



Department of  
Obstetrics &  
Gynecology

## 2019 Maternal- Fetal Medicine Fellowship Prospectus

# A Message from the Chair



Welcome to Columbia University Department of Obstetrics and Gynecology! The Maternal-Fetal Medicine Fellowship Training program at Sloane Hospital for Women at NewYork-Presbyterian Hospital/ Columbia University Irving Medical Center is an exciting,

fast-paced clinical and research-oriented program, which provides trainees with a wealth of clinical experience and exposure to all facets of our wide-ranging and rewarding specialty.

Our fellowship program is driven by physicians who are not only stellar clinicians, but are also extremely well-versed in the literature of our field. This combined with our academic environment and diversity and volume of complicated pregnancies provides a strong foundation for our training program. We provide a complete clinical immersion in high-risk obstetrics and prenatal genetics. During the course of their training, our fellows gain experience in managing virtually all of the problems that could confront a practitioner in our discipline.

Comprehensive research training is another key element of the fellowship program. The division of Maternal-Fetal Medicine is engaged in clinical, basic bench, and epidemiological research providing many opportunities for our fellows to take an active role in their research interests. Fellows will receive didactic training in research essentials and support as they complete a thesis, develop a manuscript, and present at a national meeting.

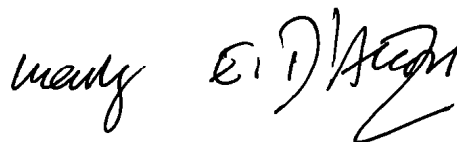
Our division is home to one of the most respected faculties of any division in the nation. Within the

Morgan Stanley Children's Hospital, we have facilities like the Center for Prenatal Pediatrics and the Mothers Center, along with a state-of-the-art labor and delivery floor and Level III NICU that is second to none.

We care for a broad range of public and privately insured patients from around the world as well as those from the surrounding population of Washington Heights. We are located in one of the largest, most diverse cities in the world and serve a patient population that presents us with genetic, medical, and surgical challenges of incredible complexity on a daily basis. We proudly serve our community and enjoy completing our training in the greatest city on the planet.

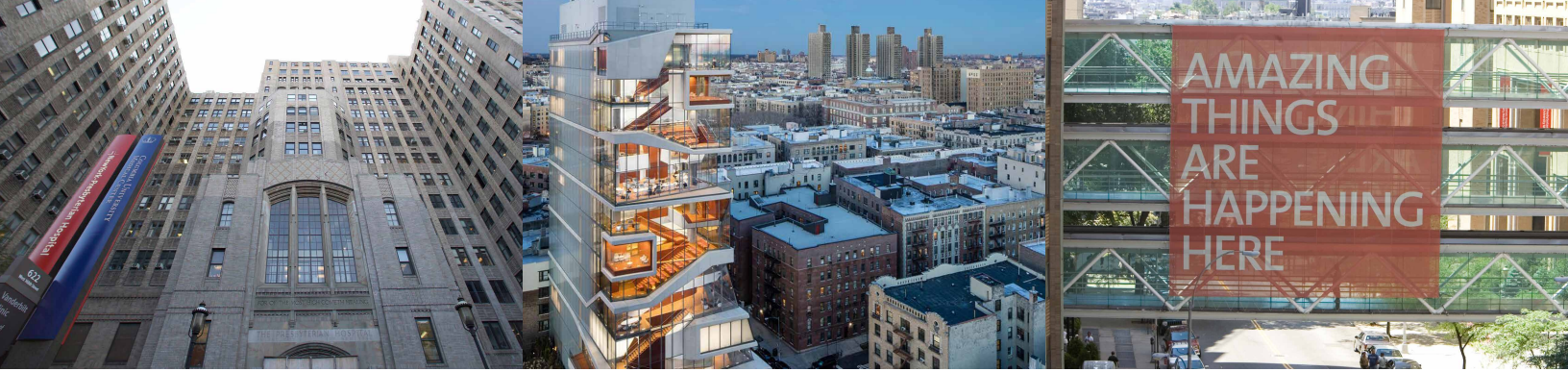
The Maternal-Fetal Medicine Fellowship at Columbia University Vagelos College of Physicians and Surgeons is a rigorous but rewarding endeavor, which culminates with the graduation of physicians who have outstanding clinical and research skills to prepare them for any practice opportunity at the completion of their training. In addition, we hope our fellows create lifelong friendships and collaborations during their time with us and get some time for fun in New York!

We invite you to come and meet with us. We are proud of who we are and what we do, and we are always looking for more bright and talented people to join our team!



**Mary E. D'Alton, MD**

Chair, Department of Obstetrics & Gynecology  
Columbia University Irving Medical Center



## Fast Facts About Our Department

- Ranked #4 for Gynecology nationwide by *U.S. News and World Report*. NewYork-Presbyterian is ranked #1 in the State of New York and #5 in the nation by *U.S. News*
- Ranked #5 in *U.S. News and World Report* for women's health programs at top medical schools
- Ranked #1 in New York State by Doximity's Residency Navigator and #5 in the nation
- 13 fellow publications in 2018-2019 academic year
- 16 Best Doctors in national and regional rankings
- 101 full-time faculty
- 46,029 unique patients served in FY2019
- 6,377 deliveries in FY2018
- Performed the first laser photocoagulation surgery to treat twin-to-twin transfusion syndrome in New York City
- 73 active funded research projects
- Ranked #9 in National Institutes of Health funding

## Fellowship Duration

The Maternal-Fetal Medicine Fellowship program is fully accredited by the Accreditation Council for Graduate Medical Education (ACGME) for three fellows per year in the three-year program.

## Prerequisite Training and Selection Criteria

Our selection criteria are consistent with the ACGME General Requirements and Columbia University Irving Medical Center's Equal Employment Opportunity and Hiring Guidelines. Columbia University fellowship programs do not discriminate with regard to race, color, religion, national origin, handicap, veteran status, sexual orientation or preference, sex, or age.





## HISTORY

The Sloane Maternity Hospital opened in 1887 as New York City's first medical facility dedicated to women's health. It was established with a benefaction from William D. Sloane and his wife, Emily Thorn Sloane, the granddaughter of Cornelius Vanderbilt. The goal was to endow a modern institution to treat women and educate midwives and obstetricians. In 1928, the Sloane Hospital for Women moved to its present site and became the obstetric and gynecologic service for Columbia-Presbyterian. Today, The Sloane Hospital for Women continues to lead the way in advancing women's health, and is now one of the preeminent obstetric and gynecologic programs in the world.



## OUR MISSION

As a major institution of higher learning, New York-Presbyterian Hospital and Columbia University Vagelos College of Physicians and Surgeons are deeply committed to fellowship training. Education is an integral part of the tripartite mission of the Department of Obstetrics and Gynecology, along with patient care and research. As a world leader in women's health care, our goal is to provide the finest comprehensive training for our future practitioners in our subspecialty by using the latest knowledge and innovative research and to provide the community at large the highest quality patient care.

Our program benefits from being affiliated with both an Ivy League institution and a world renowned hospital. All of our clinical services are based at NewYork-Presbyterian Hospital, one of the most comprehensive university hospitals in the world, with leading specialists in every field of medicine. With our dedicated staff, modern facilities, state-of-the-art technology, commitment to quality care, and our role in educating future physicians, New York-Presbyterian Hospital/ Columbia University Medical Center has earned a

reputation as a world-class teaching hospital.

The fellowship program is fully accredited by the Accreditation Council for Graduate Medical Education (ACGME). House officers hold academic appointments as Postdoctoral Clinical Fellows of Columbia University Vagelos College of Physicians and Surgeons. As an important part of their learning experience, fellows are expected to teach, supervise, and evaluate residents and medical students on all services.



## FELLOWSHIP PROGRAM LEADERSHIP



**Cynthia Gyamfi-Bannerman, MD**  
Director, Maternal-Fetal Medicine  
Fellowship Program  
Ellen Jacobson Levine and Eugene  
Jacobson Professor of Women's  
Health at CUMC



**Russell S. Miller, MD**  
Associate Program Director,  
Maternal-Fetal Medicine  
Fellowship Program  
Associate Professor of Obstetrics &  
Gynecology at CUMC

## ABOUT US

The Division of Maternal-Fetal Medicine is dedicated to providing the highest quality care to expectant mothers with high-risk health conditions, fetal abnormalities, or obstetric complications. Our team is comprised of leading MFM specialists, clinical nurses, and genetic counselors.

We coordinate our services with international experts in many treatment areas including cardiology, genetics, reproductive endocrinology, psychiatry, and pediatrics. This collaboration enables our experts to offer all possible diagnostic and therapeutic options for mothers and babies.

## OUR PROGRAMS

### **The Carmen and John Thain Center for Prenatal Pediatrics**

Director: **Russell Miller, MD**

The Center for Prenatal Pediatrics is dedicated to helping pregnant women and their families after a significant birth defect or genetic condition has been detected. We use state-of-the-art diagnostic imaging, genetic testing, and fetal therapy,

### **The Mothers Center**

Division Chief: **Leslie Moroz, MD**

The Mothers Center is a first-of-its-kind space dedicated to providing coordinated care to pregnant women with complications requiring specialized care. The Mothers Center serves as a national model for the care of high-risk pregnant women. As women with complex medical conditions become pregnant at a higher rate, it is important to have a multidisciplinary team to care for them preconceptionally, through pregnancy, and beyond. Our team is also conducting research that will contribute to improved care and education outside of the institution. We also work with our colleagues locally and nationally to reduce the incidence of the three leading causes of maternal complications: obstetric hemorrhage, hypertension, and venous thromboembolism.

### **Preterm Birth Prevention Center**

Co-Directors: **Cynthia Gyamfi-Bannerman, MD**  
**and Joy S. Vink, MD**

The Preterm Birth Prevention Center is dedicated to improving perinatal outcomes by providing personalized medical care for women at high risk for premature birth. Common interventions include vaginal and abdominal cerclage, progesterone supplements, and vaginal pessary. Our team is also involved in cutting-edge research that employs clinical, translational, and basic science methodologies to understand and decrease preterm delivery.

### **Perinatal Clinics**

The Perinatal Clinic is a high-risk clinic staffed by MFM attendings, fellows, and residents on the MFM service. The clinics are theme based (Diabetes, Maternal Complications, Obstetric and Fetal Complications), and patients are seen by a multidisciplinary team. The most complex of the maternal and fetal cases are presented each Tuesday as part of the Tuesday morning teaching sessions in either the Center for Prenatal Pediatrics or the Maternal Medicine conferences, respectively.

## APPLICATION, INTERVIEW, AND BENEFITS

We will be accepting applications via the Electronic Residency Application Service (ERAS) through July 1, 2019. All applications **MUST** be complete for an applicant to be considered for our program. This includes the following:

- A completed AAMC-NRMP application for fellowship
- An official copy of your USMLE scores
- An official medical school transcript
- A minimum of three recommendations from faculty members familiar with your performance
- Dean's Letter
- CREOG score
- Curriculum vitae

A carefully selected pool of applicants will be offered interviews on campus. Invitations to interview will be sent in mid-June, and interviews will be held on the following dates:

- Tuesday July 30, 2019
- Tuesday, August 6, 2019
- Tuesday, August 13, 2019

### Sample Interview Day

|                |  |
|----------------|--|
| <b>7:00am</b>  | Coat Check, Materials Distribution and Breakfast |
| <b>7:30am</b>  | Prenatal Pediatrics Conference                   |
| <b>8:30am</b>  | Maternal Medicine Conference                     |
| <b>9:30am</b>  | Fellowship Program Director Presentation         |
| <b>10:20am</b> | Faculty Interview #1                             |
| <b>10:40am</b> | Faculty Interview #2                             |
| <b>11:00am</b> | Faculty Interview #3                             |
| <b>11:20am</b> | Program Director Interview                       |
| <b>11:40am</b> | Program Director Interview                       |
| <b>12:00pm</b> | Lunch with Chair                                 |
| <b>1:00pm</b>  | Hospital Tours                                   |
| <b>2:00pm</b>  | Departure  |

### Salary and Benefits

Salary stipend for the 2019-2020 academic year is as follows:

| <b>Fellow Level</b> | <b>Salary</b> |
|---------------------|---------------|
| <b>PGY-5</b>        | \$88,617      |
| <b>PGY-6</b>        | \$90,209      |
| <b>PGY-7</b>        | \$92,925      |

### Vacation

Fellows receive four weeks of vacation each year, which are generally taken one week at a time.

### Educational Benefits

Each fellow receives an educational stipend of \$3,000 per academic year to attend for conferences or memberships. Each fellow is also provided with a laptop and cell phone.

### Medical Benefits

Fellows participate in NewYork-Presbyterian Hospital's Flexibility Benefits Program. The program allows fellows to choose from a variety of benefit plans covering healthcare, dental care, life insurance, and disability protection to customize their personal benefits. Professional liability coverage is provided by the hospital. Additional information about salaries and a copy of the Housestaff Agreement for NewYork-Presbyterian Hospital can be found on the GME website.



## CLINICAL CURRICULUM

### First Year

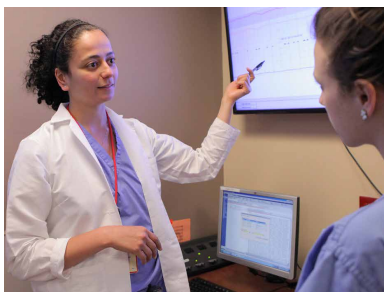
The Labor and Delivery rotation runs for 4 months in first year of clinical fellowship is designed to immerse the fellow into the clinical practice of maternal-fetal medicine. The fellow will perform high risk pregnancy deliveries and manage sick and/or complex patients in the high risk unit located in the labor suite. They will also approach obstetrics as a junior attending, guiding the Blue (MFM) Team residents through vaginal, operative and cesarean deliveries under direct supervision from the MFM attending.

### Second Year

The second year of clinical fellowship is designed to build on the foundation of the first clinical year, specifically the Inpatient and Outpatient rotations. The advanced clinical rotation in the second year combines outpatient MFM with advanced inpatient consultations and procedures. This rotation is for 4 months in the second year. The second year fellow on this rotation is the leader of the Accreta Team, a multi-disciplinary team comprised of MFM, gynecologic oncology and interventional radiology specialists. The second year fellow also attends the ID clinic and has the ability to perform fetal echocardiograms during this rotation.

### Third Year

The research rotation is primarily in the third year, with 9 months of research and a potential for 3 months extra months of research through elective time. Advanced procedures are primarily done in this year. The research time is designed to provide a broad-based exposure to research in gynecologic cancer. The overall goal of the research rotation is for the fellow to perform an in depth investigation that leads to publication in a peer-reviewed journal and fulfills the criteria outlined for the fellowship thesis. During the research year, fellows may undertake a basic, translational, clinical, or population-health based investigation.



## CONFERENCES AND DIDACTIC TEACHING

Thursday is our academic day in the Department of Obstetrics and Gynecology. The day begins with Morbidity and Mortality Conference, in which interesting cases from each service are presented by members of the house staff and are followed by lively and thoughtful discussion from the faculty and other members of the department.

### Grand Rounds

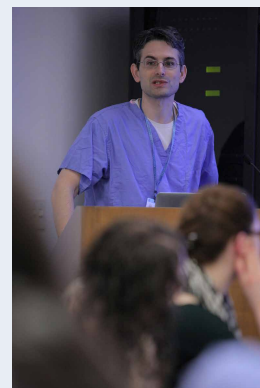
Weekly Grand Rounds follow the M&M conference and feature presentations from within our faculty, as well as many distinguished visiting guest speakers. Each year, the second year gives one Grand Rounds presentation. These talks are often the highlight of the morning session.

### Fellows Didactic Lecture Series

The fellows have a weekly lecture series that spans an 18-month block, such that each lecture is repeated twice during a fellow's training. The series follows the guide for learning and includes lectures from MFM attendings, as well as lectures from other specialties and subspecialties including obstetric anesthesia, neonatology, infectious diseases, critical care, pediatric cardiology, and pathology.

### Prenatal Pediatrics Conference

A Prenatal Pediatrics Conference is held weekly. Complex high-risk pregnancies involving issues such as fetal anomalies, congenital heart defects, and genetic syndromes are discussed in a multidisciplinary setting with colleagues from Neonatology, Pediatric Surgery, Anesthesia, and other relevant specialties.





## MATERNAL-FETAL MEDICINE RESEARCH

The Department of Obstetrics and Gynecology brings substantial experience and skill in organizing and participating in clinical and translational research. We have a strong track record in all areas of research including protocol design, implementation, data analysis, and dissemination of findings. We have a critical mass of faculty with sufficient time and skill to perform clinical research, as well as a diverse patient population willing to participate in research initiatives. We have a well-established research infrastructure that supports our efforts, including more than 50 research staff embedded in our clinical care systems. The following investigators offer an idea of the types of research opportunities that our MFM fellows can pursue:

**Kirsten Cleary, MD**'s research focuses on maternal complications of pregnancy, mainly hypertensive disease and preeclampsia. She currently serves as site Principal Investigator for CHAP (Chronic Hypertension and Pregnancy), an NIH-funded study investigating impact of blood pressure control on rate of preeclampsia in high-risk women. She is also the Maternal-Fetal Medicine Units (MFMU) Network Primary Investigator for Prevent, a randomized trial evaluating the impact of pravastatin to prevent preeclampsia in high risk women, as well as Motherhealth, a research initiative focused on the developmental of a comprehensive model for evaluation of cardiovascular and cerebrovascular health after pregnancy complicated by preeclampsia.

**Alexander Friedman, MD** has extensive experience in health services, comparative effectiveness, and translational research. He has a long track record of clinical, health outcomes, and translational research and numerous publications in high-quality journals. His work has focused on obstetric quality metrics, optimization of obstetric venous thromboembolism prevention strategies, maternal risk, and utilizing population based analyses to evaluate care variation.

**Cynthia Gyamfi-Bannerman, MD, MSc** is currently the Principal Investigator of the Maternal-Fetal Medicine Units Network and is the lead PI of the NICHD, MFMU funded follow-up study of the Antenatal Late Preterm Steroids (ALPS) study, which assesses peripartum influences of childhood neurodevelopment with current funding in that area. She also led the parent trial, a randomized, clinical trial, where women at risk for late preterm

delivery were randomized to betamethasone or placebo, which was co-funded by the NHLBI and conducted through the infrastructure of the Maternal-Fetal Medicine Units (MFMU) Network of the NICHD. In addition, her research has focused on obstetrical management of Jehovah's Witnesses, electronic fetal heart rate monitoring and the epidemiology, management and prevention of preterm birth, with a specific focus on late preterm birth.

**Russell Miller, MD** is actively involved in multicenter trials and observational studies including pregnancies complicated by fetal gastroschisis and other congenital abdominal wall defects, monochorionic, diamniotic twins, and research aimed to further the sonographic and genetic understanding of prenatally-detected fetal anomalies and conditions. Most recently, Dr. Miller is leading the investigation to evaluate fetoscopic fetal myelomeningocele repair.

**Lynn L. Simpson, BSc, MSc, MD** supports ongoing participation of our institution and faculty in the NICHD MFMU Network. She has been a principle/co-investigator in several trials, mentors residents and fellows in clinical projects, and serves as participating faculty in many NICHD MFMU Network studies. Dr. Simpson's research interests are prenatal diagnosis, congenital heart disease, multiple gestation, and fetal therapy.

**Joy Vink, MD**'s primary research goal is decrease the rate of spontaneous preterm birth by understanding the complex pathophysiology that leads to premature cervical remodeling. Dr. Vink's lab focuses on correlating how cervical tissue architecture influences its biologic and mechanical



function in pregnancy. She has established the multidisciplinary Collaborative Cervix Research Group with experts in collagen remodeling, biomechanical engineering, smooth muscle physiology, and systems biology. The knowledge obtained from her studies will be vital to further understand the molecular basis of normal and abnormal cervical remodeling in pregnancy.

**Ronald J. Wapner, MD** has participated in or led randomized trials evaluating genetic prenatal diagnostic and screening technologies for over 25 years. These include much of the original work evaluating chorionic villus sampling, biochemical and ultrasound screening for fetal chromosome abnormalities, a prospective comparison of chromosomal microarray to karyotyping for prenatal testing, microarray analysis of stillborn infants and a comparison of cell free DNA to biochemical and ultrasound screening in low risk pregnant woman. Each of these studies resulted in a publication in the NEJM and had a major impact in changing clinical care. His most recent work evaluated the role of expanded pan-ethnic carrier screening in prenatal care which presented the largest experience of such testing to date and demonstrated racial and ethnic consequences in the current screening recommendations.

#### Recent Published Fellow Research

##### **Incorporating Precesarean Vaginal Preparation Into Standard of Care for Obstetrics.**

Duffy CR, D'Alton ME, Han YW, Goldenberg RL, Gyamfi-Bannerman C. *Obstet Gynecol.* 2019 Apr;133(4):707-711. doi: 10.1097/AOG.0000000000003153. PMID: 30870287

Impact of timing of delivery on maternal and neonatal outcomes for women after three previous caesarean deliveries; a secondary analysis of the caesarean section registry. Breslin N, Vander Haar E, Friedman AM, Duffy C, Gyamfi-Bannerman C.

**Maternal outcomes by race during postpartum readmissions.** Aziz A, Gyamfi-Bannerman C, Siddiq Z, Wright JD, Goffman D, Sheen JJ,

D'Alton ME, Friedman AM. *Am J Obstet Gynecol.* 2019 May;220(5):484.e1-484.e10. doi: 10.1016/j.ajog.2019.02.016. Epub 2019 Feb 17. PMID: 30786255

**Low-dose aspirin is associated with reduced spontaneous preterm birth in nulliparous women.** Andrikopoulou M, Purisch SE, Handal-Orefice R, Gyamfi-Bannerman C.

#### Fellowship Research Day

- **Quantitative Activity Levels and Gestational Age at Delivery: A Prospective Cohort Study among Nulliparous Women**  
**Presenter:** Whitney Booker, MD  
**Preceptor:** Cynthia Gyamfi-Bannerman, MD
- **Effect of chlorhexidine vs. povidone iodine vs. saline vaginal preparation on bacterial colony counts in women undergoing elective cesarean delivery**  
**Presenter:** Cassandra Duffy, MD  
**Preceptor:** Cynthia Gyamfi-Bannerman, MD, Yiping W. Han, PhD
- **Impact of Delayed Cord Clamping on Maternal Blood Loss in Term Cesareans: A Randomized Trial**  
**Presenter:** Stephanie Purisch, MD  
**Preceptor:** Cynthia Gyamfi-Bannerman, MD



## FELLOW LIFE

### Living in New York

Columbia University Irving Medical Center is located in Washington Heights, a family-oriented neighborhood in northern Manhattan, a diverse and family-oriented neighborhood that is steeped in history. The hospital is easily accessible by several subway lines and is half a mile from the George Washington Bridge. New Jersey suburban communities, as well as Westchester and Riverdale in New York are within 15 to 30 minutes away.

### Duty Hours

It is our policy to comply with New York State 405 Regulations and with ACGME policy on work hours for post-graduate trainees. A duty hour work week is defined as a maximum of 80 hours averaged over four weeks, inclusive of all in-house activities and clinical assignments.

### Fellows Academy

The Department of Obstetrics and Gynecology has created a Fellows Academy to provide senior trainees with an inclusive educational forum, inter-divisional mentorship, networking opportunities and wellness activities. The goal of the Fellows Academy is to bring together fellows across sub-specialties to discuss common issues as they prepare for independent practice and to



enhance a broader sense of community within our department.

In our inaugural year, 2017-2018, we held talks on “Malpractice 101” and “Pearls and Life Lessons for Starting your Career.”. We also included a joint wellness session with residents about writing a condolence letter to a patient or her family.

Our first ever Fellows’ Retreat was held in April 2019. The day included an in-depth discussion of personal finances, led by a team of financial advisors who specialize in working with health care professionals, as well as a team-building exercise involving a scavenger hunt through the MoMA.

### Artful OBservation

We have launched a new educational initiative in the department, entitled Artful OBservation. Artful OBservation is designed to celebrate the unique artistic excellence in visual arts, music, narrative medicine, and theater that is all around us in New York City. Medical Humanities, which provides the inspiration for Artful OBservation, is defined by the National Library of Medicine as the “intersection of medicine and humanistic disciplines such as philosophy, religion, literature, and the fine and performing arts.” We had four successful events last year. We believe the arts provide an opportunity for physicians to engage in shared experiences, with the potential to increase wellbeing and decrease burnout among the larger community. We have improved physician wellbeing and community building within our own department through the Artful OBservation initiative.



MFM Fellows with Program Director Cynthia Gyamfi-Bannerman, MD

## WHY CHOOSE COLUMBIA?

Selecting your fellowship program is one of the most important decisions in your career in Medicine. During your fellowship you will work side by side with eight other bright, energetic physicians who are stellar clinicians and extremely well-versed in the current literature of our field. You will gain experience in managing virtually all of the problems that may confront a practitioner in our subspecialty while surrounded by exceptionally talented colleagues from across the medical center. Practicing in one of the largest, most diverse cities in the world, you will serve a patient population that presents with genetic, medical and surgical challenges of incredible complexity on a daily basis.

**Why choose Columbia?** We asked our current and former fellows to share their stories.

I wanted a heavily clinical training program with strong research support, as well as both breadth and depth of pathology. This was the only program that seemed to have everything.

**Jessica Spiegelman, MD, PGY-7**



I sought out Columbia because I knew the clinical experience and pathology was unparalleled. I couldn't pass up the opportunity to work with some of the most renowned researchers in the country.

**Desmond Sutton, MD, PGY-6**

Columbia was the place I wanted to go to because of the physicians, patients and the resources I would have access to. The wide spectrum of fetal and maternal diagnoses coupled with heterogenous patient population at Columbia would allow us to work with patients with a variety of socioeconomic backgrounds and cultures. The large volume of fetal procedures, the ultrasound training, and the incredible physicians that comprise the MFM team, made this fellowship a dream.

**Roxane Handal-Orefice, MD, PGY-7**

## LIFE AFTER FELLOWSHIP

### 2019

- Whitney Booker, MD: NYP/Columbia
- Cassandra Duffy, MD: Beth Israel Deaconess
- Stephanie Purisch, MD: NYP/Columbia

### 2018

- Joses Jain, MD: Pinon Perinatal
- Mirella Mourad, MD: NYP/Columbia
- Emilie Vander Haar, MD: NYP/Cornell

### 2017

- Amelia McLennan, MD: UC Davis Health System
- Audrey Merriam, MD: Yale School of Medicine
- Gloria Too, MD: Eastern Virginia Medical School





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Columbia University Irving Medical Center  
622 West 168th Street, PH 16  
New York, NY 10032

[columbiaobgyn.org](http://columbiaobgyn.org)

COLUMBIA UNIVERSITY DEPARTMENT OF OBSTETRICS AND GYNECOLOGY