Educational goals and philosophy

The goal of the pathology residency is to train physicians in the broad field of pathology and laboratory medicine through a combination of practical and didactic experiences in the setting of an academic medical center. Exposure to pathology research and to new and developing technologies in pathology (i.e., immunopathology, molecular pathology, ultrastructure), as well as to subspecialty pathology (i.e., dermatopathology, hepatic, and renal pathology), is integral to the program. Three broad tracks are offered: a four-year AP-CP program—tailored to the needs of individuals interested in academic or community hospital pathology—a three-year AP program—tailored to the needs of individuals interested in subspecialty or investigative anatomic pathology and a three-year CP program also tailored to the needs of individuals interested in subspecialty or investigative clinical pathology/ laboratory medicine. A combined program in AP-Neuropathology is also offered. Fellowships are offered in Surgical Pathology, Breast Pathology, Liver and Transplantation Pathology, Gynecologic Pathology, Gastrointestinal Pathology, Cytopathology, Dermatopathology, Molecular Pathology, and Neuropathology.

Rotations at several hospitals with widely varied material are provided to ensure adequate exposure of the residents to various problems in pathology (Mount Sinai Medical Center, a tertiary referral hospital; the James J. Peters Veterans Affairs Medical Center, a general hospital; and Englewood Hospital, a busy community hospital.) In addition, a mandatory rotation to the NYC Medical Examiner’s Office ensures exposure to forensic pathology.

Residents are encouraged, to the greatest extent possible, to function as clinical consultants through a program of graded responsibility over the four years of training. Anatomic and clinical rotations are integrated to provide 4 years of continuous training (18 months’ anatomic pathology, 18 months’ clinical pathology, and 12 months’ additional training in anatomic pathology or clinical pathology).
Residents are encouraged to participate in clinical and laboratory research during their training, and completion of a scholarly activity is a requirement for completion of the residency program. This may be in the form of a case report, clinicopathologic study, or laboratory research.

Each resident is assigned a faculty advisor at the beginning of the residency. Faculty advisors are retained throughout the four years, fostering a close relationship between faculty and residents. Faculty advisors are available to discuss evaluations, career planning, and research projects.

**Required rotations**

<table>
<thead>
<tr>
<th>Anatomic Pathology</th>
<th>Clinical Pathology</th>
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<tbody>
<tr>
<td>Autopsy (Mount Sinai, VAMC)</td>
<td>Blood Bank (Mount Sinai)</td>
</tr>
<tr>
<td>Surgical Pathology (Mount Sinai, VAMC)</td>
<td>Clinical Chemistry (Mount Sinai)</td>
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<tr>
<td>Cytopathology (Mount Sinai)</td>
<td>Hematology (Mount Sinai)</td>
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<tr>
<td>Pediatric Pathology (Mount Sinai)</td>
<td>Microbiology (Mount Sinai, VAMC)</td>
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<tr>
<td>Neuropathology (Mount Sinai)</td>
<td>Cytogenetics (Mount Sinai)</td>
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<tr>
<td>Dermatopathology (Mount Sinai)</td>
<td>Laboratory Management and Medical Informatics (Mount Sinai)</td>
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<td>Gynecologic Pathology (Mount Sinai)</td>
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<tr>
<td>Community Pathology (Englewood Hospital)</td>
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</tbody>
</table>

**Elective rotations**

- Gastrointestinal Pathology (Mount Sinai)
- Electron Microscopy (Mount Sinai)
- Research (Mount Sinai)
- Renal Pathology (Mount Sinai)
Competence Goals of the Overall Pathology Residency Program

The overarching goal of the pathology residency program at MSSM is to provide specialty education to physicians, leading to effective and confident independent practice of general pathology. The educational approach is experiential within the context of a dynamic, integrated health-care delivery system at the cutting edge of medical practice and education.

Each pathology resident at MSSM pathology program acquires and develops the skills, knowledge, and attitudes leading to professional proficiency through close interactions with, and under the direct supervision of, faculty members who give value, context, and meaning to the different activities of pathologists as part of a multidisciplinary medical team that involves a broad spectrum of health-care professionals in the context of interdisciplinary health-care system. As residents gain experience and demonstrate growth in their ability to actively engage in patient-care activities, they are allowed to assume roles that permit them to exercise those skills with greater independence. In the process, the concept of graded and progressive responsibility—one of the core tenets of American graduate medical education—is the dominant strategy through which this tenet operationalized at MSSM.

The shared goals of the entire MSSM pathology faculty are the following: (1) Ensuring the provision of safe and effective care to the individual patient; (2) ensuring each resident’s development of the skills, knowledge, and attitudes required to enter the unsupervised practice of general pathology with confidence and full awareness of the enormous responsibility of pathologists in the different clinical and health-care settings; and (3) establishing a foundation for continued professional growth beyond a formal educational setting.

Specific competence goals and objectives are established for each assignment at each educational level for each rotation, according to the requirements of the Residency Review Committee for Pathology, as described below.
ACGME competence goals and objectives

Patient care
Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

Residents:

(1) will have education in anatomic pathology that must include instruction in autopsy and surgical pathology, cytopathology, pediatric pathology, dermatopathology, forensic pathology, immunopathology, histochemistry, neuropathology, ultrastructural pathology, cytogenetics, molecular biology, aspiration techniques, and other advanced diagnostic techniques as they become available;

(2) will have education in clinical pathology that must include instruction in microbiology (including bacteriology, mycology, parasitology, and virology), immunopathology, blood banking/transfusion medicine, chemical pathology, cytogenetics, hematology, coagulation, toxicology, medical microscopy (including urinalysis), molecular biologic techniques, aspiration techniques, and other advanced diagnostic techniques as they become available;

(3) will demonstrate a satisfactory level of diagnostic competence and the ability to provide appropriate and effective pathology services consultation;

(4) will perform at least 50 autopsies during the program. Autopsies may be shared, but no more than two residents may count a shared case toward this standard. Further, programs must ensure that residents participate fully in all aspects of an autopsy as appropriate to the case. In a complete autopsy, this includes: (a) review of history and circumstances of death; (b) external examination of the body; (c) gross dissection; (d) review of microscopic and laboratory findings; (e) preparation of written description of gross and microscopic findings; (f) development of opinion on cause of death; and, (g) review of autopsy report with teaching staff. (i) Resident education must include exposure to forensic, pediatric, perinatal, and stillborn autopsies.

(5) Will examine and assess at least 2,000 surgical pathology specimens during the program. This material must be from an adequate mix of cases to ensure exposure to both common and uncommon conditions. Residents should formulate a microscopic diagnosis for cases they have examined grossly. Residents should preview their cases prior to sign-out with an attending pathologist;

(6) will examine at least 1,500 cytologic specimens during the program. This material must include a variety of both exfoliative and aspiration specimens; and,

(7) will participate in the regular formal clinical and teaching rounds corresponding to the laboratory services to which they are assigned. For example, residents should attend infectious-disease service rounds while on assignment in microbiology.

(8) The educational experiences detailed above may be provided through separate, exclusive rotations, by rotations that combine more than one area, or by other means. However the experiences are provided, all rotations and other assignments must conform to the educational goals and objectives of the program.
Medical knowledge
Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care.

Residents:

(1) must have instruction and experience in the interpretation of laboratory data as part of patient-care decision-making and patient-care consultation; and

(2) must participate in pathology conferences, rounds, teaching and scholarly activity, as well as gain experience in the management and direction of a pathology laboratory. This laboratory experience should include education in quality assurance, safety, regulations, and the use of hospital and laboratory information systems.

Practice-based learning and improvement
Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning.

Residents are expected to develop skills and habits to be able to meet the following goals:

(1) identify strengths, deficiencies, and limits in one’s knowledge and expertise;

(2) set learning and improvement goals;

(3) identify and perform appropriate learning activities;

(4) systematically analyze practice using quality-improvement methods and implement changes with the goal of practice improvement;

(5) incorporate formative evaluation feedback into daily practice;

(6) locate, appraise, and assimilate evidence from scientific studies related to their patients’ health problems;

(7) use information technology to optimize learning; and

(8) participate in the education of patients, families, students, residents, and other health professionals.
Interpersonal and communication skills
Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

Residents are expected to:

(1) communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds;

(2) communicate effectively with physicians, other health professionals, and health-related agencies;

(3) work effectively as a member or leader of a health-care team or other professional group;

(4) act in a consultative role to other physicians and health professionals; and

(5) maintain comprehensive, timely, and legible medical records, if applicable.

(6) Along with faculty, be regularly involved in consultative activity;

(7) provide patient-care consultations which should be both intra- and inter-departmental;

(8) perform at least 200 intraoperative consultations during the program;

(9) be considered integral members of the staff of the Department of Pathology, and must have the opportunity to participate in discussions related to management of the department; and

(10) when operating under appropriate supervision, be given direct responsibility to make decisions in the laboratory.

Professionalism
Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.

Residents are expected to demonstrate:

(1) compassion, integrity, and respect for others;

(2) responsiveness to patient needs that supersedes self-interest;

(3) respect for patient privacy and autonomy;

(4) accountability to patients, society, and the profession; and

(5) sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.
**Systems-based practice**

Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Residents are expected to:

1. work effectively in various health-care delivery settings and systems relevant to their clinical specialty;
2. coordinate patient care within the health-care system relevant to their clinical specialty;
3. incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate;
4. advocate for quality patient care and optimal patient-care systems;
5. work in interprofessional teams to enhance patient safety and improve patient-care quality; and
6. participate in identifying system errors and implementing potential systems solutions.

**Resident teaching and research**

Residents participate in the instruction of medical students at the Mount Sinai School of Medicine through participation in the department’s major pathology courses and student electives. Residents are the primary faculty in the student laboratories and supervise students on pathology clerkships.

A variety of research opportunities is available for residents in the department, ranging from clinical research to basic science. Clinical research opportunities are available in the areas of flow cytometry (J. Strauchen), gynecologic pathology (L. Deligdisch), liver pathology (S. Thung), bone pathology (R. Garcia), lymphoid pathology (J. Strauchen), molecular pathology (D. Zhang), gastrointestinal pathology (N. Harpaz), genitourinary pathology (P. Unger), and breast pathology (I. Bleiweiss). Basic research opportunities are available in the areas of molecular biology (T. Fasy), developmental pathology (S. Kohtz), and neuropathology/HIV (S. Morgello).

**Resident supervision**

Residents are supervised by faculty and senior residents through a system of graded responsibility, as mandated by New York State. Residents initially perform procedures under direct supervision of faculty until judged competent (credentialed) to perform the procedure under general supervision. Residents are encouraged to take responsibility appropriate for their level of training. Faculty and senior residents are available for consultation at all times.
Evaluation

Residents are evaluated according to the ACGME core competencies: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. Resident evaluations are provided by faculty at the end of each rotation, using an electronic program called New Innovations available to all residency programs in the institution. Evaluations are reviewed by the residents with their faculty advisor and program director semiannually. In addition, residents are evaluated in a 360-degree fashion by autopsy technical/ancillary staff and surgical pathology technical staff (i.e., physician assistants) several times a year.

Using the same electronic system, residents are also able to evaluate their rotations and the attending faculty at the completion of each rotation. These evaluations are anonymous. Resident progress is monitored through a system of credentialing mandated by New York State. Resident evaluations are reviewed on an ongoing basis by the director of the residency training program and the chairman of the department. Resident evaluations are utilized to monitor the progress of individual residents and to ensure that the program’s educational goals are being met.

- Professionalism, Behavioral Assessment and Corrective Actions

Residents whose behavior is perceived as problematic or potentially so are reviewed by the executive departmental education committee and if in need of counseling are referred to their faculty advisor and, if necessary, the program director and/or chairman. Remediation or disciplinary action may be required depending on the issue(s) at hand regarding particular residents. Disciplinary actions may be appealed to the House Staff Affairs Committee of the Medical School.

Criteria for promotion are: PGY1 to PGY2: achievement of first-year goals in autopsy, surgical, and clinical pathology; PGY2 to PGY3: achievement of second-year goals in autopsy, surgical, and clinical pathology; PGY3 to PGY4: achievement of third-year goals in autopsy, surgical, and clinical pathology; PGY4 to completion: demonstrated ability to practice with minimal supervision and potential to practice independently; completion of an academic project (case report, clinical, or laboratory study); demonstrated clinical competence to perform fine-needle aspiration; completion of fifty autopsies. Opportunity for resident self-evaluation is also provided through the annual ASCP in-service examination taken by all residents.