## FMLH MRI and Vascular Medicine Curriculum

### Description of Rotation or Educational Experience
The goal MRI and vascular medicine rotation is to provide exposure to subspecialty care and clinic and advanced imaging techniques. The fellow will split time between education in cardiac MRI and vascular medicine. In the vascular portion of the rotation, the fellow will participate in the inpatient and outpatient vascular medicine practice and will become familiar with non-invasive vascular diagnostic imaging. The cardiac MRI portion of the rotation is designed to provide the fellow with a working knowledge of cardiac MRI methods and their diagnostic utility. The cardiac MRI portion include didactic activities (self-study during the rotation and lectures throughout the year), independent interpretation of cardiac MRI cases, participation in cardiac MRI case study interpretation and “hands-on” cardiac MRI experience.

The weekly experience may vary based on factors such as the schedule of fellow’s continuity clinic and scheduled studies. A sample schedule is:

- **Monday**: ½ day continuity clinic; ½ day independent study of MRI curriculum material
- **Tuesday**: ½ day vascular medicine clinic; ½ day review of vascular lab studies and inpatient vascular medicine consultation
- **Tuesday**: ½ day vascular medicine clinic; ½ day review of vascular lab studies and inpatient vascular medicine consultation
- **Thursday**: ½ day MRI reading with faculty; ½ day independent review of MRI teaching cases
- **Friday**: ½ day joint review of MRI cases with radiology and cardiology faculty members; ½ reading with faculty

Either the first day of the rotation or prior to rotation, the fellow is responsible for contacting supervising faculty to confirm weekly schedule and obtain printed MRI curriculum. Dr. Timothy Woods supervises MRI curriculum, and Dr. James Gosset supervises vascular medicine curriculum.

### Patient Care
**Goal**
Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Fellows are expected to:

- Demonstrate competence in prevention, evaluation and management of peripheral vascular disease
- Learn comprehensive vascular examination

### Medical Knowledge
**Goal**
Fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this
knowledge to patient care. Fellows are expected to:

- Understand how to use cardiac MRI in the diagnosis of the following: coronary heart disease, congestive heart failure, valvular heart disease, pericardial disease.
- Understand specificity, sensitivity, diagnostic accuracy, utility in assessing prognosis, costs, artifacts, indications, contraindications, and pitfalls of cardiac MRI
- Understand specificity, sensitivity, diagnostic accuracy, utility in assessing prognosis, costs, artifacts, indications, contraindications, and pitfalls of cardiac MRI peripheral vascular ultrasound examination
- Understand the physics of magnetic resonance as it relates to image intensity and contrast, including flow, T1, T2, density of nuclear species (e.g., proton), and contrast agents
- Understand the sources of artifacts, including motion, arrhythmias, and metal objects
- Understand safety of implanted devices (e.g., pacemakers, automatic implantable cardioverter defibrillators), external ferromagnetic devices, and gadolinium-based contrast agents
- Understand basic post-processing approaches and analyses.
- Develop a comprehensive knowledge of 3 dimensional anatomy of the heart
- Understand the appropriate techniques and modalities for evaluating vascular diseases
- Understand the appropriate measures for vascular disease prevention
- Enhance understanding of peripheral vasculature anatomy

**Practice- Based Learning and Improvement**

**Goal**
Fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning. Fellows are expected to develop skills and habits to be able to:

- Identify strengths, deficiencies and limits in one’s knowledge and expertise.
- Set learning and improvement goals.
- Incorporate formative evaluation feedback into daily practice.
- Locate, appraise and assimilate evidence from scientific studies related to their patients’ health problems.
- Use information technology to optimize learning.

**Systems Based Practice**

**Goal**
Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. Fellows are expected to:

- Work effectively in various health care delivery settings and systems relevant to cardiovascular medicine.
- Coordinate patient care within the health care system relevant to cardiovascular
Incorporate considerations of cost awareness and risk-benefit analysis in patient care.
Advocate for quality patient care and optimal patient care systems.
Work in interprofessional teams to enhance patient safety and improve patient care quality.

Professionalism

Goal
Fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Fellows are expected to demonstrate:

Competencies
- Compassion, integrity, and respect for others.
- Responsiveness to patient needs that supersedes self-interest.
- Respect for patient privacy and autonomy.
- Accountability to patients, society, and the profession.
- Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.

Interpersonal and Communication Skills

Goal
Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and teaming with patients, their families, and professional associates. Fellows are expected to:

Competencies
- Communicate effectively with patients and families across a broad range of socioeconomic and cultural backgrounds.
- Communicate effectively with physicians, other health professionals, and health related agencies.
- Work effectively as a member of leader of a health care team or other professional group.
- Maintain comprehensive, timely, and legible medical records.

Assessment Method (Fellows)
Fellows are given verbal feedback on their performance by the faculty throughout the rotation. Final evaluations by each attending will be based on the general ACGME competencies of patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, systems-based practice, and professionalism. A formal written evaluation will be entered by the faculty into New Innovations. It will then be reviewed and signed by the fellow.
Fellows will assess the rotation overall as well as their attending physicians. These will be written evaluations which will be shared with the Chair of the Division as well as the Fellowship Program Director. Feedback from the fellows will allow for correction of any perceived deficiencies in learning opportunities on this rotation.

AGREEMENT

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Signature of Fellow          Date          Signature of Attending          Date

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Printed Name of Fellow