



**3T MR
Research
Program**

**Center for MR
Research**

**University of Illinois
at Chicago**

TECH 2000 3T MRI RESEARCH FACILITY

WINTER 2019 ISSUE

3T MRI Facility Updates

By Mike Flannery

Subject parking



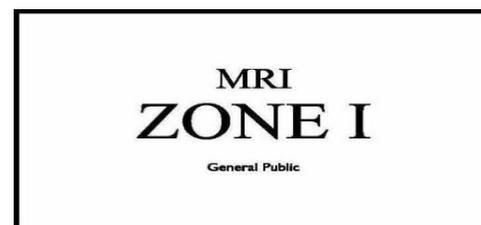
The 3T MR Research Program would like to ensure that your subject's arrival on the day of their scan goes as smoothly as possible by providing free parking for their vehicles as well as free access to the campus shuttle bus system. As a reminder, there are 3 reserved parking spaces located in the front parking lot of the 2242 W. Harrison MR research facility marked with a blue "3T Research" sign. Researchers and their subjects may use any of these spaces to park their vehicle during their scheduled exam time. In the event that the parking lot is full or these spaces are not available, please call the following number(s):

- **3T Console Desk at (312) 413-1309.**
- **If there is no answer, please call Aggeliki Gikas at (312) 413-0178.**

MRI Safety updates

The 3T MR Research program is currently working on implementing an annual MR Safety training program for all research personnel in order to increase MR safety awareness. Stay tuned for more details. All new research personnel must receive their initial MR Safety training prior to working within the MR environment at the Harrison imaging facility. All MR Safety training requests should be scheduled directly with Mike Flannery by calling (312) 996-1251 or email (mpflanne@uic.edu). There are many potential risks to research assistants, subjects, their accompanying family members, and non-MR personnel within the MR environment. The American College of Radiology (ACR) has provided recommendations for a MR site "zoning" system (Zones I-IV) to clearly define each area within the MR environment and the potential safety hazards that may exist in each of these zones. In this edition of our newsletter, we would like to inform the research community about the locations and the corresponding signs that mark each specific safety zone within the Harrison imaging facility as part of our ongoing mission to provide a safe research MR environment.

Zone I



Zone I has no detectable magnetic field and there are no restrictions on access. The general public may freely move around this zone without supervision or needing to be MR safety screened. Zone I is located within the front waiting room area and anywhere outside of the key coded door next to the reception desk at the Harrison facility.

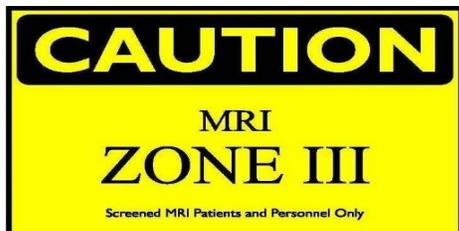
Zone II



Zone II is still a public area; however, this area will have limited access available to subjects, research staff, and subject family members since it is located between the

unrestricted Zone I and strictly controlled Zones III and IV. All subjects need to be escorted into Zone II with a properly trained Research Assistant or MR Technologist. It is here where the subject MR screening process will take place and all personal belongings shall be locked up in the lockers provided in the Zone II waiting area or left with subject's family member. Zone II is located within the changing room/locker waiting area and patient preparation room (Room 1528).

Zone III



Zone III has restricted access to the general public. The MR environment in Zone III can present hazards from the fringe, gradient, or RF magnetic fields. Subjects, research staff, family members, etc. will only be granted access after they have undergone MR safety screening and under the direct supervision of the MR research technologist. Before admittance to Zone III, subjects must remove any loose metallic objects, electronics, and all personal items from their person. Zone III is located within the MR scan control room (Room 1508) adjacent to the MRI scan room and the MR equipment room. All access is strictly controlled by MR personnel.

Zone IV



Zone IV is the magnet room itself and carries the greatest risk to subjects and non-MR personnel. Hazards such as ferromagnetic objects becoming an airborne projectile and interference of medical implants (cardiac pacemakers, aneurysm clips, etc.) may result in life threatening situations. Nobody may enter Zone IV unless they have been MR

safety screened and are accompanied by and under the direct supervision of the MR research technologist.

New Research Studies



Krista Varady, PhD

Dr. Krista Varady is a Professor of Nutrition at the University of Illinois in Chicago. Her research focuses on the efficacy of intermittent fasting for weight loss, weight maintenance, and cardio-protection in obese adults. Dr. Varady has over 70 publications on this topic and is author of the book entitled "The Every Other Day Diet". She is currently working with the 3T MR research Program to conduct proton density fat fraction (PDFF) imaging in order to measure hepatic steatosis. Dr. Varady's current project, "**Alternate Day Fasting Combined with Exercise for the Treatment of NAFLD**", aims to compare the effects of a combination intervention of alternate day fasting (ADF) and aerobic exercise vs ADF or exercise alone on hepatic steatosis over a 12 week period in prediabetic obese NAFLD subjects. The hypothesis of this specific aim is that the MR imaging analysis of the combination group will experience a greater reduction in hepatic steatosis when compared to the ADF and aerobic exercise groups individually.



Jorge Kizer, MD

Dr. Jorge Kizer is a Professor of the school of Medicine at the University of California in San Francisco. His research applies cardiac imaging and assessment of biochemical markers in clinical and epidemiologic settings to advance understanding of risk factors for heart disease and stroke, with the ultimate

goal of improving diagnosis, risk stratification and treatment for these disorders. Key areas of interest are obesity and the aging process, and how bioactive factors secreted by adipocytes, skeletal myocytes, and cardiomyocytes, among other cell types, lead to dysregulation of homeostatic mechanisms and promote the development of metabolic and cardiovascular diseases.

Dr. Kizer's current project, "**Non-Alcoholic Fatty Liver Disease and Cardiovascular Disease in Hispanic / Latinos**", will evaluate the link between hepatic fibrosis to myocardial fibrosis in this population as it relates to lifestyle, psychosocial, and sociocultural factors. This correlation will utilize a T1 mapping technique with the modified Look-Locker inversion recovery sequence (MOLLI) in order to analyze the extent of fibrosis within both the liver and heart.



John Burns, PhD

Dr. John Burns is the Associate Chair for Research in the Division of Behavioral Sciences at Rush University Medical College. Dr. Burns conducts research on biophysical conceptualizations of chronic pain. His current project, "**Transition from Acute to Chronic Pain in Total Knee Arthroplasty Patients: Identifying Resilience and Vulnerability Profiles**", will focus on post total knee arthroplasty (TKA) subjects who experience chronic postsurgical pain. The goal of the project is to produce a dataset that encompasses clinical, biological, psychological, socioeconomic and imaging predictors for a diverse group of patients undergoing TKA. Dr. Burns is collaborating with the 3T MR Research program to implement a fMRI protocol that will image the brain during the delivery of a pain stimulus. The knowledge gained from this project hopes to aid in the understanding of how acute pain becomes chronic pain following surgery and enhance the ability to target more effective preventative and treatment strategies for these patients.

UIC 3T MR RESEARCH PROGRAM 2242 W. HARRISON

- ZONE 1: GENERAL PUBLIC
- ZONE 2: UNSCREENED MRI SUBJECTS
- ZONE 3: SCREENED MRI SUBJECTS AND PERSONNEL ONLY
- ZONE 4: SCREENED MRI SUBJECTS UNDER CONSTANT DIRECT SUPERVISION OF TRAINED MRI PERSONNEL ONLY



FRONT WAITING ROOM AREA