MRI Radio-Frequency Safety Research Fellowship - FDA

U.S. Food and Drug Administration (FDA)

Posted: Mar 28, 2016

POSITION TYPE	Entry-Level Job	**NUMBER OF OPENINGS**	1
APPROXIMATE HOURS PER WEEK	40	**JOB FUNCTION**	Research
SALARY TYPE:	Stipend		

HOW TO APPLY

Please send a pdf-file containing your CV, a letter of motivation, and contact info for three references to Maria Iacono: maria.iacono@fda.hhs.gov. Please use the words "RF safety fellowship" as subject in the email.

Requested Documents:

- Resume
- Cover Letter
- Unofficial Transcript

DESCRIPTION

Patients with and without implanted medical devices may benefit from magnetic resonance imaging (MRI) examinations due to its clinical versatility, the use of non-ionizing radiation, and the high soft-tissue contrast. While MRI is a safe technology, there are still possible risks associated with its use, including tissue heating, due to the interaction with the MR radiofrequency (RF) fields. The RF-induced heating depends on several variables, including characteristics of the RF coil, the patients, and medical devices. Anatomic computational models have been recently used in electromagnetic simulations to address this safety issue and complement bench phantom testing. This approach has the advantage of including patient-specific information, while still sparing the patient from direct involvement in testing. The goal of this project is to generate a computational modeling framework that systematically analyzes RF fields across different MR systems, human subjects, and patient positioning to characterize the exposure of the human body in the clinical routine.

This program, administered by ORAU through its contract with the U.S. Department of Energy to manage the Oak Ridge Institute for Science and Education, was established through an interagency agreement between DOE and FDA. The initial appointment is for one year, but may be renewed upon recommendation of FDA contingent on the availability of funds. The participant will receive a monthly stipend commensurate with educational level and experience. Proof of health insurance is required for participation in this program. The appointment is full-time at FDA in the Silver Spring, Maryland area. Participants do not become employees of FDA or the program administrator, and there are no fringe benefits paid.

DIVISION

Division of Biomedical Physics, Office of Science and Engineering, Center for Devices and Radiological Health

LOCATION

City

Silver Spring

State/Province

Maryland

Country

United States

QUALIFICATION

A doctoral degree or masters in biomedical engineering, electric engineering, physics, or related fields with a strong experience in programming, computational modeling, and experimental measurements received within the last 5 years.

A preferred candidate will have:

• Advanced knowledge of electromagnetic field theory and interactions of electromagnetic fields and biological tissues

• Experience with finite difference time domain (FDTD) and/or finite element (FEM) electromagnetic simulation toolkits

• Hands-on experience with design and testing of MRI antennas and resonators and laboratory electromagnetic and thermal measurement equipment.

• Extensive experience in Matlab and Python is required.

• Experience in C++ programming is a plus

• Basic knowledge of human anatomy would be desirable

INDUSTRIES

Government

CLASS LEVEL

Master's, Doctoral, Post-Doctoral

ADDITIONAL DOCUMENTS

Official Transcripts will be requested at the second stage of selection