

Research Summary

Dr. Hester's current research focus is continuing the computational simulation of human physiology started by Drs. Guyton and Coleman in the 1970s. HumMod is the latest version of Dr. Coleman computer simulation of latest version of Dr. Coleman's software. For the last 15 years he has been leading the Center for Computational Medicine in the development of HumMod and other integrative physiological models. HumMod is being used for education, research and clinical trials. Dr. Hester's tech transfer company HC Simulation, LLC has developed a browser based implementation of HumMod for educational purposes. In collaboration with Dr. William Pruett and John Clemmer the CCM has used HumMod to understand results from experimental and clinical studies (PMCID 27974315, 28797976). The Center for Computational Medicine has developed the ability to modify HumMod to be able to generate populations of patients. These technical developments have led to collaborations with the FDA, Medtronic and ANSYS for the use of HumMod as an enrichment tool for clinical trials.