Development of Non-invasive Physiologic Predictors of Aggressiveness in Renal Tumors with MRI

A postdoctoral training position is available in the laboratory of Ivan Pedrosa M.D. Ph.D., in the Department of Radiology at UT Southwestern Medical Center to study Radiogenomics in renal tumors. The Pedrosa laboratory has several exciting projects related to development of novel magnetic resonance imaging (MRI) approaches to evaluate renal tumor angiogenesis and lipid metabolism in humans and their correlation with genomic and molecular alterations in the same tumors. Specifically, we seek to investigate the ability to predict recently discovered molecular alterations in the angiogenic and lipogenic pathways that are associated to aggressive behavior in clear cell renal cell carcinoma (RCC) with in vivo MRI measures of perfusion using arterial spin labeled (ASL) imaging; vascular permeability using dynamic contrast-enhanced (DCE) imaging; fat accumulation using Dixon-based MRI techniques; and cellularity using diffusion weighted imaging (DWI). Spatial co-localization of various tissue-based analyses and in vivo alterations in tumor perfusion and lipogenesis is achieved with a novel Radiogenomics platform including 3D Printing technology.

The Pedrosa Lab is located in the Department of Radiology and Advanced Imaging Research Center (AIRC) at UT Southwestern Medical Center. Primary investigations will use state-of-the-art dual-transmit, whole-body, digital 3T MRI scanner. There will be opportunities to develop additional research initiatives related to tumor pathophysiology at other 3T and the 7T whole body scanner in the AIRC. There will be close interactions with investigators in the Kidney Cancer Program (KCP) of the Simmons Comprehensive Cancer Center.

Candidates must hold a Ph.D. with prior experience in medical imaging relevant areas and good publication record. Programming skills in MATLAB/Python/C/C++/IDL is highly recommended. Other skills including MR pulse sequence programming, image processing, radiomics, and artificial intelligence are welcomed.
Information on our postdoctoral training program and benefits can be found in our Postdoc Handbook or at http://www.utsouthwestern.edu/postdocs.

Interested individuals should send a CV, statement of interests, and a list of three references to:

Ivan Pedrosa M.D. Ph.D.
UT Southwestern Medical Center
5323 Harry Hines Blvd.
Dallas, TX 75390-9085
bridgette.young@utsouthwestern.edu
https://www.utsouthwestern.edu/labs/pedrosa/

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