



THE GEORGE
WASHINGTON
UNIVERSITY
MEDICAL CENTER
WASHINGTON DC

PEDIATRIC PATHOLOGY FELLOWSHIP PROGRAM DESCRIPTION

Program Director:

Alison Huppmann, M.D.

**Address: Children's National Medical Center
Division of Anatomic Pathology
Room 1620
111 Michigan Avenue N.W.
Washington, DC 20010-2970**

Phone: 202-476-2051

Fax: 202-476-4030

Email: ahuppmann@cnmc.org

Program Coordinator:

Myisha Braddock

Phone: 202-476-2800

Email: mnbraddock@cnmc.org

1. INTRODUCTION

The pediatric pathology fellowship program at Children's National Medical Center (CNMC) is administered through cooperation with George Washington University School of Medicine and Health Sciences. CNMC is a 313-bed medical center located in Washington, DC which also serves the population of surrounding areas. The facilities include a Level I trauma center, 54 NICU beds, a Cardiac Intensive Care Unit, and the only pediatric Neuro-Intensive care unit in the mid-Atlantic region. Multiple departments are ranked in the top 20 by *U.S. News & World Report's* annual rankings, and the hospital is consistently ranked as one of the top 10 overall children's hospitals. The Children's Research Institute allows patient access to multiple clinical trials. A pediatric residency program and fellowship programs in multiple disciplines are offered.

This one-year ACGME-accredited program is designed to provide the fellow with training in all aspects of pathology relating to the fetus, infant & child. Faculty areas of expertise include tumor pathology, placental pathology, gastrointestinal pathology, fine needle aspiration and informatics. Training in all areas of clinical pathology is also available, with particular strength in hematopathology and transfusion medicine. Specific time dedicated to research or to elective rotations can also be arranged.

Departmental information:

Surgical pathology and cytology specimens: 8900 (including 450 bone marrow biopsies)
Fetal & pediatric autopsies: 50-60 (in-house plus outside consultation)

Length of training: One year of training is required for eligibility to take the Pediatric Pathology certification exam administered by the American Board of Pathology.

Requirements: Fellows must have an M.D. or D.O. degree, be eligible for medical licensure in the District of Columbia and have completed training in AP or AP/CP prior to commencing the fellowship.

2. GOALS & OBJECTIVES

At the end of the program, the fellow is expected to acquire the skills and knowledge necessary to meet the following general guidelines as suggested by the Fellowship Committee of the Society for Pediatric Pathology (Rabah et al., 2013):

1. Be competent in the workup and diagnosis of pediatric pathology specimens to practice without direct supervision in an academic or community hospital.
2. Be able to gather and identify key sources of information about patients to solve diagnostic problems in pediatric pathology.
3. Understand the mechanisms of diseases in children and have the ability to use the medical literature and techniques to optimize patient care.
4. Know the histologic features of lesions/diseases particular to the pediatric patient to formulate an appropriate differential diagnosis.
5. Be able to assist clinicians in the appropriate use of the clinical laboratory for the diagnosis of pediatric disease.
6. Communicate effectively in verbal and written form.
7. Recognize knowledge limitations and seek help when appropriate.
8. Demonstrate professional behavior at all times.

9. Commit to the review and improvement of practice patterns and lifelong learning.
10. Understand the policies and regulations affecting health care.
11. Effectively manage the pediatric clinical laboratory.
12. Be imbued with the desire to ask scientific questions that might be answered through the study of the material coming to the attention of the pediatric pathologist.

Specific goals and objectives to incorporate the six ACGME core competencies are delineated in section 4.

3. FACULTY & STAFF

Anatomic Pathology

Christopher T. Rossi, MD Medical Director; Surgical & Autopsy Pathology

D. Ashley Hill, MD Surgical & Autopsy Pathology
 Alison R. Huppmann, MD Hematopathology, Surgical & Autopsy Pathology
 Dragos Luca, MD Hematopathology, Surgical & Autopsy Pathology
 Elena Puscasiu, MD Surgical & Autopsy Pathology
 Isabel Almina-Suarez, MD Neuropathology, Surgical Pathology

Laboratory Medicine

Meghan Delaney, DO, MPH Chief of Pathology and Laboratory Medicine; Transfusion
 Medicine

Christine A. Reyes, MD Associate Chief of Pathology and Laboratory Medicine

Joseph Campos, PhD Microbiology
 Kristina Cusmano-Ozog, MD Molecular and Biochemical Genetics
 Cyril Jacquot, MD, PhD Transfusion Medicine
 Yunchuan Delores Mo, MD Transfusion Medicine

4. CURRICULUM

The fellow will assist with all CNMC and consult autopsies unless on an outside elective rotation. He/she will also participate in one of the following services each day:

1. Surgical pathology / Consult pathology / Neuropathology
2. Gastrointestinal Pathology

Specific time for rotation in Hematopathology and Clinical Pathology is allowed in the spring (April or May), with an additional month dedicated to an elective rotation or research if desired. At least one week will also be scheduled to rotate at the Office of the Chief Medical Examiner.

By the end of the fellowship program, each trainee is expected to acquire the skills and knowledge necessary to meet the six ACGME core competencies as below.

- I. Patient care
 - A. General

1. Gather, review and integrate appropriate clinical information regarding pathology cases, including clinical notes, results of radiologic studies and previous pathology/laboratory results. Interaction and discussion with colleagues in other departments is often necessary to adequately obtain this information.
 2. Assist/perform/suggest a complete analysis and work-up of pediatric pathology cases, including additional studies as needed (gross photography, immunohistochemistry, molecular/genetic evaluation, electron microscopy, immunofluorescence and laboratory testing).
 3. Recognize and diagnose features specific to pediatric pathology specimens with generation of accurate, clinically useful and timely reports.
- B. Autopsy Pathology
1. Perform and/or supervise at least 40 autopsies, including embryofetal, perinatal, stillborn, metabolic, forensic and general pediatric cases.
 2. Execute and document complete and accurate external and internal examinations.
 3. Know how to diagnose developmental anomalies with appropriate dissection techniques and ancillary testing.
 4. Recognize indicators of appropriate fetal growth and development.
- C. Surgical Pathology
1. Perform gross and/or histologic evaluation of at least 2000 specimens, including cytology, placentas and products of conception.
 2. Provide at least 50 intraoperative consultations.
 3. Recognize, describe and sample gross lesions with triage of material as appropriate for ancillary testing including protocol studies.
- D. Hematopathology / Clinical Pathology
1. Diagnose common hematopoietic disorders with evaluation of lymph node, bone marrow and peripheral blood samples.
 2. Acquire basic understanding and interpretation of flow cytometric analysis.
 3. Be able to interpret the results of common laboratory assays in the pediatric patient.

II. Medical Knowledge

- A. Recognize the difference between normal and abnormal histological findings, embryology and anatomy at various stages of development.
- B. Become acquainted with the common causes of death in pediatric patients and fetuses, metabolic and genetic disorders, malformations and congenital defects.
- C. Recognize and diagnose abnormalities in placental tissue.
- D. Be able to diagnose or develop a differential diagnosis for commonly encountered pediatric neoplasms and non-neoplastic entities, incorporating all available information.
- E. Become comfortable with suitable ancillary testing studies used in pediatric pathology, including their indications, procedures and interpretation of results.
- F. Apply established and emerging clinical, epidemiological, biomedical and social-behavioral information to assist in making diagnoses in pediatric pathology, utilizing appropriate resources as necessary (textbooks, databases, journals, etc).
- G. Utilize study sets and attend didactic lectures to supplement knowledge acquisition.
- H. Understand, be familiar with, know how to work up and/or be able to interpret common clinical laboratory studies in pediatric medicine regarding the following topics: flow cytometry, blood cell disorders, cytogenetic testing, molecular analysis, metabolic disorders, transfusion medicine, infectious diseases and reference ranges.

III. Practice-based Learning and Improvement

- A. Review and analyze scientific information from various resources (literature, textbooks, online databases/websites) relevant to patient material.
- B. Perform a detailed assessment of articles in the literature through participation in journal club.
- C. Present cases at departmental consensus conference.
- D. Participate in performance improvement / quality assurance programs subscribed to by the department (e.g., SPP slide survey, CAP PIP slides).
- E. Attend departmental quality improvement conferences.
- F. Complete pathology QA/QC evaluation forms.

IV. Interpersonal and Communication Skills

- A. Effectively communicate and transmit appropriate information verbally and/or in writing to clinicians before, during or after evaluation of a pathology specimen.
- B. Generate clear, concise and accurate pathology reports.
- C. Interact well with attending pathologists, pathologist assistants, technicians and other staff.
- D. Participate in teaching of residents, medical students and staff as needed.
- E. Prepare a 15-20 minute presentation on an interesting case at a monthly conference.
- F. Present pathologic findings at clinical conferences as requested.

V. Professionalism

- A. Demonstrate respect to patients, their families, clinicians and pathology employees.
- B. Aim to perform duties with the utmost personal, professional and ethical considerations.
- C. Adhere to guidelines regarding patient confidentiality and protection of patient information.

VI. Systems-based Practice

- A. Understand the clinical implications and ramifications of pathologic diagnoses, especially those regarding treatment, follow-up and need for additional testing.
- B. Ensure pathology reports are completed in a timely manner.
- C. Be aware of issues regarding resource utilization in the pathology lab as they contribute to a cost-effective healthcare system.
- D. Attend/participate in departmental or interdisciplinary quality improvement activities and conferences.

5. CONFERENCES

A variety of intra- and interdepartmental conferences are conducted each week. The fellow is required to attend a subset of these and is encouraged to attend any others which are of interest. Fellows are expected to present the pathology component at some of these sessions.

CONFERENCE	FREQUENCY	DAY / TIME	LOCATION
Didactic lectures	As scheduled	As scheduled	Pathology conference room
Leukemia / lymphoma conference	Monthly (Last week of month)	Tuesday, 4:00	Goldberg Center, 1.5 floor
GI conference	Monthly (3 rd Wed)	Wednesday, 12:00	Pathology conference room
Tumor board	Weekly	Wednesday, 4:00	4 th floor East conference room (Rm E4077)
Heme/onc fellow pathology teaching	As scheduled	As scheduled	Pathology department
Neuro-oncology tumor board	1 st & 3 rd week of month	Thursday, 3:30	Surgery conference room, 2 nd floor
Brain cutting	Monthly	As scheduled	Autopsy room
Cardiology specimen conference	As requested		Autopsy room
Surgery-radiology conference	Quarterly		Surgery conference room, 2 nd floor
NICU M&M conference	Monthly (1 st Wed)	Wednesday, 2:00	Team room, 6East
Muscle biopsy review	As requested		Pathology conference room
ENT surgery conference	As requested		Pathology conference room
Pathology quality improvement conference	Quarterly		Pathology conference room
CLINICAL LAB			
Management conference	Monthly		Clinical lab
Directors' conference	Monthly		Clinical lab
Metabolics / genetics signout	Daily		Clinical lab
Microbiology lab rounds	Daily		Clinical lab
Laboratory rounds	Daily		Clinical lab
OPTIONAL			
Pediatric grand rounds	Weekly	Wednesday, 8:00 or 12:00	2 nd floor auditorium
CNMC Fellows' Committee	Monthly (1 st Thurs)	Thursday, 12:00	Varies

6. DIDACTIC LECTURES

A variety of didactic lectures and unknown slide seminars given by faculty and staff will be scheduled over the course of the year.

7. TEACHING MATERIALS & EQUIPMENT

The facilities of the Division of Anatomic Pathology have undergone renovation and expansion within the last several years. A room containing a multi-headed microscope with attached camera is utilized for conferences. This camera is attached to a large flat-screen television mounted on the wall. The fellow has designated office space including a desk, telephone, computer, and microscope. Computers are equipped with internet access and a direct printer link. Digital cameras and graphics software can be utilized, and a digital slide scanner is also located in the department. Glass slide study sets are available for review, as are gross photographs and a collection of congenitally malformed hearts. The department subscribes to several slide surveys offered by the Society for Pediatric Pathology and the College of American Pathologists, and this material is then available for later study. Previous in-house cases can be searched using the department's laboratory information system, and clinical information is available through the hospital's information system.

The CNMC Medical Library contains an online collection of books, journals and other media pertinent to pediatrics, clinical medicine, biomedical research and other topics. Additionally, the library finds and e-mails articles to requesting physicians. Fellows are also provided access to the Himmelfarb Medical Library at the George Washington University. Numerous on-line resources including textbooks, journals and databases are accessible from the hospital and from home. Key textbooks and journals in pediatric pathology are located within the department.

Additional space and equipment are dedicated to surgical pathology (frozen section, gross dissection), autopsy, histology, immunohistochemistry, slide scanning and flow cytometry. Poster printing for presentations at local or national meetings can be performed within the department. Some faculty members also have additional research laboratory space located in other parts of the hospital.

8. RESEARCH OPPORTUNITIES

A variety of clinical research projects are available to the fellow. He/she is encouraged to become involved in at least one of these projects and submit an abstract to the annual Society for Pediatric Pathology meeting and to the Children's National Medical Center / Children's Research Institute annual Research and Education Week, both of which take place in the spring. The required fellow quality improvement project can also be submitted to CNMC's Research Week as a poster presentation.

9. DUTY HOURS, MOONLIGHTING & CALL SCHEDULE

Fellows will adhere to institutional and ACGME guidelines regarding duty hours and will enter their hours into the online tracking system. Moonlighting is not allowed during the fellowship

year. Fellows take at-home call with an attending pathologist one week per month during which time they participate in evening and weekend surgical pathology and autopsy cases.

10. EVALUATION PROCESS

A detailed list of objectives for each component of the fellowship is provided at the start of the program. These incorporate all six ACGME core competencies. Fellows should review these lists on a regular basis to ensure they are achieving these objectives.

The fellow is given opportunity to evaluate both the program and individual faculty through the MedHub system. This system is also used for faculty evaluation of the fellow. A 360-degree evaluation regarding teamwork, communication skills, decision-making skills and presentation skills is completed by technical and secretarial staff as well as clinicians in the hematology/oncology and surgery departments.

The program director meets with the fellow quarterly to review all evaluations and checklists. Suggestions for improvement or areas of continued development for the fellow and feedback from the fellow about the program are discussed. The fellow is encouraged to express concerns or make suggestions at any time outside of the official evaluation session.

REFERENCES / RESOURCES:

- Rabah RM, Somers GR, Comstock JM, et al. Fellowship Training in Pediatric Pathology: A Guide for Program Directors. *Pediatr Dev Pathol.* 2013 Mar-Apr;16(2):102-23.
- ACGME Program Requirements for Graduate Medical Education in Pediatric Pathology. http://www.acgme.org/Portals/0/PFAssets/ProgramRequirements/316_pediatric_pathology_2016_1-YR.pdf, last accessed May 16, 2017
- The Pediatric Pathology Milestone Project, <http://www.acgme.org/Portals/0/PDFs/Milestones/PediatricPathologyMilestones.pdf>, last accessed May 16, 2017.