3975 Fair Ridge Drive, Suite 400 North | Fairfax, Virginia 22033
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SIR Foundation
Advancing interventional radiology through research

Application to Host a Summer Medical Student Intern

The SIR Foundation Summer Medical Internship Program introduces medical students to interventional radiology research and medical device development. The goal of this program is to foster an interest in research by funding a summer research project conducted by a medical student.

Students applying for the program must show strong potential for a career in IR with proven academic success. Selected students will have an opportunity to intern with an interventional radiologist research mentor or corporate research and development mentor for 8 weeks during the summer.

SIR Foundation will provide a $6,000 stipend to help ease the financial burdens throughout their internship experience.

In 2026 there will be an international branch of this program where the German Society of Interventional Radiology will support 2 students to visit host sites in the US and 2 German universities will host 2 students form the USA.

Application Instructions and Criteria:
Institution Names: **Hannover Medical School (MHH) and TBD**
Responsible mentoring physician:
MHH: Frank Wacker, MD (department director) & Cornelia Dewald, MD (head of IR)

Length of proposed curriculum: **8 weeks / 40 hours per week**

A. A brief description of the curriculum elements :

1. Introduction to Interventional Radiology

- *Instructional Setting & Methodology*: Foundational IR knowledge will be taught in an interactive setting. The focus will be on explaining the role of modern patient centered IR. An overview of common procedures including potential indications will be provided.
- *Educational Resources*: PowerPoint presentations introducing the basic concepts of IR, supplemented by online material. Selected readings from journals and other online IR resources (e.g., CIRSE library) are available.
- *Assessment:* Students will be assessed through short Q&A sessions. A voluntary written summary of key IR concepts could be assigned as homework.

2. Anatomy for Interventional Radiology

- *Instructional Setting & Methodology:* Key anatomical landmarks crucial for IR procedures will be discussed using hands-on 3D imaging from CT or MRI exams.

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- *Educational Resources:* Students will have access to the MHH PACS system and anatomical online radiological anatomy platforms (https://radiologyassistant.nl or https://radiopaedia.org).
- *Assessment:* Students will be assessed in practical exams, where they identify key anatomical structures.

3. Diagnostic Imaging in Interventional Radiology

- *Instructional Setting & Methodology:* Instruction occur in clinical rotations where students can observe diagnostic imaging techniques in real-world settings.
- *Educational Resources:* Case study presentations provide practical examples of diagnostic imaging techniques.
- *Assessment:* includes practical assessments where students are asked to identify findings on imaging scans.

4. Interventional Radiology Techniques and Procedures

- *Instructional Setting & Methodology:* Hands-on teaching of procedural skills in a simulator. Real-life procedures can be observed in the IR suites.
- *Educational Resources:* Simulator for practicing needle guidance and catheter placement.
- *Assessment:* will be based on direct observation and feedback from the attending radiologists.

5. Clinical Decision-Making and Patient Management

- ***Instructional Setting & Methodology***: Students can participate in case discussions, learning to apply diagnostic imaging and IR techniques in the context of patient care.
- *Educational Resources*: Clinical case discussions using real patient data, online guidelines for patient management when available.
- *Assessment:* Evaluation through group case discussions, students can present and defend their clinical management decisions.

6. Research and Evidence-Based Practice in Interventional Radiology

- *Instructional Setting & Methodology*: This topic will be taught in a classroom journal club setting where students can discuss research papers and clinical trials in IR and their impact on clinical practice.
- *Educational Resources*: Key resources would include access to IR-specific journals (e.g., CVIR, JVIR, Radiology), as well as online databases such as PubMed for research literature. An attending IR will guide students in reviewing articles and understanding methodologies.
- *Assessment*: Students will be assessed through critical reviews of journal articles on a research topic in IR. On request, a final research project could be assigned to evaluate the student's understanding of evidence-based practice.

By integrating varied methods such as guided learning, hands-on practice, case discussions, real-world exposure, and assessments, students will develop both, technical

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skills and clinical reasoning that are necessary to start a career in interventional radiology.

B. Please provide a brief outline of available research topics, one of which the student will select for completion as part of the program. Projects should be of a scope appropriate for completion within the limited time frame provided.

Within 8 weeks we expect the student to be involved in ongoing projects at our institution.

Main clinical topics at MHH are:

- Pulmonary balloon angioplasty for CTEPH
- Pelvic pain treatment (Pelvic congestion)
- Chemosaturation for patients with ocular melanoma
- TARE and TACE for HCC patients
- CT-guided thermal ablation of liver tumors
- Interventional MRI, specifically MRI guided microwave ablation of liver tumors.
- Thermometry sequence development for interventional MRI (translational physics/clinical MRI)

Main clinical topics at another German university TBD are:

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Additional description:

The Hannover Medical School (MHH) and University Hospital is a maximum care center with a nationwide catchment areaand one of the elite German university medical facilities. The main research topics are Transplantation & Regenerative Medicine, Infection and Immunology Research, Biomedical Engineering and Implant Research. Frank Wacker is Professor of Radiology, the director of the department of Radiology and clinician scientist by his career. He studied medicine at the University of Tübingen. After finishing his training in Radiology and Neuroradiology at the Free University Berlin and the Charité he held faculty positions at Case Western Reserve University, Cleveland, Ohio, Charité and Johns Hopkins School of Medicine, Baltimore, Maryland. In 2010 he was appointed professor and chairman of Radiology at MHH and is currently Medical Executive Director of the MHH Radiology Center and the Head of the Imaging Unit of the Clinical Research Center Hannover. He has restructured training in Radiology, Interventional Radiology and Radiologic Science at the MHH. Students and residents are trained in organ based clinical radiology rather than modalities such as CT or MRI. Rotations include both, structured clinical training and scientific work. Dr. Wacker has benefitted from close collaboration with engineers and PhD on two continents, resulting in 8 patent applications in the field of IGT and MRI. He strongly supports partnering of PhD students in MR Physics and MD clinician scientists for MR sequence development, preclinical imaging and image data processing at the MHH. In addition, as member of the advisory board of the international graduate school for medical engineering and engineering materials at the Otto von Guericke University Magdeburg, he fosters close interdisciplinary collaborations. Dr. Wacker has supervised numerous residents, fellows and clinician scientists. The research in his department bridges the gap between preclinical and clinical imaging and provides a translational interdisciplinary framework within the scientific foci of the MHH. His personal interest is focused on image guided therapies, interventional oncology, and imaging-biomarker for early detection and reliable follow-up in infection, transplants and oncology.