We are pleased to profile Dr. Tom Conturo (Vanderbilt MSTP Class of 1989) in this issue of The Chimera. Following Dr. Conturo’s graduation from the University of Pennsylvania in 1981 with degrees in Chemistry and Biochemistry, he matriculated to the Vanderbilt MSTP. He completed his M.D. and Ph.D. degrees in 1989, the latter while in the laboratory of Dr. Al Beth in Department of Molecular Physiology and Biophysics. The title of his dissertation was “In-situ Characterization of Tissue Blood Flow, Blood Content, and Water State Using New Techniques in Magnetic Resonance Imaging.”

Dr. Conturo transitioned to a residency in diagnostic radiology at Johns Hopkins University, followed by a two-year postdoctoral fellowship at the NIH. His first faculty position was at Washington University (St. Louis) as an assistant professor of Radiology (1993), followed by appointments as adjunct assistant professor of Physics (1996) and Biomedical Engineering (1999). He was promoted to associate professor of Radiology in 1999, then promoted to adjunct associate professor of biomedical engineering and physics in 2000.

The goals of Dr. Conturo’s research lab are to develop and apply magnetic resonance (MR) imaging techniques for quantitative imaging of cerebral perfusion, brain function, water diffusion, and neuronal fiber pathways. These techniques utilize the MR signal effects of exogenous bolus-injected contrast agents, endogenous hemoglobin, and microscopic water diffusion. Long-term goals of the Conturo lab are to apply these methodologies toward imaging and understanding human brain structure, function, and physiology in normal and abnormal conditions. The approaches that are used in his laboratory cover a broad range of areas, including MRI physics, MRI pulse sequence development, theoretical derivations, computer simulations, image-processing, computer graphics, custom contrast agents, phantom studies, animal models, human studies, clinical patient studies, and comparison with other imaging modalities.

Dr. Conturo is the author or co-author of almost 60 peer-reviewed articles as well as serving as a reviewer for eight journals and a number of grant study sections. He is an active member of a number of national and international societies and organizations and has been an invited speaker at forums across the globe. He has a well-established, successful career as a physician scientist, and enjoys mentoring students at Washington University. We are proud to count him as an alumnus of the Vanderbilt MSTP!