

**Department of Orthopedic Surgery**

Division of Pediatric Orthopedics, Spine & Scoliosis Service

Columbia University Irving Medical Center

NewYork-Presbyterian Morgan Stanley Children's Hospital

# Advanced Pediatric Spinal Deformity Fellowship

2021 Recruitment Interviews



## Welcome to Columbia Spine

The Departments of Orthopedic Surgery and Neurological Surgery at Columbia University College of Physicians and Surgeons have earned reputations as two of the leading academic departments in the nation. Our rich traditions in orthopedic and neurological surgery dates back to 1866 and 1909, respectively, when the New York Orthopaedic Dispensary and Neurological Institute of New York were founded. Since that time, our departments have grown into preeminent centers for quality patient care, research, and education.

The training of residents and fellows is one of our most important missions—and we are very proud that many of today's leading spine surgeons throughout the United States and abroad have trained here at Columbia. The excellence of our training programs reflects the dedication of our faculty members, who combine their commitment to educating future leaders in the field of orthopedic and neurological surgery and their recognized expertise as clinicians and scientists. It is also an enormous advantage for all our residents and fellows to be trained in one of the nation's leading academic medical centers, which was recently ranked as a top five hospital in the nation by U.S. News & World Report and continues to be recognized as the best hospital in New York City.

Our single fellowship position for a 12 month program is based at NewYork-Presbyterian Morgan Stanley Children's Hospital and NewYork-Presbyterian Ochsner Spine Hospital. Candidates who apply for this advanced fellowship must have completed a residency in orthopedic surgery or neurosurgery as well as a fellowship in pediatric orthopedics or spine surgery.

The purpose of this fellowship is to comprehensively train surgeons in both the operative and non-operative care of complex pediatric spinal deformity.

We invite you to learn more about our outstanding fellowship program and we encourage you to ask questions and discuss the program with our current fellows.

We look forward to meeting and interviewing you today!



**Michael G. Vitale, MD, MPH**

*Ana Lucia Professor of Pediatric Orthopedic Surgery & Neurosurgery  
Chief, Pediatric Orthopedic Surgery  
Vice Chair, Quality & Strategy  
Department of Orthopedic Surgery  
Director, Advanced Pediatric Spinal Deformity Fellowship*



**Lawrence G. Lenke, MD**

*Professor of Orthopedic Surgery  
Chief, Division of Spinal Surgery  
Co-Director, Advanced Pediatric Spinal Deformity Fellowship  
Surgeon-in-Chief, NewYork-Presbyterian Ochsner Spine Hospital*



**Peter D. Angevine, MD, MPH**

*Associate Professor of Neurological Surgery  
Columbia University Irving Medical Center  
NewYork-Presbyterian Ochsner Spine Hospital*



**William N. Levine, MD**

*Frank E. Stinchfield Professor & Chair,  
Department of Orthopedic Surgery  
Chief, Shoulder Service  
Co-Director, Center for Shoulder, Elbow & Sports Medicine  
Head Team Physician,  
Columbia University Athletics  
Editor-in-Chief, Journal of the American Academy of Orthopedic Surgeons (JAAOS)*

## Fellowship Program Overview



Surgeons completing the advanced fellowship will be proficient in addressing the whole spectrum of pediatric spine pathologies including congenital, neuromuscular, syndromic and adolescent idiopathic scoliosis, as well as Scheuermann's kyphosis, spondylolisthesis and complex cervical spine deformity.

The advanced fellow will attain experience in performing techniques ranging from de-rotational casting, halo gravity traction, traditional and magnetically controlled growing rods, to posterior spinal fusion and vertebral column resections. The fellow will also gain experience in up-to-date non-operative management of adolescent idiopathic scoliosis including Rigo-Cheneau style bracing systems and Schroth physical therapy.

Approximately 320 pediatric spine deformity cases are performed at our institution annually. The overall fellowship surgical case-load profile is 40% adolescent idiopathic scoliosis, 25% early onset scoliosis, 20% neuromuscular/syndromic scoliosis, 10% cervical deformity, and 5% tumor/fracture.

## Research

The advanced pediatric spine fellow will have one day a week dedicated to research and academic pursuits. During this period he/she will be able to engage in our robust clinical research program.

## Conference Schedule

- |           |         |  |
|-----------|---------|--|
| Monday    | 6:00 am | <b>Spine Conference:</b> held at the NewYork-Presbyterian Och Spine Hospital   |
| Thursday: | 7:00 am | <b>Orthopedic Surgery Grand Rounds:</b> weekly lectures by nationally and internationally renowned guests. Held at Columbia University Irving Medical Center   |
|           | 8:00 am | <b>Multidisciplinary Spine Case Conference:</b> indications and operative planning as well as post-operative results are discussed with surgical faculty, residents, anesthesia faculty, and operating room staff. |

## Fellowship Goals and Objectives

The goals and objectives of the fellowship are to educate fellows through the 1 year of training in the art and science of advanced pediatric spinal deformity care. The primary objective is to teach skilled, competent, caring, and technically proficient physicians and surgeons. These goals are attained through a carefully created educational program, becoming proficient in the physical examination and diagnosis of patients, and progressively increasing responsibility and autonomy in the non-operative and operative management of patients. Specific goals and objectives are as follows:

- Gain proficiency in the diagnosis, evaluation and treatment of pediatric patients with various spinal deformities with emphasis on maximal restoration of function and preservation of further disability.
- Gain confidence and competency in performing spine & neurologic history and physical examination and formulating and executing a treatment plan for patients in outpatient, inpatient and consultation settings.
- Develop a proficiency of technical skills in the operating room in the surgical management of spinal deformities and demonstrate increasing autonomy from one year to the next. At the conclusion of the fellowship, the fellow will be expected to be able to practice advanced spinal surgery competently and independently.
- Develop leadership skills needed to lead a multidisciplinary team of allied health care workers including health care extenders, physical therapists, occupational therapists, social workers, nurse practitioners and nutritionists, and to understand their role and contribution to patient care.
- Become proficient in writing prescriptions for therapeutic exercises, modalities, prostheses, orthoses, and durable medical equipment.
- Develop interpersonal skills needed to effectively engage patients and family members to enhance communication and education.
- Develop competency in management of the spinal inpatients including administration, quality improvement and leadership through the use of effective verbal and written communication skills
- Gain experience and proficiency in direct supervision and teaching of fellow residents and medical students.
- Master the skills needed to independently research scholarly sources for the purposes of presenting the topic to be of educational value to other medical staff and to enhance patient care.
- Develop a sense of personal responsibility to patients and a commitment to providing excellent clinical care with proper and ethical professional behavior.
- Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health as it is related to the field of spinal surgery.
- Acquire medical knowledge about established and evolving biomedical, clinical, cognitive sciences and demonstrate the competent application of this knowledge to patient care.
- Demonstrate practice-based learning and improvement that involves investigation and evaluation of patient care, appraisal and assimilation of scientific evidence and improvements in patient care.
- Demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their families, and other health professionals.
- Demonstrate professionalism as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
- Demonstrate system-based practice, as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and ability to effectively call on system resources to provide care that is of optimal value.



## About Our Program

In 1911, Columbia University professor and orthopedic surgeon Russell A. Hibbs performed the first spinal fusion surgery for paralytic scoliosis. Since then, the spine experts at Columbia Orthopedics and Neurosurgery have continued to develop and apply innovative therapies backed by the latest clinical and basic science research to treat and heal disorders of the cervical, thoracic, and lumbar spine.

Our world class physicians specialize in surgical and non-surgical treatment of spinal deformities, acute injuries, and degenerative conditions of the spine. Using the most sophisticated diagnostic tools, in-depth clinical experience backed by the latest research, and advanced surgical techniques, our specialists create personalized treatment plans for patients suffering from all types of spine conditions – from the routine, to complex spinal reconstruction.

## NewYork-Presbyterian Och Spine Hospital

The Columbia spine team is based at two state-of-the-art facilities: the NewYork-Presbyterian Och Spine Hospital, and the NewYork-Presbyterian Morgan Stanley Children's Hospital - treating adult and pediatric patients respectively.

These facilities represent one of the most advanced centers for spine care in the world, featuring dedicated operating rooms purpose-built for spinal surgery, the latest intra-operative navigation technologies, robotically assisted surgery, state-of-the-art diagnostic testing equipment, and in-patient nursing units specifically designed for the care and treatment of spine patients.



## What the Fellows Have to Say



### **Rajiv R. Iyer, MD**

*Current Fellow*

**Residency:** Neurological Surgery,  
Johns Hopkins Hospital in Baltimore, MD

**Fellowships:** Pediatric Neurosurgery,  
University of Utah/Primary Children's  
Hospital

### **What makes the program unique?**

*The advanced pediatric spine deformity fellowship is an unparalleled opportunity for a neurosurgeon or orthopedic surgeon to immerse themselves in the care of children with complex spinal disorders. The fellowship experience is outstanding from both a clinical and an academic perspective under the mentorship of world-class leaders in the field. This combination makes the fellowship truly one of a kind.*

### **How did the fellowship impact your development as a spine surgeon?**

*The fellowship has given me exposure to all aspects of pediatric spine surgery, including patients with AIS, early onset scoliosis, neuromuscular scoliosis, kyphotic disorders, and complex congenital anomalies. Listing these general diagnoses is only the tip of the iceberg – there is so much nuance to be learned from the expert care of patients with these disorders, which I have been exposed to on a daily basis. Having completed about one third of the year, I have gained an outstanding foundation of knowledge regarding the principles of deformity surgery both in and out of the operating room. The experience also serves as an excellent transition to practice, as the fellow is directly involved in discussions regarding surgical indications and technical operative nuances. Intraoperatively, the fellow plays a major role in every surgery, whether it be an infantile derotational cast placement or a multilevel VCR.*

### **What will you miss most about Columbia and NewYork-Presbyterian?**

*I have been extremely impressed with the widespread mission to provide the best possible care for children with spinal disorders here at Columbia. Although I will miss that perpetual drive for continued improvement, I hope that by completing a fellowship here I can take that excitement and quest for top quality pediatric spine care forward in my career.*



*"My surgical and clinical skills grew immensely during my fellowship year. I enthusiastically took the lessons learned from Drs. Vitale Lenke – and exposure to the most complex spinal deformity cases seen nowhere else in the world – into my own practice – continuing the tradition of Columbia University Spine Surgery."*

### **Eduardo C. Beauchamp, MD** *Former Fellow*

*Twin Cities Spine Center, Minneapolis, MN*



*"This is one of a handful of focused pediatric spine fellowships. A year of concentrated experience in the field is imperative to development as a proficient, safe and confident deformity surgeon. You will work with leaders in the field and the opportunity is unparalleled. And you cannot beat New York as a city to live in. I am more well-rounded and technically proficient surgeon. The complexity this fellowship offers is unparalleled."*

### **Anand H. Segar, MD** *Former Fellow*

*Spine and Scoliosis Surgeon  
Auckland DHB, Auckland, New Zealand*

## The Big Apple: Where to Live and What to Do



Columbia University Irving Medical Center and NewYork-Presbyterian/Morgan Stanley Children's Hospital are located on the eastern shore of the Hudson River at the foot of the George Washington Bridge in northern Manhattan. Many housing options exist in New York City and many fellows live on the upper west side. There are housing options available through the NYP GME office.

New York is the financial and cultural capital of the world. One can easily reach Midtown Manhattan via a 20-minute subway ride that reveals a world of art, theater, and shopping. The Museum of Modern Art, the Museum of Natural History, the Metropolitan Museum, and the Hayden Planetarium are but a few of the many city museums. Radio City Music Hall, Carnegie Hall, and the four theaters of Lincoln Center are replete with music, ballet, opera, and other live entertainment. You can enjoy the latest Broadway musical, play, or revival after dining in the world's finest restaurants.

New York never sleeps! Easily accessible from three airports by car or public transportation, the CUIMC location will allow you to go to the beach for the day or to the Catskill Mountains for the weekend. If sports are in your blood, Yankee Stadium and Citi Field are a subway ride away, Madison Square Garden is a couple stops away, and the Meadowlands Sports Complex is located just across the river in New Jersey.



*"I couldn't be happier with my fellowship selection. I learned neurosurgical spine in my residency and began my introduction to the orthopedic approach during my enfolded fellowship. I want to do pediatric spinal deformity. I want to grow that specific type of practice. I wanted to learn from the absolute best. The entire group is truly invested in your education. The research opportunities are abundant. I'll be a different type of surgeon operatively, academically, and clinically when I complete my fellowship."*

**Richard Menger, MD** Former Fellow

Assistant Professor of Neurosurgery, Chief of Complex Spine Surgery  
University of South Alabama, Mobile AL

## Graduate Staff Salaries 2020 – 2021

Graduate Staff Level 1	\$73,489
Graduate Staff Level 2	\$79,359
Graduate Staff Level 3	\$85,864
Graduate Staff Level 4	\$88,277
Graduate Staff Level 5	\$91,276
Graduate Staff Level 6	\$92,915
Graduate Staff Level 7+	\$95,713



*"What makes this program unique is the opportunity to work with internationally respected pediatric spine surgeons within Orthopedic and Neurosurgery disciplines. It provided the opportunity to learn a unique and highly specialized clinical skill that cannot be acquired through routine fellowship training."*

**Brian J. Kelley, MD**    *Former Fellow*

*Assistant Professor of Pediatric Neurosurgery,  
Texas Children's Hospital, Baylor College of Medicine*





## Adult & Pediatric **Comprehensive Spine Fellowship**

*2021 Recruitment Interviews*



**COLUMBIA**

COLUMBIA UNIVERSITY  
DEPARTMENT OF ORTHOPEDIC SURGERY

 **NewYork-Presbyterian Kids**  
Morgan Stanley Children's Hospital

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