

**MSTP GRAND ROUNDS
2008-2009**

Syllabus for NU Graduate School Course Number MSTP 402

Dane Chetkovich, M.D., Ph.D.
Sandra Lee, Ph.D.
Course Co-Directors

Course Description

MSTP Grand Rounds is a 4-quarter course sequence that links evidence-based clinical medicine to advances and challenges for basic, translational, and clinical researchers. In this faculty-mentored course, two advanced MSTP students present a clinical case as a backdrop to both review state of the art knowledge on mechanisms of disease, prevention, diagnosis, and treatment and to highlight new frontiers for basic science, translational, and clinical investigators.

Faculty mentors for this course, representing several medical specialties, play several key roles before and during each session: (i) provide one-on-one training to the student presenters on how to develop effective oral presentations; (ii) identify clinicians, radiologists and pathologists who might contribute to the clinical presentation, (iii) identify basic, translational, and clinical investigators who might contribute to the research presentation, and (iv) assist during the session in guiding both Socratic questioning and audience discussions. In addition to the faculty mentors who attend all sessions, MSTP Grand Rounds attracts a diverse group of faculty (both physicians and physician-scientists) from clinical and basic science departments.

MSTP Grand Rounds features two presentations – a clinical case presentation by a clinical phase MSTP students and a research presentation by a graduate phase MSTP student in the research phase of training. The senior (clinical phase) student presents the patient's history and clinical course and identifies an interesting medical problem. The clinical case is developed by progressive disclosure starting with the chief complaint, such as: "An eight year old boy presents with shortness of breath of two days duration." The clinical student first asks the audience to collectively recommend the appropriate tests and exams and differential diagnosis, *prior* to disclosing the results of the tests and exams that were actually performed. Materials related to the case, such as x-rays, CT scans, EKGs, gross and microscopic pathology and video recordings (e.g., of a patient with a seizure disorder) are presented in the chronological order in which obtained. After the audience finalizes the diagnosis, the clinical phase student summarizes the disease pathophysiology and current therapy plus frontiers of knowledge from ongoing and recently completed clinical and translational research. The junior (research phase) student then summarizes recent advances on the mechanism of disease, prevention, diagnosis and treatment from relevant basic science and translational research on the disease. Review articles on relevant clinical and translational research are available at the course web site http://www.mstp.northwestern.edu/mstp_courses.htm.

Since each MSTP student teaches this course at least two times (one or more times in the graduate phase and at least once in the clinical phase), this course provides all students training in basic science and clinical teaching, a valuable skill for future careers as physician-scientists. Finally, since all MSTP students participate throughout all years of training, MSTP

Grand Rounds integrates throughout all phases of training the practice of evidence-based medicine with advances in basic, translational, and clinical research.

Grand Rounds Faculty

Faculty Mentors	Department	Email Address
Hossein Ardehali, M.D., Ph.D.	Medicine - Cardiology	h-ardehali@northwestern.edu
Scott Budinger, M.D.	Medicine – Pulmonary	s-buding@northwestern.edu
Dane Chetkovich, M.D., Ph.D.	Neurology	d-chetkovich@northwestern.edu
Seth Corey, M.D., M.P.H.	Pediatrics	s-corey@northwestern.edu
David Engman, M.D., Ph.D.	Pathology	d-engman@northwestern.edu
Kathryn Farrow, M.D., Ph.D.	Pediatrics - Neonatology	k-farrow@md.northwestern.edu
Alan Hauser, M.D., Ph.D.	Microbiology-Immunology	ahauser@northwestern.edu
Peter Kopp, M.D.	Medicine - Endocrinology	p-kopp@northwestern.edu
Thomas McGarry, M.D., Ph.D.	Medicine - Cardiology	t-mcgarry@northwestern.edu
William Muller, M.D., Ph.D.	Pathology	wamuller@northwestern.edu
Peter Sporn, M.D.	Medicine – Pulmonary	p-sporn@northwestern.edu
Seth Corey, M.D., M.P.H.	Pediatrics	s-corey@northwestern.edu

Location and Time

MSTP Grand Rounds is held in **Hughes Auditorium** (Lurie 1st floor large auditorium) *except* during the Interview Weeks when it is held in **Room 540 in Wieboldt Hall's 5th floor Connelly Lounge** (enter on Superior Street and go to the 4th floor by elevator and then by stairs to the 5th floor).

MSTP Grand Rounds is preceded by a light dinner from 5:00-5:30 PM followed by the two presentations from 5:30-6:30 PM. Please arrive by 5:00 PM.

Schedule for MSTP Grand Rounds and Round Table Discussions, 2008-2009 *

Date (Weds.), 5:30-6:30 PM	location	Presenters		Faculty Preceptor
		Clinical Case	Basic Science	
Sept. 10, 2008	Hughes	Alumni Seminar - Dr. Joseph Walder		
Sept. 24, 2008	Hughes	Erick Lin, Med 4	Vanderlene Kung, Grad 2	Dane Chetkovich M.D., Ph.D.
Oct. 22, 2008 * NOTE date change	Wieboldt 540	Tom Schaus, Med 4	Sara Kleinschmidt, Grad 2	Hossein Ardehali, M.D., Ph.D.
Nov. 5, 2008 *	Wieboldt 540	Ali Jalali, Med 4	Tina Pejchal, Grad 5	Kathryn Farrow, M.D., Ph.D.
Dec. 3, 2008 *	Wieboldt 540	Maxfield Flynn, Med 4	Rebecca Harris, Grad 2	William Muller, M.D., Ph.D. & Seth Corey, M.D., M.P.H.
Jan. 14, 2009 *	Wieboldt 540	Aaron Miller, Med 3	Rebecca Farmer, Grad 2	Peter Kopp, M.D.
Jan. 28, 2009	Hughes	MSTP Round Table Discussion		
Feb. 4, 2009 *	Wieboldt 540	Amanda Redig, Med 3	Maya Srikanth, Grad 2	Scott Budinger, M.D.
Feb. 25, 2009	Hughes	MSTP Round Table Discussion		
Mar. 11, 2009	Hughes	Marsha Jones, Med 4	Alan Lewis, Grad 2	Hossein Ardehali, M.D., Ph.D.
April 15, 2009	Hughes	Amanda Zubek, Med 3	Hans Arora, Grad 2	Peter Sporn, M.D.
Apr. 29, 2009	Hughes	MSTP Round Table Discussion		
May 12, 2009 Tuesday	Hughes	"Passing of the Wisdom" - All Med 4 Student Panel		
May 20, 2009	Hughes	Mei Lin Bissonnette, Med 3	Chris Brooks, Grad 2	Alan Hauser, M.D., Ph.D.
June 10, 2009	Hughes	Jane James, Med 3	Dominic Fullenkamp, Grad 2	Thomas McGarry, M.D., Ph.D.
July 8, 2009	Hughes	Jen Regan, Med 3	Romie Gibly, Grad 2	Dane Chetkovich M.D., Ph.D.
July 29, 2009	Hughes	Chris Mutch, Med 3	Brian Hitt, Grad 2	Thomas McGarry, M.D., Ph.D.

* designates 5 MSTP Interview Weeks when 24 interviewing candidates will attend.

Attendance

All MSTP students in all years are required to attend MSTP Grand Rounds (as well as all MSTP Round Table Discussions and MSTP Seminars) unless excused in advance and only for the following reasons:

- a. required seminars for graduate phase students who are trainees on other training grants
- b. out-of-town elective clerkships
- c. out-of-town residency interviews
- d. illness

If you are unable to attend due to the above, please contact Dr. Sandra Lee (s-lee@northwestern.edu or 312-503-2900) *prior* to the Grand Rounds session to request up to one excused absence per quarter and no more than two excused absences per academic year. Students who are excused in advance are required to complete the remediation exercise described below. In cases of unexcused absences, students must complete the remediation exercise described below and meet with the Course Director.

Grading and Absences

Attendance is recorded at each session and students are responsible for ensuring that they have signed the attendance sheet (exception is Evanston students who attend by videoconferences sessions will be recorded by Dr. Lee as "present"). Grades are assigned each quarter, "S" = satisfactory, "U" = unsatisfactory. A grade of "S" requires attendance at all sessions except when an excused absence was obtained in advance (out of town conference, vacation, out of town clerkship, required attendance at a training grant seminar), followed by successful completion of the remediation exercise.

Since participation in the Grand Rounds discussion is the only learning assessment, students must remediate all missed sessions within 2 weeks after the absence. If 2 or more sessions per year are missed, in addition to remediating all missed sessions, students must meet with the Course Director. Failure to remediate a missed session by the end of the quarter will result in an "Unsatisfactory" (U) grade for the quarter.

Make-up Assignment Required for Missed Sessions

If you are required to complete a make-up assignment, Jeffrey Hargraves in the MSTP Office will notify you via email. Students must complete the self-study exercise no later than two weeks after receiving the email about make-up assignment. If the make-up assignment is not completed before the conclusion of the quarter, the grade, "U" for Unsatisfactory, will be submitted to the Registrar. Since remediation entails accessing archived multimedia files that are made available by NUIT for only a few weeks after the original event, timeliness in the remediation is important. Once completed, a change of grade form ("U" ->"S") will be submitted to the NU Registrar's Office.

The make-up assignment consists of questions, written by the faculty preceptor, about the clinical presentation, the research presentation, and the research article. In order to answer these questions, you will view the PowerPoint slides, read the research journal article, and EITHER listen to an audio recording or watch multimedia files of both the clinical and basic science presentations. After doing this, type your answers to the make-up assignment and send them via email to Jeffrey Hargraves in the MSTP Office.

Directions for MSTP students to make-up sessions originally held during MSTP Interview Weeks (October, 2008-February, 2009):

Because these 5 sessions are held in Wieboldt Hall, 5th floor, we are not able to videoconference these sessions. Instead, only audio recordings of the presentations plus the Power Point slides and the research article are available on the Blackboard web site at: <https://courses.northwestern.edu/webapps/login>.

Once you have logged into the Course Management web site for the date/quarter, open the folder "Course Documents" and select the folder corresponding to the date you missed the class.

Each folder contains 5 documents:

1. the research article (as a pdf file) which you should download/print so that you can take notes while you are viewing the slides and listening to the audio file.
2. an audio recording (mp3) of both oral presentations to download to your desktop and open/play from the location to which you downloaded the audio file.
3. the self-study questions (as a Word document) which you should download/print so that you can take notes while you are viewing the slides and listening to the audio file.
4. Power Point slides of the clinical presentation to view inside of Blackboard.
5. Power Point slides of the research presentation to view inside of Blackboard.

Once you have opened the course web site in Blackboard, keep Blackboard open and manually advance the slides while you are listening to the audio file and taking notes on both the self study questions and on the research article. After you have finished listening to the audio recording and viewing both sets of slides, type your final answers into the Word document, save it on your desktop and then send to Jeffrey Hargraves (j-hargraves@northwestern.edu) as an email attachment.

Directions for MSTP students to make-up videoconferenced sessions (September and March-July)

Before beginning any of these make-up exercises:

1. print the self-study questions you will receive via email from Jeffrey Hargraves (Word document) so that you can take notes while you are viewing the multimedia files of the presentations
2. download/print the research journal article that is posted on the MSTP Grand Rounds course *public* web site at: http://www.mstp.northwestern.edu/mstp_courses.htm

Once you have completed 1 and 2 above, then you are ready to view on the web the streamed archived video of both sets of PowerPoint slides at this web site:

http://129.105.223.155/public_folder.html?folder=1

Almost any browser will work with the recommended plug-ins: Quick Time 7.0 or newer, Real Player 10, or Windows Media Player 9 or newer and a recent version of Java. The only exception is Safari which does not work with this web site.

Once the web page loads, it will display a list of recorded videoconferences. Locate the missed MSTP Grand Rounds session, click "Watch" to view the recording and then "Start Streaming".

Instructions for Presentations by the Clinical Phase Student

- Choose an interesting case from your experience on the wards. As a rule, choose a case where a definite diagnosis was made. Common diseases, or at least cases in which common diseases are reasonably included in the differential diagnosis, are preferable because of the wide differences in audience member experience. Present "clean" cases in order to focus on the primary diagnosis. If a patient suffers multiple complications unrelated to the main disease process, do *not* include these in the main didactic portion of your presentation.
- Once a case is chosen, contact the faculty preceptor, the research phase student and the MSTP Office immediately to give (i) a brief summary of the case, (ii) chief complaint and (iii) the name(s) of the physician(s) who will attend. This should be done at least four weeks *before* the presentation date. The chief complaint will be included in the announcement sent to all the MSTP students and Grand Rounds faculty participants and take the form:
"A XXX- old girl/boy or woman/man presents with YYY chief complaint of ZZZ duration."
- Prepare the case as you would for a formal presentation to attending physicians on the ward. The case presentation should include the history of present illness (HPI) pertinent past medical history (PMHx), physical examination, laboratory findings, and clinical course. Your target should be 10 minutes (without including pauses).
- Your main goal should be to demonstrate competent medical decision making that was utilized to make a diagnosis. You should present in a way that allows the audience to participate in these same decisions, specifically designing pauses in your presentation to compel audience participation:
 - After HPI (formulate differential diagnosis based on history alone)
 - After PMHx (and relevant social and family history)- refine differential diagnosis
 - After Exam (formulate a narrow differential, with general idea of pre-test probabilities)
 - Request suggestions for testing, and provide images and histology slides when possible
- Briefly outline the hospital course (if this wasn't disclosed as a fundamental part of the HPI) and treatment (2 minutes max).
- The Past Medical History can be given as a list, such as: 1. Coronary Artery Disease, 2. Congestive Heart Failure. Add the details only if they are pertinent.
- Use acronyms, but define them (EOMI, PEERLA, PMI in LMCL, NABS, etc...)
- Keep the Physical Exam *brief*. Start with a "kernel exam" and add to it any pertinent positive or negative findings. The "kernel exam" is as follows:
 - General: Obese 52 y/o white man in no apparent distress.
 - Vital Signs: Pulse 100, Blood Pressure 138/88, Respirations 16, Temp 97.6.
 - Chest: Clear to auscultation.

- Cardiac: Regular rhythm, normal S1 and S2, no murmur or gallop.
- Abdomen: Soft, non-tender, normal bowel sounds.
- Write the full names of blood and other tests and put in the normal ranges:
 - Sodium: 138 mM (135-155).
 - Potassium: 5.1mM (3.5-5.5).
- Summarize the case in two or three sentences, including the relevant Hx, exam and lab studies that guided correct diagnosis.
- Provide a brief (5 minute) summary of the disease pathophysiology, coordinated with research phase student to avoid duplicated information. Discuss the pathophysiology of only one clinical problem, even if the patient had several problems during the hospitalization. During the course of the case presentation, the differential diagnosis and workup of the presenting symptoms will have been discussed. At this point, a brief description of the disease entity, i.e. pathophysiology, clinical course, and therapy should be presented. Time permitting, the student(s) may also want to digress at some point to discuss aspects of the workup that might justify extra attention, and/or to review related diseases.
- Summarize both newer knowledge from recent the recent clinical research literature (e.g., clinical trials recently completed) and questions currently addressed by ongoing registered clinical trials.
- Request that your patient's attending physician, resident, or fellow attend the Grand Rounds and participate in the discussion. The conference is greatly enhanced by the presence of an expert in the audience. The student may wish to plan the presentation such that the physician's input will be encouraged at some point.

Instructions for Presentations by the Research Phase Student

- Summarize relevant multi-disciplinary and inter-disciplinary scientific frontiers for investigation on mechanisms of disease, prevention, diagnosis, and treatment.
- Choose a "good" paper from the recent literature, even if it's only tangentially related to the clinical problem. Choosing a good paper is of paramount importance because we learn so much more from a good paper than from a bad paper. Send a pdf of the paper to the MSTP Office by three weeks before your presentation so that it can be distributed via the course web site.
- Since the paper you choose will not be distributed in advance, the diagnosis will not be known.
- In the long run, most people remember only one clear message from a scientific paper.
- The journal article will likely be outside of your research field, since the clinical case will have been chosen by another student. All students should have extensive experience presenting research papers. It is essential that the paper is presented in a critical fashion, but the most important issue for these presentations is to *stress how the basic science findings relate to the clinical case*. This includes a discussion of the ramifications of the finding for understanding of the pathophysiology, potential therapies, differential diagnosis, etc. It may also be helpful discussing additional studies and future directions of research.

- The entire session is designed to last ~60 minutes and the presentation should encourage audience participation. In most instances, the clinical case presentation should take 20 minutes, the discussion of pathophysiology and treatment 10 minutes and the research paper 20 minutes, with some time for discussion. Ideally, the two students would meet several times and actually work together on both aspects of the presentation. This includes examination of the patient and review of the case with the attending physician (if possible) and the faculty preceptor for the MSTP Grand Rounds.

Keys to Successful Presentations by Both Student Presenters

For both presentations:

- Prepare Powerpoint slides that are well organized and contain only pertinent information.
- Just as speakers at scientific meetings use 1 computer for all speakers, we will use only 1 computer during the presentation. The student presenters should decide if they will use one of their own computers (Mac or PC) or a PC provided by MSTP. The 2 student presenters will load both of their PPT files onto the same computer before the 1st presentation.
- Remember to insert all images inserted into your slides as **jpeg** files (not as tif files).
- Use medical jargon/abbreviations, but define them as you go. Remember that your audience includes Med 1 and Med 2 students, plus interviewing candidates.
- Prepare handouts (if appropriate) and be prepared to thoroughly discuss everything related to the case, (e.g., laboratory values, differential diagnosis, mechanisms of disease pathogenesis, therapy).
- Guide the session, but encourage your colleagues to participate as much as possible.

For the clinical case presentation:

- Use all the jargon you'd typically use in a case presentation -- and then translate (this is MUCH better than avoiding jargon, according to the M1 and M2 students).
- Use progressive disclosure of the case, from chief complaint through treatment -- invite the students to suggest questions in taking history, development of problem list/differential diagnosis, what they'd focus on in the physical exam, how patient answers and PE results help to refine the differential, what radiology and labs should be ordered, how these results impact the differential.
- Engage your attending physician (and other physicians in attendance) from time to time in discussion (if it doesn't happen spontaneously).
- Engage the audience by asking a volunteer to read your slides aloud and ask other "volunteer" members to answer questions posed in the case presentation.

For the research presentation:

- Remember that your audience is HIGHLY diverse, from college seniors (in all fields) to full professors (in all fields).
- Give appropriate background to promote understanding of the rationale for the research.

- Describe methods that may not be familiar to all.
- Walk through the figures and summarize conclusions at key steps during the presentation.
- Wrap up with summary and offer both criticism if justified and discuss impact and future directions of the research.

Timetable

- Four Weeks Before** The senior student chooses the clinical case and sends a summary of the case to the MSTP faculty preceptor, the attending physician(s), and the junior MSTP student. The senior MSTP student sends the title of the Grand Rounds session to the MSTP Office and suggests several articles for the junior student.
- Three Weeks Before** Senior Student reviews chart and examine patient. Senior student assembles case materials (X-rays, labs, path, videos, etc.). Junior student sends the research paper to the MSTP Office as a pdf attachment that will be available to download from the course web site after the session.
- One Week Before** Students meet with the MSTP faculty preceptor to review the first draft of the students' PPT slides.
- Two Days Before** Students review final PPT presentations with MSTP preceptor.

<p>Basic Science Presenters</p>	<p>h-arora@northwestern.edu (Hans Arora) d-brooks@md.northwestern.edu (Chris Brooks) r-farmer@md.northwestern.edu (Rebecca Farmer) d-fullenkamp@md.northwestern.edu (Dominic Fullenkamp) romie@md.northwestern.edu (Romie Gibly) rebecca-harris@md.northwestern.edu (Rebecca Harris) brian-hitt@md.northwestern.edu (Brian Hitt) s-kleinschmidt@northwestern.edu (Sara Kleinschmidt) v-kung@northwestern.edu (Vanderlene Kung) alan-lewis@md.northwestern.edu (Alan Lewis) maya@md.northwestern.edu (Maya Srikanth)</p>
<p>Clinical Presenters</p>	<p>mflynn005@md.northwestern.edu (Maxfield Flynn) ajalali004@md.northwestern.edu (Ali Jalali) mjones003@md.northwestern.edu (Marsha Jones) eldrin@md.northwestern.edu (Erick Lin) tschaus@md.northwestern.edu (Tom Schaus) a-bass@md.northwestern.edu (Amanda Zubek) janem@md.northwestern.edu (Jane James) ammiller@md.northwestern.edu (Aaron Miller) c-mutch@md.northwestern.edu (Chris Mutch) a-redig@md.northwestern.edu (Amanda Redig) jregan004@md.northwestern.edu (Jennifer Regan) mzimmerman005@md.northwestern.edu (Mei Lin Bissonnette)</p>