

**UNIVERSITY OF MINNESOTA  
GRADUATE MEDICAL EDUCATION**

**2017-2018  
POLICY & PROCEDURE  
MANUAL**

**Department of Neurology**

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**ENDOVASCULAR SURGICAL  
NEURADIOLOGY  
FELLOWSHIP (ESN)**

#### i. Introduction/Explanation of Manual

This fellowship addendum outlines policies and procedures specific to your training program. Please refer to the Neurology Residency Program Manual for further departmental policies and procedures.

Please refer to the Institution Policy Manual located on the GME website at: <http://hub.med.umn.edu/graduate-medical-education/policies-governance/graduate-medical-education-institution-manual> for University of Minnesota GME specific policies. It is designed to be an umbrella policy manual. Some programs may have policies that are more rigid than the Institution Manual in which case the program policy would be followed. Should the policies in the Program Policy Manual or Fellowship Addendum conflict with the Institution Manual, the Institution Manual takes precedence.

The Neurology Residency Program Policy Manual can be found at: <http://www.neurology.umn.edu/residency.html>

#### ii. Department Mission Statement

The University of Minnesota, Department of Neurology mission is to advance the care and treatment of patients with neurological disorders. To do so we believe we must be leaders in taking discovery from the bench to the bedside through the development of programs of excellence in basic and clinical research. Development of these programs positions us to deliver state of the art clinical care provided by physicians who are leaders in their field. As a result, the department has expertise in a broad range of clinical neurology subspecialties that provide the foundation for our clinical, research and educational programs. We understand the importance of training outstanding academic neurologists who will lead us into the future and have dedicated physicians on our faculty who recognize the importance of establishing and maintaining superior educational programs for resident and fellowship training.

#### iii. Program Mission Statement

This document summarizes the organization of the Endovascular Surgical Neuroradiology (ESN) fellow's educational experience, which is administered and supervised by the faculty at the University of Minnesota. The ESN fellowship is based out of the Department of Neurology, and the faculty have appointments in the Departments of Neurology, Neurosurgery, and Radiology. The two training sites for the ESN fellowship are University of Minnesota Medical Center, Fairview (UMMC) and Hennepin County Medical Center (HCMC).

Endovascular Surgical Neuroradiology is a relatively new subspecialty that uses minimally invasive technology, including catheter-based interventions, neuroimaging, and clinical neurological expertise to diagnose and treat vascular diseases of the central nervous system (CNS), head, neck, and spine.

The trainee must have a thorough knowledge of the natural history of diseases, clinical trials, the risks/benefits of the various options and special training and skills described in this document.

#### iv. Program Overview

This subspecialty fellowship program provides one year of supervised graduate medical education experience with progressive responsibility in all aspects of endovascular surgical

neuroradiology. Fellows will receive a comprehensive, supervised, full-time endovascular surgical neuroradiology experience that will expose them to the pre-operative evaluation, intra-procedural skills, and post procedural management of patients with various vascular diseases of the CNS, head, neck, and spine.

Direct interactions of fellows with patients will be supervised by the program faculty to ensure that appropriate standards of care and concern for patient welfare are maintained.

Prior to entering this program, trainees must have satisfactorily completed an ACGME-accredited residency program in neurology, neurosurgery, or an accredited fellowship in neuroradiology. and be eligible for their appropriate national board examinations.

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## **SECTION 1 - STUDENT SERVICES**

### **CAMPUS MAIL**

Each trainee has a designated mailbox in the department. Trainees are expected to pick up their mail at least weekly. The address for receiving mail in the department is:

University of Minnesota  
Department of Neurology  
Attn: (name)  
420 Delaware St, SE, MMC 295, Ste 12-100  
Minneapolis, MN 55455

### **E-MAIL AND INTERNET ACCESS**

Each trainee has been assigned their own University email account prior to the start of their orientation. This account is to be used for all program, department, and University business communications. The use of personal non-University email accounts is not permissible for business communications.

Announcements about important institution and program events or requirements are sent to your official University email account. Trainees are expected to check this account daily.

There are several computers available for use in the fellows' room. Each has internet access. University email can be accessed via the web-based Gophermail application at [www.mail.umn.edu](http://www.mail.umn.edu), or via other email software such as Outlook or Thunderbird.

### **BADGES**

All trainees and staff are required to have a University of Minnesota badge, and to wear it. Your program coordinator will help you obtain your badge as part of your onboarding process. You will also be required to have badges for every hospital where you rotate and to always wear them when providing patient care.

### **HEALTH INSURANCE PORTABILITY AND ACCOUNTABILITY ACT (HIPAA) TRAINING**

Residents are required to complete the University Privacy Training and the Public Jobs: Private Data Security Training. The Academic Health Center has designed training programs which are located at [www.myu.umn.edu](http://www.myu.umn.edu) and are accessed via the trainee's University of Minnesota x500 Internet password. Once authenticated ("signed in"), go to the "my WORK LIFE" tab to access the courses. The University provides 90 days to complete your required training. For more information, as your program coordinator to put you in touch with the department's Privacy & Security Coordinator.

Compliance is mandatory. Failure to complete the required training could result in suspension of your participation at these sites. PLEASE REVIEW THE USE OF INFORMATION

TECHNOLOGY RESOURCES STANDARDS BELOW. If you need to review the rest of the HIPAA requirements please visit the website at <http://www.ahc.umn.edu/privacy/hipaa/home.html>

### **Using Information Technology Resources Standards**

#### Use of IDs and Passwords

- Do not share the password assigned to you.
- Select an obscure password and change it frequently.
- Understand that you are responsible for all activities on your username/account ID.
- Ensure that others cannot learn your password.
- If you have reason to believe that your username/account ID or password has been compromised, contact your System/Network Administrator immediately.

#### Use of Information/Data

- Access only accounts, files, and data that are your own, that are publicly available, or to which you have been given authorized access. Secure information that is in your possession.
- Maintain the confidentiality of information classified as private, confidential or data on decedents.
- Use University information for tasks related to job responsibilities and not for personal purposes.
- Never disclose information to which you have access, but for which you do not have ownership, authority, or permission to disclose. Keep your personal information/data current.
- Accurately update your own records through University self-service systems and other processes provided for you.

#### Use of Software and Hardware

- Use University e-mail, computers, and networks only for legal, authorized purposes. Unauthorized or illegal uses include but are not limited to:
  - Harassment;
  - Destruction of or damage to equipment, software, or data belonging to others;
  - Unauthorized copying of copyrighted materials; or
  - Conducting private business unrelated to University activities.
- Never engage in any activity that might be harmful to systems or to any information/data stored thereon, such as:
  - Creating or propagating viruses;
  - Disrupting services or damaging files; or
  - Making unauthorized or non-approved changes.
- When vacating computer workstations, sign-off or secure the system from unauthorized use.
- Use only legal versions of copyrighted software on University of Minnesota owned computer or network resources, in compliance with vendor license requirements.
- Be aware of any conditions attached to or affecting the provision of University technology services:

- Consult with the system administrator for any questions about system workload or performance.
- Refrain from monopolizing systems, overloading systems or networks with excessive data, or wasting computer time, connect time, disk space, printer paper, manuals, or other resources.

#### Consequences of Violations

Access privileges to the University's information technology resources will not be denied without cause. If in the course of an investigation, it appears necessary to protect the integrity, security, or continued operation of its computers and networks or to protect itself from liability, the University may temporarily deny access to those resources. Alleged policy violations will be referred to appropriate University investigative and disciplinary units. For example, alleged violations by students may be directed to the Student Judicial Affairs office. The University may also refer Women's Health Special listed violations of law to appropriate law enforcement agencies. Depending on the nature and severity of the offense, policy violations may result in loss of access privileges, University disciplinary action, and/or criminal prosecution.

#### **PAGERS**

The Department of Neurology assigns a pager to each resident and fellow for the duration of their program, at no cost to the trainee. Trainees are required to replace lost pagers at their own expense, and may do so at the Information Desk in the UMMC hospital main lobby. This is also the location for exchanging damaged pagers.

Program coordinators have batteries available.

Trainees are required to have their pagers, and turned on, when they are 'on call'.

#### **TUITION AND FEES**

University Tuition and Fees are being waived at this time for residency and fellowship program training. However, any trainees who are enrolled in Graduate School must pay their own tuition and fees.

<h2><b>SECTION 2 - BENEFITS</b></h2>
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#### **EXERCISE ROOM**

The University of Minnesota Medical Center, Fairview (UMMC) Medical Executive Committee has graciously provided an exercise facility for use by University of Minnesota residents and fellows.

Location:

Room C-496 Mayo Memorial Building

(Locker rooms/showers are located directly across the hall)

#### Hours:

The facility is open 24 hours a day, 7 days a week

#### Access Code to Exercise Room and Locker Rooms:

9111 (Please do not share with anyone other than residents and fellows)

The space also includes a small kitchenette area with refrigerator, microwave, coffeemaker and hot/cold water dispenser. If you have any concerns about the facility, call 612-273-7482.

### **CALL ROOMS**

There are call rooms available at both UMMC and HCMC for fellows to use if they are too tired to drive home.

UMMC – on 4th floor of Mayo building, next to C-496 exercise room

Call 626-6330 for reservations; check-in time 2:00pm to 7:00 am

HCMC – walkin available at R5.302, door code 2354.

Reserve through Katie Dolan, 873-2595 x4 when need is known in advance

UMMC also has a general resident lounge on the 6th floor, which offers a TV, computer, telephone, and light refreshments (restocked twice a day).

### **HEALTH BENEFITS**

The University of Minnesota is please to offer a broad range of benefits to Medical School residents and fellows. The following benefits are administered by the **Office of Student Health Benefits**, 410 Church Street S.E., N323, Minneapolis, MN 55455. For more information, visit the Office of Student Health Benefits website at [www.shb.umn.edu](http://www.shb.umn.edu) or email [umshbo@umn.edu](mailto:umshbo@umn.edu).

Medical Coverage: HealthPartners Residents and Fellows Health Plan  
HealthPartners provides the health plan network and claims administration services for University of Minnesota Medical School residents and fellows. HealthPartners gives members access to 650,000 healthcare providers and 6,500 hospitals across the United States. You will have a choice of two plans, Basic or Basic Plus. All residents and fellows are required to enroll in one of the two plans for at least single coverage, or provide documentation of other comparable health benefit coverage. Medical School residents and fellows who enroll in the University-sponsored HealthPartners plan (and enrolled dependents) are automatically eligible for Continuation of coverage through COBRA at the end of their residency or fellowship.

Dental Coverage: Delta Dental  
Delta Dental of MN provides dental network and claims administration services for University of Minnesota Medical School residents and fellows. Delta Dental members have access to both PPO and Premier providers. Medical School residents and fellows who enroll in the University-sponsored Delta Dental plan (and enrolled dependents) are automatically eligible for Continuation of care through COBRA at the end of their residency or fellowship.



Life Insurance: Minnesota Life

Medical School residents and fellows are automatically enrolled in a \$50,000 standard life Minnesota Life insurance policy. Enrollment is no cost to Medical School residents and fellows (the cost is covered by your department). In addition to the standard plan, residents and fellows have the option to purchase voluntary life insurance for themselves or their dependents at low group rates through Minnesota Life. Medical School residents and fellows are automatically eligible for Continuation of life insurance coverage through COBRA at the end of their residency or fellowship.

Long and Short Term Disability Coverage: Guardian Life Insurance Company

Medical School residents and fellows are automatically enrolled in a long and short term disability insurance policy. Enrollment is no cost to Medical School residents and fellows (the cost is covered by your department). Guardian offers Medical School residents and fellows up to \$10,000 per month of individual coverage. In addition, Guardian offers a Student Loan Payoff benefit effective if you become disabled while you are a resident. Guardian also offers a unique Guaranteed Standard Issue Plan option. Residents and fellows have the option to purchase long term disability coverage that you can take with you upon completion of your residency/fellowship regardless of any pre-existing medical conditions—25-30 percent of residents and fellows would not otherwise qualify for this type of coverage due to pre-existing medical conditions.

Flexible Spending Accounts

Medical School residents and fellows are eligible to participate in two types of Flexible Spending Accounts (FSAs), the U of M Health Care Reimbursement Account and the Dependent Care Reimbursement Account. Both programs allow you to pay for related expenses using pre-tax dollars.

**LAUNDRY SERVICE**

Laundrying of scrub suits is provided for residents at all sites. Scrubs should be used at the site they were obtained from. Wearing scrubs from different sites is discouraged at some sites and prohibited in others. See site coordinators for information.

**LEAVE POLICIES**

Trainees must give notice, in writing, of intent to use parental leave and other leaves used in conjunction with parental leave (such as a medical leave) to their program director at least four (4) weeks in advance, except under unusual circumstance. Holidays that occur during a leave of absence run concurrent with the leave and are not in addition to the leave.

Parental Leave

The resident/fellow (trainee) as defined below must give notice, in writing, of intent to use parental leave and other leaves used in conjunction with parental leave to their program director (and coordinator) at least four (4) weeks in advance, except under unusual circumstances.

Birth mother: A birth mother shall be granted, upon request to the program director, up to six weeks parental (maternity) leave for the birth of a child. The maternity leave may begin at the time requested by the trainee, but no later than six weeks after the birth and no sooner than two weeks before the birth. The leave must be consecutive and without interruption.

Trainees on maternity leave will receive the first two weeks of their leave as paid parental leave. This paid parental may be charged against the trainees' vacation, or sick allocation. Note: The first two weeks of this paid parental leave covers the required fourteen day wait period before they are eligible to receive the short-term disability benefit, see Office of Student Health Benefits website. <http://www.shb.umn.edu/twincities/residents-fellows-interns/m-residents-fellows-health-plan.htm>. Department of Neurology program coordinator and the Clinical Neuroscience Administrative Center HR staff will assist with the paperwork details for taking a maternity leave.

Trainees that have vacation available may use it in conjunction with the short-term disability benefit during their maternity leave.

#### Birth father:

A birth father shall be granted, upon request to the program director, up to two weeks paid parental leave for the birth of a child. The leave may begin at the time requested by the trainee, but no later than six weeks after the birth and no sooner than two weeks before the birth. The leave must be consecutive and without interruption. This paid parental leave may be charged against the trainees' vacation, or sick allocation.

#### Registered same sex domestic partner:

Registered same sex domestic partner of someone giving birth shall be granted, upon request to the program director, up to two weeks paid parental leave. The leave may begin at the time requested by the trainee, but no later than six weeks after the birth and no sooner than two weeks before the birth. The leave must be consecutive and without interruption. This paid parental leave may be charged against the trainees' vacation, sick or PTO allocation.

#### Family Medical Leave Act (FMLA)

Medical Residents/Fellows are eligible to be part of the Family Medical Leave Act (FMLA) if they have worked at the University for at least 12 months (not required to be consecutive) and worked at least 1,250 hours in the 12 months preceding the commencement of the leave. Leave shall not exceed 12 weeks in any 12-month period. The 12-month period is based on an academic year (07/01-06/30). A resident/fellow may qualify for Short-Term and Long-Term Disability benefits, so check those sections also. The Department will review the trainee's appointment record to verify eligibility for FMLA when there has been a request for a Leave of Absence. If eligibility has been met, leaves will be entered into the trainee's record as FMLA. Also see the section on effects of leaves on the duration of training.

#### Vacation/Sick Leave

The Department of Neurology provides each trainee with three weeks of vacation and one week of sick leave. For all scheduled time off (e.g., vacations, personal business, interviews, conferences, etc) it is the trainee's responsibility to fill out a Time Away Request Form and submit it to the appropriate coordinator. Trainee must also inform the faculty and colleagues that would expect them in clinic or on the ward.

A maximum of two weeks of vacation may be taken at a time. Only one fellow may be gone at a time, since it is imperative to maintain both hospital services.

Do not make travel arrangements until you get the final official approval.

### Holidays

The educational requirements and the 24 hour operational needs of the hospital are taken into consideration when scheduling holiday time off. The program coordinator will work with each of the trainees in determining that days off are spread among all trainees.

### Jury/Witness Duty Witness Duty

Upon request to the program director, leave is provided to trainees who are subpoenaed to testify before a court or legislative committee concerning the University or the federal or state government.

**Jury Duty:** Upon request to the program director, leave is provided to trainees who are called to serve on a jury. Trainees do not lose pay when serving on a jury or testifying as described above. The training program and the fellow may write a letter to the court asking that the appointment for jury duty be deferred based on hardship to the trainee and the program. The decision for deferment is made by the court.

### Medical Leave

A trainee shall be granted, upon request to the program director, a leave of absence for their serious illness/injury that requires an absence of greater than 14 days. The trainee may qualify for Short-Term and Long-Term Disability benefits. Refer to those sections. The trainee must give notice, in writing, of intent to use medical leave to their program director at least four weeks in advance, except under unusual circumstances. Trainees are expected to make every effort to find coverage for their call during their absence and must notify their sites of their absence.

### Bereavement Leave

Trainees shall be granted, upon the approval of the program director, up to 5 days off to attend the funeral of an immediate family member. Sick or vacation time must be used. Immediate family shall include spouse, cohabiters, registered same sex domestic partners, children, stepchildren, parents, parents of spouse, and the stepparents, grandparents, guardian, grandchildren, brothers, sisters, or wards of the trainee.

### Military Leave

Please refer to the Institutional Policy manual for the policy on military leave.

### Personal Leave of Absence

Only under unusual circumstances such as a personal or family emergency, will a personal leave of absence be considered. Trainees must give notice, in writing, of intent to use personal leave to the Program Director at least four weeks in advance, except under unusual circumstances. Residents are expected to make every effort to find coverage for their call/night float/shift and must notify their sites of their absence. If a trainee takes a leave, this will be considered when approving future vacation requests (especially when the request is for the same time period as a resident who has not taken a leave). A resident requesting a non-medical personal leave must use all remaining vacation and sick days, if the trainee does not have any PTO time left, they will be required to use unpaid time.

## Professional Leave

Fellows may be approved to attend off site conferences. Time away for conferences must be requested and approved in the same manner as other leaves. Hospital service coverage must be coordinated among the fellows; not all fellows may be gone at the same time. Check with the program director regarding availability of funds for reimbursing conference travel; funds are not available every year.

## **MEAL TICKETS/FOOD SERVICE**

Trainees on duty have access to adequate and appropriate food services 24 hours a day at all institutions. HCMC add funds to meal cards based on the number of days rotating at that hospital. The UMMC meal card policy is more restrictive, and based on the number of night/weekend shifts worked.

Your Program Coordinator will help you obtain meal cards, and provide you with a copy of the UMMC policy.

## **PARKING SERVICES**

Parking is provided at both UMMC and HCMC at no cost to the trainee. See Katie Dolan for parking arrangements at HCMC, and Pat Bulgerin for parking arrangements at UMMC.

In the event that a UofM parking ramp card is lost, the trainee must visit the Parking Services office at 300 Washington Ave and pay \$15 for a replacement card. Parking Services will want to know the number on the lost card – the Program Coordinator has a master list and can help find that number. The trainee must also inform their Program Coordinator of the number on any new cards assigned to them.

All parking cards are the property of the issuing hospital, and must be turned in at the end of the fellowship.

For a nominal fee, UMMC also offers residents/fellows off-hour parking in their patient ramp. To get approved for this parking, visit the Fairview Parking/Security desk in Mayo B340.

## **SHUTTLE SERVICE, INTERCAMPUS**

A Fairview shuttle service is available between the Riverside and University campuses from 5:20 a.m. to 8:30 p.m. See the shuttle schedule near the boarding locations on each campus. The shuttle picks up and drops off at the Variety Club Research Center (VCRC) circle at 401 East River Pkwy on the University campus and in the West circle entrance outside Subway restaurant on the Riverside campus.

FALL, SPRING & SUMMER SEMESTERS:

**(No service during weekends, breaks and holidays.)**

Monday–Friday 7:00 am – 5 pm every 15 minutes

Monday–Friday 5:00 pm – 10 pm every 30 minutes (Fall and Spring Semester ONLY)

## **SHUTTLE SERVICE, CLINIC AND SURGERY CENTER**

There are shuttles running every 5-10 minutes from the UMMC lobby door circle to the new Clinics and Surgery Center (CSC) at 909 Fulton St SE.

## **STIPENDS**

Trainee stipends for Academic Year 2017-2018 are as follows:

PGY5	\$61,466 annually
PGY6	\$63,624 (where most junior ESN fellows are assigned)
PGY7	\$65,659

And paid biweekly, every other Wednesday, on a 10-day delayed basis. Direct deposit is strongly encouraged. The deposit notice is available 48 hrs in advance of each deposit by visiting [my.umn.edu](http://my.umn.edu), selecting the 'My Pay' section. See the links at the bottom of the page for additional options.

## **WORKERS' COMPENSATION**

The University is committed to providing trainees with comprehensive medical care for on-the-job injuries. Under Minnesota statute, Medical trainees are considered employees of the University of Minnesota for Workers' Compensation insurance purposes. When a trainee is injured during training, they must take immediate steps to report injury to the University. The University cannot pay bills for trainee treatment unless an injury report is on file. The Medical Resident/Fellow must complete the following steps in case of a work related injury:

1. Report any work related injury to your Supervisor on the day or shift that it occurs. You must complete an Injury Report form at the rotation site where the injury occurred and follow the sites protocol for the specific injury (e.g. needle sticks, surgical injuries, etc.).
2. You **MUST** also complete and sign a University of Minnesota "Employee Incident Report" as soon as possible following the injury. To obtain the Employee Incident Report form contact your Program Coordinator. Complete the form and return to your coordinator for forwarding to Workers' Compensation. Also forward any medical bills that you have received regarding the injury. The University of Minnesota Workers' Compensation Department will review for payment.

## **NEEDLE STICKS AND BLOOD BORNE PATHOGEN EXPOSURE (BBPE) MANAGEMENT**

**24 Hour Help Line: 612-339-3663**

### **Quick Steps – What to Do First!**

1. Clean it.
2. Get treated.
3. ID the source patient.
4. Report it. Contact the faculty on service. (ALSO within 24 hours contact your Program Coordinator to obtain an Employee Incident Report).
5. Get a follow-up exam.  
Contact Occupational & Environmental Medicine at 952-883-6999.

**IMPORTANT: The Centers of Disease Control and Prevention recommend that the exposed person seek treatment within 1-2 hours after initial exposure.**

Note: If you are a resident/fellow, it is your responsibility to learn facility-specific exposure protocols when you begin your rotation. Please see employee health at your facility to learn procedures.

The [detailed steps](#) to manage an exposure are on the Occupational Health and Safety website, as well information on the [Bloodborne Pathogen Training Program](#).

If you are on rotation at one of our major affiliated sites, their [Occupational Health and Safety \(OHS\) offices](#) are available to help you during their regular business hours.

After you have completed the steps listed above, please make sure that a First Report of Injury (FROI) form is **completed within 8 business hours (1 work day)**. This is required by the Department of Labor and Industry and is also necessary to pay the bills that are incurred as a result of the injury.

The preferred method of completing a First Report of Injury (FROI) form is via the on-line [e-FROI](#). In order to access the e-FROI, you must log-in with the employee ID or the x500 of the injured party. The e-FROI guides you through the process of completing the required information. Upon submission, the completed e-FROI goes directly to Sedgwick Claims Management and Peggy Handt, your area contact, at 612-624-6019. **Be sure to choose "Twin Cities All Other" in the drop-down for the campus in the e-FROI.**

If the e-FROI is not available for accessing online, it is possible that the system is temporarily down; instead, you can submit a fillable [First Report of Injury](#) (FROI) form. Complete all required information in the fillable FROI, save as a PDF, and email the completed FROI to [211@sedgwickcms.com](mailto:211@sedgwickcms.com).

If you print off the FROI and complete it manually, fax the completed form directly to Sedgwick Claims Management (SCM) at 952-826-3785.

You should hear from an adjuster at Sedgwick Claims Management (SCM) within 3 business days of submission of the completed e-FROI. If you do not hear from SCM within 3 business days, contact Peggy Handt at 612-624-6019 to make sure that your e-FROI was received at Sedgwick.

A Supervisor Incident Investigation Report is also required and must be completed within 24 business hours (3 work days). This form can be found at: <http://policy.umn.edu/Policies/hr/Benefits/WORKERSCOMP.html>. It is located under "forms/instructions". Fax the completed form directly to Sedgwick Claims Management at 952-826-3785.

Further instructions can be found in the [Reporting Workers Compensation Related Injuries policy](#) on the Uwide Policy Library.

**If you receive a bill as a result of the injury, please retain the bill and fax it to Sedgwick Claims Management at 952-826-3785.**

\*\*If you receive initial treatment for a BBPE at a training site Employee Health Office or Emergency Room, please identify yourself as a UM resident/fellow.

\*\*The cost of testing the source patient is the responsibility of the site at which the needlestick/blood borne pathogen exposure occurred.

### **SECTION 3 - INSTITUTION RESPONSIBILITIES**

*Please refer to the Institution Policy Manual located on the GME website at:  
<http://hub.med.umn.edu/graduate-medical-education/policies-governance/graduate-medical-education-institution-manual> htm for University of Minnesota GME specific policies.*

Should the policies in the Program Policy Manual or Fellowship Addendum conflict with the Institution Manual, the Institution Manual takes precedence.

### **SECTION 4 - DISCIPLINARY AND GRIEVANCE PROCEDURES**

*Please refer to Institution Policy Manual located on the GME website at  
<http://hub.med.umn.edu/graduate-medical-education/policies-governance/graduate-medical-education-institution-manual>*

There are no Endovascular Surgical Neuroradiology policies that are more specific than the institutional policies.

## **SECTION 5 - GENERAL POLICIES AND PROCEDURES**

### **PROGRAM OVERVIEW**

This endovascular surgical neuroradiology subspecialty fellowship program provides two years of supervised graduate medical education experience with progressive responsibility in all aspects of endovascular surgical neuroradiology. Fellows will receive a comprehensive, supervised, full-time endovascular surgical neuroradiology experience that will expose them to the pre-operative evaluation, intra-procedural skills, and post procedural management of patients with various vascular diseases of the CNS, head, neck, and spine.

Direct interactions of fellows with patients will be supervised by the program faculty to ensure that appropriate standards of care and concern for patient welfare are maintained.

### **CORE COMPETENCIES**

To comply with the institutional and program requirements of accredited fellowships, this training program is organized to provide the intellectual environment, formal instruction, peer interaction, and broad supervised experience necessary for fellows to gain the knowledge, skills and attitudes essential to the research, teaching, and independent practice of ESN. Central to these goals is the fellow's attainment, at the level of a new subspecialty practitioner, of the six ACGME core competencies in the areas of:

- patient care (PC),
- medical knowledge (MK),
- practice-based learning and improvement (PBLI),
- interpersonal and communication skills (CS),
- professionalism (Prof), and
- systems-based practice (SBP).

The goals and objectives for each rotation are referenced to one or more of the applicable ACGME core competencies.

### **FELLOWSHIP GOALS**

The goals of the Endovascular Surgical Neuroradiology fellowship program are:

1. To ensure fellows perform comprehensive diagnosis, treatment, and management of all patients on the endovascular service, with vascular disease of the nervous system such as (PC, MK, PBLI):

- brain and spine arteriovenous malformations,
- arteriovenous fistulas of the brain, spine, spinal cord,
- head and neck vascular malformations,
- tumors of the head, neck, spine,



- central nervous system ischemic and hemorrhagic stroke
- intracranial aneurysms.

Special emphasis is placed on the care of patients with stroke-related conditions.

2. To provide clinical training encompassing essentially all areas of endovascular surgical neuroradiology (PC, MK)
3. To ensure that fellows demonstrate an understanding of disease symptomatology and pathophysiology relating to those disease states which are amenable to treatment with endovascular techniques (PC, MK, PBLI).
4. To ensure that fellows apply emerging research findings to patient care in an appropriate, ethical and safe manner (PC, Prof, MK, PBLI).
5. To ensure the trainee is able to practice independently in the field of endovascular neurosurgical radiology upon graduation (PC, MK, PC, PBLI, SBP).
6. To ensure the trainee is skilled in the techniques of performing catheterization of supra-aortic arteries and interpretation of cerebrovascular angiography with excellent diagnostic, clinical and imaging capability (PC, MK, PBLI, SBP).
7. To ensure the trainee is able to provide excellent pre-procedural, intra-procedural and post-procedural care to the patient including pertinent aspects of critical care management (PC, MK, PBLI).
8. To ensure the trainee demonstrates thorough understanding of cerebrovascular anatomy and its correlation and application in the clinical setting (MK, PC, PBLI).
9. To ensure the trainee is able to discuss treatment options with patients and families in a manner that allows patients to provide fully informed consent (MK, PC, CS).
10. To ensure the trainee is able to plan treatment and management in a manner that considers not only the best available evidence, but also cost effectiveness and patient preferences (PC, MK, PBLI, SBP).
11. To ensure the trainee is able to lead a multidisciplinary treatment team in a manner that optimizes care coordination and minimizes errors (PC, MK, PBLI, SBP, Prof, CS).

## **ROTATION OBJECTIVES**

During the 12 months of training in the accredited senior year, fellows spend six months at each of the two training sites. The training is split between these two facilities to provide exposure to two different sets of endovascular procedures consequent to the conditions treated and the demographics of the patients admitted to the services. The experience at HCMC provides significant experiences in endovascular surgical treatment of emergency strokes, ruptured aneurysms, ischemic strokes and traumatic vascular injuries as well as frequent opportunities to work closely with faculty and residents in the emergency department (ED). The emphasis at UMMC is on treatment of patients referred for elective

endovascular surgical treatment of conditions such as un-ruptured aneurysms, arteriovenous malformations, and pre-surgical embolization of intra-and extra-cranial tumors. Both sites offer ample opportunities for performing diagnostic and intraoperative cerebral angiography. Masonic Children's Hospital (part of UMMC) provides an opportunity for treating pediatric neurovascular disease. HCMC also supports the pediatric population.

Given the alternating rotation scheduling as well as the longitudinal and procedural nature of the training, we have divided the goals and objectives into quarterly blocks (three-month intervals). The objectives for each quarter are grouped into the following three categories: 1) Both (objectives achieved through experience at both UMMC and HCMC); 2) UMMC (objectives achieved primarily through work at UMMC) and 3) HCMC (objectives achieved primarily through work at HCMC). In the event that the number of fellows changes, the rotation schedule may also change to accommodate the training of all fellows.

**First Quarter Objectives:** Upon completion of the first quarter, fellows are expected to:

- Understand the key elements in pre-procedural data acquisition, informed consents, and risk-benefit assessment for each type of procedure. (Both: PC, CS, Prof, SBP)
- Understand principles of peri-procedural antiplatelet and anticoagulant treatment. (Both: PC, MK)
- Understand the principles in selection of anesthesia for the procedure and monitoring of recovery. (Both: PC, MK)
- Understand the pharmacology of arterial vasodilators/constrictors, contrast agents, anticoagulants, antiaggregants, thrombolytics, and agents used in provocative testing (Both: PC, MK, PBLI).
- Understand the pharmacology of agents to control blood pressure, heart rate, allergic reaction, and infection (Both: PC, MK, PBLI)
- Understand the pharmacology of agents to reduce the risk of stroke (Both: PC, MK, PBLI)
- Demonstrate knowledge of the basic principles of adjunctive medication and monitoring during the interventional procedures including the pharmacology, dosing, and pharmacokinetics of adjunctive agents such as heparin, direct thrombin inhibitors, and platelet glycoprotein IIB/IIIA inhibitors (Both: PC, MK, PBLI).
- Understand the indications for ordering and subsequent interpretation of laboratory tests and methods that are adjunctive to interventional procedures, such as physiological monitoring, noninvasive neurovascular testing, and noninvasive neurovascular imaging (Both: PC, MK, SBP, PBLI)
- Understand the arterial angiographic anatomy of the brain, spine, spinal cord, and head and neck. (Both: PC, MK)
- Understand the venous angiographic anatomy of the brain, spine, spinal cord, and head and neck (Both: PC, MK)
- Understand collateral circulation (Both: PC, MK)
- Recognize anastomosis that pose risk of inadvertent iatrogenic embolization of normal vessels (Both: PC, MK)
- Understand regional cerebral blood flow and the principles of cerebral auto regulation (Both: PC, MK)
- Demonstrate knowledge of the catheter and delivery systems used in endovascular surgical neuroradiology (Both: PC, MK)

- Communicate effectively and thoroughly with referring physicians (phone calls, written correspondence) (Both: PC, CS)
- Coordinate aspects of care with other services when necessary (Both: PC, SBP, CS)
- Self assess procedural performance and incorporate recommendations to improve skills (Both: PC, PBLI, Prof)
- Obtain informed consent for all ESN procedures including HDE consent forms where applicable. (E.g. Neuroform/Enterprise Stents; Onyx HD500)
- Perform daily evaluation of all patients who have undergone an ESN procedure, document evaluation of patients and plan for further care after discussing with on call attending.
- Identify the equipment requirements for each type of endovascular procedure (Both: PC, MK)
- Acquire and interpret angiographic images prior to procedure (Both: PC, SBP)
- Communicate effectively verbally, electronically and in writing with other members of the care team, including timely entries to the patient's electronic medical record (Both: PC, MK, CS, Prof). This will include pre-procedure assessment for sedation and its documentation in the electronic health record. Post-procedural notes. Daily progress notes on all patients subjected to interventional treatments. (These should be directly performed by the senior/fellow)
- Maintain a data base approved by the fellowship for ESN procedures. Supervise data base entry by junior fellow for diagnostic angiogram studies (SBP).
- Present complications and challenging cases at morbidity and mortality conference.

**Second Quarter Rotation Objectives:** Upon completion of the second quarter, fellows are expected to:

- Understand the roles of other members of the acute stroke response team (HCMC: PC, Prof, SBP)
- Work effectively with all members of the stroke team including ED and EMS personnel (HCMC: PC, CS, SBP)
- Identify areas where system breakdowns in the care of stroke patients may occur (HCMC: PC, MK, SBP)
- Understand how current protocols for acute stroke treatment have been developed (HCMC: MK, PC, SBP)
- Critically appraise emerging research and evidence and appropriately apply to care of stroke. Use hemodynamic and angiographic data to select cases for surgical and endovascular surgical neuroradiological procedures with emphasis on data acquired emergently within the ED. (HCMC: PBLI, PC)
- Use hemodynamic and angiographic data to select cases for surgical and endovascular surgical neuroradiological procedures with emphasis on data acquired through various referral sources (UMMC: PC, MK)
- Respect patient and family preferences in emergency care (HCMC: PC, Prof, SBP)
- Demonstrate a basic understanding of radiation physics, radiation safety, fluoroscopy and radiologic anatomy, and basic principles of using contrast agents (Both: MK, SBP)
- Prepare the equipment required for each type of endovascular procedure within the angiographic suite (Both: PC, MK)

- Ascertain the required measurements and other pertinent angiographic data for performance of each of the endovascular procedure (Both: PC, MK)
- Understand the pharmacological properties and dosage/route of administration of medications for conscious sedation. (Both: PC, MK)
- Effectively manage Intra- and post-procedural complications related to endovascular procedures. (Both: PC, MK)
- Accurately place guide-catheters and guide-sheaths in the internal carotid or vertebral artery. (Both: PC, MK)
- Understand the impact of patients' cultural, ethnic and religious backgrounds on the treatment of acute illness (HCMC: PC, Prof)
- Respect patient and family preferences in emergency care—understanding advanced directives, health care power of attorney (HCMC: PC, Prof, SBP).
- Work effectively with members of the on-call neurosurgery team in patients with acute intra-cranial hemorrhage.(Both: SBP, Prof)

**Third Quarter Rotation Objectives:** Upon completion of the third quarter, fellows are expected to:

- Develop a treatment plan for all ESN cases ahead of time - includes form with patients' condition, vascular anatomy, etc; discuss with attending physician prior to case. (Both: PC)
- Serve as an effective consultant physician by coordinating post-procedural care with patient, families and referring physicians (UMMC: PC, SBP)
- Organize the service and demonstrate leadership in allocating responsibility to junior fellows (the fellows in the preparatory year) and the vascular neurology fellows. (UMMC: PC, SBP, Prof, CS)
- Prioritize patient care activities of the service according to the caseload and monitoring need (UMMC: PC, SBP)
- Accurately self assess procedural skill and seek opportunities to improve and refine skills (Both: PC, PBLI)
- Evaluate severity of atherosclerotic disease using various methods including measurement of pressure gradients, use of quantitative lesion assessment, and intravascular ultrasound (HCMC: PC, MK)
- Appropriate selection of devices based on angiographic and clinical data. (Both: MK, PC)
- Advance microcatheters and devices over microwires in various intra- and extra-cranial circulations. (Both: PC)
- Accurately deliver, position, and detach/deploy endovascular devices including detachable coils, stents, and liquid embolic agents. (Both: PC)
- Recognize device malfunctions and complications associated with procedures (UMMC: PC, MK, SBP)
- Lead patient and/or family conferences prior to and/or after uncomplicated procedures in presence of faculty. (Both: PC, MK, CS)
- Learn and incorporate key points into patient-related hospitalization or procedure dictations that allow the institution to effectively bill for the patient care at an appropriate reimbursement level (Both: SBP)
- Prepare professional manuscripts documenting findings from patient care, clinical investigations and research activities (Both: PC, MK, PBLI, CS)

- Systematically review the treatment of patients and identify areas for improvement. Requires data base entry. (Both: PC, PBLI, MK).
- Incorporate scheduled feedback from attending physicians in plan of care. (Both: PBLI, CS)

**Fourth Quarter Rotation Objectives:** Upon completion of the fourth quarter, fellows are expected to:

- Provide care on the stroke service at the level of an attending physician (HCMC: PC, CS, SBP)
- Evaluate, manage, and perform endovascular surgical neuroradiological procedures in patients with acute cerebral ischemia under supervision of the attending physician (HCMC: PC, MK)
- Liaison with the emergency department so care of emergent patients is smooth and efficient (HCMC: PC, Prof, SBP)
- Demonstrate proficiency in embolization of aneurysms, arteriovenous malformations, and arteriovenous fistulas (UMMC: PC, MK)
- Identify ways of reducing and eliminating possible error in the care of stroke patients (HCMC: PC, SBP)
- Implement processes and procedures that improve the transition of patients to and from the neurocritical care service (HCMC: PC, SBP, CS)
- Apply current “best practices” in the care of stroke and other emergent neurologic conditions (HCMC: MK, PC, PBLI)
- Participate in the development and refinement of stroke treatment protocols (HCMC: PC, MK, PBLI)
- Systematically review the outcomes of the treatment of stroke patients and identify areas for improvement (HCMC: PC, PBLI)
- Organize the procedure with emphasis on coordination between patients, nurses, technicians, faculty, and trainees. (Both: PC, CS, SBP)
- Perform all aspects of procedures, including selection of devices and catheters, approaches, device positioning, and detachment/deployment of endovascular devices in an independent manner in the presence of the attending physician. (Both: PC, MK, SBP)
- Develop a plan to address device malfunctions and complications associated with procedures using both endovascular and medical strategies. (Both: PC, SBP)
- Assess the complexity of the procedure and incorporation of information in the decision making process. (Both: PC, MK)
- Lead patient and/or family conferences prior to and/or after complicated procedures, in presence of faculty. (Both: PC, CS, Prof)
- Effectively communicate clinical and scientific findings to peers and colleagues through professional presentations and meetings (Both: PC, CS, MK, PBLI).

## **FELLOW SUPERVISION, CLINICAL DUTIES AND PROCEDURAL COMPETENCE**

Because of the nature of this training program, fellows work closely under the supervision of attending faculty physicians to perform the following clinical duties and procedures:

- Inpatient and outpatient consultations for the pre-operative evaluation and follow-up management of patients with vascular diseases of the CNS, head, neck, and spine.
- Pre-operative evaluation and management of patients in the Emergency Department with acute stroke and various other vascular diseases of the CNS, head, neck, and spine. Patient care will take place in the outpatient clinic, the critical care units, step-down or stroke units, and the neurosciences floor.
- Provide moderate sedation to patients during endovascular procedures under the indirect/direct supervision of the attending physician. Each fellow will be required to have ACLS and BLS training as well as complete the moderate sedation education packet. The program director will approve each fellow to provide moderate sedation.

Each trainee will participate, with increasing levels of responsibility, in at least 100 procedures that include, but are not limited, to:

### **1. Recanalization procedures:**

- Acute stroke intervention: Intra-arterial thrombolysis of cerebral vessels; mechanical thrombectomy; revascularization with angioplasty and stent placement.
- Cerebral vasospasm treatment: Intra-arterial vasodilator therapy, proximal and distal balloon angioplasty
- Stenotic and occlusive disease: Angioplasty and stenting of the carotid, vertebral and subclavian arteries. Intracranial angioplasty and stenting of the carotid, middle cerebral, vertebral and basilar arteries
- Recanalization of cranial venous occlusive disease such as dural sinus thrombosis.

### **2. Embolization procedures:**

- Aneurysms: Endovascular coiling, balloon-assisted coiling of aneurysms, stent-assisted coiling of aneurysms, liquid embolization of aneurysms, flow diversion of aneurysms, parent vessel sacrifice
- Brain and spinal arteriovenous malformations and AV fistulas: Embolization using liquid and solid embolic agents.
- Carotid-cavernous fistulas: Transarterial and transvenous embolization.
- Vein of Galen malformations: Transarterial and transvenous embolization.
- Vertebral dissections/pseudoaneurysms: Coiling, stent-assisted coiling, and endovascular coil occlusion of parent vessel
- Pre-surgical embolization of brain and spinal tumors
- Percutaneous embolization of cutaneous malformations (hemangioma, lymphovenous malformations, etc) of the head and neck
- Embolization of bleeding arteries in the head and neck including Epistaxis
- Vertebroplasty and Kyphoplasty procedures for spine

### **3. Other procedures:**

- Diagnostic cerebral and spinal angiography
- Wade testing
- Temporary Balloon test occlusion

## **LONGITUDINAL RESPONSIBILITIES**

### **A. Rounds**

The cerebrovascular team will perform morning rounds on all the interventional and non-interventional patients on our service. The purpose of these rounds will be to develop a patient care plan early in the morning prior to the start of any procedures for the day. The rounds will be attended by Endovascular Surgical Neuroradiology fellows, fellows in the preparatory year, Vascular Neurology fellows, rotating neurosurgery residents, neuroradiology fellows, Neurocritical Care rotating fellows/residents, nurse practitioners, and attending faculty. Equally important is early communication with the necessary teams so there is continuation of care as well as a documented action plan, so health care teams later during the day have a record of the action plan from the Endovascular Surgical Neuroradiology team.

The fellow will round on all the patients early in the morning and enter DAILY notes on each patient into the electronic medical record. These notes must be cosigned by an ESN attending physician, either the responsible attending or the on-call attending physician. After rounding on all the patients, the fellow will call the Endovascular and Neurocritical Care attending on call for that day to discuss the plan on EACH of the patients. In addition, for specific complex cases, especially in the ICU, the fellows will also discuss the cases with the specific endovascular attending who performed a procedure, and together they will formulate specific plans for the day.

Subsequent to this, the fellow will contact:

- 1) the Neurosurgery chief resident or resident on call at their site to discuss related patients and their plan, and to check for any new potential cases or transfers for the day.
- 2) the Neurology chief resident or resident on call at their site to discuss related patients and their plan, as well as to check for any new potential cases or transfers for the day.

### **B. Outpatient Clinics**

Outpatient clinic activities take place throughout the week. There is special emphasis on arriving on time so patients are not delayed, and quality care is given. Clinic will include stroke and endovascular patients. This is part of the training of fellows - to be involved with evaluation and management of patients with cerebrovascular disease, and deciding which ones should have medical therapy and which ones will benefit from endovascular or surgical therapy.

All patients will need to have notes written in the corresponding Electronic Medical Record and will need the necessary orders and imaging studies organized. ESN fellows will help coordinate, with the necessary support staff, any relevant pre-procedural work-up and orders needed for elective procedural admissions.

### **C. Consults**

There has to be a fellow covering consults and calls from the floor at all times. When the fellow on the endovascular rotation is scrubbed in for a procedure, he will assign one of the junior members of the team to back him/her up for new consults or patient related concerns, so that effective care is not delayed. All consults requested during the day will have to be evaluated by a fellow the same day and a note will have to be written. This consult will be

staffed by the on call attending as soon as s/he is available. The recommendations will be communicated to the requesting service in an expedient manner.

#### D. Calls during the night

All fellows will take turns being 'on call' for both hospitals, taking call from home, for a week at a time.

The on call fellow will call the answering services to ensure that they have him/her listed for call for that night. This will ensure that last minute changes in schedules do not result in confusion at the time of an emergency night-time call.

If there are night-time calls about a patient, the fellow on call will obtain all the necessary information in a timely manner and then contact the on-call attending about the case. For emergency cases, the fellow will come to the relevant hospital, evaluate the patient, and re-discuss the case with the attending on call.

If the fellow is at the hospital beyond 9 PM, he/she will make plans to have at least 10 hour away as a rest period before reporting to duty the next day. Communicate with your fellow trainees and the attending faculty, so they can cover any urgent patient care duties before you report back to the hospital after your rest/personal time. Work with the team participating in after-hours procedures so that each participant has an opportunity for their 10-hour rest period – alternating arrival/ departure times is one possible way of meeting this minimum of 9-hour rest period requirement.

Accurate reporting of all duty hours into the RMS system is important and mandatory. Both the fellow and the program coordinator are responsible for bringing to the attention of the Program Director recurring schedules that do not permit the required 10 hour sleep/rest period every day, as this violates duty hour limits set by the ACGME and this institution.

For those rare occasions when an ESN fellow prefers not to (or should not) return home, call rooms are available.

UMMC – on 4th floor of Mayo building, next to the C-496 exercise room  
Call 626-6330 for reservations; check-in time 2:00pm to 7:00 am.

HCMC – walk-in available at R5.302, door code 2354.

Reserve through Cindy Farr, 873-2595 x4 when need known in advance.

#### E. Weekend responsibilities

The ESN fellow at each site will sign out on Friday to the on-call fellow for the weekend about all inpatients and active consults so that the on-call fellow has a list of active cases and also has a potential plan for the weekend on all these cases.

The on-call fellow will round on all the patients (on Saturday and Sunday) at both hospitals and write daily notes to the medical record. The on-call fellow will also round on the HCMC stroke patient service on Saturday and Sunday.

The procedure for discussing pertinent issues with the on-call attending is the same as that during the week,. The procedure for communication with the neurosurgery, neurology and neurocritical care teams is also the same as on weekdays.



For any calls received by fellows from home on weekends, the responsibility for evaluating patients and communicating with the attending on call are similar to that for night-time call (from home).

The fellow and the program coordinator are responsible for bringing to the attention of the Program Director recurring schedules that exceed 80 hours in-house per week, as this violates duty hour limits set by the ACGME and this institution. The same applies to recurring schedules that do not allow at least 10 hours of rest/personal time between the end of duties one day and the start of duties the following day.

#### F. Dictation responsibilities

The primary assistant for each procedure will be responsible for dictating the procedure on Powerscribe. The dictations, per hospital policy, should be done within 24 hours of a procedure. The dictation will consist of indications of the procedures, periprocedural medications and anesthetics, devices and techniques used during the procedure, intraprocedural events, immediate angiographic and clinical outcomes, and interpretation of angiographic images acquired. Special emphasis will be placed on vascular distribution catheterized and category of the procedure (angioplasty, stent placement, embolization, etc.).

#### G. Case log responsibilities

Case information must be entered into the data base. In addition, fellows must maintain a personal log of the types of cases in which they participate. The number and types of cases for each fellow will be examined and discussed during the quarterly meetings with the Program Director.

#### H. Duty hour reporting responsibilities

Fellows are expected to log into the RMS online system and report their duty hours at least once weekly; more often is preferred. Accurate duty hour reporting is extremely important. Among other uses, your time is used to track compliance with the duty hour limitations set by the ACGME and this institution, and to obtain reimbursement from the hospitals towards your salary and benefits. To this end, it is important to log hours frequently – daily reporting is strongly encouraged.

The fellowship coordinator will work with each fellow to ensure that reporting is up-to-date before each monthly cut-off; that the appropriate activity codes are being used for duties at each site.

Fellows that become aware of recurring duty hours that exceed 80 hours per week, or that do not allow at least 10 hours of rest/personal time overnight, or do not allow at least four days off per month, are encouraged to bring the matter to the attention of not only the fellowship coordinator, but also to the program director, so any issues can be addressed and corrected.

## **ADDITIONAL LONGITUDINAL RESPONSIBILITIES**

### **Conferences**

Graduate medical education takes place in an environment of inquiry and scholarship in which fellows participate in the development of new knowledge, learn to evaluate research findings, and develop habits of inquiry as a continuing professional responsibility.

Our program faculty will contribute to the environment of inquiry and scholarship by actively participating in conferences (departmental, institutional, local and national), rounds, clinical discussions, journal clubs, scientific societies, research projects, mentoring, etc. For their part, fellows will continually strive to improve their understanding of basic mechanisms of normal and abnormal states and the application of current knowledge to practice.

Fellows are expected to attend or lead all teaching and research conferences on the schedule, except when they are the primary assistant in a procedure, or are actively preparing a patient for a procedure. The conferences are:

Vascular Neurology / Neuro ICU Conference* (Alternating didactics, cases, journal club, M&M)	4:00 PM Tuesdays, 12-109 PWB, UofM
Neurology/Neurosurgery/Neuroradiology/ Neuropathology Joint Neuroimaging Conf	7:30am Tuesdays, 12-115 PWB, UofM
Weekly Endovascular Case Conference*	7:00am Wednesdays, 12-109 PWB
Neurology Grand Rounds	Noon Fridays, UMMC, various
Neurosurgery/Endovascular M M & M Conference*	6:30am 2 <sup>nd</sup> Fridays, Neurosurgery Conf Rm, UofM
Neurology/Neurosurgery/ Neuroradiology Joint Case Conf	11:00am Fridays, HCMC, Neurology Conf Room
Vascular Radiology Conference	7:00 am Mondays, UofM Radiology
Angio Multidisciplinary Quality Conference	quarterly, location tba

Required conferences marked with an '\*'. Others are strongly encouraged.

### **Research**

As a cutting edge subspecialty program, we have a strong investigational component such that fellows may become familiar with the design, implementation, and interpretation of clinical research studies.

We encourage basic science, clinical, and translational research related to the field of endovascular surgical neuroradiology. Fellows are encouraged to present their research at local, national, and international conferences. Our departmental faculty will mentor and guide them in areas of interest that they can build upon during the research aspect of their future careers.

The trainee will develop skills in the following areas with emphasis on projects related to cerebrovascular diseases and endovascular surgical neuroradiology:

- Literature review, to ascertain the exact state of knowledge before undertaking new investigation.
- Generation of hypothesis and specific goals, ensuring that the hypothesis is testable, that the goals are appropriate and statistical power is achievable.
- Development of the research plan and the protocol, including study design, recruitment of subjects (if a clinical study), ethical considerations, informed consent and protection of privacy, data collection modes, full description of procedures and IRB approval, where appropriate.
- Data collection, including preparation of either electronic or paper data collection forms.
- Development of analytic methods or procedural skills, with emphasis on handling of artifacts, missing data, outliers and statistical inference.

All fellows engaged in research will identify a mentor who is a full-time faculty investigator with experience in trainee development; develop a research project under close supervision of the mentor and with careful consideration for design and feasibility; and actively participate fully in presentation of abstracts or papers at scientific meetings and preparation of manuscripts for publication in peer-reviewed journals.

### **Reading**

Fellows are strongly encouraged to be up-to-date with the latest literature on the natural history of disease; and the clinical trials, and risks/benefits of treatment options for stroke, diseases of the CNS, head, neck, and spine. Remaining up-to-date on the latest literature is a life-long endeavor. Attendance and participation in Journal Club is required.

Your Program Director will recommend textbooks.

### **Teaching and Delivery of Educational Programs**

Fellows are expected to take an active role in the teaching and training of residents/fellows in other disciplines, medical students, nurses, and other health-care personnel assigned to the cerebrovascular service. This includes rotating neurosurgery residents and neuroradiology fellows. Fellows will also participate in patient and public education programs about stroke through the American Heart Association/American Stroke Association. Frequent participation in clinical conferences dealing with stroke diagnosis and management will be of particular importance.

## **Leadership**

Each endovascular surgical neuroradiology fellow will act as the chief fellow of the cerebrovascular service at the hospital where they are rotating. This will involve accepting responsibility for organizing the service and demonstrating leadership by delegating responsibility to junior ESN fellows (the fellows in the preparatory year), rotating trainees from neurosurgery/neuroradiology, and the vascular neurology fellows. At the same time, the endovascular surgical neuroradiology fellow will be primary assistant (with progressive responsibility) to the faculty at most interventional procedures at that site.

## **SITUATIONS THAT REQUIRE CONTACTING FACULTY**

Each institution has specific requirements listing situations in which a trainee must contact the supervising physician immediately. Examples of these situations are:

In outpatient neurology clinic:

- When patients are behaviorally disordered or threatening
- When there is need for a CODE team activation

When on the inpatient service or on consults:

- Unexpected transfer to ICU or higher level of care
- Unanticipated intubation or ventilator support
- Change in CODE status
- Major neurologic change
- Major medical problem (e.g. cardiac arrest, a CODE, new or rapidly worsening respiratory distress, PE)
- Clinical intervention due to medication or treatment errors
- Development of any new clinical problem requiring an invasive procedure or operation for treatment
- Patient, family, or clinical staff request for attending notification.

## **SCHOLARLY ACTIVITY**

All fellows are expected to participate in scholarly activities. Mentors for these activities must be from among the active faculty.

Every fellow must participate in at least one research project during the year, with a faculty mentor. The Program Director will expect to hear about the topic of this project, and the name of the faculty mentor, by the end of the 4<sup>th</sup> month. Every fellow gives a very short presentation about their research at the Year End Fellowship Symposium, in late May.

## **ABSENCES**

All absences must be communicated as far in advance as possible to the program coordinator, and also to the program director and the patient care team.

Vacation: Each fellow is granted 3 weeks of vacation per academic year (21 calendar days). No more than two weeks of vacation can be taken at any one time, and must be coordinated

with the schedules of the other trainees assigned to your hospital's patient care team so that only one person is gone at a time. There is no carry-over of vacation from one academic year to the next.

Professional leave: Each fellow may take up to 5 business days of academic/professional leave per year to attend out-of-town conferences, board examinations, or job interviews. Any time beyond that must be taken as vacation time.

Other leaves: See Section 2 for a description of other types of leave available.

## **CALL ROOMS**

For those rare occasions when a fellow prefers not to (or should not) return home, call rooms are available.

UMMC – on 4th floor of Mayo building, next to the C-496 exercise room  
Call 626-6330 for reservations; check-in time 2:00pm to 7:00 am.

HCMC – walk-in available at R5.302, door code 2354.  
Reserve through Katie Dolan, 873-2595 x4 when need is known in advance.

## **TRAINEE LOUNGE**

UMMC has a trainee lounge on the 6th floor, which they stock with bottled water and light snacks several times a day. Fellows should NOT be using the Physician's Lounge.

## **LIFE SUPPORT CERTIFICATION – ACLS / BLS**

Upon entering an accredited GME training program, such as the ESN fellowship, all trainees who have direct contact with patients must be certified in Basic Life Support (BLS). Certification is typically valid for two years. Once the initial certification expires, the trainee must take a recertification class. ESN fellows are also required to maintain ACLS certification throughout their training.

For those trainees required by the hospital to have BLS or any other life saving certification, they will be recertified at the teaching hospital's expense. Contact your fellowship coordinator or [tnelson1@fairview.org](mailto:tnelson1@fairview.org) to get scheduled for training or re-training.

## **MODERATE SEDATION EDUCATION**

Each fellow is required to complete the moderate sedation training ANNUALLY, then complete and submit the signed authorization form to their fellowship coordinator.

The training can be accessed from any Fairview computer using this link:

[http://content.elsevierperformancemanager.com/Content/MN724a/Sedation\\_and\\_Analgnesia\\_for\\_Non\\_Anesthesia\\_Providers\\_ALL/index.html](http://content.elsevierperformancemanager.com/Content/MN724a/Sedation_and_Analgnesia_for_Non_Anesthesia_Providers_ALL/index.html)

## **SECURITY/SAFETY**

Security and personal safety measures are provided to trainees at all locations, including but not limited to parking facilities, on-call quarters, hospital and institutional grounds, and related clinical facilities (e.g. medical office buildings).

Contact Information:

University of Minnesota Medical Center Security Office: 612-273-4544

University of Minnesota Security Monitor Program: 612-624-WALK

VA Medical Center Security Office: 612-467-2007 / office located on the first floor, in room 1U-162

Hennepin County Security Office 612-873-2359 / office located at RL150

## **MEDICAL RECORDS AND REFERENCE MATERIALS**

As part of the onboarding process at each site, every ESN fellow receives logon instructions for accessing that hospital's electronic medical records system, and information about what reference materials are available in print in the clinic area. All ESN fellows also have access to electronic medical literature databases with search capabilities through the University of Minnesota's Biomedical Library.

### MHealth / UMMC Hospital

There is access to the Fairview Medical Library both from hospital/clinic computers and using mobile devices. Visit

[https://intranet.fairview.org/Resources/Information/MedicalLibrary/S\\_095521](https://intranet.fairview.org/Resources/Information/MedicalLibrary/S_095521) for details about which applications are available and how to access them with your mobile device.

### Bio-Medical Library

All residents and fellows have access to full facilities of the University of Minnesota Bio-Medical Library, which is physically located in Diehl Hall (just south of Phillips Wangenstein). Through the Bio-Medical library website <https://hsl.lib.umn.edu/biomed> and with an x500 login, hundreds of online journals, textbooks, databases, etc, can be accessed. Reference sites, such as UpToDate, PubMed, ClinicalKey, Micromedex, Ovid Medline and more. And to E-Books and journals such as NEJM, JAMA, Neurology, Lancet, etc. (Some of these are accessible only from hospital computers.)

Library subject specialist Jonathan Koffel, [jbkoffel@umn.edu](mailto:jbkoffel@umn.edu), 612-626-5454, is available for help researching a topic or for tips on using library resources.

### Moodle

The cerebrovascular programs maintain a Moodle site exclusively for the fellows. It currently contains many reference articles and can be customized to increase usefulness. Work through Coordinator Pat Bulgerin for major changes. <https://moodle.umn.edu>

### American Heart Association guidelines

The latest American Heart Association statements and guidelines for care can be found at: [http://my.americanheart.org/professional/StatementsGuidelines/Statements-Guidelines\\_UCM\\_316885\\_SubHomePage.jsp](http://my.americanheart.org/professional/StatementsGuidelines/Statements-Guidelines_UCM_316885_SubHomePage.jsp)

### Others

Other sites, like the American Academy of Neurology website, the Neurocritical Care Society website, the NIH website, etc, also have news articles, practice guidelines.

## **LABORATORY/PATHOLOGY/RADIOLOGY SERVICES**

Inpatient clinical support services are available on a 24-hour basis at University of Minnesota Medical Center, Hennepin County Medical Center, and the Minneapolis VA Health Care System, to meet reasonable and expected demands, including intravenous services, phlebotomy services, messenger/transporter services, Inpatient Radiology services including laboratory and radiologic information retrieval systems allow prompt access to results.

## **DUTY HOURS**

Fellows will rotate from home on stroke code call overnight and on weekends in such a way that each fellow covers an average of a third of the call. Fellows can expect to be on duty approximately 60 hours/week, on average.

Exact hours worked must be reported daily into the web-based RMS reporting system. Fellows are expected to log into the RMS online system and report their duty hours daily. Accurate duty hour reporting is extremely important. Among other uses, your time is used to track compliance with the duty hour limitations set by the ACGME and this institution, and to obtain reimbursement from the hospitals towards your salary and benefits. To this end, it is important to log hours frequently – daily reporting is strongly encouraged. All hours worked and all moonlighting (external and internal) hours must be reported. The combined total of hours worked should not exceed 80 hrs per week except in very unusual circumstances. Fellows will have an average of 1 day off per week, averaged over a 4-week period.

The fellowship coordinator will work with each fellow to ensure that reporting is up-to-date before each monthly cut-off; and that the appropriate activity codes are being used for duties at each site.

Fellows that become aware of recurring duty hours that exceed 80 hours per week, or that do not allow at least 10 hours of rest/personal time overnight, or do not allow at least four days off per month, are encouraged to bring the matter to the attention of not only the fellowship coordinator, but also to the program director, so any issues can be addressed and corrected.

## **MOONLIGHTING**

Fellows interested in moonlighting must discuss it with the Program Director. If moonlighting is approved, a letter will be written formally approving moonlighting. No moonlighting can be performed without an approval letter. All moonlighting hours must be reported via the RMS duty hours, and will be counted towards the 80 hour per week duty hour limit.

## **RESIDENT WELL-BEING**

Program directors and teaching staff will be sensitive to the need for timely provision of confidential counseling and psychological support services to fellows. Training situations that consistently produce undesirable stress on fellows or residents will be evaluated and modified.

Details about the support resources available to all residents/fellows can be found on the Graduate Medical Education web site <http://www.med.umn.edu/gme/residents/home.html>. These include Needle Sticks and Blood Borne Pathogen Exposure Mgmt instructions, a Dispute Resolution Process, Well-Being Tools, a Resident Assistance Program (RAP) at 651-430-3383, and an on-site consultant (Marilyn Becker, Ph.D., L.P. at 612-626-7196.), among others.

## **OTHER EDUCATIONAL RESOURCES TO BE USED**

Fellows have at their disposal a learning area in the department, which includes several computers, computer-based teaching tools covering neurology, neuroradiology and pathology, and the most frequently used, up-to-date textbooks. The computers provide Medline searches. In addition, fellows have access to the hospital and biomedical libraries, which include a sizeable collection of neurology journals and classic textbooks.

## **ESN FELLOWSHIP VISA POLICIES**

The ESN fellowship prefers to sponsor visas of type J1. On very rare occasions, outstanding applicants that have never held a J1 visa are considered for H1b visa sponsorship.

## **EVALUATION METHODS**

### **Evaluation by faculty, of faculty, of rotations**

Each quarter, fellowship faculty are asked to evaluate each fellow's performance, via evaluations in the New Innovations RMS web-based system.

Also each quarter, fellows are asked to evaluate the program faculty, as well as the various rotations they have completed.

### **Semi-annual meeting with PD**

One of the ACGME program requirements is a meeting between each trainee and the program director on a semi-annual basis.

At these meetings, the PD will review each trainee's ratings and evaluations submitted by himself and other faculty. A written evaluation summary will be prepared and signed by both the PD and the trainee.



### **360 Degree Evaluation**

Semi-annually, there is a semi-annual “360-degree” assessment of the trainees by the clinic and angio suite technical and nursing staff, as well as patients.

### **Semi-annual meetings with the faculty**

Information from the quarterly faculty evaluations, the 360 evaluations, conference attendance, research project status, and the breadth of categories in the fellow procedure log all are discussed during a semi-annual meeting between fellows and program faculty. At that time, faculty and fellows have an opportunity to make suggestions for program improvement in a group setting; then faculty give each fellow, individually, suggestions for improvement.

### **Annual Meetings**

Annually, the Program Director completes a slightly more extensive evaluation of each fellow that summarizes their performance during the full year and indicates whether the fellow is ready to assume increased responsibility or whether he/she has demonstrated sufficient competence to enter Endovascular Surgical Neuroradiology practice without direct supervision.

Also annually, fellows and faculty are encouraged to complete confidential written evaluations of the program itself. These are also scheduled and completed through the New Innovations RMS system. Anonymous, aggregated information from all rotation and program evaluations are used in an ACGME required annual, formal, fellowship evaluation meeting.

The results of the above annual evaluations, the rotation evaluations, the faculty evaluations, and the quarterly fellow evaluations all become part of the material considered in the formal, ACGME-required, annual Program Evaluation meeting. All faculty and fellows are invited to attend.

## SECTION 6 - ADMINISTRATION

### IMPORTANT PHONE NUMBERS

\*\*Refer to the stroke booklet for the full list of hospital and clinic contacts

HCMC Neurology Office – Cheryl Neel	(612) 873-2595
HCMC clinic	(612) 873-2515
UofM Neurology Office main line	(612) 625-9900
UMMC Hospital main line	(612) 273-3000
Cathie Witzel (Fellowship Coordinator)	(612) 625-1696

### FACULTY

(Endovascular faculty in bold; other key faculty in plain):

**Ramachandra Tummala, M.D. (Program Director and UMMC Site Director)**

David C. Anderson, M.D.

Oladi Benthoo, MD

Mustapha Ezzeddine, M.D.

**Andrew Grande, M.D.**

**Bharathi Jagadeesan, M.D. (HCMC Site Director)**

Kamakshi Lakshminarayan, M.D., Ph.D.

Ben Miller, M.D.

R. A. Reshi, M.D.

Chris Streib, MD

### HOLIDAYS

Maintaining the hospital services is a 24/7/365 endeavor. While there will always be someone on service – either in the hospital or on call from home, the ESN fellowship endeavors to adjust schedules so that all trainees can take several holidays during the year. We encourage the fellows to work out a plan amongst themselves, so that as many fellows as possible can take off the holidays that are most important to them. Communicate preferences and agreements to the fellowship coordinator and program director.

The Department of Neurology staff holiday schedule can be found at:

<http://www1.umn.edu/ohr/benefits/leaves/holiday/tcroc/index.html>

## **FELLOW CONTACT INFORMATION**

Fellows are expected to keep both their program coordinator and the University Payroll department informed of any changes to their contact information. Address and phone number changes for Univ of Minnesota can be completed online by visiting <http://hrss.umn.edu/> and selecting the Personal Information Update section. However, please tell your coordinator directly.

## **CONFIRMATION OF RECEIPT OF FELLOWSHIP PROGRAM MANUAL**

All fellows must complete a form annually indicating that they have received and reviewed the program manual. The form to complete is on the next page.

**University of Minnesota  
Department of Neurology**

**ENDOVASCULAR SURGICAL NEURORADIOLOGY FELLOWSHIP**

**Confirmation of Receipt of your Fellowship Addendum  
for Academic Year 2017-2018**

By signing this document you are confirming that you have received and reviewed your Fellowship program Addendum for this academic year. This policy manual contains policies and procedures pertinent to your training program.

This receipt will be kept in your personnel file.

Fellow Name (Please print) \_\_\_\_\_

Fellow Signature \_\_\_\_\_

Date \_\_\_\_\_

Coordinator Initials \_\_\_\_\_

Date \_\_\_\_\_