological control model.*

Mathematical model selection is an integral phase of the model development timeline, relying on numerous techniques and validation methods. Within this talk, I will discuss the implications of global sensitivity analysis and its role in model selection, highlighting two methods in particular - Sobol' indices and Morris Screening. The use of these methods will then be discussed in light of a neurological model based on the physiological response to the Valsalva maneuver. Specific selection criteria and an overview of the tests performed on this model will be outlined. Results will be interpreted through the lens of model selection, focusing on the necessity of (i) distinguishing between the aortic and carotid components and (ii) the discrete sympathetic delay. (Received September 05, 2018)