

University of Minnesota

Department of Medicine

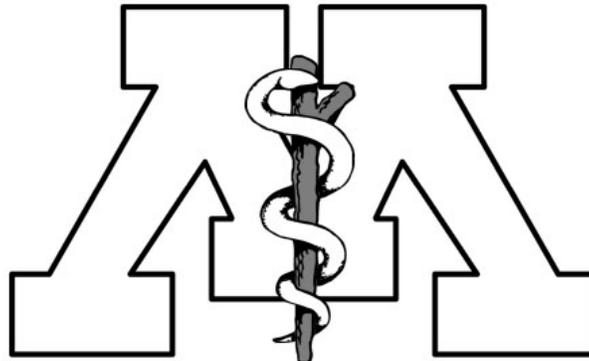
Division of Hematology, Oncology & Transplantation

Fellowship Program

Policy and Guidelines

Addendum to
Department of Medicine
Program Policy & Procedure Manual

2016-2017



Introduction and Welcome to New Fellows

On behalf of the faculty, staff, and fellows, welcome to the Division of Hematology, Oncology and Transplantation. We hope the time you spend with us will be both educational and enjoyable.

The Internal Medicine Program Policy Manual is designed to be an umbrella policy manual. Some programs may have policies that are more rigid than the Internal Medicine Program Policy Manual in which case the program policy would be followed. Should a policy in a Program Manual conflict with the Internal Medicine Manual, the Internal Medicine Manual would take precedence.

GME policies can be found at the following website:

<http://hub.med.umn.edu/graduate-medical-education/policies-governance/graduate-medical-education-institution-manual>

The Internal Medicine Program Policy Manual can be found at the following website:

<http://hub.med.umn.edu/graduate-medical-education/policies-governance/residency-fellowship-program-policy-manuals>

This addendum is designed to serve as a guide to the specifics of our fellowship program. Please read it carefully and keep it on hand for future reference.

Fellows are responsible for knowing and adhering to the policies and guidelines. When in doubt, fellows are responsible for contacting the program director or coordinator for clarification.

Department of Medicine Mission Statement

The mission of the Department of Medicine is to enhance the health of the people of Minnesota, the nation and the world, through innovation and research, education and patient care.

Program Mission Statement

The major goal of the Division of Hematology, Oncology, and Transplantation fellowship program is to train physicians for academic careers in Hematology, Oncology, and Transplantation. The emphasis of the three-year program is on clinical training in all areas of Hematology, Oncology, and Transplantation and the development of the necessary skills for an academic career through intensive training in basic or clinical research. The training program leads to board eligibility in Hematology and Medical Oncology.

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SECTION 1 - STUDENT SERVICES

1. Electronic Resources

- a. Fellows are assigned a University of Minnesota e-mail account at the beginning of their fellowship.
 - i. We regularly send fellows messages to their University e-mail. Please check your account regularly.
- b. Fellows have free access to Medline and other electronic library services.
- c. Fellows may gain access from home computers via modem, DSL, etc., and from computers in the resident rooms at each of the hospital sites. Fellows may login in remotely through Fairview remote access using the following link and by supplying their username and login.

www.securegateway.fairview.org
- d. Fellows also have access to workstations in the Fellows Office, in the Reference Area of the Bio-Medical Library in Diehl Hall and in the Division Office.
- e. Software for home computers to connect to the University system can be obtained at 152 Shepherd Labs on the University campus for a nominal charge.

2. Fellows' Office/Mail

- a. Because some important documents are sent directly to fellows' homes; fellows should make sure that the Fellowship Office has their current home address and phone number at all times.
- b. Fellows have mailboxes located in the Div. of HOT Fellows' Office for the duration of their fellowship, and are asked to check their mail on a regular basis.
 - i. The office is located at M40 Masonic Cancer Center.
 - ii. The door code is 1414*

3. HIPAA

- a. All University of Minnesota Residents, Fellows, Faculty and Staff have to complete HIPAA training sessions through the University of Minnesota, regardless of any other training sessions you may have had elsewhere. HIPAA training is federally mandated.
- b. These training sessions must be completed prior to your residency/fellowship start date.

4. Late Fees

- a. Any late fees which are incurred because of library fines, nonpayment of student loans, or inadequate immunization documentation, or other non-departmental reason are the responsibility of the fellow incurring the fees.

5. Pagers

- a. Each fellow will be assigned a universal pager to be carried throughout the training.
- b. **Pagers have an 80 mile radius. Fellows will not have to switch beepers when they switch sites.**
- c. For information on how to page others, send text pages, change your status, and other pager functions, please go to <http://www.dom.umn.edu/firms/issue1/facultypagers.html>
 - i. **Your pager should indicate the appropriate status at all times.**
- d. Batteries for pagers are available at all medicine offices at each of the hospital sites.
- e. For repair: Fellows should turn in their universal pagers to University of Minnesota Medical Center Information desk located in the UMMC and a temporary pager will be assigned.
- f. Graduation
 - i. At the end of training, universal pagers should be returned to fellowship coordinator ASAP. Certification of your training here will be held up if this is not done.

6. Photocopying/Faxing/Scanning/Printing

- a. Fellows are allowed to use the copiers on the UMMC wards, and the copy machines located in PWB 14-142 and 14-100.
 - i. For black and white copies, bypass the sign-in screen and press the 'black and white' photocopy button.
 - ii. For color printing, please ask the fellowship coordinator or other support staff for the code.
 - iii. Fellows can print to the printer in 14-142 from the fellows' room. When printing, change the printer to PWB Canon C535. If prompted for a code, it is 11776. This goes in the Dept. ID box. You do not have to enter a pin/password.
 - iv. Fellows should keep in mind that if copying large projects, the printer in PWB 14-142 should be utilized.
- b. The printers in PWB 14-142 and PWB 14-100 can also scan to your e-mail.
- c. The PWB 14-100 printer is also a fax machine. Instructions on how to fax are above the printer.

7. Tuition and Fees

- a. Tuition and fees are waived at this time. Trainees who are enrolled in the Graduate School pay tuition and fees.

8. White Coats

- a. Two white Department of Medicine coats will be given to you during orientation.
- b. There is a bin for soiled coats in the hallway outside PWB 14-132; clean coats will be returned to the rack beside the bin in approximately two weeks.

SECTION 2 – BENEFITS

1. Educational Funds

- a. Each 2nd and 3rd year fellow is provided with \$1500 to be used for conferences or other educational materials.
- b. If not used for conference reimbursement, the fellow must present, in writing either through e-mail or otherwise, a plan of use for the item before purchase. (Example- the desire to buy a specific text book or study aid).
 - i. After approval and purchase, the fellow is to submit an expense reimbursement form with receipt.
- c. 1st year fellows are provided with \$500 to be used for educational expenses such as membership to an organization not provided by the dept., textbooks or subscriptions.
 - i. The Division provides complimentary membership for all fellows to ASCO and ASH.

2. Insurance/Professional Liability

- a. Information regarding the above can be found at: <http://www.med.umn.edu/residents-fellows/current-residents-fellows>
- b. The hospital does not cover Insurance/Liability for Moonlighting. Please refer to the Moonlighting policy for further information.

3. Meal Allotment

- a. Fellows are not given any meal allotment and are responsible for their own meal costs.

4. Stipends

- a. Information on current stipend levels can be found at: <http://www.med.umn.edu/residents-fellows/current-residents-fellows/stipends-benefits>

5. Parking

- a. University of Minnesota:
 - i. Fellows on the following services will obtain parking cards from the fellowship coordinator (14-124 PWB, 612-626-0400):
 1. Malignant Hematology
 2. Inpatient H/O
 3. BMT
 4. H/O Consults

- ii. If fellows so prefer (and if it is done so in an efficient manner) fellows may make arrangements with the next person on service to hand off the card. However, it is YOUR responsibility to let the Fellowship Coordinator know of the arrangements you've made.
- iii. At the beginning of each rotation a fellow must e-mail the Fellowship Coordinator if they are in possession of a parking card.
- iv. Failure to properly hand-off the card will result prompt cancellation of the card and resultant fellow loss of funds and/or loss of parking card privileges.**
- v. As appropriate, the Fellowship Office may offer a parking card for other rotations. This will be done on a case-by-case basis and is at the sole discretion of the Fellowship Program. **These cards are to be returned to the fellowship office at the end of the rotation.**
- vi. Daily parking tickets are available for all fellows coming to the university for educational purposes (Grand Rounds, Core Conferences, Journal Club, etc.). They are located at the main H.O.T. Office (PWB 14-100). Contact the fellowship coordinator for further information.

b. V.A. Medical Center:

- i. You will be assigned a medical badge on the first day of rotation at the VAMC. This badge gives you parking access to the VAMC as well as allowing you access to VAMC buildings after hours.
- ii. Jillian Sully (3rd floor, 612-467-4134 or -4135) in the Hematology/Oncology office will walk you through the process once you arrive for your first rotation.

c. Regions Medical Center:

- i. Fellows are to park in the North Building parking ramp.
- ii. Sandy Archer (651-254-2299), divisional support staff at Regions Hospital, will then walk you through the process once you arrive for your first rotation.

d. Hennepin County Medical Center:

- i. For first time attendees, please park in the parking ramp on the corner of 8th and Chicago (Not the ramp across from HCMC, but rather the ramp across from the Hennepin Multispecialty Center).
- ii. Please report to the main office, B-533, at 8:00 a.m. on the day that your rotation begins.
- iii. Leigh Anne Hamersten (612-873-2705), divisional support staff at HCMC, will walk you through the process once you arrive for your first rotation.

SECTION 3 - INSTITUTION RESPONSIBILITIES

Please refer to Institution Policy Manual at: <https://hub.med.umn.edu/graduate-medical-education/policies-governance/graduate-medical-education-institution-manual>

SECTION 4 - DISCIPLINARY AND GRIEVANCE PROCEDURES

1. Fellows may address any concerns about any aspect of the program at any time to Dr. McClune or Dr. Weisdorf.
2. If the fellow does not feel comfortable speaking with the Program or Division Directors, then the fellow should contact Dr. Briar Duffy (Internal Medicine Program Director), Dr. James Nixon (Vice-Chair for Education, Department of Medicine) or Dr. Peter Igarashi (Chair, Department of Medicine) for assistance.
3. You can also access all GME grievance procedures online at:
<http://www.gme.umn.edu/InstitutionPolicyManual2013/index.htm>

SECTION 5 - GENERAL POLICIES AND PROCEDURES

CONFERENCE ATTENDANCE

FELLOWS' CORE CONFERENCE (FCC): These are the backbone of fellowship curriculum. They generally occur on Fridays from 10am – 12 pm.

GARIBALDI CONFERENCE: This is a weekly conference with lectures by faculty and outside visitors.

GRAND ROUNDS: Fellow led discussion on current practices/issues in Hematology/Oncology and Transplantation.

JOURNAL CLUB: Fellow led review of current literature.

Procedure:

1. Schedule:

Friday 8:00 am: Journal Club/Grand Rounds

Friday 9:00 am: Garibaldi Conference

Friday 10:00am: Fellows' Core Conference

Topics and times for each UMN Friday conference are located in RMS under the "Conferences" tab.

2. Attendance

a. All Fellows are expected to attend all conferences related to the fellowship program and to be on time.

b. Proof of attendance is in the form of attendance sheets.

i. Attendance sheets are placed in each conference.

ii. There are three attendance sheets.

iii. Fellows are only to sign in for themselves. This is the only way attendance will be tracked.

c. Excused Absences

i. Absences due to illness and vacation are considered excused absences as long as the fellowship office is notified such events will be occurring.

d. Compliance

- i. As fellows are required to notify the fellowship office regarding time away from the program, compliance should be at 100%. However, we recognize that unexpected events may occur. Thus, **fellows should attend a minimum of 85% of all conferences to maintain good standing** in the program. If you fall below this, meetings with the Program Director or Division Chair will be set-up and if ongoing, travel/educational funds withheld at the discretion of the Program Director.

e. Notifications

- i. The Division e-mails weekly reminders to faculty and fellows regarding times and topics of all Educational Conferences.

DICTATION/MEDICAL RECORDS

1. All patient discharges must be completed within 48 hours. All clinic notes must be completed within 48 hours.
2. Fellows will be provided with a 6 digit dictation code at the start of fellowship as well as instructions for dictation. The phone number when on-site is ***** for dictations. Many fellows will choose to dictate based on their own personal comfort level.

DRESS CODE

1. In addition to professional and respectful behavior, it is important that our work habits include proper dress and personal appearance when interacting with patients and their families as well as other colleagues. In addition, you are considered to be role models for future physicians; it is important to set a good example when supervising the residents and medical students.
 - a. The use of scrubs should be limited to any call night, and your white coat should be worn at all times.
 - b. It is not appropriate to wear scrubs when in clinic.
 - c. Dressing comfortably on the weekends is not an excuse to wear sweat pants.
 - d. Shoes should be clean and in good condition (no beat-up sneakers).
 - e. Open-toed shoes are **NOT** allowed in the hospitals or clinics.

DUTY HOURS

DUTY HOURS are defined as all clinical and academic activities related to the fellowship program, i.e. patient care, administrative duties related to patient care, time spent at the training room or for event coverage, and academic activities such as conferences and research. Duty hours do not include studying and preparation time spent away from the hospital.

MOONLIGHTING is defined as clinical work performed by a fellow during the time that they are in a fellowship program that results in compensation. Please see the UMN Moonlighting Policy here: <https://docs.google.com/document/d/1PoMZHGCs5trIYg-qzP6lvMtUmKYMctU3JdmTYAo88lQ/edit>

ONE DAY is defined as one continuous 24-hour period free from all clinical, educational and administrative activities.

Procedure:

1. Duty hours are limited to 80 hours per week, and are averaged over a four-week period, inclusive of all **in-house call activities and Moonlighting**.
2. Moonlighting is allowed **if approved by the Program Director**.
 - a. ALL MOONLIGHTING HOURS COUNT TOWARD THE 80 HOUR LIMIT.
 - b. Please refer to the Moonlighting policy for more information.
3. Fellows are provided with one day in seven free from all educational and clinical responsibilities, averaged over a four-week period, inclusive of call.
 - a. This means that fellows will not have any responsibility to be available on that day (this includes no pager).
 - b. This day off should not occur on a scheduled continuity clinic day.
 - c. It is the responsibility of the individual fellow, in cooperation with his/her patient care team and with the approval of the attending staff physician, to determine the most appropriate day off.
4. Fellows must always maintain breaks (time away from the hospital) in 10 hour increments.
5. When on call, you must alert the Program Director if you have to return to the hospital on consecutive nights as this can result in undue fatigue.
 - a. In such cases the back-up fellow may be assigned to cover clinical duties to allow rest.
6. Duty Hours are considered a fellow's administrative duty and completing them goes toward professionalism. Monitoring of duty hours will occur through New Innovations/RMS.

- a. Fellows are expected to have completed their duty hours and double checked that they are an accurate reflection of their time by the 2nd of each month.**
- b. Fellows who do not complete duty hours by the 2nd of each month will face disciplinary action.
 - i. Disciplinary action can include loss of educational funds, administrative leave, and up to and including more formal notices and dismissal.

MOONLIGHTING

Definition:

Moonlighting is defined as any revenue generating work performed as a fellow physician outside of the fellowship program.

Procedure:

1. The fellow **MUST** speak with the Program Director prior to beginning a moonlighting assignment.
 - a. The fellow must disclose the site of the proposed moonlighting activity, nature of work, information on immediate supervisor, and anticipated hours of work per month.
 - b. The fellow must complete the Moonlighting Form, located on RMS, and have it signed by the Program Director **BEFORE** they begin moonlighting activities.
2. All Moonlighting hours count toward the 80 hour a week work limit, and **must be reported by the fellow in their duty hours.**
3. First Year Fellows are **NOT** allowed to moonlight.
4. J-1 Visa holders or those needing sponsorship are **NOT** allowed to moonlight.
5. Moonlighting is prohibited any time a fellow is expected to be engaged in an activity related to the fellowship program, including call or research elective time. Moonlighting discovered during these times may lead to immediate dismissal from the program.
6. Fellows who moonlight will receive monitoring from their Program Directors to check for fatigue and that they are able to maintain the rigors of the program.
7. While at the site wherein the fellow is moonlighting, **professional liability insurance coverage is the responsibility of the resident and/or hiring institution.** The insurance coverage provided by the University of Minnesota does not cover moonlighting activities, including that which occurs at the VA or Regions Hospitals.
8. **Fellows violating this policy will be subject to disciplinary action including the revocation of moonlighting privileges for the remainder of their fellowship. Further violation of the policy may lead to probation, suspension without pay and/or disciplinary action including, but not limited to, termination.**

LEAVE OF ABSENCE

Procedure:

1. ABIM Policy on Days Away

- a. In accordance with ABIM policy, all fellows will be given one month (including weekends) of leave, to be used for **both** vacation and sick leave.
- b. Vacation time includes 15 weekdays, and 6 weekend days. Sick time includes 5 weekdays and 2 weekend days. Conferences are considered an extension of the education program provided, thus not included in this count.
- c. **Any leave exceeding one month must be made up at the end of training.**
- d. There is no carry-over of vacation or sick time from one year to the next. Unused vacation is not paid out at the end of the year.
- e. For additional details, please refer to the ABIM policy located on the web at www.abim.org.

2. Days Away Form

- a. Fellows will sign up for vacation before each academic year. HOWEVER, this does not mean it is fully approved. All absences (save for emergencies) must be pre-approved a **minimum of sixty (60) days in advance**.
- b. The Days Away Form (located in the fellowship office and on the RMS homepage) MUST be completed a **minimum of sixty (60) days in advance** for any leave from the program (Vacation, Conference, etc).
 - i. Signatures from all clinic/research faculty must be obtained on the form BEFORE final approval from the Program Director.
 1. E-mails from faculty in lieu of signature are acceptable.
- c. **The Fellowship Director has the right of refusal for all days away.**
- d. ***Failure to complete a Days Away form prior to leave will result in disciplinary action*** up to and including loss of education funds and reimbursements and will place future leave in jeopardy. It can also lead to an extension of your time in the program.

3. Vacation Time

- a. First year fellows are assigned their vacations to correspond with their first year rotation schedule.
- b. Senior fellows are allowed to take vacation during some elective and research rotations ***if previously discussed*** with the Fellowship Office.

- c. Vacation time is not permitted on the Hematology/Pathology elective, Inpatient Heme/Onc service, Heme/Onc Consult service, or the Inpatient BMT Service nor at affiliated sites
 - i. Exceptions can be made if discussed with the Fellowship Office.

4. Sick Leave

- a. Fellows are responsible for notifying the Fellowship Program Coordinator, Program Director, and the appropriate faculty member(s) of their rotation and clinic as soon as possible when they are to be out sick.
- b. There is a back-up fellow call schedule located on the RMS homepage that will be used for covering fellows.
- c. **It is the fellow's responsibility to contact the back-up fellow.** However, should that not be possible, the fellow should notify the Program Director and he or his designee will contact the back-up fellow for coverage.

5. Conferences

- a. Attendance at regional and national conferences is greatly encouraged. However, ***a Days Away Form is required*** to be signed and in the Fellowship Office a MINIMUM of one month in advance.
 - i. Failure to provide a Days Away Form will result in disciplinary action up to and including loss of funds, future days away, and possible extension of training.
- b. 2nd and 3rd year fellows will be reimbursed out of their educational fund which has a limit of \$1,500 per year.
 - i. Funds do not carry over from year to year.
 - ii. Upon return, submit an itemized account of expenses along with the expense worksheet located on RMS homepage to the fellowship coordinator.
- c. Travel above and beyond the \$1500 must be sponsored by outside the department, through the fellow mentor, or self-funded.
- d. Fellows should make the Program Director aware of a conference they would like to attend as early as possible (and, if possible, while the rotation schedule is being drawn up).
- e. If assigned to a clinical service during a time when you wish to attend a meeting, you must arrange coverage unless stated by the faculty member on the Days Away Form that coverage is unnecessary.

6. Leave for Interviews/Professional Leave

- a. Second and 3rd year fellows may take a total of 5 days of leave (combined) for interviews. The expectation is that, as much as possible, these days away will not interfere with clinical duties or service rotations. This does not count as part of the vacation/sick leave totals.
- b. ***A Days Away Form is required*** to be signed and in the Fellowship Office a MINIMUM of sixty days (60) in advance.
 - i. Failure to provide a ***Days Away Form*** will result in disciplinary action up to and including loss of funds, future days away, and possible extension of training.

7. Holidays

- a. **Each clinic has a different holiday schedule.** It is the responsibility of the fellow to find out if their continuity clinic or clinic for a rotation is closed for a holiday.

8. Military Leave

- a. The fellow must notify the program as soon as they are called to active military duty.
- b. Military leave may be authorized upon request and normally will not exceed 15 days each per year (on a basis of a seven day week).
 - i. A request for such leave beyond 15 days may be authorized by the Program Director, depending on the circumstances. This can result in extension of the fellowship.
- c. It is incumbent upon the Program Director to notify the appropriate governing boards regarding this change in status.

9. Jury Duty

- a. Absence for jury duty and court leave will be authorized consistent with the requirements of the courts. The fellow and training program 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.

10. Bereavement Leave

- a. A fellow will be granted, upon request to the Program Director, up to 5 days off to attend the funeral of an immediate family member.
 - i. 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.
- b. Sick or vacation time must be used.

11. Parental Leave

- a. Fellows should notify the Program Director as far in advance as possible of the request for maternity/paternity leave, but at **least four (4) weeks in advance, except under unusual circumstances.**
- b. **Fellows should be aware of the following:**
 - i. The ABIM allows one year of training to be interrupted by only four weeks, including vacation, sick leave, educational leave and Maternity/Paternity Leave.
 - ii. Any time off exceeding four weeks will extend your training.
 - iii. To be eligible to sit for certification in a subspecialty of Internal Medicine, candidates must have completed the required training in the subspecialty by October 31 of the year of examination.
- c. Maternity Leave
 - i. **6 weeks is allotted if natural birth, 8 for C-section.**
 - ii. Any time beyond the fellow's allotted 4 weeks of vacation/sick time will need to be made up later, extending program length.
 - iii. If the fellow wishes to come back earlier than the 6 or 8 weeks after giving birth, they will need to obtain medical clearance to do so.
- d. Paternity/Domestic Partner Leave
 - i. 2 weeks is allotted for paternal/domestic partner leave
 - ii. The 2 weeks can be taken directly from vacation time and need not extend fellowship training.
 - iii. Paternity leave must take place either any time between 2 weeks before birth and up to 6 weeks after the birth of the child.
- e. Adoption
 - i. 2 weeks is allotted for Adoptive Parent leave
 - ii. The 2 weeks can be taken directly from vacation time and need not extend fellowship training.
- f. GME Policy

- i. For further information and clarification, please refer to the GME policy on parental leave located at: <https://www.med.umn.edu/residents-fellows/current-residents-fellows>

12. Personal Leave of Absence (LOA)

- a. The fellowship program understands that sometimes personal matters arise beyond those listed above that may necessitate an extended period of time away from training.
- b. A requested LOA must be presented in writing to the Fellowship Program Director.
- c. The Fellowship Program Director and Fellowship Committee must approve your request at least three months prior to the requested LOA date.
 - i. Exceptions may be made if the request falls under the definition of the Family Medical Leave Act (FMLA). Please see the Institution Manual for the Medical School policy on FMLA.
- d. All personal time must be made up beyond the 4 weeks allotted for vacation and sick time must be made up. This may extend training.
 - i. Please note this time will be unpaid and you will be responsible for paying your insurance for the time you are gone.
- e. Make sure approval is obtained before making any plans!

13. Emergency and Other Leave

- a. Emergency leave, leave for examinations, leave for attendance at scientific or professional meetings, or other absences may be authorized by the Program Director, depending on the circumstances

14. Unauthorized Leave

- a. Unexcused or unsupportable absences or unauthorized leave or extensive tardiness from any mandatory clinical or educational activity constitutes unprofessional conduct.
- b. Under your signed employment contracts, unprofessional conduct is one behavior which will subject the resident to discipline for non-academic reasons.
- c. Such discipline may be in the form of a written warning, probation, suspension or termination.

LICENSURE

1. Fellows are not required to have a Minnesota State License to participate in the fellowship program, although state law mandates that each resident have a Minnesota Residency Permit. This requires a one-time application and the permit is valid throughout the residency. You are responsible for the fee. Questions regarding licensure should be directed to:

Minnesota Board of Medical Practice
2829 University Avenue West, Suite 500
Minneapolis, MN 55414
612-617-2130
<http://mn.gov/health-licensing-boards/medical-practice/>

SCHEDULES

Procedure:

1. All schedules are posted on the RMS homepage.
2. Continuity Clinic and Rotation schedules for fellows are prepared by the Fellowship Director prior to the start of the academic year based on requests submitted in April.
3. Back-up Schedule
 - a. A back-up schedule is created on a yearly basis to provide coverage for fellows who are unexpectedly unable to serve on their inpatient rotation (due to illness, fatigue, family emergency, etc).
 - b. Fellows will be on the back-up schedule for two week blocks. The fellow on the back-up schedule is expected to be:
 - i. Available via pager 24-7 for the entire duration of your time on the schedule.
 - ii. Physically able to perform on an inpatient or outpatient rotation.
 - iii. Able to be at the site where you are needed within 90 minutes of being contacted.
 - iv. Prepared to take overnight call from home if that coverage is needed.
 - c. If you are needed for back-up and unavailable for any reason at that time, you will be required to provide other call services in the future to make up for your lack of availability.
 - i. This will also reflect in your evaluations regarding professionalism.
 - d. If you are unable to cover any part of your assigned block on the schedule, you may make a switch or arrange for alternate coverage by another fellow.

- e. As with other rotation switches, changes in coverage need to be arranged one month prior to the affected period and communicated to the fellowship coordinator at that time.
- f. Fellows are in charge of maintaining the back-up schedule and notifying the Fellowship Office of any changes.

4. Schedule Changes

- a. Fellows are personally responsible for arranging switches in the schedule, and for finding a replacement in their absence, except in the case of emergency.
- b. All changes to the schedule must be presented in writing to the Fellowship Director for approval as far in advance as possible (preferably at least one month in advance).
- c. **Any trade must result in the same number of fellows at any site as on the original schedule and for the same time slots.**

SECURITY / SAFETY

1. Security and personal safety measures are provided to residents 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 / East Building / Riverside Campus

Regions Hospital Security Office: 651-254-3979

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

Department of Veterans Affairs Health Care System Security Office: 612-467-2007 / located on the first floor, in room 1U-162

2. In the event of any injury that occurs while a fellow is on-duty at any University or affiliated site, it is the fellows' responsibility to notify the Fellowship Office immediately within the first 24 hours of the injury. This is for timely reporting for your Workers' Compensation benefit. Failure to do so will likely result in out-of-pocket expense for the fellow.
 - a. Note that each rotation description includes contact information at the site to report workplace injury.
 - b. University workplace exposure information, including needle-stick reporting, can be found at the following links:
 - a. <http://www.med.umn.edu/residents-fellows/current-residents-fellows/health-wellness/needle-sticks-blood-borne-pathogen-exposure-management>
 - b. <https://docs.google.com/document/d/1ROtODx-Be2d7a2SAEFW6H9t1ZJzmx0DhMxDho90dPbk/edit>

SUPERVISION

Procedure:

1. Our fellowship program is one based on graduated responsibility leading to autonomy as a physician.
 - a. Fellows will work closely with faculty throughout their rotations to meet benchmarks of promotion within the program and within autonomy of specific procedures.
2. While it is our goal for fellows to be autonomous, faculty is ultimate responsible for patient welfare and safety. Thus, faculty are on-call and available to fellows at all times (24 hours a day, 7 days a week).

VISA SPONSORSHIP

1. The J-1 alien physician visa sponsored by ECFMG is the preferred visa status for foreign national trainees in all UMN graduate medical education programs; therefore, *the Hematology and Medical Oncology Fellowship sponsors only J-1 visas.*

WELL-BEING AND FATIGUE

Procedure:

1. Well-Being

- a. The program encourages fellows to recognize their own levels of stress, and to seek the advice of their attending physician or program director if stress becomes too great.
- b. The Fellowship Office also monitors the duty hours, days off, adequacy of rest, and levels of stress for fellows and will provide guidance for stress reduction or well-being.
- c. The Fellowship Office provides a health and wellness section on the RMS/New Innovations homepage that provides links to various programs offered on campus and in the greater Twin Cities area to help maintain both emotional and physical well-being.
- d. Faculty are also responsible for monitoring the health and stress levels of those under their supervision, and to report any expected cases of excess stress or fatigue to the program director.
- e. UMN GME offers a wealth of information for resident/fellow well-being. This can be found at: <http://www.med.umn.edu/residents-fellows/current-residents-fellows>

2. Resident Assistance Program (RAP)

- a. The Resident Assistance Program (RAP) is a 24-hour free confidential assistance program designed specifically for residents and fellows.
- b. RAP offers support and assistance to residents/fellows with issues and problems such as getting a handle on resident debt, dealing with stress, career choices, relationships, and adjusting to residency.
- c. RAP is strictly confidential, and is provided by an outside firm, Sand Creek. The RAP program will NOT notify the program or program director of a residents' use or contacts.
- d. Contact: Sand Creek (the agency) at 651-430-3383 or 1-800-632-7643
- e. More information can be found at <http://www.med.umn.edu/residents-fellows/current-residents-fellows/health-wellness/resident-and-fellow-assistance-program-rap>
- f. Fellows and their families are encouraged to take advantage of this benefit.

3. Fatigue

- a. Fatigue can lead to impaired performance and thus is taken seriously within the program.
- b. If you feel you are fatigued please alert an attending or the program director.

- c. Cab Vouchers are available, for a maximum of \$35.00 per cab fare, should you feel impaired. This is not a reimbursement, but rather a voucher provided by Fairview. The full policy is located at http://www.gme.umn.edu/prod/groups/med/@pub/@med/@gme/documents/content/med_content_425164.pdf

4. On Call Rooms

a. University of Minnesota Medical Center

- i. On-call Residents, Medical Students, Fellows, Attending physicians and certain on-call hospital staff are eligible to check-in to a call room.
- ii. UMMC has 18 on-call rooms located on the 4th floor of the Mayo building.
- iii. All rooms have punch code security access changed daily, and a security monitor on duty from 2:00PM-8:00AM.
- iv. They each contain a desk, TV, radio clock, and air conditioning.
- v. Check-in occurs only during the designated hours of 2:30 PM until 7:00 AM.
 - 1. To check in, go to the desk located in the Resident Lounge (Mayo C-496).
 - 2. The check in desk is staffed by a security monitor during set hours 7 days/week and will require you to present your hospital ID badge.
 - 3. The security monitor will assign you a room, the access code, and the locker room and lounge access codes.
 - 4. All individuals must be out of their rooms by 8:00 AM.
 - 5. Housekeeping will come to begin cleaning by 7:00 AM. If you wish to sleep until 8:00 AM, make sure your DO NOT DISTURB sign is indicated on your door.
 - 6. No room is checked out to the same service two days in a row.
- vi. Belongings left in the rooms past noon, will be removed and kept in a security locker.
- vii. Belongings can be picked up any time after 2:30 PM from the security monitor. Any questions, call 612-273-7597.

b. Regions Hospital

- i. The call rooms at Regions are located on the 3rd floor.

- ii. There are 3 call rooms assigned to internal medicine, each with 2 beds which means the call rooms are shared.
- iii. Rooms are unisex.
- iv. There is a key pad to each room and the combination number to access the room is given out by the chief residents when residents rotate here.
- v. The rooms are accessible any time during the day for the on-call team.

SECTION 6 – ADMINISTRATION/CONTACT LISTS

Hematology, Oncology and Transplantation Division (HOT)

Phone: 612-626-2446 (612-624-0123 auto attendant)
420 Delaware Street SE, MMC 480, Minneapolis, MN 55455

Fed Ex/Courier Address

Room 14-100, Phillips Wangensteen Bldg.
516 Delaware Street SE, Minneapolis, MN 55455

FAX NUMBERS:

14-100 PWB – HOT Main Office: 612-625-6919
654 MCRB - Dr. Miller: 612-626-3941

14-154 Moos: 612-626-1441
Stem Cell Institute: 612-624-2436
Hospitalist 7D: 612-273-3225

Digital Pager: www.myairmail.com UMMC Fairview Operator: 612-273-3000 University of Minnesota Operator: 612-625-5000

CAMPUS FACULTY	PRACTICE	PHONE 612-62	PAGER 612-899-	EMAIL --@umn.edu	LOCATION	ASSISTANT / PHONE / NOTES
Afrin, Lawrence, MD	HEME/ONC	6-4710	3611	afrinl	PWB 14-114 C	Georgi Walberg, 5-9604
Arora, Mukta, MD	BMT	6-4105	8721	arora005	PWB 14-136 A	Kristin Blomquist 5-8942
Bachanova, Veronika, MD, PhD	BMT/HEME/ONC	5-5469	1200	bach0173	PWB 14-136 B	Kristin Blomquist 5-8942
Barjes, Ezzideen	Hospitalist	612-273-3074	6633	ebarjesa	PWB 14-132D	Colleen Van House, 5 -1110
Beckwith, Heather MD	ONC	5-4918	7057	einho003	MCRB 560 A	Kristin Blomquist 5-8942
Bejanyan, Nelli, MD	BMT	4-6982	9529	nbejanya	PWB 14-132 B	Kristin Blomquist 5-8942
Belcher, John, PhD	Research	4-2611		belcher	PWB 14-154	Barbara Porwit, 4-5620
Blaes, Anne, MD	ONC	6-8138	7027	blaes004	PWB 14-148	Tracy Daye-Groves, 4-5944
Brunstein, Claudio, MD, PhD	BMT	5-3918	6170	bruns072	PWB 14-124 B	Kristin Blomquist 5-8942
Cichocki, Frank, PhD	Research	6-8482		cich0040	MCRB 554A	Barbara Porwit, 4-5620
Cooley, Sarah, MD	BMT	5-8474	7461	cool0023	MCRB 654 C	Kristin Blomquist, 5-8942
Datta, Yvonne, MD	HEME	6-5195	8669	datta009	PWB 14-114 A	Georgi Walberg, 5-9604
Domingo-Musibay, Evidio, MD	HEME/ONC	4-5373	5360	musib024	PWB 14-150	Kris Blomquist 5 -8942
Eckfeldt, Craig, MD, PhD	HEME	6-6019	5099	eckf0002	CCRB 2-131	Barbara Porwit, 4-5620
Felices, Martin, PhD	Research	6-5744		mfelices	MCRB 660A	Barbara Porwit, 4-5620
Fujioka, Naomi, MD	HEME	6-6689	7468	fujio002	MCRB 554 F	Kristin Blomquist 5-8942
Garry, Mary PhD		5-2831		garry002	CCRB 4-147	Barbara Porwit, 4-5620
Greeno, Ed MD	ONC	6-6418	2899	green048	PWB 14-142 A	Tracy Daye-Groves, 4-5944
Gupta, Kalpna PhD (F)	Research	5-7648		gupta014	MT 14-142	Georgi Walberg, 5-9604
Gupta, Shilpa MD (F)	ONC	6-3003	4560	guptash	PWB 14-142C	Barbara Porwit, 4-5620
Hebbel, Robert MD	Research	4-6104		hebbe001	PWB 14-102 B	Tracy Daye-Groves, 4-5944
Holtan, Shernan MD (F)	BMT/Research	612-301-1095	3135	sgholtan	PWB 14-124 E	Georgi Walberg, 5-9604
Jacob, Harry MD	HEME	4-7908	2331	jacob002	MT 14-136	Barbara Porwit, 4-5620
Kolla, Bhaskar, MD	Hospitalist	612-273-3074	6633	bckolla	PWB 14-132D	Colleen Van House, 5-1110
Kratzke, Robert MD	ONC	6-3794	6155	kratz003	MT 14-236	Tracy Daye-Groves, 4-5944
Lange, Carol, PhD	Research	6-0621		lange047	CCRB 3-126	Marilyn Lingard; 5-1405; linga012
Lazaryan, Alex, MD	HEME/ONC/BMT	6-4253	9533	alazarya	PWB 14-124 C	Kristin Blomquist, 5-8942
Lou, Emil MD, PhD	HEME/ONC	5-7667	8115	emil-lou	MT 14-242	Tracy Daye-Groves, 4-5944
McClune, Brian, DO	HEME/BMT	5-7101	2507	bmcllune	PWB 14-124 D	Stacy Maher, 6-0400
McGlave, Philip, MD	BMT	4-5422	7493	mcglav001	PWB 14-102 A	Rosellen Fairall, 4-4440
Mehta, Rohtesh, MD, MPH, MS	HEME/ONC	4-8144	4559	rsmehta	PWB 14-132A	Kristin Blomquist, 5-8942
Miller, Jeff, MD	BMT	5-7409	7128	mille011	MCRB 654 A	Stephanie Weiland; 6-4024; matur015
Ostrander, Julie PhD	Research	5-1996		hans1354	CCRB 3-134	Marilyn Lingard; 5-1405; linga012
Patel, Manish, DO	ONC	4-6940	7651	patel069	PWB 14-156	Tracy Daye-Groves, 4-5944
Peterson, Bruce, MD	ONC	4-5631	2560	peter001	MT 14-154 A	Tracy Daye-Groves, 4-5944
Potter, David MD, PhD	ONC	5-8933	6352	dapotter	MT 14-146	Tracy Daye-Groves, 4-5944
Rashidi, Armin MD, PhD	BMT/HEME		6123	arashidi	PWB 14-152	Georgi Walberg, 5-9604
Reding, Mark, MD	HEME	5-1104	8262	redin002	PWB 14-112 A	Georgi Walberg, 5-9604
Sachdev, Deepali, PhD	Research	6-9420		sachd003	CCRB 3-133	Marilyn Lingard; 5-1405; linga012
Sachs, Zohar, MD, PhD	ONC	6-7055	5943	sachs038	MT 14-248	Tracy Daye-Groves, 4-5944
Shah, Surbhi MD	HEME/ONC	6-0333	1026	shahx090	MT 14-244	Trace Daye Groves, 4-5944
Skubitz, Keith, MD	ONC	4-2989	2088	skubi001	MT 14-150	Tracy Daye-Groves, 4-5944

Slungaard, Arne, MD	BMT	4-9410	7730	slung001	PWB 14-132 C	Kris Blomquist, 5-8942
Ustun, Celalettin, MD	HEME/BMT	4-5109	4303	custun	PWB 14-168 B	Barbara Porwit, 4-5620
Vercellotti, Greg, MD	HEME/ONC/BMT	6-3757	7092	verce001	PWB 14-124 F	Barbara Porwit, 4-5620
Warlick, Erica, MD	HEME/ONC/BMT	5-5467	5451	ewarlick	PWB 14-168 A	Georgi Walberg, 5-9604
Weisdorf, Daniel, MD	HEME/ONC/BMT	4-3101	7849	weisd001	PWB 14-110 A	Colleen Van House, 5-1110
Yee, Doug, MD	ONC	6-8487	2831	yeexx006	MCRB 754 C	Jean Jacoby, 6-5475

Fellows - MCC Room M40

Phones: 5-9978 / 4-6478 / 6-3428

Fax: 4-7160

Contact Stacy Maher, Fellowship Program Coordinator – Phone: 6-0400 Email: mahe0056@umn.edu

NAME	PAGER 612-899-	EMAIL --@umn.edu	PGY
Baxstrom, Kate MD	1820	baxst001	4
Blazar, Michael MD	1879	blaza004	4
He, Fiona, MD	1113	hexxx509	5
Hegerova, Livia, MD	3530	heger022	6
Hurley, Peter, MD	3525	hurle141	6
Khan, Fatima, MBBS	1013	khanx174	7
Kotiso, Florence, MD	3531	kotis002	6
Levin, Liz MD	5697	edlav003	4
Merino, Aimee MD PhD	3356	merin008	3
Mescher, Craig, MD	3562	mesc0014	6
Oostra, Drew, MD	3543	oostr004	6
Pease, Daniel, MD	4667	peas0044	5
Suvorava, Natallia, MD	4695	suvor004	5
Thaw, Sunn Sunn, MBBS	2531	thawx001	6
Touma, Waseem, MD	3527	touma003	6
Vijayakumar, Jayanthi, MBBS	4679	vijay091	5
Woan, Winston (Karrune) MD PhD	3493	woanx001	3
Yun, Hyun Don, MD	4705	yunxx141	5

Administrative

NAME	PHONE 612-62	EMAIL --@umn.edu	LOCATION	NOTES
Blomquist, Kristin	5-8942	krblomqu	PWB 14-100	Arora, Bachanova, Beckwith, Bejanyan, Brunstein, Cooley, Domingo-Musibay, Fujioka, Lazaryan, Mehta, Slungaard
Daye-Groves, Tracy	4-5944	tmgroves	MT 14-154	Blaes, Hebbel, Greeno, Kratzke, Lou, Patel, Peterson, Potter, Sachs, Shah, Skubitz
Fairall, Rosellen	4-4440	faira001	PWB 14-106 B	Office Supervisor / McGlave
Fox, Dianna	6-0874	foxd	PWB 14-142 B	Operations Analyst
Franklin, Michael	6-2640	frank061	PWB 14-124 G	Editor Home Office on T & TH
Maher, Stacy	6-0400	mahe0056	PWB 14-124	Fellowship Program Coordinator; McClune
Porwit, Barbara	4-5620	porw0001	PWB 14-100	Belcher, Cichocki, Eckfeldt, Felices, Garry, Gupta S, Jacob, Ustun, Vercellotti
Ptacek, Cheri	5-2654	ptace002	PWB 14-106 A	Director of Operations
Van House, Colleen	5-1110	cvanhous	PWB 14-110	Weisdorf, Ptacek, Barjes, Kolla
Walberg, Georgi	5-9604	gwalberg	PWB 14-100	Afrin, Datta, Gupta K, Holtan, Rashidi, Reding, Warlick
Weiland, Stephanie	6-4024	matur015	MCRB 654	Cancer Experimental Therapeutics Initiative (CETI) Miller & Cooley / FAX: 612-626-3941

Conference Rooms

Name	Location	Door Code/Key	Phone	# of People	AV/Computer/Projection	Notes/Reservation Info
14-109	PWB	If locked, go across hall to 14-100 and ask for it to be unlocked	612-301-8295 Polycom for conference calls	25-30	Projector Computer Do not use remote for turning on project. Press ON button on podium.	HOT Division Meetings, Conference and Events have priority. We can bump non-HOT meetings, if needed for HOT scheduling. Reservations: Google Calendar or ask any HOT admin
14-124 H (Fishbowl)	PWB	If locked, go across hall to 14-100 and ask for it to be unlocked		6	NO AV NO Computer NO Projector **Can project on wall if portable projector and own laptop	HOT Division Meetings, Conference and Events have priority. We can bump non-HOT meetings, if needed for HOT scheduling. Reservations: Google Calendar or ask any HOT admin
14-252	MT	14142*	612-625-9720	10-15	Check out laptop and projector from Colleen Van House in 14-110	HOT Division Meetings, Conference and Events have priority. We can bump non-HOT meetings, if needed for HOT scheduling. Reservations: Google Calendar or ask any HOT admin
13-204	PWB	2490*		40	Projector Laptop – get key for closet	PEDS has priority and no bumping of meetings for anyone. Reservations: osemy Morales- morale@umn.edu
B522	Mayo			20	Projector NO Computer Bring own laptop	Reservations: Trisha Horsmann x56111 – horsmann@umn.edu

Advanced Practice Providers (APP's)

CSC, 909 Fulton Street SE, 2nd Floor, Mpls MN 55455
UMMC / Hospital, 500 SE Harvard St, Mpls MN 55455

HEME/ONC APP's	Hem/Onc Clinic Triage Center	Phone Fax	612-676-4210 612-676-4004
	Ward 7D, UMMC Hospital	Phone Fax	612-273-3074 612-273-3225
	Provider Email	PAGER 612-899-	Location
Watson, Tanya NP Supervisor	twatson@umphysicians.umn.edu	8717	Onc Clinic, 2121BB, 909 Fulton St SE
Akkerman, Natalie PA	nakkerma10@umphysicians.umn.edu	1306	Onc Clinic, 2121BB, 909 Fulton St SE
Allgood, Rachel PA	rallgood10@umphysicians.umn.edu	2462	Onc Clinic, 2121BB, 909 Fulton St SE
Pennington, Karen PA	kpenning10@umphysicians.umn.edu	8748	Onc Clinic, 2121BB, 909 Fulton St SE
Poveda, Sarah PA	spoveda10@umphysicians.umn.edu	4272	Onc Clinic, 2121BB, 909 Fulton St SE
Reinhardt, Lucy PA	lreinhardt@umphysicians.umn.edu	7681	Onc Clinic, 2121BB, 909 Fulton St SE
Turnquist, Emma PA	eturnqui10@umphysicians.umn.edu	4386	Onc Clinic, 2121BB, 909 Fulton St SE
Berquist, Kacy, NP	kberquis10@umphysicians.umn.edu	5618	7D Hospital, UMMC, 500 SE Harvard

Kurowski, Lesley NP	lkurovsk10@umphysicians.umn.edu	2617	7D Hospital, UMMC, 500 SE Harvard
Lunde, Laura PA	llunde10@umphysicians.umn.edu	8285	7D Hospital, UMMC, 500 SE Harvard
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Pham, Pearl PA	ppham10@umphysicians.umn.edu	5376	7D Hospital, UMMC, 500 SE Harvard
Pierce, Meghann RN, CNP (7D Lead)	mpierce10@umphysicians.umn.edu	7642	7D Hospital, UMMC, 500 SE Harvard
Sheen, Cecilia PA	csheen10@umphysicians.umn.edu	3071	7D Hospital, UMMC, 500 SE Harvard
Tatsumi, Juliet PA	jtatsumi10@umphysicians.umn.edu	3165	7D Hospital, UMMC, 500 SE Harvard
Walsh, Kimberly NP	Kwalsh2@fairview.org kwalsh@umphysicians.umn.edu	7907	7D Hospital, UMMC, 500 SE Harvard
Wren, Abbie NP <i>Casual</i>	awren10@umphysicians.umn.edu	2120	7D Hospital (Shared Pager)
Hanke, Bethany NP <i>Casual</i>	bhanke10@umphysicians.umn.edu	2120	7D Hospital (Shared Pager)
Rick, Tara PA <i>Casual</i>	trick@umphysicians.umn.edu	2120	7D Hospital (Shared Pager)
BMT APP's	BMT Clinic	Phone Fax	612-676-4210 612-676-4007
	BMT Care Coordinators	Phone Fax	612-273-2800 612-676-4007
	WARD 5C, UMMC, BMT	PAGER 612-899-	BMT Clinic, CSC, 909 Fulton St SE UMMC Ward 5C, 500 SE Harvard
Nick, Mary PA (BMT Lead)	Mnick1@fairview.org mnick@umphysicians.umn.edu	6302	BMT Clinic, 2121BE / UMMC 5C
Carrier, Claire PA	ccarrie2@fairview.org ccarrier@umphysicians.umn.edu	9205	BMT Clinic, 2121BE / UMMC 5C
Dieterle, Natalie PA	ndieter1@fairview.org ndieter110@umphysicians.umn.edu	8319	BMT Clinic, 2121BE / UMMC 5C
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Jimenez, Kristen PA	kangell3@fairview.org kangell10@umphysicians.umn.edu	3367	BMT Clinic, 2121BE / UMMC 5C
Kell, Tasha PA	tkell10@umphysicians.umn.edu	5611	BMT Clinic, 2121BE / UMMC 5C
Kramer, Angela PA	akramer5@fairview.org akramer@umphysicians.umn.edu	9355	BMT Clinic, 2121BE / UMMC 5C
Schafer, Libby NP	eschafer10@umphysicians.umn.edu	6117	BMT Clinic, 2121BE / UMMC 5C
Skendzel Sasha NP	sskendz1@fairview.org	2882	BMT Clinic, 2121BE / UMMC 5C
Tello Elizabeth NP	ebrown3@fairview.org ebrown@umphysicians.umn.edu	9298	BMT Clinic, 2121BE / UMMC 5C
Witt, Sarah PA	switt10@umphysicians.umn.edu	3216	BMT Clinic, 2121BE / UMMC 5C

	HOSPITALIST (weekend service)	PAGER 612-899-	Location
Fricklas, Elizabeth (Betsy) PA		5785	7D Hospital, UMMC, 500 SE Harvard

	HIGH RISK CANCER CLINIC (OSL)	PAGER 612-899-	Location
Denise Musser, CNS <i>Office Phone 612-626-9898</i>	dmusser10@umphysicians.umn.edu	3163	Mayo C280 MMC 450
	COMMUNITY SITES (OSL)		Location
Germescheid, Shari NP	sgermsch10@umphysicians.umn.edu	<i>n/a</i>	Maple Grove
Sorenson (McGuire), Bonnie NP	bsorenso10@umphysicians.umn.edu	<i>n/a</i>	Southdale
Dunsmore, Kathleen PA			Northland

Research

NAME	PHONE 612-62	EMAIL --@umn.edu	LOCATION	NOTES
Kennedy, Leslie	4-0164	l-kenn	VCRC 168	Medicine Research Director
Clevenger, Rachel	5-6970	Niem0100	VCRC 171-14	HOT Grant Coordinator
Gau, Jane	5-9125	gauxx003	MT 14-136	Research Nurse Clinician Pager # 612-899-2286 FAX 612-625-8966

BMT Personnel (Mayo Building)

NAME	PHONE 612-273	Ext.	EMAIL	ROLE
Cummings, Ann	2151			Oncology Social Worker
Frank, Karen	2800		kfrank1@fairview.org	Protocols – C524 Mayo
French, Kathy	2800	3322	kfrench1@fairview.org	BMT Nurse Coordinator, Adult Outpatient
Krepski, Tim	2800	6587	tkrepski1@fairview.org	BMT Program Supervisor, Harvests, URD searches – C526 Mayo
Parran, Leslie	2946		lparran1@fairview.org	Admin Dir – BMT Program – C545 Mayo
Rangnekar, Vandana	7054		vrangne1@fairview.org	Sr. Business Analyst, Data Report Requests B551 Mayo

Affiliated Faculty – Campus Mail: Label with name and put in facility bin by the back door on the shelf on the right side in the Mayo Building Mail Room B306, which is on 3rd floor.

NAME	PHONE	EMAIL	PAGER / FAX
HCMC	612-873-3000		612-904-4341
LeighAnn Hamersten ADMIN	612-873-7381	Leigh.hamersten@hcmcd.org	
Rausch, Douglas Division Director	612-740-1878	douglas.rausch@hcmcd.org	Pager: 612-740-1878
Bommakanti, Satya	612-873-6369	satya.bommakanti@hcmcd.org	Pager: 612-336-0058
Koreth, Rachel	612-873-6369	rachel.koreth@hcmcd.org	Pager: 612-336-0596
Wiernik, Andres	612-873-6369	andref.wiernik@hcmcd.org	Pager: 612-336-0877
REGIONS			651-254-3572
Sandy Archer ADMIN	651-254-2299		Fax: 651-254-3874
Anderson, Dan	651-254-3572	daniel.m.anderson@healthpartners.com	Pager: 612-580-0116
Demel, Kurt Mail Stop 11503F	651-254-3572	kurt.c.demel@healthpartners.com	Pager: 651-629-0070
Hurley, Randy	651-254-3572	randy.w.hurley@healthpartners.com	Pager: 612-539-8284
Jaffe, Jeff	651-254-3572	jeffry.p.jaffe@healthpartners.com	Pager: 612-580-0314

Jahagirdar, Balkrishna	651-254-3572	Balkrishna.N.Jahagirdar@healthpartners.com	Pager: 651-629-0768
McCormack, Steven	651-254-3572	steven.e.mccormack@healthpartners.com	Pager: 612-580-4415
VA	612-725-2000	MAIL CODE 111E	612-725-2149
Jillian P. Sully ADMIN	612-467-4135	Jillian.sully@va.gov	
Gupta, Pankaj	612-467-4135	Pankaj.Gupta@va.gov primary gupta013@umn.edu	Pager: 612-818-7044 Phone: 612-467-4120
Johnson, Gerhard	612-467-4135	Gerhard.Johnson@va.gov primary johns337@umn.edu	Pager: 612-818-7329 Phone: 612-467-4133
Klein, Mark	612-467-4135	mark.klein2@va.gov primary	Pager: 612-818-1146 VM: 612-467-4682
Luikart, Sharon	612-467-4135	Sharon.Luikart@va.gov primary luika001@umn.edu	Pager: 612-818-7794 Phone: 612-467-4131
Mariash, Evan			
Patel, Neil	612-467-4135	Neil.Patel3@va.gov primary	Pager: 612-818-7963
Weitz, Carol	612-467-4124	Carol.Weitz@va.gov primary	Pager: 612-818-1043

HCMC – Hennepin County Medical Center, 701 Park Avenue South, Minneapolis, MN 55415

REGIONS – Regions Hospital, 640 Jackson Street, St. Paul, MN 55101

VA – Minneapolis VA Clinic, One Veterans Drive, Minneapolis, MN 55417

HOT DIVISION PRACTICE LOCATIONS

BMT: FACULTY AND APP

University of Minnesota Medical Center (UMMC) – Fairview

500 Harvard Street, 5th Floor, Ward 5C, Minneapolis, MN 55455

General Phone: 612-273-3000 Ward 5C: 612-273-3053

Adult Blood and Marrow Transplant Clinic (BMT Clinic)

Erica Warlick, MD, Medical Director

University of Minnesota Health Clinics and Surgery Center

909 Fulton Street SE, 2nd Floor, Minneapolis, MN 55455

General/Appointments: 612-676-4200 Fax: 612-676-4007

BMT Care Coordinators Phone: 612-273-2800

Angelique Rau, Administrative Manager, arau1@fairview.org

BMT Infusion: 612-676-4006

HEMATOLOGY / ONCOLOGY: FACUTY AND APP

University of Minnesota Medical Center (UMMC) – Hospital

500 Harvard Street, 7th Floor, Ward 7D, Minneapolis, MN 55455
General Phone: 612-273-3000 Fax: 612-672-4244
7D: 612-273-3074 7D Fax: 612-273-3225

Masonic Cancer Clinic (Hematology, Oncology)

Erica Warlick, MD, Medical Director

University of Minnesota Health Clinics and Surgery Center
909 Fulton Street SE, 2nd Floor, Minneapolis, MN 55455
General/Appointments: 612-676-4200 Fax: 612-676-4004
Oncology Infusion: 612-676-4061 Triage: 612-676-4210
Leslie Ferguson, Clinic Supervisor, lfergusoo10@umphysicians.umn.edu – Pager: 612-899-2620
Whitney Strantz, wstrantz10@umphysicians.umn.edu

Breast Center Clinic (Drs. Beckwith, Blaes, Potter, Yee)

Erica Warlick, MD, Medical Director

Masonic Cancer Clinic
University of Minnesota Health Clinics and Surgery Center
909 Fulton Street SE, 2nd Floor, Minneapolis, MN 55455
Tel: 612-676-4200 Fax: 612-676-4005
Leslie Ferguson, Administrative Supervisor, lfergusoo10@umphysicians.umn.edu – Pager: 612-899-2620
Valerie Harshe, vharse@umphysicians.umn.edu

Center for Bleeding and Clotting Disorders

Mark Reding, MD, Medical Director

University of Minnesota Clinics and Surgery Center
(Doctors Datta, Reding, Shah)
909 Fulton Street SE, 3rd Floor, Minneapolis, MN 55455
Tel: 612-626-6455 Fax: 612-625-4955 Provider Referrals: 612-672-7000
Helen McIntyre, MBA, FACHE, Executive Director, hmcinty1@fairview.org, 612-625-1640

Special Coag Lab: 273-4797 – **Special Hem:** 273-7777

AGENCY CONTACT INFORMATION

Please find below a list of addresses and telephone numbers that you might find helpful. Please contact the appropriate agency for applications and information as needed.

ACCREDITATION COUNCIL FOR GRADUATE MEDICAL EDUCATION (ACGME)

Suite 2000
515 North State Street
Chicago, IL 60610-4322
Office: ((312) 464-4920
Fax: (312) 464-4098
www.acgme.org

AMERICAN BOARD OF INTERNAL MEDICINE

American Board of Internal Medicine
University City Sciences Center
3624 Market Street
Philadelphia, PA 19104
(215) 243-1500
1-800-441-2246
www.abim.org

AMERICAN COLLEGE OF PHYSICIANS

American College of Physicians
4200 Pine Street
Philadelphia, PA 19104
(800) 523-1546
www.acponline.org

AMERICAN SOCIETY FOR BLOOD AND MARROW TRANSPLANTATION

American Society for Blood and Marrow Transplantation	**	Annual meeting = Tandem w/ CIBMTR, February
85 West Algonquin Road, Suite 550	**	Recommend Associate Membership and use of website
Arlington Heights, IL 60005		
(847) 427-0224		
(847) 427-9656		
www.asbmt.org		

AMERICAN SOCIETY OF CLINICAL ONCOLOGY

American Society of Clinical Oncology	**	Annual meeting in May or June
1900 Duke Street, Suite 200	**	Recommend Associate Membership and use of website
Alexandria, VA 22314		
(703) 299-0158		
(888) 282-2552		
www.asco.org		

AMERICAN SOCIETY OF HEMATOLOGY

American Society of Hematology
1900 M Street NW, Suite 200
Washington DC 20036
Office: (202) 776-0544
Fax: (202) 776-0545
www.hematology.org

** Annual meeting first week of December
** Recommend Associate Membership and
use of website

CENTER FOR INTERNATIONAL BLOOD AND MARROW TRANSPLANTATION

Center for International Blood and Marrow Transplantation
3001 Broadway St. NE
Minneapolis, MN 55413-5000
(612) 884-8600
(612) 884-8660
www.nmdpresearch.org

DRUG ENFORCEMENT ADMINISTRATION

Drug Enforcement Administration
110 South 4th Street
Minneapolis, MN 55401
(612) 348-1700
www.usdoj.gov/dea/

EDUCATIONAL COMMISSION FOR FOREIGN MEDICAL GRADUATES

ECFMG
3624 Market Street
Philadelphia, PA 19104-2685
(215) 386-5900
www.ecfm.org

INTERNATIONAL SOCIETY FOR EXPERIMENTAL HEMATOLOGY

International Society for Experimental Hematology
2025 M Street, N.W., Suite 800
Washington, DC 20036-3309
(202) 367-1183
(202) 367-2183
www.iseh.org

MINNESOTA BOARD OF MEDICAL PRACTICE

Minnesota State Board of Medical Practice
2829 University Avenue SE, Suite 400
St. Paul, MN 55414

(651) 617-2130

<http://www.state.mn.us/cgi-bin/portal/mn/jsp/home.do?agency=BMP>

MINNESOTA SOCIETY OF CLINICAL ONCOLOGY

Executive Office:

11600 Nebel Street, Suite 201

Rockville, Maryland 20852

Phone: 301.984.9496, ext. 205

Fax: 301.770.1949

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners

3930 Chestnut Street

Philadelphia, PA 19104

(215) 349-6400

www.nbme.org

Confirmation of Receipt of your Fellowship Addendum for Academic Year 2016/2017

By replying to this electronically distributed document via email you are confirming that you have received and reviewed your Fellowship 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.

University of Minnesota and Affiliated Hospitals
Hematology and Medical Oncology Fellowship Program
Rotation Descriptions and Objectives
2016-2017

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Bone Marrow Transplantation Inpatient Service (BMT) (5C 273-3053)

Location: University of Minnesota Medical Center, Fairview, 4B
Duration: 1 month
Staff: The inpatient BMT Service (approximately 18-25 patients) will be staffed by two attending physicians designated as Teams A and B. There will be one fellow assigned to the Team A at all times plus several mid-level providers.

Mid-level providers and typically one moonlighter also cover patients on weekends. If the inpatient census is high, fellows may need to assist in primary coverage of some patients on the weekends.

There is an outpatient BMT attending for the BMT clinic. The BMT clinic (phone 612-626-2663) is open daily (8 am – 5 pm weekdays and 8 am – 12 pm weekends). Mid-levels also care for outpatients in the clinic.

(BMT Clinic Phone: 612-676-4200, Fax: 612-273-2920)

Coverage: The fellow is expected to arrive before sit-down rounds that begin at 8:30 am to assist the mid-level providers in any urgent care matters. The fellow should remain until the late afternoon/early evening until all immediate care matters are completed. A hospitalist (pager 6633) covers the patients from 3 – 11 p.m., and from 11 p.m. – 7 a.m. a moonlighter (pager 6633).

Call: The fellow will rotate night and weekend call coverage for the inpatient and consult services with the UMMC Heme Malignancy, UMMC Hematology/Oncology consult and Heme/Onc Consults Fellow. The fellow will be on call for 2-3 weekend days/month. The attending physician is required, along with the fellowship director, to closely monitor duty hours, as well as for any evidence of fellow fatigue or stress. The back-up fellow or the attending physicians may need to take additional call to prevent fellow fatigue.

NOTE: Patients cared for by practitioners at the Fairview Maple Grove Clinic are instructed to call here at night/weekends for medical assistance. You should handle their calls in the same manner as any other clinic patient. Their clinic notes/labs/x-ray reports are in EPIC and iSite as for any other Fairview patient. Dr. Elimelakh carries her pager and tells me that you may contact her with questions Monday-Friday 8 a.m. – 5 p.m.; her pager is 1286; clinic phone is 763-898-1000. Otherwise, discuss the case with your on-call faculty attending and, if necessary, instruct the patient to come here to the ER for evaluation or admission. Please also put a note into EPIC regarding the patient encounter and route it to the patient's clinic hematologist or oncologist.

General Description:

This is a monthly rotation on the inpatient Bone Marrow Transplant (BMT) services. The overall goal is for the fellow to develop confidence and clinical expertise in the care and management of transplant recipients.

"Sit-down" rounds are held each morning at 8:30 am on the unit for BMT . The NP/PAs and resident are responsible for seeing their patients and preparing for these sit-down rounds. The charge nurse and inpatient nurse coordinator (and often a pharmacist) join rounds. On Mondays, comprehensive patient care rounds are held in conjunction with the social worker. Following sit-down rounds with the mid-level providers and resident, the fellow and attending will make "walk-rounds."

BMT Inpatient Service Educational Objectives the Context of the ACGME Core Competencies

Competency	PGY 4 (First year fellow)	PGY 5/6 (Second/third year fellow)
Patient Care	<ul style="list-style-type: none">• Actively participate in at least 3 multidisciplinary health team rounds.• Write chemotherapy orders with faculty supervision.• Understand and interpret CBC and correlate with peripheral blood and bone marrow findings.• Understand test results within the context of a patient's diagnosis and treatment plans.• Establish effective communication between the inpatient and outpatient transplant services.	<ul style="list-style-type: none">• Demonstrate competence in the prescription and administration of chemotherapeutic and biologic agents through all therapeutic routes.• Demonstrate ability to lead a multidisciplinary team in the effective delivery of health care.• Understand and facilitate the unique discharge needs of transplant patients.
Medical Knowledge	<ul style="list-style-type: none">• Begin to develop understanding of indications for transplantation.• Become familiar with BMT protocols.• Participate in core lectures;	<ul style="list-style-type: none">• Demonstrate expertise in the diagnosis and management of patients with benign hematologic, malignant hematologic and solid tumor disorders undergoing autologous and allogeneic

	<p>critically review at least one article per week that pertains to a current patient problem with the team.</p> <ul style="list-style-type: none"> • Begin to understand acute complications and late side effects of transplantation. 	<p>stem cell transplantation (specifically primary diagnoses treated, type of preparatory regimen, anticipated recovery, overall morbidity and mortality), complications (graft vs. host disease, mucositis, infection, venoocclusive disease, alveolar hemorrhage), and supportive care.</p> <ul style="list-style-type: none"> • Demonstrate expertise in the diagnosis and management of acute complications and late side effects of transplantation.
Practice Based Learning and Improvement	<ul style="list-style-type: none"> • Present cases at patient care conferences with assistance of faculty attending • Incorporate new knowledge to improving patient care in the majority of cases. 	<ul style="list-style-type: none"> • Present cases at patient care conference with minimal assistance by faculty attending • Incorporate new knowledge to improving patient care on an ongoing basis for all patients.
Interpersonal and Communication Skills	<ul style="list-style-type: none"> • Triage night and weekend phone calls with faculty assistance on the majority of calls. 	<ul style="list-style-type: none"> • Effectively triage night and weekend patient phone calls providing medically sound and compassionate advice with minimal faculty input.
Professionalism	<ul style="list-style-type: none"> • Demonstrate ability to interact with all members of health care team, patients, and family members 	<ul style="list-style-type: none"> • Demonstrate competence in all interactions with all members of health care team, patients, and family members
Systems-Based Practice	<ul style="list-style-type: none"> • Demonstrate understanding of health care resources in the University setting and begin to identify areas for improvement • Develop an understanding of quality control measures employed for patient care and safety 	<ul style="list-style-type: none"> • Demonstrate expertise in utilization of health care resources in the University setting and identify at least one area for improvement • Identify areas for improvement in quality control measures that can be employed for patient care and safety

Fellow Responsibilities and Lines of Responsibilities within the Team:

Note: Also Refer to Faculty Supervision, page 21, Fellowship Curriculum

Patient care: The fellow will be responsible for following, assisting in and supervising the details of all inpatients followed by the Service. It is expected the fellow will arrive on the unit by 7:30-8 a.m. to assist the NP/PAs and resident in any urgent care issues prior to morning rounds.

After “walk-rounds” the fellow should communicate any new care issues to the resident and mid-level providers. The fellow must be available throughout the day to provide support to the resident and mid-levels about their patients, speak with consultants, and consult with the attending physician about any complicated decisions or therapeutic plans. At the end of the day, the mid-levels and resident will “sign-out” their patients to the fellow, who will be responsible for signing out to the moonlighter, and will update the faculty member about any new issues. Any new admissions will be seen by all team members for that patient. According to graded responsibility, the fellow should take an increasing responsibility for making care decisions – at first with faculty input, then less, and as a third year fellow with minimal faculty input.

It is the team’s responsibility (with fellow and faculty supervision) to provide care to any assigned patients on weekends. Discuss with your attending physician whether to not he/she desires you to have seen those patients prior to morning rounds on the weekends.

The fellow must write an admission note for each newly admitted patient. This note is meant to be a summary of the reason for the patient's admission and the assessment/management plan. Although the fellow is not required to write a daily progress note (except perhaps on the weekend if the census is high), one should be written at any time that a patient's condition abruptly changes. The referring physician must also be called at any time there is an abrupt change in a patient’s condition. The fellow should write all chemotherapy orders and review with the BMT pharmacist; the attending staff must co-sign all orders.

Access to all BMT protocols is available on the computers on 5C. Go to BMT Intranet and then to My Quick Links. To create a shortcut on your computer: Go to Fairview Intranet – Search for BMT in the Google search within the Fairview Intranet – Select BMT Order Sets, Guidelines – Click on Add to Quick Links – BMT Intranet Link is saved in My Quick Links Section.

Good communication between the inpatient and outpatient care providers is an essential aspect of optimal care. **If you have advised a patient who called after hours/night to go to the outpatient BMT clinic the following morning, you should contact the outpatient BMT attending or BMT DOM at 8 am the next morning and communicate the plan.** Likewise, the outpatient BMT attending will contact you in the late afternoons if there are patients who are ill who may potentially call at night. The outpatient BMT attending is available by pager at night for questions regarding outpatients who may have been seen in the clinic.

Teaching: The fellow will provide relevant medical literature for the inpatient service and participate in scheduled teaching conferences, both for the Medicine residents and for the BMT group as a whole. The fellow will be asked to present cases at the Wednesday patient care conference.

Procedures: The fellow should participate in at least one bone marrow harvest during fellowship, and observe apheresis in the Blood Donor Center on at least one occasion.

BMT: Educational Objectives

Expectations by rotation:

The first month that a fellow is on BMT service, the fellow should become familiar with all BMT protocols. Particularly for fellows with limited prior BMT experience, the fellow should read as much as possible all protocols and develop a basis understanding of indications for transplant and general supportive care.

By the second month on the rotation, the fellow should develop a higher degree of knowledge about the immunology of BMT, including graft versus tumor effect, chimerism, use of donor lymphocyte infusions for relapse. The fellow should begin making independent decisions for patients with oversight by the attending physician.

By the third month rotation, the fellow should be developing an in-depth knowledge of all aspects of BMT, from pre-BMT consultation and decisions on when BMT is indicated, care of the critically ill BMT recipient, effective management of acute and chronic GVHD, options for the management of the patient who relapses following BMT, and post-transplant late-effects. The fellow should be developing proficiency in all the listed ACGME competencies (see below) related to BMT, and should be independently making management decisions, interacting with the patient and leading the multidisciplinary team, and making discharge and post-transplant management decisions.

By the completion of this rotation, the fellow will be able to:

1. Demonstrate expertise in the diagnosis and management of patients with non-malignant hematologic, malignant hematologic and solid tumor disorders undergoing transplantation with focus on:

- Autologous and allogeneic stem cell transplantation, specifically, the primary diagnoses for which transplantation is effective, type of preparatory regimens, anticipated recovery time, overall morbidity and mortality.
- Complications from stem cell transplantation including graft vs. host disease, mucositis, infections, venoocclusive disease, and alveolar hemorrhage
- Supportive care needs of transplant recipients (growth factor support, transfusion support, hyperalimentation)
- Management of indwelling central venous catheters
- By third rotation –demonstrate expertise as a consulting physician for patients with hematologic malignancies

Evaluation: In-training exam, global evaluation by staff attending. The staff attending will review at least 3 of the fellow's admission notes as an adjunct to assessing fellow's level of medical knowledge.

2. Develop an understanding of the interaction of nursing staff, pharmacists, social workers, dietitians, physical and occupational therapists, and nurse coordinators by actively participating in at least 3 multidisciplinary health team rounds.

Evaluation: Global rating form filled out by the attending staff. **One 360 evaluation** to include evaluation by nursing staff, pharmacists, mid-level providers (NP/PAs), and **at least 2 patients of the fellow's choosing. The 360 evaluation should be performed each month the fellow is on service.**

3. Understand and facilitate the unique discharge needs of transplant patients.
- The first month on the rotation, the fellow will review at least 2 sets of discharge orders with the faculty to ensure understanding of the discharge medications, follow-up appointments and testing.
 - The second month on the rotation, the fellow should independently ensure appropriate discharge instructions and follow-up.

Evaluation: Global rating form filled out by the attending staff.

4. Establish effective communication between the inpatient and outpatient transplant services by calling the accepting out-patient doctor (either the patient's primary transplant doctor or 'the doc of the month').

Evaluation: Global rating form filled out by the attending staff.

5. Actively participate in teaching mid-level providers.
- **The BMT fellow is expected to give one short 'chalk talk', no longer than 15 minutes, each week to the mid-level providers.**

Evaluation: Global rating by the attending staff and a review of the talks (either a list of talks given, an outline of the talks, or copies of notes/handouts used) by the fellowship director. The review should be maintained in the fellow portfolio.

6. Effectively triage night and weekend patient phone calls from transplant patients and provide medically sound and compassionate advice.
- The first month on the rotation, the BMT fellow will keep a log of night and weekend phone calls, and review at least 6 of them in-depth with the staff including patient concern, fellow assessment, and recommendation.
 - The second month on the rotation, the BMT fellow will keep a log of night and weekend phone calls, and follow-up on at least 6 of them to determine clinical outcome.

Evaluation: Global rating form filled out by the attending staff and review of the log by the fellowship director at the year-end review.

7. Demonstrate ability to lead a team in the effective delivery of health care.

- By the end of the first month, the fellow should be actively participating in attending rounds.
- By the end of the second month, the fellow should be leading both attending rounds and the interaction with the patient and family.
- BMT fellows should lead all family conferences, and function independently (with staff oversight only as needed) by their second rotation.

Evaluation: Global rating form filled out by the attending staff.

8. Develop an understanding of quality control measures employed for patient care and safety.

Evaluation: Global rating form filled out by the attending staff.

Conference:

- BMT Conference on Mondays from 1:15 – 2:15 p.m., room 450 MCRB
Attendance is mandatory.
- Heme Malignancy (hematopathology) Conference: **Attendance is mandatory;** Room D175 Mayo; 2nd and 4th Mondays, 4:15- 5:15 p.m. Fellows should prepare a case for presentation at each conference as appropriate.
- BMT/Heme Malignancy patient care conference: **Attendance is mandatory;** weekly on Mondays, 3:30 – 4:30 p.m., PWB 14-136. Fellows should be prepared to discuss pertinent cases.
- HOT Patient Care Conference on Wednesday, noon, except the first Wednesday of the month (faculty meeting only): **Attendance is mandatory.** The fellow should be prepared to discuss cases of interest with the attendees.

Reference

Hematopoietic Cell Transplantation, 2nd Edition. Thompson, Bloom and Forman. Glackwell Sciences

Reading List:

- BMT Program Protocols are available on Fairview Intranet (see page 46 for details on access). You are encouraged to read in detail all protocols to which your patients are enrolled. The background section of each protocol is informative.

Supportive care

- VanBurik JA, Brunstein CG. Infectious complications following unrelated cord blood transplantation. VoxSang.2007;92:209-96.
- Shah JN and Chemaly RF. Management of RSV infections in adult recipients of HCT. Blood. 117:2755-2763, 2011.

- Tomblyn M, Chiller T, Einsele H et al. Guidelines for preventing infectious complications among HCT recipients: a global perspective. *Biol Blood Marrow Transplant.* 15:1143-1238, 2009.

UCBT

- Brunstein CG et al. Umbilical cord blood transplantation after nonmyeloablative conditioning: Impact on transplant outcomes in 110 adults with hematological disease. *Blood.*2007; June 14.
- Wagner JE et al. Transplantation of unrelated donor umbilical cord blood in 102 patients with malignant and nonmalignant diseases: influence of CD34 cell dose and HLA disparity on treatment-related mortality and survival. *Blood* 2002;100:1161-1618.
- Barker JN, Weisdorf DJ, DeFor TE et al. Transplantation of 2 partially HLA-matched umbilical cord blood units to enhance engraftment in adults with hematologic malignancy. *Blood* 2005;105:1343-7.
- Laughlin MJ, Eapen M, Rubinstein P et al. Outcomes after transplantation of cord blood or bone marrow from unrelated donors in adults with leukemia. *N Engl J Med* 2004;351:2265-75.

AML/MDS

- Flynn CM et al. Reduced intensity compared with high dose conditioning for allotransplantation in acute myeloid leukemia and myelodysplastic syndrome: A comparative clinical analysis. *Am J Hematol.* 2007; July 6.

GVHD

- Weisdorf DJ, Snover DC, Haake R et al. Acute upper gastrointestinal graft-versus-host disease: Clinical significance and response to immunosuppressive therapy. *Blood* 1990. 76:624-629.
- Pidala J, Perez, L, Anasetti D. Have we improved in preventing and treating aGVHD? *Curr Opin Hematol.* 18:408-413, 2011.
- Socie G and Blazar BR. Acute graft-versus-host disease: from bench to the bedside. *Blood.* 114:4327-4336, 2009.
- Saliba RM, de Lima M, Giralt S et al. Hyperacute GVHD: risk factors, outcomes and clinical implications. *Blood.* 109:2751-2758, 2007.
- Filipovich AH, Weisdorf D, Pavletic S, et al. National Institutes of Health consensus development project on criteria for clinical trials in chronic graft - versus - host disease: I. Diagnosis and staging working group report. *Biol Blood Marrow Transplant* 2005; 11: 945.
- Carpenter PA. How I conduct a comprehensive chronic GVHD assessment. *Blood.* 118:2679-2687, 2011.

Nonmyeloablative conditioning – first report

- McSweeney PA, Niederwieser D, Shizuru JA et al. Hematopoietic cell transplantation in older patients with hematologic malignancies: replacing high-dose cytotoxic therapy with graft-versus-tumor effects. *Blood* 2001. 97:3390.

MDS

- Benesch M, Deeg HJ. Hemopoietic cell transplantation for myelodysplastic syndromes. *Curr Hematol Rep.* 2003. 2:209-16.

Lymphomas

- Vose JM et al. Autologous transplantation for diffuse aggressive non-Hodgkin lymphoma in first relapse or second remission. *Biol Blood Marrow Transplant.* 2004 10:116-27.
- Van Besien K et al. Comparison of autologous and allogeneic hematopoietic stem cell transplantation for follicular lymphoma. *Blood.* 2003 102:3521-9. Epub 2003 Jul 31.
- Majhail NS et al. Long term results for autologous stem cell transplantation for primary refractory or relapsed Hodgkin's lymphoma. *Biol Blood Marrow Transplant.* 2006;12:1065-1072.
- Gisselbrecht C, Glass B, Mounier N et al. Salvage regimens with autologous transplantation for relapsed large B-cell lymphoma in the rituximab era. *J Clin Oncol.* 28:4184-4190, 2010.

Myeloma

- Attal M, Harousseau J-L, Facon T et al. Single versus double autologous stem-cell transplantation for multiple myeloma. *N Engl J Med* 2003 ;349 :2495.
- Garban F, Attal M, Michallet M et al. Prospective comparison of autologous stem cell transplantation followed by dose-reduced allograft (IFM99-03 trial) with tandem autologous stem cell transplantation (IFM99-04 trial) in high-risk de novo multiple myeloma. *Blood.* 2006;3474-80.
- Rajkumar SV, Dimopoulos MA, Palumbo A et al. International Myeloma Working Group update criteria for the diagnosis of multiple myeloma. *Lance Oncol.* 2014;15(12):e538-48.

Germ cell tumors

- Einhorn LH et al. High-dose chemotherapy and stem cell rescue for metastatic germ cell tumors. *N Eng J Med.* 2007; 257:340-348.

NK cells

- Miller JS et a. Successful adoptive transfer and in vivo expansion of human haploidentical NK cells in patients with cancer. *Blood.* 2005;105:3051-7.

T regs

- Li L et al. CD4+CD25+ regulatory T cell lines from human cord blood have functional and molecular properties of T cell anergy. *Blood.* 2005; DOI 10.1182

Hematology and Oncology Consult Service

Location: University of Minnesota Medical Center, Fairview inpatient services and clinics

Duration: 1 month

Staff: The inpatient hematology and oncology consult service will be comprised of one fellow, a hematology attending physician and an oncology attending physician. Intermittently, the team will also have an internal medicine resident(s) (residents will spend 2 weeks/month on the consult service and 2 weeks/month in the ambulatory clinic) and/or medical student(s).

The team will oversee the care of all consults with non-malignant or undiagnosed hematologic disorders. These will include consults from the 7D inpatient hematology team for patients with complicated benign hematologic disorders.

Dr. Nicole Zantek of Laboratory Medicine and Pathology will staff the Special Coagulation laboratory aspects of the rotation. The fellow will participate in the daily activities in the Special Coagulation Laboratory in order to gain an appreciation of the strengths and limitations of tests performed in a coagulation laboratory. This includes lectures from 10 am to noon on Wednesdays at Mayo D242. **The fellow should contact Dr. Zantek prior to the start of the rotation to confirm the schedule.**

Call: The fellow will rotate night and weekend call coverage for the inpatient and consult services with the UMMC hematology and oncology inpatient fellow, the UMMC heme malignancy fellow, and the BMT fellow.

General Description:

The goal of this rotation is for the fellow to develop those skills necessary for effective consultation for patients with benign and malignant hematologic disorders and solid tumor malignancies. Patients seen in consultation may be inpatients in UMMC or Fairview Riverside. The fellow will also be exposed to aspects of laboratory testing for bleeding and thrombotic disorders under the direction of Dr. Zantek.

Hematology and Oncology Consult Service Educational Objectives the Context of the ACGME Core Competencies

Competency	PGY 4 (First year fellow)	PGY 5/6 (Second/third year fellow)
Patient Care	<ul style="list-style-type: none"> • Begin to acquire the skills of a consultant in hematology and oncology • Begin to maintain comprehensive, timely, legible and appropriately detailed medical records as a consultant. 	<ul style="list-style-type: none"> • Demonstrate the skills of an effective consultant in hematology/medical oncology. • Always maintain comprehensive, timely, legible and appropriately detailed medical records as an expert consultant.
Medical Knowledge	<ul style="list-style-type: none"> • Gain an understanding of the diagnosis and management of patients with benign hematologic, malignant hematologic and solid tumor disorders. 	<ul style="list-style-type: none"> • Demonstrate expertise in the diagnosis and management of patients with benign hematologic, malignant hematologic and solid tumor disorders.
Practice Based Learning and Improvement	<ul style="list-style-type: none"> • Present cases at patient care conferences with assistance of faculty attending • Incorporate new knowledge to improving patient care in the majority of cases. • Incorporate practice based learning into daily patient care by sharing at least 2 articles per week, with the rest of the consult team, which relate to current patient cases 	<ul style="list-style-type: none"> • Present cases at patient care conference with minimal assistance by faculty attending • Incorporate new knowledge to improving patient care on an ongoing basis for all patients.
Interpersonal and Communication Skills	<ul style="list-style-type: none"> • Triage night and weekend phone calls with faculty assistance on the majority of calls. • Work with the triage nurses to deliver timely and quality patient care with faculty supervision. 	<ul style="list-style-type: none"> • Effectively triage night and weekend patient phone calls providing medically sound and compassionate advice with minimal faculty input. • Independently work with the triage nurses to deliver timely and quality patient care.
Professionalism	<ul style="list-style-type: none"> • Demonstrate ability to interact with all members of 	<ul style="list-style-type: none"> • Demonstrate competence in all interactions with all members of

	<p>the primary health care team, patients, and family members as a consultant</p> <ul style="list-style-type: none"> • Maintain professional relationships with healthcare team as a team member. 	<p>health care team, patients, and family members</p> <ul style="list-style-type: none"> • Maintain professional relationships with healthcare team as the team leader.
Systems-Based Practice	<ul style="list-style-type: none"> • Begin to apply knowledge of health systems to use resources in providing optimal patient care (i.e. in-patient vs. out-patient consultation and testing, arranging appropriate follow-up) with faculty assistance. 	<ul style="list-style-type: none"> • Independently apply knowledge of health systems to use resources in providing optimal patient care (i.e. in-patient vs. out-patient consultation and testing, arranging appropriate follow-up).

Fellow Responsibilities and Lines of Responsibilities within the Team:

Note: Also Refer to Faculty Supervision, page 21, Fellowship Curriculum

The fellow is responsible for ensuring that all inpatient consults are *seen and staffed within 24 hours*, and for contacting the referring service to discuss the assessment and plan. The fellow is responsible for assuring that all inpatients being followed by the consult team are seen on a regular basis and should ascertain that, if necessary, appropriate follow-up plans in Masonic Cancer and Blood Disorders Clinic are made for the patient after discharge from the hospital. The fellow will oversee making the assignments for consults to the resident and student on the team.

The consult fellow will perform bone marrow biopsies/aspirates on consult patients as indicated with appropriate supervision based on competency. In the event that a patient needs to be transferred to one of the inpatient hematology/oncology services, the fellow is responsible for coordinating the transfer.

To enhance follow-up care and communication at rotation change-over, the fellow should keep a running log of every consult request and disposition (i.e. date of consult request, diagnosis, ongoing f/u, signed off/not actively following).

The fellow will report directly to the faculty attending, and should contact the attending physician as soon as possible about any urgent or emergent consults. As time permits, the consult fellow will be expected to participate in outpatient hematology and oncology clinics at least two mornings per week with direct supervision by the clinic staff. This schedule may be altered depending on the fellow’s clinic schedule and number of active consults.

Hemophilia Educational Activities: The fellow will also participate in the care of hemophilia patients. The fellow will attend hemophilia staff rounds from 8:45 a.m. – 10 a.m. on Mondays in the Hemophilia Center office (5th floor Mayo Building, Room B-549) and,

when possible, see patients in the Adult Comprehensive Hemophilia Clinic (6th floor PWB, Delaware Street Clinic), held on Monday afternoons. The hematology consult fellow will also make rounds on any inpatients with hemophilia along with the Hemophilia Center staff.

Special Coagulation Laboratory: The fellow will participate in the daily activities in the Special Coagulation Laboratory in order to gain an appreciation of the strengths and limitations of tests performed in a coagulation laboratory. This will be achieved through participation in test interpretation, didactic sessions, observation of laboratory testing, and independent study.

The fellow will participate in the following activities during this rotation:

1. Didactic sessions. These take place on **Wednesdays from 10:15 to 12:00** in Mayo D235 or D242. The didactic sessions should take priority over clinical duties, with the exception of the fellow's continuity clinic.
2. Test interpretation: Experience in appropriate interpretation of laboratory results is gained by participating in the sign out of Special Coagulation Laboratory cases. The daily sign out time varies to maximize the number of trainees that can participate. Sign out takes place in Mayo D242. When time permits, fellows, can review cases prior to sign out.
3. Observation of laboratory testing: During the month of consult service, the fellow should coordinate one half day to spend observing the performance of laboratory testing. **Contact the Technical Supervisor in the Special Coagulation Laboratory at 612-273-4364 (Tammy Carlberg)** to coordinate this experience.
4. Independent study. Fellows are expected to read the required items in the reading list provided below. Additional reading materials are suggested. Reading on case specific topics is encouraged.

The fellow will also work with the UMMC inpatient hematology and oncology service fellow to oversee and lead the educational curriculum on the inpatient service.

Hematology and Oncology Consults: Educational Objectives

The first month on the service, the fellow should begin developing an understanding of the diagnoses and management of patients with non-malignant and oncologic diseases. The fellow should be able to see patients in consultation, staff them with the attending physician, and with the assistance of the attending physician develop a recommendation for management and therapy. The fellow should review all diagnostic laboratory, radiographic, and pathology material. The fellow should interact with the patient and family, but is not expected to lead care conferences. The fellow, with the attending, should communicate all recommendations to the primary team.

In consecutive months, the fellow is expected to develop an in-depth understanding of the diagnosis and management of patients with a broad variety of diseases. The fellow should begin to function independently in decision making and development of care plans, and should begin to lead, with faculty assistance, discussions with patients and families about the

diagnosis, prognosis, and management recommendations. Senior fellows (second and third years) should be functioning with increasing independence as a consultant. Senior fellows should be able to effectively run a consulting team, triage consults, independently evaluate patients, independently develop recommendations for management, and independently lead care conferences.

By the completion of this rotation, the fellow will be able to:

1. Demonstrate expertise in the diagnosis and management of patients with hematologic and oncologic disorders with focus on:

- Thrombocytopenia
- Idiopathic thrombocytopenic purpura
- Thrombotic thrombocytopenic purpura
- Heparin-induced thrombocytopenia
- Disseminated intravascular coagulation
- Inherited and acquired thrombophilia
- Inherited and acquired bleeding disorders
- Leukopenia
- Anemia
- Hematologic complications of solid organ transplantation
- Understand the general methods and appropriate use of coagulation laboratory assays in: 1) diagnosis of thrombophilia and bleeding disorders; and 2) monitoring of therapies, including factor concentrates, DDAVP, heparins, warfarin, and direct thrombin inhibitors
- Diagnostic and staging studies for patients with newly diagnosed solid tumor malignancies
- Oncologic emergencies, including but not limited to spinal cord compression and hypercalcemia of malignancy

Evaluation: In-training examination and global assessment by attending staff. **The attending physician will review in detail a minimum of 3 consultation notes written by the fellow and discuss them with the fellow.**

2. Incorporate practice based learning into daily patient care by **sharing at least 2 articles per week with the rest of the consult team** that relate to current patient cases.

Evaluation: Global rating by the attending staff and review of the articles by the fellowship director. (Include the articles in the fellow portfolio)

3. Maintain comprehensive, timely, legible and appropriately detailed medical records as a consultant.

Evaluation: Global rating by the attending staff based on review of a minimum of 3 consultations written by the fellow

4. Demonstrate the skills of an effective consultant in hematology and medical oncology.

Evaluation: Global rating by the attending staff

5. Maintain professional relationships with healthcare team, as a leader or member.

Evaluation: Global rating by the attending staff

6. Apply knowledge of health systems to use resources in providing optimal patient care (i.e. inpatient vs. outpatient consultation and testing, arranging appropriate follow-up).

Evaluation: Global rating by the attending staff

7. Work with the triage nurses to deliver timely and quality patient care.

Evaluation: Global rating by the attending staff

Conferences:

- HOT Patient Care Conference, Wednesday, noon, except the first Wednesday of the month: Attendance is mandatory.

Reading List:

- Rosendaal, FR. "Venous Thrombosis: The role of genes, environment, and behavior." Hematology 2005, American society of Hematology Education Book, pages 1-12.
- Levine, JS, Branch DW, and J Rauch. The antiphospholipid syndrome. New England Journal of Medicine, 2002. 346(10): p. 752-63. Description: An overview of the antiphospholipid syndrome, with a clear description of the diagnostic tests available.
- Arepally GM and Ortel TL. "Heparin-Induced Thrombocytopenia", NEJM, 2006; 355:809-817. Description: Diagnosis and management of patients with heparin induced thrombocytopenia.
- Snow V et al, "Management of Venous Thromboembolism: A Clinical Practice Guideline from the American College of Physicians and the American Academy of Family Physicians," Ann Intern Med, 2007; 146:204-210.
- Segal et al, "Management of Venous Thromboembolism: A Systematic Review for a Practice Guideline." Ann Intern Med, 2007; 146:211-222. Description: A review of the literature of acute and chronic management of DVT and PE.
- Hirsh, J and AY Lee. How we diagnose and treat deep vein thrombosis. Blood, 2002. 99(9): 3102-10. Description: The optimal management of symptomatic venous thromboembolism.
- Toh CH, Dennis M. Disseminated intravascular coagulation: old disease, new hope. BMJ 2003;327(7421):974-7. Description: Recent review article of DIC. PubMed citation number: 14576251

- George JN. Clinical practice: thrombotic thrombocytopenic purpura. NEJM 2006; 354:1927-35.
- Moake JL. Thrombotic microangiopathies. N Engl J Med. 2002; 22; 347(8): 589-600. PubMed citation number: 12192020
- Cines DB and Bussel JB. How I treat idiopathic thrombocytopenic purpura (ITP). Blood, 2005, vol 106, 2244-2251.
- Bolton-Maggs PH, Pasi KJ. Haemophilias A and B. Lancet 2003;361:1801-9.
- Mannucci PM and Tuddenham EG. The hemophilias – from royal genes to gene therapy. NEJM 2001; 344:1773-9.
- Mannucci PM. Treatment of von Willebrand's Disease. N Engl J Med. 2004; 12:683-94.
- Arnold DM et al. Systematic Review: Efficacy and Safety of Rituximab for adults with idiopathic thrombocytopenic purpura. Annals Internal Medicine 2007; 146:25-33.
- Palareti G et al. D-Dimer testing to determine the duration of anticoagulation therapy. N Eng J Med. 2006;355:1780.

Reading List- Special Coagulation Laboratory

Required reading:

- Khor B and Van Cott EM. Laboratory evaluation of hypercoagulability. Clin Lab Med 2009;29:339-366
- Kottke-Marchant L and Corcoran G. The laboratory diagnosis of platelet disorders. Arch Pathol Lab Med 2002;126:133-146
- National Heart, Lung, and Blood Institute. The diagnosis, evaluation, and management of von Willebrand disease. Bethesda, Md.: National Institutes of Health; December 2007. NIH publication no. 08-5832.
- Ortel TL. Antiphospholipid syndrome: Laboratory testing and diagnostic strategies. Am J Hematol 2012 87:S75-S81.
- Practical-Haemostasis.com A practical guide to laboratory hemostasis at www.practical-haemostasis.com

Suggested reading:

Journal articles

- Abbassi-Ghanavati M. Greer LG, and Cunningham FG. Pregnancy and laboratory studies: A reference table for clinicians. Obstet Gynecol 2009;114:1326-1331
- Cesarman-Mau G and Hajjar KA. Molecular mechanisms of fibrinolysis. British Journal of Haematology 2005;129:307-321.
- Hayward CPM et al. Congenital platelet disorders: Overview of their mechanisms, diagnostic evaluation and treatment. Haemophilia 2006;12:128-136
- Khor B and Van Cott EM. Laboratory tests for protein C deficiency. Am J Hematol 2010;85:440-442
- Kottke-Marchant K and Duncan A. Antithrombin deficiency: Issues in laboratory diagnosis. Arch Pathol Lab Med 2002;126;1326-1336

- Luddington RJ. Thromboelastography/thromboelastometry. Clin Lab Hem 2005;27:81-90
- Marlar RA and Gausman JN. Protein S abnormalities: A diagnostic nightmare. Am J Hematol 2011;86:418-421
- Muyakis S et al. International consensus statement of on an update of the classification criteria for definite antiphospholipid syndrome. J Thromb Haemost 2006;4:295-306
- Van Cott EM, Laposata M, and Prins MH. Laboratory evaluation of hypercoagulability with venous or arterial thrombosis. Arch Pathol Lab Med 2002;126:1281-1295

Suggested Books:

- Hathaway and Goodnight. Disorders of hemostasis and thrombosis: A clinical guide. ©2000 McGraw Hill Inc., New York.
- Kitchen CS, Alving BM, and Kessler CM. Consultative Hemostasis and Thrombosis. ©2002 W.B. Saunders Co., USA
- Kitchen S, McCraw A, and Echenagucia M. Diagnosis of haemophilia and other bleeding disorders: A laboratory manual. 2nd edition. ©2010. World Federation of Haemophilia (available from WFH web site – www.wfh.org)

Hematology and Medical Oncology Inpatient Service (Unit 7D 273-3074)

Location: University of Minnesota Medical Center, Fairview

Duration: 1 month

Staff: There is one benign hematology/medical oncology attending physician and one fellow directly supervising one or more mid-level providers. Each team oversees the care of patients with both hematologic and oncologic diseases. Any patients admitted in excess of the number of patients capably cared for by mid-level providers will be admitted by the fellow and faculty member with the assistance of the fellow. This is an elective rotation for residents.

Coverage: The fellow is expected to arrive before sit-down rounds that begin at 8:30 am to assist the mid-level providers in any urgent care matters. The fellow should remain until the late afternoon/early evening until all immediate care matters are completed. A hospitalist (pager 5785) covers the patients from 3 – 11 p.m., and from 11 p.m. to 7 a.m. a moonlighter (pager 6633).

Call: The fellow will rotate night and weekend call coverage for the inpatient and consult services with the UMMC Heme Malignancy, UMMC Hematology/Oncology consult and BMT fellow. The fellow will be on call for 2-3 weekend days/month. The attending physician is required, along with the fellowship director, to closely monitor duty hours, as well as for any evidence of fellow fatigue or stress. The back-up fellow or the attending physicians may need to take additional call to prevent fellow fatigue.

NOTE: Patients cared for by practitioners at the Fairview Maple Grove Clinic are instructed to call here at night/weekends for medical assistance. You should handle their calls in the same manner as any other clinic patient. Their clinic notes/labs/x-ray reports are in EPIC and iSite as for any other Fairview patient. Dr. Elimelakh carries her pager and tells me that you may contact her with questions Monday-Friday 8 am – 5 p.m.; her pager is 1286; clinic phone is 763-898-1000. Otherwise, discuss the case with your on-call faculty attending and, if necessary, instruct the patient to come here to the ER for evaluation or admission. Please also put a note into EPIC regarding the patient encounter and route it to the patient's clinic hematologist or oncologist

General Description:

This monthly rotation includes the inpatient Benign Hematology and Medical Oncology service at UMMC. Patients are admitted to this service with a broad variety of hematologic and oncologic diseases, including non-malignant hematology (sickle cell anemia, hemophilia, etc.) and solid tumor oncology.

Hematology Inpatient Service Educational Objectives at Each Educational Level in the Context of the ACGME Core Competencies

	Educational Level	
Competency	PGY 4 (First year fellow)	PGY 5/6 (Second/third year fellow)
Patient Care	<ul style="list-style-type: none"> Actively participate in at least 6 multidisciplinary health team rounds. Write chemotherapy orders with faculty supervision. Understand and interpret CBC. Understand test results within the context of a patient's diagnosis and treatment plans. 	<ul style="list-style-type: none"> Demonstrate ability to lead a multidisciplinary team in the effective delivery of health care.
Medical Knowledge	<ul style="list-style-type: none"> Begin to develop understanding of diagnosis and management of patients with hematologic disorders. Participate in core lectures; critically review at least one article per week that pertains to a current patient problem with the team. 	<ul style="list-style-type: none"> Demonstrate expertise in the diagnosis and management of patients with hematologic disorders
Practice Based Learning and Improvement	<ul style="list-style-type: none"> Present cases at patient care conferences with assistance of faculty attending 	<ul style="list-style-type: none"> Present cases at patient care conference with minimal assistance by faculty attending
Interpersonal and Communication Skills	<ul style="list-style-type: none"> Triage night and weekend phone calls with faculty assistance on the majority of calls. 	<ul style="list-style-type: none"> Effectively triage night and weekend patient phone calls providing medically sound and compassionate advice with minimal faculty input.
Professionalism	<ul style="list-style-type: none"> Demonstrate ability to interact with all members of health care team, patients, and family members 	<ul style="list-style-type: none"> Demonstrate competence in all interactions with all members of health care team, patients, and family members

Systems-Based Practice	<ul style="list-style-type: none"> • Demonstrate understanding of health care resources in the University setting and begin to identify areas for improvement 	<ul style="list-style-type: none"> • Demonstrate expertise in utilization of health care resources in the University setting and identify at least one area for improvement
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Fellow Responsibilities and Lines of Responsibilities within the Team:

Note: Also Refer to Faculty Supervision and Graded Responsibility, page 20 Fellowship Curriculum

Patient care: The fellow is responsible for assisting the attending in the overall clinical supervision and management of all patients. Patients admitted overnight by the hospitalist or moonlighter will be picked up by the mid-level provider in the morning on weekdays. On weekends, the fellow is expected to call the overnight moonlighter at pager 6633 and obtain signouts on current patients and holdovers. The fellow is expected to make rounds with the midlevel team and attending on a daily basis, and assist the mid-level providers throughout the day as needed. After sit-down rounds, the fellow and faculty will do “walk-rounds.” Following walk-rounds, the fellow is responsible for updating the mid-level providers on any new issues pertaining to their patients. The mid-level provider and/or fellow is responsible for communicating any multi-disciplinary issues to the multi-disciplinary team members and charge nurse.

Fellow level knowledge is crucial for optimizing patient care, and as the fellow progresses through his/her training, the fellow should take an increasing role for making care decisions – at first with faculty input, then less, and then as a third year fellow with minimal faculty input. The fellow should write chemotherapy orders with faculty supervision, perform (with faculty supervision until certified) all heme/onc procedures, and have ongoing knowledge of the patient's hematologic/oncologic status and care plans. The fellow should call the referring physician at any time there is an abrupt change in a patient’s condition, such as transfer to the MICU. (Note: the MICU assumes primary care of such patients, with either the inpatient or consult service assuming a consultative role (this will often be attending directed).

An essential role of the fellow is the responsibility for ensuring that the discharge orders and plans are communicated to the primary physician and/or referring physician, and any follow-up orders conveyed to the outpatient Hematology/Oncology Clinic. The patient navigator on 7D will assist in this process.

The fellow should briefly review progress of the inpatients during "sign out" at the end of each day with the mid-level providers. The fellow should contact the attending physician at the end of the day and discuss any new issues. The mid-level providers will sign out their patients to the hospitalist or moonlighter. Any patients being cared for by the fellow/attending will be signed out to the hospitalist or moonlighter by the fellow.

Patients admitted in excess of the number able to be cared for by the mid-level(s) will be

admitted and cared for by the fellow (up to 5-6 patients depending on level of acuity) with the assistance of the attending. Any patients in excess of this number will be admitted and cared for by the fellow and faculty attending physician. When the mid-level patient numbers decline, patients can be transferred to a mid-level provider's care. The fellow is responsible for the primary care of up to 5-6 patients on the weekends with faculty oversight – these may be the fellow's patients or the mid-level provider's patients. However, it must be emphasized that the fellow is expected to know about all patients on the service.

Clinic triage: The fellow is responsible for assisting the clinic triage nurses in management of any patient issues for which the patient's primary physician or mid-level provider is unavailable.

Teaching: The fellow is responsible for searching the medical literature and providing relevant references to the service, both for educational purposes and to facilitate care of patients with unusual problems. The fellow is responsible for teaching relevant procedures and in assisting in procedures when necessary. **The fellow is responsible for a minimum of one presentation/week during the rotation.** The fellow should present interesting and/or difficult cases at the University Patient Conference (Wednesday noon conference) and any of the other relevant weekly tumor board conferences.

Educational Objectives

1. Demonstrate an understanding of allocation of resources that does not compromise quality of care as well as the role of each member of the health care team through active participation in at least 6 multidisciplinary health team rounds.

Evaluation: Global rating by the attending staff

2. **Critically review at least one article per week with the team (This review should take no longer than 15 minutes.)**

Evaluation: Global rating by the attending staff of teaching effectiveness; Review of the articles by the fellowship director at the semi-annual review. (The article is to be kept in the fellow's portfolio for review with the director.)

3. Demonstrate ability to lead a team in the effective delivery of health care.

- By the end of the first rotation month, the fellow should be actively participating in attending rounds.
- By the end of the second rotation month, the fellow should be leading both attending rounds and the interaction with the patient and family. The attending physician and the fellow will meet on at least one occasion to review the fellow's performance in leading rounds with the housestaff and in interacting/communicating with the patients and their families on team rounds.

Evaluation: Global rating form by attending staff based on direct observation of the fellow's performance. **One 360 degree evaluation** must be completed on each rotation with

evaluation forms to be completed by nursing staff, social worker/discharge planners, residents, and at least 3 patients of the fellow's choosing.

4. Effectively triage night and weekend patient phone calls providing medically sound and compassionate advice.

- During the first rotation month, the fellow will keep a log of night and weekend phone calls, and review at least 6 of them in-depth with the staff including patient concern, fellow assessment, and recommendation.
- During the second rotation month on the rotation, the fellow will keep a log of night and weekend phone calls, and follow-up on at least 6 of them to determine clinical outcome.

Evaluation: Global rating form by the attending staff and review of the log by the fellowship director. (To maintain privacy, patient names should be removed/blacked out).

5. Maintain comprehensive, timely, legible, and appropriately detailed medical records.

Evaluation: Staff will review 2 progress notes to ensure all relevant diagnostic, staging, and treatment information is properly delineated.

Educational Objectives in Hematology

By the completion of this rotation, the fellow will be able to:

1. Demonstrate expertise in the diagnosis, interpretation of test results, and management of patients with non-malignant hematologic disorders with a focus on:

- Hemoglobinopathies
- Bleeding and thrombotic disorders

Evaluation: In-training exam and global assessment by attending.

Conferences:

- HOT Patient Care Conference on Wednesday, noon. **Attendance is mandatory.** The fellow should be prepared to discuss cases of interest with the attendees.

Reading List:

1. Genetics and physical properties of hemoglobins.

- Schechter A. *Hemoglobin Research and the Origins of Molecular Medicine*. Blood. 2008; 112: 3927- 3938

2. Diagnosing sickle cell disease and recognizing clinical sequelae.

- Stuart M J, Nagel R L. *Sickle-cell disease*. Lancet. 2004; 364: 1343-60
- Ballas S K et al. *Definitions of the Phenotypic Manifestations of Sickle Cell Disease*. Am J Hematology. 2010; 85 (1): 6-13

3. Role of RBC transfusion therapy & perioperative management

- Hirst C, Williamson L. *Perioperative Blood Transfusion for Sickle Cell Disease*. [Cochrane Database Syst Rev](#). 2012 Jan 18;1:CD003149

4. Role and use of fetal hemoglobin synthesis stimulators
 - Ware R E. *How I use Hydroxyurea to Treat Young Patients with Sickle Cell Anemia*. Blood. 2010; 115 (25): 5300-5311
 - Steinberg M H et al. *The Benefits and Risks of Long-term Use of Hydroxyurea in Sickle Cell Anemia: A 17.5 year follow-up*. Am J Hematol. 2010; 85 (6): 403-408
5. Role and use of stem cell transplantation in the management of sickle cell anemia
 - Hsieh M M et al. *Allogeneic Hematopoietic Stem-cell Transplantation for Sickle Cell Disease*. NEJM. 2009; 361: 2309-17.
 - Shenoy S. *Hematopoietic Stem Cell Transplantation for Sickle Cell Disease: Current Practice and Emerging Trends*. Hematology. 2011 (1): 273 -279
6. Variant sickle cell syndromes
 - Nagel R.L, Fabry M.E. *The Paradox of Hemoglobin SC*. Blood Reviews. 2003; 17 (3): 167-78
7. Management of acute and chronic pain (see above).
8. A video-intervention to improve clinician attitudes toward patients with sickle cell disease: the results of a randomized experiment.
 - Haywood et al, J Gen Intern Med 2011 May 26(5):518-23

1. Social issues: <http://sickle.bwh.harvard.edu/outpatient.html>

Coagulation

1. Dahlback B. Blood coagulation. Lancet 2000.355;1627-32.
2. Dalen JE, Hirsdh J, Guyall GH (eds). Sixth ACCP consensus conference on antithrombotic therapy. Chest.2001;119(Suppl)1-370.
3. Sadler, JE. Von Willebrand factor, ADAMTS13, and thrombotic thrombocytopenic purpura. Blood, 2008 112:11-18.

Educational Objectives in Medical Oncology

By the completion of this rotation, the fellow will be able to:

1. Demonstrate expertise in the diagnosis and management of patients with solid tumor disorders with a focus on
 - Oncologic emergencies
 - Inpatient chemotherapy administration
 - Sarcomas
 - Melanoma (high-dose IL-2)
 - Renal cell carcinoma (high-dose IL-2)
 - Liver-directed therapies (i.e. chemoembolization, ethanol embolization)
 - Cancer and treatment related complications
 - Gastrointestinal malignancies
 - Thoracic malignancies
 - Breast cancer

- Palliative care and transition to hospice

Evaluation: In-training exam and assessment by attending.

Conference:

- Tumor Conferences: The fellow should attend as many of the tumor specific conferences as possible

Reading List:

HEAD AND NECK

Cetuximab

Bonner JA, Harari PM, Giralt J, et al. Radiotherapy plus cetuximab for squamous cell carcinoma of the head and neck. *New Engl J Med* 2006;354:567-78.

Bonner JA, Harari PM, Giralt J, et al. Radiotherapy plus cetuximab for locoregionally advanced head and neck cancer: 5-year survival data from a phase 3 randomised trial, and relation between cetuximab-induced rash and survival. *Lancet Oncol* 2010;11:21-8.

Adjuvant

Cooper JS, Pajak TF, Forastiere AA, et al. Postoperative concurrent radiotherapy and chemotherapy for high-risk squamous-cell carcinoma of the head and neck. *New Engl J Med* 2004;350:1937-44. PMID

Bernier J, Dommenege C, Ozsahin M, et al. Postoperative irradiation with or without concomitant chemotherapy for locally advanced head and neck cancer. *New Eng J Med* 2004;350:1945-52. PMID

Induction

Vermorken JB, Remenar E, van Herpen C, et al. EORTC 24971/TAX 323 Study Group. Cisplatin, fluorouracil, and docetaxel in unresectable head and neck cancer. *N Engl J Med* 2007;357:1695-1704.

Posner MR, Hershock DM, Blajman CR, et al. Cisplatin and fluorouracil alone or with docetaxel in head and neck cancer. *N Engl J Med* 2007;357:1705-15.

Lefebvre JL, Pointreau Y, Rolland F, et al. Induction chemotherapy followed by either chemoradiotherapy or bioradiotherapy for larynx preservation: the TREMPILIN randomized phase II study. *J Clin Oncol* 2013;31:853-59. PMID 23341517

Chemoradiation with cisplatin

Forastiere AA, Zhang Q, Weber RS, et al. Long-term results of RTOG 91-11: a comparison of three nonsurgical treatment strategies to preserve the larynx in patients with locally advanced larynx cancer. *J Clin Oncol* 2013;31:845-52.

Adelstein DJ, Li Y, Adams GL, et al. An intergroup phase III comparison of standard radiation therapy and two schedules of concurrent chemoradiotherapy in patients with unresectable squamous cell head and neck cancer. *J Clin Oncol* 2003;21:92-8.

Non-Small Cell Lung Cancer

Metastatic

Scagliotti GV, Parikh P, von Pawel J, et al. Phase III study comparing cisplatin plus gemcitabine with cisplatin plus pemetrexed in chemotherapy-naïve patients with advanced-stage non-small-cell lung cancer. *J Clin Oncol* 2008;26:3543-51.

Schiller JH, Harrington D, Belani CP, et al. Comparison of four chemotherapy regimens for advanced non-small-cell lung cancer. *N Engl J Med* 2002;346:92-8.

Sandlar A, Gray R, Perry MC, et al. Paclitaxel-carboplatin alone or with bevacizumab for non-small-cell lung cancer. *New Engl J Med* 2006;355:2542-50.

Maintenance

Stinchcombe TE, Socinski MA. Maintenance therapy in advanced non-small cell lung cancer: current status and future implications. *J Thorac Oncol* 2010;6:174-182

Targeted Therapy

Mok TS, Wu Y-L, Thongprasert S, et al. Gefitinib or carboplatin-paclitaxel in pulmonary adenocarcinoma. *N Engl J Med* 2009;361:1-11.

Rosell R, Carcereny E, Gervais R, et al. Erlotinib versus standard chemotherapy as first-line treatment for European patients with advanced EGFR mutation-positive non-small cell lung cancer harbouring mutations of the epidermal growth factor receptor: an open label, randomized phase 3 trial. *Lancet Oncol* 2010;13:239-46.

Kwak EL, Bang Y-J, Camidge R, et al. Anaplastic lymphoma kinase inhibition in non-small-cell lung cancer. *New Engl J Med* 2010;363:1693-703.

EMERGENCIES

Morgan C, Tillett T, Braybrooke J, Ajithkumar T. Management of uncommon chemotherapy-induced emergencies. *Lancet Oncol* 2011;12:806-14. PMID 21276754

Behl D, Hendrickson AW, Moynihan TJ. Oncologic emergencies. *Crit Care Clin* 2010;26:181-205. PMID 19944281

CHEMOTHERAPY DOSING

Griggs JJ, Mangu PB, Anderson H, et al. Appropriate chemotherapy dosing for obese adult patients with cancer: American Society of Clinical Oncology clinical practice guideline. *J Clin Oncol* 2012;30:1553-61. PMID 22473167

HIGH DOSE IL-2

Renal cell carcinoma

Fyfe G, Fisher RI, Rosenberg SA, Sznol M, Parkinson DR, Louie AC. Results of treatment of 255 patients with metastatic renal cell carcinoma who received high-dose recombinant interleukin-2 therapy. *J Clin Oncol*. 1995;13:688-96.

Fisher RI, Rosenberg SA, Fyfe G. Long-term survival update for high-dose recombinant Interleukin-2 in patients with renal cell carcinoma. *Cancer J Sci Am*. 2000;6:S55-7.

Rosenberg SA, Yang JC, White DE, Steinberg SM, et al. Durability of complete responses in patients with metastatic cancer treated with high-dose interleukin-2: Identification of the antigens mediating response. *Ann Surg.* 1998;228:307–19.

SUPPORTIVE CARE

NCCN Guidelines for Supportive Care

http://www.nccn.org/professionals/physician_gls/f_guidelines.asp#site

LIVER-DIRECTED THERAPIES

Salem R, Lewandowski RJ. Chemoembolization and radioembolization for hepatocellular carcinoma. *Clin Gastroenterol Hepatol* 2013;11(6):604-11. PMID 23357493

Oncology Inpatient Service Educational Objectives at Each Educational Level in the Context of the ACGME Core Competencies

	Educational Level	
Competency	PGY 4 (First year fellow)	PGY 5/6 (Second/third year fellow)
Patient Care	<ul style="list-style-type: none"> • Actively participate in at least 6 multidisciplinary health team rounds. • Understand indications and side effects of chemotherapeutics for head and neck carcinomas, sarcomas, lung cancer and gastrointestinal malignancies • Understand test results within the context of a patient’s diagnosis and treatment plans. • Maintain comprehensive, timely, legible, and appropriately detailed medical records. 	<ul style="list-style-type: none"> • Demonstrate competence in the prescription and administration of chemotherapeutic and biologic agents through all therapeutic routes for patients with solid tumors. • Demonstrate ability to lead a multidisciplinary team in the effective delivery of health care. • Maintain comprehensive, timely, legible, and appropriately detailed medical records.
Medical Knowledge	<ul style="list-style-type: none"> • Begin to develop understanding of diagnosis and management of patients with oncologic disorders. • Participate in core lectures; critically review at least one article per week that pertains 	<ul style="list-style-type: none"> • Demonstrate expertise in the diagnosis and management of patients with oncologic disorders

	to a current patient problem with the team.	
Practice Based Learning and Improvement	<ul style="list-style-type: none"> • Present cases at patient care conferences with assistance of faculty attending 	<ul style="list-style-type: none"> • Present cases at patient care conferences with minimal assistance by faculty attending
Interpersonal and Communication Skills	<ul style="list-style-type: none"> • Triage night and weekend phone calls with faculty assistance on the majority of calls. 	<ul style="list-style-type: none"> • Effectively triage night and weekend patient phone calls providing medically sound and compassionate advice with minimal faculty input.
Professionalism	<ul style="list-style-type: none"> • Demonstrate ability to interact with all members of health care team, patients, and family members 	<ul style="list-style-type: none"> • Demonstrate competence in all interactions with all members of health care team, patients, and family members
Systems-Based Practice	<ul style="list-style-type: none"> • Demonstrate understanding of health care resources in the University setting and begin to identify areas for improvement 	<ul style="list-style-type: none"> • Demonstrate expertise in utilization of health care resources in the University setting and identify at least one area for improvement

Malignant Hematology Inpatient Service (7D 273-3074)

Location: University of Minnesota Medical Center, Fairview 7D

Duration: 1 month

Staff: There is one malignant hematology attending physician and one fellow directly supervising one or more mid-level providers. Each team oversees the care of patients with both hematologic and oncologic diseases. Any patients admitted in excess of the number of patients capably cared for by mid-level providers will be admitted by the fellow and faculty member with the assistance of the fellow. This is an elective rotation for residents.

Coverage: The fellow is expected to arrive before sit-down rounds that begin at 8:30 am to assist the mid-level providers in any urgent care matters. The fellow should remain until the late afternoon/early evening until all immediate care matters are completed. A hospitalist (pager 6633) covers the patients from 3 – 11 p.m., and from 11 p.m. to 7 a.m. a moonlighter (pager 6633).

Call: The fellow will rotate night and weekend call coverage for the inpatient and consult services with the UMMC Heme and Medical Oncology fellow, UMMC Hematology/Oncology consult and BMT fellow. The fellow will be on call for 2-3 weekend days/month. The attending physician is required, along with the fellowship director, to closely monitor duty hours, as well as for any evidence of fellow fatigue or stress. The back-up fellow or the attending physicians may need to take additional call to prevent fellow fatigue.

NOTE: Patients cared for by practitioners at the Fairview Maple Grove Clinic are instructed to call here at night/weekends for medical assistance. You should handle their calls in the same manner as any other clinic patient. Their clinic notes/labs/x-ray reports are in EPIC and iSite as for any other Fairview patient. Dr. Elimelakh carries her pager and tells me that you may contact her with questions Monday-Friday 8 a.m. – 5 p.m.; her pager is 1286; clinic phone is 763-898-1000. Otherwise, discuss the case with your on-call faculty attending and, if necessary, instruct the patient to come here to the ER for evaluation or admission. Please also put a note into EPIC regarding the patient encounter and route it to the patient's clinic hematologist or oncologist

General Description:

This monthly rotation includes the inpatient Malignant Hematology service at UMMC. Patients are admitted to this service with a broad variety of malignant hematologic disorders including leukemia, lymphoma, and myeloma.

Malignant Hematology Inpatient Service Educational Objectives in the Context of the ACGME Core Competencies

	Educational Level	
Competency	PGY 4 (First year fellow)	PGY 5/6 (Second/third year fellow)
Patient Care	<ul style="list-style-type: none"> • Satisfactorily perform and interpret 2 bone marrow biopsies and aspirates incorporating the process of informed consent with faculty supervision. • Satisfactorily perform and interpret one lumbar puncture or Ommaya reservoir tap incorporating the process of informed consent with faculty supervision. • Actively participate in at least 6 multidisciplinary health team rounds. • Write chemotherapy orders with faculty supervision. • Understand and interpret CBC and correlate with peripheral blood and bone marrow findings. • Understand test results within the context of a patient's diagnosis and treatment plans. 	<ul style="list-style-type: none"> • Demonstrate competence in the prescription and administration of chemotherapeutic and biologic agents through all therapeutic routes. • Demonstrate ability to lead a multidisciplinary team in the effective delivery of health care.
Medical Knowledge	<ul style="list-style-type: none"> • Begin to develop understanding of diagnosis and management of patients with malignant hematologic disorders. • Participate in core lectures; critically review at least one article per week that pertains to a current patient problem with the team. 	<ul style="list-style-type: none"> • Demonstrate expertise in the diagnosis and management of patients with malignant hematologic disorders

Practice Based Learning and Improvement	<ul style="list-style-type: none"> • Present cases at patient care conferences with assistance of faculty attending 	<ul style="list-style-type: none"> • Present cases at patient care conference with minimal assistance by faculty attending
Interpersonal and Communication Skills	<ul style="list-style-type: none"> • Triage night and weekend phone calls with faculty assistance on the majority of calls. 	<ul style="list-style-type: none"> • Effectively triage night and weekend patient phone calls providing medically sound and compassionate advice with minimal faculty input.
Professionalism	<ul style="list-style-type: none"> • Demonstrate ability to interact with all members of health care team, patients, and family members 	<ul style="list-style-type: none"> • Demonstrate competence in all interactions with all members of health care team, patients, and family members
Systems-Based Practice	<ul style="list-style-type: none"> • Demonstrate understanding of health care resources in the University setting and begin to identify areas for improvement 	<ul style="list-style-type: none"> • Demonstrate expertise in utilization of health care resources in the University setting and identify at least one area for improvement

Fellow Responsibilities and Lines of Responsibilities within the Team:

Note: Also Refer to Faculty Supervision, page 21, Fellowship Curriculum

Patient care: The fellow is responsible for assisting the attending in the overall clinical supervision and management of all patients. Patients admitted overnight by the moonlighter will be listed on the whiteboard in the physician workroom for pick-up by the midlevel (and fellow/attending if needed). The fellow is expected to make rounds with the midlevel team and attending on a daily basis, and assist the mid-level providers throughout the day as needed. After sit-down rounds, the fellow and faculty will do “walk-rounds.” Following walk-rounds, the fellow is responsible for updating the mid-level providers on any new patient issues. The mid-level provider/fellow is responsible for communicating any multi-disciplinary issues to the multi-disciplinary team members and charge nurse.

Fellow level knowledge is crucial for optimizing patient care, and as the fellow progresses through his/her training, the fellow should take an increasing role for making care decisions – at first with faculty input, then less, and then as a third year fellow with minimal faculty input. The fellow should write chemotherapy orders with faculty supervision, perform (with faculty supervision until certified) all heme/onc procedures, and have ongoing knowledge of the patient's hematologic/oncologic status and care plans. The fellow should call the referring physician at any time there is an abrupt change in a patient's condition, such as transfer to the MICU.

An essential role of the fellow is the responsibility for ensuring that the discharge orders and plans are communicated to the primary physician and/or referring physician, and any follow-up orders conveyed to the outpatient Hematology/Oncology or BMT Clinic. The nurse coordinator on 7D will assist in this process.

The fellow should briefly review progress of the inpatients during "sign out" at the end of each day with the mid-level providers. The fellow should contact the attending physician at the end of the day and discuss any new issues. The mid-level providers will also sign out their patients with the moonlighter. Any patients being cared for by the fellow/attending will be signed out to the moonlighter by the fellow.

Patients admitted in excess of the number able to be cared for by the mid-level(s) will be admitted and cared for by the fellow (up to 5-6 patients depending on level of acuity) with the assistance of the attending. Any patients in excess of this number will be admitted and cared for by the faculty attending physician. When the mid-level patient numbers decline, patients can be transferred to a mid-level provider's care. The fellow is responsible for the primary care of up to 5-6 patients on the weekends with faculty oversight – these may be the fellow's patients or the mid-level provider's patients.

Clinic triage: The fellow is responsible for assisting the clinic triage nurses in management of any patient issues for which the patient's primary physician or mid-level provider is unavailable.

Teaching: The fellow is responsible for searching the medical literature and providing relevant references to the service, both for educational purposes and to facilitate care of patients with unusual problems. The fellow is responsible for teaching relevant procedures and in assisting in procedures when necessary. The fellow is responsible for a minimum of one presentation/week during the rotation. The fellow should present interesting and/or difficult cases at the University Patient Conference (Wednesday noon conference) and any of the other relevant weekly tumor board conferences.

Educational Objectives in Malignant Hematology

By the completion of this rotation, the fellow will be able to:

1. Demonstrate expertise in the diagnosis, interpretation of test results, and management of patients with malignant hematologic disorders with a focus on:
 - Leukemias, acute and chronic
 - Lymphoma of all phenotypes and histology
 - Multiple myeloma

Evaluation: In-training exam and global assessment by attending.

2. Satisfactorily perform and interpret 2 bone marrow biopsies and aspirates (within the context of peripheral blood CBC and smear examination) incorporating the process of informed consent.

- The first month on the rotation, the fellow will decide, with the faculty, which tests to order on the bone marrow biopsies and aspirates.
- On subsequent months of the rotation, the fellow will make the initial decision on which tests to order and review with the faculty.

The fellow will also review the slides with the hematopathologist to ensure adequacy of the biopsy and aspirate.

Evaluation: Staff verification of performed procedures in RMS.

One completed **bone marrow biopsy competency certification evaluation form.**

3. Satisfactorily perform and interpret one lumbar puncture or Ommaya reservoir tap incorporating the process of informed consent.

Evaluation: Staff verification of performed procedures in RMS.

One completed **intrathecal chemotherapy competency certification evaluation form.**

4. Demonstrate an understanding of allocation of resources that does not compromise quality of care as well as the role of each member of the health care team through active participation in at least 6 multidisciplinary health team rounds.

Evaluation: Global rating by the attending staff

5. Critically review at least one article per week with the team (This review should take no longer than 15 minutes.)

Evaluation: Global rating by the attending staff of teaching effectiveness; Review of the articles by the fellowship director at the semi-annual review. (The article is to be kept in the fellow's portfolio for review with the director.)

Evaluation: Global rating by the attending staff of teaching effectiveness; Review of the articles by the fellowship director at the semi-annual review. (The article is to be kept in the fellow's portfolio for review with the director.)

6. Demonstrate ability to lead a team in the effective delivery of health care.

- By the end of the first rotation month, the fellow should be actively participating in attending rounds.
- By the end of the second rotation month, the fellow should be leading both attending rounds and the interaction with the patient and family. The

attending physician and the fellow will meet on at least one occasion to review the fellow's performance in leading rounds with the housestaff and in interacting/communicating with the patients and their families on team rounds.

Evaluation: Global rating form by attending staff based on direct observation of the fellow's performance. **One 360 degree evaluation** must be completed on each rotation on Ward 1 with evaluation forms to be completed by nursing staff, social worker/discharge planners, residents, and at least 3 patients of the fellow's choosing.

7. Demonstrate competence in the prescription and administration of chemotherapeutic and biologic agents through all therapeutic routes.

- During the first rotation month, the fellow will write at least 2 chemotherapy orders cooperatively with the staff.
- During the second rotation month, the fellow should write at least 2 chemotherapy orders independently and then review with the staff.

Evaluation: The fellow should maintain copies of the orders (patient name removed/blacked out to maintain patient privacy) in his/her portfolio for review with the fellowship director. Completion of a **Chemotherapy Competency Certification Evaluation Form**

8. Effectively triage night and weekend patient phone calls providing medically sound and compassionate advice.

- During the first rotation month, the fellow will keep a log of night and weekend phone calls, and review at least 6 of them in-depth with the staff including patient concern, fellow assessment, and recommendation.
- During the second rotation month on the rotation, the fellow will keep a log of night and weekend phone calls, and follow-up on at least 6 of them to determine clinical outcome.

Evaluation: Global rating form by the attending staff and Review of the log by the fellowship director. (To maintain privacy, patient names should be removed/blacked out).

Conferences:

- HOT Patient Care Conference on Wednesday, noon, except the first Wednesday of the month (faculty meeting only): Attendance is mandatory. The fellow should be prepared to discuss cases of interest with the attendees.
- Heme Malignancy (hematopathology) Conference: Attendance is mandatory; Room D175 Mayo; 2nd and 4th Mondays, 4:15- 5:15 p.m.. Fellows should prepare a case for presentation at each conference.
- BMT/Heme Malignancy patient care conference: Attendance is mandatory; weekly on Mondays, 3:30 – 4:30 p.m., PWB 14-136. Fellows should be prepared to discuss pertinent cases.

Reading List:

Hematologic Malignancies

- Nancy Lee Harris, Elaine S Jaffe, Jacques Diebold, Georges Flandrin, H Konrad Muller-Hermelink, James Vardiman, T. Andrew Lister, Clara D. Bloomfield. World Health Organization Classification of Neoplastic Diseases of the Hematopoietic and Lymphoid Tissues: Report of the Clinical Advisory Committee Meeting – Airlie House, Virginia, November 1997. *Journal of Clinical Oncology* 1999 17(12): 3835-3849. *Description:* Standard for pathologists, clinicians, and researchers to communicate. PubMed citation number: 10577857
- Richard J Fisher, Ellen R Gaynor, Steve Dahlberg, Martin M Oken, Thomas M Grogan, Evonne M Mize, John H Glick, Charles A Coltman Jr, Thomas P Miller. Comparison of Standard Regimen (CHOP) with three intensive chemotherapy regimens for advanced Non-Hodgkin's Lymphoma. *NEJM* 1993 328(14): 1002-1006. *Description:* This study is a prospective randomized phase III trial comparing CHOP with three other regimens in NHL. There was no difference in outcomes re-establishing CHOP as the standard of care for the first line treatment of DLCL. This remained the standard of care until studies with Rituximab. PubMed citation number: 7680764
- Shipp et al. The International Non-Hodgkin's Lymphoma Prognostic Factors Project. A Predictive Model for Aggressive Non-Hodgkin's Lymphoma. *NEJM* 1993 329(14): 987-994. *Description:* The IPI score serves the clinician as a diagnostic aide in classifying patients with DLCL as high risk, intermediate risk and low risk. PubMed citation number: 8141877
- Cheson BD et al. Revised response criteria for malignant lymphoma. *J Clin Oncol.* 2007;579-586.
- Craig FE and Foon KA. Flow Cytometric Immunophenotyping for hematologic neoplasms. *Blood.* 2008;111:3941-3967.
- Wood BL et al. 2006 Bethesda international consensus recommendations on the immunophenotypic analysis of hematolymphoid neoplasia by flow cytometry: Optimal reagents and reporting for the flow cytometric diagnosis of hematopoietic neoplasia. *Clinical Cytometry* 2007;72BS14-S22.
- Shah GD and DeAngelis LM. Treatment of Primary CNS Lymphoma. *Hematol Oncol Clin North Am.* 2005;19(4):611-27.
- Solal-Celigny et al. Follicular lymphoma international prognostic index. *Blood.* 2004;104:1258-1265.
- Federico M, Bellei M, Marcheselli L et al. Follicular lymphoma international prognostic index 2: a new prognostic index for follicular lymphoma developed by the international follicular lymphoma prognostic factor project. *J Clin Oncol.* 27:4555-4562, 2009.
- Hoster E et al. A new prognostic index (MIPI) for patients with advanced-stage mantle cell lymphoma. *Blood.* 2008;111:558-565.
- Chiorazzi N et al. Chronic lymphocytic leukemia. *N Eng J Med.* 2005; 352:804.
- Grever MR et al. Comprehensive assessment of genetic and molecular features predicting outcome in patients with chronic lymphocytic leukemia: Results from the US intergroup phase III trial E2997. *J Clin Oncol.* 2007;25:799-804.
- Willams DA. A new mechanism of leukemia drug resistance? *N Eng J Med* 2007;357:77-78.

- Estey E. Acute myeloid leukemia and myelodysplastic syndromes in older patients. *J Clin Oncol.* 2007;25:1908-1915.
- Baldus, CD, et al. Clinical outcome of *de novo* acute myeloid leukaemia patients with normal cytogenetics is affected by molecular genetic alterations: a concise review
British Journal of Haematology 2007;137 (5), 387–400.
- Kantarjian H et al. Results of a randomized study of 3 schedules of low-dose decitabine in higher-risk myelodysplastic syndrome and chronic myelomonocytic leukemia. *Blood.*2007;;109:52-57.
- List, Alan et al. Efficacy of Lenalidomide in the Myelodysplastic Syndromes. *N Eng J Med.* 2005; 352:549-57.
- Kuruvilla J, Keating A, Crump M. How I treat relapsed and refractory Hodgkin lymphoma. *Blood.* 117:4208-4217, 2011.
- Meyer RM, Hoppe RT. Point/counterpoint: early-stage Hodgkin lymphoma and the role of radiation therapy. *Hematology.* 313-321, 2012.
- R. Kyle and SV Rajkumar. Drug Therapy Multiple Myeloma. *N Eng J Med.* 2004; 351: 1860-73.
- Orlowski RZ et al. Randomized phase III study of pegylated liposomal doxorubicin plus bortezomib compared with bortezomib alone in relapsed or refractory multiple myeloma: Combination therapy improves time to progression. *J Clin Oncol.* 2007;25:3892-3901.
- M. Talpaz et al. Dasatinib for Imatinib-resistant Philadelphia Chromosome-Positive Leukemias. *N Eng J Med.* 2006;354:2531-41.
- L. Silverman et al. Randomized Control Trial of Azacytidine in Patients with Myelodysplastic Syndrome: A Study of the CALGB. *J Clin Oncol.* 2002;20:2429-40.
- Yung L and Linch D. Hodgkin's lymphoma. *Lancet;* 2003; 361(9361):943-951

Supportive Care

- Clinical practice guideline for the use of antimicrobial agents in neutropenic patients with cancer: 2010 update by the infectious Diseases Society of America. Freifeld AG, Bow EJ, Sepkowitz KA et al. *Clin Infect Dis.* 2011;52(4):427-31.
<http://cid.oxfordjournals.org/content/52/4/e56.long>
- Robenshtok E, Gafter-Gvili A, Goldberg E et al. Antifungal prophylaxis in cancer patients after chemotherapy or HCT: systematic review and meta-analysis. *J Clin Oncol.* 25:5471-5489, 2007.

Hennepin County Medical Center Consults and Clinic (HCMC)

<u>Location:</u>	HCMC
<u>Duration:</u>	1 month
<u>Staff:</u>	The service is staffed by one staff attending, one fellow; one to three residents.
<u>Call:</u>	The residents are always responsible for first call. The staff physician is always available for staff call. The fellow is encouraged to keep the beeper on for backup call from the residents, but the fellow never has primary call responsibility unless special arrangements are made. The faculty will also work with the fellow to determine one week when the fellow will not have the pager on and will be free from call.
<u>Faculty:</u>	Dr. Doug Rausch, Dr. Rachel Koreth, Dr. Andres Wiernik, Dr. Satya Bommakanti, Dr. Vicki Morrison
<u>Contact:</u>	Dr. Doug Rausch Fellowship Site Director and Division Chief Phone: (612) 873-6369; cell 612-298-0941 Pager: (612) 740-1878 Email: Douglas.Rausch@hcmcd.org

General Description:

This is a monthly rotation with a primary focus on developing effective consultation skills and enhancing ones knowledge base in a wide variety of hematologic and oncologic disorders. HCMC is a large, inner city, safety net hospital that serves indigent patients as well as patients with insurance. Strengths of the HCMC experience include the primary care nature of the hematology and oncology patients. In addition, HCMC has a large HIV population, a large immigrant population, and a large underserved population leading to hematology and oncology cases not commonly seen at other hospitals in the state of Minnesota. HCMC has its own internal medicine residency program. Residents within the program are dedicated to the primary care of their patients, thus the fellow has the ability to act in a supervisory and consulting role the vast majority of the time.

Fellow Responsibilities and Lines of Responsibilities within the Team:

Note: Also Refer to Faculty Supervision and Graded Responsibility, Fellowship Curriculum

The fellow will see hematology and oncology patients both in clinic and as a consultant on the inpatient services. There is no inpatient hematology/oncology service, so patients are admitted to a general medicine service where the team acts as closely involved consultants. Residents on the consult service will be primarily responsible for following the inpatients while the fellow will act as an overseer and teacher (although, the fellow may be responsible for some patients depending on the workload and abilities of the residents), and directly

reports to the attending physician. By the level of a senior fellow (PGY 5/6), the fellow should be functioning independently to lead the team with minimal faculty input.

Clinic starts at 8:00 a.m., Monday-Friday. There are usually between 15 and 20 patients each morning. Fellows will see patients independently, formulate care plan, and discuss with faculty. On subsequent rotations, the fellow should take greater responsibility in formulating care plans independently with minimal faculty supervision. Consult rounds begin mid-morning around 10 am or sometimes in the afternoon around 1 pm, depending on the attending's clinic schedule. Ten to 15 patients are typically followed by the team with 1-3 new consults each day.

Educational Objectives:

By the completion of this rotation, the fellow will be able to:

1. Demonstrate expertise in the diagnosis and management of patients with benign hematologic, malignant hematologic and solid tumor disorders with focus on:
 - HIV and AIDS associated malignancies
 - Bladder cancer
 - Germ cell tumors
 - Primary hepatobiliary malignancies
 - Myeloproliferative disorders

Evaluation: In-training exam and assessment by faculty attending.

2. Apply knowledge of health systems to use resources in providing optimal patient care. The fellow will meet with the social worker to discuss home health care and long term care options on 3 patients they are caring for either on the in-patient consult service or in the clinic.

Evaluation: Review notes from these meetings with the monthly staff attending and the fellowship director at the year-end review.

3. Demonstrate the skills of an effective consultant in hematology/medical oncology.

Evaluation: Global rating form filled out by the attending staff.

4. Incorporate practice based learning into daily patient care by reviewing the NCCN guidelines (at www.NCCN.com) on staging, treatment, and surveillance on at least 2 patients per week in clinic. Check patient's chart for adherence to recommendations and discuss rationale for deviation with the staff.

Evaluation: Global rating form filled out by the attending staff. The staff attending will review a minimum of 2 patients seen by the fellow to review adherence to recommendations.

5. Maintain professional relationships with healthcare team, as a leader or member.

Evaluation: Global rating form filled out by the attending staff.

6. Satisfactorily perform and interpret 2 bone marrow biopsies and aspirates incorporating the process of informed consent.
 - The first month on the rotation, the fellow will decide with the staff which tests to order on the bone marrow biopsies and aspirates.
 - The second month on the rotation, the fellow will make the initial decision on which tests to order and review with the staff.
 - The fellow will also review the slides with the hematopathologist to ensure adequacy of the biopsy and aspirate.

Evaluation: Staff acknowledgement of performed procedures and review results of at least two of the bone marrow biopsies with the fellowship director at the year-end review.

7. Demonstrate competence in the prescription and administration of chemotherapeutic and biologic agents through all therapeutic routes.
 - The first month on the rotation, the fellow should write at least 2 chemotherapy orders cooperatively with the staff.
 - The second month on the rotation, the fellow should write at least 2 chemotherapy orders independently and then review with the staff.

Evaluation: Staff acknowledgement of performed procedures

8. Complete on-line evidence-based medicine resource (ASH On-line at www.hematology.org), and use these principles to critically review an article for Journal Club at UMMC.

Evaluation: Anonymous evaluations from attendees at Journal Club and feedback from faculty advisor for the Journal Club will be included in the fellow's file/portfolio. The fellow must ascertain in writing to the fellowship director that the on-line evidence based medicine curriculum has been completed.

Conference -- Attendance is mandatory.

Tumor conference: Each Wednesday at noon held in the Pathology Department.

Reading List:

1. Ratner Lee, Jeanette Lee, Shenghui Tang, David Redden, Faye Hamzeh, Brian Herndier, David Scadden, Lawrence Kaplan, Richard Ambinder, Alexandra Levine, William Harrington, Louise Grochow, Charles Flexner, Benjamin Tan, David Strauss. Chemotherapy for Human Immunodeficiency virus associated Non-Hodgkin's lymphoma in combination with highly active antiretroviral therapy. *Journal of Clinical Oncology*. 19(8):2171-2178, April 15, 2001 Description: Prospective Study shows that full dose CHOP with growth factor support can be administered concurrently with HAART therapy for HIV. PubMed citation number: 11304769

2. Pantanowitz L, Dezube BJ. Advances in the pathobiology and treatment of Kaposi sarcoma. *Curr Opin Oncol*. 2004. 16:443-9.
3. De Braud F, Maffezzini M, Vitale V, Bruzzi P, Gatta G, Hendry WF, Sternberg CN. Bladder cancer. *Crit Rev Oncol Hematol*. 2002. 41:89-106.
4. Shelley MD, Burgon K, Mason MD. Treatment of testicular germ-cell cancer: a cocharne evidence-based systematic review. *Cancer Treat Rev*. 2002. 28:237-53.
5. Marcos-Alvarez A, Jenkins RL. Cholangiocarcinoma. *Surg Oncol Clinic N Am*. 1996.5:301-16.
6. Spivak JL. Polycythemia vera: myths, mechanisms, and management. *Blood*. 2002 Dec 15;100(13):4272-90. Epub 2002 Aug 08. Description: A scholarly review that encompasses pathophysiology, diagnosis, clinical course, and treatment. PubMed citation number: 12393615
7. Barosi, G. Myelofibrosis with myeloid metaplasia: diagnostic definition and prognostic classification for clinical studies and treatment guidelines. *J Clin Oncol* 1999.17(9): 2954-70. PubMed citation number: 10561375
8. Schafer, AI. Thrombocytosis. *New Engl J Med*. 2004;350:1211-9. Description: Concise review paper of the approach to an elevated platelet count and the management of ET. PubMed citation number: 15028825
9. Arepally GM et al. Heparin induced thrombocytopenia. *N Eng J Med*. 2006; 344: 1286.
10. George JN, et al. Thrombotic Thrombocytopenic Purpura. *NEJM* 2006; 354:1927.
11. Moake JL, et al. Thrombotic Microangiopathies. *NEJM* 2002; 347: 589.

HCMC Consults and Clinic Educational Objectives at Each Educational Level in the Context of the ACGME Core Competencies

	Educational Level	
Competency	PGY 4 (First year fellow)	PGY 5/6 (Second/third year fellow)
Patient Care	<ul style="list-style-type: none"> • Satisfactorily perform and interpret 2 bone marrow biopsies and aspirates incorporating the process of informed consent • Understand test results within the context of a patient’s diagnosis and treatment plans. • Begin to understand how to prescribe and administer chemotherapeutic and biologic agents through all 	<ul style="list-style-type: none"> • Demonstrate competence in the performance and interpretation of 2 bone marrow biopsies and aspirates incorporating the process of informed consent • Demonstrate competence in the prescription and administration of chemotherapeutic and biologic agents through all therapeutic routes for patients with hematology and

	<p>therapeutic routes for patients with hematology and oncologic disorders. Write orders with staff supervision.</p> <ul style="list-style-type: none"> • Document the planning and coordination of follow-up care • Maintain comprehensive, timely, legible, and appropriately detailed medical records. 	<p>oncologic disorders. Independently write orders for co-signing by staff.</p> <ul style="list-style-type: none"> • Demonstrate ability to participate in a multidisciplinary team in the effective delivery of health care, and to be a team leader when the situation is appropriate to do so. • Maintain comprehensive, timely, legible, and appropriately detailed medical records.
Medical Knowledge	<ul style="list-style-type: none"> • Gain an understanding of the diagnosis and management of patients with benign hematologic, malignant hematologic and solid tumor disorders with focus on HIV and AIDS associated malignancies, bladder cancer, germ cell tumors, primary hepatobiliary malignancies, and myeloproliferative disorders. • Complete on-line evidence-based medicine resource, and use these principles to critically review an article for Journal Club with faculty assistance. 	<ul style="list-style-type: none"> • Demonstrate expertise in the diagnosis and management of patients with benign hematologic, malignant hematologic and solid tumor disorders with focus on HIV and AIDS associated malignancies, bladder cancer, germ cell tumors, primary hepatobiliary malignancies, and myeloproliferative disorders. • Complete on-line evidence-based medicine resource, and independently use these principles to critically review an article for Journal Club.
Practice Based Learning and Improvement	<ul style="list-style-type: none"> • Present cases at patient care conferences with assistance of faculty attending, and lead the discussion. • Identify challenges to completion of plan of care • Incorporate practice based 	<ul style="list-style-type: none"> • Present cases at patient care conferences with minimal assistance by faculty attending, and incorporate new knowledge into one's practice. • Identify challenges to completion of plan of care

	<p>learning into daily patient care by reviewing the NCCN guidelines on staging, treatment, and surveillance on at least 2 patients per week in clinic. Check patient's chart for adherence to recommendations and discuss rationale for deviation with the staff.</p>	<p>and how to surmount them</p> <ul style="list-style-type: none"> Independently incorporate practice based learning into daily patient care by incorporating the NCCN guidelines on staging, treatment, and surveillance on all patients. Check patient's chart for adherence to recommendations
Interpersonal and Communication Skills	<ul style="list-style-type: none"> Triage night and weekend phone calls with faculty assistance on the majority of calls. Understand differences in the communication skills needed for direct care, consultative opinion, and consultative management Identify responsibility for execution of plan/follow-up Maintain an appropriate therapeutic relationship with patient and family Formulate plan to bring multiple disciplines into agreement with the proposed plan and communicate the plan Gain an understanding of the stresses placed on patients with limited financial and social resources, and how to effectively communicate with them. 	<ul style="list-style-type: none"> Effectively triage night and weekend patient phone calls providing medically sound and compassionate advice with minimal faculty input. Demonstrate expertise in communication skills for providing direct care, consultative opinion, and consultative management Identify responsibility for execution of plan/follow-up and ascertain that the plan is carried out to completion Maintain an appropriate therapeutic relationship with patient and family Formulate plan to bring multiple disciplines into agreement with the proposed plan and communicate the plan, then ascertain that plan is completed. Demonstrate an understanding of the stresses placed on patients with limited financial and social resources, and effectively communicate with them.
Professionalism	<ul style="list-style-type: none"> Demonstrate ability to interact with all members of health care team, 	<ul style="list-style-type: none"> Demonstrate competence in all interactions with all members of health care team,

	<p>patients, and family members</p> <ul style="list-style-type: none"> • Demonstrate sensitivity to patient and families' culture, age, and disabilities 	<p>patients, and family members</p> <ul style="list-style-type: none"> • Demonstrate sensitivity to patient and families' culture, age, and disabilities, and teach others
Systems-Based Practice	<ul style="list-style-type: none"> • Demonstrate understanding of health care resources in the HCMC setting and begin to identify areas for improvement • Demonstrate an understanding of allocation of resources that does not compromise quality of care. 	<ul style="list-style-type: none"> • Demonstrate expertise in utilization of health care resources in the HCMC setting and identify at least one area for improvement • Lead the development of a system wide care plan for individual patients that does not compromise quality of care.

Regions Hospital Consults and Clinic

<u>Location:</u>	Regions Hospital, St. Paul, MN
<u>Duration:</u>	1 month
<u>Staff:</u>	The service is staffed with one staff attending and two fellows
<u>Call:</u>	The fellow takes night call from home 6/7 nights; the staff attending takes call 7/7 nights. The fellow day off is usually Sunday.
<u>Faculty:</u>	Dr. Randy Hurley (Department Head), Dr. Jeff Jaffe, Dr. Colleen Morton, Dr. Dan Anderson, Dr. Kurt Demel, Dr. Balkrishna Jahagirdar, Dr. Steve McCormack, Dr. Priya Kumar
<u>Contact:</u>	Dr. Jeff Jaffe, Fellowship Site Director Phone: 651-254-2299 Pager: 612-580-0314 Email: jeffry.p.jaffe@healthpartners.com

General Description:

The Hematology/Oncology rotation for fellows at Regions consists of a busy inpatient consultation service as well as extensive outpatient experience. Each fellow will spend 2 weeks on the inpatient service and 2 weeks on the outpatient service during each month rotation when there are 2 fellows assigned to Regions. When there is one fellow assigned, there will be morning outpatient experience followed by the inpatient consult service depending on the inpatient census. When an Internal Medicine Resident is assigned, the fellow will spend up to a half day in the morning outpatient setting.

The inpatient service is primarily a consult service; approximately 60 consults/month including a broad variety of both benign hematology, coagulation, and malignant disease. There is also occasionally a small primary oncology service consisting of Hospice cases and protocol patients on chemotherapy.

The outpatient experience consists of 5 full day clinics where the fellow will see both new and follow-up patients, working with each of the attending staff. The patient mix is approximately 30% benign Hematology and 70% malignant disease, and the fellow has the opportunity to manage many "new" patients primarily for their initial staging and treatment.

There are extensive didactic sessions including morphology training, Grand Rounds, hospice/palliative care rounds, and a weekly multidisciplinary cancer conference, as well as monthly neuro-oncology and urologic oncology conferences. Active participation in clinical research through cooperative group trials is encouraged, with over 150 NCI approved clinical trials available for patient treatment. Dr. Jaffe conducts a bone marrow clinic each Thursday during which the fellow may gain expertise in the performance and review of bone marrows and peripheral blood smears. There will also be extensive training in coagulation laboratory techniques and clinical management of patients with hemostasis/thrombotic issues (coag laboratory – Dr. Jeff Evens on Monday and Wednesdays; coag clinic – Dr. Colleen Morton –

either Tuesday or Wednesday). Clinical topics to be covered will include uses of rFVII, Coumadin reversal, protamine reversal of low molecular weight heparin and unfractionated heparin, bleeding following thrombolytic therapy, Coumadin bridging and management, argatroban and lepirudin use in heparin induced thrombocytopenia, and massive transfusion protocol and blood product use.

Fellow Responsibilities and Lines of Responsibilities within the Team:

Note: Also Refer to Faculty Supervision and Graded Responsibility, page 24, Fellowship Curriculum

The fellow is responsible for seeing that all inpatient consults are performed and staffed in a timely manner (within 24 hours). If there is a resident on the service, the fellow is responsible for assigning consults to the resident and assuring that the resident sees the patient in a timely manner. The fellow prioritizes consults, and reports directly to the faculty attending each day. The fellow is responsible for seeing new patients in the outpatient clinic and follow-up patients during each assigned clinic day, and staffing them with the faculty attending. With repeated educational experiences, it is expected that the fellow will assume greater responsibility and ultimately lead the team in all aspects with minimal faculty attending support.

The fellow will participate in the Bone Marrow Clinic under Dr. Jaffe's direction. The fellow will be trained and perform multiple procedures including bone marrows and instillation of intrathecal therapy.

As the fellow rotates at Regions hospital on multiple occasions, there will be increasing responsibilities in the areas of therapeutic decision-making, coordination of multispecialty care of cancer patients (Oncology/surgery/XRT), performance of procedures, and teaching of students and residents.

First Rotation: Focus is on the basic pathophysiology and natural history of cancer and hematologic diseases. The emphasis is on the initial diagnosis and staging, interactions with patients, families and staff, and instruction on the basics of consultative Hematology/Oncology. Initial instruction in the performance of bone marrows and intrathecal chemotherapy is completed. There will be time assigned with the chemotherapy nurses and pharmacists to learn about the direct administration of chemotherapy.

Introduction to Chemotherapy Infusion Oncology Fellow Learning Experience

Description: Provide a ½ day hands-on learning experience in the Regions Cancer Care Center chemo infusion room for each first year Oncology Fellow during their first Regions rotation

Preceptors: Carol Muntean, RN, OCN
Randy Hurley MD, BS Pharmacy, CTropMed

Objectives:

1. Describe general principals of chemotherapy preparation and administration
2. Describe general maintenance and access of central venous catheter devices

3. Discuss management of chemotherapy infusion reactions and other less common chemotherapy-induced emergencies
4. Describe the approach to chemotherapy extravasation
5. Describe the management of common chemotherapy side effects

Methods:

1. Preceptor shadowing ½ day in Regions Chemo Infusion Center
2. Participate in chemotherapy class for patients
3. Reading Syllabus

Evaluation: complete on-line survey

Syllabus:

1. Lenz HJ. Management and preparedness for infusion and hypersensitivity reactions. *The Oncologist* 2007;12:601-09
2. Morgan C et al. Management of uncommon chemotherapy induced emergencies. *Lancet Oncol* 2011;12:806-814
3. Schulmeister L. Extravasation management. *Semin Oncol Nursing* 2011;27:82-90
4. Hesketh PJ. Chemotherapy induced nausea and vomiting. *New Engl J Med* 2008;358:2482-94
5. National Comprehensive Cancer Network: Recommendations for use of anti-emetics and myeloid growth factors: accessible at www.nccn.org

Second Rotation: Builds on the above skills and emphasizes therapeutic decision-making and coordination of surgery, chemotherapy, and XRT based on evidence in the medical literature and randomized clinical trial data. Instruction in the art of “difficult conversations” and end of life counseling are emphasized. Procedures are performed independently.

Third (Senior) Rotation: The Fellow will basically run the service with attending staff support. They will act as the primary consultant and coordinate care and therapeutic interventions with the families, primary care provider, and related specialties. Additional experience in Palliative Care/Hospice will be provided.

Regions: Educational Objectives

By the completion of this rotation, the fellow will be able to:

1. Demonstrate expertise in the diagnosis and management of patients with benign hematologic, malignant hematologic and solid tumor disorders with focus on:
 - Common cancers including breast, lung, colorectal, prostate, and hematologic cancers
 - Evaluation of anemia, thrombocytopenia (including heparin induced thrombocytopenia), pancytopenia
 - Evaluation of gammopathies and amyloidosis
 - Evaluation of the clotting and/or bleeding patient

Evaluation: In-training exam and staff attending evaluation.

2. Demonstrate the skills of an effective consultant in hematology/medical oncology.

Evaluation: RMS global rating form filled out by the attending staff. **One mini-CEX should be completed on each rotation.**

3. Incorporate practice based learning into daily patient care by reviewing the NCCN guidelines (at www.NCCN.com) on staging, treatment, and surveillance on at least 2 patients per week in clinic. Check patient's chart for adherence to recommendations and discuss rationale for deviation with the staff.

Evaluation: Global rating form filled out by the attending staff.

4. Maintain professional relationships with healthcare team, as a leader or member.

Evaluation: Global rating form filled out by the attending staff.

5. Maintain comprehensive, timely, legible, and appropriately detailed medical records as a consultant.

Evaluation: Staff will review of 2 consult notes to ensure all relevant diagnostic, AJCC staging, and treatment information is properly delineated.

6. Satisfactorily perform and interpret 2 bone marrow biopsies and aspirates incorporating the process of informed consent.
 - The first month on the rotation, the fellow will decide with the staff which tests to order on the bone marrow biopsies and aspirates.
 - The second month on the rotation, the fellow will make the initial decision on which tests to order and review with the staff.

The fellow will also review the slides with Dr. Jaffe and/or the hematopathologist to ensure adequacy of the biopsy and aspirate.

Evaluation: Staff acknowledgement of performed procedures and review of results of at least two of the bone marrow biopsies with the fellowship director at the year-end review. (Copies of the bone marrow biopsy reports should be maintained in the fellow's portfolio with all patient identifiers removed/blacked out.)

7. Demonstrate competence in the prescription and administration of chemotherapeutic and biologic agents through all therapeutic routes.
 - The first month on the rotation, the fellow should write at least 2 chemotherapy orders cooperatively with the staff.
 - The second month on the rotation, the fellow should write at least 2 chemotherapy orders independently and then review with the staff.

Evaluation: Staff acknowledgement of performed procedures.

Conferences:

Attendance is mandatory

- Multidisciplinary Cancer Conference: Held every Tuesday at 7:00 a.m
- Pathology Review Conference: Every Wednesday at 7:00 a.m
- Bone Marrow Clinic: Held every Thursday, 9:30 – noon.

Attendance is Optional

- Multidisciplinary Hospice/Palliative Care Rounds: Held every Wednesday at 1 p.m.
- Daily Internal Medicine Core Curriculum lectures: Held at noon.
- Medicine Grand Rounds: Alternates with Morbidity & Mortality conference. Held Wednesdays at noon.
- Morbidity & Mortality: Alternates with Medicine Grand Rounds. Held Wednesdays at noon.
- Neuro-Oncology: third Friday of each month.
- Urologic Oncology: third Wednesday of each month.

Reading List:

Gammopathies:

- Rajkumar SV, Dispenzieri A, Kyle RA. Monoclonal gammopathy of undetermined significance, Waldenstrom macroglobulinemia, AL amyloidosis, and related plasma cell disorders: diagnosis and treatment. Mayo Clinic Proceeding. 2006;81(5):693-703.
- Rajkumar SV, Kyle RA. Multiple myeloma: diagnosis and treatment. Mayo Clinic Proceedings 2005;80(10):1371-1382.
- Kyle RA et al. Clinical course and prognosis of smoldering (asymptomatic) multiple myeloma. N Eng J Med. 2007;356:2582-2590.
- Lachmann HJ et al. Natural history and outcome in systematic AA amyloidosis. N Eng J Med. 2007;356:2361-2371.
- Kyle RA et al. American Society of Clinical Oncology 2007 clinical practice guideline update on the role of bisphosphonates in multiple myeloma. J Clin Oncol.2007;25:1-10.

Anemia:

- Tefferi A. Anemia in adults: a contemporary approach to diagnosis. Mayo Clinic Proceedings 2003;78(10):1274-1280. With flow diagrams published Mayo clinic Proceedings 2004;79(7):955-956.
- Weiss G, Goodnough LT. Anemia of chronic disease. NEJM 2005;352(10):1011-1023.

- Gerhs BC, Friedberg RC. Autoimmune hemolytic anemia. *Am J Hematol* 2002;69(4):258-271.

Thrombocytopenia

- Cines DB, Bussel JB. How I treat idiopathic thrombocytopenic purpura. *Blood* 2005;106(7):2244-2251.
- Alving BM. How I treat heparin-induced thrombocytopenia and thrombosis. *Blood* 2003;101(1):31-37.
- George JN. Thrombotic thrombocytopenic purpura. *NEJM* 2006;354(18):1927-1935.
- Drachman JG. Inherited thrombocytopenia: when a low platelet count does not mean ITP. *Blood* 2004;103(2):390-398.

Breast cancer

- Gene expression and benefit of chemotherapy in women with node-negative, estrogen receptor-positive breast cancer. Paik et al. *JCO* 2006;24(23):3726.
- Tamoxifen and chemotherapy for axillary node-negative, estrogen receptor-negative breast cancer: findings from National Surgical Adjuvant Breast and Bowel Project B-23. Fisher et al. *JCO* 2001;19(4):931.
- Randomized trial of dose-dense versus conventionally scheduled and sequential versus concurrent combination chemotherapy as postoperative adjuvant treatment of node-positive primary breast cancer: first report of Intergroup Trial C9741/Cancer and Leukemia Group B Trial 9741. Citron et al. *JCO* 2003;21(8):1431.
- Paclitaxel after doxorubicin plus cyclophosphamide as adjuvant chemotherapy for node-positive breast cancer: results from NSABP B-28. Mamounas et al. *JCO* 2005;23(16):3686.
- Trastuzumab plus adjuvant chemotherapy for operable HER2-positive breast cancer. Romond et al. *NEJM* 2005;353(16):1673.
- Trastuzumab after Adjuvant Chemotherapy in HER2-positive breast cancer. Piccart-Gebhart et al. *NEJM* 2005;353(16):1659.
- Results of the ATAC (Arimidex, Tamoxifen, Alone or in combination) trial after completion of 5 years' adjuvant treatment for breast cancer. Howell et al. *Lancet* 2005;365(9453):60.

Regions Hospital Consults and Clinic Educational Objectives at Each Educational Level in the Context of the ACGME Core Competencies

	Educational Level	
Competency	PGY 4 (First year fellow)	PGY 5/6 (Second/third year fellow)
Patient Care	<ul style="list-style-type: none"> • Satisfactorily perform and interpret 2 bone marrow biopsies and aspirates incorporating the process of informed consent • Understand test results in the context of a patient's diagnosis and treatment plans. • Begin to understand how to prescribe and administer chemotherapeutic and biologic agents through all therapeutic routes for patients with hematology and oncologic disorders. Write orders with staff supervision. • Document the planning and coordination of follow-up care • Maintain comprehensive, timely, legible, and appropriately detailed medical records. 	<ul style="list-style-type: none"> • Demonstrate competence in the performance and interpretation of 2 bone marrow biopsies and aspirates incorporating the process of informed consent • Demonstrate competence in the prescription and administration of chemotherapeutic and biologic agents through all therapeutic routes for patients with hematology and oncologic disorders. Independently write orders for co-signing by staff. • Demonstrate ability to participate in a multidisciplinary team in the effective delivery of health care, and to be a team leader when the situation is appropriate to do so. • Maintain comprehensive, timely, legible, and appropriately detailed medical records.
Medical Knowledge	<ul style="list-style-type: none"> • Gain an understanding of the diagnosis and management of patients with benign hematologic, malignant hematologic and solid tumor disorders with focus on breast cancer, renal cell carcinoma, the evaluation of anemia, thrombocytopenia, and hemostasis/thrombosis issues. 	<ul style="list-style-type: none"> • Demonstrate expertise in the diagnosis and management of patients with benign hematologic, malignant hematologic and solid tumor disorders with focus on breast cancer, renal cell carcinoma, the evaluation of anemia, thrombocytopenia, and hemostasis/thrombosis issues.

<p>Practice Based Learning and Improvement</p>	<ul style="list-style-type: none"> ● Present cases at patient care conferences with assistance of faculty attending, and lead the discussion. ● Identify challenges to completion of plan of care ● Incorporate practice based learning into daily patient care by reviewing the NCCN guidelines on staging, treatment, and surveillance on at least 2 patients per week in clinic. Check patient's chart for adherence to recommendations and discuss rationale for deviation with the staff. 	<ul style="list-style-type: none"> ● Present cases at patient care conferences with minimal assistance by faculty attending, and incorporate new knowledge into one's practice. ● Identify challenges to completion of plan of care and how to surmount them ● Independently incorporate practice based learning into daily patient care by incorporating the NCCN guidelines on staging, treatment, and surveillance on all patients. Check patient's chart for adherence to recommendations.
<p>Interpersonal and Communication Skills</p>	<ul style="list-style-type: none"> ● Triage night and weekend phone calls with faculty assistance on the majority of calls. ● Understand differences in the communication skills needed for direct care, consultative opinion, and consultative management ● Identify responsibility for execution of plan/follow-up ● Maintain an appropriate therapeutic relationship with patient and family ● Formulate plan to bring multiple disciplines into agreement with the proposed plan and communicate the plan 	<ul style="list-style-type: none"> ● Effectively triage night and weekend patient phone calls providing medically sound and compassionate advice with minimal faculty input. ● Demonstrate expertise in communication skills for providing direct care, consultative opinion, and consultative management ● Identify responsibility for execution of plan/follow-up and ascertain that the plan is carried out to completion ● Maintain an appropriate therapeutic relationship with patient and family ● Formulate plan to bring multiple disciplines into agreement with the proposed plan and communicate the plan, then ascertain that plan is completed.
<p>Professionalism</p>	<ul style="list-style-type: none"> ● Demonstrate ability to interact with all members of health care team, patients, and family members ● Demonstrate sensitivity to patient and families' culture, age, and disabilities 	<ul style="list-style-type: none"> ● Demonstrate competence in all interactions with all members of health care team, patients, and family members ● Demonstrate sensitivity to patient and families' culture, age, and disabilities, and teach others

Systems-Based Practice	<ul style="list-style-type: none"> • Demonstrate understanding of health care resources in the Regions Hospital setting and begin to identify areas for improvement • Demonstrate an understanding of allocation of resources that does not compromise quality of care. 	<ul style="list-style-type: none"> • Demonstrate expertise in utilization of health care resources in the Regions Hospital setting and identify at least one area for improvement • Lead the development of a system wide plan for individual patients that does not compromise quality of care.
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Veterans Administration Medical Center (VAMC) Consults

<u>Location:</u>	VAMC, Minneapolis, MN
<u>Duration:</u>	1 month
<u>Staff:</u>	The service is staffed with one staff attending and one fellow
<u>Call:</u>	Fellows will take 1 st call during the week. On weekends, the fellow will have one day off and 1 st call will be taken by the attending Hematology/Oncology staff physician.
<u>Faculty:</u>	Dr. Tom Downs, Dr. Pankaj Gupta, Dr. Gerhard Johnson, Dr. Fatima Khan, Dr. Mark Klein, Dr. Sharon Luikart, Dr. Evan Mariash, Dr. Neil Patel, Dr. Carol Weitz

Contacts:

Sharon Luikart MD
Chief, Section of Hem/Onc
(W) 612-725-2000 x 4135
(P) 612-818-7794
(H) 651-642-1835

Evan Mariash MD
VA Fellowship Site Director
(W) 612-725-2000 x 4132
(P) 612-818-7334
(H) 651-330-2367

General Description:

The mission of this clinical service is to promote optimal care of patients with hematologic and oncologic problems, to provide an opportunity for resident and fellow education in patient management, and to conduct clinical research. The clinical rotation describes the umbrella of services for patients cared for by the Hematology/Medical Oncology service within the VAMC. Clinical services include the Hematology/Oncology in-patient Red Service, consult service, and ambulatory Hematology/Oncology clinic.

Fellow Responsibilities and Lines of Responsibilities within the Team:

Note: Also Refer to Faculty Supervision and Graded Responsibility, page 24, Fellowship Curriculum

The Red Service provides inpatient care for patients receiving routine chemotherapies who are otherwise medically stable. During the week, the NP/PA cares for these patients with the staff. On weekends, the fellow is responsible for providing care for these patients with the attending staff. The Hematology/Oncology consult service provides an interdisciplinary consult role at the VAMC.

The Hematology/Oncology consult team consists of an attending Hematology/Oncology staff physician, a Hematology/Oncology fellow, and at times a medical resident and/or medical student.

The consult team will implement therapy, monitor the patient's response, suggest corrective measures if problems arise, and facilitate discharge planning. The Hematology/Oncology service will provide comprehensive care to their patients, including chemotherapy,

monitoring blood products, symptomatic care, and timely referral for other problems. The fellow is responsible for assuring that all consultations are seen and staffed in a timely manner.

The fellow will present patient cases and actively participate in attending rounds. The fellow should complete a comprehensive history/physical examination, develop a basic plan of care, and present the case to the team in attending rounds. The fellow will participate in interdisciplinary team discussions for patient care (including services such as Radiation Oncology and Surgery)

VAMC: Educational Objectives and Evaluations

Upon completion of this rotation the fellow will be able to:

1. Demonstrate expertise in the diagnosis and management of patients with benign hematologic, malignant hematologic and solid tumor disorders with a focus on:
 - Lung cancer
 - Prostate cancer
 - Other solid tumors
 - Myelodysplastic syndrome
 - Other hematologic malignancies such as AML, lymphoma

Evaluation: Global rating by staff attending.

2. Know and apply the principles of effective Hematology/Oncology consultation:
 - Appropriate therapeutic relationship with patient and family
 - Understand differences in direct care, consultative opinion, and consultative management
 - Identify responsibility for execution of plan/follow-up
 - Complete a comprehensive Hematology/Oncology assessment of each patient including an appropriate documentation of diagnosis and staging as designated by the American Joint Committee on Cancer (AJCC) and develop a plan for management
 - Understand the process and function of interdisciplinary collaborative roles provided by other services such as Radiation Oncology and Surgery

Evaluation: Random patient charts will be assessed by the staff attending as to whether the fellow's consult notes appropriately identify the patient's diagnosis, AJCC stage of disease, and intended treatment plan. This assessment will be reflected in the E*value global rating. **One mini-CEX must be completed during each monthly rotation at the VAMC.**

Objectives for the Second Clinical Rotation (Fellows returning for an additional clinical rotation at VAMC) include the goals above plus:

1. Act as an overseer and teacher for both medical students and residents rotating through the Hematology/Oncology service.

- The fellow will hold one "chalk-talk" per week for the students/residents
- The fellow will provide an article on a relevant patient care problem for at least one patient/week seen by the team

Evaluation: Informal feedback by team members to the staff attending will be used for the global assessment.

2. Understand the role of clinical research trials in patient care and the process of informed consent for participation in research trials.

- Understand structure and function of current clinical cooperative research trial groups
- Identify current clinical research trials available for patients
- Coordinate patient participation in such clinical research trials

Evaluation: Random patient charts will be assessed as to whether the fellow's proposed treatment plan appropriately addresses the availability of current clinical research trials.

3. Complete a comprehensive history/ physical and develop a comprehensive and interdisciplinary plan of care prior to discussion with the attending Hematology/Oncology staff physician

- Evaluate consistency of current plan of care with prognosis
- Identify reasonable challenges to completion of plan of care
- Formulate plan to bring multiple disciplines in to agreement with the proposed plan
- Understand costs of health care in America for Hematology/Oncology medical conditions

Evaluation: Random patient charts will be assessed as to whether the proposed treatment plan is in keeping with the patient's prognosis and whether documentation exists of past discussions with other specialty services and their future role in the treatment plan.

4. Coordinate an interdisciplinary treatment plan for the Hematology/Oncology patient with a terminal illness

- Understand current therapeutic limits and when supportive care and hospice referral is most appropriate

Evaluation: Global rating by staff attending.

5. Demonstrate professionalism in the care of patients from different cultures, elderly patients, and patients with disabilities.

Evaluation: Global rating by staff attending based on direct observation of the fellow's interactions with patients and their families.

360 Evaluation(s): (Please note, we require a 360 rotation evaluation for each rotation) Please discuss this with your attending to identify the appropriate nursing or PA staff to identify.

VAMC Conferences:

Attendance is Mandatory:

- Patient Care Conference: Every other Thursday Monday in 3V-164 from 1-2 p.m.
- Hematopathology Conference: Held every other Thursday at pathology department from 1-2 p.m. (Subject to change. Please see your rotation attending for final schedule when starting your rotation).

Attendance is Strongly Encouraged:

- Tumor boards: (See your attending or Jillian Sully for the specific location in the VA).
 - Thoracic conference: Every Friday 8-9 a.m. (1H-123)
 - Head/neck conference: Every Wednesday 11 a.m.-12 p.m. (1H-123)
 - Genitourinary conference: 3rd Thursday of each month 7:15 a.m.-8:15 a.m. (Urology Clinic)
 - Gastrointestinal conference: Every Tuesday 2-3 p.m. (1H-123)
 - Liver tumor board: Alternate Wednesdays 8-9 a.m. (1H-123)
 - Breast Conference: 4th Monday of each month 12 -1 p.m.
- Oncology Workgroup: New chemotherapy regimens are discussed in a multidisciplinary format for incorporation into Intellidose, our computerized chemotherapy ordering system. Held every Thursday 2.30-3.30 p.m. in 3V-164.

Attendance is Optional

- Medicine Grand Rounds: Held every Friday 12-1 p.m.
- Morbidity & Mortality: Every Wednesday from 12-1 p.m.
- Research Conference: Every Thursday from 12-1 p.m.
- Core Lectures for residents: Held every Monday and Tuesday from 12-1 p.m

VAMC Educational Objectives in the Context of the ACGME Core Competencies:

Patient Care

- Documentation of diagnosis, staging studies, clinical stage (using AJCC staging), and intended treatment plan in consult
- Formulate and document reasonable prognosis
- Documentation of the planning and coordination of follow-up care

Medical Knowledge

- Demonstrate that management plan for the patient is appropriate for both the diagnosis and stage of disease
- Awareness of established NCCN Oncology guidelines for patient's disease and stage

- Identify appropriate clinical research trials that are available

Practice-Based Learning and Improvement

- Evaluate consistency of current plan of care with prognosis
- Identify reasonable challenges to completion of plan of care
- Formulate plan to bring multiple disciplines in to agreement with the proposed plan

Interpersonal and Communication Skills

- Appropriate therapeutic relationship with patient and family
- Understand differences in direct care, consultative opinion, and consultative management
- Identify responsibility for execution of plan/follow-up

Professionalism

- Sensitivity to patient and families' culture, age, and disabilities

Systems-Based Practice

- Understand costs of health care in America for Hematology/Oncology medical conditions
- Understand structure and function of current clinical cooperative research trial groups

Reading List and References:

Texts:

- Cancer Principles and Practice of Oncology, Vincent T. DeVita, Jr., Samuel Hellman, and Steven A. Rosenberg. Lippincott, Williams & Wilkins, Philadelphia, PA.
- Wintrobe's Clinical Hematology, John P. Greer, John Foerster, John N. Lukens, George
- M. Rodgers, Frixos Paraskevas, and Bertil Glader. Lippincott, Williams & Wilkins, Philadelphia, PA.
- AJCC Cancer Staging Manual, Frederick L. Greene, David L. Page, Irvin D. Fleming, April G. Fritz, Charles M. Balch, Daniel G. Haller, and Monica Morrow. Springer-Verlag, New York, NY.

Reviews and journal articles:

It is suggested that by the end of the 2nd month of rotations at the VA, nearly all of the following journal articles will have been read by the rotating fellows. This is not a comprehensive list and only highlights papers you should be familiar with. Your own literature searching will continue to be of paramount importance.

Please see VA Oncology Ambulatory-Outpatient Elective rotation description for complementary bibliography. We recommend that you start with these articles and move to that list when you finish this list.

Prostate Cancer

1. Petrylak, D.P. et al. Docetaxel and estramsustine compared with mitoxantrone and prednisone for advanced refractory prostate cancer. *NEJM* 2004;351:1513-20.
2. Tannock, I.F. et al. Docetaxel plus prednisone or mitoxantrone plus prednisone for advanced prostate cancer. *NEJM* 2004;351:1502-12.
3. Scher, H.I. and Sawyers, C.L. Biology of progressive, castration-resistant prostate cancer: directed therapies targeting the androgen-receptor signaling axis. *Journal of Clinical Oncology* 2005;23:8253-61.
4. Small, E.J. et al. Antiandrogen withdrawal alone or in combination with ketoconazole in androgen-independent prostate cancer patients: a phase III trial (CALGB 9583). *Journal of Clinical Oncology* 2004;22:1025-33.

Bladder Cancer

1. Garcia, J.A. and Dreicer, R. Systemic Chemotherapy for advanced bladder cancer: update and controversies. *Journal of Clinical Oncology* 2006;24:5545-51.
2. von der Maase, H. et al. Gemcitabine and cisplatin versus methotrexate, vinblastine, doxorubicin, and cisplatin in advanced or metastatic bladder cancer: results of a large, randomized, multinational, multicenter, phase III study. *Journal of Clinical Oncology* 2000;17:3068-77.
3. Grossman, H.B. et al. Chemotherapy plus cystectomy compared with Cystectomy alone for locally advanced bladder cancer. *NEJM* 2003;349:859-66.

Renal Cell Carcinoma

1. Yang, J.C. et al. A Randomized trial of bevacizumab, an anti-vascular endothelial growth factor antibody, for metastatic renal cancer. *NEJM* 2003;349:427-34.
2. Flanigan et al. Nephrectomy followed by interferon alfa-2b compared with interferon alfa-2b alone for metastatic renal-cell cancer. *NEJM* 2001;345:1655-9.
3. Escudier, B. et al. Sorafenib in advanced clear-cell renal-cell Carcinoma. *NEJM* 2007;356:125-34.
4. Motzer, R.J. et al. Sunitinib versus interferon alfa in metastatic renal-cell carcinoma. *NEJM* 2007;356:115-24.
5. Hudes, G. et al. Temsirolimus, interferon alfa or both for advanced renal-cell carcinoma. *NEJM* 2007;356:2271-81.
6. Motzer, R.J. Efficacy of everolimus in advanced renal cell carcinoma: a double-blind, randomized, placebo-controlled phase III trial. *Lancet* 2008;372:449-56.
7. Rini, B.I. et al. Phase III trial of bevacizumab plus interferon alfa versus interferon alfa monotherapy in patients with metastatic renal cell carcinoma: final results of CALGB 90206. *Journal of Clinical Oncology* 2010;28:2137-43.
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Small cell lung cancer

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Head/neck cancer

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Supportive Care and Miscellaneous

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2. Rizzo, J.D. et al. Use of epoetin and darbepoetin in patients with cancer: 2007 American Society of Hematology/American Society of Clinical Oncology clinical practice guideline update. *Blood* 111:25-41.
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1. Kantarjian, H. et al. Results of intensive chemotherapy in 998 patients age 65 years or older with acute myeloid leukemia or high risk myelodysplastic syndrome. *Cancer* 2006;106:1090-1098.
2. Farag, S.S. Pretreatment cytogenetics add to other prognostic factors predicting complete remission and long-term outcome in patients 60 years of age or older with acute myeloid leukemia; results from Cancer and Leukemia Group B 8461. *Blood* 2006;108:63-73.
3. Greenberg, P. et al. International scoring system for evaluating prognosis in myelodysplastic syndromes. *Blood* 1997;89:2079-2088.

4. Kantarjian, H. et al. Decitabine improves patient outcomes in myelodysplastic syndromes: results of a phase III randomized study. *Cancer* 2006;106:1794-803.
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Other Hematologic Malignancies

1. Crespo, M. et al. ZAP-70 expression as a surrogate for immunoglobulin-variable-region mutations in chronic lymphocytic leukemia. *NEJM* 2003;348:1764-1775.
2. Rai, K.R. et al. Fludarabine compared with chlorambucil as primary therapy for chronic lymphocytic leukemia. *NEJM* 2000;343:1750-1757.
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5. Keating, M.J. et al. Early results of a chemoimmunotherapy regimen of fludarabine, cyclophosphamide, and rituximab as initial therapy for chronic lymphocytic leukemia. *JCO* 2005;23:4079-88.
6. Wierda, W. Chemoimmunotherapy with fludarabine, cyclophosphamide, and rituximab for relapsed and refractory chronic lymphocytic leukemia. *JCO* 2005;23:4070-78.
7. Hillmen, P. et al. Alemtuzumab compared with chlorambucil as first-line therapy for chronic lymphocytic leukemia. *JCO* 2007;25:5616-23.
8. Hiddeman, W. et al. Treatment strategies in follicular lymphomas: current status and future perspectives. *JCO* 2005;23:6394-9.
9. Peterson, B.A. et al. Prolonged single-agent versus combination chemotherapy in indolent follicular lymphomas: a study of the cancer and leukemia group B. *JCO* 2003;21:5-15.
10. Schulz, H. et al. Immunochemotherapy with rituximab and overall survival in patients with indolent or mantle cell lymphoma: a systematic review and meta-analysis. *Journal of the National Cancer Institute* 2007;99:706-14.
11. Czuczman, M.S. et al. Rituximab in combination with fludarabine chemotherapy in low-grade or follicular lymphoma. *JCO* 2005;23:694-704.
12. Knauf, W.U. et al. Phase III randomized study of bendamustine compared with chlorambucil in previously untreated patients with chronic lymphocytic leukemia. *JCO* 2009;27:4378-84.

Gastrointestinal Malignancies (focus on Colon)

1. Andre, T. et al. Oxaliplatin, fluorouracil, and leucovorin as adjuvant treatment for colon cancer. NEJM 2004;350:2343-2351.
2. Hurwitz, et al. Bevacizumab plus irinotecan, fluorouracil, and leucovorin for metastatic colorectal cancer. NEJM 2004;350:2335-2342.
3. Goldbert, R.M. et al. Randomized controlled trial of reduced-dose bolus fluorouracil plus leucovorin and irinotecan or infused fluorouracil plus leucovorin and oxaliplatin in patients with previously untreated metastatic colorectal cancer: a North American Intergroup Trial. JCO 2006;24:3347-3353.
4. Cunningham, D. et al. Cetuximab monotherapy and cetuximab plus irinotecan in irinotecan-refractory metastatic colorectal cancer. NEJM 2004;351:337-345.

VAMC Consults and Clinic Educational Objectives at Each Educational Level in the Context of the ACGME Core Competencies

	Educational Level	
Competency	PGY 4 (First year fellow)	PGY 5/6 (Second/third year fellow)
Patient Care	<ul style="list-style-type: none"> • Document diagnosis, staging studies, clinical stage (using AJCC staging), and intended treatment plan in consult note or clinic note. • Understand test results within the context of a patient's diagnosis and treatment plans. • Formulate and document reasonable prognosis • Document the planning and coordination of follow-up care • Maintain comprehensive, timely, legible, and appropriately detailed medical records. 	<ul style="list-style-type: none"> • Demonstrate competence in the prescription and administration of chemotherapeutic and biologic agents through all therapeutic routes for patients with solid tumors. • Demonstrate ability to participate in a multidisciplinary team in the effective delivery of health care. • Maintain comprehensive, timely, legible, and appropriately detailed medical records.
Medical Knowledge	<ul style="list-style-type: none"> • Gain an understanding of the structure and function of cooperative groups in cancer research • Become aware of established NCCN 	<ul style="list-style-type: none"> • For each patient, determine is there is a clinical trial available for which the patient is eligible • Be able to articulate the NCCN Oncology guidelines

	Oncology guidelines for patient's disease and stage	for patient's disease and stage, and teach others
Practice Based Learning and Improvement	<ul style="list-style-type: none"> • Present cases at patient care conferences with assistance of faculty attending, and lead the discussion. • Identify challenges to completion of plan of care 	<ul style="list-style-type: none"> • Present cases at patient care conferences with minimal assistance by faculty attending, and incorporate new knowledge into one's practice. • Identify challenges to completion of plan of care and how to surmount them
<i>Interpersonal and Communication Skills</i>	<ul style="list-style-type: none"> • <i>Triage night and weekend phone calls with faculty assistance on the majority of calls.</i> • <i>Understand differences in the communication skills needed for direct care, consultative opinion, and consultative management</i> • <i>Identify responsibility for execution of plan/follow-up</i> • <i>Maintain an appropriate therapeutic relationship with patient and family</i> • <i>Formulate plan to bring multiple disciplines into agreement with the proposed plan and communicate the plan</i> 	<ul style="list-style-type: none"> • <i>Effectively triage night and weekend patient phone calls providing medically sound and compassionate advice with minimal faculty input.</i> • <i>Demonstrate expertise in communication skills for providing direct care, consultative opinion, and consultative management</i> • <i>Identify responsibility for execution of plan/follow-up and ascertain that the plan is carried out to completion</i> • <i>Maintain an appropriate therapeutic relationship with patient and family</i> • <i>Formulate plan to bring multiple disciplines into agreement with the proposed plan and communicate the plan, then ascertain that plan is completed.</i>

Professionalism	<ul style="list-style-type: none"> • Demonstrate ability to interact with all members of health care team, patients, and family members • Demonstrate sensitivity to patient and families' culture, age, and disabilities 	<ul style="list-style-type: none"> • Demonstrate competence in all interactions with all members of health care team, patients, and family members • Demonstrate sensitivity to patient and families' culture, age, and disabilities, and teach others
Systems-Based Practice	<ul style="list-style-type: none"> • Demonstrate understanding of health care resources in the VAMC setting and begin to identify areas for improvement • Formulate plan to bring multiple disciplines into agreement with the proposed plan 	<ul style="list-style-type: none"> • Demonstrate expertise in utilization of health care resources in the VAMC setting and identify at least one area for improvement • Formulate plan to bring multiple disciplines into agreement with the proposed plan and ascertain that plan is completed.

Evaluation(s): (Please note, we require a 360 rotation evaluation for each rotation)

Hematopathology

<u>Location:</u>	University of Minnesota Medical Center, Special Hematology Laboratory, second floor Mayo (D219)
<u>Duration:</u>	One month
<u>Staff:</u>	Robert McKenna, M.D., Director; Elizabeth Courville, MD, Sophia Yohe, MD, Bartosz Grzywacz, MD, Michael Linden, MD, PhD, Vanessa Dayton, MD, and Sarah Williams, MD
<u>Call:</u>	There is no call responsibility.

NOTE: This rotation is mandatory – i.e., all fellows must complete this rotation during fellowship training. NO VACATION may be taken during this rotation.

General Description:

HOT residents will rotate on the Hematopathology service. Conference attendance is mandatory. In the beginning of the rotation, the trainee will review didactic material to learn how to approach the morphologic interpretation of peripheral blood smears. Within the first week they will preview peripheral blood smears, write up the cases, and review them with the faculty. Once competent, the trainee will then at the end of Week 1 or early Week 2 begin to review one bone marrow per day in addition to 1 – 3 blood smears daily. All cases will be previewed and written up by the HOT fellow. There is ample supervision from the two Hematopathology Fellows present, Sue Crisman (a medical technologist with considerable expertise), as well as all faculty members. As the HOT fellows are trained to obtain bone marrow biopsies as part of their clinical service training, this is not emphasized while rotating on the Hematopathology service.

Hematopathology Service Educational Objectives at Each Educational Level in the Context of the ACGME Core Competencies

Competency	Educational Level: PGY 4/5/6
Patient Care	<ul style="list-style-type: none">• Prepare a draft consultative report• Identify key elements of laboratory data in the health

	<p>care record</p> <ul style="list-style-type: none"> • Accurately interprets morphologic data
Medical Knowledge	<ul style="list-style-type: none"> • Understand the principles of automated cell counting and potential problems associated with such • Interpret blood smears, bone marrow aspirates, touch preparations and bone marrow biopsies and all special stains • Understand the various pathophysiologic mechanisms for developing anemia
Practice Based Learning and Improvement	<ul style="list-style-type: none"> • Utilize and applies basic hematopathology textbook knowledge • Utilize online literature databases to improve medical knowledge base and aid in decision making • Acknowledge and takes responsibility for errors when recognized
Interpersonal and Communication Skills	<ul style="list-style-type: none"> • Prepare a preliminary written hematopathology report that is coherent and corrected for typographical errors • Understand the role of the pathologist within a clinical team • Prepare and presents cases at multidisciplinary conferences
Professionalism	<ul style="list-style-type: none"> • Demonstrate ability to interact with all members of the health care team, including pathology trainees and medical technologists • Observe patient confidentiality • Exhibit truthfulness to all members of the health care team
Systems-Based Practice	<ul style="list-style-type: none"> • Consistently checks identity and integrity of specimens (microscopic slides) • Identify key elements of ordering practices • Follow patient safety policies and accreditation requirements

Evaluation: RMS global rating by designated Hematopathology faculty member (reflects group/consensus opinion which is discussed with the trainee in person at the end of the rotation).

Fellow is to obtain a 360 evaluation from a member of the hematopathology team.

Conferences – Attendance is Mandatory:

- Heme Malignancy conference (Monday, 2nd and 4th), 4:15 pm in D175 Mayo
- Daily morning case conference rounds – M, T, Th, F at 0800; W 0915 during academic year and 0800 during summer (when Grand Rounds is not in session), D219
- LM&P Grand Rounds, W 0800 during academic year, 450 CCRB
- Tuesday and Thursday morning Hematopathology lectures and review of unknown cases, 0900, D219

References:

- WHO Classification of Tumours Pathology and Genetics of Tumours of Haematopoietic and Lymphoid Tissues IARC Press, 2008 (very helpful to have own copy)
- Hematopathology CD review program on computer
- Hematopathology; Jaffe, Harris, Varidman, Campo, Arber; Saunders/Elsevier, 2011 (available in the residents area for use on site)

Blood Banking and Transfusion Medicine

Location: University of Minnesota Medical Center, Fairview Blood Bank and Apheresis Center; Fellow’s Office, Rm D-242 Mayo Memorial Bldg, 420 Delaware St. SE; On first day, report to D-251 Mayo Memorial Bldg at 8:30am and meet Ms. Bobbie Gibson

Duration: A 4-week training experience – It must be scheduled prior to start of academic year

Faculty: Dave McKenna Jr./Bobbie Gibson

Blood Banking and Transfusion Medicine Educational Objectives in the Context of the ACGME Core Competencies

Competency	Educational Level: PGY 5/6
Patient Care	<ul style="list-style-type: none"> • Provide effective consultation in the inpatient and outpatient setting
Medical Knowledge	<ul style="list-style-type: none"> • Understand concepts related to blood typing and compatibility • Understand the appropriate use of blood component therapy • Understand how to detect and evaluate for red cell and platelet antibodies • Understand when and how to investigate suspected transfusion reactions • Understand use of apheresis technology for a variety of applications, including therapeutic plasma exchange, cytopheresis, stem cell collections, and photopheresis • Understand concepts of stem cell processing and

	<p>storage</p> <ul style="list-style-type: none"> • Understand concepts of HLA typing
Practice Based Learning and Improvement	<ul style="list-style-type: none"> • Present cases and use the discussion to update one's own knowledge base and care of patients. • Incorporate new knowledge to improving patient care. • Incorporate practice based learning into daily patient care by sharing at least 2 articles per week that relate to current patient cases
Interpersonal and Communication Skills	<ul style="list-style-type: none"> • Demonstrate the ability to effectively communicate with the patient's primary care providers in all care settings. Communication should include a discussion of the indications for the testing/procedure, findings, and implications for patient care.
Professionalism	<ul style="list-style-type: none"> • Demonstrate ability to interact with all members of the primary health care team, patients, and family members as a consultant providing recommendations for diagnostic and management purposes. • Maintain professional relationships with healthcare team as a team member.
Systems-Based Practice	<ul style="list-style-type: none"> • Demonstrate expertise in using health-care system resources to provide optimal patient care.

Evaluation: Global rating by faculty based upon review by Transfusion Medicine Faculty working with the fellow during the rotation. A short presentation (approximately 30 minutes) at the Transfusion Medicine Breakfast Meeting is required and will be included in the evaluation. Attendance will be a factor in evaluation as well.

Required Meetings/Conferences: Rotating fellows will attend the following:

- Clinical Pathology Conference: Tues 12-1 P.M. (weekly)
- Transfusion Medicine Lecture Series: Tues 1-2 P.M. (weekly)
- Lab Medicine & Pathology Grand Rounds (when relevant): Wed 8-9 AM (weekly)
- Immunohematology Conference: Wed 3-4 P.M. (bi-monthly)
- Transfusion Medicine Journal Club: Wed 3-4 P.M. (bi-monthly and rotates with Immunohematology Conference)
- Transfusion Medicine Breakfast Meeting: Thurs 8:15-9:45 (weekly)
- Special Coagulation Laboratory sign-out: time varies (daily) – Transfusion Medicine activities take precedence over this activity
- Special Coagulation lecture: Wed 10-12 (weekly)
- Scheduled meetings for orientation to apheresis center, cell therapy lab, etc.

Partial Suggested Reading List:

- Guidelines for Transfusion Therapy 6th Edition – Fairview Laboratory Services

- Practical Guide to Transfusion Medicine – CD-ROM, 2001, AABB Press.
(*Recommend reviewing this during 1st week and last week of rotation)
- G Moroff, NL Luban. The irradiation of blood and blood components to reduce graft-versus-host disease: technical issues and guidelines (Review). *Transfuse Med Rev* 1997; 11:15-26.
- E Greeno, J McCullough, and D Weisdorf. Platelet utilization and the transfusion trigger: a prospective analysis. *Transfusion* 2007;47:201-205.
- Z Szczepiorkowski, N Bandarenko, HC Kim, et al. Guidelines on the Use of Therapeutic Apheresis in Clinical Practice—Evidence-Based Approach from the Apheresis Applications Committee of the American Society for Apheresis. *J. Clin. Apheresis* 2010; 25:83-177.
- M Klein, D Kadidlo, J McCullough, et al. Microbial contamination of hematopoietic stem cell products: incidence and clinical sequelae. *Biology of Blood and Marrow Transplantation* 2006; 12:1142-1149.
- D McKenna and M Clay. Hematopoietic stem cell processing and storage. In: Murphy M and Pamphilon D, editors. *Practical transfusion medicine*. 3rd ed., Oxford, UK, Blackwell Publishing Ltd..
- B Thyagarajan, M Berger, D Sumstad, and D McKenna. Loss of integrity of umbilical cord blood unit freezing bags: description and consequences. *Transfusion* 2008; 48(6): 1138-1142.
- Klein J and Sato A. The HLA System (Parts I and II). *NEJM* 2000 (9/7/00 and 9/14/00); 702-709 and 782-786.
- N Kamani, S Spellman, C Katovich Hurley, et al. State of the Art Review: HLA Matching and Outcome of Unrelated Donor Umbilical Cord Blood Transplants. *Biology of Blood and Marrow Transplantation* 2009; 14:1-6.
- SJ Lee, J Klein, M Haagenson, et al. High-resolution donor-recipient HLA matching contributes to the success of unrelated donor marrow transplantation. *Blood* 2007;110:4576-4583.
- RR Vassallo. New paradigms in the management of alloimmune refractoriness to platelet transfusions. *Curr Opin Hematol* 2007;14:655–663.
- J McCullough. *Transfusion Medicine*. 3rd edition. Elsevier Inc., 2012.

Additional reading suggestions may be found on the ASH Hematology Reading List (http://www.hematology.org/education/training/reading/59_transfusion.cfm), and rotating fellows are encouraged to search the literature for current transfusion medicine articles that may be of interest to them.

Continuity Clinic

Location: Site-specific

Duration: 6 months

Staff: Various

Call: none defined

General Description: Each fellow must attend one, one-half day, continuity clinic throughout the fellowship training period. Continuity clinics must be a minimum of six months in length per ACGME guidelines. Continuity clinics will be assigned to all first year fellows. Henceforth, fellows will request continuity clinics each spring during the development of their career development plan.

For those senior fellows desiring more ambulatory clinical training experiences, additional one-half day clinics may be requested and the time frame can be from one – twelve months in length (i.e., as long as one clinic is attended for six months, additional clinics can be any duration). Approval for additional clinic assignments must be obtained from Dr. McClune and the continuity clinic faculty member in order to ascertain adequate numbers of patients and adequate time for teaching.

Fellows should strive to see a mixture of new patients and follow-up patients, and when completing return to clinic documents ascertain that, whenever possible, that the patient will return to clinic on the date the fellow is in clinic. The fellow is responsible for following up on any outstanding test results from a patient visit and discussing them with the faculty and patient as appropriate.

Fellow Responsibilities and Lines of Responsibilities:

Note: Also Refer to Faculty Supervision and Graded Responsibility, page 20 Fellowship Curriculum

Fellows should see their patients independently, then review all cases with the faculty attending physician who is overall responsible for the patient's care. The care plan will be developed mutually, but per Graded Responsibility requirements, by the third fellowship year, fellows should be developing care plans independently with minimal input by faculty. **The fellow is responsible for following up on all outstanding test results from a patient visit and discussing them with the faculty and patient as appropriate.**

Educational Objectives:

During the first fellowship year, fellows should develop a general understanding of the variety of malignant and non-malignant hematologic and oncologic diseases that patients have who are cared for by hematologists and oncologists. Fellows should begin to develop an understanding of the criteria for diagnosis, staging and management of heme/onc patients, and with the staff, begin to understand how to develop and implement a management plan. Fellows should also recognize when patients require transition from the outpatient to the inpatient setting for care.

During the second year, fellows are expected to have broadened their medical knowledge base to the point of beginning to independently develop diagnostic and treatment plans for their patients, and begin to lead all discussions of diagnosis, prognosis and management of patients. The fellow should monitor their own practice, and employ improvement measures and resources within the health care system to improve and optimize their practice.

By the third year, fellows should be acting independently in all aspects of care of their continuity clinic patients with minimal staff oversight. By the conclusion of training, fellows must have reached a level of proficiency to be competent to care for heme/onc patients.

1. Demonstrate the skills of an effective consultant in hematology/medical oncology.

Evaluation: Global rating form filled out by the attending staff.

2. Demonstrate the skills of an effective practitioner of hematology/medical oncology in providing specialized care to a panel of patients.

Evaluation: Global rating form filled out by the attending staff.

3. Apply knowledge of health systems to use resources in providing optimal patient care.

Evaluation: Global rating form filled out by the attending staff.

4. Incorporate practice based learning into daily patient care.

Evaluation: Global rating form filled out by the attending staff.

5. Demonstrate competence in the prescription and administration of chemotherapeutic and biologic agents through all therapeutic routes.

Evaluation: Global rating form filled out by the attending staff; all chemotherapy orders are to be written by the fellow, reviewed and co-signed by the attending staff and a listing of these orders printed out and turned into the fellowship office or logged into RMS.

6. Maintain professional relationships with healthcare team, as a leader or member relationships with healthcare team, as a leader or member.

Evaluation: Global rating form filled out by the attending staff.

In addition to the RMS global rating, one mini-CEX must be completed every month on a new or follow-up patient. All fellows must also obtain one 360 degree evaluation.

Educational Objectives in the Context of ACGME Core Competencies

	Educational Level		
Competency	PGY 4 (First year)	PGY 5 (Second year)	PGY 6 (Third year)
Patient Care	<ul style="list-style-type: none"> Jointly with staff develop plan for diagnosis, staging, 	<ul style="list-style-type: none"> Independently, with staff confirmation, develop plan for 	<ul style="list-style-type: none"> Independently, with selective staff confirmation, develop

	<p>treatment and follow-up of all patients</p> <ul style="list-style-type: none"> Jointly with staff, make decisions on when a patient requires hospitalization 	<p>diagnosis, staging, treatment and follow-up of all patients</p> <ul style="list-style-type: none"> Independently with staff confirmation, make decisions on when a patient requires hospitalization 	<p>plan for diagnosis, staging, treatment and follow-up of all patients.</p> <ul style="list-style-type: none"> Independently, with selective staff confirmation, make decision on admitting a patient to the hospital, and manage all transitions of care between the outpatient and inpatient setting.
Medical Knowledge	<ul style="list-style-type: none"> Develop a general understanding of the variety of malignant and non-malignant hematologic and oncologic diseases that patients have who are cared for by hematologists and oncologists. 	<ul style="list-style-type: none"> Demonstrate, with staff input, expertise in the diagnosis and care of patients with a variety of malignant and non-malignant hematologic and oncologic diseases in the ambulatory setting 	<ul style="list-style-type: none"> Demonstrate expertise, independent from staff input, in the diagnosis and care of patients with a variety of malignant and non-malignant hematologic and oncologic diseases in the ambulatory setting
Practice Based Learning and Improvement	<ul style="list-style-type: none"> Learn to utilize all learning resources to improve patient care in the ambulatory setting for patients with a variety of malignant and non-malignant hematologic and oncologic diseases Participate in QOPI and contribute to discussions 	<ul style="list-style-type: none"> On at least two patients/week, bring reference material to clinic to share with staff and discuss how the knowledge impacts patient care Participate in QOPI and lead discussions; lead at least one project during the second/third years of fellowship 	<ul style="list-style-type: none"> Demonstrate, independent from staff, a commitment to assess the literature, review one's own practice, and implement improvements in one's own practice on an ongoing basis. Participate in QOPI and lead discussions; lead at least one project during the second/third years of fellowship
Interpersonal and Communication Skills	<ul style="list-style-type: none"> Communicate effectively with all clinic staff, care providers, patients and families After discussion with staff, lead patient discussions 	<ul style="list-style-type: none"> Communicate effectively with all clinic staff, care providers, patients and families Independently, with staff oversight, lead patient discussions 	<ul style="list-style-type: none"> Communicate effectively with all clinic staff, care providers, patients and families Independently, with staff oversight, lead patient discussions

	about diagnosis, prognosis and care	about diagnosis, prognosis and care .	about diagnosis, prognosis and care .
Professionalism	<ul style="list-style-type: none"> • Demonstrate ability to interact with all members of health care team, patients, and family members • Demonstrate sensitivity to patient and families' culture, age, and disabilities 	<ul style="list-style-type: none"> • Demonstrate ability to interact with all members of health care team, patients, and family members • Demonstrate sensitivity to patient and families' culture, age, and disabilities 	<ul style="list-style-type: none"> • Demonstrate ability to interact with all members of health care team, patients, and family members • Demonstrate sensitivity to patient and families' culture, age, and disabilities
Systems-Based Practice	<ul style="list-style-type: none"> • Develop an understanding of health care systems and the impact on delivery of care in the ambulatory setting, as well as when transitions of care are required 	<ul style="list-style-type: none"> • Identify one issue that is complicating the delivery of outstanding ambulatory care 	<ul style="list-style-type: none"> • Identify one issue that is complicating the delivery of outstanding ambulatory care and implement plan for improvement

Fellow Role on Rotation: To act as the supervising physician for patients normally followed by their clinic preceptor, to set forth diagnostic and treatment plans for a variety of outpatients, and to assist in the timely notification of patients with results from labs, diagnostic imaging and pathology results.

Team Responsibilities: Expectations are that fellows will evaluate out patients in both the new and follow-up setting in a timely and manner. Fellows are required to precept patient care plans with their clinic preceptor in order to provide evidence-based oncologic and hematologic care.

Conferences: Fellows are expected to attend regularly scheduled Divisional Conferences in addition to didactic times set aside by Continuity Clinic Preceptors.

Reading List: In development; for now access <http://university.asco.org/e-learning/cancer-topics/36> with your ASCO membership and begin modules.

Blood Banking and Transfusion Medicine

- Location: University of Minnesota Medical Center, Fairview Blood Bank and Apheresis Center; Fellow’s Office, Rm D-242 Mayo Memorial Bldg, 420 Delaware St. SE; On first day, report to D-251 Mayo Memorial Bldg at 8:30am and meet Ms. Bobbie Gibson
- Duration: A 4-week training experience – It must be scheduled prior to start of academic year
- Faculty: Dr. Andrew Johnson; Dr. David McKenna

Blood Banking and Transfusion Medicine Educational Objectives in the Context of the ACGME Core Competencies

Competency	Educational Level: PGY 5/6
Patient Care	<ul style="list-style-type: none"> • Provide effective consultation in the inpatient and outpatient setting
Medical Knowledge	<ul style="list-style-type: none"> • Understand concepts related to blood typing and compatibility • Understand the appropriate use of blood component therapy • Understand how to detect and evaluate for red cell and platelet antibodies • Understand when and how to investigate suspected transfusion reactions • Understand use of apheresis technology for a variety of applications, including therapeutic plasma exchange, cytophoresis, stem cell collections, and photophereis • Understand concepts of stem cell processing and storage • Understand concepts of HLA typing
Practice Based Learning and Improvement	<ul style="list-style-type: none"> • Present cases and use the discussion to update one’s own knowledge base and care of patients. • Incorporate new knowledge to improving patient care. • Incorporate practice based learning into daily patient care by sharing at least 2 articles per week that relate to current patient cases
Interpersonal and Communication Skills	<ul style="list-style-type: none"> • Demonstrate the ability to effectively communicate with the patient’s primary care providers in all care settings. Communication should include a discussion of the indications for the testing/procedure, findings, and implications for patient care.

Professionalism	<ul style="list-style-type: none"> • Demonstrate ability to interact with all members of the primary health care team, patients, and family members as a consultant providing recommendations for diagnostic and management purposes. • Maintain professional relationships with healthcare team as a team member.
Systems-Based Practice	<ul style="list-style-type: none"> • Demonstrate expertise in using health-care system resources to provide optimal patient care.

Evaluation: New Innovations rating by faculty based upon review by Transfusion Medicine Faculty working with the fellow during the rotation. A short presentation (approximately 30 minutes) at the Transfusion Medicine Breakfast Meeting is required and will be included in the evaluation. Attendance will be a factor in evaluation as well.

Required Meetings/Conferences: Rotating fellows will attend the following:

- Clinical Pathology Conference: Tues 12-1 P.M. (weekly)
- Transfusion Medicine Lecture Series: Tues 1-2 P.M. (weekly)
- Lab Medicine & Pathology Grand Rounds (when relevant): Wed 8-9 AM (weekly)
- Immunohematology Conference: Wed 3-4 P.M. (bi-monthly)
- Transfusion Medicine Breakfast Meeting: Thurs 8:15-9:45 (weekly)
- Special Coagulation Laboratory sign-out: time varies (daily) – Transfusion Medicine activities take precedence over this activity
- Special Coagulation lecture: Wed 10-12 (weekly)
- Scheduled meetings for orientation to apheresis center, cell therapy lab, etc.

Partial Suggested Reading List:

- Guidelines for Transfusion Therapy 6th Edition – Fairview Laboratory Services
- Practical Guide to Transfusion Medicine – CD-ROM, 2001, AABB Press. (*Recommend reviewing this during 1st week and last week of rotation)
- G Moroff, NL Luban. The irradiation of blood and blood components to reduce graft-versus-host disease: technical issues and guidelines (Review). *Transfuse Med Rev* 1997; 11:15-26.
- E Greeno, J McCullough, and D Weisdorf. Platelet utilization and the transfusion trigger: a prospective analysis. *Transfusion* 2007;47:201-205.
- J Schwartz, JL Winters, et al. Guidelines on the Use of Therapeutic Apheresis in Clinical Practice-Evidence-based Approach from the Writing Committee of the ASFA: The 6th Special Issue. *J. Clin. Apheresis*. 2013; 28: 145-284.
- M Klein, D Kadidlo, J McCullough, et al. Microbial contamination of hematopoietic stem cell products: incidence and clinical sequelae. *Biology of Blood and Marrow Transplantation* 2006; 12:1142-1149.
- D McKenna and M Clay. Hematopoietic stem cell processing and storage. In: Murphy M and Pamphilon D, editors. *Practical transfusion medicine*. 3rd ed., Oxford, UK, Blackwell Publishing Ltd..

- B Thyagarajan, M Berger, D Sumstad, and D McKenna. Loss of integrity of umbilical cord blood unit freezing bags: description and consequences. *Transfusion* 2008; 48(6): 1138-1142.
- Klein J and Sato A. The HLA System (Parts I and II). *NEJM* 2000 (9/7/00 and 9/14/00); 702-709 and 782-786.
- N Kamani, S Spellman, C Katovich Hurley, et al. State of the Art Review: HLA Matching and Outcome of Unrelated Donor Umbilical Cord Blood Transplants. *Biology of Blood and Marrow Transplantation* 2009; 14:1-6.
- SJ Lee, J Klein, M Haagensohn, et al. High-resolution donor-recipient HLA matching contributes to the success of unrelated donor marrow transplantation. *Blood* 2007;110:4576-4583.
- RR Vassallo. New paradigms in the management of alloimmune refractoriness to platelet transfusions. *Curr Opin Hematol* 2007;14:655–663.
- J McCullough. *Transfusion Medicine*. 3rd edition. Elsevier Inc., 2012.

Additional reading suggestions may be found on the ASH Hematology Reading List (http://www.hematology.org/education/training/reading/59_transfusion.cfm), and rotating fellows are encouraged to search the literature for current transfusion medicine articles that may be of interest to them.

Blood and Marrow Transplant (BMT) Clinic

- Location: UMMC Bone Marrow Transplant Clinic, 5th floor PWB
(Phone: 626-2663, FAX: 626-2664)
- Duration: A two to four week training experience
- Staff: The assigned adult BMT faculty member (“Doc of the Month”), plus all adult BMT faculty
- Call: There is no call responsibility
- Schedule: For those fellows desiring additional experience in the clinical care of recipients of stem cell transplants, a 2-4 week elective in the outpatient BMT clinic may be scheduled. Fellows rotating on the inpatient BMT service are welcome to attend the outpatient clinic during their rotation as time allows.

General Description:

This is a 2-4 week experience in the outpatient BMT clinic. The clinic serves adult BMT recipients and donors. The fellow will participate in new patient consultations, donor evaluations, observe apheresis and bone marrow harvests, and perform bone marrow aspirations and biopsies and lumbar punctures. Fellows will be expected to work with home care agencies, pharmacies, nurse practitioners, physician assistants, nurses, nursing assistants, social workers and referring physicians in a coordinated effort to provide optimal patient care. The fellows will work on a daily basis with the Doctor of the Month assigned to the clinic, plus work with each adult BMT faculty attending in individual continuity clinics.

BMT Clinic Educational Objectives in the Context of the ACGME Core Competencies

Competency	Educational Level: PGY 4/5/6
Patient Care	<ul style="list-style-type: none">• Provide effective consultation in the outpatient setting• Evaluate and counsel a new patient for autologous or allogeneic transplantation with staff oversight• Evaluate potential donors for peripheral blood or bone marrow stem cell harvesting with staff oversight• Manage, with staff oversight, a variety of allogeneic and autologous post-transplant issues and complications including infections, blood product transfusion, management and care of indwelling venous access catheters, graft-versus-host disease
Medical Knowledge	<ul style="list-style-type: none">• Understand the procedure and risks of apheresis and bone marrow harvests• Understand the indications for transplantation for a variety of non-malignant and malignant conditions,

	<p>and the risks and potential benefits to the patient</p> <ul style="list-style-type: none"> • Understand the nonmalignant late effects that can occur following transplantation, and appropriate counsel patients • Understand the late infectious complications of transplant, and how to diagnose and treat them (including herpetic viral infections and fungal infections) • Understand the diagnostic criteria for chronic GVHD, and how to treat the disease • Gain an understanding of novel therapeutic trials for patients undergoing transplant • Understand indications for and risks of donor lymphocyte infusions
Practice Based Learning and Improvement	<ul style="list-style-type: none"> • Present cases and use the discussion to update one's own knowledge base and care of patients. • Incorporate new knowledge to improving patient care. • Incorporate practice based learning into daily patient care by sharing at least 2 articles per week that relate to current patient cases
Interpersonal and Communication Skills	<ul style="list-style-type: none"> • Demonstrate the ability to effectively communicate with the patient's primary care providers at time of initial consultation and during follow-up care. • Demonstrate ability to interact with all members of the health care team, and with home care agencies • Demonstrate ability to communicate effectively with patients and families by leading care meetings • Establish effective communication between the outpatient and inpatient transplant services
Professionalism	<ul style="list-style-type: none"> • Demonstrate ability to interact with all members of the health care team, patients, and family members as a consultant and post-transplant care provider • Maintain professional relationships with healthcare team as a team member
Systems-Based Practice	<ul style="list-style-type: none"> • Demonstrate expertise in using health-care system resources to provide optimal patient care.

Evaluation: Global rating by faculty.

Conferences:

Attendance is mandatory

- BMT conference, Monday 1:15 - 2:15, CCRB 450.

- BMT/Heme Malignancy Conference; Monday 3:30-4:30, 14-109 PWB
- Hematologic Malignancy Pathology Conference Monday 4:15 p.m. (every 2nd and 4th Mondays) Bell Institute of Pathology.
- Divisional Clinical Conference

Reading List:

History of HCT

- Applebaum FR. Hematopoietic-cell transplantation at 50. *N Engl Med* 2007;357:1472.
- Lazarus HM et al. High dose melphalan and the development of hematopoietic stem-cell transplantation: 25 years later. *J Clin Oncol.* 2008;26:2240-2243.

GVHD

- Couriel D et al. Ancillary therapy and supportive care of chronic graft-versus-host disease: national institutes of health consensus development project on criteria for clinical trials in chronic Graft-versus-host disease: V. Ancillary Therapy and Supportive Care Working Group Report. *Biol Blood Marrow Transplant.* 2006;12:375-96.
- Lee SJ, Vogelsang G, Flowers MED. Chronic Graft-versus-host disease. *Biol Blood Marrow Transplant.* 2003; 9:215-233.

HLA matching

- Hurley CK, Baxter Lowe LA, Logan B, Karanes C, Anasetti C, Weisdorf D, Confer DL. National Marrow Donor Program HLA-matching guidelines for unrelated marrow transplants. *Biol Blood Marrow Transplant.* 2003; 9:610-5.

Decision Analysis

- Cutler CS, Lee SJ, Greenberg P et al. A decision analysis of allogeneic bone marrow transplantation for the myelodysplastic syndromes: delayed transplantation for low-risk myelodysplasia is associated with improved outcomes. *Blood.* 2004;104:579-585.
- Malcovati L, Porta MGD, Pascutto C et al. Prognostic factors and life expectancy in myelodysplastic syndromes classified according to the WHO criteria: A basis for clinical decision making. *J Clin Oncol* 2005;23:7594-7603.
- Sorror M L et a. Hematopoietic cell transplantation (HCT)-specific comorbidity index: a new tool for risk assessment before allogeneic HCT. *Blood.* 2005;106:2912-2919.

Late Effects and Screening Guidelines

- Majhail NS, Rizzo JD, Lee SJ, Aljurf M, Atsuta Y, Bonfim C, Burns LJ, Chaudhri N, Davies S, Okamoto S, Seber A, Socie G, Szer J, Van Lint MT, Wingard JR, Tichelli A; Center for International Blood and Marrow Transplant Research (CIBMTR); American Society for Blood and Marrow Transplantation (ASBMT); European Group for Blood and Marrow Transplantation (EBMT); Asia-Pacific Blood and Marrow Transplantation Group (APBMT); Bone Marrow Transplant Society of Australia and New Zealand (BMTSANZ); East Mediterranean Blood and

Marrow Transplantation Group (EMBT); Sociedade Brasileira de Transplante de Medula Ossea (SBTMO). Recommended screening and preventive practices for long-term survivors after hematopoietic cell transplantation. *Bone Marrow Transplant* 47:337-41, 2012.

- Baker KS et al. New malignancies after blood or marrow stem-cell transplantation in children and adults: incidence and risk factors. *J Clin Oncol.* 2003. 21:1352-8.
- Tomblyn M, Chiller T, Einsele H, Gress R, Sepkowitz K, Storek j, Wingard JR, Young J-A H, Boeckh MA. Guidelines for preventing infectious complications among hematopoietic cell transplantation recipients: A global perspective. *Biol Blood Marrow Transplant* 15:1143-1238, 2009.

Cell Processing

- Location: UMMC Cell Processing Laboratory, MCT Facility, 1900 Fitch Ave., St. Paul, MN 55108 (Saint Paul Campus)
- Duration: A two week training experience
- Faculty: David McKenna, M.D. rotation director
Phone 612-624-5736, Pager 899-7375

General Description:

The rotation will include formal lectures, observation of processing within the clinical lab, and time for directed reading and discussion. Small, focused projects may be identified for fellows indicating an interest.

During the rotation, the fellow is welcome (but not required) to join the following Transfusion Medicine Conferences:

- Clinical Pathology Conference: Tues 12-1 P.M. (weekly)
- Transfusion Medicine Lecture Series: Tues 1-2 P.M. (weekly)
- Lab Medicine/Pathology Grand Rounds (when relevant): Wed 8-9 A.M. (weekly)
- Immunohematology Conference: Wed 3-4 P.M. (bi-monthly)
- Transfusion Medicine Breakfast Meeting: Thurs 815-945 (weekly)

Cell Processing Educational Objectives in the Context of the ACGME Core Competencies

Competency	Educational Level: PGY 5/6
Medical Knowledge	<ul style="list-style-type: none">• Understand the various methods of routine (e.g., volume reduction, red cell depletion, thawing) and advanced (e.g., cell selection by immuno-magnetic selection or counterflow centrifugal elutriation) cell processing with a focus on processing and storage of hematopoietic progenitor/stem cells from marrow, peripheral blood, and umbilical cord blood• Understand quality control in a clinical cell processing laboratory including cell enumeration (e.g., nucleated cells, CD34+ cells, others), viability (e.g. microscopy- and flow cytometry- based), functional evaluation (e.g., CFU-GM), and detection of microbial contamination (e.g., sterility, endotoxin)• Develop basic knowledge of the regulatory aspects of routine and advanced clinical cell processing, including the role of the Food and Drug Administration and professional organizations (e.g., AABB, FACT)

Practice Based Learning and Improvement	<ul style="list-style-type: none"> • Incorporate new knowledge to improving patient care.
Interpersonal and Communication Skills	<ul style="list-style-type: none"> • Demonstrate the ability to effectively communicate with all members of the cell processing facility
Professionalism	<ul style="list-style-type: none"> • Demonstrate ability to interact at a professional level with all members of the cell processing laboratory

Evaluation: The fellow will be evaluated by Dr. McKenna primarily through discussion of reading, lectures, and observed laboratory activities. Global rating will be completed by Dr. McKenna.

Cell Processing Partial Reading List:

General:

- McKenna D and Clay M. Hematopoietic stem cell processing and storage. In: Murphy M and Pamphilon D, editors. Practical transfusion medicine. 2nd ed., Oxford, UK, Blackwell Publishing Ltd., 2005. (3rd edition in press)
- McKenna D, Kadidlo D, Miller J, Orchard P, Wagner J, McCullough J. The Minnesota Molecular & Cellular Therapeutics Facility: a state-of-the-art biotherapeutics engineering laboratory. *Transfusion Medicine Reviews* 2005; 19(3): 217-228.

Quality Assurance/Quality Control:

- McCullough J. Quality assurance and good manufacturing practices for processing hematopoietic progenitor cells. *Journal of Hematotherapy* (1995); 4: 493-501.
- HM Khuu, F Stock, M McGann, et al. Comparison of automated culture systems with a CFR/USP-compliant method for sterility testing of cell-therapy products. *Cytotherapy* 2004; 6 (3):183-195.
- Mascotti K, McCullough J, and Burger S. HPC viability measurement: trypan blue versus acridine orange and propidium iodide. *Transfusion* 2000;40:693-696.
- D Krause, MJ Fackler, CI Civin, and WS May. CD34: Structure, Biology, and Clinical Utility. *Blood* 1996; 87(1): 1-13.
- MA Owensa , HG Valla, AA Hurley, SB Wormsley. Validation and quality control of immunophenotyping in clinical flow cytometry. *Journal of Immunological Methods* 2000; 243: 33-50.

Regulatory:

- Several reviews, documents

Selected chapters from textbooks:

- Blume KG, and Forman SJ, Appelbaum FR, eds. *Thomas' Hematopoietic Cell Transplantation*. Oxford: Blackwell 2004.

- Snyder EL and Haley NR, Cellular Therapy: A Physician's Handbook, 1st edition. Bethesda, Maryland: AABB Press, 2004.
- Stem Cells and Regenerative Medicine, eds. Low W and Verfaillie C, World Scientific Publishing, 2008.

Additional reading dealing with QC testing and specific processing technologies will be assigned or made available to the fellow. Current literature discussing novel cell therapies (NK cells, T regulatory cells, mesenchymal stromal cells) may be included as well, depending upon specific interests of the fellow.

Gynecologic Oncology

- Location: Women's Health Clinic, PWB 1C
- Duration: A two to four-week rotation
- Staff: Melissa A. Geller, MD, MS., Rotation Director (Maple Grove/U) 612-899-7786, Peter Argenta, M.D. (Methodist/U), Linda Carson, M.D. (Methodist/U), Levi Downs, M.D. (U), Rahel Ghebre, M.D. (sabbatical), Sally Mullany, MD (Regions/U), Deanna Teoh, MD (Regions), Boris Winterhoff (U)
- Call: There is no call responsibility
- Orientation: Fellows should contact the Gyn Onc Fellow on call the week they start for information on the clinic schedule. Call page operator to find out Gyn Onc fellow on call.
- Fellows:
 - 3rd year fellow – Tanya Pulver (Pager 612-899-3650)
 - 2nd year fellow – Mihae Song (Pager 612-899-4744)
 - 1st year fellow – Locke Uppendahl (Pager 612-899-5705)

General Description:

The gynecologic oncology rotation is predominantly clinic based. Fellows will participate in clinic Monday through Friday 8 a.m. to 5 p.m. We encourage heme-onc fellows to participate in the care of the chemotherapy patients. The fellows are encouraged to come to the OR on at least one occasion. We feel it is very beneficial to see a new ovarian cancer cytoreductive surgery.

If research is desired in the Gynecologic Oncology field, many projects are available. Contact Dr. Melissa Geller, 612-899-7786

Gynecologic Oncology: Educational Objectives in the Context of the ACGME Core Competencies

Competency	Educational Level: PGY 5/6
Patient Care	<ul style="list-style-type: none"> • Counsel patients regarding screening guidelines for gynecologic health, risk factors and promote healthy behaviors • Become competent in the performance of screening and diagnostic pelvic examinations
Medical Knowledge	<ul style="list-style-type: none"> • Understand how to diagnose and manage patients with a wide variety of gynecologic cancers, including ovarian, endometrial, cervical, vaginal, and vulvar cancer in the outpatient setting

Practice Based Learning and Improvement	<ul style="list-style-type: none"> • Present cases and use the discussion to update one's own knowledge base and care of patients. • Incorporate new knowledge to improving patient care. • Incorporate practice based learning into daily patient care by sharing at least one article per week that relate to current patient cases
Interpersonal and Communication Skills	<ul style="list-style-type: none"> • Demonstrate ability to interact with all members of the health care team, patients and families
Professionalism	<ul style="list-style-type: none"> • Maintain professional relationships with healthcare team as a team member.
Systems-Based Practice	<ul style="list-style-type: none"> • Demonstrate expertise in using health-care system resources to provide optimal patient care.

Evaluation: Global rating by staff attending.

Conferences:

- Tumor Board: Every Wednesday during odd months/Every Thursday during even months, 7:00 a.m., Moos Tower 12th floor room 12-224. Rad Onc/Tumor Conference every two weeks from 7 – 7:30a.m. Education conferences every month. **Attendance is mandatory.**
- Gyn-Onc Fellow Didactics: *Attendance is strongly suggested.*

Reading List:

- *Clinical Gynecology Oncology, DiSaia (copies available on 7C)*

Genitourinary Malignancies

<u>Period:</u>	A two to four week training experience
<u>Location:</u>	University of Minnesota Medical Center for Prostate Cancer. Masonic Cancer Center. UMMC Oncology Clinic.
<u>Staff:</u>	Dr. Gautam Jha, Rotation Director (fellow contact, pager 612-899-9583)
<u>Call:</u>	There is no call responsibility

General Description:

The genitourinary malignancies rotation is predominantly clinic based. Fellows will participate in clinic Monday through Friday 8 a.m. to 5 p.m. Fellows are encouraged to come to the OR and observe surgical procedures performed by urologic surgeons and to observe simulation and planning for external beam radiation therapy and radiobrachytherapy treatments in the radiation therapy center.

Genitourinary Malignancies Educational Objectives

Upon completion of this elective, the fellow will gain:

- By the completion of this elective, the fellow should be able to understand the management of prostate, testicular, urothelial and kidney cancers
- Work with urologic surgeon and observe prostatectomies including robotic surgery.
- Work with a radiation oncologist and observer planning for EBRT and brachytherapy.

Prostate Cancer:

- Prevention
- Screening and early detection
- Diagnosis and staging
- Treatment
 - Early stage: choice between surgery vs. radiation vs. expectant management
 - Prostate cancer nomograms
 - Intermediate stage: to be familiar with neoadjuvant hormonal and EBRT
 - Salvage therapy post EBRT and surgery
 - Advanced stage:
 - Hormonal therapy and its controversies
 - Chemotherapy in hormone refractory prostate cancer
 - Novel therapies
 - PSA failure only and its kinetics: when and how to treat PSA failure?
 - Complications of treatments: surgery, EBRT and hormonal therapy
 - Palliative treatment of prostate cancer
 - Bone health and prostate cancer

Testicular Cancer:

- Classification and pathology
- Tumor markers and half lives
- Staging for testicular cancer
- Treatment
 - Seminoma
 - Early stage : surveillance vs. EBRT vs. adjuvant chemotherapy
 - Treatment for advanced stage
 - Non-seminomatous germ cell tumor
 - Early stage : node dissection (RPLND) vs. adjuvant chemotherapy vs. surveillance : be familiar with the new emerging evidence
 - Advanced stage and risk stratification
 - First line chemotherapy
 - Salvage chemotherapy
 - Autologous bone marrow transplant
 - Follow-up of long-term survivors

Urothelial and Kidney Cancer:

- Urothelial cancer
 - Etiology and various pathologies
 - Staging
 - Treatment of localized disease
 - Indications for radical surgery and the role of neoadjuvant therapy
 - Organ preservation approach
 - Indications for intravesical therapy
 - Management of metastatic disease: chemotherapy
- Kidney cancer
 - Pathology of kidney cancer
 - Staging and prognosis
 - Treatment
 - Surgery including nephron-sparing surgery and its indication
 - Treatment of advanced disease
 - Novel agents and kidney cancer

Genitourinary Malignancies: Educational Objectives in the Context of the ACGME Core Competencies

Competency	Educational Level: PGY 5/6
Patient Care	<ul style="list-style-type: none">• Counsel patients regarding screening guidelines for genitourinary health• Become competent in the performance of screening and diagnostic GU examinations

Medical Knowledge	<ul style="list-style-type: none"> • Understand how to diagnose and manage patients with a wide variety of GU cancers, including prostate, testicular, urothelial and renal malignancies • Understand the role of the radiation oncology in patient care; observe planning for EBRT and brachytherapy and understand indications, risks and benefits
Practice Based Learning and Improvement	<ul style="list-style-type: none"> • Present cases and use the discussion to update one's own knowledge base and care of patients. • Incorporate new knowledge to improving patient care. • Incorporate practice based learning into daily patient care by sharing at least one article per week that relate to current patient cases
Interpersonal and Communication Skills	<ul style="list-style-type: none"> • Demonstrate ability to interact with all members of the health care team, patients and families
Professionalism	<ul style="list-style-type: none"> • Maintain professional relationships with healthcare team as a team member.
Systems-Based Practice	<ul style="list-style-type: none"> • Demonstrate expertise in using health-care system resources to provide optimal patient care.

Evaluation: Global rating by staff attending

Conferences:

Urologic ISC Tumor Conference -- Every 2nd Tuesday, 7:00 am, B216 Mayo.
Attendance is strongly recommended.

Genitourinary Malignancies Suggested Reading:

Prostate Cancer:

- [Goodman PJ](#), [Thompson IM Jr](#), [Tangen CM](#), et al. The prostate cancer prevention trial: design, biases and interpretation of study results. [J Urol](#). Jun;175(6):2234-42, 2006.
- [Neill MG](#), [Fleshner NE](#). An update on chemoprevention strategies in prostate cancer for 2006. [Curr Opin Urol](#). May;16(3):132-7, 2006.
- [McLeod DG](#), Iversen P, See WA, et al: Bicalutamide 150 mg plus standard care vs standard care alone for early prostate cancer. [BJU Int](#). Feb;97(2):247-54. 2006.
- The entire issue of JCO has many excellent review articles about prostate cancer. [JCO](#). Volume 23, Issue 32, November 10, 2005.
- Sathya JR, Davis IR, Julian JA, et al: Randomized trial comparing iridium implant plus external-beam radiation therapy with external-beam radiation therapy alone in

- node-negative locally advanced cancer of the prostate. *J Clin Oncol.* 23:1192-1199, 2005.
- Stephenson AJ, Scardino PT, Eastham JA, et al: Defining biochemical recurrence of prostate cancer after radical prostatectomy: A proposal for a standardized definition. *J Urol.* 173:183, abstract 671, 2005.
 - Klotz L: Active surveillance with selective delayed intervention: Using natural history to guide treatment in good risk prostate cancer. *J Urol.* 172:S48-S50, 2004.
 - Thompson IM, Pauler DK, Goodman PJ, et al: Prevalence of prostate cancer among men with a prostate-specific antigen level $<$ or $=$ 4.0 ng per milliliter. *N Engl J Med.* 350:2239-2246, 2004.
 - D'Amico AV, Manola J, Loffredo M, et al: 6-month androgen suppression plus radiation therapy vs radiation therapy alone for patients with clinically localized prostate cancer: A randomized controlled trial. *JAMA.* 292:821-827, 2004.
 - Petrylak D, Tangen C, Hussain M, et al: Docetaxel and estramustine compared with mitoxantrone and prednisone for advanced refractory prostate cancer. *N Engl J Med.* 351:1513-1520, 2004.
 - Tannock IF, de Wit R, Berry W, et al: Docetaxel plus prednisone or mitoxantrone plus prednisone for advanced prostate cancer. *N Engl J Med.* 351:1488-1490, 2004.
 - Tunn UW, Kurek, R, Kienle E, et al. Intermittent is as effective as continuous androgen suppression in patients with PSA-relapse after radical prostatectomy. *J Urol.* 171:384, 2004. (abstr 1458)
 - Small EJ, Halabi S, Dawson NA, et al: Antiandrogen withdrawal alone or in combination with ketoconazole in androgen-independent prostate cancer patients: A phase III trial (CALGB 9583). *J Clin Oncol.* 22:1025-1033, 2004.
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- Bolla M, Collette L, Blank L, et al: Long-term results with immediate androgen suppression and external irradiation in patients with locally advanced prostate cancer (an EORTC study): A phase III randomised trial. *Lancet.* 360:103-106, 2002.
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Testicular Cancer:

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- Hinton S, Catalano PJ, Einhorn LH, et al. Cisplatin, etoposide and either bleomycin or ifosfamide in the treatment of disseminated germ cell tumors: final analysis of an intergroup trial. *Cancer.* 2003 Apr 15;97(8):1869-75, 2003.
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- Foster R, Bihle R. Current status of retroperitoneal lymph node dissection and testicular cancer: when to operate. *Cancer Control.* Jul-Aug;9(4):277-83, 2002. Review.

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- Spermon JR, Roeleveld TA, van der Poel HG, et al. Comparison of surveillance and retroperitoneal lymph node dissection in Stage I nonseminomatous germ cell tumors. *Urology* 59(6):923-9, 2002.
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- Michael H, Lucia J, Foster RS, et al. The pathology of late recurrence of testicular germ cell tumors. *Am J Surg Pathol*. 24:257-273, 2000.

Urothelial and Kidney Cancer:

- Motzer RJ, Escudier B, Oudard S, et al.; RECORD-1 Study Group (Dudek AZ). Efficacy of everolimus in advanced renal cell carcinoma: a double-blind, randomised, placebo-controlled phase III trial. *Lancet*. Aug 9;372(9637):449-56, 2008.
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- Escudier B, Eisen T, Stadler WM, et al.; TARGET Study Group. Sorafenib in advanced clear-cell renal-cell carcinoma. *N Engl J Med*. Jan 11;356(2):125-34, 2007.
- Motzer RJ, Hutson TE, Tomczak P, et al. Sunitinib versus interferon alfa in metastatic renal-cell carcinoma. *N Engl J Med*. 356(2):115-24. 1, 2007.
- [Atkins MB](#), [Avigan DE](#), [Bukowski RM](#) et al. Innovations and challenges in renal cancer: consensus statement from the first international conference. *Clin Cancer Res*. 10:6277S-81S, 2004. Review.
- Yang JC, Sherry RM, Steinberg SM, et al. Randomized study of high-dose and low-dose interleukin-2 in patients with metastatic renal cancer. *J Clin Oncol*. 21:3127-3132, 2003.
- Yang JC, Haworth L, Sherry RM, et al. A randomized trial of bevacizumab, an anti-vascular endothelial growth factor antibody, for metastatic renal cancer. *N Engl J Med*. 349:427-434, 2003.
- Barton Grossman H, Natale RB, Tangen CM, et al. Neoadjuvant chemotherapy plus cystectomy compared with cystectomy alone for locally advanced bladder cancer. [N Engl J Med](#). 349(9):859-66, 2003.
- Rodel C, Grabenbauer GC, Kuhn R, et al. Combined-modality treatment and selective organ preservation in invasive bladder cancer: long-term results. *J Clin Oncol*. 20(14):3061-71, 2002.
- Flanigan RC, Salmon SE, Blumenstein BA, et al. Nephrectomy followed by interferon alfa-2b compared with interferon alfa-2b alone for metastatic renal-cell cancer. [N Engl J Med](#). 345:1655-9, 2001.

- Von der Maase H, Hansen SW, Roberts JT, et al. Gemcitabine and cisplatin versus methotrexate, vinblastine, doxorubicin, and cisplatin in advanced or metastatic bladder cancer: results of a large, randomized, multinational, multicenter, phase III study. *J Clin Oncol.* 17:3068-77, 2000.
- Motzer RJ, Mazumder M, Bacik J, et al. Survival and prognostic stratification of 670 patients with advanced renal cell carcinoma. *J Clin Oncol.* 17:2530-40, 1999.
- Parkinson DR, Sznol M. High-dose interleukin-2 in the therapy of metastatic renal-cell carcinoma. *Semin Oncol.* 22:61-6, 1995. Review.
- Stodlen WM, Vogelzang NJ. Low-dose interleukin-2 in the treatment of metastatic renal-cell carcinoma. *Semin Oncol.* 22:67-73, 1995. Review.
- Rabinovitch RA, Zelefsky MJ, Gaynor JJ, et al. Patterns of failure following surgical resection of renal cell carcinoma: implications for adjuvant local and systemic therapy. *J Clin Oncol.* 12:206-12, 1994.

Head & Neck Cancer

- Locations: 1) Medical Oncology Clinic, UMMC (Monday, Wednesdays)
 2) Therapeutic Radiology Clinic, UMMC
 (Mondays, Tuesdays and Fridays for new patients. Wednesdays for follow ups. To be arranged with Dr. Reynolds)
 3) Surgical Oncology Clinic – 8th Floor, PWB, Clinic 8A
 (Tuesdays, 8 am to Noon)
- Duration: 2 weeks
- Staff: Dr. Gautam Jha, Rotation Director
 Therapeutic Radiology: Dr. Kathryn Dusenbery, rotation coordinator:
 Connie Blasing 612-626-2440
 Surgical Oncology: Frank Ondrey, MD, Bevan Yeuh, MD (for OR learning if interested) (contact Janel Richter, phone 612-625-9449)
- Call: No call responsibility.

General Description:

The fellow will be an active participant in the outpatient setting in the evaluation and multimodality treatment planning of head and neck cancer patients. They will become familiar in the acute and long term toxicities of treatment and with their management strategies. They are also encouraged to attend the OR and to observe surgical procedures of interest by the surgical oncologists (Bevan Yeuh, MD)

Head and Neck Cancer: Educational Objectives in the Context of the ACGME Core Competencies

Competency	Educational Level: PGY 5/6
Patient Care	<ul style="list-style-type: none"> • Become competent in the performance of screening and diagnostic head and neck examinations
Medical Knowledge	<ul style="list-style-type: none"> • Understand how to diagnose and manage patients with head and neck cancer • Understand the role of surgery, chemotherapy and radiation oncology in patient care; understand the risks and benefits of each treatment modality and multimodality therapy • Understand the acute and long term toxicities of treatment and their management strategies
Practice Based Learning and Improvement	<ul style="list-style-type: none"> • Present cases and use the discussion to update one's own knowledge base and care of patients. • Incorporate new knowledge to improving patient care. • Incorporate practice based learning into daily patient care by sharing at least one article per week that relate to current patient cases

Interpersonal and Communication Skills	<ul style="list-style-type: none"> • Demonstrate ability to interact with all members of the health care team, patients and families
Professionalism	<ul style="list-style-type: none"> • Maintain professional relationships with healthcare team as a team member.
Systems-Based Practice	<ul style="list-style-type: none"> • Demonstrate expertise in using health-care system resources to provide optimal patient care.

Evaluation: Global rating by faculty.

Conferences: Interdisciplinary conference held on Fridays from 11 am to 12 noon at PWB, 8-335.

References:

1. Multidisciplinary management of head and neck cancer by Ki Hong et al.
2. Marur, S and Forastiere, A.A. Head and Neck cancer: Changing Epidemiology, Diagnosis, and Treatment. Mayo Clinic Proceedings 2008;83:489-501.
3. Adelstein DJ, Li Y, Adams GL, Wagner H et al. An intergroup phase III comparison of standard radiation therapy and two schedules of concurrent chemoradiotherapy in patients with unresectable squamous cell head and neck cancer. J Clin Oncol 2003;21(1):92-97.
4. Pfister, D.G. et al. American Society of Clinical Oncology clinical practice guideline for the use of larynx-preservation strategies in the treatment of laryngeal cancer. Journal of Clinical Oncology 2006;24:3693-704.
5. Vermorken, J.B. et al. Cisplatin, fluorouracil and docetaxel in unresectable head and neck cancer. NEJM 2007;357:1695-704.
6. Posner, M.R. et al. Cisplatin and fluorouracil alone or with docetaxel in head and neck cancer. NEJM 2007;357:1705-15.
7. Bonner, J.A. et al. Radiotherapy plus cetuximab for squamous cell carcinoma of the head and neck. NEJM 2006; 354:567-79.

Hemostasis/Thrombosis and Immunophenotyping

Period: A four week training experience in hemostasis/thrombosis and immunophenotyping

Location: UMMC

Staff: Nicole Zantek MD, PhD; Yvonne Datta MD
Rotation Directors: hemostasis/thrombosis
Email: zant0005@umn.edu, datta009@umn.edu
Sophia Yohe, MD,
Rotation Directors: immunophenotyping
Email: yohe0001@umn.edu,

General Description:

This rotation will provide exposure to the diagnostic aspects of coagulation medicine and immunophenotyping/flow cytometry

1. Hemostasis/Thrombosis Educational Objective:

The fellow will be actively involved in the outpatient and inpatient (limited) clinical consultation activities of clinics related to hemostasis and thrombosis and in the laboratory investigation of clotting and bleeding disorders along with test interpretation. The fellow will attend the weekly Bleeding and Clotting Disorders meeting, when appropriate see admitted hemophilia patients, attend Bleeding and Coag clinics supervised by Drs. Morton, Redding and Datta and report to the clinical lab to observe and learn about tests used in coagulation investigations, how they are interpreted and participate in the weekly lab coagulation lecture series and Transfusion Medicine meetings.

At least once weekly, the fellow will prepare a case to present for Dr. Zantek regarding a coagulation case and more may be assigned by clinical faculty based on the demands of the rotation. The topic may be on anything related to hemostasis; however the case must include at least one reference from a journal article not included in the reading list. Examples of topics include:

- Laboratory studies – Hemostasis and thrombosis
- Venous thrombosis – Diagnosis and therapy
- Lupus inhibitors and antiphospholipid syndrome
- Heparin-induced thrombocytopenia/thrombosis – Diagnosis and management
- Thrombocytopenia – Immune and non-immune
- Qualitative platelet disorders
- Cerebral venous thrombosis
- Recombinant factor VIIa therapy for bleeding

Hemostasis/Thrombosis: Educational Objectives in the Context of the ACGME Core Competencies

Competency	Educational Level: PGY 4/5/6
Patient Care	<ul style="list-style-type: none"> • Provide expert consultative care to patients with hemostasis/thrombosis diseases.
Medical Knowledge	<ul style="list-style-type: none"> • Confidently approach clinical problems of bleeding and thrombosis with an enhanced understanding of the scientific basis for clinical decisions • Demonstrate ability to appropriately interpret tests of coagulation and bleeding to assist with diagnostic and treatment recommendations
Practice Based Learning and Improvement	<ul style="list-style-type: none"> • Present cases and use the discussion to update one's own knowledge base and care of patients. • Incorporate new knowledge to improving patient care. • Incorporate practice based learning into daily patient care by sharing at least one article per week that relate to current patient cases
Interpersonal and Communication Skills	<ul style="list-style-type: none"> • Demonstrate ability to interact with all members of the health care team, patients and families
Professionalism	<ul style="list-style-type: none"> • Maintain professional relationships with healthcare team as a team member.
Systems-Based Practice	<ul style="list-style-type: none"> • Demonstrate expertise in using health-care system resources to provide optimal patient care.

Evaluation: RMS global rating by staff attending

Required conference/clinic attendance:

Bleeding and Clotting Disorders Meeting, Mondays 10:30am-Noon, Mayo B-549.
Hemophilia Clinic with Dr. Redding, Mondays 12:30-completion, Masonic Clinic
Outpatient Clinic with Dr. Datta, Tuesdays 8:00am-1030am, Masonic Clinic
Coag Sign-out Rounds with Dr. Zantek, Daily with typical times on Monday
afternoon, Tuesday 10:30am-12:30pm, Wednesday 1:00-3:00pm, Thursday 10:15-
Noon, and Friday afternoon, D242 Mayo
Bleeding/Clotting Outpatient Clinic with Dr. Redding, Tuesdays 12:45pm-5:00pm,
Masonic
Lab Coagulation Lecture, Wednesdays 10:15am-Noon, D235 Mayo
Heme/Onc Wednesday Conference, Noon- 1:00pm, PWB 14-109
Transfusion Medicine Conference, Thursdays 8:30am-10am, Bridges Board Room,
8th Floor of the hospital, East Bank

Medicine Grand Rounds, Thursdays Noon-1pm, TBD weekly
Outpatient Clinic with Dr. Morton, Thursdays 1:00pm-5:00pm at Health-Partners
Riverside, 2220 Riverside Ave, 2nd Floor, 612.341.4800; email:
colleen.t.morton@healthpartners.com
Outpatient Clinic with Dr. Datta, Fridays 1:00-4:00pm, Masonic Clinic

Reading List- Special Coagulation Laboratory

Required reading:

- Khor B and Van Cott EM. Laboratory evaluation of hypercoagulability. Clin Lab Med 2009;29:339-366
- Kottke-Marchant L and Corcoran G. The laboratory diagnosis of platelet disorders. Arch Pathol Lab Med 2002;126:133-146
- National Heart, Lung, and Blood Institute. The diagnosis, evaluation, and management of von Willebrand disease. Bethesda, Md.: National Institutes of Health; December 2007. NIH publication no. 08-5832. <http://www.nhlbi.nih.gov/guidelines/vwd>.
- Ortel TL. Antiphospholipid syndrome: Laboratory testing and diagnostic strategies. Am J Hematol 2012 87:S75-S81.
- Tripodi A and Mannucci PM. The coagulopathy of chronic liver disease. N Engl J Med 2011;365:147056
- Practical-Haemostasis.com A practical guide to laboratory hemostasis at www.practical-haemostasis.com
- Laposata M. Coagulation disorders: Quality in laboratory diagnosis ©2011 Demos Medical Publishing

Suggested reading:

- Journal articles
 - Abbassi-Ghanavati M. Greer LG, and Cunningham FG. Pregnancy and laboratory studies: A reference table for clinicians. Obstet Gynecol 2009;114:1326-1331
 - Cesarman-Mau G and Hajjar KA. Molecular mechanisms of fibrinolysis. British Journal of Haematology 2005;129:307-321.
 - Hayward CPM et al. Congenital platelet disorders: Overview of their mechanisms, diagnostic evaluation and treatment. Haemophilia 2006;12:128-136

- Khor B and Van Cott EM. Laboratory tests for protein C deficiency. *Am J Hematol* 2010;85:440-442
- Kottke-Marchant K and Duncan A. Antithrombin deficiency: Issues in laboratory diagnosis. *Arch Pathol Lab Med* 2002;126:1326-1336
- Luddington RJ. Thromboelastography/thromboelastometry. *Clin Lab Hem* 2005;27:81-90
- Marlara RA and Gausman JN. Protein S abnormalities: A diagnostic nightmare. *Am J Hematol* 2011;86:418-421
- Miyakis S et al. International consensus statement of an update of the classification criteria for definite antiphospholipid syndrome. *J Thromb Haemost* 2006;4:295-306
- Van Cott EM, Laposata M, and Prins MH. Laboratory evaluation of hypercoagulability with venous or arterial thrombosis. *Arch Pathol Lab Med* 2002;126:1281-1295
- Suggested Books:
 - Kottke-Marchant K. An algorithmic approach to hemostasis testing. ©2008 College of American Pathologists (CAP)
 - Hathaway and Goodnight. Disorders of hemostasis and thrombosis: A clinical guide. ©2000 McGraw Hill Inc., New York.
 - Kitchen CS, Alving BM, and Kessler CM. Consultative Hemostasis and Thrombosis. ©2002 W.B. Saunders Co., USA
 - Kitchen S, McCraw A, and Echenagucia M. Diagnosis of haemophilia and other bleeding disorders: A laboratory manual. 2nd edition. ©2010. World Federation of Haemophilia (available from WFH web site – www.wfh.org)

2. Immunophenotyping and Flow Cytometry

This elective will run concurrently with the elective rotation in hemostasis/thrombosis. The flow cytometry rotation will offer the fellow the opportunity to learn the underlying concepts of flow cytometry, including basic instrument mechanics, principles of data acquisition, and the immunophenotypes of common hematologic malignancies. The fellow will have the opportunity to observe and participate in the analysis of peripheral blood, bone marrow, and various tissue samples. An overview of normal B and T lymphocyte development and immunophenotyping will be provided.

Following this background preparation, the fellow will begin to analyze flow cytometry teaching set and view recorded lectures. They will also assist in the triaging of panels by obtaining clinical history and become familiar with concepts and principles of

triaging. Fellows will watch the different types of processing and understand the workflow of a specimen received in the flow cytometry laboratory. .

Immunophenotyping and Flow Cytometry: Educational Objectives in the Context of the ACGME Core Competencies

Competency	Educational Level: PGY 4/5/6
Medical Knowledge	<ul style="list-style-type: none"> • Demonstrate attainment of a basic understanding of the instrument mechanics and principles of data acquisition • Demonstrate understanding of clinical cell surface antigen characterization (immunophenotyping) • Understand appropriate clinical settings in which flow cytometry can provide important and useful clinical information and the clinical settings in which flow cytometry is not contributory • Analyze data as presented by flow cytometry (including peripheral blood, bone marrow and tissue) in the diagnosis and characterization of hematologic and lymphoid neoplasias
Practice Based Learning and Improvement	<ul style="list-style-type: none"> • Incorporate new knowledge to improving patient care.
Interpersonal and Communication Skills	<ul style="list-style-type: none"> • Demonstrate ability to interact with all members of the facility
Professionalism	<ul style="list-style-type: none"> • Maintain professional relationships all members of the facility • Be self-motivated to watch the provided lectures and review training cases

Evaluation: RMS global rating by staff attending

Immunophenotyping Reading List:

- Davis BH, Foucar K, Szczarkowski W, Ball E, Witzig T, Foon KA, Wells D, Kotylo P, Johnson R, Hanson C, and Bessman D. U.S.-Canadian consensus recommendations on the immunophenotypic analysis of hematologic neoplasia by flow cytometry: medical indications. *Cytometry* 1997; 30:249-263.
- Jennings CDE and Foon KA. Recent advances in flow cytometry: application to the diagnosis of hematologic malignancy. *Blood* 1997; 90(8):2863-2892.
- Jennings CD and Foon KA. Flow cytometry: recent advances in diagnosis and monitoring of leukemia. *Cancer Invest* 1997; 15(4):384-399.
- Lamy T and Loughran TP. Large granular lymphocytic leukemia. *Cancer Control*; 5(1):25-33.

- Marti GE, Stetler-Stevenson M, Bleasing JJH, and Fleisher TA. Introduction to flow cytometry. *Semin Hematol* 2001; 38(2):93-99.
- Schmid I, Krall WJ, Uttenbogaart CH, Braun J, and Giorgi JV. Dead cell discrimination with 7-amino-actinomycin D in combination with dual color immunofluorescence in single laser flow cytometry. *Cytometry* 1992; 13:204-208.
- Stelzer GT, Shults KE, and Loken MR. CD45 gating for routine flow cytometric analysis of human bone marrow specimens. *Ann NY Acad Sci* 1993; 677:265-281.
- Stetler-Stevenson M and Braylan RC. Flow cytometric analysis of lymphomas and lymphoproliferative disorders. *Semin Hematol* 2001; 38(2):111-123.
- Weir EG and Borowitz MJ. Flow cytometry in the diagnosis of acute leukemia. *Semin Hematol* 2001; 38(2):124-138.

A. Masonic Cancer and Blood Disorders Clinic and Familial Cancer Clinic

Location: University of Minnesota Health, Hematology/Oncology Clinic
Duration: A two to four week training experience
Staff: Dr. Anne Blaes, primary, plus all Division of H.O.T. faculty – Contact Dr. Blaes at least one month prior to the start of your rotation to prepare an individualized plan for the rotation
 Mary Ahrens, MS, CGC – Cancer Risk Management Program
Call: There is no call responsibility
Schedule: Contact Dr. Blaes at least one month prior to the start of the rotation to arrange your schedule.
 Administrative Contact: Tracy Daye-Groves tmgroves@umn.edu

General Description:

Fellows desiring additional experience in the evaluation and outpatient management of benign hematologic, hematologic malignancies, and neoplastic disorders may elect to spend 2-4 weeks in the subspecialty outpatient clinics. This elective allows exposure to a wide variety of benign and malignant diseases, and involvement with enrolling patients onto clinical trials.

You may elect to focus on hematology (benign hematology/hematologic malignancies), oncology (hematologic malignancies/solid tumors), or both hematology and oncology during the rotation. You will also have the opportunity to work with Dr Carolyn Torkelson on benign breast disease and with members of the Cancer Risk Management Program to discuss aspects of genetic counseling and hereditary cancers.

It is the expectation of the rotation that the fellow will create his/her schedule one week ahead of time emailing the proposed schedule to Tracy Groves tmgroves@umn.edu the Wednesday prior to the rotation so it can be approved. 2 half days of reading are allowed. It is expected that during a 4 week block, the fellow on the rotation will spend at least ½ day with the cancer risk mgmt program (genetics) and with high risk breast clinic (Dr Torkelson).

Educational Objectives in the Context of ACGME Core Competencies

Competency	Education Level: PGY 4	Education Level: PGY 5/6
Patient Care	<ul style="list-style-type: none"> • Illustrate the ability to take a complete bleeding history • Illustrate the ability to take a complete clotting history • Illustrate the ability to effectively take a history and physical in an oncology patient 	<ul style="list-style-type: none"> • Demonstrate competency in the diagnosis and management of patients with a variety of hematologic disorders, including sickle cell anemia, hemophilia, vonWillebrand’s disease, thrombosis and coagulation

		<p>abnormalities, hematology malignancies</p> <ul style="list-style-type: none"> • Provide competent consultative and ambulatory care to all patients. At the PGY 5 level, input by faculty should be sought; at the PGY 6 level input should only be needed on selected cases.
<p>Medical Knowledge</p>	<ul style="list-style-type: none"> • Recognize the risk factors for the development of solid tumor malignancies • Identify signs/symptoms for bleeding and clotting disorders • Identify the presentation for hereditary cancer syndromes • Summarize oncology staging on all newly diagnosed solid tumor malignancies • Explain the general oncologic approach (staging, workup) for new hematologic and solid tumor malignancies • Interpret results of coagulation assays for both congenital and acquired disorder • Understand how to diagnose and manage all types of anemia • Understand the complexity of care required by sickle cell anemia patients 	<ul style="list-style-type: none"> • Demonstrate understanding of the diagnosis, pathology, staging and management of heme malignancies and neoplastic disorders • Provide counseling to promote healthy behaviors/modification of risk factors and increase patient compliance with preventive health behavior and treatment regimens • Understand potential late effects in survivors of cancer and recommendations for screening for late effects • Provide genetic counseling for patients with breast and colon cancer • Understand the unique issues involved in caring for the geriatric patient with cancer • Demonstrate understanding of the relevant chemotherapy protocols and combined modality therapy for neoplasia • Understand the components to implementation of palliative care • Understand the basics of clinical trial design and implementation • Understand the complexity of care required by sickle cell anemia patients

Practice Based Learning and Improvement	<ul style="list-style-type: none"> • Present cases and use the discussion to update one’s own knowledge base and care of patients. 	<ul style="list-style-type: none"> • Present cases and use the discussion to update one’s own knowledge base and care of patients. • Incorporate new knowledge to improving patient care. • Incorporate practice based learning into daily patient care by sharing at least one article per week that relate to current patient cases
Interpersonal and Communication Skills	<ul style="list-style-type: none"> • Demonstrate ability to interact with all members of the health care team, patients and families 	<ul style="list-style-type: none"> • Demonstrate ability to interact with all members of the health care team, patients and families • Implement an end of life discussion (incorporating the discussion of POLST forms, code status) • Provide patient education on the signs/symptoms of chemotherapy side effects
Professionalism	<ul style="list-style-type: none"> • Present to clinic prepared to meet patients, having previously reviewed their treatment history and prior therapies • Maintain professional relationship with a healthcare team as a team member 	<ul style="list-style-type: none"> • Maintain professional relationships with healthcare team as a team member.
Systems-Based Practice	<ul style="list-style-type: none"> • Demonstrate expertise in using health-care system resources to provide optimal patient care by summarizing the roles of the oncology nurse, social worker, nurse coordinator, and pharmacist 	<ul style="list-style-type: none"> • Demonstrate expertise in using health-care system resources to provide optimal patient care. • Coordinate a minimum of two family conferences utilizing social workers, nurses as appropriate to discuss end of life care • Coordinate a discussion of hereditary cancer syndromes with the assistance of the Cancer Risk Management Program • Design a treatment plan for a newly diagnosed cancer

		<p>patient after presenting a case presentation at a multidisciplinary conference incorporating the role of the radiologist, pathologist, surgeon and medical oncologist</p>
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Fellow Role on Rotation:

PGY4:

- Assist in new patient workups, identifying staging, further testing and the development of a hematologic or oncologic plan
- Observe the writing of new chemotherapy orders
- Write a minimum of 5 new chemotherapy orders in a supervised setting

PGY5, 6:

- Perform all new patient work ups, including identifying staging, further testing, and the development of a hematologic or oncologic plan
- Write a minimum of ten chemotherapy orders on new patients
- Conduct a minimum of one family conference discussing end of life care goals

Evaluation:

- E*value global rating by faculty. This is a combined evaluation based on the feedback from the various providers with whom you have worked formulated into one evaluation
- 360 evaluation by either a midlevel provider or nurse coordinator with whom you have worked

Conferences:

The fellow should attend a minimum of 8 conferences during their 4 week rotation, with plans to present a patient case at at least 2 conferences

- Wednesday noon patient care conference
- Colorectal Conference – 12-1 on Mondays, CSC 2nd floor or 3rd floor conference room
- Thoracic Cancer Center Conference: Tuesday, noon, CSC
- Breast Conference, Fridays, 7am, Mayo building

Readings:

Chu E and DeVita TJ. Cancer Chemotherapy Drug Manual. Jones and Bartlett Publishers: Boston, 2014.

ASCO University

Journal of Clinical Oncology

Blood

UptoDate

Molecular Diagnostics Laboratory (MDL)

- Location: Molecular Diagnostics Laboratory, D210, Mayo.
Duration: A 2-4 week training experience – It must be scheduled prior to start of academic year
Faculty: Dr. Sophia Yohe, Rotation Director, phone: 612-273-3098

Educational Objectives:

The rotation in the Molecular Diagnostics Laboratory (MDL) is designed to provide the fellow with an introduction to molecular diagnostics, including basic concepts in molecular genetics and molecular pathology, methods and techniques, laboratory logistics (i.e., specimen procurement, processing, and a general knowledge of laboratory work-flow), and indications for /appropriate utilization of molecular testing.

Molecular Diagnostics: Educational Objectives in the Context of the ACGME Core Competencies

Competency	Educational Level: PGY 5/6
Medical Knowledge	<ul style="list-style-type: none">• Know specimen requirements for molecular diagnostic testing• Understand how DNA and RNA are extracted• Understand PCR and RT-PCT techniques• Understand the basic principles of DNA sequencing, and assays used in MDL• Gain an understanding of the basic principles of molecular biology and human genetics• Understand the basic molecular pathology of those diseases commonly tested for in the clinical molecular diagnostic laboratory• Understand the use of molecular testing in the diagnosis and management of disease and the relationship/overlap between molecular testing and other laboratory tests (e.g., flow cytometry, cytogenetics).• Understand laboratory practice issues including proficiency testing, certification, QA/QC, and Medicare compliance.
Practice Based Learning and Improvement	<ul style="list-style-type: none">• Present cases and use the discussion to update one's own knowledge base and care of patients.• Incorporate new knowledge to improving patient care.

Interpersonal and Communication Skills	<ul style="list-style-type: none"> • Demonstrate ability to interact with all members of laboratory
Professionalism	<ul style="list-style-type: none"> • Maintain professional relationships with all members of the laboratory

Evaluation: Global rating by faculty based upon review by Faculty working with the fellow during the rotation. Fellows will be evaluated on performance of daily activities, on participation in required meetings and conferences, and on presentations.

Overview of Daily Duties and Responsibilities

- For those patients referred to the laboratory for gene rearrangements, BCR-ABL testing and BMT engraftment studies, the fellow is expected to obtain clinical histories and relevant results from other laboratories (Special Hematology, Flow Cytometry/Immunophenotyping, Surgical Pathology, Cytogenetics). This information should be obtained prior to reviewing cases with staff person on service.
- Review test results as they become available with the Molecular Diagnostics Fellow PRIOR to case sign out with the staff person on service. The fellow should be prepared to answer any questions regarding any particular case.
- Attend case sign out with staff person on service.
- During the rotation, fellows are expected to perform literature searches with regard to difficult/unusual cases. The findings of the literature search are discussed with the MDL staff and fellows. The fellow is also expected to present the case and the results of the literature search at the weekly MDL staff meeting. The MDL directors emphasize that staying current with the literature is essential in a rapidly changing field such as molecular diagnostics.

Required Meetings/Conferences: Rotating fellows will attend the following:

- Molecular Diagnostics Staff Meeting, Discussion of issues in laboratory management, and interesting cases in the MDL.
- Hematologic Malignancy Conference- alternating Mondays at 4:15 pm,
- Special Diagnostics Administrative Meeting, Discussion of administrative issues in the "Specialty Diagnostics" laboratories.

Other Conferences – attendance is optional

- GI Pathology Conference
- Laboratory Medicine and Pathology Grand Rounds
- Clinical Pathology Case Conference
- Dermatopathology Conference
- Cytology Conference
- Institute of Human Genetics Seminar
- Resident's Conference

Reading List:

1. Strachman T., and Read A. Human Molecular Genetics
2. Thompson and Thompson. Genetics in Medicine
3. Heim and Mittelman. Cancer Cytogenetics
4. Wells and Warren. Genetic Instabilities and Hereditary Neurological Diseases.
5. Current Protocols in Molecular Genetics.
6. Maniatis. Molecular Cloning.
The MDL also has a teaching file of gels and autoradiograms illustrating interesting/unusual cases. The MDL also has a Disease Reference Book including background information, testing protocols, and result interpretation for each of the diseases tested for in the MD

Palliative Care Consult Service

Period: A one to four week training experience

Location: There are no designated units. Inpatient consultations are performed on all medical/surgical floor and intensive care units at UMMC with some patients seen at the Riverside East Hospital and Transitional Care Unit. A pediatric component of the experience may be arranged if desired. Participation in one Fairview Home Hospice Interdisciplinary Conference and at least one day of home/facility hospice visits with the hospice nurse is required. Participation in the Palliative Care Clinic on Sixth Floor, Clinic 6B (612-624-7902) is optional.

Faculty and Contact Information:

NAME	PAGER	OFFICE	E-MAIL
Sandra (Sandy) Gordon-Kolb, MD, CPE Medical Director, Palliative Physician (Internal Medicine)	612-899-3638	612-273-4861	sgordon4@fairview.org
Rudolph (Rudy) Keimowitz, MD Palliative Physician (Hematology)	612-538-8850	612-273-5477	rkeimow1@fairview.org
Joel Carter, MD Palliative Physician (Family Practice & Emergency Medicine)	612-899-1414	612-271-3191	jcarter5@fairview.org
Drew Rosielle, MD Palliative Physician (Medicine)	612-899-4178	612-673-3790	rosi0011@umn.edu
Dot Landis, MSW (half-time) Palliative Social Worker	612-899-7126	612-273-5893	dlandis1@fairview.org
Paul Galchutt, MDiv Palliative Chaplain (half-time)			pgalchu1@fairview.org
Lyn Ceronsky, APRN, MS System Director, PCLC Director	612-526-7680	612-672-6456	lcerons1@fairview.org
Julie Robbins Administrative Assistant		612-672-6362	jrobbin3@fairview.org

General Description

Fairview's Palliative Care Program describes the umbrella of palliative care services for patients cared for within the entire Fairview system who have advanced, progressive medical illness or acute life-threatening illness. The Palliative Care Program is one of only six

nationally designated Palliative Care Leadership Centers in the US and is responsible for education, quality improvement, research, and direct clinical care in palliative medicine and related disciplines. Direct clinical services include the Palliative Care Consult service, the Palliative Care Clinic and Fairview Hospice. The Palliative Consult Service provides interdisciplinary consult roles at both campuses of the University of Minnesota Medical Center, Fairview (UMMC and Riverside). The UMMC Palliative Consult Service consists of an advanced practice nurse, physicians, a clinical social worker, and a spiritual health care provider. Fairview Hospice provides care in multiple settings, but largely in a patient's own home, for patients whose life expectancy is less than six months and otherwise meet Medicare Hospice Benefit criteria.

Educational Objectives

- 1) To master the basic principles of palliative assessment, interdisciplinary teamwork, communication, prognostication and treatment options.
- 2) To gain an understanding of ethical and legal principles integral to palliative decisions and care.
- 3) To appreciate the necessity of integrating palliative care principles into hematology and oncology practice.

Description:

One and Two week rotations:

Specific experiences:

Fellows will actively participate in the inpatient team consult service, attend and contribute to daily interdisciplinary team meetings, attend scheduled didactic sessions, and arrange a 1-2 day hospice experience. The latter is required for a 2-week rotation and encouraged as possible for a 1-week rotation.

Upon completion of this rotation the student will be able to:

- Understand the structure and function of an interdisciplinary palliative care team and the need for interdisciplinary teamwork in palliative care
- Complete a comprehensive symptom assessment and develop a palliative plan for management
- Recognize and collate psycho-social and spiritual aspects of care into a comprehensive assessment and management plan
- Gain an enhanced knowledge of pain management skills
- Lead and/or contribute to a patient-family conference from a palliative perspective
- Understand the process and function of an interdisciplinary hospice team
- Recognize the basic needs of patients and families living at home with advanced or terminal illness

One month rotation:

Specific experiences:

Same as above plus review and discuss a Palliative journal article at Journal Club once monthly, attend and contribute to Morbidity and Mortality conferences from a palliative perspective, round in Long Term Care with NP/ Hospice case manager, lead a hospice or home visit with direct staff supervision, and participate in a Palliative Clinic experience.

Upon completion of this rotation the fellow will be able to:

- Accomplish all of the above
- Assess and manage palliative care patients in the ambulatory and in-hospital setting, to include demonstrating appropriate interpersonal skills with patients and health providers, gathering information, formulating treatment plan, documenting patient encounter and planning and coordinating follow-up care
- Understand palliative care models in long term care facilities and recognize how illness care in this setting impacts the patient and family differently than the home care model.
- Comprehend the insurance and financial barriers impacting various palliative care delivery systems
- Discuss and apply palliative ethical and legal principles to specific cases encountered
- Consider cultural aspects important in palliative assessment and management
- Appreciate the necessity for self-care and learn tools to accomplish
- Realize the societal costs of end of life care in America
- Identify the principles of bereavement, anticipatory grief, and the syndrome of complicated grief. Learn and coordinate the resources for managing these issues of care.

Palliative Care: Educational Objectives in the Context of the ACGME Core Competencies

Competency	Educational Level: PGY 5/6
Patient Care	<ul style="list-style-type: none"> • Complete a comprehensive symptom assessment and develop a palliative plan for management • Lead and/or contribute to a patient-family conference from a palliative perspective • Recognize the basic needs of patients and families living at home with advanced or terminal illness • Appreciate the necessity for self-care and learn tools to accomplish
Medical Knowledge	<ul style="list-style-type: none"> • Gain an enhanced knowledge of pain management skills • Appreciate the necessity of integrating palliative care principles into hematology and oncology practice. • Discuss and apply palliative ethical and legal principles to specific cases encountered • Identify the principles of bereavement, anticipatory

	grief, and the syndrome of complicated grief. Learn and coordinate the resources for managing these issues of care.
Practice Based Learning and Improvement	<ul style="list-style-type: none"> • Present cases and use the discussion to update one's own knowledge base and care of patients. • Incorporate new knowledge to improving patient care.
Interpersonal and Communication Skills	<ul style="list-style-type: none"> • Demonstrate ability to interact with all members of the health care team, patients and families • Consider cultural aspects important in palliative assessment and management
Professionalism	<ul style="list-style-type: none"> • Maintain professional relationships with healthcare team as a team member.
Systems-Based Practice	<ul style="list-style-type: none"> • Understand the structure and function of an interdisciplinary palliative care team and the need for interdisciplinary teamwork in palliative care • Understand palliative care models in long term care facilities and recognize how illness care in this setting impacts the patient and family differently than the home care model. • Comprehend the insurance and financial barriers impacting various palliative care delivery systems • Realize the societal costs of end of life care in America • Learn and coordinate the resources for managing bereavement, anticipatory grief, and the syndrome of complicated grief.

Evaluation:

- 1) Palliative faculty to complete New Innovations global rating documentation
- 2) Fellow to provide documentation to Fellowship director of completing web-based tutorial at time of review
- 3) Palliative faculty to give direct feedback

Meetings/Conferences:

- UMMC Palliative Care Consult Service Interdisciplinary Team Meeting
Mayo Room B-390
Daily 8:30 – 9:15 am
- Fairview Homecare and Hospice - Metro team
Hospice & Home Care office at 2450 26th Ave S, Minneapolis
Weekly IDT Tuesdays 10:30 am – 12N
Home/facility visit vary by arrangements
- M & M Conferences

Moos Tower 2-620
Fridays 12-1:00 pm

- Palliative Care - Topic of Interest
Boardroom, 8th floor UMMC
Monthly, 4th Tuesday, 7:45 – 8:30 am

Examples of Reading List (these and other articles available in binder):

- www.stoppain.org – One hour tutorial, web-based, case-based study on adjuvant drugs. Mandatory completion for 1 month rotations; recommended for shorter rotations.
- Morrison, RS and Meier, DE: Palliative Care: N Eng J Med 2004; 350 (25): 2582-2590.
- Khatcheressian, J., et. al.: Improving Palliative and Supportive Care in Cancer Patients: Oncology 2005;19(10): 1365-1388.
- Dalal, S, Del Fabbro, E, and Bruera, E: Symptom Control in Palliative Care: Parts I-III: Journal of Palliative Medicine 2006; 9(2): 391-436.
- McNicol, E and et al: Management of Opioid Side Effects in Cancer-Related and Chronic Noncancer Pain: A Systematic Review: The Journal of Pain 2003; 4(5): 231-256.
- Meisel, A, Snyder, L, and Quill, T: Seven Legal Barriers to End-of Life Care: Myths, Realities, and Grains of Truth: JAMA 2000; 284(19): 2495-2501.
- Lo, B et.al.: Discussing Religious and Spiritual Issues at the End of Life: A Practical Guide of Physicians: JAMA 2002; 287(6): 749-754.
- Weissman, D: Decision Making at a Time of Crisis Near the End of Life: JAMA 2004; 292(14): 1738-1743.

Additional References:

- The Oxford Textbook of Palliative Medicine: Oxford University Press, 2003.
- Bruera, Higginson, Ripamonti, Von Gunton, eds: The Textbook of Palliative Medicine: Oxford University Press, 2006.
- UNIPAC Book Series:Hospice/Palliative Training for Physicians, a Self-Study Program: Mary Ann Liebert, Inc. 2006, 8 volumes.
- Lynn, J: Sick to Death and Not Going to Take It Anymore: Reforming Healthcare for the Last Years of Life: University of California Press, 2004.
- Kaufman, S:And a Time to Die: New York: Scribner, 2005, 400 pages.
- EPEC-O DVD (available from the TLC team and available for check-out in fellowship office)
- Most recent issues of the following journals:
 - Journal of Palliative Medicine
 - The Journal of Supportive Oncology
 - The Journal of Pain and Symptom Management
 - Fast Facts at www.eperc@mcw.edu

An electronic version of the Palliative Rotation Handbook is available on the Fairview Intranet. To access it, go to:

- 1) intranet.fairview.org -- you will need to enter a Fairview login and password.
- 2) Select the Palliative Care option under Departments and Programs. This will take you to the Palliative Care Web Pages.
- 3) Choose the Palliative Care Resident Rotations option in the menu on the left side of the page.

Therapeutic Radiology

- Location: Therapeutic Radiology Clinic (first floor UMMC: phone 612-273-6700)
- Duration: A two to four-week training experience that must be scheduled in advance
- Staff: Dr. Jianling Yuan, (Rotation Director), Kathryn Dusenbery, MD, Margaret Reynolds, MD, and Chung Lee, MD.
Contact Karina Lawrence one month prior to your rotation start 612-626-2631.
- Call: There is no call responsibility

General Description:

The fellow will be an active participant in consultations, simulations, treatment visits, and follow-up visits for patients referred to the department. Fellows are expected to attend departmental planning conferences (Tuesday afternoons from 3:30- 5:30). At the end of the rotation you will be expected to deliver a short 10-15 minute presentation on the topic of your choice.

Therapeutic Radiology: Educational Objectives in the Context of the ACGME Core Competencies

Competency	Educational Level: PGY 5/6
Patient Care	<ul style="list-style-type: none"> • With staff oversight, provide care to patients requiring therapeutic radiation by performing effective in and out patient consultations for use of radiation therapy as a treatment modality.
Medical Knowledge	<ul style="list-style-type: none"> • Understand the principles and application of external beam and brachytherapy radiation therapy in the treatment of neoplastic disorders • Understand the palliative benefit of radiation therapy, indications and contraindications for palliative treatment. • Understand the acute and possible long term side effects of radiation therapy • Understand the concept of normal tissue complication probability and have a basic understanding of how dose is prescribed and determined with probability tables and dose volume histograms. Have a basic knowledge of normal tissue tolerances to ionizing radiation and which chemotherapeutic drugs modify this tolerance. • Understand the utility of radiation sensitizers in clinical practice

	<ul style="list-style-type: none"> Effectively assess tumor imaging by computed tomography, magnetic resonance and nuclear imaging techniques.
Practice Based Learning and Improvement	<ul style="list-style-type: none"> Present cases and use the discussion to update one's own knowledge base and care of patients. Incorporate new knowledge to improving patient care. Incorporate practice based learning into daily patient care by sharing at least one article per week that relate to current patient cases
Interpersonal and Communication Skills	<ul style="list-style-type: none"> Demonstrate ability to interact with all members of the health care team, patients and families
Professionalism	<ul style="list-style-type: none"> Maintain professional relationships with healthcare team as a team member.
Systems-Based Practice	<ul style="list-style-type: none"> Demonstrate expertise in using health-care system resources to provide optimal patient care.

Evaluation: Global global rating by faculty

Conferences:

Mandatory: Treatment Planning conference Tuesdays from 3:30 - 4:30.

You are also invited to Tuesday night conference held 4:30-5:30 pm in the clinic conference room. You should also attend Interdisciplinary conferences depending on which faculty you are working with including Neuro, GI, Thoracic, Head & Neck, Gynecology, Sarcoma, Breast and GU

References:

- Perez CA, Brady LW eds: Principles and Practice of Radiation Oncology, 3rd ed. Philadelphia, Lippincott-Raven, 1998
- Devita V ed: Principles and Practice of Oncology
- Pazdur et al (ed): Cancer Management: A Multidisciplinary Approach
- Radiation Oncology for the House Officer

J. VA Hematology Oncology Ambulatory Out-patient Elective

<u>Location:</u>	Minneapolis VA Medical Center Out-Patient Hematology-Oncology Clinic
<u>Phone:</u>	612-467-4135
<u>Period:</u>	4 week training experience, Monday - Friday
<u>Staff:</u>	All Minneapolis VA Hematology-Oncology Faculty
<u>Contact:</u>	Evan Mariash, MD; Pager: 612-818-7334; email: evan.mariash@va.gov
<u>Call:</u>	There is no call responsibility

Background:

It is widely acknowledged that although the hematology oncology fellows in our training program receive outstanding training and mentorship, the emphasis of their experience with patient care has traditionally been in the ‘in-patient consult/ward’ setting. This approach may not be ideally suited for those fellows intending to pursue a career in a ‘private practice’ setting, where the majority (80-90%) of patient encounters is in the out-patient ambulatory setting. Furthermore, although each of the fellows has a continuity clinic, during the course of which they longitudinally follow patients over time, they do not have much exposure to work up and formulation of a treatment plan for *newly diagnosed* cancer patients (i.e. most of the patients they see in their continuity clinic already have an established plan of care). The goal of this rotation is to fill in this hiatus and provide the fellows a valuable learning experience in allowing them to be the primary individual evaluating a patient with a new cancer diagnosis and formulating and executing an evidence-based plan of care.

Objectives/Goals:

- 1) Develop expertise (in the ambulatory setting) in evaluating and formulating a plan of care for patients with newly diagnosed hematology-oncology problems.
- 2) Critically review the key clinical trials in the literature as well as evidence-based National Guidelines such as the NCCN.
- 3) Enhance ability to function in a multidisciplinary environment, communicate with referring physicians and coordinate care by communicating with surgical and radiation oncologists, interventional radiologists, chemotherapy nurses and chemotherapy pharmacists.
- 4) Learn to discuss and present cases in multidisciplinary tumor boards (ENT tumor board/ thoracic malignancy tumor board/ urology tumor board/GI malignancy tumor board)
- 5) Improve medical documentation skills and cite the appropriate literature when formulating and documenting an assessment/plan.
- 6) Use AJCC staging guidelines to document on the medical record an accurate stage for newly diagnosed cancer patients.
- 7) Improve ‘efficiency’ by simulating a practice model and seeing and completing work-ups for new patients in limited time slots.

General description/structure: The rotation would have 2 components: a clinical (patient care) component and an educational component.

Fellow Role and Team Responsibilities:

This is a 1 month 'out-patient' elective rotation. The hematology-oncology fellow is assigned 4 new patients/day for at least 3 days of the week. He/she is excused on the day of their continuity clinic, and also on Friday mornings to attend the scheduled educational activities at the University Hospital. On those days, one new patient will be assigned at a 1 pm time slot. If a new patient slot is not scheduled, the fellow is expected to see return patients in clinic with other attendings in clinic that day. The patients will be assigned into this clinic by the hematology-oncology staff on 'service'. The fellow is expected to evaluate these patients, discuss with the appropriate hematology-oncology attending the plan of care, and arrange for appropriate and timely follow-up. The fellow is expected to complete the medical documentation associated with the patient encounter. If the staging has been completed, the fellow will also be expected to complete a templated AJCC staging form for that patient. The fellow is also expected to '*follow-up*' on test results they have ordered during the rotation (eg. CT scans, lab tests) and communicate these results to the patients and providers. The new patients/problems encountered during this rotation may include (but not be limited to):

- 1) Adjuvant chemotherapy for non-small cell lung cancer
- 2) Non-surgical management of stage 3 non-small cell lung cancer with chemoradiation.
- 3) Chemotherapy for metastatic non-small cell lung cancer
- 4) Evaluation and management of newly diagnosed small cell lung cancer
- 5) Evaluation of newly diagnosed squamous cell head and neck cancer
- 6) Adjuvant chemotherapy for colo-rectal cancer
- 7) Evaluation and management of newly diagnosed metastatic colon cancer
- 8) Perioperative chemotherapy for newly diagnosed gastric cancer
- 9) Neoadjuvant and adjuvant therapy of esophageal cancer
- 10) Chemotherapy for advanced pancreatic/biliary cancers
- 11) Management of advanced hepatocellular cancer
- 12) Metastatic renal cancer (first line and subsequent therapy)
- 13) Neoadjuvant/adjuvant treatment of bladder cancer
- 14) Castrate-resistant prostate cancer (first-line and subsequent therapy)
- 15) Management of advanced melanoma
- 16) Newly diagnosed multiple myeloma
- 17) Newly diagnosed Non-Hodgkin Lymphoma
- 18) Newly diagnosed Myelodysplastic Syndromes
- 19) Approach to work up of cytopenias
- 20) Work up of patients with venous thromboembolism and decision making regarding duration of anticoagulation.
- 21) Newly diagnosed myeloproliferative neoplasms including CML
- 22) Palliative care discussions (when appropriate) for newly diagnosed poor performance metastatic cancer patients, in whom chemotherapy is considered inappropriate.

Teaching/educational component: This component of the rotation will take place in the afternoons for approximately 1-2 hours. The fellow will work closely with one of the hematology-oncology staff physicians (Dr. Evan Mariash will lead this endeavor) at the VAMC to:

- i) Use the cases they have seen and worked up as a platform for discussion and to review some of the pertinent clinical trials in that area and review National guidelines/recommendations such as the NCCN.
- ii) Review supportive care guidelines including the use of myeloid/erythroid growth factors, anti-emetics, indications for bisphosphonates and other bone-modifying agents, and out-patient pain management.
- iii) Prepare a one-hour presentation at one of the VAMC Thursday patient-care conferences with a focus on an evidence-based answer to a common clinical problem (eg: adjuvant chemotherapy for lung or colon cancer, or reviewing the treatment options for high-grade MDS)
- iv) Attend multidisciplinary tumor boards (including presenting new cases they have seen during that month) including the ENT tumor board/ thoracic malignancy tumor boards/ urology tumor board and GI malignancies tumor board
- v) Spend 1-2 sessions (1 hour discussions) with our ‘Chemotherapy Work Group’ led by Dr. Mariash to review how a standardized chemotherapy set/template is built with an emphasis on supportive care medications (anti-emetic medications based on level of emetogenicity of that regimen; myeloid growth factors if needed as per ASCO guidelines).

VA Medical Center Hematology-Oncology Ambulatory Elective: Educational Objectives in the Context of the ACGME Core Competencies

Competency	Education Level: PGY 5,6
Patient care	<ul style="list-style-type: none"> • Provide effective consultation in the outpatient setting. • Counsel patients and family members regarding diagnosis, prognosis, therapeutic options and goals of therapy • Appropriate follow up of tests ordered including documentation of discussion of test results with patients.

<p>Medical Knowledge</p>	<ul style="list-style-type: none"> • Learn the diagnosis and management of common out-patient problems seen in hematology-oncology clinical practice • Review supportive care guidelines including the use of myeloid/erythroid growth factors, anti-emetics, indications for bisphosphonates and other bone-modifying agents, and out-patient pain management.
<p>Practice-Based Learning</p>	<ul style="list-style-type: none"> • Present cases and use the discussion to update one's own knowledge base • Critically review such evidence based-guidelines as the NCCN and incorporate practice-based learning into daily patient care by sharing at least 3 articles per week that relate to current patient cases • Improve medical documentation skills and cite the appropriate literature when formulating and documenting an assessment/plan. • Use AJCC staging guidelines to document on the medical record an accurate stage for newly diagnosed cancer patients. • Present a 30-60 minute discussion at a Thursday afternoon patient-care conference reviewing and analyzing the key literature in the field pertaining to a case. • Work with the 'chemotherapy work group' and learn how a new journal article translates into a templated chemotherapy order set.
<p>Interpersonal and Communication Skills</p>	<ul style="list-style-type: none"> • Demonstrate ability to effectively

	<p>communicate with patients and family members.</p> <ul style="list-style-type: none"> • Demonstrate ability to communicate with patient's primary care/referring provider • Attend and present cases at multidisciplinary tumor boards (including presenting new cases they have seen during that month). These include the ENT tumor board/ thoracic malignancy tumor board/ urology tumor board and GI malignancies tumor board
Professionalism	<ul style="list-style-type: none"> • Demonstrate ability to interact respectfully with healthcare team members, patients and family members.
Systems-Based Practice	<ul style="list-style-type: none"> • Demonstrate experience in using health- care system resources to provide optimal patient care.

Conferences and Tumor Boards: Attendance is required if not in clinic or educational activity

- Patient-care conference: Alternate Thursdays 1-2 pm, 3V 164
- Hematopathology conference: Alternate Thursdays 1-2 pm, Pathology Conference Room
- ENT tumor board: Wednesday 11 am-12 noon, 1H-123
- Thoracic tumor Board: Friday 8-9 am, 1H-123
- Urology tumor board: 3rd Thursdays 7.15 am, Urology Conference Room 2V-132
- GI tumor Board: Tuesday 12-1 pm, 1H-123
- Liver tumor board: Alternate Wednesdays 8-9 am, 1H-123

Reading List:

Supportive Care:

- Basch E et al. Antiemetics: American Society of Clinical Oncology clinical practice guideline update. [Clin Oncol](#). 2011 Nov 1;29(31):4189-98.
- Hesketh P. Chemotherapy-Induced Nausea and Vomiting. *N Engl J Med* 2008; 358: 2482-94
- Smith T et al. 2006 update of recommendations for the use of white blood cell growth factors: an evidence-based clinical practice guideline. [J Clin Oncol](#). 2006 Jul 1;24(19): 3187-205.

- Lyman G et al. American Society of Clinical Oncology Guideline: Recommendations for Venous Thromboembolism Prophylaxis and Treatment in Patients With Cancer. *J Clin Oncol*, **December 1, 2007** vol. 25 no. 34, **5490-5505**
- Fizazi K et al. Denosumab versus zoledronic acid for treatment of bone metastases in men with castration-resistant prostate cancer: a randomised, double-blind study. *Lancet* 2011,Mar 5;377(9768):813-22

Prostate Cancer

- De Bono J et al. Abiraterone and increased survival in metastatic prostate cancer. *N Engl J Med*. 2011 May 26; 364(21):1995-2005
- De Bono J et al. Prednisone plus cabazitaxel or mitoxantrone for metastatic castration-resistant prostate cancer progressing after docetaxel treatment: a randomised open-label trial. *Lancet* 2010 Oct 2; 376(9747):1147-54.
- Tannock IF et al. Docetaxel plus prednisone or mitoxantrone plus prednisone for advanced prostate cancer. *N Engl J Med* 2004 Oct 7;351(15):1502-12.

Renal Cancer

- Rini B et al. Comparative effectiveness of axitinib versus sorafenib in advanced renal cell carcinoma (AXIS): a randomised phase 3 trial. [Lancet](#). 2011 Dec 3;378(9807):1931-9.
- Hudes G et al. Temsirolimus, interferon alfa, or both for advanced renal-cell carcinoma. [N Engl J Med](#). 2007 May 31;356 (22):2271-81.
- Motzer R et al. Sunitinib versus interferon alfa in metastatic renal-cell carcinoma. [N Engl J Med](#). 2007 Jan 11;356 (2):115-24.
- Escudier B et al. Bevacizumab plus interferon alfa-2a for treatment of metastatic renal cell carcinoma: a randomised, double-blind phase III trial. [Lancet](#). 2007 Dec 22;370 (9605):2103-11.

Bladder Cancer:

- James N et al. Radiotherapy with or without chemotherapy in muscle-invasive bladder cancer. [N Engl J Med](#). 2012 Apr 19;366 (16):1477-88.
- Griffiths G et al. International phase III trial assessing neoadjuvant cisplatin, methotrexate, and vinblastine chemotherapy for muscle-invasive bladder cancer: long-term results of the BA06 30894 trial. [J Clin Oncol](#). 2011 Jun 1;29(16):2171-7.
- Grossman H et al. Neoadjuvant chemotherapy plus cystectomy compared with cystectomy alone for locally advanced bladder cancer. [N Engl J Med](#). 2003 Aug 28;349(9):859-66.
- Von der Maase H et al. Gemcitabine and cisplatin versus methotrexate, vinblastine, doxorubicin, and cisplatin in advanced or metastatic bladder cancer: results of a large, randomized, multinational, multicenter, phase III study. *Clin Oncol*. 2000 Sep;18(17):3068-77.

Non-Small cell Lung Cancer

- Scagliotti G et al. Phase III Study Comparing Cisplatin Plus Gemcitabine With Cisplatin Plus Pemetrexed in Chemotherapy-Naïve Patients With Advanced-Stage Non-Small-Cell. *J Clin Oncol* 2008; 26:3543-3551.

- Douillard J et al. Adjuvant vinorelbine plus cisplatin versus observation in patients with completely resected stage IB-IIIa non-small-cell lung cancer (Adjuvant Navelbine International Trialist Association [ANITA]): a randomised controlled trial. [Lancet Oncol.](#) 2006 Sep;7(9):719-27.
- Sandler A et al. Paclitaxel–Carboplatin Alone or with Bevacizumab for Non–Small-Cell Lung Cancer. *N Engl J Med* 2006; 355:2542-2550
- Shepherd F et al. Erlotinib in Previously Treated Non–Small-Cell Lung Cancer. *N Engl J Med* 2005; 353:123-132
- Arriagada R et al. The International Adjuvant Lung Cancer Trial Collaborative Group. Cisplatin-Based Adjuvant Chemotherapy in Patients with Completely Resected Non–Small-Cell Lung Cancer. *N Engl J Med* 2004; 350:351-360

Small Cell Lung Cancer

- Slotman B et al. Prophylactic cranial irradiation in extensive small-cell lung cancer. *N Engl J Med.* 2007 Aug 16;357 (7):664-72.
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Evaluation(s):

Evaluations: RMS global rating by staff attending

360 Evaluation(s): (Please note, we require a 360 rotation evaluation for each rotation) Please discuss this with your attending to identify the appropriate nursing or PA staff to identify.