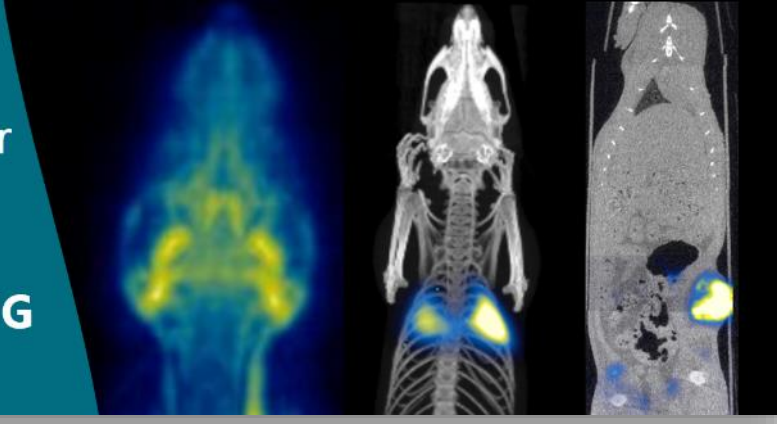
Advancing the Limits of Molecular Imaging with

MAGNETIC PARTICLE IMAGING



An Introduction to Magnetic Particle Imaging:

Systemic Tracking of Immune Cells *In Vivo*

The success of cancer immunotherapy has driven the rapid growth of research in immuno-oncology. This has fueled the need to determine the biodistribution of a variety of immune cells in solid tumors and systemically over time.

Magnetic Particle Imaging (MPI) is a novel preclinical imaging technique that can be used to non-invasively track iron-oxide-tagged immune (and other) cells ***in vivo*.**

By combining accurate quantitation and specificity, MPI can provide information on macrophage and other immune cell biodistributions over time. MPI has also been used to track the biodistribution of stem, tumor and immune cells *in vivo* for weeks or even months. The same nanoparticles can also be used to generate heat for localized hyperthermia, as therapy or as an adjunct to radiation or immune therapies.

This can be used for:

- Systemic tracking of immune (and other) cells in 3D *in vivo*
- Localized RF hyperthermia for tumor immunogenesis (*e.g.*, to turn immunologically 'cold' tumors 'hot')
- Drug delivery monitoring and image-guided theragnostics

Results for both immune cell tracking and localized hyperthermia will be discussed.

Date/Time: 2:00 – 3:00 PM, Wednesday, Feb 26th
Location: PARCC – Conference room
Hosted By: Bertrand Tavitian

Presenter: James Mansfield

James R. Mansfield is a scientist with over 25 years of experience in instrumentation and application development for the Life Sciences. His work has been in in vivo *and pathology imaging and analysis, multispectral imaging, in vivo spectroscopy and applied data analysis, directed towards finding of novel methods for the diagnosis and monitoring of medical conditions. Jim is an associate editor of two journals, holds 8 patents, and has over 60 peer-reviewed publications.*

About Magnetic Insight

Magnetic Insight is developing solutions in Magnetic Particle Imaging (MPI), a ground-breaking technology that will add value alongside with current clinical and translational research imaging techniques. Magnetic Insight was founded by the leading research group of MPI from UC Berkeley.

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