Abstract:
The Medtronic Neuro and Spine Enabling Technologies business unit (Louisville, Colorado) oversees a broad portfolio of products, including implantable devices and assistive technologies (imaging, navigation and robotics) for use in the planning and performance of cranial and spinal procedures. This technological ecosystem offers rich opportunities for clinical researchers to advance the state of the art of neurosurgery in partnership with Medtronic. This seminar will present an overview of the Enabling Technologies product portfolio and an introduction to the collaborative research program operated by the Enabling Technologies External Research and Early Technologies team. Two NIH-supported translational research projects, for which Dr. Schaewe is the Industry Principal Investigator, will be highlighted: 1) Brain Shift Characterization with Dartmouth College (PI Keith Paulsen, PhD) and 2) Resting State Functional Brain Mapping with Washington University in St. Louis (PI Eric Leuthardt, MD).

Bio:
Timothy J. (Tim) Schaewe, D.Sc. is a Principal Research Engineer and Technical Fellow for the Medtronic Neuro and Spine Enabling Technologies business. Dr. Schaewe has extensive experience in the areas of image-guided surgery and computational models of neuroanatomy and has contributed to the success of numerous clinical research initiatives as a professional engineer in industry and as an academic researcher. Prior to joining Medtronic, Dr. Schaewe was a member of the stroke research team at the UCLA David Geffen School of Medicine where he led the development and deployment of automated software for quantitative analysis of multi-modal MR and CT images supporting stratification and randomization of patients enrolled in the NIH-sponsored MR RESCUE clinical trial. Since joining Medtronic in 2012, he has served as the industry principal investigator for two National Cancer Institute supported academic-industry collaborations: with Dartmouth College, investigating computational modeling for brain shift compensation during brain tumor resection procedures, and with Washington University in St. Louis, exploring the application of resting state functional magnetic resonance imaging in image-guided surgery. Dr. Schaewe received his Doctor of Science degree in Electrical Engineering from Washington University in St. Louis in 1991.