

# SCIENCE SEMINAR

FRIDAY, FEBRUARY 13  
KNOTT HALL B01  
3PM

## INTRODUCTION TO THE PHYSICS OF MRI

RONALD OUWERKERKAFF  
STAFF SCIENTIST AT NIH/NIDDK

THIS PRESENTATION WILL COVER SOME OF THE BASIC PRINCIPLES, PHYSICS AND ENGINEERING PROBLEMS OF CLINICAL AND RESEARCH MAGNETIC RESONANCE.

1) THE EQUIPMENT:

- A. THE SUPERCONDUCTING MAGNETS FROM 1.5T CLINICAL MRI TO 22.1T RESEARCH NMR
- B. THE GRADIENT COILS AND AMPLIFIERS
- C. THE RF TRANSMIT AND RECEIVE SYSTEMS

2) THE PULSE SEQUENCE, THE MANY WAYS TO ACQUIRE AN MR IMAGE

3) SPECIAL MRI TECHNIQUES SUCH AS FMRI DIFFUSION TENSOR IMAGING

4) RESEARCH TOPICS SUCH AS MR SPECTROSCOPY, MR OF OTHER NUCLEI  
AND HYPERPOLARIZED MR

REFRESHMENTS WILL BE SERVED