

MEDICAL PHYSICS SEMINAR SERIES



Lawrence Lechuga

Fluorine-19 MRI for Quantitative In Vivo Tracking of Murine Natural Killer Cells Within Lymphoma

In recent years, cancer immunotherapies have demonstrated great success against multiple forms of cancer. One treatment approach utilizes adoptive cellular transfer (ACT) of Natural Killer cells to elicit cytotoxic activity and tumor infiltration. A growing number of studies suggest that the presence of NK cells within solid tumors is associated with more positive clinical outcomes. Although this information may hold prognostic value and inform the timing of cellular infusions, the biodistribution and persistence of these cells after infusion are generally unknown. Fluorine-19 (¹⁹F) MRI has the potential to track and quantify labeled cells for days to weeks after adoptive transfer.



Luis Torres

Motion Compensation in Pulmonary Ultra-short Echo Time MRI

Idiopathic Pulmonary Fibrosis (IPF), a chronic restrictive lung disease, and Bronchopulmonary Dysplasia (BPD), a disease of premature birth, are progressive pulmonary diseases that could benefit from structural MRI to allow for more frequent imaging without accruing ionizing radiation dose. Recently, 3D radial ultrashort echo-time (UTE) MRI has shown promise for application in these subjects, however, due to long acquisition times and inconsistent tidal breathing in disease, motion corruption is still frequently observed. Recently, more advanced motion correction techniques have been proposed to retrospectively improve image quality. Our goal is to identify the current best approach for compensating for respiratory motion and capturing respiratory dynamics using 3D radial UTE MRI.

Monday, March 7
4:00PM (CT) via Webex

Location:

<https://uwmadison.webex.com/uwmadison/j.php?MTID=m5a73495761389656e596d8c3a87ee070>



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