

SPEAKERS/ INSTRUCTORS



ABDULLAH ABU JAMEA, PhD
Assistant Professor & Consultant
Medical Physicist, Department of
Radiology & Medical Imaging,
King Khaled University Hospital
King Saud University, Riyadh, KSA



OMER DEMIRKAYA, PhD, DABSNM
Senior Scientist,
Head, Imaging Physics Section
Biomedical Physics Department
King Faisal Specialist Hospital &
Research Centre, Riyadh, KSA



ABDULLAH AL HOTI, MSc
Education Coordinator, Clinical
Department, Medical Imaging
King Abdulaziz Medical City
Riyadh, KSA



METAB ALKUBEYER, MD
Consultant Body MRI &
Imaging Informaticist,
King Khalid University Hospital
Riyadh, KSA



AHMED MASAWI, MSc
Senior Technical Specialist,
Biomedical Physics Department
King Faisal Specialist Hospital
& Research Centre, Riyadh, KSA

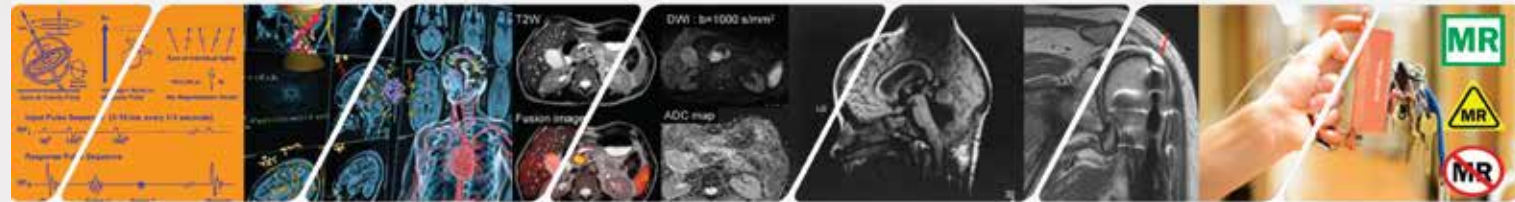


RAFAAT MOHTASIB, PhD
Post-Doctoral Fellow,
Biomedical Physics Department
King Faisal Specialist Hospital &
Research Centre, Riyadh, KSA



MAMDOH SAAD ALOBAIDY, MD
Associate Consultant,
Radiology Department
King Faisal Specialist Hospital &
Research Centre, Riyadh, KSA

What you need to know?



- This course is not only targeting professionals in the medical imaging field, but it is also targeting most of the health professionals and assistants who could help in improving patient and staff safety in MRI environment.

- Physician ordering MRI will be more confident about who should and should not undergo MRI scan while keeping patient safety in perspective.

- The course will simplify the physics behind diffusion and perfusion MRI imaging.

- Who should attend: Residents, Fellows, Technologists, Nurses, Respiratory therapist, biomedical engineers and any other health professionals accompany the patients during MRI procedures.

2017 RADIATION IN MEDICINE SYMPOSIUM & WORKSHOP

KING FAISAL SPECIALIST HOSPITAL &
RESEARCH CENTRE, RIYADH, SAUDI ARABIA

12 - 16 FEBRUARY 2017

MRI: BASICS AND SAFETY *Track*

SUNDAY, 12 FEBRUARY 2017

VENUE: POST-GRADUATE CENTRE

CHAIR: Ahmed Masawi, MSc
Email: amasawi@kfshrc.edu.sa
Tel. No.: 0112162919 ext. 48413

INTRODUCTION TO MRI PHYSICS

It is quite possible to acquire images with an MR scanner without understanding the principles behind it, but choosing the best parameters, methods, interpreting images and avoiding artifacts requires the thorough understanding of basic MR principles.

This lecture aims to cover fundamental MR principles such as magnetism, MR signal production, MR image formation and contrast characteristics.

The topics discussed in this session will prepare the audience (or attendees) to encapsulate the advanced MR safety and MR applications.

MRI PHYSICS, SEQUENCES (ADVANCED)

In-depth information regarding pulse sequences, image formation and contrast. Emphasis is placed on details of MR parameters, pulse sequences, methods of data acquisition, imaging options, image artifacts and quality assurance to enable the audience to maximize MR quality by understanding the fundamentals of MR imaging.

MRI ARTIFACTS:

1. Present the different parameters used to judge the quality of an image
2. Describe the factors influencing the signal-to-noise ratio and their interdependence
3. List the different MRI artifacts, their origin, effects on the image and ways of reducing them:
 - Movements, phantom images, flow
 - Magnetic susceptibility and metal artifacts
 - Truncation / Gibb's
 - Folding / aliasing
 - Chemical shift
 - Cross-excitation
 - Magic angle
4. Present the basic criteria in MRI quality control

PROGRAM LAYOUT

DAY 1, SUNDAY, FEBRUARY 12, 2017

Time	Mins	
07:30 – 08:30	60	Registration & Coffee Break
SESSION I		
08:30 – 09:15	45	Introduction To MRI Physics Speaker: Mr. Abdullah Al Hoti
09:15 - 10:00	45	MRI Physics, sequences Speaker: Dr. Abdullah Abu Jamea
10:10 - 10:15	15	MORNING BREAK
SESSION II		
10:15 - 11:00	45	MRI Biomarkers I Speaker: Dr. Metab Alkubeyyer
11:00 - 11:45	45	MRI Biomarkers II Speaker: Dr. Metab Alkubeyyer
12:00 - 13:15	75	PRAYER & LUNCH BREAK
SESSION III		
13:15 - 14:30	75	MRI Artifacts and Remedies Speaker: Dr. Abdullah Abu Jamea
14:30 - 15:15	45	MRI ACR Weekly QC Speaker: Dr. Omer Demirkaya
15:15- 15:45	30	PRAYER & AFTERNOON BREAK
SESSION IV		
15:45 - 16:25	40	Gadolinium Based Contrast Safety Speaker: Dr. Mamdoh Saad Alobaidy
16:25 - 17:05	40	MRI Safety Speaker: Mr. Ahmed Masawi
17:05 - 17:25	20	fMRI (Mind-Reading and Neurofeedback) Speaker: Dr. Rafat Mohtasib

QUANTITATIVE MAGNETIC RESONANCE IMAGING BIOMARKERS (DIFFUSION AND PERFUSION):

- Introduce the Basic mechanisms of Quantitative Magnetic Resonance Imaging Techniques.
- Discuss the functional concepts of biological perfusion and diffusion processes.
- Learn and develop an understanding of MRI perfusion and diffusion scanning techniques.
- Explain the purpose for using each technique.
- Discuss the pulse sequences of each scan, and the potential benefits for patient care.
- Describe current applications for perfusion and diffusion imaging.
- Describe new applications using perfusion and diffusion imaging and their potential benefits.

GADOLINIUM BASED CONTRAST SAFETY:

- Provide an overview of Gadolinium-Based Contrast Agents (GBCAs) different molecular structures and safety profiles.
- Describe a spectrum of Gadolinium deposition entities in humans.

MRI SAFETY:

- Understand the major safety risks associated with MRI scan.
- Understand the potential impact MRI technology may have on safety considerations.
- Review current MR safety guidelines.