

## **M664 Seminar in Applied Math. “Mathematics in Medical Imaging”**

In spite of the title, industrial, geophysics, and homeland security applications will also be touched upon.

This is a severely mathematical applied area, where all kinds of beautiful math are used.

I will cover the basics of Radon and related transforms arising in imaging, their relations to radiative transport and wave equations, mathematics of various types of classical, as well as newly being developed tomographic methods.

The background suggested is basics of Real, Complex, and Functional analysis, elements of Fourier series and transforms (albeit a write-up will be provided), are highly desirable. Elements of PDEs would not hurt as well.