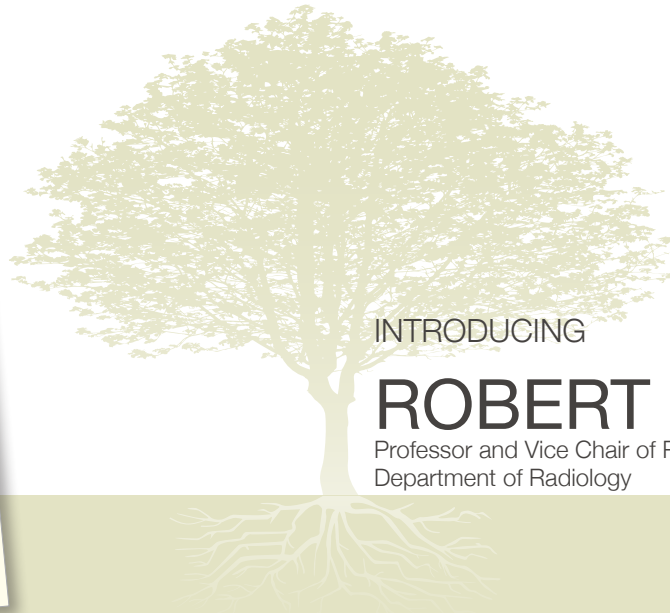


Colleagues,
I am pleased to announce that Dr. Robert E. Lenkinski has arrived on campus as the Vice Chair of Research for the Department of Radiology. With Bob's many talents, we can look forward to key contributions in translational and collaborative research. Please join me in welcoming Bob to the UT Southwestern community.
Neil M. Rofsky, M.D.



INTRODUCING

ROBERT E. LENKINSKI, PhD

Professor and Vice Chair of Research
Department of Radiology

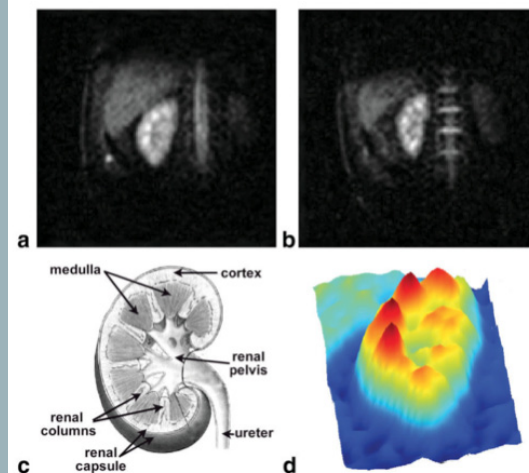
Dr. Lenkinski is a chemist by training. He received his B.Sc. from the University of Toronto in 1968 and completed his Ph.D in Chemistry in 1973 at the University of Houston. Dr. Lenkinski was a post-doctoral fellow in the Isotope Department at the Weizmann Institute of Science in Rehovot, Israel. He was on the faculty of the Department of Radiology at the University of Pennsylvania from 1986-1999 and at Beth Israel Deaconess Medical Center, Harvard Medical School from 1999 until his recruitment to UTSW. One of his major research interests is in clinical applications of *in vivo* Magnetic Resonance spectroscopy. Dr Lenkinski is also developing *in vivo* multinuclear MR imaging methods, primarily Na-23. A more recent area of interest has been molecular imaging. This new area involves the development of novel MR, radiotracer, and optical based imaging contrast agents. In this area Dr. Lenkinski has developed an agent that binds to hydroxyapatite, the form of micro-calcification that is predominantly present in human breast cancer.



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MAJOR RESEARCH THEME:

There are two major goals of my current research program. The first is the development, validation and application of Magnetic Resonance Spectroscopic (MRS) and Multi-nuclear Imaging methods for the study of human disease. This program is aimed at understanding how the metabolic information derived from these methods can aid in the diagnosis, staging and treatment of a variety of pathologies. Current applications involve brain tumors, breast cancer, prostate cancer and renal function. This work involves basic research, translational, and clinical investigations. The second part of my program is the development of MR-based molecular imaging agents. This work spans chemical conjugation, basic theoretical treatments of MR effect size. A major aim of this research is the characterization of these agents in model systems. At present a major focus is on lanthanide based relaxation and shift reagents and their conjugation to low-molecular weight ligands. A particular example is the development of lanthanide based chelates for the imaging of micro-calcifications in human breast cancer.



Coronal slices (A, B) taken from a 3D acquisition of the sodium-23 signal of a human kidney. The panel in C shows a depiction of the coronal anatomical structure of the human kidney for reference. Panel D shows the surface plot of the image shown in A. Note that the renal pyramids show enhanced signal and that the sodium gradient from the cortex to each pyramid varies linearly with distance.