PATHOLOGY

RESIDENT

HANDBOOK

2009-2010

Department of Pathology

The University of Texas Health Science Center at San Antonio
San Antonio, Texas

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PATHOLOGY RESIDENCY TRAINING PROGRAM
PROGRAM GOALS AND OBJECTIVES

The Pathology Residency Training Program at the University of Texas Health Science Center at San Antonio provides opportunities in postgraduate training in Anatomic and Clinical Pathology by utilizing the facilities of the University Hospital, Audie Murphy Veterans Hospital, and University of Texas Health Science Center for core rotations. This experience is augmented by rotations at the Baptist Memorial Hospital, Santa Rosa Children’s Hospital, South Texas Dermatopathology and the Bexar County Forensic Sciences Center. The main objective of the training program is to prepare medical and osteopathic doctorates for the practice of Anatomic and Clinical Pathology and to provide a setting in which teaching and research activities may be pursued. In addition, advanced training in Hematopathology, Transfusion Medicine, Cytopathology, and Surgical Pathology are also available. The varied patient population at our two main teaching hospitals and the activities at the research laboratories at the University of Texas Health Science Center at San Antonio provide an environment in which this goal may be accomplished so that all residents may be board eligible in Anatomic and Clinical Pathology with up to four years of post-graduate training for medical school graduates and three years for those who have already completed a Post-Sophomore fellowship in pathology or American Board of Pathology (ABP) accredited research year beginning July 1, 2002. No advanced credit is given for prior clinical training for those beginning pathology training after July 1, 2002. If training in AP or CP only is desired, residency periods for up to three years for medical school graduates are offered.

Our program is an outcomes-based training program based upon the ACGME and Pathology RRC six general competencies as listed below:

**Patient care:** Residents must demonstrate a satisfactory level of diagnostic competence and the ability to provide appropriate and effective consultation in the context of pathology services.

**Medical knowledge:** Residents must demonstrate knowledge about established and evolving biomedical, clinical and cognate (e.g. epidemiological and social-behavioral) sciences and the application of this knowledge to pathology.

**Practice-based learning and improvement:** Residents must be able to demonstrate the ability to investigate and evaluate their diagnostic and consultative practices, appraise and assimilate scientific evidence and improve their patient care practices.

**Interpersonal and communication skills:** Residents must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with other health care providers, patients, and patients’ families.

**Professionalism:** Residents must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
Systems-based practice: Residents must demonstrate an awareness and responsiveness to the larger context and system of health care and the ability to call on system resources to provide pathology services that are of optimal value.

Each rotation lists its goals and objectives separately; however the four following general competencies’ objectives apply to all rotations as well as to the pathology training program in general.

Practice-based learning & improvement

Trainees will demonstrate:
- Ability to formulate quality assurance monitors for specific laboratory areas
- Ability to apply knowledge and appropriate statistical methods to the appraisal of clinical studies and current literature in medicine
- Awareness of the variety of pathology practice settings
- Ability to utilize library, web-based, and other educational sources
- Ability to use information technology and other methods to support monitoring of patient laboratory testing and enhancing clinician education in regards to appropriate and cost-effective utilization for patient management.

Interpersonal and Communication Skills

Trainees will demonstrate:
- Effective and professional consultation to other clinicians and other health care professionals and sustain ethically sound professional relationships with colleagues, patients, and patients’ families.
- Interact with consultants, laboratory personnel, and administration in an appropriate manner.
- Ability to provide services in a timely, organized and coherent manner
- Effective listening skills and ability to carryout standard operating procedures and verbal instructions

Professionalism

Trainees will demonstrate:
- Sensitivity and responsiveness to patient, colleagues and laboratory personnel culture, age, gender, and disabilities.
- Commitment to ethical principles pertaining to confidentiality of patient information, informed consent, and business practices.
- Respect, compassion and integrity
- Adherence to guidelines and regulations set forth by regulatory and accrediting agencies.
- Ability to recognize and identify deficiencies in peer performance

Systems-based practice
Trainees will demonstrate:

- Knowledge of the laboratory management’s effect on other health care professionals, organizations, and society
- Ability to access, understand and utilize the resources, providers, and systems necessary to provide optimal care
- Knowledge of how the types of medical practices and delivery systems differ from one another, including methods of controlling health care costs and allocating resources
- Ability to apply evidence-based, cost conscious strategies for screening, diagnosis, and disease management.
- Ability to provide cost-effective health care and resource allocation without compromising quality of care.

For AP/CP trainees, the program is structured to meet ABP requirements of 18 months of training in both Anatomic and Clinical Pathology with 12 months that may be customized dependent upon the trainee’s goals and needs as long as the electives meet both ABP and UTHSCSA requirements. The current “routine” model is as follows: Residents in the first two years of training do twelve months of AP and twelve months of CP. This is usually accomplished by thirty-four weeks of AP (12 weeks of autopsy and 22 weeks of surgical pathology) and eighteen weeks CP (6 weeks hematopathology, 6 weeks transfusion medicine, & 6 weeks of clinical chemistry) in the first year with 40 weeks of CP (6 weeks hematopathology, 6 weeks transfusion medicine, 12 weeks of microbiology/immunology & 6 weeks of clinical chemistry) with an additional 12 weeks of surgical pathology in the second year, but this is customizable. All rotation lengths are a minimum of six weeks in duration and staggered to allow CP rotations immediately following autopsy rotations.

In the third and fourth year, mandatory rotations include three months of cytopathology, six weeks of pediatric pathology (includes two weeks of pediatric CP), and six weeks of forensic pathology (3 weeks count toward AP-autopsy and 3 weeks toward CP-toxicology). The full 18 months of Clinical pathology is fulfilled with further advanced clinical pathology training and a mandatory six weeks of flow cytometry, cytogenetics, and molecular diagnostics during the third year. In anatomic or clinical pathology, additional one to six week long electives are available, as well as advanced electives in other topics covered by core rotations. All electives must meet residency director approval with written specific goals and objectives and faculty supervision.

All mandatory core rotations should be completed in the first 3 years if possible so that the final year can be developed into a clinical track or basic research academic track. Opportunities for both basic and clinical research are available with research faculty who have interests in renal, bone, genitourinary pathology, breast pathology, biostatistics, molecular biology, and other fields.

Whether residents choose an academic track or clinical track, they are encouraged to participate in clinical research with subspecialty oriented diagnostic pathologists in surgical pathology, cytopathology and clinical pathology. The Resident conferences have been organized to have a combination of didactic lectures in AP/CP as well as
working conferences to review the most recent cases and exposure to basic research as well as quality assurance. During these training years, each resident is encouraged to undertake and complete a scientific project to be published as a peer-reviewed national abstract/paper. This is to give the residents exposure and experience in formulating hypotheses, working through a well-controlled project and organizing data suitable for publication.

Residents have opportunities for teaching experience in their interaction with fourth year medical students and residents from other fields while they are on pathology rotations. Residents also participate in the teaching of the lab sessions within the second-year medical student pathology course. PGY 3’s and above are required to teach a minimum of 3-4 MS Labs (1block) per year.

Residents are evaluated as follows: at least every six weeks evaluations of residents performance from faculty are collected. These evaluations are based upon the six general competency areas utilizing RRC recommended evaluation methods. Evaluations are reviewed by the Residency Program Director at least every six months, and feedback from these evaluations is provided to the residents at least twice a year, usually in June and December. Any serious deficiencies are discussed with the resident during or soon after completion of the rotation. Overall resident performance and any problems in these areas are discussed periodically with the Pathology Residency Advisory Committee, which makes recommendations as to remedial or disciplinary action, if needed. Residents also take the Resident In-Service Examination (RISE) sponsored by the American Society of Clinical Pathologists (ASCP) early in May. In accordance with the guidelines of the ASCP, the results of individual RISE scores are not used for discipline or promotion. RISE results are used only to assist trainees in evaluating their progress and in identifying areas of strengths and weaknesses of both the residents and the training program. Evaluations, program structure, discipline, resident selection are governed by the policies of the Graduate Medical Educational Committee (GMEC) of The University of Texas Health Science Center at San Antonio (UTHSCSA) and can be found on the internet at: http://www.uthscsa.edu/gme/policies.html

After each rotation, residents are given the opportunity to evaluate specific rotations, faculty and conferences anonymously. These evaluations are reviewed by the residency director and made available to the faculty responsible for that rotation in a timely fashion. Consistently negative feedback from residents is brought to the attention of the Director of the rotation and the Residency Advisory Committee to explore alterations in the structure of the rotation.

At the end of the academic year all pathology residents and fellows will vote on the pathology faculty member that best exemplified a “teaching role model”. The “Peter Banks, MD, Teaching Award” is then presented to that elected pathology faculty at the June graduation ceremony.

The overall design of this residency training program has been accomplished after many hours of work by contributing faculty and the Residency Advisory Committee. The combination of structured core rotations and less structured, advanced level training should provide residents with a strong basic fund of knowledge while allowing pursuit of individual interests and career goals.
WEEKLY CONFERENCES  
DEPARTMENT OF PATHOLOGY 
For residents, fellows, and attendings on rotation at UH and VAH 

UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER 
AT SAN ANTONIO 

General Organization: 

Certain conferences have been established for teaching of Pathology Residents and Fellows. These conferences will cover a wide range of topics in CP and AP including the most recent issues in the various subspecialty areas. Conferences will begin promptly and attendance at designated conferences is mandatory; only those residents and fellows performing a frozen section may be absent. Special visiting guest lectures arranged by the Chair will supersede the published schedule. 

<table>
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<tr>
<th>CONFERENCE</th>
<th>DAY</th>
<th>TIME</th>
<th>EXPECTED ATTENDEES</th>
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<tr>
<td>Autopsy-Surgical Gross</td>
<td>Monday</td>
<td>7:30 am</td>
<td>All AP Residents, Fellows, &amp; Faculty</td>
</tr>
<tr>
<td>Journal Club</td>
<td>Monday</td>
<td>12:00 noon*</td>
<td>All Residents, Fellows &amp; Faculty</td>
</tr>
<tr>
<td>Clinical Pathology Conference</td>
<td>Tuesday</td>
<td>12:00 noon</td>
<td>All Residents, CP Fellows, Faculty</td>
</tr>
<tr>
<td>Citywide Hematopathology Conf</td>
<td>Tuesday</td>
<td>4:00 pm</td>
<td>Senior Residents &amp; Fellows</td>
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<td>Dermatopathology</td>
<td>Wednesday</td>
<td>8:00 am</td>
<td>AP Residents &amp; AP Fellows</td>
</tr>
<tr>
<td>Laboratory Medicine Report</td>
<td>Wednesday</td>
<td>12:00 noon</td>
<td>All Residents, CP Fellows, Faculty</td>
</tr>
<tr>
<td>AP Microscopic Unknown Conf</td>
<td>Thursday</td>
<td>7:30 am</td>
<td>All Residents &amp; AP Fellows, Faculty</td>
</tr>
<tr>
<td>AP &amp; CP Didactic Series</td>
<td>Thursday</td>
<td>12:00 noon</td>
<td>All Residents, Fellows &amp; Faculty</td>
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<tr>
<td>Professor Microscopic Rounds</td>
<td>Friday</td>
<td>12:00 noon*</td>
<td>All AP Residents &amp; Fellows</td>
</tr>
<tr>
<td>Final Autopsy Conference</td>
<td>Friday</td>
<td>12:00 noon*</td>
<td>All AP Residents &amp; Fellows, Faculty</td>
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<td>(alternates with Professor Rounds)</td>
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*Mandatory for all AP/CP Residents  
*Once a month.  
#Bimonthly
Weekly & Monthly Pathology Teaching Conferences
- For Residents, Fellows, and Attending Staff
- Only four conferences are mandatory for all residents (2 AP & 2 CP) as noted above
  (Exception for frozen section coverage only.)
- Conferences are mandatory for fellows within their respective AP or CP designation.
- It is strongly encouraged for attendings in their respective areas as it is considered a portion of
  their teaching requirements. (Patient/case review conferences should be documented as such on
  their monthly time sheets. Some offer formal CME hours.)
- A weekly schedule of the following will be posted the Friday before by Program Coordinator
  Jane Hegarty with an e-mailing to all pathology attendings, residents & fellows.

**Autopsy-Surgical Gross Conference**
**Location & Time:** Every Monday at 7:30 AM (unless UTHSCSA holiday then it is on Tuesday)
in the Autopsy Conference room ground floor of The University Hospital. Mandatory for AP
residents and AP fellows.
**General Summary:** Begins with presentation of prior week’s autopsies’ gross organs
(representing the complete autopsy) with concise review of the patient history (cases and
attendance recorded for QA purposes). Those cases with interesting radiographs please contact
Radiology (567-6488) and clinicians 4-5 days prior to the conference. It will be Radiology’s and
the clinician’s choice to show radiographs and provide extra clinical input at the conference.
Following the autopsy presentations the surgical pathology gross cases selected by faculty,
residents and fellows from both UH & VA are shown as unknowns with an assigned faculty
discussant/leader. The precise format for discussion is left to the attending pathologist (rotates
among anatomic pathology attendings based upon the 6 month schedule organized under the
direction of Director of Anatomic Pathology or their designee).

**Hematology/Hematopathology Tumor Board**
**Location & Time:** Every Tuesday at 8 AM (unless UTHSCSA holiday) in Mabee Conference
room at the CTRC. Mandatory for residents on Hematology and Hematopathology fellows.
**General Summary:** Current patients are presented conjointly with Hematology/Oncology and
Hematopathology.

**Journal Club**
**Location & Time:** First Monday of each month at Noon (unless UTHSCSA holiday then it is on
the following Monday) in UHS Pathology Conference Room, e0316. (Lunch/snacks - for this
conference only - are provided from the annual residency fund.) Mandatory for all residents and
fellows.
**General Summary:** Under the direction of Dr. Martin Fernandez, the focus of this conference is
molecular pathology. Topics will generally cover applications of the techniques of molecular
biology to the diagnosis or understanding of disease states. The topics may vary between AP
(e.g. solid tumors, genetics) or CP (e.g. infectious disease, hematopathology), etc. but should
reflect recent advances. One or two residents or fellows are selected (by rotation schedule) to
present and lead the discussion of journal articles (selected with input from Dr. Fernandez).
Copies of the articles will be distributed to all residents and fellows for their reading prior to the
meeting.

**Clinical Pathology Conference**
**Location & Time:** Every Tuesday at Noon at University Hospital 3rd floor Pathology
Conference Room.
Mandatory for all residents and CP fellows.
**General Summary:** Under the direction of the Director of Clinical Labs the conference has a
rotating schedule of methods of discussion or presentation including the first Tuesday of each
month to be a lab management topic. A 6 month schedule of assigned attendings, residents and fellows is published by the chief residents/Director of Clinical Lab.

**Dermatopathology Conference**

**Location & Time:** Every Wednesday at 8:00 AM at University Hospital Surgical Pathology multiheaded microscope. Conference is mandatory only for those faculty, residents and fellows currently on AP rotations with. Dermatological cases that will be reviewed. (Exception is resident/fellow/faculty currently signing-out.)

**General Summary:** Under the direction of Dr. Tom Davis of South Texas Dermatopathology the prior week cases from University and AMVA Hospitals are reviewed for quality control and correlated with clinical information provided by dermatology residents who also attend. QA correlation is recorded and returned to each institution as part of the monthly QA reporting in surgical pathology. It is the duty of the Director of Surgical pathology at each institution (or their designee) to review this data and make it available to the original attendings. Current cases may be supplemented by teaching cases of rarer entities provided by Dr. Davis.

**Laboratory Medicine Report**

**Location & Time:** Every Wednesday at NOON at University Hospital 3rd floor Pathology Conference Room. Mandatory for all residents and CP fellows.

**General Summary:** Under the direction of Director of Laboratory Medicine brief interesting current case or testing method synopsis (10 – 15 minutes each) are presented from each of the clinical lab departments. Technologist and supervisors are also invited.

**Citywide Hematopathology Conference**

**Location & Time:** Every Tuesday at 4:00 PM at University Hospital Surgical Pathology multiheaded microscope. Resident attendance is not mandatory except for those on hematology, but is encouraged for the more advanced resident or those with interest in possible subcertification in hematopathology.

**General Summary:** Under the direction of hematopathology attendings current hematology cases are reviewed for quality assurance and/or suggestions of further ancillary testing methods with clinical input. Cases from University and STVHCS Hospitals as well as shared cases from other regional hematopathologists are utilized.

**AP Microscopic Unknown Conference**

**Location & Time:** Every Thursday at 7:30 AM at University Hospital 3rd floor Pathology Conference Room. Mandatory for all residents and AP fellows.

**General Summary:** Under the direction of the Director of Anatomic Pathology or their designee the conference has a rotating schedule of topics. A 6 month schedule of assigned attendings, residents and fellows is published. The 1st Thursday of the month is held in conjunction with Dr. Ron Williams and staff from Orthopedic Oncology. The 2-3 cases will be selected by orthopedics and given to the scheduled pathologist for placement in the surgical pathology sign-out area one week prior to the conference. All from pathology (ie: not orthopedic housestaff) are expected to review those slides and give a diagnosis prior to the conference. Clinical history and radiographic information is presented by the orthopedic staff and pathology diagnoses will be given in a "round-robin" manner by all pathology members in attendance with discussion of differential and histological features given by the presenting resident or fellow with contributions (including "pitfalls") as needed by the attending.

The other conferences will have three cases briefly presented (lecture format to be avoided) by a combination of trainees and faculty of interesting surgical pathology or cytological pathology cases. The cases should have microscopic slides or other relevant material place out in a designated area by the Monday of the conference week AT THE LATEST for review by
attendees. All attendees are expected to review this material and be able to participate in discussion if called upon by the presenter.

**Didactic Conference**

**Location & Time:** Every Thursday at Noon in University Hospital 3rd floor Pathology Conference Room. Mandatory for all residents.

**General Summary:** A two year rotating conference schedule is arranged and published by the Director of Anatomic Pathology or designee. The topics will provide an organized approach to the organ systems and periodically include clinical pathology topics pertinent to the recently discussed anatomic organ system. Pure lecture format is discouraged and interactive format is suggested but the format is up to the individual faculty member or guest speaker assigned. Topics include references to all six of the general competencies, not just medical knowledge, may be included in both didactic conferences as well as slide seminars.

**Professor Microscopic Rounds**

**Location & Time:** On the 1st and 3rd Fridays of the month at Noon at University Hospital Surgical Pathology multiheaded microscope. Mandatory for all residents and AP fellows.

**General Summary:** Director of Surgical Pathology or designated attendings in anatomic pathology and hematology will review interesting or challenging cases of the week presented to them by housestaff. Questions may be asked of residents/fellows in attendance, however the main purpose of the conference is for the attending to reflect "diagnostic pearls" that they have found useful by experience for assisting in the differential as well as concurrent QA. Slides are not available for review prior and this is not to be conducted as an unknown conference nor as a formal lecture.

**Autopsy Final Conference**

**Location & Time:** On the 2nd and 4th Fridays of the month (5th Friday of month also if it occurs in the month) at Noon at University Hospital 3rd floor Pathology Conference Room. Mandatory for all AP residents, AP fellows, and autopsy attendings of cases presented.

**General Summary:** The autopsy final anatomic diagnosis is succinctly reviewed along with digital photo illustration of the gross and microscopic features. In addition a current publication pertinent to some aspect of the case will be highlighted for each autopsy. The autopsy cases will be discussed by the resident who performed the autopsy with support from the attending of record (and prior review of the digital Powerpoint presentation). Timing of the final autopsy presentation will be in charge of the Director of the Autopsy Service.

Following the autopsy presentations other gross transparencies or digital images taken recently in Surgical pathology in the prior 2 weeks will be shown by the Surgical pathology fellow and critiqued by the audience. Powerpoint presentations should be put in the autopsy folder under Conferences on ‘Terra’.

All powerpoint presentations should go in their respective folders in ‘Terra’ after presentation.
PATHOLOGY RESIDENCY PROGRAM POLICIES AND PROCEDURES

All UTHSCSA Dept of Pathology Policies and Procedures are governed by the policies of the Graduate Medical Educational Committee (GMEC) of The University of Texas Health Science Center at San Antonio (UTHSCSA) and can be found on the web at: http://www.uthscsa.edu/gme/policies.html

The Process of Selecting Residents

Resident selection is performed consistent with the UTHSCSA GME “Policy on Resident Selection and Appointment.” Written eligibility criteria are consistent with the ACGME Institutional Requirements. There will be no impermissible discrimination in resident selection, and all residents will be eligible for permanent licensure in the state of Texas.

1. Selection of Candidates for Interview.
   The Residency Program Director will review applications through the Electronic Residency Application System (ERAS) and if necessary through the Universal form. Applications will be filtered with the aim of selecting 30 or more good applicants for interview prior to the match. All candidates selected for interview are submitted for screening per compliance agreement. The deadline for applications is December 30.

2. Schedule for Interview Day.
   The interview will contain the following seven components:
   Entrance and exit Interview with the Residency Program Director
   Interview with Chair or senior designee (Reddick / Olson)
   Interview with faculty member directly involved in Clinical Pathology (CP) training*
   Interview with faculty member directly involved in Anatomic Pathology (AP) training*
   Interview with one senior resident
   Lunch with 2 trainees# (must have been in the program at least 6 months)
   Tour of the facilities (one of the residents that accompanies the applicant to lunch)

   * If the applicant indicates an area of interest the AP or CP faculty will be selected / replaced by a faculty member with a similar interest e.g. if the candidate expresses an interest in research the AP faculty could be Dr. Naski, etc.

   # One of the trainees taking the applicant to lunch will also meet the candidate and escort them to the entrance interview. The candidate will be escorted between interviews by either the previous interviewer or one of the trainees.

The Residency Program Advisory Group will give the Residency Program Coordinator a list of AP faculty, CP faculty and Trainees to select from. An interview should only be scheduled if individuals are available for each of the components of the schedule. Substitutions should only be made with consent of the Residency Program Director.
The residents will be responsible for submitting the names of 3 suitable restaurants to the Assistant to the Chair before any applicants are interviewed. The department will pay for 3 entrees and non-alcoholic beverages from the chosen locations.

3. Ranking of Candidates.
All interviewers will complete an evaluation form and return it to the Residency Program Director. Following completion of all of the interviews, the Residency Program Coordinator will compile a summary table of the candidates interviewed including their average score and a list of the overall appraisals. This list and the resident’s individual evaluation forms will be distributed to the chief resident. The residents will then meet to decide which applicants they would like to enter into the National Match Program and how these candidates should be ranked. A resident representative will present this list at an open meeting of faculty and residents. The individuals directly involved in interviewing candidates will vote on acceptance of the proposed list. If a majority decision is not reached, the Residency Program Director will arbitrate.

4. Un-filled positions.
If any positions are not filled through the National Match Program, the Residency Program Director or their designee will be available on site the day before the match results are released to field calls from applicants. A team of faculty members selected by the Residency Program Advisory Group will also be available to help field calls and discuss the suitability of candidates. The Residency Program Coordinator will be assigned an administrative assistant to help compile applications.

5. The Residency Program Advisory Group will be consulted if unusual circumstances arise that require deviation from the procedure outlined above.

Approved by GMEC: March 2002.

Evaluation of Residents

Resident evaluation is performed in a manner consistent with the UTHSCSA GME “Policy on Resident Evaluation.”

Residents are evaluated as follows: at least every six weeks evaluations of residents’ performance from faculty are collected and reviewed by the Residency Program Director. Feedback from these evaluations is provided to the residents at least twice a year, usually in December and June. Any serious deficiencies are discussed with the resident during or soon after completion of the rotation. Overall resident performance and any problems in these areas are discussed periodically with the Departmental Ad Hoc Residency Committee, which makes recommendations as to remedial or disciplinary action, if needed.

Residents also take the Resident In-Service Examination (RISE) sponsored by the American Society of Clinical Pathologists (ASCP) early in May. In accordance with the guidelines of the ASCP, only the resident knows the results of individual RISE scores.
Specific RISE results are not used as justification for promotion or sanctions against residents. RISE results are used only to assist trainees in evaluating their progress and in identifying areas of strengths and weaknesses of both the residents and the training program.

A written report of each evaluation is placed in the resident’s departmental file. In the event that evaluations justify adverse actions (probation, non-advancement, termination), the resident will be notified promptly. A final evaluation will be kept on file.

Approved by GMEC: March 2002.

Promotion of Residents

Residents are promoted to the next PGY level, based upon good standing in the program, and by favorable evaluations by rotation directors and meeting competency objectives at completion of the core rotations.

Pathology residents on service in Surgical Pathology will periodically be given gradually increasing responsibility for completing some of their own cases. The Chief of Surgical Pathology will extend this responsibility after staff pathologists agree that the resident has achieved the desired level of competence. Faculty evaluations classify resident capability as follows:

Level I: Gross only cases
Level II: Normal tissue sent for identified
Level III: Non-neoplastic cases
Level IV: All cases including neoplasia

It is expected that, by the end of their training, most residents will achieve responsibility for signing out the bulk of their cases; however, all cases are reviewed and signed out by faculty as required by institutional and 3rd party payer policies.

Approved by GMEC: March 2002.

Dismissal of Residents

Pathology Resident/Fellow Grievance Policy

I. Grievance Policy Procedures

It is the policy of The Department of Pathology at The University of Texas Health Science Center at San Antonio to encourage fair, efficient, and equitable solutions for problems arising out of residency and fellowship training relationship and to meet the requirements of State and Federal law.
II. Scope of Grievance Policy

Complaints concerning wages, hours of work, working conditions, rotation scheduling, performance evaluations, discrimination on any basis prohibited by law, reprimands and probation decisions, the interpretations of residency/fellow policies, or other grievance related to pathology training as a resident shall be considered subject to this policy.

III. Applicability

The complaint of any pathology resident or fellow will be considered pursuant to the procedure below.

IV. Retaliation Prohibited

No resident or fellow will be penalized, disciplined, or suffer prejudice for exercising the right to make a complaint or for aiding another resident/fellow in presentation of that complaint.

V. Procedure for Bringing a Grievance

A. The resident/fellow shall informally present the complaint to his/her residency/fellowship director for discussion, consideration, and resolution within five (5) working days from the date of the discovery of the action that is subject to the complaint. If the Residency/Fellowship Director is the subject of the complaint, the resident/fellow may address the complaint to the Pathology Chair.

B. If the complaint is not satisfactorily resolved by the residency/fellowship Director within five (5) working days, the resident/fellow may present the complaint in writing within five (5) working days to the Pathology Chair for consideration and action. The Chair will give a decision to the resident/fellow within ten (10) working days of receipt of the complaint.

C. Complaints not satisfactorily resolved by the departmental Chair may be appealed in writing to the ad hoc Pathology Residency Committee (made up of a minimum of six full time pathology faculty members) or to the Associate Dean for Graduate Medical Education of The University of Texas Health Science Center at San Antonio. If the ad hoc Pathology Residency Committee is chosen the resident/fellow may personally select one half of the faculty that will participate in the decision making. A meeting will be called within ten (10) working days after the appealed Pathology Chair decision. The resident/fellow may represent himself/herself at the meeting or choose to have a faculty member represent him/her. A decision will be given in writing to the resident/fellow within five (five) working days following the meeting of the ad hoc committee.

If the resident/fellow still wishes to appeal they may still appeal to the Associate Dean for Graduate Medical Education. The GME Policy on Resident Grievance and Appeal Procedure will be followed.

D. The written grievance and all decisions or responses regarding such complaint shall become a part of the resident/fellow file. The Texas State Board of Medical Examiners...
VI. Grievance Format Defined

A resident/fellow in the Department of Pathology grievance shall consist of two elements. Grievances shall contain a clear and concise statement that explains the specific complaint. Grievances shall also contain the resident/fellow’s recommendation for attaining a sufficient remedy to the complaint.

VII. UTHSCSA Housestaff Grievance Policy

This policy may be superceded by any subsequent UTHSCA policy that is approved by the Graduate Medical Education Committee.

Approved by GMEC: March 2002.

Pathology Graduate Trainee Termination Policy

I. Termination Policy Procedures

It is the policy of The Department of Pathology at The University of Texas Health Science Center at San Antonio to encourage fair, efficient, and equitable solutions for problems arising out of residency and fellowship training relationship and to meet the requirements of State and Federal law.

II. Scope of Termination Policy

This termination policy is applicable only to pathology residents, fellows, and other graduate trainees who have failed to show the necessary progression of knowledge and/or the carrying out the expected duties of their training status as per the residency training manual. The only exception is that related to incapacity related to physical illness.

III. Applicability

The termination of employment of any pathology resident or fellow will be considered pursuant to the procedure below.

IV. Retaliation and Prejudice Prohibited

No resident or fellow will be penalized, disciplined, or suffer prejudice for exercising the right to make a complaint or for aiding another trainee in presentation of that complaint. No resident or fellow may be penalized or terminated secondary to race, gender, age, religious beliefs, physical illness, or sexual preference.

V. Procedure for Bringing about Termination of Employment
A. The training program director will present in a timely manner both verbally and in writing to the graduate trainee evidence of the trainee’s failure to fulfill the duties of their employment. A probationary period will be selected, with a minimum of 4 weeks to a maximum of 12 weeks, which will have specific written goals and objectives that the trainee must satisfy by the end of the probationary period. A minimum of 4 months notice must be given to trainee for contract non-renewal. If the trainee disagrees with the director’s opinion or with the goals and objectives of the probationary period they may file a grievance per the departmental residency/fellow grievance policy.

No probationary period will be required for termination of employment if Federal or State felony laws have been violated or if the resident/fellow has lost his/her medical, osteopathic, or dental license to practice in the State of Texas.

B. If the probationary goals and objectives are not satisfactorily completed within the probationary time period or if a Federal or State Law or loss of licensure has occurred, the training director will meet with the Pathology Chair or his/her designee and an ad hoc Pathology Residency Committee (made up of a minimum of six full time pathology faculty members). The trainee may personally select one half of the faculty that will participate in the ad hoc Pathology Residency Committee. A meeting will be called within ten (10) working days after the training director’s initial decision for termination. The resident/fellow may represent him or herself at the meeting and will be allowed legal counsel at his/her own expense, or may choose to have a faculty member represent him/her. A decision will be given in writing to the trainee within five (five) working days following the meeting of the ad hoc committee.

C. Terminations that the resident/fellow may wish to appeal following the ad hoc meeting may be appealed in writing to the Associate Dean for Graduate Medical Education of The University of Texas Health Science Center at San Antonio. This procedure will follow the UTHSCSA GME Policy on Resident Grievance and Appeal Procedure.

D. The written termination and all decisions or responses regarding the termination shall become a part of the trainee’s file. The Texas State Board of Medicine will be forwarded copies of such as when required by laws governing physician work performance.

VI. UTHSCSA Housestaff Termination Policy

This policy may be superseded by any subsequent UTHSCA policy that is approved by the Graduate Medical Education Committee.

Approved by GMEC: March 2002.

Confidential Evaluation of Faculty, Educational Experiences, and Overall Program

Yearly, the residents are given the opportunity to evaluate specific rotations, conferences, and faculty, anonymously. A template evaluation form is provided to all the residents via the computer for completion on line, and a paper copy is then returned anonymously to the director or coordinator. These evaluations are reviewed by the residency director and made available to the faculty responsible for that rotation in a timely fashion. Consistently negative feedback from residents is brought to the attention of the Director.
of the rotation and the Residency Committee to explore alterations in the structure of the rotation.

Approved by GMEC: March 2002.
UTHSCSA Dept. of Pathology Moonlighting Policy

THE UTHSCSA Department of Pathology follows the recommendations of the UTHSCSA GME policy as published in Section 8 of GME policies that can be viewed on the web at: http://www.uthscsa.edu/gme/policy8.html

The Department of Pathology considers internal moonlighting to consist of similar duties that are part of the regular pathology training requirements but which the residents are given extra compensation beyond their routine salaries. They must have faculty supervision, have evaluations completed by the director of the service every three months as well as reporting of the “internal moonlighting” hours to the residency director as part of their six-month C.V. Internal moonlighting will be covered by the U.T. Systems Medical Liability Self-Insurance Plan. All other work that requires a medical degree and is separate from the program training is considered “non-approved” moonlighting and is not covered by the U.T. liability self-insurance plan.

Internal Moonlighting is allowed at those pathology facilities that we have a current affiliation agreement with and residents routinely do electives at. These include: Santa Rosa Hospital Downtown under the direction of Victor Saldivar, M.D. (210)704-2312, South Texas Dermatopathology under the direction of Tom Davis, M.D., Bexar County Medical Examiner under the direction of Vincent DiMaio, M.D., as well as in The University Health System and Audie Murphy V.A. Hospital System under the direction of Larry J. Fowler, M.D.

External (unapproved) moonlighting is not condoned by the pathology department and trainees assume all risks if they elect to do so despite the programs policy to NOT allow external moonlighting. The following should be considered if the resident considers any external moonlighting:

1. No outside work will be performed while resident is on call at UHS & VA or during regular duty hours. Discovery of performing moonlighting duties under these circumstances may be grounds for immediate probation and possible dismissal from the program for repeated events.

2. A permanent Texas license is needed to perform “unapproved” moonlighting. Trainees should provide their own liability insurance or have in writing from the outside employer assurance they are covered by a professional liability insurance with “tail coverage” as well as worker’s compensation coverage.

3. It is within the rights of the UTHSCSA Dept of Pathology, UTHSCSA GME office and/ or the Executive Vice Chancellor for Health Affairs to rescind the approval for “internal” or “unapproved” moonlighting within 30 days of written notification to the trainee.
**Pregnancy Safety Policy for Pathology Residents**

All residents should be aware that there are certain hazards common to working in a hospital or pathology laboratory that may cause risk to a developing fetus to a greater degree than to an adult physician trainee.

The decision to become pregnant is a personal one. Consultation with your physician prior to pregnancy will help you to make an informed decision. Additional resources include the Safety Office at University Hospital (358-2448) or the UT Health Science Center (567-2955). Specific information regarding any potentially harmful chemicals or exposures can be obtained from the Supervisor of the section to which the resident is assigned.

In the event of pregnancy, there are several safeguards that may be implemented in order to minimize the risk of exposure to hazards that may be harmful to the fetus. In order to expedite such safeguards, prompt notification of the Residency Director and/or Chief Residents upon confirmation of pregnancy is important.

To minimize the risk to yourself and your fetus, strict adherence to all of the universal safety precautions relevant to the task you are performing is essential. In the gross room and autopsy suite, the use of gloves, gown, mask, and eye protection will help to decrease the risk of exposure. Additionally, the resident can request a respirator from the UHS Safety Office to be worn while working in areas where fumes or other agents may be a risk. If desired, the pregnant resident can also request a monitoring badge be provided by the UHS Safety Office in order to monitor, track, and specifically document formaldehyde exposure. In accordance with guidelines established by the Occupational Safety and Health Administration (OSHA, San Antonio Office phone #525-2947), routine, periodic monitoring of formaldehyde exposure within the gross room is performed. The results of these tests are available for review by contacting the supervisor of Histology or UHS Safety Officer.

In all areas of the Laboratory, it is important to remember that proper handwashing and consistent use of disposable gloves are two of the most effective means to reduce the risk of exposure to chemical and biologic agents.

It is important to note that the 1978 Pregnancy Discrimination Act forbids sex-specific fetal-protection policies and was upheld by the United States Supreme Court in 1991 (Automobile Workers v. Johnson Controls, Inc.). In short, this law prohibits the removal of an employee from their job simply due to the pregnancy and potential risk to the fetus. Only when the pregnancy interferes with an employee’s ability to perform the duties of her job can reassignment be mandated by the employer. Therefore, no resident will be automatically removed from their rotation at the grossing bench during Surgical Pathology, excluded from performing autopsies, or performing any other task as it relates to duties of pathology residency at UTHSCSA due to pregnancy.

If a resident desires reassignment during the course of her pregnancy, accommodation of this request will be attempted. It is important to note that such reassignment is usually best achieved prior to the start of the rotation block. Reassignment will be on a voluntary basis. No resident will be required to “cover” a service for a pregnant resident and all
changes to the rotation schedule require approval of the Rotation Director(s) and the Residency Director.

If the resident and her physician deem that the pregnant resident is unable to carry out the essential duties of the assigned rotation, the resident can elect to take a leave of absence under the Family and Medical Leave Act in accordance with the policies of the University Health System.
Annually, PGY 1-7 Pathology residents and fellows will receive a book fund in the amount of $800.00. This fund is disbursed in accordance with each person’s contract year. When you are ready to purchase books, please contact the Pathology Training Coordinator. The easiest way to buy books is by providing the bookstore with a voucher, and she can supply you with one (approved with appropriate signature) before each purchase. If you purchase a book at a conference or order a book online, e.g. Amazon, please bring the invoice to the Coordinator, and she will prepare the required paperwork for reimbursement. It is UT policy that you must have the book sent directly to you at the UTHSCSA address, not to your home.

Use of book funds is subject to the following:

- Book funds must be used before the end of the resident’s contract year, and are non-transferable to the next year (i.e., if they are not used before the beginning of the next PGY year, they are lost).

- Book funds are available only during the period when the resident is employed in the Pathology Residency Program (i.e., a resident cannot access it before they arrive, and cannot use it once they graduate or otherwise separate from the program).

- Book funds may be used for educational materials related to pathology. These may include books (paper or electronic), journals, software, study aids, or other such items. They may be used to pay for memberships to professional organizations only if a pathology journal is provided as part of membership (e.g., USCAP). General memberships (e.g., AMA) will not be reimbursed.

- Book funds may also be used to pay for registration fees for a conference or review course, provided that educational materials are received as part of the course and the conference or course takes place while the resident is employed in the Pathology Residency Program. (NOTE: travel and other expenses associated with attending the course are NOT covered/reimbursable. See travel policy below.)

- Book funds may NOT be used to pay fees associated with licensing, boards, or other examinations.

- Residents are responsible for any expenditures over $800. This includes direct purchases during orientation week: if a resident or fellow exceeds the $800 limit, they will need to remit the difference to the Department of Pathology.

The appropriateness of a book fund expense and reimbursement request will be decided by the Program Director. If there is any doubt, or if an item is unusual or may not qualify, it is recommended that the resident ask beforehand, to avoid incurring costs that may not be reimbursed.
Travel fund policy

PGY I residents receive no travel allowance except with Chair designation. For PGY II and above, each trainee will be funded for each peer-reviewed 1st authored abstract accepted for a national meeting. This support will cover:

- Registration fees for meeting (additional fees [e.g., workshops] must be approved)
- UTHSCSA-arranged round-trip fare to the U.S. meeting site
- Housing costs including the night before and the night after the presentation only
- Transportation (e.g., taxi or airport shuttle, airport parking)
- A per diem for meals not to exceed $50.00.

Reimbursement for travel, housing, transportation, and meals will be provided only for the resident or fellow; no reimbursement will be provided for family members or friends. If a resident is accompanied by family or friend(s) and is charged the double rate or family rate for lodging, he/she will be reimbursed at the single occupancy rate.

Cost of poster should NOT exceed $500; however it is strongly suggested the faculty member submit the request for presentation costs to the department rather than the residency account. Any costs in excess of the Program Director or Pathology Chair pre-approved costs will be covered by the resident/fellow. (Please see Procedures for Posters)

Please obtain permission for your trip from your respective program director, and then let the Pathology Program Coordinator know so that she can follow proper institutional procedures in processing the necessary paperwork. Permission must first be obtained through the Coordinator via a travel authorization request, and as it is electronic, dates cannot be "backdated" after travel. Failure to do this could result in your being denied reimbursement of your expenses.

It is the residents’ and fellows’ responsibility to make their own travel arrangements, and arrangements for airfare must be made through the state-approved Corporate Travel Office, 366-9565. If you wish to be reimbursed only for courses, e.g. Osler, you must also obtain a travel authorization for eventual reimbursement. Our fax number for our receipt of itinerary is 567-2478. Please provide the receipt to the Program Coordinator for paperwork processing.

Remember to keep all receipts from your trip including the airline ticket stub. Please note that alcoholic beverages are not reimbursable. Also please note that car rental is not reimbursable, except under extenuating circumstances, and will be at personal expense should you rent a car, and parking relative to car rentals will also not be reimbursed.

Copying/Supplies & Capital Equipment Policies

- Copying: Each resident and fellow will be given a photocopy card allowing $25 worth of copies at Pathology Department expense for articles, etc. If copying relates to official hospital or department business, then it must be done by that entity’s
support staff. Please place your name on your card immediately. Lost cards will not be replaced at department expense.

• **Computer supplies**: CD-Rs and other necessary computing supplies will be made available to pathology trainees by Pathology Computing. Consult the Chief Residents and they will be in charge of documenting distribution of these items to residents and fellows.

• **Microscopes**: Are NOT to be removed from their assigned areas without the written permission of the institutional owner of the equipment. Home use must be granted from the institutional owner and the Residency Director or Coordinator CANNOT issue this permission. It is also strictly forbidden for any patient care data with identifiers to leave the institutional boundaries as punishable by Federal regulation and Law.

**Basic Cardiac Life Support Courses**

Pathologists (trainees and faculty) are required to take the Basic Cardiac Life Support Course every 2 years. If you have not yet taken the course, please contact the Pathology Program Coordinator, and they will provide times with University Hospital for you to take it. If Pathology trainees have already taken the course and have current documentation, please provide this to the Program Coordinator for a copy of your certification card as soon as possible.

**UT Badges**

All UT Employees, including those residents paid by external funding sources, are required to have a UT Badge. A list of residents has been provided to University Police to cover the $10 fee, and the resident or fellow only needs to go to the University Police window and provide the cashier with your name and department, and they will in turn provide you with your badge. The badges are returned upon the end of each resident’s or fellow’s contract time. Additionally, in the event of a lost badge, the resident or fellow is responsible for the cost of replacement.

**Texas License**

After you have applied for and received a Texas License (Physician’s Permit), please let the Pathology Training Coordinator know. She will need a copy of the Permit that is issued to you.

When a Permanent Full Texas License is issued, the Training Permit becomes invalid.

Regarding professional liability insurance, The University of Texas System is now following the same 30-day grace period as the Texas State Board of Medical Examiners. However, every year, as soon as you get your notice to renew your license, please send in
Rotation Scheduling for Off-site or Elective Rotations Policy

**Background:** This is being required to protect the resident as well as required for documentation to the RRC & ABP. Prior complaints have been made to the Program Director and Coordinator from rotation directors of “unscheduled” residents appearing and lack of completed resident evaluations when rotation directors deny that the resident was under their direction at the time assigned.

**Policy:** All off-site rotations (non-core rotations at UHS or AMVAH) and/or elective rotations in pathology must have a “Off-site or Elective Rotation Form” completed and turned into the Program Coordinator prior to full approval of part of the yearly resident rotation schedule. These include but are not limited to rotations:

1) within the Department of Pathology at the Medical School such as Molecular/Flow/Cytogenetics, Immunohistochemistry, and any of the Research Labs

2) Elective advanced rotations in subspeciality areas of pathology (ie: neuropath, breast pathology, renal, GI, GU, etc.) even if performed at UHS or AMVAH.

3) All off-site rotations such as Santa Rosa Hospital, South Texas Dermatopathology, Medical Examiners Office, etc.

Though the Chief Residents and Program Director may assign you a particular time of your elective or off-site rotation, it is the responsibility of the individual resident doing the rotation to have these forms completed prior to July 1 of each residency year. The forms require the signature of the rotation director which then signifies that they will be responsible for your supervision and evaluation during that time period and have agreed upon the description of the rotation. If there is no published outline of the rotation in the resident manual (per pathology rotation template) then such a description of the rotation in regards to topic, assigned location, goals and objectives, daily activities, method of evaluation, and suggested reading will be required before the Program Director can sign off on the rotation. The template is available from the Program Director or Coordinator. The form requires signature of the Program Director to signify to the RRC and ABP that they have seen a description of the proposed rotation and approved it.

Changes in rotations after that time will continue to use the standard “rotation change” form that must be signed by both the rotation director that you are switching from and the rotation director you are switching to.

Residency Candidate Luncheon Policies

The Chief Resident will choose a current resident to accompany a residency candidate to lunch, and if desired, a second resident may also accompany the candidate. Fellows who
have not served as a resident within our program should not be utilized except for recruitment of other Fellow candidates for the same specialty.

Reimbursement for food and beverage will be limited to $15.00 per person. Any costs exceeding this limit will be borne by the host resident/fellow.

**Vacation Requests**

Vacation/leave forms must be completed and with necessary signatures prior to expected absences. Prior to bringing the vacation/leave form for Program Director’s signature all vacations/leaves must have evidence of prior approval by the attending/director of that specific rotation from which you are requesting leave.

**VACATION POLICY**

**DEFINITIONS**

1. **CORE ROTATION:** A mandatory rotation that is typically scheduled for an individual in the first 3 years of residency.

   Examples include:

   The clinical core rotations of:
   - 12 weeks of hematology
   - 12 weeks of blood bank
   - 12 weeks of microbiology
   - 12 weeks of chemistry
   - 6 weeks of molecular diagnostics, cytogenetics, flow cytometry

   (First six weeks rotations in any clinical pathology rotation will be completed at University Hospital taken with the first two years of residency.)

   The Anatomic Pathology core rotations:
   - 9 months of surgical pathology
   - 3 months of autopsy
   - 3 months of cytology
   - 6 weeks of forensics/toxicology
   - 6 weeks pediatric pathology

2. **ROTATIONS THAT REQUIRE COVERAGE:** Rotations requiring resident/fellow coverage at all times. Currently these rotations include surgical pathology, transfusion medicine, autopsy and cytology.

3. **ELECTIVE ROTATION:** A rotation that is not a core or required coverage rotation. An elective rotation is a rotation the resident chooses and is not scheduled.

   Examples include:
AP electives such as neuropathology, oral pathology, renal pathology, etc.

Research electives.

CP electives such as flow cytometry, molecular diagnostics, immunology or other clinical rotations outside the scheduled rotations in the first two years of residency.

POLICIES

Please use the above definitions for applying the vacation policies. Note that certain rotations are both core and rotations that require coverage (surgical pathology, cytology and autopsy). In those cases the policies are cumulative, not exclusive.

Approval by the residency or fellowship director and the staff/director of the rotation from which a resident/fellow is requesting leave is required before vacation is taken. Prior to bringing the vacation request form to the residency or fellowship director for signature, the form should be signed by the attending/director of the service from which one is requesting leave.

1. CORE ROTATIONS: The resident must be present for 5 of the 6 weeks of any core rotation. In addition, a cumulative maximum of 2 weeks vacation may be taken over the 3 months of a single core rotation. Example: A maximum of 2 weeks may be taken on a 3 months assigned to chemistry.

2. ROTATIONS THAT REQUIRE COVERAGE: Vacation may not be taken unless adequate coverage is provided. The person requesting vacation must make arrangements for adequate coverage.

SURGICAL PATHOLOGY

In surgical pathology at least 1 senior person (third-year resident and above) is required to cover the VA and 3 people to cover UH.

When 2 people are covering the VA hospital and 3 people are at UH one person may take vacation on surgical pathology without having to find a replacement. 3 people will be left at UH and 1 senior person at the VA hospital.*

*Vacation taken in this fashion is limited. A person may take 1 week of vacation for every 4.5 months of surgical pathology scheduled. Therefore, if a resident has from 1.5-4.5 months of surgical pathology he or she may take 1 week of vacation on surgical pathology. If a resident/fellow has 5 or more months of surgical pathology he or she may take up to 2 weeks of vacation on surgical pathology. In addition, the maximum amount of vacation that may be taken by an individual on a 1.5-month rotation is 1 week. Not more than 2 weeks of vacation may be taken in this fashion on a 1.5-month rotation by the 5 residents on surgical pathology.

If vacation cannot be taken using the above policy for surgical pathology a resident/fellow can still take vacation if he/she finds adequate coverage. It is the responsibility of the individual taking vacation to find appropriate coverage.
AUTOPSY - Autopsy service needs to be covered by at least 1 individual. If only one person is on the service he/she needs to find adequate coverage to take vacation.

CYTOLOGY - One person needs to be on the cytology/FNA service. If only one person is on the service he or she needs to find adequate coverage to take vacation.

TRANSFUSION MEDICINE – Transfusion Medicine will require full-time resident/fellow coverage.

3. ELECTIVE ROTATIONS: The resident or fellow must obtain approval from the staff-director of the elective rotation and residency/fellowship director. One week vacation applies to 1.5-month elective, but exceptions can be granted by director of the elective rotation and residency director.

EMERGENCIES

In case of emergencies (i.e. personal illness or death/illness in the family) one may take leave at any time. However, an individual must inform the attending/staff on the rotation he/she is covering and the chief resident of the situation, so that plans for coverage can be made.

A list of senior residents on electives will be created by chief residents to call for emergency coverage for those rotations requiring coverage only. 4/12/00
UTHSCSA Pathology Program
Chief Resident Selection, Benefits, and Duties
(5/20/2009)

Goals:
- Gain administrative experience-working with faculty, staff, junior residents and students by helping manage an academic training program and pathology service
- Contribute to the continuous quality improvement of the UTHSCSA Pathology Program

I. Chief Resident Selection
   a. Two Chief residents are selected in January or February of each year by a vote of the Chiefs and Chairs Committee based upon the following:
      i. Program Director’s suggestion
         1. May also be based upon “straw poll of residents” and interviews with PGY-3 candidates
      ii. Resident written feedback during 360 degree evaluations and Rolf Scott Award nominations
      iii. Candidates must be in their second to last PGY year of training when selected and be a resident in good standing

II. Benefits
   a. All benefits begin on July 1\textsuperscript{st} of their PGY 4 year and end on June 30\textsuperscript{th} of the same PGY year.
   b. Parking passes to the UHS faculty parking area as provided by professional staff services at UHS
   c. Pay bonus of $1000/year per Chief Resident divided evenly among the pay periods for that academic year
      i. $500 of the bonus is provided by UHS per Chief Resident
      ii. $500 of the bonus is provided by the Department of Pathology
   d. Designation as prior Chief Resident on “Final Letter” and other training documentation

III. Duties
a. Chief residents will begin working on rotation schedule for residents when appointed and after eliciting each resident’s *vacation and schedule request form* for the upcoming year.

   i. Draft completion for final approval should be submitted by the scheduled Chiefs and Chairs meeting in May.

b. Chief residents construct the “Holiday” cross-cover schedule in consultation with Program Director and applicable rotation directors.

c. Chief residents write welcome emails/letters to each new resident selected via the Match designating themselves as an important contact and asking for rotation and vacation requests.

d. Chief residents construct the on-call schedule for residents.

e. Chief residents construct resident coverage for each conference series that residents are involved in, including:

   i. Surgical Morbidity and Mortality conference (work with director of AP)

   ii. 4th Tuesday Didactic (work with Director of CP)

   iii. Thursday Grand Rounds (work with Director of AP)

   iv. Tumor Board

   v. Yearly SASP Presentations (work with Program Director)

   vi. Journal Club

   vii. NOT included: Friday Autopsy Conference and other clinical correlation conferences (Breast, Derm, Pulmonary, etc)

   viii. Chief residents encourage resident attendance at required conferences

f. Chief residents organize and supervise Orientation Week for new residents in consultation with the Program Directors and Directors of AP & CP.

g. Chief Residents serve on the monthly Chief’s & Chair’s Conference that meets routinely the first Wednesday of each month at 8:30 AM in the Chair’s small conference room.

h. Chief residents conduct a monthly meeting of residents routinely on the second Monday of the month (after C&C) at noon.
i. **Chief residents are the primary liaison between residents, faculty and staff:**

   i. Let faculty know when problems or complaints are cropping up between residents, residents and faculty, and residents and staff in a professional manner and with good judgment.

   ii. Encourage residents to get their **rotation evaluations** completed by faculty and turned in to the program coordinator, to complete their 6 month **portfolios**.

   iii. Encourage residents to evaluate **faculty, rotations and conferences** as well as fellow residents throughout the year and to turn them in (anonymously) to chief residents **bi-yearly** who will then give them to the Program Coordinator.

j. Serve in facilitating interviews with new candidates, serving as a primary interviewer and conducting the resident ranking of candidates.

k. Chief residents are the **pipeline** for communication of resident illness or absence to the current rotation faculty as well as to the program coordinator. They also facilitate coverage of the absent resident’s duties if, after consultation with supervising faculty, it is determined that coverage is needed.

   i. Residents that may “cover” for the absence include senior residents who are on elective rotations.

   ii. Residents that are on “core” rotations should be the last to be considered for cross covering.

l. **Specifically NOT designated as duties:**

   i. Mandatory duties of AP or CP Fellows

      1. Appropriate supervision of grossing in surgical pathology should be facilitated by:

         a. Chief residents scheduling upper level residents along with less experienced residents during surgical pathology rotations.

         b. Supervision by Surgical Pathology Fellows

         c. Supervision by Surgical Pathology Attendings
d. Voluntary support from experienced and available upper level residents

m. Chief residents should consult the Program Director or their designee when given new duties by faculty or staff not specifically designated in this document or when given demands that conflict with the above description
Procedures for Posters

Creating Large Rollout Posters using PowerPoint Software
In order for Multimedia and Web Services (MWS) to properly output a PowerPoint file of your poster session, please follow the guidelines indicated below. A template is available upon request and should be used to set the file up correctly. The final sizes of the poster can be in the ranges of 3x2, 5x4, 6x4, or 8x4. The printer is limited to a width of 56 inches. Keep in mind that the normal turnaround for output and lamination of a poster is 5-6 days. If the final poster is needed before the normal turnaround, additional special handling charges will be applied; this is strongly discouraged.

Text
0 Create text in Powerpoint or create text in Microsoft Word and copy/paste into Powerpoint document. The text MUST appear editable when in PowerPoint and NOT as a graphic image. It is easier to create the text in Word and then place in PowerPoint by using the copy/paste command under the Edit menu. The final font size should be 18-24 points.

Fonts
0 Times, Times Roman, Arial, or Helvetica only

Graphics or Imported files
0 TIFF files at 200 DPI at final size when poster is printed
   Example: If the final size of the image is 5 x 7 inches when the poster is enlarged, make sure it is scanned at 200-300 DPI at 5 x 7. The image MUST have enough resolution to print correctly when enlarged. If the files are scanned at a too high of a DPI, the printing times will increase and may create additional problems with the file. If you are scanning slides for placement in the poster, scan the slide at the final size it will appear on the poster at 200 DPI.
0 Graphs can be created in PowerPoint, Excel or Word. WMF-Windows Metafiles can also be inserted into the file.

If you have a different type of file from the above, please check with MWS to test whether the inserted file type will print correctly.

Backgrounds
0 Use any of the backgrounds available in PowerPoint. The light textured backgrounds work well and add a nice look to the poster.
0 Custom backgrounds can be created and inserted. Please consult with a MWS staff member about this option.
0 A note about the use of dark blues. Dark blues tend to look okay on the monitor but may print in the purple range (Fig.1). Please consult with MWS on which blues are safe to choose. MWS does not recommend using a dark background.
Creating Page Set Up
The Page Set up should be listed as custom and should be at 50% of the final size of the rollout poster and should only contain one slide. Adjust the width and height of the file based on the final dimensions of your poster. Do not reformat your poster after you have created it or the placed graphics will be skewed. The 5’x4’ and 6’x4’ size posters are the most common and generally cost approx. $200-$250 provided all requirements are met.

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Example of Poster Session

**First Proof**
Once you have created your poster session, please bring a floppy or Zip 100 disk along with a hardcopy of your file and a service request with account number and authorized signature to MWS. A color proof will be printed at 50% of the final size of the poster. Please proof carefully for any spelling errors or possible file conversion errors from the use of the Symbols fonts or use of superscript and subscript characters. You may correct your errors and resubmit the file to MWS or request that both proofreading and corrections be made by the MWS staff. A nominal hourly labor charge will be added for author requested changes that are done in MWS. Additional editorial services are available upon request. A second proof can be requested but will be charged accordingly. Incurring additional charges for MWS staff to correct errors and requesting a second proof are strongly discouraged.

**Final Poster**
Once the proofing stage has been completed, the full sized poster will be printed and laminated. Grommets can be placed on the corners, for an additional charge, and the poster will be placed in a large tube for transport, also at an additional cost.
General Organization

The anatomical pathology (AP) program is designed to provide training to individuals pursuing one of three career options including (1) combined AP and clinical pathology, (2) straight AP, and (3) combined AP and experimental pathology for those primarily interested in academic diagnostic and/or experimental careers.

Each of the career options requires a minimum usually of 18 months total training in AP to become board eligible. All residents begin the AP portion of the training with an obligatory “Core” first year which will usually involve 4.5 months in surgical pathology and 3 months in autopsy pathology. The Core AP rotation will not necessarily be taken consecutively during the first year but may be interspersed with Core CP training as well as in the second year of a combined AP/CP residency. The required second year of AP training will be flexible enough to allow residents to emphasize areas of particular interest including any combination of rotations is surgical pathology, autopsy, cytopathology, renal pathology, neuropathology pediatric pathology, immunopathology and electron microscopy. The second year AP requirements may be fulfilled at any time during the remaining two to four years total training period depending on the career option being pursued and providing the Core AP rotations have been completed. Individuals interested in a straight diagnostic AP residency will have the option of pursuing an additional one to two years in-depth training in their areas of interest. Residents interested in basic research/academic careers will have the opportunity of pursuing one to two years of additional training in one of laboratories of the various basic research attendings within the department. All electives must have Director approval and must also meet service requirements of the agencies funding the training program.
Surgical Pathology Rotation Description

Course Directors:  Jaishree Jagirdar, M.D. (University Hospital [UH])
Aamir Ehsan, M.D. (Audie Murphy VA Hospital [AMVAH])


Rotation Periods:  4-8 weeks (typically 6 weeks)

I. General Organization:

During the first Core year of training, every resident participates in a minimum of 3 months of surgical pathology training. The program is flexible after the first year in that the exact numbers and time of additional rotations within the total four year training period depends upon the particular career options being pursued by each resident.

In general, residents rotate in Surgical Pathology at both UH and AMVAH. Although differing in detail, the overall goals, objectives, and outcomes assessment at each location are similar. The duties and responsibilities of the resident are detailed in the Pathology Residency Manual that is distributed at the beginning of each academic year.

An orientation is given to new residents at the beginning of the year. Thereafter, formal teaching exercises consist of weekly gross and microscopic conferences under the guidance of faculty, as well as weekly lectures by faculty. Correlation of morphology with radiology and other ancillary techniques plays a key role in these exercises.

Residents are periodically given gradually increasing responsibility for preliminary completion of some of their own cases. This responsibility is extended by the Chief of Surgical Pathology in consultation with other staff pathologists. It is expected that, by the end of their training, residents will achieve this responsibility for the bulk of their cases.

Level I:  Gross only cases
Level II:  Normal tissue sent for identification
Level III: Non-neoplastic cases
Level IV: All cases except core biopsies

Senior residents are also given responsibility for assisting with the guidance of junior residents, for presenting at clinical conferences, and for greater independence with frozen section consultations.
II. Rotation Goals for Trainees:

A. **Patient Care:** Achieve an appropriate level of diagnostic competence, as well as the ability to provide appropriate and effective consultation regarding pathology services.

B. **Medical Knowledge:** Develop knowledge of established and evolving sciences pertinent to the practice of Surgical Pathology, and demonstrate application of that knowledge.

C. **Practice-Based Learning and Improvement:** Develop the ability to evaluate and apply evolving scientific knowledge to the daily practice of Surgical Pathology for the purpose of improving patient care practices.

D. **Interpersonal and Communication Skills:** Develop the ability to exchange information and team effectively with other health care professionals, as well as interact appropriately with patients and families.

E. **Professionalism:** Recognize the significant responsibilities and ethical principles of the practice of Surgical Pathology, and show sensitivity to a diverse professional and patient population.

B. **Systems-Based Practice:** Recognize the position of Surgical Pathology within the larger system of health care, as well as be able to identify system resources that will facilitate the practice of Surgical Pathology.

III. Rotation Objectives for Trainees:

(Abbreviations for related competencies: PC - Patient Care; MK - Medical Knowledge; PBLI - Practice-Based Learning and Improvement; ICS - Interpersonal and Communication Skills; PR - Professionalism; SBP - Systems-Based Practice)

A resident who is competent in Surgical Pathology should:

I. Follow the Surgical Pathology Gross Room and Reporting Manual (PC, MK, PBLI, ICS, PR)

II. Make gross descriptions that are accurate, succinct and complete (PC, ICS, PR, SBP)

III. Choose appropriate tissues for histologic examination and other studies, such as tumor bank (PC, MK, SBP)

IV. Follow directions for dictation, and for completion and disposition of paperwork (PC, ICS, PR, SBP)

V. Ascertain the intent and appropriateness of a request for frozen section or other ancillary studies before proceeding (PC, MK, PBLI, ICS, PR, SBP)

VI. Operate and use appropriately cryostats, rapid stains, bone saws and other relevant equipment (PC, MK)

VII. Review and correct typed clinical history, gross descriptions, etc. (PC, ICS, PR)
VIII. Obtain appropriate clinical history and previous pathologic findings, and review relevant literature, prior to making a diagnosis (PC, MK, PBLI, ICS, PR, SBP)

IX. Use and interpret ancillary diagnostic techniques (special stains, immunohistochemistry, electron microscopy, etc.) appropriately (PC, MK, ICS, SBP)

X. Use standard textbooks, original literature and other knowledge resources efficiently when dealing with challenging cases (PC, MK, PBLI)

XI. Use appropriate templates, staging forms, etc., and complete all paperwork as needed (PC, MK, ICS, PR, SBP)

XII. Render diagnoses that are correct and complete, using standard diagnostic terminology and format (PC, MK, ICS, PR, SBP)

XIII. Complete all duties on the day expected (PC, ICS, PR, SBP)

XIV. Follow-up promptly on incomplete cases (PC, ICS, PR, SBP)

XV. Take gross and microscopic photographs that accurately and completely illustrate the lesion(s) present (PC, MK, ICS, SBP)

XVI. Respond well to appropriate requests for routine and non-routine duties (PC, MK, PBLI, ICS, PR, SBP)

XVII. Cooperate with faculty and colleagues to ensure that accurate and complete diagnoses are rendered (PC, MK, PBLI, ICS, PR, SBP)

XVIII. Demonstrate commitment to the practice of Surgical Pathology (ICS, PR)

XIX. Show stability and clear thinking during busy or pressured situations (PC, ICS, PR)

XX. Respond promptly and reliably to requests for professional assistance (PC, ICS, PR, SBP)

XXI. Show understanding of and respect for the work of technical and secretarial staff (ICS, PR, SBP)

XXII. Assist other trainees when needed (PC, MK, PBLI, ICS, PR, SBP)

XXIII. Assist clinicians and other visitors to Surgical Pathology when needed (PC, MK, ICS, PR, SBP)

XXIV. Prepare for, attend and participate in all required conferences (PC, MK, PBLI, PR)

XXV. Display appropriate images and discussion when presenting at conferences (PC, MK, PBLI, ICS, PR, SBP)

XXVI. Make presentations at clinical conferences that aid and facilitate patient care decisions? (PC, MK, PBLI, ICS, PR, SBP). These may be used for evaluation

XXVII. Apply the principles of Quality Improvement to daily work in Surgical Pathology (MK, PBLI)

XXVIII. Participate in laboratory inspections and other quality activities (PC, MK, PBLI, SBP)

XXIX. Display familiarity with information technology that is relevant to Surgical Pathology (PC, MK, PBLI, SBP)

XXX. Adhere to guidelines set forth by regulatory and accrediting agencies (MK, PBLI, ICS, PR, SBP)

IV. Outcomes Assessment:

A. Subjective Evaluations:
1. Faculty Evaluations: At the end of each rotation lasting for at least 4 weeks, each faculty member working with the resident will complete a Faculty Evaluation of Resident Competency in Surgical Pathology form (Attachment A).

2. Technical and Secretarial Staff Evaluations: Once each quarter, the Senior Secretary and the Senior Histotechnologist will be asked by faculty about each resident who was on-service during the previous quarter. Any feedback will be documented on the form under item # XXI.

3. Evaluation by Pathology Residents: At the end of each quarter the other residents on-service for that rotation will be asked by faculty for feedback from residents. This will be documented on the pathology evaluation form under item #XXII.

4. Evaluation by Clinicians: Whenever a resident presents Surgical Pathology material at a clinical conference, a clinician will be asked for feedback which will be documented under item # XXIII on the Pathology evaluation form.

B. Objective Evaluations:

Annually a 1-hour quiz will be given to all residents doing AP consisting of up to 10 cases with clinical history, gross specimens, glass slides and/or photographs with up to 30 questions contributed by the faculty. Cases will focus on diagnostic challenges that are central to the daily practice of Surgical Pathology. There will be a good mix of basic as well as more involved cases. Expectations for resident performance are as follows: After 3 months of Surgical Pathology - 50% correct; after 6 months - 75% correct; after 9 months - 90% correct.

V. Suggested References:


VI. Resident Duties and Responsibilities (outline):

Residents are responsible for dissection, photography, gross description, and preparation for final sign-out of surgical specimens with staff Pathologists. Graduated responsibility for preliminary completion of cases is accorded to Pathology residents on an individual basis as each develops the ability to deal with progressively more complex cases.

Residents on-service at University Hospital follow a 3-day cycle:

- Day 1: Gross-in surgical specimens; cover frozen sections until noon
- Day 2: Prepare Gyn cases for sign-out at 11:00 am; prepare remaining cases for sign-out on Day 3
- Day 3: Sign out all remaining cases; cover frozens from noon to 4:30 pm

Standard working hours for Prosectors and Staff Pathologists are from 8:00 am to 4:30 pm, Monday through Friday. However, the Day 1 Prosector and the Staff Pathologist both need to be immediately available for frozen section coverage beginning at 7:30 am. The workday does not end until the prescribed day’s activities are completed.

Residents on-service are required to attend the following Conferences: Gross Conference (Mondays at 7:30 am); Grand Rounds (Thursdays at 7:30 am); Professor’s Rounds (alternate Fridays at 12 noon).

VII. Rotation Outline: An idealized description of the Prosector's day at University Hospital is as follows:

Day 1
From 7:30 am to noon, cover frozen sections and fresh tissue distribution. The Prosector's beeper is available from the Surgical Pathology secretaries. Gross-in all large specimens requiring fixation that are received by 3:00 pm, and all small specimens received by 4:30 pm. However, breast biopsies and large specimens that are received by 4:30 pm and do not require fixation (eg, amputations) must also be grossed in on Day 1. Monday through Thursday, large specimens needing fixation and received after 3:00 pm are opened and pinned by the Day 3 Prosector, who will gross them the next day. However, specimens received on Friday and held for fixation must be cut-in by Friday’s Day 1 Prosector so that the slides come out Monday morning.

Be available for clinicians seeking results of incomplete cases.
Complete sign-out of any ready cases that were not completed on the prior Day 3.
Day 2
Prepare Gyn cases for sign-out; begin sign-out at 11:00 am.
Prepare remaining cases for sign-out on Day 3.
Be available for clinicians seeking results of incomplete cases.
Complete sign-out of any cases that were not completed during the prior cycle.

Day 3
Begin sign-out at 8:00 am (8:30 am on Monday and Thursday). Place completed cases in the basket in the sign-out room.
Faculty will periodically break for frozens; use this time to telephone clinicians, hand in special stain requests, etc.
Break for midday conferences from noon to 1:00 pm.
Present cases at Faculty Consensus Conference at 1:30 pm; afterward, continue with sign-out until finished.
Follow-up any “rush” cases needing additional work (eg, consults, special stains).
Open and/or pin out any large specimens needing fixation that are received after 3:00 pm.
Cover frozen sections from noon - 4:30 pm.

VIII. Rotation Review:

<table>
<thead>
<tr>
<th>Jaishree Jagirdar, M.D.</th>
<th>Date</th>
<th>Kristin Fiebelkorn, M.D.</th>
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<td>Rotation Director</td>
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<td>Residency Program Director</td>
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AUTOPSY PATHOLOGY ROTATION

Course Director: Larry J. Fowler, M.D.

Faculty:
- Aamir Ehsan, M.D. (AMVAH)
- Martin Fernandez, M.D. (UHS)
- Larry J. Fowler, M.D. (UHS)
- Kelly Hallmark, M.D. (AMVAH)
- Josefine Heim-Hall, M.D. (UHS, Pediatric Autopsy Only)
- Jaishree Jagirdar, M.D. (UHS)
- Jason Loos, M.D. (AMVAH)
- Ghazwan Scharabi, M.D. (AMVAH)
- Francis E. Sharkey, M.D. (UHS)
- Hunan Siddiqui, M.D. (AMVAH)
- Fermin O. Tio, M.D. (UHS)
- Philip T. Valente, M.D. (UHS)
- I-Tien Yeh, M.D. (UHS)

Rotation Periods: 12 weeks for CORE Rotation. Offered all 12 months of any training year in 6 weeks blocks. Important: All autopsy rotations must be followed by on-site rotations that allow timely completion of the final autopsy reports within 30 working days.

I. General Organization:
The autopsy pathology rotation will consist of 12 weeks routinely in the 1st year of APCP training but not limited to that period of training. The CORE rotation is usually done in two separated time periods of six weeks each (during first and second halves of the academic year). The resident is either performing post mortem study or reviewing assigned topics. All general autopsy rotations must be followed by on-site rotations that allow timely completion of the final autopsy reports within 30 working days.

II. Rotation Goals:
Medical knowledge and Patient Care Competencies: Understanding clinical and laboratory expression of most commonly encountered disease processes and the many associated complications leading to illness or death. Data gained from review of the clinical chart prepares the resident for a discussion with clinical teams and construction of a problem list. The thorough prosection allows direct observation and study of all permitted organ systems. Correlation of chart data and the problem list with the gross observations leads to proper selection of representative samples of lesions in addition to routine tissue for microscopic study. The selected tissue must be well fixed. Residents must learn to recognize the microscopic range of normal and the hallmarks of tissue injury, necrosis, inflammation, healing, infection and neoplasia in the major organ systems. They must be able to arrive at a concise report that blends the clinical information with the gross, microscopic and clinical laboratory data.
Interpersonal and communication Skills and Systems-based Practice Competencies: Knowledge of basic principles of communication to enable direct conversation with clinical teams before the postmortem exam and to relay results back to them after completion of prosection, including showing them the gross lesions if desired. Resident
discusses the gross diagnoses with attending before issuing provisional anatomic diagnoses electronically. After studying microscopic slides, presents case to Pathology attending and final report generated in computer and issued after approval. The importance of making the autopsy report understandable to clinicians and family of the decease is emphasized. This must be transmitted both verbally and by formal electronic document preferably within 30 working days for routine cases.

**Practice Based learning and improvement:** Residents must demonstrate ability to investigate and evaluate their consultative and diagnostic practices and to use previous cases to fill in areas of disease that they have not directly encountered in their own practice. They must perform electronic literature searches for each case and appraise available scientific evidence. They must be able to select cases with higher quality risk management scores and bring them to attention of institutional committees and for clinician education with presentations at mortality/morbidity conferences.

**Professionalism:** Residents must demonstrate commitment to carrying out their professional responsibilities in a timely fashion, adhering to high diagnostic standards and ethical principles while remaining sensitive to a diverse patient population and how they regard death as well as regards HIPAA compliance.

### III. Rotation Objectives:

**A.** Before an autopsy prosection can be conducted successfully several medical and administrative skills must be enhanced or acquired so that the necessary procedures can be performed.

1. Completely review patient chart and summarize
   a. reason for current admission
   b. pertinent past history
   c. hospital course
   d. pertinent laboratory findings
   e. terminal events

   *(Competencies: PC, MK, PBLI, SBP)*

2. Check autopsy permit for validity and restrictions. A resident must learn and understand all of the relevant information in the autopsy manual and on the back of the autopsy permission form. The resident must prepare to be the initial one contacted when the clinical team has questions.

   *(Competencies: PC, MK, PBLI, IPCS, P, SBP)*

3. Contact attending who is on autopsy duty and discuss pertinent aspects about the case.

   *(Competencies: PC, MK, IPCS)*

4. If the attending on duty does not respond in 30 minutes, contact the Director of the autopsy service or their designee if they are out of town.

   *(Competencies: PPCS, P)*

5. If a case appears to be “reportable to the medical examiner,” the resident must prepare to discuss the case intelligently with the clinical resident or attending and evaluate the case for reportability to the county medical examiner. If also felt to be reportable by the pathology attending, and clinical resident refuses to do so, the pathology resident must communicate with the Medical Examiner as follows. If it is a case at the VAH, call Dr. Ehsan. If it is a UH case, after discussion with the pathology attending, the pathology resident
discusses the case with a physician in the medical examiner’s office to avoid misunderstanding. (Competencies: PC, MK, IPCS, SBP)

6. List any specific question and any special procedures necessary, such as cultures, touch preps, frozen sections, removal of auditory canal, spinal cord, etc. (Competencies: PC, MK, SBP)

7. Contact requesting clinical teams prior to the autopsy to invite them to observe as well as to gain insight into any information you may still need that was not clear by the autopsy permit or chart. If they cannot be present during the autopsy, offer to page them again at completion for their attendance at the summation given to the pathologist attending. Document clinician’s attendance or their decision not to attend with each autopsy. The clinical team also should receive a verbal or email invitation to attend the final formal presentation of the case at a noon autopsy conference as well as notifying them when the FAD is completed. (Competencies: PC, MK, IPCS, SDP)

B. Performance of Autopsy

1. Learning to properly perform an autopsy calls on many medical, technical and manual skills in a coordinated manner so that problem solving is enhanced.
   a. At the beginning of each academic year the autopsy director will try to be the attending during the first two weeks of every new resident’s rotation. If not they will locate a more senior resident or other faculty to be available at the table throughout the autopsy to teach and direct the autopsy. The resident should have already reviewed the Autopsy Manual as published in the residency manual and understand the gross dissection process. (SBP, MK)
   b. Gross anatomy has to be reviewed and embraced in order to enable interpretable prosection. This mammoth chore is divided so that the prosection is divided into four parts, each one to be concentrated on during each of the first four prosections. (Competencies: MK)
   c. Microscopic anatomy presents much of the same need for study and review. Slides from prior cases are used for study. (Competencies: MK)
   d. Resident needs to continually refine the definition of the range of “normal”. (Competencies: MK)
   e. The resident must continually study as well as “learn how to do by doing.” An abundance of assistance is available throughout the core rotation. The pathology attending assigned to the case will be available to consult on the case before, during and at the conclusion of the prosection. This same attending will review all gross and microscopic and complete the case with the resident. (Competencies: PC, MK, PBLI, IPCS, P, SBP)

2. Perform a thorough autopsy, take appropriate smears and cultures,
and take gross photographs of major gross findings or the absence of anticipated findings (see autopsy manual). The Rokitansky en bloc method of dissection is used for teaching purposes. The Virchow single organ method, used for HIV and hepatitis cases, will be taught later. Contact the attending or the Director of Autopsy Service during the autopsy as necessary. (Competencies: PC, MK, PBLI, IPCS, SBP)

3. Contact pathology attending and present case and gross organs at completion of dissection. (Competencies: PC, MK, IPCS)

4. Prepare Provisional Anatomic Diagnoses (PAD) which must be completed, signed, and published within 24 hours of performing the autopsy. If clinicians were not able to witness the gross findings, the resident will tell them the provisional findings when finished. (Competencies: PC, MK, IPCS, P)

5. Arrange time to attend the gross brain cutting and to review microscopics with all senior residents and pathology attendings involved with the case. (Competencies: PC, MK, IPCS)

6. Study microscopic slides and prepare a written description and diagnoses for tissue on each slide. (Competencies: PC, MK, PBLI)

7. Present the completed case along with a “Final Anatomic Diagnoses” to pathology attending sufficiently before the 30 working day maximum limit. (Competencies: PC, MK, PBLI)

8. The case must be completed and signed in 30 working days. (SBP)

9. A PowerPoint presentation for the case must be prepared for final autopsy review conference. (Competencies: PBLI, MK, IPCS, P)

10. Whenever two residents participate in a case, both must participate in all steps and be prepared to give the final presentation. (Competencies: PBLI, P, SBP)

Abbreviations for six general competencies:
PC = Patient care, MK = Medical knowledge, PBLI = Practice-based learning and improvement, IPCS = Interpersonal and communication skills, P = Professionalism, SBP = Systems-based practice.

IV. Outcomes Assessment (trainee evaluations):
Subjective Evaluation  The standard competency-based trainee evaluation form is completed by the medical director of autopsy pathology at the completion of each six week interval of training and/or by a faculty member that the resident feels has worked with sufficiently on autopsy to evaluate. If deficiencies or problems of any sort arise, they are confronted and discussed immediately in order to clarify and remediate the condition. The director of autopsy pathology has the opportunity to study the results of each prosection and has each case along with its interpretation presented in gross conference format. The pathology assistants, transcriptionists, other residents working with them on an autopsy and clinicians will be contacted by the evaluating faculty for 360 degree evaluation. The resident is directly observed during the dissection (and this can be considered a “simulation” observation for purposes evaluation).
Objective Evaluation  The autopsy case material studied by the resident is determined by the randomized diseases of the patients autopsied and the disease topic of the week. The resident will be verbally quizzed on both current cases and differentials, however there is no written exam except for the yearly Residency In-Service Exam. The residents are required to keep a log of their completed autopsy cases and included within their resident portfolios.

V.  **Suggested Texts**

*Required Reading (Manual and books should remain in autopsy resident area)

<table>
<thead>
<tr>
<th>Title</th>
<th>Author</th>
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<tbody>
<tr>
<td>*Autopsy Manual</td>
<td>Faculty</td>
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<tr>
<td>Cardiac Conduction System in Unexplained Death</td>
<td>Bharati &amp; Lev</td>
</tr>
<tr>
<td>Cardiovascular Pathology (Saunders, MPP Series, Vol 23)</td>
<td>Virmani, Atkinson, Fenoglio</td>
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<tr>
<td>*Handbook of Autopsy Practice, Humana Press, 3rd Ed</td>
<td>Ludwig J</td>
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<tr>
<td>*Handbook of Pediatric Autopsy Pathology</td>
<td>Gilbert-Barness E</td>
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<tr>
<td>Histology for Pathologists</td>
<td>Sternberg</td>
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<tr>
<td>*Robbins Pathologic Basis of Disease *</td>
<td>Kumar, Abbas, Fausto</td>
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VI.  **Resident Duties and Responsibilities**

1. Check with UH and VAH at 7:30am to see if any autopsies to be performed. Also then check if ME office cases available dependent upon ME faculty calendar.
2. The resident on autopsy core rotation performs all cases each day. If there are more than two prosections that can not be postponed than the Chief Residents should be contacted to find other available residents. Hospital autopsies performed as above and per Autopsy Manual in the Resident’s Manual including contacting clinical teams at the time of the autopsy.
3. Present case at weekly departmental gross conference.
4. Attend brain cutting conference.
5. Complete microscopic study and present case in written form to attending assigned to case.
6. Prepare PowerPoint presentation of case, including digital gross and microscopic images, for the final autopsy review conference.
7. Present findings at clinical conferences when requested (M&M, etc).
8. Along with the daily autopsy workload, the resident studies the “Topic of the week”, reviews prior CAP cases on file, and performs required reading.
9. They should monthly assist Harold Payne in the monthly QA especially checking Sunrise Death Notes to be certain documentation is present for approaching the deceased relatives to request autopsy permission as required buy UHS. They may also be asked to conduct in-house CAP checklist audits as needed or be assigned other process improvement projects by the autopsy director.

VII.  **Rotation Outline:**

A. Autopsy Practice

1st autopsy - concentrate on external exam, y-shaped incision, internal exam of Thoracic and abdominal cavities, evisceration and removal of
calvarium and brain. Learning suggested modified technique of heart and lung dissection.

2nd autopsy – as above plus, do all dissection supervised for the yourself of the heart and lungs and do one other block (GI or GU yourself).

3rd autopsy – as above plus do one extra block dissection that haven’t done before (if previous GI do GU).

4th autopsy – do all blocks and dissection yourself as long as not pressed for time (eg. if two autopsies in one day then pathology assistant help is allowed).

For all further autopsies the resident should do the actual dissection including “hands on” including the calvarium portion as allowed by not having more than one resident on the case or being pressed for time. Exceptions are at the discretion of faculty or autopsy director.

B. Concurrent Schedule for Review

1st week: How to capture and process gross and microscopic images for use in PowerPoint case presentations. Then for below we suggest reviewing of Robbin’s CD Case Studies in the following.

2nd week: Inflammation (acute, chronic and granulomatous), wound healing, scarring, and neoplasia.

3rd week: Cardiovascular

4th week: Pulmonary and thrombosis

5th week: Hepatobiliary and pancreas

6th week: Renal, urinary, and prostate

7th week: Female genitalia and breast

8th week: Upper gastrointestinal

9th week: Lower gastrointestinal

10th week: Musculo-skeletal

11th week: Endocrine

12th week: Central nervous system
Rules for “General” Autopsy Experience at Medical Examiner’s Office
For Junior Residents from UTHSCSA

- Medical Autopsies at UHS/VA have fallen to less than 100 in the past 4 years despite vigorous attempts to increase autopsy rate of hospital deaths of non-ME cases. The RRC requires 50 autopsies that must include a chart review or history taking, gross dissection, microscopic review, and a write-up of the case under supervision. In an ACGME accredited training program.

- ME Office 2001 data revealed 872 “Natural Deaths” with 408 having complete autopsies.

- First and second year residents will be doing some “general autopsies” at the ME office after initial training and experience with at least 2 autopsies at UHS or AMVA Hospital while on the “hospital autopsy service”. These “Junior” residents will be available to perform the autopsies at the ME office only when no autopsies are available at UHS and VA Hospitals (and as ME published calendar allows).

- The resident who is on the general hospital autopsy rotation will check the ME “On Service Calendar” that is on display in the UHS autopsy suite (check with Harold for location). Call 335-4053 to see if they are still available and be timely. It would also be considered proper to notify them on days that they may be expecting you if you are unable to attend. If the resident is scheduled to be at the ME office and an autopsy arises at University or the VA hospitals they MUST be notified first thing in the morning that you will not be coming over. If scheduled, they will expect the resident to be there at or before 9am to begin the case. Plan on having the time from 8-12 open to perform the dissections on the days you are scheduled to be at the ME’s Office. They will not supply scrubs or parking (wear your scrubs, coat and ID over to the ME office). The resident should call the ME office each morning you are scheduled anyway just to verify that they have an appropriate case to do. In the interest of a worthwhile experience, only ONE resident on the general autopsy service is allowed to participate at anyone time.

- During your first week on the general autopsy service contact the ME office to sign required documentation as required by the ME office for confidentiality, privacy of information, etc. The reports (see below) that you will do for the Director of the General Autopsy Service (Dr. Fowler) MUST be reviewed by ME Faculty FIRST to proof. (Reasons: 1) to remove any information the ME office feels compromises confidentiality (name, ME number, specific date of death, etc); 2) they will also make sure that the resident is on target with the circumstances and cause of death, since the autopsy director won’t be familiar with the cases and may not know whether the resident completely understood all of the relevant factors. Sex, age, and primary and secondary cause of death are needed for you to report these autopsies on your Board of Pathology Application so be sure to keep track of this information but name, date of death, or precise date of autopsy (other than which rotation time period that you performed the autopsy).

- You will observe and participate in the chart or history review, gross dissection with ME Faculty of suspected “natural deaths” that will have a gross dissection and preferably a minimum of one microscopic section taken for review. Some of these may be toxicology cases (i.e.: overdoses) just as long as a dissection and one microscopic section...
is taken. They may include selected accidental or suicidal deaths in the possible mix also, to give greater flexibility in scheduling cases.

- You will need to review the microscopic, toxicology reports & radiographs where relevant. Do so in a timely fashion. ME’s will be available for review of micro and other follow-up material by advance arrangement with the resident. No MATERIAL IS TO BE REMOVED FROM THE ME OFFICE. You will then write-up an “unofficial” autopsy report (utilizing our FAD format) that will be reviewed by the UTHSCSA hospital autopsy director or program director prior to be able to be counted toward their required 50 cases. Harold Payne will track the numbers to be numbered as ME 05-001, etc. (unrelated to the number given the case at the ME’s office) only for the general autopsy service’s record keeping. Selected cases may be used for presentation at the residency Friday final autopsy case conference with approval by the ME Office as long as HIPAA info is removed from the conference presentation. These “unofficial” write-ups the UHS Autopsy office will keep on file as long as a copy for the resident’s use as proof for ABP. The UT Autopsy Director (or their designee) will review this write-up with the resident for educational purposes. It will not be part of the ME official report that is done separately by the ME Faculty/Fellow for legal purposes. It is extremely important to maintain anonymity of the cases in the unofficial write-ups. The ME case number and name of the decedent should not be referenced. Again these write-ups must be reviewed by Drs. Molina or Frost before finalizing.

- This description of ME cases for the “General Autopsy Service” DOES NOT effect the “Forensic Rotation” as described in the residency manual as a 3rd or 4th year rotation with forensic autopsies.

**Rotation Review:**

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<tr>
<th>Larry J. Fowler, M.D.</th>
<th>Date</th>
<th>Kristin Fiebelkorn, M.D.</th>
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<tbody>
<tr>
<td>Autopsy Rotation Director</td>
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<td>Residency Program Director</td>
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BCMEO Forensic Autopsy/Toxicology Rotation

**Course Director:** Jennifer Rulon, M.D.

**Faculty:**
- Randall Frost, MD, Chief Medical Examiner
- Kim Molina, MD, Deputy Chief Medical Examiner
- Elizabeth Peacock, MD, Medical Examiner
- Rajesh Kannan, MD, Medical Examiner
- Rod McCutcheon, Chief Toxicologist

I. General Organization:
The forensic autopsy rotation for will consist of a four week rotation at the Bexar County Medical Examiner’s Office. It is recommended during the PGY3 year following core rotations in general autopsy and clinical chemistry. Daily responsibilities include performance and observation of forensic autopsies. Other responsibilities will include crime scene investigation, courtroom and/or deposition exposure and a presentation on a current forensic topic. During the four week period, the resident is expected to spend some time within the toxicology laboratory and must arrange this with the Chief Toxicologist.

II. Rotation Goals and Objectives:

- **Medical Knowledge & Patient Care Competencies:** Examine and interpret the spectrum of homicide, accidental or natural cause of death utilizing all principles and techniques of the autopsy. Understand how to appropriately and correctly complete a valid Texas death certificate.

- **Interpersonal and Communication Skills & Systems-based Practice Competencies:** Knowledge of basic principles to enable transmission of the autopsy results to physicians, law enforcement personnel and family members utilizing communication skills and laboratory information systems.

- **Laboratory-based learning and improvement competency:** Understand the appropriate use and techniques of the forensic autopsy including toxicology and crime laboratory analysis as well as the need for chain of custody requirements.

- **Professionalism competency:** Understand of the need for commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient and clinician population as well as to research. Understand the need for expert testimony and courtroom procedures.

IV. Outcomes Assessment (trainee evaluations):

- **Subjective Evaluations:** The standard competency-based trainee evaluation will be completed at the end of each trainee time-period by the faculty supervisor with input from other faculty members and technicians. If trainee performance is perceived as unsatisfactory at anytime during the rotation it should be discussed in a timely fashion prior to the end of the rotation.

- **Objective Evaluations:** A presentation to the staff will be required of each resident. A take-home, self study exam is given.

V. Suggested Text References:
VI. Resident Duties & Responsibilities:
A. Residents will be expected to be available for between the hours of 8:00 AM to 5:00PM Monday through Friday except with excused absences. The resident will meet with the duty ME every weekday morning at approximately 0800 in the autopsy room to review the cases for the day. At this time, the cases will be reviewed and discussed. Decisions as to whether to perform an autopsy or to conduct an external examination will be made at this time. The Medical Examiner will assign a case to the resident. All cases are performed by a medical examiner with the resident assisting.

B. The resident is expected to attend death scene investigations under the direction of the medical investigators at the BCMEO.

C. The resident is responsible for researching and giving a 15 minute presentation on a pertinent forensic issue.

D. The resident is responsible for attending the weekly ME conference.

E. The resident will keep a list of all cases in which they are involved and in the manner in which they are involved (ie. cutting of an autopsy, attending a death scene, etc). This list must be presented to the course director at the completion of the rotation.

F. The resident is expected to rotate through the toxicology laboratory and to become familiar with the basic techniques of toxicologic testing. The resident is expected to organize this portion of the rotation with the Chief Toxicologist.

VII: Rotation Outline - variable, depending on time spent on rotation

VIII. Rotation Review

_________________________  ____________  ______________________  ____________
Rotation Director          Date             Residency Director       Date
CYTOPATHOLOGY ROTATION

Site: UTHSCSA, University Hospital and Audie-Murphy V.A. Hospital

Faculty & Course Director: Philip T. Valente, M.D., Co-Director
I-T. Yeh, M.D.
J. Jagirdar, M.D.
M. Nicolas-Policarpio
F. Sharkey, M.D.
G. Scharabi, M.D.

Rotation Periods: 12 weeks for CORE Rotation broken into two 6 week rotations. Offered all 12 months of any training year.

I. General Organization:
The cytopathology core rotation consists of two six weeks rotations (total 12 weeks) routinely with the first 6 weeks during PGY-2 year and another 6 weeks in the 3rd year of APCP training but not limited to that period of training. The CORE rotation may also be done in one combined 12 week rotation upon special request.

II. Rotation Goals:
Medical Knowledge & Patient Care Competencies: Understanding of proper collection, processing, and interpretation of gynecologic and non-gynecologic cytology specimens (including FNA).

Interpersonal and Communication Skills & Systems-based Practice Competencies: Knowledge of basic principles to enable transmission of the cytological diagnosis in an informative, timely, and succinct way that best serves patient and clinician needs utilizing communication skills and laboratory information systems.

Laboratory-based learning and improvement competency: Understanding of principles of data management for quality assurance, billing, and clinical research.

Professionalism competency: Understanding of the need for commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient and clinician population as well as to research.

III. Rotation Objectives:
- The trainee should be able to view any Gyn Pap test and properly classify by The Bethesda System 2001 utilizing both conventional smear and liquid-based preparations. They should also be able to generate and communicate their opinion for proper management. If given a 10 slide quiz 60% of the slides should be able to be properly classified (within one gradation of classification). (Competencies^ PC, MK, PBLI, IPCS, SBP)
- Able to list the common inflammatory etiologies as well as identify them as they apply to gynecological samples. (PC, MK)
- Able to suggest a variety of methods for confirmation of HPV (human papilloma virus) and other infective agents utilizing histochemical, immunochemical and molecular diagnostic techniques in a cost-effective manner for both gynecological and non-gynecological samples. (PC, MK, PBLI, IPCS, P, SBP)
- Able to recite the criteria for unsatisfactory Pap tests and the quality indicators for the Bethesda 2001 terminology. (PC, MK, PBLI)
- Able to explain proper performance of a Pap test for a clinician utilizing both conventional smear and liquid-based collection methods. (PC, MK, PBLI, IPCS, P)
- Able to detail potential slide labeling discrepancies and list differences between conventional smear, ThinPrep® and SurePath® Pap test preparations. (PC, MK, PBLI, SBP)
- Able to give reasonable suggestions for clinical follow-up based upon Pap test diagnoses. (PC, MK, PBLI, IPCS, P, SBP)
- The trainee should be able to view any body site cytology and properly classify as negative, inflammatory, atypical/suspicious, neoplastic, or malignant for both aspiration and exfoliative specimens. They should then be able to generate and communicate their opinion for proper patient management. If given a 10 slide quiz 60% of the slides should be able to be properly classified. (PC, MK, PBLI, IPCS, SBP)
- Able to list the common inflammatory etiologies as well as identify them in reference to body site of the nongynecological sampling. (PC, MK, PBLI)
- Able to recite the criteria for unsatisfactory or limited specimens dependent on body site and be able to communicate them in a concise and cordial manner. (PC, MK, PBLI, IPCS, P, SBP)
- Able to explain and demonstrate proper performance of FNA to a clinician. (PC, MK, PBLI, IPCS, P)
- Able to recite potential FNA procedural complications to a patient. (PC, MK, IPCS, P)
- Will have performed a minimum of 25 diagnostic FNAs on patients. (PC, PBLI)
- Able to properly triage an FNA specimen based upon a "provisional diagnosis". (PC, MK, PBLI, SBP)
- Able to give reasonable suggestions for clinical follow-up based upon FNA or other nongynecological cytology result. (PC, MK, PBLI, IPCS, SBP)
- Able to list and explain choices for continuous quality assurance monitors for both gynecologic and nongynecologic cytology specimens. (PC, MK, PBLI, IPCS, P, SBP)
- Able to list the components of the FNA procedure and interpretations that are professionally billable by the pathologist. (IPCS, P, SBP)
- Able to identify a contaminant and know how to confirm it and deal with the problem for quality assurance and diagnostic purposes. (PC, MK, PBLI, IPCS, P)
- Able to identify and demonstrate steps in managing potential complications of FNA such as pneumothorax, arterial bleed, fainting, and needle-stick injury. (PC, MK, PBLI, IPCS, P)
- Able to prioritize work, dealing with urgent cases first. (PC, PBLI, IPCS, P, SBP)
- Able to explain the importance of routinely checking all prior and subsequent histology on cytology cases for quality assurance. (PC, MK, PBLI, IPCS, P, SBP)
- Able to explain and demonstrate proper triage of specimens for ancillary testing based upon rapid interpretation of cytological specimens (especially radiologically-guided FNAs but not limited to) and final preparations. (PC, MK, PBLI, IPCS, P, SBP)

See Appendix 2 for other general competency objectives for pathology trainee rotation objectives.

^ Abbreviations for six general competencies:
PC = Patient care, MK = Medical knowledge, PBLI = Practice-based learning and improvement, IPCS = Interpersonal and communication skills, P = Professionalism, SBP = Systems-based practice.

IV. Outcomes Assessment (trainee evaluations):

**Subjective Evaluations:** The standard competency-based trainee evaluation will be completed at the end of each trainee time-period or a minimum of every 3 months by each faculty member with input from cytology fellow, cytology staff and clinicians (360 degree evaluation), simulations of FNA procedure, and oral testing. If trainee performance is perceived as unsatisfactory at anytime during the rotation it should be discussed in a timely fashion prior to the end of the rotation. We require sharing face to face with the trainee any written evaluation by the evaluator.

**Objective Evaluations:** A 5 to 10 glass slide examination of gynecological smears utilizing the Bethesda Classification System (2001) is given at the end of the first 6 weeks. 60% of the slides should be able to be properly classified (as WNL, inflammatory, LGSIL, HGSIL, etc as per CAP or ASCP glass slide review) for passing. If less than 60% is obtained the test is repeated during the second six week rotation.

At the end of the second six week rotation a 5-10 glass slide examination of nongynecological smears will be given at the end of the rotation. 60% of the slides should be properly classified as negative, inflammatory, atypical/suspicious, or malignant. If less than 60% is obtained the test may be repeated within one week of the end of the rotation.

A 20 question short answer or multiple choice test will be given at the end of the second six week rotation, again a minimum of 60% correct is required for passing. Continued failure on these tests will necessitate further time in cytopathology until such knowledge and skills are obtained.

V. Suggested Text References:
- [http://www.asccp.org/consensus/cytological.shtml](http://www.asccp.org/consensus/cytological.shtml) for colposcopy guidelines by TBS
- DeMay R, The Art & Science of Cytopathology, ASCP Press or the abbreviated one book text by DeMay (also by ASCP Press).
- Bibbo M Editor, Comprehensive Cytopathology, Saunders
- Geisinger, et al, Modern Cytopathology, Churchill-Livingstone

VI. Resident Duties & Responsibilities (outline): A. Residents and Fellow will be expected to be available for FNA aspirations and daily Gyn & Non-gyn cytology sign-out from the hours of 8:00 AM to 5:00PM Monday through Friday except with excused absences or for attendance at required conferences.

B. Any unexpected absence or tardiness should be communicated as quickly as possible to the FNA attending of the week.
C. The resident is responsible for reviewing one tray of abnormal Gyn cases and majority of NonGyn cases including FNA on a daily basis.

D. The resident is responsible for verbally communicating all malignant diagnoses to the clinician of record and documenting following attending review of diagnoses. All FNA preliminary diagnoses should also be communicated at the time of "provisional" diagnosis.

E. The resident will be responsible in working conjointly with attending for the monthly cytology Grand Round cases and monthly QA reports when a Fellow is not on service.

F. The resident and fellow will be share responsibility with the attending staff in instruction and teaching of cytotechnologists, medical students and other technologist students.

G. The resident and fellow are responsible for keeping the FNA cart and baskets replenished with supplies and stains filtered or replaced on a weekly basis (the person performing the FNA should replace supplies immediately following the FNA).

VII: Rotation Outline for the 3 month core:

Week 1:
A. On day 1 meet with the Director of FNA or Fellow for direct hands on instruction of performance of FNA, followed by introduction to the Director of the Cytology Service and cytology personnel.
B. 2 hours of each day should be spent in the processing area reading the laboratory manual and with hands-on instruction of cytological preparation and staining methods.
C. Practice FNA technique on fruit and then fresh gross room specimens.
D. Read "The Bethesda System" text utilizing references to flesh out the cytological findings of squamous intraepithelial lesions and how it applies to the cervical biopsy grades of dysplasia, and current suggested clinical follow-up. Learn criteria for unsatisfactory Pap test and “limiters” of Bethesda 2001.
E. Review with attending a minimum of 1 tray (appx. 20) Gyn cytology slides per day.
F. Be available for daily FNAs as well as FNA Clinic on Wednesday morning and throughout rotation.

Week 2:
A. Begin reviewing book chapters on glandular atypia while reviewing findings of glandular atypia in "The Bethesda System" booklet.
B. 10 slides should be prescreened by resident (before cytotechnologist screens) then follow the slides through "the system" to determine final outcome. This should be continued throughout the first month.
C. Begin study of Gyn study packets this should be continued throughout the core rotation.
D. Review all abnormal Gyn (as time allows), all NonGyn, and FNAs with Cytopathology Attendings on a daily basis and continue throughout rotation.

Week 3:
A. Review and study in depth the various inflammatory conditions affecting the cervical smear including but not limited to Herpes simplex, bacterial shift (lactobacilli to cocci), Chlamydia, Candida, Actinomyces, Trichomonas & Leptothrix.
B. Continue above duties from weeks 1 &2.
"Week 4"  
A. Study in-depth post therapeutic changes (ie: postradiation changes, Tamoxifen, Depoprovera, etc.).  
B. Be able to interpret hormonal maturation.  

"Week 5":  
A. Begin reviewing book chapters on respiratory and urinary cytology.  
B. Continue 1 tray of Gyn slide sign-out review daily and all non-Gyns & FNA (throughout rotation).  
C. Begin study of NonGyn study packets for respiratory and urinary cytology.  

"Week 6":  
A. Begin reviewing book chapters on CSF and body fluid cytology.  
B. Continue 1 tray of Gyn slide sign-out review daily and all non-Gyns & FNA (throughout rotation).  
C. Begin study of NonGyn study packets for CSF and body fluids cytology (pleural effusions, paracentesis & pelvic washes).  

"Week 7":  
A. Begin reviewing book chapters on gastrointestinal & bile duct cytology.  
B. Continue 1 tray of Gyn slide sign-out review daily and all non-Gyns & FNA (throughout rotation).  
C. Begin study of NonGyn study packets for gastrointestinal tract and bile duct brushing cytology.  

"Week 8":  
A. Begin reviewing book chapters on breast cytology (FNA and nipple discharge).  
B. Continue 1 tray of Gyn slide sign-out review daily and all non-Gyns & FNA (throughout rotation).  
C. Begin study of NonGyn study packets for breast cytology.  

"Week 9":  
A. Begin reviewing book chapters on head & neck cytology (salivary gland & thyroid).  
B. Continue 1 tray of Gyn slide sign-out review daily and all non-Gyns & FNA (throughout rotation).  
C. Begin study of NonGyn study packets for salivary gland, thyroid & other head & neck cytology.  

"Week 10":  
A. Begin reviewing book chapters on abdominal & retroperitoneal FNA cytology.  
B. Continue 1 tray of Gyn slide sign-out review daily and all non-Gyns & FNA (throughout rotation).  
C. Begin study of NonGyn study packets for abdominal & retroperitoneal FNA cytology.  

"Week 11":  
A. Begin reviewing book chapters on lymph node cytology.  
B. Continue 1 tray of Gyn slide sign-out review daily and all non-Gyns & FNA (throughout rotation).  
C. Begin study of NonGyn study packets for lymph node cytology.  

"Week 12":  

A. Present Friday afternoon educational session (may be Cytology/histology correlation pitfalls, interesting case review or journal article dealing with cytology).
B. Continue 1 tray of Gyn slide sign-out review daily and all non-Gyns & FNA (throughout rotation).

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<th>Rotation Review</th>
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<td>Rotation Director</td>
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Overall objectives of the clinical pathology residency training program

The residency training program in clinical pathology includes a minimum of 18 months training, required for credentialing in clinical pathology, and up to 24 months of optional additional time in elective clinical pathology, advanced laboratory medicine or research relevant to laboratory medicine. The program incorporates a variety of training activities such as one on one interaction with clinical pathology faculty and fellows, reading assignments, didactic lecture series, journal club, and hands on technical training.

During the 18 months required for credentialing in clinical pathology, the training program gives a resident the opportunity to acquire the theoretical and technical knowledge, and the clinical and management skills needed to enable a graduate to competently perform the following tasks:

1. Direct a hospital based or self standing clinical laboratory
2. Provide clinical consultations to clinicians on medical significance of laboratory data, appropriate and cost effective use of laboratory tests, and appropriate use of blood components and other therapeutic modalities offered by the laboratory
3. Perform or provide medical supervision to any diagnostic or therapeutic procedure (i.e. bone marrow aspiration and biopsy, therapeutic phlebotomy or apheresis) provided by the laboratory service
4. Direct and manage the quality program for a laboratory

The 18 months required training consists of two 6 week rotations in Clinical Chemistry, Hematology, Microbiology, Transfusion Medicine, VA Laboratory Medicine and one 6 week core rotation in combined molecular/flow/cytogenetics. One half (3 weeks) of the forensics/toxicology and pediatric pathology core rotations may be counted as clinical pathology as well. Clinical Pathology electives or Advanced Clinical Pathology rotations may be utilized to complete CP requirements. Detailed content and specific location site of the core, elective and advanced rotations are described in the following sections.

Training sites

Training sites for core clinical pathology include the laboratories of the University Health Systems (UHS), the Audie Murphy Veterans Hospital (VA), and South Texas Reference Laboratories, Department of Pathology at the University of Texas Health Sciences Center (UTHSC). A minimum of six weeks of a clinical core rotation must be initially performed at UHS prior to rotating on a similar rotation at another allowed site.

Scheduling

The 18 months of required core and elective rotations will be scheduled during the four years of each resident’s training. Exceptions must be approved by the Program Director
and the Director of Clinical Laboratories at UHS. The 3 months core rotation requirement in each specialty may be fulfilled with non-continuous assignment at different sites, however each assignment will be for no less than six weeks. Scheduling requirements specific with each core rotation are included in the core rotation descriptions. All scheduling will be completed at the initiation of the resident year (July-June) by the Chief Residents in consultation and cooperation with the Residency Program Director who will consult the separate rotation directors.

**Faculty**

The following faculty are involved in the Clinical Pathology training program:

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<tr>
<th>Name</th>
<th>Specialty</th>
<th>Site</th>
<th>Phone #</th>
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<tbody>
<tr>
<td>Bryan, Eugenia, MD</td>
<td>Transfusion Medicine</td>
<td>UHS</td>
<td>567-4115</td>
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<tr>
<td>Ehsan, Aamir, MD</td>
<td>Hematology</td>
<td>VA</td>
<td>567-2126</td>
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<tr>
<td>Furmaga, Wieslaw, MD</td>
<td>Clinical Chemistry</td>
<td>UHS</td>
<td>567-4074</td>
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<td>UTHSC</td>
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<tr>
<td>Harrison, Chantal, MD</td>
<td>Transfusion Medicine</td>
<td>UHS</td>
<td>567-4090</td>
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<td>VA</td>
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<tr>
<td>Jorgensen, James, PhD</td>
<td>Microbiology</td>
<td>UHS</td>
<td>567-4088</td>
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<tr>
<td>Kinney, Marsha, MD</td>
<td>Hematopathology</td>
<td>UHS</td>
<td>567-4098</td>
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<tr>
<td>Mott, Glen, PhD</td>
<td>Clinical Chemistry</td>
<td>UHS</td>
<td>567-4023</td>
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<tr>
<td>Olson, John, MD, PhD</td>
<td>Clinical Laboratories</td>
<td>UHS</td>
<td>567-6650</td>
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<tr>
<td>Rinaldi, Michael, PhD</td>
<td>Mycology</td>
<td>UTHSC</td>
<td>567-4113</td>
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<tr>
<td>Robetorye, Ryan, MD, PhD</td>
<td>Hematopathology</td>
<td>UHS</td>
<td>567-4091</td>
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<tr>
<td>Saldivar, Victor, MD</td>
<td>Pediatric Pathology</td>
<td>S R</td>
<td>704-2311</td>
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<tr>
<td>Fiebelkorn, Kristin, M.D.</td>
<td>Microbiology/Immunology/Virology</td>
<td>VA</td>
<td>567-3100</td>
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<td>Higgins, Russell, M.D.</td>
<td>Hematopathology</td>
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<tr>
<td>Gunn, Shelly, M.D., Ph.D.</td>
<td>Molecular Pathology</td>
<td>UTHSC</td>
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<td>Naski, Michael, M.D., Ph.D.</td>
<td>Hematopathology</td>
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<td>Dallas, Steven, Ph.D.</td>
<td>Microbiology</td>
<td>VA</td>
<td>567-8860</td>
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<tr>
<td>Pollack, Marilyn, Ph.D.</td>
<td>Histocompatibility and Immunogenetics</td>
<td>UTHSC</td>
<td>567-4115</td>
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Methods of evaluation

At the end of each rotation, a written evaluation given by the supervising faculty(ies) is discussed with the resident. In some core rotations a written examination is given when the entire 3 months curriculum has been completed. Specific details for each rotation are provided in the rotation description.

On Call Duties

Refer to the residents’ on call manual

Clinical Pathology Electives and Courses

The following electives or courses in clinical pathology are available:

Flow Cytometry
Cytogenetics
Molecular Pathology
Mycology
Forensic Toxicology
Virology

Programs in development:

Informatics (Rick Medina / Dr Olson)
Laboratory Management (Dr. Olson)
Research (All Staff)
Forensic Identity (ME Office)
ICU/CCU Lab Consultant (Drs. Olson / Harrison)
Immunology (Drs. Pollack and Fiebelkorn)

Fellowships
The following ACGME accredited fellowships in clinical pathology are offered:

Hematology (2 fellows)
Blood Banking/Transfusion Medicine
Clinical Chemistry Rotation

Faculty: Wieslaw Furmaga, M.D., Glen Mott, Ph.D.

**Rotation Periods:** Two blocks of 6 weeks each.

**I. General Organization**

The core clinical chemistry rotation is divided into two 6-week blocks, with the first block typically being completed during the PGY-1 year and the second six-week block during the PGY-2 year. Additional opportunities for training in clinical chemistry are available on an elective basis during the senior residency years.

**II. Rotation Goals**

The general goals for residents during the Clinical Chemistry rotation are to gain basic knowledge of the appropriate clinical use of laboratory tests and develop management and leadership skills in the clinical chemistry laboratory.

**III. Rotation Objectives**

The general objectives of the Clinical Chemistry training program are for the resident to:

A. Develop a satisfactory theoretical knowledge for the methodologies used in the clinical chemistry laboratory.

B. Learn the skills required in the interpretation of the clinical chemistry tests as applied to patient care.

C. Develop a satisfactory level of competency in providing consultations for clinicians and medical personnel about in-house clinical chemistry tests and reference laboratory services.

D. Understand the management of a Clinical Chemistry Laboratory and the specific problems associated with it.

E. Develop the ability to analyze scientific evidence and to apply the results of this analysis to the appropriate interpretation of clinical chemistry tests.

F. Demonstrate an effective information exchange with the laboratory technicians and clinical staff members.

By the end of the three-month chemistry rotation, the resident, to fulfill the six competencies set out by the ACGME, the resident….

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<td>1.</td>
<td>Understands and can interpret most common chemistry laboratory results for discussion with clinicians. (PC, P, MK, PBLI, ICS)</td>
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<td>2.</td>
<td>Is able to provide consultation concerning the utility of requested special send out tests, and can suggest any alternative testing strategies. (PC, P, MK, PBLI, ICS)</td>
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<td>Understands and can explain pathophysiology of diseases and relationship between laboratory test results and physical symptoms of patients. (MK, SBP, PBLI)</td>
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<td>4.</td>
<td>Is able to critically evaluate research results in relation to clinical and laboratory practice. (MK, SBP, PBLI)</td>
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<td>5.</td>
<td>Is familiar with the institutional and state regulations relating to laboratory practice. (MK, SBP, PBLI)</td>
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<td>6.</td>
<td>Presents chemistry cases in a professional and clear manner in weekly clinical pathology conferences. (P, MK, PBLI, ICS)</td>
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<td>7.</td>
<td>Fundamentals of laboratory testing: pre-analytical variables, references ranges, evaluation of test performance. (PC, MK, PBLI, ICS)</td>
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<td>8.</td>
<td>Quality control/quality assurance in the clinical chemistry laboratory. (PC, MK, PBLI, ICS)</td>
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<td>9.</td>
<td>Understanding of instrumentation I: spectrophotometry, immunoassays. (PC, MK, PBLI, ICS)</td>
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<td>10.</td>
<td>Understanding of instrumentation II: electrochemistry, laboratory automation. (PC, MK, PBLI, ICS)</td>
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<td>11.</td>
<td>Understands fundamentals of clinical enzymology, biochemical markers of cardiac diseases, liver and pancreas. (PC, MK, PBLI, ICS)</td>
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<td>12.</td>
<td>Understands acid-base disorders, blood gases, renal function, water and electrolyte balance. (PC, MK, PBLI, ICS)</td>
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<td>13.</td>
<td>Is familiar with common tumor markers. (PC, MK, PBLI, ICS)</td>
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<td>15.</td>
<td>Can discuss lipid metabolism and chemistry. (PC, MK, PBLI, ICS)</td>
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<td>17.</td>
<td>Endocrinology I: thyroid function studies. (PC, MK, PBLI, ICS)</td>
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<td>20.</td>
<td>Endocrinology IV: reproductive endocrine function. (PC, MK, PBLI, ICS)</td>
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IV. Outcomes Assessment (resident evaluations):

A. Subjective Evaluations of the pathology resident while on the clinical chemistry service will be based on:
   1. The mastery of theoretical clinical chemistry concepts during the discussion sessions and at the clinical rounds.
   2. The ability to implement the acquired knowledge in the interpretations of laboratory results presented during the daily laboratory rounds and the weekly clinical rounds with the faculty.
   3. Professional manners in relations with patients and both laboratory and support personnel.

B. Objective Evaluations of the pathology resident will be based on:
   1. Faculty and staff evaluation of the quality of the final sign-out of the clinical cases and on the ability to handle daily responsibilities and assignments in an efficient manner.
   2. Evaluation of the trainees’ growth and the effectiveness as a consultant through a weekly review of beeper questions and handling of reference laboratory test requests.
   3. Improvement in performance on the tests given before and after rotation. The tests will consist of 50 to 100 Pathology Board format questions and the results will be discussed with faculty.

V. Suggested Text References:

Text References:
Tietz Textbook of General Chemistry
Henry, R., Clinical Diagnosis and Management by Laboratory Methods
Kaplan and Pesce, Clinical Chemistry: Theory, analysis and correlation
Williams Textbook of Endocrinology
Guyton Medical Physiology

Journals:
Clinical Chemistry
New England Journal of Medicine

VI. Resident Duties & Responsibilities (outline):

During the core rotation, the trainee(s) will be responsible for the following activities:
A. Discussion/teaching sessions with staff.
B. "Bench rotation" periods designed to provide direct laboratory experience and to complement the didactic sessions.
C. Laboratory rounds with faculty.
D. Interpretation and sign-out of electrophoresis gels for serum/urine protein, and immunofixation, and amniotic fluid scans.

E. Review and approve requests for reference laboratory testing.

F. Responding to calls from clinicians or laboratory personnel concerning the test results, interpretations, recommended testing strategies, and other issues.

G. Participation in the weekly clinical chemistry laboratory meeting.

H. Weekly presentation at the Laboratory Medicine conference.

I. Preparation of clinical rounds.

J. Research project presentation.

A. Discussion Sessions with Staff
   The trainees will meet with faculty members weekly for 1-1/2 to 2 hours each session. The resident is expected to arrange the time with the faculty member. At these sessions, tests performed in the Clinical Chemistry Laboratory will be reviewed with regard to the following aspects:
   - Physiology
   - Pathophysiology
   - The clinical utility of various tests in routine and urgent situations
   - Effect of collection and handling on these tests
   - Methods of measurement, including advantages and disadvantages of each method
   - Interpretation of values
   - Physiological and analytical factors affecting the tests

   To guide the trainees' study, a series of questions and or selected cases as well as reading material relevant to the topic will be provided. The trainee will be expected to be able to discuss this material with the faculty member and any areas of difficulty will be reviewed. Trainees are always required to be prepared before coming to these sessions.

B. Bench Rotations
   The resident is expected to rotate through each area of the Clinical Chemistry laboratory. The purpose of these rotations is to allow the trainees to become familiar with the various types of analytical procedures performed, automated instruments used, and general work flow patterns in the laboratory. The resident will receive a specific schedule at the beginning of rotation. These sessions will usually be in the morning and will not conflict with the weekly scheduled seminars and conferences. On the first day of the rotation, the trainee will have a general tour of the clinical chemistry laboratory and the satellite laboratories. During subsequent sessions, the technologist in charge of the assigned area will be available to answer questions concerning the procedures and the instruments used, as well as setup, turn around times, and specimen requirements.
C. Laboratory Rounds

Laboratory rounds are conducted frequently by the Medical Director and the Assistant Supervisors. Attendance each day by the resident is required. Each section of the laboratory is visited and any concerns or questions from clinicians, technical or procedural difficulties, quality control issues, or interesting and unusual results are discussed. Laboratory rounds help to ensure that the directors and supervisors are aware of any factors or occurrences that might affect the overall function of the laboratory, and to allow intervention should such issues arise. In addition to the didactic interactions with faculty, the rounds also provide the resident with the opportunity to observe and understand any clinically interesting, unique, and unexpected results noted during the analysis.

D. Interpretation and sign out of serum/urine protein electrophoresis gels and amniotic fluid scans

The technologists will page the resident on call whenever the following assays are completed. It is then the resident's responsibility to review and/or interpret the results of these assays in a timely manner.

1. Serum or Urine Protein Electrophoresis Interpretation
   SPEPs, UPEPs, and/or immunofixation electrophoresis (IFE) gels are normally run on Monday, Wednesday, and Friday or on other days as needed. Each day, the resident on call is responsible for reviewing these gels and writing interpretive consultations for each specimen. The results will then be reviewed and signed out with a faculty member later in that day. The resident will also be responsible for contacting the requesting physician to report any abnormal or unexpected results or analytical problems, or to gather any additional clinical information necessary for appropriate interpretation.

2. Amniotic Fluid Bilirubin Scans
   Samples for this assay are processed as received, seven days a week. The resident is expected to review the scan in a timely manner and examine the results for any potential errors, sample handling problems, or interfering substances that could make interpretation of the results questionable. The results should be reviewed with a faculty member and then reported to the requesting physician, either by FAX or verbal communication.

3. Triple Screens
   Triple marker screens for fetal defects are performed Monday through Friday. The resident should review the results of these assays each weekday, noting any potential discrepancies between measured levels of the analytes and the computed relative risk. These results will then be signed out with a faculty member at the same time as the SPEPs.
E. Reference Laboratory Request Approvals

There is an array of specialized assays which are requested very infrequently by clinicians and therefore represent a low test volume. For economic reasons, the Clinical Chemistry laboratory and Serology/Virology laboratory send patient samples to a reference laboratory when these tests are requested. Although some of these tests have a well defined diagnostic role, many of them are costly and/or possess low clinical utility. Therefore, to ensure that the resources of the laboratory are used most effectively, requests for such tests require review and approval by the resident.

Requisitions for reference laboratory testing are compiled by the receiving clerks and the technologists in the referral test area and placed into a folder for resident review and approval. Each morning and periodically during the day, it is the resident's job to review these requisitions and contact the requesting physician to ascertain the intended use/clinical situation prompting the request for this test. Information they should obtain in each case includes a very brief patient history, suspected diagnosis, and expected use of the test result (i.e., what effect will the result have on clinical decisions). The goals of this interaction are to provide consultation concerning the utility of the requested test and/or suggest any alternative testing strategies. Occasionally, the identity of the requested test may be in question or the test may not be available through our normal providers. In these situations, the resident will be asked to assist in identifying the test or locating a CLIA certified laboratory which offers such testing. The samples will not be sent to the reference laboratory until the resident has consulted with the requesting physician and instructed the laboratory personnel whether or not to finalize the request, so it is important to respond promptly to these issues. A brief summary of the send-out test as it applies to the specific patient will be reviewed by the resident at the weekly meeting of the Chemistry Management Team (see G below).

F. Beeper Calls

The resident on call during the day responds to ALL chemistry calls from inside and outside the hospital. It is expected that the resident will respond to all calls promptly and courteously.

There are three general categories of calls:

1. STAT request approvals. These calls require immediate action, approval or otherwise.
2. Internal chemistry issues. This pertains to technical problems or service related questions (lab, send-out, customer service)
3. Test consultations. These questions are from the hospital clinicians and cover all topics: requests for more information on a test, how to interpret a test, or how to obtain a specific test. These questions usually require further investigation. Sources include: textbooks, Medline search and literature, other institutions, medical directors, supervisors, etc.
For each call, the following information should be obtained:

- Date, time, caller's name and pager/phone number
- Patient's name, location, hospital number, diagnosis/current status
- Question to be addressed
- Follow-up on each call as required, e.g., what was the final result, was the result consistent with the patient's condition, did the person who initiated the request get what he/she wanted?

Provide accurate information. This may require going to the library or consulting with faculty, supervisors, or technologists. It is better to get back to the caller later with accurate and useful information than to provide them with an incorrect or misleading answer.

G. Weekly Clinical Chemistry Laboratory Meeting

Each week, the medical directors, laboratory supervisor and assistant supervisors, and the resident(s) on the clinical chemistry service meet to review any and all matters pertinent to the operation of the laboratory. During this meeting, the resident should be prepared to discuss the referral lab requests from the preceding week and any beeper calls or other issues which required attention, including the initial question/problems, the action taken in response to the issue, and follow up of the outcome. Participation in these meetings not only provides an opportunity to observe how the supervisors and medical directors assure that the laboratory functions smoothly, but also serves as a communication link between the various hospital services and the chemistry laboratory.

H. Laboratory Medicine Weekly Conference

Each week, the resident should select an interesting case involving the chemistry laboratory for presentation at the Wednesday noon conference. The presentations should focus on the utility of or problems with a laboratory test in the diagnosis or monitoring of a particular disease. Topics and presentations should be reviewed with a faculty member at least one day in advance of the conference.

I. Clinical Rounds

Each week the resident prepares a case study based on the in-house patients. The trainee will go to the floor, review the chart of a chosen patient, analyze laboratory results and prepare a short presentation. The preparation should contain: the admission (working) diagnosis, past medical history, and the comparative analysis of laboratory results in relation to symptoms presented during the admission and later hospitalization. A critical conclusion about the diagnosis and treatment is also expected. Subsequently the case will be discussed with faculty. The purpose of the clinical rounds is to stimulate’ synthetic thinking, to develop the ability to perceive patient’s clinical symptoms and laboratory result as a different appearance of one pathological entity, and to build a solid foundation for an objective clinical judgment.
J. Research project
At the end of the six week rotation, the resident gives a short fifteen minutes
presentation on a freely chosen topic related to clinical pathology. The presentation
must include a review of the most recent interrelated articles, editorials and lectures.
The audience will consist of the laboratory personnel, the college’s residents and the
faculty members. A Socratic style is preferred in which the observational data are
presented followed by questions to the audience. The research project presentation
should help to develop rhetoric skills as well as the ability to demonstrate new and
sometimes difficult problems in an understandable way to a broad variety of listeners.
In addition, it should give an opportunity for residents to explore new areas
approaching the boundaries of the unknown.

VII: Rotation Outline
Basic Didactic Session Schedule for Clinical Chemistry Rotation
Academic Year 2009 -2010: Block 1

<table>
<thead>
<tr>
<th>Week of Rotation</th>
<th>Topic</th>
</tr>
</thead>
</table>
| **Week 1**       | **Session 1** Fundamentals of laboratory testing: pre-analytical variables, references ranges, evaluation of test performance.  
|                  | **Session 2** Serum and urine protein electrophoresis, fetal lung maturity tests, monitoring hemolytic disease of the newborn, and triple screen |
| **Week 2**       | **Session 1** Instrumentation I: spectrophotometry, immunoassays       
|                  | **Session 2** Fundamentals of clinical enzymology                      |
| **Week 3**       | **Session 1** Biochemical markers of cardiac disease                    
|                  | **Session 2** Liver and pancreas                                       |
| **Week 4**       | **Session 1** Instrumentation II: electrochemistry, laboratory automation 
|                  | **Session 2** Acid-base disorders, blood gases                         |
| **Week 5**       | **Session 1** Renal function, water and electrolyte balance            
|                  | **Session 2** Tumor markers                                            |
| **Week 6**       | **Session 1** Toxicology and therapeutic drug monitoring               
<p>|                  | <strong>Session 2</strong> Quality control/quality assurance in the clinical laboratory |</p>
<table>
<thead>
<tr>
<th>Week of Rotation</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Lipids</td>
</tr>
<tr>
<td>Week 2</td>
<td>Carbohydrates, diabetes</td>
</tr>
<tr>
<td>Week 3</td>
<td>Endocrinology I: thyroid function studies</td>
</tr>
<tr>
<td>Week 4</td>
<td>Endocrinology II: adrenal function</td>
</tr>
<tr>
<td>Week 5</td>
<td>Endocrinology III: hypothalamic and pituitary disorders</td>
</tr>
<tr>
<td>Week 6</td>
<td>Endocrinology IV: reproductive endocrine function</td>
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**Faculty**

<table>
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<tr>
<th>Position</th>
<th>Name</th>
<th>Office</th>
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<tbody>
<tr>
<td>Medical Director</td>
<td>Wes Furmaga, M.D.</td>
<td>567-4074</td>
<td>230-0244</td>
</tr>
<tr>
<td>Associate Medical Director</td>
<td>Glen Mott, Ph.D.</td>
<td>567-4023</td>
<td>235-0540</td>
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</tbody>
</table>

**Laboratory Personnel**

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
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</tr>
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<tbody>
<tr>
<td>Chemistry Supervisor</td>
<td>Kathleen Born</td>
<td>358-2788</td>
<td>756-4088</td>
</tr>
<tr>
<td>2nd Shift Supervisor</td>
<td>Tim Ingram</td>
<td>358-2750</td>
<td>756-3121</td>
</tr>
<tr>
<td>3rd Shift Supervisor</td>
<td>David Escamilla</td>
<td>358-2750</td>
<td>756-3121</td>
</tr>
<tr>
<td>Weekend Supervisor</td>
<td>Max Davatos</td>
<td>358-2750</td>
<td>756-3121</td>
</tr>
<tr>
<td>Assistant Supervisor</td>
<td>Rene Hurd</td>
<td>358-2787</td>
<td>756-1542</td>
</tr>
<tr>
<td>Assistant Supervisor</td>
<td>Anne Seldon</td>
<td>358-2786</td>
<td></td>
</tr>
<tr>
<td>Administrative Assistant</td>
<td>Judy Orem</td>
<td>358-2780</td>
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**Senior Technologists:**

<table>
<thead>
<tr>
<th>Role</th>
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<th>Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapid Response Laboratory</td>
<td>Dennis Smith</td>
<td>358-2791</td>
</tr>
<tr>
<td>Electrophoresis, Nursery, Blood Gases</td>
<td>Lynda Wolfe</td>
<td>358-1327</td>
</tr>
<tr>
<td>Endocrinology/Toxicology</td>
<td>Carol Gage</td>
<td>358-1328</td>
</tr>
<tr>
<td>Urinalysis</td>
<td>Janice Westrich</td>
<td>358-2793</td>
</tr>
<tr>
<td>Processing, Reference Lab, Safety</td>
<td>Cindy Marek</td>
<td>358-2795</td>
</tr>
</tbody>
</table>

**Rotation Review:**

<table>
<thead>
<tr>
<th>Rotation Director</th>
<th>Date</th>
<th>Residency Program Director</th>
<th>Date</th>
</tr>
</thead>
</table>
Hematology/Hematopathology Rotation

Faculty & Course Director: Marsha C. Kinney, M.D. Director, Division of Hematopathology; John D. Olson, M.D., Ph.D., Director of Clinical Laboratories, University Hospital (UH) and Director of Hemostasis and Thrombosis; Aamir Ehsan, M.D., Director, Pathology and Laboratory Medicine Services, South Texas Veterans Health Care System (STVHCS), Audie L. Murphy Division; Ryan S. Robetorye, M.D., Ph.D., Director of Molecular Diagnostics Laboratory; Michael Naski, M.D., Ph.D., Director of Flow Cytometry Laboratory; and Russell A. Higgins, M.D., Director of Hematology Laboratory, University Hospital.

Rotation Period: 12 weeks, generally divided into two 6 week rotations

I. General Organization: The Hematology/Hematopathology rotation for residents broadly consists of training in both Laboratory Medicine (cell counting, hemoglobin evaluation, hemostasis, etc.) and Anatomic Pathology (bone marrow, lymph nodes, and hematopathology consultation). During resident training a minimum of 12 weeks total is spent in these two areas. The configuration of the training experience varies somewhat with resident and fellow staffing. Additional elective rotations are also available. The learning experience includes activities in the UH Hematology Laboratory, STVHCS, the South Texas Reference Laboratories (Flow Cytometry, Molecular Diagnostics, and Cytogenetics), and in the Hematopathology Division.

II. Rotation Goals: The overall goals of the hematopathology rotation are formulated to help residents develop and strengthen their competencies in: (1) patient care; (2) medical knowledge; (3) practice-based learning and improvement; (4) interpersonal and communication skills; (5) professionalism; and (6) systems based practice. The specific goals of this rotation are for the resident to:

A. Be competent in the diagnosis of the common congenital, reactive, and neoplastic disorders of the hematopoietic and lymphoid system and disorders of hemostasis and thrombosis and understand the clinical implication of those particular diagnoses.
B. Become an effective consultant in directing test selection, specimen collection, triage of tissue samples; and interpretation of test results
C. Develop expertise in directing a Hematology/Hemostasis and Thrombosis Laboratory to include specific test methodology and instrumentation, proficiency testing, accreditation, process evaluation (to include quality assurance and outcomes assessment), management and personnel issues, in the context of the larger system of health care delivery and policy development.
D. Demonstrate excellence in interpersonal and communication skills
E. Strengthen his/her role as an effective teacher and develop ongoing skills in life long learning and continuous professional development
F. Participate in original investigation

III. Rotation objectives: In order to accomplish the goals in II above, the resident will:

A. Interpret CBC data, differentials, body fluid cell counts and morphology, specialized hematology tests and coagulation tests and study bone marrow, lymph nodes, and other tissue specimens, order additional tests if indicated, formulate final and differential diagnoses, prepare interpretive laboratory reports for hematology and hemostasis and thrombosis testing and comprehensive integrated (including cytochemistries, flow cytometry, paraffin immunoperoxidase, molecular genetics and cytogenetic studies) surgical pathology reports on bone marrow, lymph nodes and other surgical biopsies.
B. Know methodology (automated or manual), test limitations, sample requirements for hematology and hemostasis and thrombosis testing
C. Triage fresh tissue specimens to assure proper specimen workup
D. Perform clinical consultations on patients with bleeding disorders or direct test selection to evaluate patients with thrombosis or bleeding
E. Consult with clinicians on the workup of their patients with regard to sample requirements, test selection, test results, test interpretation, additional studies, and service issues in the laboratory.
F. Maintain close contact with the clinical service to obtain pertinent clinical data on patients including previous diagnoses, current signs and symptoms and physical findings. Residents will communicate preliminary findings, proposed work-up of cases, and final diagnoses in a timely, coherent and professional manner.

G. Participate in laboratory direction and management to include attendance at the hematology management meetings, review of blood smears and body fluids according to selected criteria, formulation and review of quality assurance data, review of quality control data and participation in corrective action if indicated, troubleshooting of clinical and technical problems, submission and review of proficiency testing data, review of CAP checklists and participation in inspections, involvement in process evaluation, resource utilization review, and personnel issues.

H. Communicate with colleagues on the faculty or in training, technologists, and secretaries in a manner that demonstrates commitment to ethical principles pertaining to confidentiality of patient information, respect for the patient’s and other individuals’ age culture, gender and disabilities, and with compassion and integrity.

I. Participate in teaching to include case presentations and other conference participation, continuing medical education for technologists, and formal lectures.

J. Use information technology (Medline and other databases, electronic journals, laboratory and hospital information systems) to diagnose disease processes in individual patients and globally evaluate and monitor laboratory testing.

K. Stimulate academic interests and lifelong learning through studying unusual patients, evaluating diagnostic techniques, performing clinicopathologic correlation and translational work.

L. Develop practice patterns responsive to the larger context of health care delivery.

IV. Outcomes assessment: Residents will be evaluated using the departmental evaluation form based on the ACGME general competencies and the goals and objectives outlined in II and III above. Feedback will be given verbally during the course of the rotation and in writing at the end of the rotation. The evaluation will be done with input from all the attendings on the service and based on the resident’s diagnostic, management and communications skills (including report quality), teaching abilities, conference participation, and overall interest in the rotation. Dr. Kinney will review the evaluation with the resident at the end of the rotation.

V. Suggested Text References: See specific service handout:

VI. Resident Duties and Responsibilities:

Service responsibilities: See specific handout for each service.

Conferences: Residents are required to attend the following conferences:

<table>
<thead>
<tr>
<th>Conference</th>
<th>Scheduled Time</th>
<th>Department Responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hematology/Hematopathology Tumor Board</td>
<td>Tuesday, 8:00-9:00</td>
<td>Hematology Division</td>
</tr>
<tr>
<td>Hematology Laboratory Management Meeting</td>
<td>Tuesday (first at 9:45 and third at 1:15)</td>
<td>Hematology Laboratory</td>
</tr>
<tr>
<td>City-wide Hematopathology Conference</td>
<td>Tuesday, 4:00-5:00</td>
<td>Hematopathology</td>
</tr>
<tr>
<td>Laboratory Medicine Report</td>
<td>Wednesday, 12:00-1:00</td>
<td>Clinical Pathology</td>
</tr>
<tr>
<td>Hematopathology Journal Club</td>
<td>1st Friday of the month</td>
<td>Hematopathology</td>
</tr>
</tbody>
</table>

Bone Marrow Service
UH and STVHCS

1. Description of Responsibilities: When on the Bone Marrow service, the resident is responsible for acquiring clinical information on patients having marrow examinations performed. The resident reviews the Wright’s
stained blood and marrow aspirate smears and biopsy touch preparations to triage the specimen for cytochemistry, flow cytometry, cytogenetics, and molecular genetics, if indicated. The tissue sections are reviewed by the resident using routine H&E, PAS, and iron stains. Previous biopsy material, if performed, is reviewed for comparison with the current case and for quality assurance. A preliminary diagnosis is formulated, and the bone marrow is presented to the attending hematopathologist for sign-out. Additional studies (e.g., immunohistochemistry, organism and other special stains, and electron microscopy) are ordered as required. The resident requests these studies after his/her review of the sections and/or after review with the attending. During the workup of the case, the resident is the first line of communication with the clinical staff. The resident dictates the final report and relays the diagnosis to the clinicians. The trainee is expected to perform a sufficient number of bone marrow aspirates and biopsies to become comfortable and proficient in this procedure. This is done under the supervision and direction of a M.D. hematologist/oncologist or nurse practitioner in the clinic or hospital.

2. **Supervision:** The trainee is under the direct supervision of the Hematopathology attending on the service who is available 24 hours/day, seven days a week, either on site or by beeper.

3. **Graduated Responsibility:** The attending on service closely supervises the resident during the initial part of the rotation. As the resident becomes skilled in triaging and interpretation of marrow, including morphology, cytochemistry and immunohistochemistry, the trainee is allowed to order and interpret these tests independently and give preliminary diagnoses to physicians before final review with the attending.

4. **Expectations at the end of the rotation:** Residents are expected to:
   1) Know the relevant diagnostic, morphologic, immunologic, molecular genetic, cytogenetic, clinical and prognostic features of the common primary hematopoietic disorders of the marrow in adults and children; specifically the resident should know how to work-up and diagnose: acute and chronic leukemias (including hairy cell leukemia; myelodysplastic syndromes; myeloproliferative disorders; multiple myeloma; and lymphoma in the marrow.
   2) Demonstrate expertise in evaluating post-treatment marrows for therapeutic response or residual disease.
   3) Recognize changes in the marrow secondary to systemic disorders;
   4) Know how to evaluate the marrow for metastatic tumor and infectious disease (including HIV; parvovirus; fungal and AFB infections).
   5) Know how to perform bone marrow aspiration and biopsy procedures, and prepare and triage marrow samples for diagnosis.

5. **Suggested Reading:**

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**In-House Lymph Node and Division Consult/Referral Service**

1. **Description of responsibilities:** When on the lymph node service, the resident is responsible for acquiring clinical information on patients having lymph node or other surgical biopsies performed and cytology specimens other than CSF. Previous biopsy material, if performed, is reviewed for comparison with the current case and for quality assurance. If fresh tissue is obtained in surgical pathology, the resident reviews the Wright’s stained touch preparations along with the surgical pathology residents and Hemepath fellow or attending to triage the specimen for ancillary studies such as flow cytometry, cytogenetics, and molecular genetics as indicated. The tissue sections are reviewed by the resident with routine H&E and PAS stains. A preliminary diagnosis is formulated, and the case is signed out with the attending.
hematopathologist. Additional studies (e.g., organism and other special stains, immunohistochemistry, and electron microscopy) are ordered as required. The resident requests these studies after his/her review of the sections and/or after review with the attending. During the workup of the case, the resident is the first line of communication with the clinical staff. The resident dictates the final report and relays the diagnosis to the clinicians.

2. **Supervision:** The resident is under the direct supervision of the Hematopathology attending on the service who is available 24 hours/day, seven days a week, either on site or by beeper.

3. **Graduated responsibility:** The attending of the week closely supervises the resident during the initial part of the rotation. As the resident becomes skilled in triaging and interpretation of the morphology and immunohistochemistry of the lymph nodes, other surgical specimens and cytology specimens other than CSF, the resident is allowed to order and interpret these tests independently and give preliminary diagnoses to physicians before final review with the attending. These diagnoses will be communicated as preliminary and pending attending review.

4. **Expectations at the end of the rotation:** The resident should:
   (1) Know the relevant diagnostic, morphologic, immunologic, molecular genetic, cytogenetic, clinical and prognostic features of reactive and neoplastic hematopoietic or lymphoid proliferations at tissue sites other than the marrow; specifically the resident should know how to diagnose common B cell lymphomas (follicular, MALT, mantle cell, and diffuse large cell), T cell lymphomas (lymphoblastic, anaplastic large cell; nasal/nasal type NK/T cell lymphoma; hepatosplenic; subcutaneous panniculitis-like); Hodgkin’s disease; reactive conditions to include infectious mononucleosis; Rosai-Dorfman disease; toxoplasmosis; cat scratch; HIV related adenopathy; eosinophilic granuloma
   (2) Be proficient in ordering and integrating the results of ancillary tests into the final diagnosis/report.
   (3) Use current literature in evaluating the pathologic and clinical findings.
   (4) Develop expertise in communication and consultation skills with the clinical staff in providing optimal patient care.

5. **Suggested reading**
1. Description of responsibilities/activities
   a. The resident participates in the overall management of the laboratory to include: QA, QC, personnel issues and scheduling, technology (instrument evaluation, purchases, etc.), budgeting and finance, and long-range planning. Specifically, the resident is responsible for:
      - Abnormal peripheral blood smear and body fluid review and directing the work-up of such cases as required.
      - Review of QC and proficiency testing results on a timely basis with the supervisor and/or director; the resident should be familiar with Westgard rules.
      - Reviewing the CAP checklist and results of the previous inspection and participating in CAP inspections when available
      - Consultation with other trainees and attendings regarding patient care issues in the laboratory and appropriate selection of diagnostic tests.
      - Investigation of abnormal test results and service issues reported by clinicians.
   b. The resident shall observe the automated hematology cell and differential counters and should know the basic operating principles (including linearity, flagging criteria, review criteria, and measured versus calculated parameters; and cytogram interpretation)
   c. The resident is responsible for reviewing and formulating reports on CSF cytology specimens from patients with leukemia or lymphoma. The resident should look up the clinical history, previous diagnostic material including CSFs, current clinical status, CSF cell counts and formulate a preliminary diagnosis; the case is reviewed with the attending and a final diagnosis is made.
   d. The resident should know the reference intervals at different patient ages for all hematology testing.
   e. The resident is trained in the workup of inherited and acquired red cell disorders by three mechanisms:
      - Review of peripheral blood smears
      - Laboratory analysis of abnormal hemoglobin electrophoresis, isoelectric focusing, and high performance liquid chromatography (HPLC) and other laboratory tests including Heinz bodies (for unstable hemoglobins), osmotic fragility (hereditary spherocytosis), sucrose hemolysis and flow cytometry for the presence or absence of GPI linked proteins CD16, CD55, CD59 (paroxysmal nocturnal hemoglobinuria) and direct Coombs test are reviewed. This is done in conjunction with chemistry, flow cytometry, transfusion medicine and Wilford Hall Air Force Hospital.
      - Clinical correlation and evaluation of patients with the transfusion medicine and clinical hematology service.

2. Supervision: The resident is supervised by the Director of the Hematology Laboratory and the attending hematopathologist on the service.

3. Graduated responsibility: The resident will assume greater responsibility in the direction or the hematology laboratory and in the sign-out of hematology tests as deemed appropriate by the director of the laboratory in conjunction with the hematopathologist on service.

4. Expectations at the end of the rotation: The resident should:
   - Understand the role of the medical director of a hematology laboratory
   - Know the normal reference ranges for hematology testing and their variation with age; know the normal morphology of marrow and peripheral blood cells.
   - Be familiar with the basic operating principles and limitations of the major automated cell and differential counters.
   - Recognize common peripheral blood manifestations of marrow based or systemic diseases to include RBC size and shape abnormalities; RBC or WBC inclusions; atypical lymphocytes, blasts, and microorganisms. The resident should know what microorganisms can be seen on Wright's stain.
   - Know how to classify and work-up anemia including specialized hematology testing.

5. Suggested Reading
Hemostasis and Thrombosis for the Hematopathology Resident

The experience for the resident is a continuous one that occurs throughout the length of the first 6 week rotation on the hematopathology service. The goals and objectives for the resident regarding hemostasis will be:

**Patient Care**
Trainees must demonstrate a satisfactory level of diagnostic competence and the ability to provide appropriate and effective consultation in hemostasis. Goals include:

1. To become comfortable with the interview and examination of patients with disorders of hemostasis and to order tests, evaluate the results and complete the consult write up.
2. To consult effectively with clinicians who have ordered tests of hemostasis, understanding the clinical disorder in the patient and providing guidance regarding the appropriate use of the laboratory in the clinical situation.

Trainees are expected to:
- Interview and examine of patients with disorders of hemostasis and order, evaluate results and complete consult write up for presentation to the faculty.
- Describe the methods and application of the various types of tests used in the evaluation of disorders of hemostasis, including but not limited to Platelet Count, PT/INR, aPTT, Fibrinogen Assay, Thrombin Time, ELISA assays, coagulation factor assays, platelet function assays and others.
- Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment
- Use information technology to support diagnostic decisions and clinician education

**Medical Knowledge**
Trainees must demonstrate knowledge about established and evolving biomedical, clinical and cognate (e.g. epidemiological and social-behavioral) sciences and the application of this knowledge to hemostasis. The goals include:

1. To learn the normal mechanisms of hemostasis.
2. To observe and learn the methods of the various types of tests used in the evaluation of disorders of hemostasis.
3. To understand the application of the tests of hemostasis to the evaluation of bleeding and thrombophilic disorders.
4. To gain experience in teaching hemostasis and the disorders of hemostasis to students and residents in both the classroom and the laboratory setting.

Trainees are expected to:
- Describe and discuss the normal mechanisms of hemostasis.
- Describe the methods and application of the various types of tests used in the evaluation of disorders of hemostasis, including but not limited to Platelet Count, PT/INR, aPTT, Fibrinogen Assay, Thrombin Time, ELISA assays, coagulation factor assays, platelet function assays and others.
- Demonstrate an investigatory and analytic thinking approach to clinical situations (bleeding and thrombosis) with proper selection of diagnostic testing

**Practice Based Learning and Improvement**
Trainees must be able to demonstrate the ability to investigate and evaluate their diagnostic and consultative practices, appraise and assimilate scientific evidence and improve their patient care practices. Goals and objectives include:
- Formulate quality assurance monitors for the hemostasis laboratory
- Apply knowledge and appropriate statistical methods to the appraisal of clinical studies and current literature in medicine
- Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness
• Ability to utilize library, web-based, and other educational sources
• Use information technology and other methods to support monitoring of patient laboratory testing and enhancing clinician education in regards to appropriate and cost-effective utilization for patient management
• gain experience in teaching hemostasis and the disorders of hemostasis to students and residents in both the classroom and the laboratory setting.

**Interpersonal and Communication Skills**

Trainees must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with other health care providers, patients, and patients’ families.

Goals and objectives are for the trainees to:

• Effective and professional consultation to other clinicians and other health care professionals and sustain ethically sound professional relationships with colleagues, patients, and patients’ families
• Interact with consultants, laboratory personnel, and administration in an appropriate manner
• Ability to provide services in a timely, organized and coherent manner
• Effective listening skills and ability to carry out standard operating procedures and verbal instructions
• gain experience in teaching hemostasis and the disorders of hemostasis to students and residents in both the classroom and the laboratory setting.

**Professionalism**

Trainees must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

The goals include:

1. To consult effectively with clinicians who have ordered tests of hemostasis, understanding the clinical disorder in the patient and providing guidance regarding the appropriate use of the laboratory in the clinical situation.

Trainees are expected to:

• Consult effectively with clinicians who have ordered tests of hemostasis, understand the clinical disorder in the patient and provide guidance regarding the appropriate use of the laboratory in the clinical situation.
• Demonstrate sensitivity and responsiveness to patients’, colleagues’ and laboratory personnel’s culture, age, gender, and disabilities
• Demonstrate commitment to ethical principles pertaining to confidentiality of patient information, informed consent, and business practices
• Demonstrate respect, compassion and integrity
• Demonstrate adherence to guidelines and regulations set forth by regulatory and accrediting agencies
• Demonstrate ability to recognize and identify deficiencies in peer performance

**Systems-Based Practice**

Trainees must demonstrate an awareness and responsiveness to the larger context and system of health care and the ability to call on system resources to provide pathology services that are of optimal value. The goals include:

1. To learn the principles of laboratory management as they apply to the hemostasis laboratory.

Trainees are expected to:

• Apply the principles of laboratory management as they apply to the hemostasis laboratory.
• Formulate quality assurance monitors for the hemostasis laboratory
• Apply knowledge and appropriate statistical methods to the appraisal of clinical studies and current literature in medicine
• Demonstrate knowledge of the laboratory management’s effect on other health care professionals, organizations, and society
• Demonstrate ability to access, understand and utilize the resources, providers, and systems necessary to provide optimal care

The Rotation Experience:
A number of the day to day activities of the resident in hemostasis are described below. Reading, discussion and active participation the cases and in discussion of the cases or management problems will facilitate the achieving the goals and objectives.

Patient evaluation:
Between 30 and 50 times per year, patients are referred to the Hemostasis Laboratory for evaluation of a bleeding disorder. The resident will interview the patient, perform a simple physical exam, decide on the testing to be done, evaluate the results of the data and write up the results of the consultation. Early in training, each step will be guided by the faculty with the resident taking increased responsibility for the process as she/he gains skill and confidence.

Evaluation and Interpretation of Laboratory Data:
Approximately 250 times per year the laboratory receives requests for test for evaluation of bleeding or thrombophilia. For each of these cases, the resident on the service will contact the ordering physician to learn the clinical information and determine if testing is indicated, if other testing should be added and if the testing is being done at the right time. These cases also required interpretation of the results with a brief consult being written. Early in training, each step will be guided by the faculty with the resident taking increased responsibility for the process as she/he gains skill and confidence.

Case Discussion:
Daily discussion with the faculty will occur regarding cases that have been referred to the laboratory. In addition, there will be session to discuss problems in hemostasis and thrombosis in general. The resident will be an active participant in these sessions, learning and contributing from his/her study and reading the literature. There is a regular "Clot Club" conference for which the resident will assist in preparing cases and on occasion present cases at the conference.

Laboratory Experience:
The resident will spend sufficient time in the laboratory to gain an understanding of the principles of the operation of the hemostasis instrumentation and the preventive maintenance and quality control that is performed. He/she will observe each type of assay to gain an understanding of the basic principles of the methods.

Laboratory Management:
The resident will work with the faculty in guiding activities in the hemostasis laboratory. The resident will be a regular participant in the weekly hematopathology management meeting. All of the management issues of the laboratory are addressed in this venue. The resident will participate in the discussion, assist in the resolution of problems and identify issues that need to be addressed. On occasion the resident will be assigned a specific problem to gather data and propose a solution to the rest of the management team. She/he will get assistance in these projects from the supervisory staff and the faculty.

Teaching:
The resident will be working regularly with the other residents and students that rotate on the hematopathology clinical service. The resident will have the responsibility of guiding the operations of the clinical service and teaching the students (along with the faculty) principles of hemostasis and thrombosis and assisting them with the daily issues that arise in the laboratory. There will be opportunities for the resident to prepare and give lectures on the topic of hemostasis to other residents and students.

Evaluation:
The faculty and, when appropriate, the management staff of the laboratory will evaluate the resident's performance of the tasks noted above. Projects will be discussed and critiqued in the appropriate setting in order to accomplish feedback in real time. If the resident is experiencing difficulty in any area, this will be discussed and plans for improvement developed. Written evaluation will be performed at least every rotation, more frequently if necessary. The resident will also evaluate the effectiveness of the faculty at the same intervals.

**Reading:**

Kitchen S, Olson JD, Preston FE. Quality in Laboratory Hemostasis and Thrombosis. Wiley-Blackwell, 2009


**Literature:** Articles identified by students, residents, fellow and faculty during the rotation.

**Web Site:** http://heme-coag.uthscsa.edu
MICROBIOLOGY CORE ROTATION

Faculty & Course *Director: James Jorgensen, PhD*
Kristin Fiebelkorn, MD
Deanna Sutton, BS, MT(ASCP)
Annette Fothergill, MA, MBA, MT(ASCP)

Rotation Periods: 12 weeks (2 - six week core rotations)

I. General Organization:

The Clinical Microbiology Rotation will consist of a total of twelve weeks of basic microbiology training split into two 6-week blocks, usually in the second and third year. These two rotations are required for completion of Clinical Pathology Training and a resident must have earned full credit for both rotations before requesting an advanced clinical microbiology rotation in the fourth year. Full credit for the clinical microbiology core will be given after completion of the second rotation and evaluation of the resident’s performance by the relevant faculty members. Along with the daily responsibilities outlined below, the rotations will be structured to cover specific topics/areas/specialties. The rotations will take place at the University Hospital Clinical Microbiology Laboratory and the University Hospital Immunology/Virology Laboratory. Additional rotations or specialized training may take place at the Fungus Testing Laboratory at the UTHSCSA or the Audie L. Murphy Memorial Veterans’ Health System Clinical Microbiology Laboratory.

II. Rotation Goals:

At the completion of the two Core Clinical Microbiology rotations, the resident should be able to:

1. Recommend appropriate specimens and assess the quality of specimens for microbiological analysis.

2. Explain the principles and essential steps in routine examinations of blood, spinal fluid, other body fluids, and tissues.

3. Understand the approach to work-up of routine respiratory, urine, wound, and fecal bacterial and viral cultures. This should include the principal pathogens sought and the methods routinely used.

4. Explain and interpret routine and specialized antimicrobial susceptibility tests.

5. Suggest appropriate clinical micro- biological tests for diagnosis of bacterial, parasitologic, mycobacterial, and fungal diseases using microscopy, rapid antigen detection or molecular methods, and culture.

6. Suggest appropriate diagnostic procedures including microscopy, antigen detection, molecular and culture procedures used in contemporary clinical virology and immunology.
7. Demonstrate an understanding of quality control, the costs of performing various tests, and an assessment of decision making involved in selecting new tests.

8. Explain the benefits/shortcomings of automation and newer non-culture-based techniques in clinical microbiology.

9. Understand the epidemiological significance of the detection or isolation of various microorganisms.

10. Understand appropriate interaction between the microbiology laboratory and other medical specialties, hospital epidemiologists, and medical staff committees.

11. Recognize pathogens of public health significance or select agents and understand procedures for confirmation and reporting to public health authorities.

By the end of the two microbiology rotations, the resident should be able to fulfill the six competencies set out by the ACGME as outlined below.

<table>
<thead>
<tr>
<th></th>
<th><strong>Understands and can communicate to clinicians the specimen requirements for tests performed in the microbiology and virology laboratories (PC, MK, ICS, SBP, P)</strong></th>
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<tbody>
<tr>
<td>2.</td>
<td><strong>Can communicate the various testing approaches used for diagnosis of bacterial, fungal, and parasitic diseases (PC, MK, ICS, P)</strong></td>
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<tr>
<td>3.</td>
<td><strong>Recognizes common bacterial and fungal pathogens on daily rounds (MK, SBP)</strong></td>
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<tr>
<td>4.</td>
<td><strong>Recognizes common infectious agents when seen on direct smear exams, e.g., gram stain, fluorochrome, calcofluor white, India ink (MK)</strong></td>
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<tr>
<td>5.</td>
<td><strong>Interpretation of clinical significance of culture and rapid test results (MK, SBP, PBLI)</strong></td>
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<tr>
<td>6.</td>
<td><strong>Is able to discuss with clinicians the results of various antimicrobial susceptibility tests performed by the lab (MK, SBP, PBLI, ICS)</strong></td>
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<tr>
<td>7.</td>
<td><strong>Can communicate the various testing approaches used for viral diseases (PC, MK, ICS, P)</strong></td>
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<tr>
<td>8.</td>
<td><strong>Can interpret infectious diseases serology results and their clinical significance (PC, MK, SBP)</strong></td>
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<tr>
<td>9.</td>
<td><strong>Communicates effectively with clinicians regarding unusual patient results or requests requiring consultation (PC, MK, ICS, E, SBP)</strong></td>
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<tr>
<td>10.</td>
<td><strong>Understands the extent of services provided in our clinical setting and how that might compare with community-based laboratory settings, i.e., the process of choosing between testing options, labor requirements, turn-around times and other environmental factors (MK, SBP, PBL)</strong></td>
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<tr>
<td>11.</td>
<td><strong>Is familiar with the role of the microbiology laboratory as it relates to the hospital infection control and pharmacy and therapeutics committees (for second rotation) (PC, ML, P, ICS)</strong></td>
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III. Rotation Objectives:

(See weekly objectives under weekly rotations)

IV. Outcomes Assessment (resident evaluations):

**Subjective Evaluations**: The standard resident evaluation will be completed by the Microbiology faculty with input from other faculty and staff and will be reviewed with the resident at completion of each 6-week rotation. If resident performance is perceived as “unsatisfactory” at anytime during the rotation it should be discussed in a timely fashion prior to the end of the rotation period with learning objectives and goals reviewed with the resident.

**Objective Evaluations**: Questions will be directed to the resident during daily lab rounds and during weekly Infectious Disease plate rounds to ascertain whether the resident is gaining systems-based practice knowledge. The resident will be given a written exam near the end of the first rotation for the resident’s assessment of his/her learning. The resident will be expected to select an interesting case for presentation during each of the weekly Clinical Pathology Interesting Case Conferences and to present one continuing education session to the microbiology technologists. The resident’s presentations will be assessed based upon teaching value of the case or conference topic, its medical relevance, and the effectiveness of the presentation.

V. Recommended Reading:


The resident rotation spreadsheet checklist should be consulted for the appropriate reading assignments in Koneman.
In addition, Microbiology faculty will provide recent review articles and other relevant publications to the resident during the course of the rotations.

VI. Resident Duties & Responsibilities:

Daily Duties

A. Round with the Microbiology Faculty each day at 10:30 am (UH Microbiology) (excluding days assigned to the Virology/Immunology Laboratory).

B. Call Infectious Disease Fellows or Infectious Diseases PharmD when directed regarding any unusual isolates or special test requests.

3. Call responsible physicians regarding certain life- or limb-threatening results recognized during morning rounds.

4. Correlate positive body fluid (e.g., CSF) smears with those performed in Hematology or Cytology.

5. Review positive fluorochrome and calcofluor stains as time permits.

Mandatory Conferences and Activities:

4. While on service within any of the Microbiology areas during the rotation, attend Infectious Diseases Plate Rounds every Wednesday at 11 a.m.

2. Present a brief synopsis with demonstration materials of an interesting recent or current case at Pathology Clinical Pathology Interesting Case Conference every Wednesday from noon-1 pm.

3. Infectious Disease Case Conference (every Thursday 4:00-5:00 p.m.—UH Pathology Conf. Room). Be prepared to present clinical microbiology or anatomic pathology (surgical, cytology, or autopsy) findings at this conference if called upon in advance of the conference.

4. Present a 30-minute continuing education session on a topic of choice to the microbiology technologists once during each 6-week rotation.

Optional Conferences

1. University Hospital Infection Control Committee Meeting (when possible, bi-monthly meetings, 12-1:30 p.m. UH Board Room-1st floor) or Pharmacy and Therapeutics Committee Meeting (second Friday of each month, noon-1 pm, UH Board Room-1st floor).

2. City wide “Bug Club” (2nd and 4th Wednesdays, 6:30-8 p.m., UTHSCSA
Other Daily Activities

(See weekly schedules)

VII: Rotation Outline:

Week 1 UHS Microbiology Lab (exact schedule may vary depending upon presence of other trainees)

Day 1: Accessioning and specimen processing
Day begins at 8:30 a.m.

Objectives:
- become familiar with with biosafety risks and precautions in the microbiology lab
- become familiar with determining specimen quality, specimen processing, primary isolation techniques, choice of media for different specimen types, and incubation periods
- become familiar with the general characteristics of each broth and agar media
- assist technicians with problem specimens (i.e. body site identification, contacting physicians about improperly submitted specimens, unlabeled specimens, lack of specific diagnosis, etc.)

Day 2-5: Bacterial plate reading (Day begins at 8:30 a.m.)
Days 2-5 (respiratory and genital cultures)

Objectives:
- become familiar with the most commonly isolated organisms (including normal respiratory and genital flora) with respect to colony morphology on various media, other growth requirements, gram stain morphology, identification techniques,
- review pathogenesis of common organisms, and special epidemiologic features.
- recognize Groups A and B streptococci, S. pneumoniae, Haemophilus influenzae, Moraxella catarrhalis, S. aureus
- understand the detection of ocular pathogens, including bacteria and Acanthameba
- become familiar with routine susceptibility testing techniques, including Vitek 2, disk diffusion, E test, and broth microdilution susceptibility methods

Week 2

Days 1-5: Bacterial plate reading – wounds and body fluids

Objectives:
- as described above, plus tests for detection of MRSA, D-zone testing, VRE and other enterococci, multi-drug-resistant gram-negatives (including ESBL), yeasts.
- understand the use of selective and differential media, including Chromagars.
- understand when body fluids may be placed in blood culture bottles.
- determine when antigen detection tests might be useful on CSF specimens.
• determine the basic principles of culturing for anaerobes, and methods for their recognition, including use of anaerobic chamber vs. anaerobe boxes; methods used for definitive identification of isolates; performance of relevant susceptibility tests.

**Week 3**

Days 1-5: Blood cultures, special antibiotic susceptibility tests

Objectives:
• become familiar with the proper technique to collect and perform a blood culture
• become familiar with the recommended volume of blood to culture, the number of cultures needed
• become familiar with the Bactec automated system used for blood cultures
• discuss the Isolator tube blood culture system and when it should be used
• become familiar with the microbiology workup of transfusion reactions
• review the approach to screening random donor and single donor platelets
• become familiar with the following special antibiotic tests:
  - MIC or MIC/MBC microdilution tests
  - Schlichter or serum bactericidal test (SIT/SBT)
  - Use of E test for individual drug MICs

**Week 4**

Days 1-3: Mycobacteriology and Mycology

Day begins at 8:30 a.m.

Objectives:
• become familiar with the appropriate specimens needed for isolation of mycobacteria and fungi
• become familiar with primary isolation techniques and media for mycobacteria and fungi
• be able to interpret fluorochrome, Kinyoun, KOH/calcofluor, and india ink stains/preps
• become familiar with routine biochemical tests to identify mycobacteria and yeast
• become familiar with the basics of microscopic identification of common molds, e.g., _Aspergillus, Fusarium, Bipolaris, Penicillium_, zygomycetes
• become familiar with the DNA probe tests used to identify mycobacteria and fungi
• become familiar with the direct RNA amplification test (Gen-Probe MTD) for detection of _M. tuberculosis_ in sputum
• become familiar with antimicrobial susceptibility testing of mycobacteria and yeasts
• become familiar with the activities of commonly used anti-fungal agents and the yeasts and molds with intrinsic or acquired resistance to them

Days 4-5: Parasitology and miscellaneous EIA tests

Objectives:
• become familiar with procedures used to collect, prepare, and examine parasitology specimens
• learn how to calibrate an ocular micrometer
• overview of parasitology EIA, cryptococcal antigen testing, rotavirus antigen testing, and Clostridium difficile toxin testing
• read and review parasitology study materials

Week 5

Days 1-5  - Urine and stool cultures

Objectives:
• understand the quantitation of bacteria and yeast in urine.
• recognize the most common causes of urinary tract infection, how those organisms can be identified, and which antimicrobial agents should be tested for susceptibility
• understand the process of recognition and identification of possible enteric pathogens in stool cultures, e.g., Campylobacter, Salmonella, Shigella. Understand the antimicrobial agents that might be used for therapy of bacterial agents of diarrhea.
• understand when less common agents of diarrhea should be sought, and the appropriate specialized media that would be used for isolation of hemorrhagic E. coli strains, Vibrio, Yersinia, Aeromonas
• become familiar with the CLO test

Week 6

Objectives:
• review of tests/procedures learned during the first five weeks or request for specialized rotation (e.g., Fungus Testing Laboratory).
• review the advantages and disadvantages of the various manual and automated testing methods used to identify bacteria, fungi, and parasites
• review the Pathology Bioterrorism response plan to understand the most likely BT or select agents
• review specialized media or tests for uncommon organisms, e.g., Legionella, Bartonella, pertussis, Brucella
• present continuing education session for technologists.

Week 7-9  Beginning of second rotation at UH

Objectives:
• review general University Hospital bacteriology, mycobacteriology, mycology, parasitology procedures
• refresh any confusing areas with focus on general test performance and interpretation; return to any areas that require additional time or experience
• In depth study of antimicrobial susceptibility testing (assess different methods, means of interpretation of results, QC, special antibiotic tests, determining an antibiotic test battery/formulary, selective reporting strategies, detection and reporting of ESBL and inducible resistance
• become familiar with the content and use of the CLSI documents on antimicrobial susceptibility testing.
• review the preparation of the hospital antibiogram
• understand the interaction of the Microbiology Laboratory with the hospital Infection Control and Pharmacy and Therapeutics committees
• review the laboratory’s role in reporting certain organisms to public health authorities

**Weeks 10-12: Virology, immunology, and molecular diagnosis of infectious diseases**

Goals & objectives:

- Assist technologists with problem specimens (i.e., body site identification, contacting physicians about improperly submitted specimens, unlabeled specimens, or inappropriate requests)

- Provide consultation to clinicians regarding test selection, specimen requirements and interpretation of results as needed.

- Present interesting or instructive topics related to virology, immunology, and molecular infectious disease testing at Clinical Pathology Interesting Case Conference on Wednesday for noon-1pm during weeks 10-12.

- Present a 30-minute continuing education session on a topic of choice to the virology and immunology technologists during week 12.

- (Other specific objectives listed under weekly activities below)

**Week 10  Virology**

Objectives:

- Understand (and be able to discuss with clinicians) appropriate specimen types that should be submitted for viral culture in different clinical situations (e.g., nasopharyngeal specimen for respiratory viruses, urine culture for mumps virus, vesicle fluid for HSV, etc.)

- Understand which tests should be performed in addition to or instead of viral culture in certain clinical situations (e.g., CMV DNA viral load instead of CMV blood culture).

- Be familiar with appropriate specimen collection and handling for viral culture, including various transport media and collection devices and when they should be used (respiratory collection kit, DFA collection kit, viral transport media).

- Understand the Select Agent Rule, Biosafety Levels (BSL), and public health reportable diseases and how they apply to the virology and immunology laboratory, including UHS policy and procedures.
- Become familiar with procedure for inoculation and processing of conventional viral cultures, including the selection of appropriate cell types for certain specimen types and viruses sought.

- Recognize cytopathic effect of common viruses in various cell lines and artifacts (including toxicity and endogenous viruses), through study of the viral culture teaching set and review of positive viral cultures as available (all three weeks of rotation)

- Become familiar with immunofluorescent staining procedure for viral culture confirmation; understand the principle of the hemadsorption test, and the viruses for which it may be used

- Become familiar with rapid culture techniques such as the shell vial method, and their role in the virology laboratory.

- Become familiar with the role of viral antigen testing in the diagnosis of various viral infections, including sensitivity, specificity, and interpretation of results in clinical context (including influenza and RSV rapid antigen testing, rotavirus antigen testing, and adenovirus antigen testing).

Week 11: Immunology

Objectives

- Understand the principles of infectious disease serology and its role in the diagnosis of different bacterial, fungal, parasitic, and viral infections.

- Be familiar with collection and timing issues that can lead to errors in the interpretation of serologic tests (effects of transfusion and plasmapheresis, serology in neonates and infants, window period for infectious diseases)

- Become familiar with different manual and automated methods for detection of antibodies, including principle, techniques, and their pros and cons and common pitfalls.

- Become familiar with the serologic diagnosis of HIV including screening and confirmation, including appropriate testing algorithms for adults, children, neonates, and individuals with the acute retroviral syndrome.

- Understand serologic markers of hepatitis viruses, their interpretation, and use in clinical care of patients

- Be familiar with serologic testing for the common herpesviruses (EBV, HSV, VZV, CMV).

- Understand the use and interpretation of treponemal and nontreponemal tests in serum and CSF in the diagnosis of syphilis.
- Become familiar with donor testing, including infectious agents sought, tests performed, and regulatory requirements.

- Know the current UHS exposure protocol and role of HIV prophylaxis.

- Understand the principles of autoimmune serology, and the role of various serologic markers in the diagnosis of common autoimmune diseases.

- Become familiar with immunofluorescent patterns of ANA antibodies and their interpretation; understand the role of EIA methods for ANA screening and characterization of ENAs.

Week 12: Molecular diagnosis of infectious diseases

- Understand the basic principles of molecular detection of bacterial, fungal, parasitic, and viral pathogens, including various methods available and specific work practices required to reduce the risk of contamination.

- Understand (and be able to discuss with clinicians) appropriate specimen types that may be submitted for molecular testing in different clinical situations.

- Be familiar with appropriate specimen collection and handling for molecular testing, including differences in stability of DNA and RNA and specific collection devices and their use (PPT tubes, collection devices for Chlamydia trachomatis and Neisseria gonorrhoeae testing).

- Become familiar with the role of nonamplified and amplified nucleic acid testing for Chlamydia trachomatis and Neisseria gonorrhoeae, methods available, interpretation, and pitfalls.

- Understand the principles and methods of HIV RNA viral load testing, including interpretation and its role in the selection of antiretroviral therapy.

- Understand HCV RNA viral load testing and HCV genotyping, their interpretation, and their role in prognosis and therapy.

- Understand CMV DNA viral load testing, its interpretation in different patient populations and clinical situations, and its role in preemptive antiviral therapy.

- Understand the principles behind antiviral resistance and appropriate testing methods (including targets for molecular detection of mutations) for resistance for HIV, HBV, CMV, and HSV; understand molecular versus culture-based methods of detecting resistance.

- Become familiar with the process of selecting and validating a new molecular test.

VIII. Rotation Review
<table>
<thead>
<tr>
<th>Rotation Director</th>
<th>Date</th>
<th>Residency Director</th>
<th>Date</th>
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</table>

TRANSFUSION MEDICINE CORE ROTATION

Faculty and *Course Director:

Eugenia Bryan, M.D.
Jay Brooks, M.D.
*Chantal Harrison, M.D.
John Olson, M.D.
Current Transfusion Medicine Fellow

Rotation Periods:

Two six-weeks periods

I. General Organization

The Transfusion Medicine core rotation has been organized to familiarize the resident with the basic principles of operation of a hospital blood bank/transfusion service and with the interactions of a Pathologist-Medical Director with patients, clinicians, supervisory and technical staff, nursing staff, hospital administration personnel, and the non-medical public (blood donors, blood drive coordinators, etc.). The core rotation consists of two blocks of six weeks at University Hospital.

This rotation is a requirement for completion of Clinical Pathology training and a resident must have earned full credit for this rotation before taking advanced clinical transfusion medicine. Full credit for the transfusion medicine core rotation will be given after completion of the rotation, evaluation of the resident’s performance by the relevant faculty members and successful completion of a written examination.

Along with the daily responsibilities outlined below, the rotation will be structured to cover specific topics with reading assignments, short didactic sessions, exercises/case studies and hands on technical work when appropriate. Frequent discussions with the faculty and/or fellow on clinical decisions are an important part of the training process.

II. Rotation Goals

**Medical Knowledge & Patient Care Competencies:** Demonstrate a satisfactory level of knowledge and diagnostic competence, and demonstrate the ability to provide appropriate and effective consultation and therapy to patients in the context of transfusion medicine.

**Interpersonal and Communication Skills & Systems-based Practice Competencies:** Knowledge of basic principles to enable transmission of the transfusion medicine information in an informative, timely, and succinct way that best serves patient and clinician needs utilizing communication skills and laboratory information systems.

**Laboratory-based learning and improvement competency:** Understanding of principles of data management for quality assurance, billing, and clinical research.

**Professionalism competency:** Understanding of the need for commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient and clinician population as well as to research.
III. Rotation objectives:

At the end of the first six–week rotation the resident should be able to:

1. Evaluate allogeneic blood donors and patients presenting for autologous or therapeutic phlebotomy (MK, PC, P, ICS, SBP)
2. Diagnose and manage donor reactions (MK, PC, IPCS, P)
3. Evaluate and manage patients referred for therapeutic apheresis and peripheral blood hematopoietic precursor cells collection (MK, PC, IPCS, P, SPC, PBLI)
4. Evaluate appropriateness of transfusion therapy (MK, PC, SPC)
5. Communicate effectively with clinicians on appropriate blood component therapy (IPCS)
6. Perform basic immunohematologic techniques: blood typing, antibody detection and simple antibody identification; direct antiglobulin test and eluate (MK)
7. Explain blood group compatibility rules (MK)
8. Interpret antibody identification panels (MK)
9. Discuss the clinical interpretation of a positive direct antiglobulin test (MK)
10. Evaluate suspected transfusion reactions (MK, PC, IPCS, P)
11. Write accurate and complete blood bank consultations (MK, PC, IPCS, P, SPC, PBLI)

At the end of the second six-week rotation the resident should be able to:

1. Describe the infectious disease testing done on allogeneic blood (MK)
2. Describe lookback requirements (MK)
3. Interpret platelet and HLA antibody screening results (MK)
4. Discuss the genetics and biochemistry of the major blood groups (ABO, Le, Se, Rh, Kell, Kidd, Duffy, Diego, MNSs, P) with the serologic characteristics and clinical significance of their antibodies (MK)
5. Perform complex antibody identification techniques (multiple antibodies, selected cell panels, separation by absorption and elution) (MK)
6. Discuss different methods of detection of antigen-antibody reaction (tube, enhancement media, solid phase, gel) (MK)
7. Discuss blood component preparation, storage conditions, and preservation (MK)
8. Perform a mock CAP or AABB assessment of the blood bank (MK, SBP, P, IPCS)
9. Discuss the role of regulatory (FDA) and professional organizations (AABB, CAP, JCAHO, ASHI) in the management of blood banks and transfusion services (MK, PBLI)
10. List the type of events that must be reported to FDA (MK, PBLI)

IV. Outcome assessment

Subjective evaluation
After each rotation the resident will be evaluated by the faculty on service during the rotation in regards to:

1. Fund of knowledge and rotation specific knowledge adequacy in relationship to the level of training
2. Ability to retrieve accurate relevant patient medical history and write effective consultations
3. Communication skills with faculty, technologists, clinicians, health care personnel, and residents
4. Interpretation of serological reactions (panels, elution and absorption, phenotyping)
5. Quality of their presentations at journal club and staff in-service
6. Interaction with donors and patients
7. Responsibility and concern in providing care and follow up of patients

Objective evaluation
1. At the end to the first section of the first rotation the resident will take a donor screening multiple choice question exam
2. At the end of the second rotation the resident will take a comprehensive 100 multiple choice questions exam

V. Suggested Reading Materials

Current edition of:

AABB Standards
AABB Technical Manual
Harmening D Modern Blood Banking and Transfusion Practices FA Davis
Issitt PD Applied Blood Group Serology Montgomery Scientific Publications
Mollison PL, Engelfriet CP, and Contreras M Blood Transfusion in Clinical Medicine Blackwell Scientific Publications
Collection of selected classical articles in three ring binder
ASCP course manual “Review of Current Topics in Blood Banking and Transfusion Medicine”
Rossi EC, Simon TL, Moss GS, Gould SA Principles of Transfusion Medicine Williams & Wilkins
Petz LD, Swisher SN, Kleinman S, Spence RK, Strauss RG Clinical Practice of Transfusion Medicine Churchill Livingstone
Anderson KC and Ness PM Scientific Basis of Transfusion Medicine WB Saunders

VI. Resident Responsibility

The resident should be available from 8:00 AM to 5:30 PM to do the following:

1. Interface with clinicians and nurses in clarifying orders, handling patient problems, and consulting on component therapy
2. Evaluate patients who are using unusually large amounts of blood components and communicate with clinicians when appropriate
3. Write consultations on all formal evaluations
4. Evaluate all suspected transfusion reactions
5. Evaluate all patients with a positive direct or indirect antiglobulin test
6. Evaluate any patient presenting for autologous or therapeutic phlebotomy
7. Evaluate patients for therapeutic apheresis or stem cell collection and provide medical supervision for procedures
8. Follow up on patients with possible transfusion transmitted disease
9. Evaluate HLA testing and platelet antibody screen results
10. Participate in chart reviews and data retrieval for the Blood Utilization Committee
11. Evaluate allogeneic blood donors as requested by donor room personnel and participate in at least one outside blood drive as a medical screener
12. Give one continuing education session to blood bank personnel

As the residents gain more experience and according to the supervising faculty judgment, residents will be given the opportunity to make independent decisions on donor acceptability, patient care during therapeutic procedures, consultations with clinicians on appropriate component therapy, blood type switching, crossmatch difficulties, and inventory management. These decisions will occur during regular hours of the rotation or when taking night and weekend call.

VII. Structure of the Rotations
It is expected that the resident will complete the first four sections during the first rotation and the last four in the second rotation. However this schedule is flexible and the resident can work at his/her own pace.

Section 1: Introduction to the Blood Bank/ Transfusion Service; Whole Blood Donor Selection and Blood Collection; Blood Components Preparation, Storage and Indications; Transfusion Reactions

A. Goals
1. Become familiar with the physical facilities and personnel organization
2. Learn the following Cerner computer functions: PUI, UIQ, UDP, PRI, PRX, OID, STI, RES
3. Become familiar with the Sunrise system and be able to enter a clinical note on a patient computerized chart
4. Learn allogeneic donor selection and acceptance criteria
5. Learn evaluation criteria for autologous and therapeutic phlebotomy and the structure and content of the written consultation
6. Become familiar with symptoms, etiology, and therapy of donor reactions
7. Successfully take the donor selection criteria competence test
8. Become familiar with the preparation, storage requirements, and clinical indications of the different components prepared from whole blood
9. Recognize the symptoms and laboratory findings associated with the classic early transfusion reactions
10. Learn the structure, content and distribution of a consultation for suspected transfusion reaction

B. Activities
1. Tour of the blood bank and introduction to key personnel. Review organization chart, location of the communication logbook, special component approval log, important phone and beeper numbers.
2. Cerner computer training session
3. NT computer training session with access to Sunrise clinical system, and consult database
4. Review content of donor record forms (compare the content of the two types)
5. Evaluate allogeneic donor medical history, explain the AIDS risk factors to a donor, and perform physical exam
6. Observe preparation of bag, placement of identification numbers and position of bag in shaker
7. Observe donor arm preparation and phlebotomy
8. Observe collection of processing sample; strip tubing and make segments
9. Make components and store in appropriate area under proper supervision
10. Evaluate a patient for autologous donation, explain risks and benefits, obtain informed consent, outline donation schedule, prescribe iron & folate or Niferex, write consultation
11. Evaluate a therapeutic phlebotomy patient and write consultation
12. Take donor selection competence test

C. Points of Discussion
1. Allogeneic blood donor selection criteria
2. Goals of preoperative autologous blood collection
3. Indications for therapeutic phlebotomy
4. Guidelines for appropriate use of blood components
5. Early transfusion reactions

Section 2: Apheresis; Preparation of and Indications for Special Blood Components

A. Goals
1. Learn screening criteria specific to platelet and plasma donors
2. Learn symptoms, etiology, and therapy of reactions specific to platelet donors and patients undergoing stem cell collection or therapeutic apheresis
3. Understand physiology of citrate toxicity
4. Learn the significance of the values displayed by the Cobe Spectra and how to modify them
5. Understand the separation mechanism underlying the function of the different types of apheresis machines: Cobe Spectra and Trima, Fenwall, Haemonetics
6. Learn the types of diseases treated by therapeutic apheresis and the appropriate protocols for each disease
7. Learn the appropriate emergency use of the drugs kept in the apheresis unit: Tums, Benadryl, calcium gluconate, epinephrine, atropine
8. Learn the structure, content, and distribution of a consultation for therapeutic apheresis and stem cell collection
9. Learn how to calculate a platelet apheresis and a stem cell collection yield
10. Learn how to safely and aseptically manipulate the central access used to hook up a patient to the apheresis machine
11. Become familiar with the preparation, storage requirements, and clinical indications of the modified blood components: washed blood, frozen blood, frozen deglycerolized blood, aliquots, splits, leukoreduced cellular components, irradiated components, CMV negative cellular components, matched components
12. Understand the advantages and disadvantages of a pedipack and learn approval guidelines
13. Learn the following Cerner computer functions: RIA, UPI, DNI, CRP

B. Activities
- Tube and prime Cobe Spectra; practice setting parameters
2. Observe the washing of a unit of blood for the neonates and the transfer of an aliquot into a syringe, and the preparation of a pedipack
3. Observe the irradiation process
4. Find out where the frozen blood is kept and take a look at a canister
5. Find out where the matched components are kept
6. Cerner computer training sessions

   C. Points of Discussion
   1. Therapeutic apheresis
   2. Bone marrow transplantation
   3. Indications for special component modification or testing

Section 3: Immunohematology: ABO and Rh typing; antibody detection and identification

   A. Goals
   1. Learn the technical methods of blood group antigen typing and antibody detection
   2. Learn basic antibody identification techniques (panel and rule out method)
   3. Learn genetics, biochemistry, and serology of ABO blood group
   4. Learn genetics, biochemistry, nomenclatures, and serology of Rh blood group
   5. Learn the structure, content and distribution of a consultation for positive direct or indirect antiglobulin test

   B. Activities
   1. Perform forward and reverse ABO typing
   2. Perform Rh typing including weak D and complete Rh phenotype
   3. Perform antibody screen
   4. Perform single antibody identification

   C. Points of Discussion
   1. Panel interpretation
   2. Antibody detection techniques
   3. Carbohydrate antigens biochemistry
   4. ABO and Rh genetics
   5. ABO, P, I, Lewis, and Secretor biochemistry and serology

Section 4: Immunohematology: Complex antibody identification techniques; direct antiglobulin test

   A. Goals
   1. Learn the appropriate use and limitations of special serologic techniques such as enzyme treatment, adsorptions (REST, HPC, cold auto, warm auto, homologous), elutions, DTT, chloroquine
   2. Learn how to create selected cell panels
   3. Learn how to work up and interpret a positive direct antiglobulin test
   4. Learn the serology of the Kell, Duffy, Kidd, MNS, Diego, Lewis, P, and I, Lutheran, Xg, and Bg blood group systems

   B. Activities
   1. Perform multiple antibodies identification using selected cells panels
   2. Perform a direct antiglobulin test and an eluate

   C. Points of Discussion
1. Interpretation of a positive direct antiglobulin test  
2. Immune mediated hemolytic anemias  
3. Hemolytic transfusion reactions  
4. Hemolytic disease of the newborn  
5. Other blood groups  

Section 5: Transfusion transmitted diseases  

A. Goals  
1. Learn general principles of ELISA testing and cut off determination in direct and competitive assays  
2. Learn principles of Western blot testing and interpretation of HIV Western blot, HTLV Western blot, and HCV RIBA  
3. Learn the clinical interpretation and appropriate ordering algorithms of hepatitis markers assays  
4. Understand procedure and intent of lookback policy  
5. Learn which infectious diseases can be transmitted by blood components or derivatives transfusion and how the risk of transmission can be minimized  

B. Activities  
1. Do a lookback on a specific donor (i.e. identify recipients of all components from the units of blood donated by the donor)  
2. Do a suspected transfusion transmitted disease investigation (i.e. identify all donors for all components received by the patient)  

C. Points of Discussion  
1. HIV and hepatitis testing  
2. FDA requirements on lookback for HIV and HCV  
3. Organ transplantation and tissue banking  
4. CMV and transfusion  
5. Delayed transfusion reactions  

Section 6: Transfusion practices  

A. Goals  
Learn:  
1. Indications and expected effect of each type of blood component  
2. Evaluation and therapy of acquired and congenital coagulopathies  
3. Special aspects of neonatal and pediatric transfusion  
4. Logistics and complications of massive transfusions  
5. Risk, clinical evolution and prevention of transfusion associated graft-versus-host disease  
6. Methods to minimize allogeneic blood donor exposure  
7. Screening criteria for review of appropriateness of transfusion  

B. Activities  
1. Prepare massive and neonatal transfusion report for blood utilization committee  

C. Points of Discussion
1. Neonatal and pediatric transfusion
2. Hemostasis and the use of blood components
3. Transfusion practices guidelines
4. Emergency blood transfusion protocols

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Section 7: HLA and platelet serology; Parentage testing

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  A. Goals
  Learn:
  1. Genetics and biochemistry of MHC locus products
  2. Serologic methods of detection and identification of antibodies to platelets and lymphocytes antigens
  3. Serologic methods of HLA phenotyping
  4. Clinical significance of MHC in organ and bone marrow transplantation
  5. Clinical significance of HLA, granulocytes and platelet antigens in transfusion
  6. Evaluation of refractoriness to platelet therapy and approaches to provide compatible platelets to an alloimmunized patient
  7. Genetics of red cell antigens, red cell enzymes, and serum proteins systems used in parentage testing
  8. Definition of direct and indirect exclusion in classical parentage testing systems
  9. Genetics and testing methodology of RFLP and PCR based DNA polymorphisms used in parentage testing
  10. Principles of calculation of paternity index, probability of paternity, and power of exclusion

B. Activities
  1. Observe HLA phenotyping by microlymphocytotoxicity
  2. Observe HLA antibody screen

C. Points of Discussion
  1. HLA genetics
  2. HLA phenotyping tray interpretation
  3. Refractoriness to platelet therapy; interpretation of platelet and HLA antibody screens
  4. Role of platelet antibody testing in pregnancy; NAITP
  5. Platelet and WBC specific antigens and antibodies

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Section 8: Regulation and accreditation of blood banks and transfusion services

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  A. Goals
  1. Become familiar with the role played by FDA, CAP, AABB, JC, CMS in the activities of blood banks and transfusion services
  2. Learn the type of activities that mandate registration versus licensing by the FDA
  3. Learn when and how to report errors and transfusion associated deaths to the FDA
  4. Become familiar with the format and focus of the accreditation program of CAP, AABB, and JC

  B. Activities
  1. Perform a mock CAP inspection of the blood bank
2. Select an AABB quality essential and determine how it is implemented throughout the different systems in the blood bank
3. Give a continuing education session to blood bank personnel

C. Points of Discussion
1. cGMP
2. Organization and purpose of CAP, AABB, and FDA
3. FDA reporting requirements

VIII. Rotation Review

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______________________________  ________________________________
**Rotation: VA General Laboratory Medicine**

**Course Director:** Aamir Ehsan, MD  
**Faculty:** Pathologists providing services at the VA

**Rotation Periods:** 2 rotations of 6 weeks each

I. **General Organization:**
   The Resident will serve as the physician resource for all of the sections of the laboratory of STVHCS. The resident will have completed at least one prior rotation in each of the laboratory medicine services at the UHS. It is preferable if 2 rotations have been completed in Hematopathology and Transfusion Medicine. The rotation is intended for senior residents (third or fourth year).

II. **Rotation Goals:**
   To gain increased confidence in the management of the clinical and administrative roles in the general clinical laboratory and to gain leadership skills in these areas.

III. **Rotation Objectives:**
   During this rotation, the resident’s objectives are:

   To develop increased independence in the sign-out of hematopathology, transfusion medicine, clinical chemistry, immunology, serology and microbiology cases. (PC, MK, PBLI, IPCS, P, SBP)

   To manage the day to day operations of the general clinical laboratory from the pathologist’s perspective. (PBLI, IPCS, P, SBP)

   To provide consultation to the clinical services regarding patients care issues that arise in microbiology, clinical chemistry, immunology, serology, transfusion medicine and hematopathology. (PC, MK, IPCS, P, SBP)

   To participate in the committees of the AMVAH as they relate to role of laboratory medicine in providing clinical service. (PBLI, IPCS, P, SBP)

IV. **Outcomes Assessment (resident evaluations):**

   **Subjective Evaluations:** as provided from the staff and faculty in pathology and the clinical services

   **Objective Evaluations:** Faculty and staff evaluation of the quality of the final sign-out of the clinical cases and the management projects those are undertaken.

V. **Suggested Text References:**
As recommended for the individual laboratory medicine disciplines.

VI. Resident Duties & Responsibilities (outline):

Residents are required to be physically present or available at the VA during normal tour of duty as defined in the residency manual.

Duties will include but will not be limited to:

**Clinical Microbiology Laboratories**

1. Meet daily with the supervisor to determine the things that need your attention.
2. Review and evaluate daily QC/QA activities (an early morning activity).
3. Prepare paperwork and send out requests for serological tests accomplished by other laboratories not performed at this VA (not necessarily daily, usually sporadic throughout any given week).
4. Call personally to requesting physician/ward for certain positive/negative tests involving specific infectious agents, e.g., tuberculosis, brucellosis, and syphilis etc.
5. One day per week, throughout rotation, accomplish blood cultures and reading Gram stains.
6. Compiling laboratory information for hospital improvements in patient-care related matters
7. Attend Tuesday morning clinical microbiology lab rounds (alternating Tuesdays – VA & UH).

**Hematopathology**

1. Meet daily with the supervisor to determine the things that need your attention.
2. Body fluids, peripheral blood, coagulation or any other unusual requests need to be evaluated and if needed to be reviewed with hematology faculty on service.
3. Administrative issues to be discussed with Dr. Ehsan, while service issues to be discussed with hematology faculty on service.
4. Available for any questions related to newly performed bone marrow samples (like what samples need to be sent for ancillary studies). Resident on hematology service will sign out the bone marrows. The marrow sign-out responsibility will be re-evaluated depending upon the workflow of heme cases at the UH and VA.
5. Review heme cases with clinicians. Just to give them an idea about the possibilities.
6. Participate in hematology oncology clinical conference at the VA

**Transfusion Medicine**

1. Meet daily with the supervisor to determine the things that need your attention.
2. Work-up the transfusion reactions.
3. Consults on blood bank related issues like product release or any other questions from the clinicians (discusses and signs out with blood bank faculty on service). Administrative issues will be discussed with Dr. Brooks.
4. Attend the blood utilization committee of the VA (at 2PM - third Tuesday of every other month)

**Clinical Chemistry (Immunology/Serology)/Phlebotomy/Processing:**
1. Meet daily with the supervisor to determine the things that need your attention.
2. Sign out the electrophoresis and other specialized procedures as needed.
3. Review the medical necessity and approve requests for testing that will be sent to reference laboratories.
4. Consult with clinicians and laboratory personnel on clinical chemistry/processing related issues as needed and discuss with faculty on service.

**CTRC Lab Visit**
Once a week for half a day – visit CTRC laboratory at the mutually agreed time with lab staff and faculty.

**STVHCS Laboratories**
There are many outpatient and other satellite labs within the STVHCS. Visit to these labs is highly recommended but not required. The purpose is to get acquainted with satellite lab operations.

**Coverage in the absence of Resident**
When the resident is on vacation (or other time off) or when the rotation is not covered; residents who are rotating at the UH in blood bank, hematopathology, microbiology, chemistry will cover the respective sections and ensure all sections are covered. When the VA resident is taking time off it is the resident responsibility to ensure the alternate coverage is available and all sections are covered. When no VA resident is on service; the chief residents will ensure that all sections are covered by the residents rotating at the UH labs. Any time off and/or alternate arrangements for coverage will need to be brought to the attention and approved by the Chief of pathology at STVHCS.

**VII: Rotation Outline (optional):**

There is no fixed rotation of duties. The clinical work that arises and the problems that need to be solved will drive the rotation.

**VIII. Rotation Review**

| Rotation Director | Date | Residency Director | Date |
COMBINED FLOW CYTOMETRY, MOLECULAR DIAGNOSTICS, AND CYTOGENETICS ROTATION

Faculty: Hongxin Fan, M.D., Michael Naski, M.D., Ph.D., and Ryan S. Robetorye, M.D., Ph.D.

Combined Rotation Duration: 6 weeks

The combined course includes scheduled didactic and practical sessions in each of the individual laboratory sections.

Duties and Responsibilities
Residents from the UT Health Science Center are required to attend the complete 6 week course. Participants from other institutions may elect to attend only the annual cytogenetics workshop.

Course participants are expected to attend scheduled didactic sessions that are complemented by hands-on demonstrations of laboratory techniques and case studies. Trainees will be also assigned to small groups (no more than five trainees) to observe the sign-out of current cases within the molecular diagnostics, cytogenetics, and flow cytometry laboratories. During the course of the rotation, trainees will be expected to show increasing competency in lab data interpretation and report generation.

Molecular Diagnostics Rotation

Faculty: Hongxin Fan, M.D. and Ryan S. Robetorye, M.D., Ph.D.

Rotation Duration: 1 month

Rotation duties and responsibilities
Residents are expected to attend scheduled didactic sessions and hands-on demonstrations of laboratory techniques. Trainees are expected to complete assigned readings and participate in case sign-out and consultations. Opportunities are also available for involvement in activities related to the establishment of new molecular assays in the clinical laboratory and for involvement in research activities that may provide data for subsequent abstracts and/or publications.

Goals and Objectives
1. Gain a working knowledge of molecular diagnostics, including nucleic acid isolation, amplification and detection techniques, such as Southern Blot, polymerase chain reaction (PCR), real-time PCR, and capillary gel electrophoresis. Understand how molecular assays are performed and interpreted.

2. Learn the clinical applications of molecular diagnostics for the diagnosis and monitoring of cancer, inherited disease, and infectious disease.

3. Interpret molecular data from clinical cases and learn to compose diagnostic reports using available clinical, morphologic, immunophenotypic, and cytogenetic findings.

4. Discuss issues of quality control, quality assurance, and lab administration related to DNA technology.

Flow Cytometry Laboratory Rotation

Faculty: Michael Naski, M.D., Ph.D., Martina Reinhold, Ph.D.

Rotation Duration: Six weeks as a part of the combination rotation, or
Six weeks—in association with the hematopathology rotation

Since about 75% of the cases analyzed in the flow lab are obtained from the University Hospital and the Audie L. Murphy VA Medical Center; trainees rotating on the hematopathology service are also required to spend time in the flow lab. The attending hematopathologist on service for the flow lab will sign out cases on a daily basis with the trainees at a mutually convenient time. In addition, a separate rotation in the flow cytometry laboratory is offered as part of the six week combined flow, molecular, and cytogenetics rotation.

The flow cytometry laboratory provides complete immunophenotypic analysis of cell populations by multi-parameter flow cytometry. The immunophenotypic assays are of value in the diagnosis and surveillance of leukemias (acute and chronic), lymphomas, CD34 enumeration for stem cell transplantation, fetal hemoglobin detection, and evaluation and monitoring of immunodeficiency/ altered immune states.

Rotation Goals and Objectives
- Understand basic principles of flow cytometry, including instrument settings, compensation, and gating techniques.
- Understand how multi-parameter flow analysis can be used for the diagnosis of hematolymphoid disorders.
- Correlate flow cytometry data with clinical history, morphology, and other ancillary studies, including immunohistochemistry, molecular, and cytogenetic findings.
- Develop competency in the use of multi-parameter flow cytometry for the analysis of leukemias and lymphomas.
- Gain a working knowledge of other types of analysis performed by flow cytometry, including CD34 enumeration, CD4 enumeration, and hemoglobin F quantitation.
- Develop competency in the analysis of simple and complicated flow cytometry data using commonly used analysis software.
- Assist with interpretation of CAP, other proficiency samples; monitor QC activities and assist in determining the need for any changes or corrective actions as indicated.
- Develop and maintain effective communication skills and professional relationships with clinicians, pathologists, and laboratory personnel.
- Understand and apply guidelines and regulations set forth by regulatory and accrediting agencies.

**Cytogenetics Laboratory Rotation**

**Faculty: To be determined**

**Rotation Duration: 1 week**

Cytogenetics is covered in a week-long workshop that is offered to senior pathology residents in the San Antonio region. The workshop is held Monday through Thursday from 9 a.m. to 4 p.m. and on Friday from 9-11 a.m. Subjects covered include the basics of cytogenetic techniques and terminology, congenital aberrations, prenatal diagnosis, molecular DNA studies and practical applications, cancer cytogenetics, and FISH. The workshop consists of morning didactic lectures and afternoon laboratory exercises. The laboratory portion of the workshop includes processing of the participants’ own peripheral blood specimen for karyotyping in order to become more familiar with cytogenetics techniques. There is also time for karyotyping of unknown cases with correlation of peripheral blood and bone marrow findings, and a wet lab session on FISH analysis.

**Rotation Goals and Objectives**
1. Gain a working knowledge of cytogenetics, including nomenclature, basic techniques, and FISH.
2. Become familiar with the most common clinical applications of cytogenetics for prenatal diagnosis, identification of congenital abnormalities, and diagnosis and monitoring of malignancies.
3. Interpret cytogenetic data from clinical cases and learn to compose diagnostic reports using available clinical, morphologic, immunophenotypic, and molecular findings.
4. Discuss issues of quality control, quality assurance, and lab administration related to cytogenetics.

**Combined Rotation Outcomes Assessment (Trainee Evaluation)**

The standard competency-based trainee evaluation will be completed at the end of the rotation by the course directors and/or hematology faculty member with input from lab staff. If trainee performance is perceived as unsatisfactory at anytime during the rotation, this issue will be discussed in a timely fashion prior to the end of the rotation. At the end of the rotation, evaluation results will be discussed with the trainee by the evaluator(s).

**Rotation Review:**

________________________  ______________________
Rotation Director   Date   Residency Director   Date
Revised 5-09
HISTOCOMPATIBILITY (HLA) AND IMMUNOGENETICS LABORATORY ROTATION

Faculty & Course Director: Marilyn S. Pollack, PhD - (210-567-5698)
Laboratory Supervisor: Laura McNeish, BS, CHT (ABHI), CHS (ABHI) – (210-358-0760)

Rotation Period: 2 weeks (Longer rotations available upon request)

I. General Organization:

The Histocompatibility and Immunogenetics Laboratory rotation will involve approximately 2 full weeks in the laboratory during regular laboratory hours, 8AM – 5 PM. Individual experienced technologists will be assigned as the primary contact persons for the resident for each sub-section of the Rotation. The order in which sub-sections are presented will vary according to the availability of appropriate test samples and according to the workload of the laboratory. Both the Supervisor and Laboratory Director are available to provide additional information and to answer questions, as needed.

II. Rotation Goals:

1. To enable residents to become familiar with basic laboratory techniques used for histocompatibility testing, immune function testing and chimerism analysis.

2. To enable residents to become familiar with why different types of tests are selected for different clinical purposes (e.g., renal transplantation vs. liver transplantation vs. hematopoietic stem cell transplantation).

3. To enable residents to gain an in depth understanding of at least one aspect of histocompatibility testing by presenting a case study at one of the Laboratory Medicine sessions during the rotation.

III. Rotation Objectives:

At the completion of this rotation, a Pathology Resident will be able to:

1. Understand why and when both serological and molecular methods are often used for HLA typing purposes.

2. Understand the basic serological and molecular procedures used for HLA typing.

3. Understand the different types of crossmatch tests (direct cytotoxicity, antiglobulin-enhanced and flow) and when they are used for different clinical purposes.

4. Understand how patients are tested for the presence and specificity of their HLA antibodies using either panels of cells or microarray beads coated with antigens from individual donors or with purified single HLA alleles.

5. Understand how patients are tested for their immune function as proliferative (or pre-proliferative) responses to allogeneic cells and/or mitogens.

6. Understand how allogeneic hematopoietic stem cell transplant recipients are tested for engraftment and chimerism.

7. Understand the processes involved in solid organ allocation through the National Organ Procurement Network.
9. Understand how/why HLA test procedures are used to evaluate options for sensitized platelet transfusion candidates and to assess risk for certain autoimmune diseases, vaccine eligibility trials or risk for drug hypersensitivity reactions.

IV. Outcomes Assessment (resident evaluations):

Subjective Evaluations: Residents will be evaluated as to their level of participation in the training process and general understanding by the Laboratory Supervisor and Director. They will also be evaluated in relation to the quality of their Laboratory Medicine case report.

Objective Evaluations: Residents will be given a short quiz containing questions related to the objectives listed above.

V. Suggested Text References (these will be provided on the first day of the rotation):


Selected chapters from: Guidelines for Clinical Histocompatibility Practice, ASHI, 2/99


Cao, K. et al., Analysis of the frequencies of HLA-A,B, and C alleles and haplotypes in the five major ethnic groups of the United States…Human Immunology 62: 1009-1030, 2001

Duquesnoy, R. HLA matchmaker: Human Immunology 63: 339-352, 2002


VI. Resident Duties & Responsibilities:

The resident would be expected to be at the laboratory at about 8:00 each morning to check on the training schedule for that day unless he/she informs the Laboratory Supervisor about any required early morning conferences. The resident would also be expected to spend each full day at the laboratory unless he/she informs the Laboratory Supervisor about any required day-time conferences.

VII: Rotation Outline:

The rotation will be divided into several subsections, as noted. The order in which sub-sections are presented will vary according to the availability of appropriate test samples, according to the workload of the laboratory, and according to Director availability. The Laboratory Supervisor and the Resident will check that all sections are completed. These sections are as follows:

1. Serological HLA typing including “hands on” reading and interpretation of test results
2. Antibody screening (HNA-3a) using frozen cell trays
3. HLA antibody screening using individual donor antigen coated microarray beads
4. HLA antibody specificity identification using single allele coated microarray beads
5. Molecular HLA typing including DNA extraction, selection of primer kits, operation of PCR, gel electrophoresis and analysis of PCR products
6. Serology and Flow cytometry crossmatching
7. Immune function testing
8. Chimerism analysis including DNA extraction, operation of PCR, use of sequencer for PCR product size analysis, quantification of results
9. Review of testing and policies relevant to UNOS deceased donor organ allocation
10. Patient chart reviews of testing done for different types of patients and the interpretations of test results;
   - Solid organ transplant candidates and recipients and potential living donors
   - HPC transplant candidates, donors and recipients,
   - Sensitized platelet transfusion candidates.
   - Patients tested for disease risk assessment, vaccine eligibility or risk for drug hypersensitivity reactions
   - Deceased donors
   - Patients tested for immune function
   - Charts and check lists for understanding of the UNOS organ allocation system and relevant testing

**Rotation Review:**

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GASTROINTESTINAL PATHOLOGY ROTATION

Course Director: Fermin Tio, M.D.

Rotation Period: Elective rotation, offered for 2 weeks to 1 month or more to residents who have completed at least 6 months of general surgical pathology.

General Organization:
The gastrointestinal pathology rotation is designed for residents and fellows with a good foundation in basic surgical pathology and who desire more experience with gastrointestinal pathology. It consists of at least a month exposure to a variety of GI cases and includes exposure to interdisciplinary conference on gastrointestinal cases. It also includes working on research projects and writing short case reports if and when time permits.

Rotation Goals:
Patient care and Medical knowledge competencies: Understanding the proper processing of gastrointestinal specimens and the interpretation of these specimens.

Interpretation and communication skills and Systems-based practice competencies: Communication of gastrointestinal pathologic diagnoses to other physicians, including surgeons and gastroenterologists, to best serve the patient.

Practice-based learning and improvement competency: Investigate cases, read literature on cases to improve gastrointestinal diagnostic skills.

Professionalism competency: Perform duties in an ethical manner with sensitivity to a diverse patient population.

Rotation Objectives:
- Be able to help general surgical pathology residents handle routine GI specimens, including special techniques.
- Be able to read special studies in GI pathology including immunohistochemical studies in the differential diagnoses of different lesions.
- Be able to present the pertinent pathologic findings to clinicians and to aid in the clinicoradiologic-pathologic correlation at the weekly GI conference with clinicians.
- Use and review as time permits study sets compiled of GI pathology cases to help solidify and diversify understanding of difficult cases in GI pathology.

Outcomes assessment:
Subjective: A standard competency based trainee evaluation will be compiled at the end of the rotation by the course director, with input from clinical faculty and laboratory/administrative personnel.

Objective: a) Verbal quizzing an questioning of the trainee.

b) Review of 10 cases at the end of the rotation.

Resident duties and responsibilities:
Daily duties: Check for GI surgeries on the OR schedule and be available to assist the resident on the surgical pathology rotation with these specimens. Follow-up and review of permanent section from GI cases.
Weekly duties: GI Conference, Thursdays 1:00 pm, UH multi-head scope, prepare slides with Dr. Tio for presentation and investigate each case as necessary.

Other: Review teaching file of GI cases.

Recommended Texts:

Gastrointestinal Pathology: An Atlas and Text by Cecilia M Fenoglio-Preiser, Patrick Lantz, Margaret Listrom, Amy Noffsinger, Franco Rilke Lippincott Williams & Wilkins; 2nd edition (January 1997)


Liver Biopsy Interpretation by Peter J. Scheuer, Jay H. Lefkowitch Saunders Ltd.; 7 edition (August 19, 2005)

Rotation Review:

Rotation Director Date Residency Director Date
IMMUNOHISTOCHEMISTRY ROTATION

Course Director: Robert Reddick, M.D.

Rotation Period: Elective rotation, offered for 2 weeks or more to residents who have completed at least 6 months of general surgical pathology.

General Organization:
The immunohistochemistry rotation is designed for residents and fellows with a good foundation in basic surgical pathology and who desire more experience with immunohistochemistry and the complexities that running an immunohistochemistry laboratory entail. It consists of at least 2 weeks exposure to the daily workings of the immunohistochemistry laboratory including observing the processes in the lab and participation in daily QA. Research and development as well as validation of new immunohistochemical stains is an ever-present and important challenge in the immunohistochemistry laboratory which the resident should become involved in during the rotation, time permitting.

Rotation Goals:
- Patient care and Medical knowledge competencies: Understanding the proper processing of immunohistochemistry slides and the proper interpretation of these cases including the importance and use of appropriate controls.
- Interpretation and communication skills and Systems-based practice competencies: Communication of the findings during daily QA of immunohistochemical stains that may impact the interpretation and/or turn around time of a given case to the requesting pathologist, in interest of what best serves the patient.
- Practice-based learning and improvement competency: Investigate cases, read literature on cases to improve use of immunohistochemical stains in routine surgical pathology practice. Participation, as time and situation permits, in the research, development and validation of new immunohistochemical stains for clinical and/or research purposes.
- Professionalism competency: Perform duties in an ethical manner with sensitivity to a diverse patient population.

Rotation Objectives:
- Observe and/or participate in the daily processes of the laboratory from specimen/slide reception to daily QA and release of the immunohistochemical stains to the signing pathologist/resident.
- Understand the procedures involved in immunohistochemistry and critical steps in procedures that may greatly impact the quality of stains produced (i.e. antigen retrieval).
- Ask questions of the laboratory staff about where problems occur in the process of producing an immunohistochemical stain, and how to best go about troubleshooting problem stains.
- Participate in Daily QA (morning and afternoon) of immunohistochemical stain cases. Troubleshoot problem cases and take time with laboratory staff to explain certain stains, why they are used, what they should be staining (are proper controls being used, etc.).
- Assist the laboratory, if needed, in finding appropriate control tissue for stains.
- As time and situations permit, participate in the process of research, development and validation of new immunohistochemical stains.
Outcomes assessment:

**Subjective:** A standard competency based trainee evaluation will be compiled at the end of the rotation by the course director, with input from clinical faculty and laboratory/administrative personnel.

**Objective:** a) Verbal quizzing an questioning of the trainee.

Resident duties and responsibilities:

**Daily duties:** Observe for a reasonable time, the processes within the lab in order to get an understanding of the daily workflow and the procedures at work in the lab. Aily QA of cases (in morning and in afternoon)

Recommended Texts:

**Diagnostic Immunohistochemistry** by David Dabbs *(Hardcover - Jan 23, 2006)*

**Efficient Tumor Immunohistochemistry** by Mehrdad Nadji and Nadji & Nassiri *(Hardcover - Jun 18, 2006)*

**Immunohistopathology: A Practical Approach to Diagnosis** by Jules M. Elias *(Hardcover - Aug 2003)*

**Rotation Review:**

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NEUROPATHOLOGY ROTATION

Course Director/Faculty: James M. Henry, MD, Professor, Pathology, UTHSCSA

Rotation Period: 4-12 weeks

I. General Organization:
Participate in individual and group microscopic tutorials re: tumors of the central and peripheral nervous systems; skeletal muscle pathology; non-tumor diseases of the CNS; audit formal lectures in neuropathology for medical students (10 hours); participate in weekly brain cuttings at UTHSCSA and monthly brain cuttings at the Medical Examiner’s Office.

II. Rotation Goals for Trainee:
A. Patient Care (PC): Achieve an appropriate level of gross and microscopic diagnostic competence.
B. Medical Knowledge (MK): Develop knowledge of established and evolving parameters pertinent to the practice of neuropathology, and demonstrate application of that knowledge to the clinical and neuroradiologic parameters of CNS and PNS diseases.
C. Practice-Based Learning and Improvement (PBLI): Develop the ability to apply knowledge to the daily practice of neuropathology for the purpose of improving patient care practices.
D. Interpersonal and Communication Skills (ICS): Develop the ability to exchange information and team effectively with other health care professionals, as well as interact appropriately with patients and families.
E. Professionalism (PR): Recognize the significant responsibilities and ethical principles of the practice of neuropathology and show sensitivity to a diverse professional and patient population.
G. System-Based Practice (SBP): Recognize the position of neuropathology within the larger system of health care and identify the neuroscience system resources that will facilitate the practice of neuropathology.

III. Rotation Objectives for Trainee:
A. Obtain, review and assess appropriate clinical histories, gross and neuroradiologic descriptions, histopathologic findings and review relevant literature required in order to make and confirm a correct diagnosis (PC, MK, PBLI, ICS, PR, SBP)
B. Use and interpret ancillary diagnostic techniques (special stains, immunohistochemistry, electron microscopy, etc.) appropriately (PC, MK, ICS, SBP)
C. Use standard textbooks, original literature and other knowledge resources efficiently when dealing with challenging cases (PC, MK, PBLI)
D. Render diagnoses that are correct and complete, using standard diagnostic terminology and format (PC, MK, ICS, PR, SBP)
E. Complete all assignments in a timely manner (PC, ICS, PR, SBP)
F. Follow up promptly on incomplete cases (PC, ICS, PR, SBP)
G. Cooperate with faculty and colleagues to ensure that accurate and complete diagnoses are rendered (PC, MK, PBLI, ICS, PR, SBP)
H. Show stability and clear thinking during busy or pressured situations (PC, ICS, PR)
I. Respond promptly and reliably to requests for professional assistance (PC, ICS, PR, SBP)
J. Show understanding of and respect for the work of technical and secretarial staff (ICS, PR, SBP)
K. Assist clinicians and other visitors as required (PC, MK, ICS, PR, SBP)
L. Prepare for, attend and participate in all required conferences (PC, MK, PBLI, PR)
M. Display appropriate images and provide professional discussion when presenting at conferences (PC, MK, PBLI, ICS, PR, SBP)
O. Apply the principles of Quality Improvement to daily work in neuropathology (MK, PBLI)
P. Display familiarity with information technology that is relevant to neuropathology (PC, MK, PBLI, SBP)
Q. Adhere to guidelines set forth by regulatory and accrediting agencies (MK, PBLI, ICS, PR, SBP)

IV. Outcomes Assessment:
A. Subjective Evaluation: At the end of the rotation, each faculty member working with the resident will complete a resident evaluation form.
B. Objective Evaluation: N/A

V. Suggested Reading:
A. Ellison and Love: Neuropathology 2nd Ed. (Mosby)
B. Prayson: Basic Neuropathology (Elsevier)
D. Fuller and Goodman: Practical Review of Neuropathology (Lippincott)
E. WHO III Classification: Tumors of the Nervous System (IARC)

Rotation Review:

________________________________________  ______________________________________
Rotation Director   Date   Residency Director   Date
ORAL PATHOLOGY ELECTIVE ROTATION

**Director:** H. Stan McGuff, D.D.S.

**Rotation Period:**
The duration of the rotation is from 1 to 4 weeks.

**General Organization:**
The oral pathology rotation is designed for residents who desire more experience with oral pathology. The resident will be exposed to cases from the oral biopsy service as well as outside consultation cases. Slide study sets and outside slide exchange cases are also available for review. The resident is encouraged to review the current literature and read from the recommended textbook.

**Rotation Goals and Objectives:**
The resident will improve their understanding of the etiology, pathogenesis, clinical presentation, radiographic features, histopathology, treatment, and prognosis of diseases involving the oral cavity.

**Outcomes assessment:**
A standard competency based trainee evaluation will be completed at the end of the rotation by the director. This assessment will be based on direct observation and interaction with the resident.

**Resident duties and responsibilities:**
The resident will be available for daily review and sign-out of cases from the oral pathology biopsy service as well as outside cases sent in consultation to the service.

**Recommended Texts:**

**Rotation Review:**

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PULMONARY PATHOLOGY ROTATION

Course Director: Jaishree Jagirdar, M.D.

Rotation Period: Elective rotation, offered for 1 month or more to residents who have completed at least 6 months of general surgical pathology.

General Organization:
The pulmonary pathology rotation is designed for residents and fellows with a good foundation in basic surgical pathology and who desire more experience with pulmonary pathology. It consists of at least a month exposure to a variety of lung cases and includes exposure to interdisciplinary conference on pulmonary cases. It also includes working on research projects and writing short case reports.

Rotation Goals:
- Patient care and Medical knowledge competencies: Understanding the proper processing of pulmonary specimens and the interpretation of these specimens.
- Interpretation and communication skills and Systems-based practice competencies: Communication of pulmonary pathologic diagnoses to other physicians, including surgeons and pulmonologists, to best serve the patient.
- Practice-based learning and improvement competency: Investigate cases, read literature on cases to improve pulmonary diagnostic skills.
- Professionalism competency: Perform duties in an ethical manner with sensitivity to a diverse patient population.

Rotation Objectives:
- Be able to help general surgical pathology residents handle routine pulmonary specimens, including special techniques.
- Be able to read special studies in pulmonary pathology including immunohistochemical studies in the differential diagnoses of different lesions.
- Be able to present the pertinent pathologic findings to clinicians and to aid in the clinicoradiologic-pathologic correlation at the weekly pulmonary conference with clinicians.
- Use and review as time permits study sets compiled of pulmonary pathology cases to help solidify and diversify understanding of difficult cases in pulmonary pathology. A large collection of virtual slides exist for review.

Outcomes assessment:
- Subjective: A standard competency based trainee evaluation will be compiled at the end of the rotation by the course director, with input from clinical faculty and laboratory/administrative personnel.
- Objective: a) Verbal quizzing and questioning of the trainee.
  b) Review of 10 cases at the end of the rotation.

Resident duties and responsibilities:
- Daily duties: Check for lung/chest surgeries on the OR schedule and be available to assist the resident on the surgical pathology rotation with these specimens. Follow-up and review of permanent section from pulmonary cases.
**Weekly duties:** Pulmonary Conference, Wednesdays 12:00 noon, (VA Pulmonary Division, 5th floor), prepare slides with Dr. Jagirdar for presentation and investigate each case as necessary.

**Other:** Review teaching file of pulmonary cases.

**Recommended Texts:**

**Practical Pulmonary Pathology: A Diagnostic Approach** by Kevin O. Leslie and Mark R. Wick

**Thurlbeck's Pathology Of The Lung** by Andrew Churg, Jeffrey L., M.D. Myers, Henry D., M.D. Tazelaar, and William M. Thurlbeck

**Histological Typing of Lung and Pleural Tumours (WHO. World Health Organization. International Histological Classification of Tumours)** by W.D. Travis, T.V. Colby, B. Corrin, and Y. Shimosato

**AFIP Atlas of Nontumor Pathology: Non-Neoplastic Disorders of the Lower Respiratory Tract** by William D. Travis, Thomas V. Colby, Michael N. Koss, Melissa L. Rosado-de-Christenson, Nestor Luiz Müller, Talmadge E. King, Jr

**Textbook of Pulmonary Pathology** by Dail and Hammar, 2008

**Katzenstein and Askin's Surgical Pathology of Non-Neoplastic Lung Disease: Volume 13 in the Major Problems in Pathology Series (Major Problems in Pathology)** by Anna-Luise A. Katzenstein

**Rotation Review:**

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BCMEO TOXICOLOGY ROTATION

Faculty & Course Director: Jennifer Rulon, MD and J. Rod McCutcheon

Rotation Periods: Offered by special arrangement 12 months of the year for variable periods.

I. General Organization:
The toxicology rotation for will consist of a period of time no shorter than 2 weeks and no greater than 4 weeks and must be pre-arranged and may occur in the 3rd year or above.

II. Rotation Goals:
Medical Knowledge & Patient Care Competencies: Understanding of proper collection, processing, and interpretation of toxicologic specimens.
Interpersonal and Communication Skills & Systems-based Practice Competencies: Knowledge of basic principles to enable transmission of the toxicologic analysis to other physicians as well as law enforcement personal utilizing communication skills and laboratory information systems.
Laboratory-based learning and improvement competency: Understanding of principles of the equipment used in toxicologic analysis including quality assurance mechanisms.
Professionalism competency: Understanding of the need for commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient and clinician population as well as to research.

III. Rotation Objectives:
- The trainee should be able to review toxicologic results and perform analysis of the data.
- Able to explain proper performance of toxicologic method to clinicians and law enforcement personnel.
- Able to give causes for common artifacts/ discrepancies in toxicologic analysis.
- Able to explain toxicologic techniques to clinicians and law enforcement personnel.
- Able to identify a contaminant and know how to confirm it and deal with the problem for quality assurance and diagnostic purposes.

IV. Outcomes Assessment:
Subjective Evaluations: The standard competency-based trainee evaluation will be completed at the end of each trainee time-period or a minimum of every 3 months by the faculty supervisor with input from other faculty members and technicians. If trainee performance is perceived as unsatisfactory at anytime during the rotation it should be discussed in a timely fashion prior to the end of the rotation.

V. Suggested Text References:
1) Levine B Principles of Forensic Toxicology . American Association for Clinical Chemistry. 2002

VI. Resident Duties & Responsibilities:
A. Residents will be expected to be available for between the hours of 8:00 AM to 5:00 PM Monday through Friday except with excused absences.
B. Any unexpected absence or tardiness should be communicated as quickly as possible to the faculty supervisor.
C. The resident is responsible for observing, understanding and participating in the different methodologies of toxicologic analysis, to include gas chromatography, mass spectrophotometry, liquid chromatography, immunoassays, etc.
D. The resident is responsible for attending the weekly ME meeting.
E. The resident will be responsible for meeting with the supervising faculty to discuss toxicologic issues, cases, readings and questions.
F. Resident will be responsible for reading toxicologic resources and understanding the different types of substances seen in a forensic setting and how to interpret drug concentrations/toxicology reports.
G. The resident will research and give a 5-10 minute presentation on a pertinent forensic toxicologic issue.

VII: Rotation Outline - variable, depending on time spent on rotation

VIII. Rotation Review

______________________________   __________________________
Rotation Director               Date                                Residency Director   Date
BREAST PATHOLOGY ROTATION

Course Director:  I-Tien Yeh, M.D.

Rotation period: Elective rotation, offered for 1 month or more to residents who have completed at least 6 months of general surgical pathology.

General organization:
The breast rotation is designed for residents and fellows with a good foundation in basic surgical pathology and desire more experience with breast pathology. It consists of at least a month of exposure to a variety of breast cases and includes exposure to interdisciplinary conferences on breast disease.

Rotation Goals:
Patient care and Medical knowledge competencies: Understanding the proper processing and interpretation of breast lesions.
Interpersonal and communication skills & system-based practice competencies: Communication of breast pathologic diagnoses to other physicians, including surgeons and radiologists, to best serve patients.
Practice-based learning and improvement competency: Investigate cases, read literature on cases to improve breast diagnoses. Clinical research, as time permits.
Professionalism competency: Perform duties in ethical manner, with sensitivity to our diverse patient population.

Rotation Objectives:
- Be able to help general surgical pathology residents handle routine breast specimens, including special techniques such as utilizing radiology to examine blocks for calcifications.
- Understand and able to apply criteria to distinguish among usual ductal hyperplasia, atypical ductal hyperplasia and ductal carcinoma in situ.
- Understand and able to apply criteria to grading of ductal carcinoma in situ and invasive breast carcinoma.
- Be able to read special studies in breast pathology, including immunohistochemical prognostic markers.
- Be able to present pertinent pathologic findings to clinicians and to aid in correlation of pathologic findings to clinical findings.

Outcomes assessment:
Subjective: A standard competency-based trainee evaluation will be completed at the end of the rotation by the course director, with input from clinical faculty and laboratory/administrative personnel.
Objective: A slide examination will be given to the trainee at the end of the rotation. Accompanying test questions for the slides will include questions regarding the classification, grading, and handling of breast lesions. This slide set will include a case of immunohistochemical prognostic markers for assessment.

Resident duties and responsibilities:
Daily duties:
- Review rush breast cases at University Hospital with sign-out staff (check with surgical pathology fellow).
- Check for breast surgeries be available during frozen sections.
- Follow up with review of permanents sections from breast cases.
- Check for prognostic factors daily, give preliminary readings.

**Weekly duties:**
- Breast conference, Wed 7:15 am (CTRC), prepare slides for presentation.
- Review cases for clinical trials enrollment (in lab, 334B), if available.
- Read fluorescent in situ hybridization studies for HER 2 (in lab), as needed.

**Other:**
- Review teaching slide file of breast cases.
- Get involved with breast study, as time permits.

**Recommended Texts:**
Rosen, Histopathology of the Breast (Lippincott Williams & Wilkins, 2009)
O’Malley and Pinder, Breast Pathology (Churchill Livingston Elsevier 2006)

**Rotation Review:**

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BASIC RESEARCH ROTATION

Faculty Director:  Sherry L. Werner, M.D.

Rotation Period: Elective rotation, offered for one month or more to residents or fellows who have completed at least 6 months of general surgical pathology.

I. General Organization:
The basic research rotation is designed for residents and fellows who are interested in molecular and cellular biology. It will consist of at least one month of work in a basic science laboratory that is directed by an established investigator. The individual will participate in an ongoing research project and attend research meetings. Data generated during the rotation will be used for an abstract that will be submitted to a national meeting.

II. Rotation Goals:
Patient care (technical skills): Experience hands-on use of a variety of research techniques that may include: cell culture, tissue immunostaining, in situ hybridization, immunoblotting, protein purification, electrophoresis, PCR, DNA cloning, RNA preparation, Northern blotting, RT-PCR, cell transfection/viral infection, JC-1 assay and luciferase reporter assay.
Medical knowledge: Understand basic research techniques used in the laboratory and how these are utilized to address relevant scientific questions.
Interpersonal and communication skills: Confer with the Director to formulate a research plan, conduct experiments under the supervision of technical assistants, interact with investigators collaborating on the project and present data at laboratory meetings.
Practice-based learning and improvement competency: Research current scientific literature on the project topic to expand knowledge, discuss results with laboratory personnel, organize and prepare data for presentation at meetings/conferences, and understand the translational relevance of the work and potential clinical application.
Professionalism competency: Understand the need to carry out experimental work in a professional manner and according to ethical principals.

III. Rotation Objectives:
- Perform experiments using the appropriate equipment and according to established protocols.
- Develop skills in laboratory techniques and understand safety procedures.
- Maintain detailed and accurate records of all experiments.
- Interpret data and prepare results for presentation at meetings/conferences, research reports, manuscripts.
- Perform data analysis using statistical software packages.
- Perform literature search on the topic and understand the potential clinical relevance of the project.

IV. Outcomes Assessment:
Subjective Evaluations: A standard competency-based trainee evaluation will be completed at the end of the rotation by the Director, with input from other faculty and laboratory/administrative
personnel. If the individual’s performance is perceived as unsatisfactory at any time during the rotation, it should be discussed in a timely fashion prior to the end of the rotation. We require sharing with the resident/fellow any written evaluation by the Director.

**Objective Evaluations:** The resident or fellow will be expected to present his/her work at the laboratory meeting and at the pathology research conference. Data generated during the rotation will be used for abstract and/or publication. The resident/fellow will be encouraged to participate in research activities and continue work on the project in the future.

**V. Suggested Text References:**

**VI. Resident Duties & Responsibilities (outline):**
A. Residents and fellows will be expected to be available for research activities from the hours of 8:00 AM to 5:00 PM Monday through Friday except with excused absences or for attendance at required conferences.
B. The Resident is responsible for carrying out the assigned experiments according established protocols on a daily basis.
C. The resident is responsible for verbally communicating to the Director or other lab personnel any difficulties that are encountered while performing experiments. All data will be analyzed and any changes in the protocol will be approved by the Director.
D. The resident will be responsible for compiling, analyzing, and presenting data.
E. The resident will be responsible for using the appropriate equipment/supplies for experiments and following safety rules. Supply usage should be communicated to laboratory personnel.

**VII. Rotation Review**
| Rotation Director | Date | Residency Director | Date |
PEDIATRIC PATHOLOGY ROTATION
CHRISTUS SANTA ROSA CHILDREN’S HOSPITAL
(updated May, 2009)

Faculty & Course Director*:
Victor Saldivar*, M.D. (210) 704-2312
(Teacher of Pediatric Pathology)
Tom DeNapoli, M.D.

Rotation Periods: 4-6 weeks but must have completed CORE Rotations in Autopsy, Surgical Pathology and ALL CP prior to taking this rotation.

I. General Organization:

The Pediatric Pathology Rotation will consist of 4-6 weeks at the Christus Santa Rosa Children’s Hospital in downtown San Antonio. It is available for residents beyond the first and second years of the core AP-CP curriculum and strongly encouraged during the 3rd year rotation period. It provides an introduction to all aspects of placental, fetal, perinatal, pediatric, and adolescent anatomic pathology as well as clinical pathology as it applies to pediatric patients.

II. Rotation Goals:

Medical Knowledge & Patient Care Competencies: Understanding of proper collection, processing, and interpretation of pediatric anatomic (including autopsy) and clinical pathology specimens.

Interpersonal and Communication Skills & Systems-based Practice Competencies: Knowledge of basic principles to enable transmission of the pediatric pathological diagnosis in an informative, timely, and succinct way that best serves patient, patient family and clinician needs utilizing communication skills and laboratory information systems especially in regards to the pediatric patient.

Laboratory-based learning and improvement competency: Understanding of principles of data management for quality assurance, billing, and clinical research.

Professionalism competency: Understanding of the need for commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse pediatric patient, patient family and clinician population as well as to research.

III. Rotation Objectives:

- The trainee should be able to review any Pediatric clinical lab results and be able to generate and communicate their opinion for proper management or further laboratory testing. (Competencies^ PC, MK, PBLI, IPCS, SBP^)

- The trainee should be able to list common congenital syndromes and Pediatric genetic disorders and be able to explain a standardized laboratory approach for diagnosis and management with consideration of predictive values and cost containment. (PC, MK, PBLI, IPCS, P, SBP)
- The trainee should be able to carry out a perinatal or pediatric autopsy with succinct and accurate clinical data gathering, gross findings, microscopic descriptions and pathology summary. (PC, MK, IPCS)

- The trainee should be able to list differences between perinatal or pediatric versus adult specimen allocation, morphologic assessment of disease via autopsies, frozen sections, surgical pathology, cytopathology, hematopathology, microbiology, as well as chemistry, transfusion medicine, and genetic analysis consultations. (PC, MK, SBP)

- The trainee should be able to recite the more common pediatric pathological diagnoses or be aware that further consultation is necessary prior to diagnosis being rendered following observation of gross, histological and cytological specimens in the fresh, frozen, and fixed state. (PC, MK)

- The trainee should be able to list the more common differential diagnosis following review of hematological peripheral smears and bone marrow preparations from pediatric patients. (PC, MK)

- The trainee should be able to demonstrate concise and accurate consult on the pediatric patient advising clinicians as to appropriate laboratory evaluation and cost effectiveness as it applies to transfusion services, chemistry, microbiology and other laboratory tests. (PC, MK, PBLI, IPCS, P, SBP)

- See Appendix 2 for other general competency objectives for pathology trainee rotation objectives.

^ Abbreviations for six general competencies:
PC = Patient care, MK = Medical knowledge, PBLI = Practice-based learning and improvement, IPCS = Interpersonal and communication skills, P = Professionalism, SBP = Systems-based practice.

IV. Outcomes Assessment (trainee evaluations):

Subjective Evaluations: The standard competency-based trainee evaluation will be completed at the end of each trainee time-period (4-6 weeks) by the rotation director or their designee with input from other pathology staff (including medical technologists and secretaries) and clinicians (360 degree evaluation), simulations of autopsy and bone marrow procedures, and oral testing. If trainee performance is perceived as unsatisfactory at anytime during the rotation, it should be discussed in a timely fashion prior to the end of the rotation. We encourage sharing face to face with the trainee any written evaluation by the evaluator.

Objective Evaluations: Non-standardized verbal testing will be carried out routinely throughout the rotation by faculty over those items listed in the course objectives.

V. Suggested Text References:
- Potters’s Pathology of the Fetus and Infant, Edited by E Gilbert-Barness, Mosby, Current Edition
- Other current journal articles as assigned.

VI. Resident Duties & Responsibilities:

- Notify Dr. Saldivar to confirm rotation times as soon as third year schedule available.

- Attend all intradepartmental conferences as well as routine Pediatric-Clinical Correlation Conferences (obtain current conference list, location, and times from Dr. Saldivar).

- Attendance at regularly scheduled conferences for UTHSCSA/Dept of Pathology is excused while at this off-site rotation. Be certain arrangements are made for on-call coverage/duties and any previously scheduled conferences that may conflict with your primary responsibilities while on this rotation.

- Participation in ALL aspects of any perinatal/pediatric autopsy that occurs at Santa Rosa while on this rotation.

- Daily gross room participation and sign-out responsibilities for those routine pathologist faculty responsibilities (surgical pathology, cytopathology, hematopathology including marrows and peripheral smear review and clinical consultations).

- Perform bone marrow biopsies under direction of Pediatric Hematology/Oncology physician at clinic (Thursdays at 8:00 AM)

- Any absences during this rotation must be transmitted directly to Santa Rosa faculty.

VII: Rotation Outline:

To optimize exposure to all elements of anatomic and clinical pediatric pathology no set schedule of activities is mandated.

VIII. Rotation Review

Rotation Director  Date  Residency Director  Date
ADVANCED TRAINING IN CLINICAL PATHOLOGY

Following successful completion of core rotations in Hematology, Chemistry, Microbiology, Transfusion Medicine, and Molecular/Flow/Cytogenetics residents will be eligible to take advanced training in clinical pathology. The advanced rotation may be taken in one section of the laboratory or a combination of laboratory sections, e.g., Transfusion Medicine and Hematology. The areas of interest must be specified prior to the start of the rotation. The advanced rotation is designed to provide additional experience which will be preparation for assuming the role of medical director of a section of the clinical laboratory.

I. Course Objectives

A. To give the resident increased service responsibility
B. To provide training in laboratory management
C. To provide opportunity for applied research projects

The specific rotation schedule is flexible and will depend on the needs and interests of the individual resident. The following outline suggests activities which may be appropriate for this level of training.

II. Service Responsibilities

Act as liaison with an appropriate clinical team, floor or clinic. Be available for questions from technologists and clinical teams, perform daily review of the patients’ laboratory studies, attend appropriate conferences or rounds (e.g., Medicine morning report, BMT conference, Hematology consult rounds).

III. Laboratory Management

A. Perform a CAP inspection. Act as the team leader and perform the laboratory general and computer checklists.
B. Evaluate the feasibility and cost effectiveness of transferring selected “send-out” tests to the laboratory.
C. Design a quality assurance indicator, follow for one month and present at UH or VA QA meeting.
D. Evaluate a new machine or new test. Include a review of the literature, comparison of methods, and detailed budget. Write a procedure using NCCLS guidelines (include a description of the quality control required).
E. Make one presentation for the medical technologists CME course and participate in medical technology student case presentation.
F. Present to Hospital Committees, clinical teams and pathology residents as required.