

**EDUCATIONAL GOALS AND OBJECTIVES
AND RESPONSIBILITIES
PEDIATRIC UROLOGY FELLOW
CHILDREN'S NATIONAL MEDICAL CENTER**

Program: Pediatric Urology

Location: Washington DC

Hospital Affiliation: Children's National Medical Center

Academic Institution Affiliation: The George Washington University School of Medicine

Residency Director:

Name Hans G. Pohl, MD, FAAP

Residency Co-ordinator (manager):

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Core curriculum:

1st year: Research (molecular and clinical) under direction of Dr. Craig Peters and Dr. Hans Pohl
2nd year: Clinical (OR, outpatient, inpatient)

Conferences:

Weekly Uroradiology case conference (evaluation, management)
Weekly discussion conference (topic oriented)
Monthly All-City Ped Urology Grand Rounds (cases, didactic lecture)

Institutions utilized:

Inpatient: Children's National Medical Center (primary), Georgetown University Hospital (secondary), Fairfax Hospital (secondary)
Outpatient: Children's National Medical Center

FACULTY

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1. H. Gil Rushton, MD is fellowship trained in pediatric urology and Chairman of the Division of Urology. He has practiced in the Washington area since 1986. He served as a past Secretary and Chairman of the American Academy of Pediatrics Section on Urology, the Executive Secretary of the Pediatric Urology Advisory Council to the American Board of Urology and as the Section Editor for the Journal of Urology, Pediatric Section. He oversees all aspects of the department, including the clinical supervision and experience of the trainee, and division operations. He has the opportunity to spend one-on-one time with the fellow, both in the operating room and in outpatient clinics. He determines if the trainee has weaknesses in any specific areas and will insure that those are addressed. He meets with the Program Director (Dr. Hans Pohl) regularly to evaluate the trainee's progress and informs the Program Director of the trainee's strengths and deficiencies. He meets with the faculty semiannually to discuss the program and review the fellow's progress.

Medical School: Medical University of South Carolina, 1974-1978

Residency: Medical University of South Carolina, 1979-1983

Fellowship: Hospital for Sick Children, London, 1983

Emory University, 1985-1986

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Subspecialty interests: Vesicoureteral reflux and UTIs, perinatal hydronephrosis, and reconstruction of hypospadias and ambiguous genitalia

2. Dr. Peters was on faculty at Children's Hospital, establishing the Pediatric Urology research laboratory and the Minimally Invasive Surgery program and subsequently the first Pediatric Urology robotics program. From 2006 to 2010, he was Chief of the Division of Pediatric Urology at the University of Virginia, continuing to develop pediatric robotic surgical practice. He has written extensively on clinical robotic surgery. He is also active as the Pediatric Editor of the Campbell-Walsh Textbook of Urology, Associate editor for the Journal of Urology, Chair of the DSMB of the NIH RIVUR study, Chair of the AUA Clinical Guidelines Panel for Vesicoureteral Reflux, and chair of the Section on Urology of the American Academy of Pediatrics. Dr. Peters joined CNMC in 2010 as Chief of the Division of Surgical Innovation, Technology and Translation, as well as a principle investigator in the Sheikh Zayed Institute for Pediatric Surgical Innovation.

Medical School: Johns Hopkins University School of Medicine

Residency: Johns Hopkins University Hospital

Fellowship: Children's Hospital, Boston

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Subspecialty interests: Minimally invasive surgery (Laparoscopy and Robotics), Vesicoureteral reflux, hydronephrosis and obstructive uropathies

3. M. David Gibbons, MD is fellowship trained in pediatric urology and has the opportunity to supervise surgical experience of the fellow. He has practiced in the Washington area since 1983 and joined the

staff at Children's in 1998. Working primarily in Northern Virginia and Northwest DC, Dr. Gibbons is also Director of Pediatric Urology at Georgetown University Hospital. He offers the trainee the opportunity to scrub on index cases and supervises OR experience when the pediatric fellow is serving as the teaching assistant for general urology trainees. He also participates in the weekly and monthly conferences.

Medical School: Virginia Military Institute, 1968-1972
Residency: Assist. Resident, Surg., Med. College of VA, 1973-1974
Medical College of Va. and McGuire Veteran's Hospital, 1974-1976
Fellowship: Children's Hospital of Philadelphia, 1977-1978

Subspecialty interests: Evaluation of the fetus with urological abnormalities, intersex Abnormalities, and complex genital reconstruction

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4. A. Barry Belman, MD, Chairman Emeritus, is one of the original urologists who confined his practice to pediatric urology. He came to Washington in 1976 to establish the Department of Urology at Children's Hospital. He has served as past Chair of the American Academy of Pediatrics Section on Urology and past Pfellow of the Society for Pediatric Urology. His has served as editor of 3 editions of Clinical Pediatric Urology, the preeminent text in the field. He has the opportunity to work with the fellows in the outpatient arena, operating room, and the weekly and monthly conferences Additionally, he will involve the fellow in clinical research projects with the goal of presenting at major meetings and publishing in the appropriate journals.

Medical School: Northwestern University Medical School – '64
Residency: McGaw Medical Center of Northwestern University – '65-70

Subspecialty interests: Complex hypospadias repair, vesicoureteral reflux and UTIs

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5. Hans G. Pohl, MD is fellowship trained in pediatric urology and is Director of Research for the Division and Program Director for the Fellowship. Dr. Pohl joined the faculty at Children's Hospital in 2002. Dr. Pohl is a member of the Children's Research Institute where he is applying state-of-the-art molecular biological techniques to the study of renal cortical following urinary tract infection. He is responsible for the academic and investigatory portions of the fellow's experience as well as supervising experience in the outpatient clinic and operating room. He also participates in all conferences and leads the monthly research conference. Dr. Pohl is a member of the Program Director's Committee for Pediatric Urology as well as an associate editor for the Journal of Urology. He currently oversees 4 NIH funded clinical trials pertaining to the evaluation and management of vesicoureteral reflux and urinary tract infections.

Medical School: George Washington University Medical School, 1988-1992
Residency: George Washington University, 1992-1998

Fellowship: National Institutes of Health, 1998-2000
Boston Children's Hospital, 2000 - 2002

Subspecialty interests: Complex reconstructive problems, exstrophy/epispadis complex, urinary incontinence associated with spina bifida

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6. Naida Kalloo, MD joined the Division is fellowship trained in pediatric urology and is Director of the comprehensive Voiding Dysfunction Clinic. She joined the faculty of the Division of Urology in 2003 after serving for 7 years as the attending pediatric urologist at the National Naval Medical Center in Bethesda, MD. She will have the responsibility of educating the fellow regarding this complex but common pediatric problem and is also involved in supervising surgical experience.

Medical School: Howard University Medical School 1981-1985
Residency: Emory University (General Surgery) 1985-1987
Howard University (Urology) 1987-1991
Fellowship: Johns Hopkins University Hospital 1991-1994

Subspecialty interests: Elimination dysfunction, including both diurnal and nocturnal enuresis

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7. Scott Sparks, MD is a fellowship trained pediatric urologist and Surgical Director of the Stone Clinic. He joined the faculty of the Division of Urology in 2010 after his fellowship. He will have the responsibility of educating the fellow regarding the surgical management of pediatric calculus disease as well as general pediatric urological conditions.

Medical School: Baylor College of Medicine, 1999-2003
Residency: West Virginia University, 2003-2008
Fellowship: University of California, San Diego, 2008-2010

Subspecialty interests: Nephrolithiasis

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8. Massoud Majd, MD is an internationally known expert in the field of Nuclear Medicine. He supervises the weekly uro-radiology conference in which capacity he lends his broad expertise in the indications for and interpretations of various diagnostic radiographic tools. He has produced landmark work in the field of pediatric urology nuclear imaging.

DETAILED PROGRAM INFORMATION

The purpose of the two-year Pediatric Urology Post Residency Training Program is exclusively the education and training of the appointed trainee. The objective is to offer a broad, inclusive year of clinical training and a full year of dedicated research with the goal to produce the finest pediatric urologist possible.

CLINICAL EXPERIENCE

The clinical year offers a graduated experience covering the urologic problems of childhood and adolescence. By the end of the year the trainee will be well versed in both the outpatient evaluation and treatment of common and complex urologic problems as well as the diagnostic means of arriving at an appropriate clinical plan. This will include the care of children with congenital urologic anomalies affecting the genitourinary tract, the evaluation and treatment of children with tumors, the evaluation and management of childhood trauma, non-surgical renal disease, and urinary tract infections as well as the evaluation and treatment of the newborn. The fellow will be facile in the in depth evaluation of patients as relates to history taking, physical examination, the ordering and interpretation of indicated diagnostic studies and the planning of appropriate treatment, both surgical and non-surgical. Trainees will know how to obtain appropriate information from parents, guardians and, when possible, the patient him- or herself. They will learn how to communicate this information to all appropriate individuals, including the patient (appropriate to his/her level of understanding), family members/guardians and referring and other involved physicians and health care providers. They will know how to communicate the appropriate information to other members of the diagnostic and therapeutic team to best utilize the facilities available and expedite appropriate management.

The pediatric urology fellow, with guidance from the program director, will select surgical cases on which to scrub. He/she will be expected to be the primary surgeon or teaching assistant on all index cases, when possible. After gaining adequate surgical experience the pediatric urology fellow will be expected to be the teaching assistant on all other cases when scrubbed. All surgical cases will be directly supervised by the assigned attending physician.

Additionally, the pediatric urology fellow will be involved in the education of medical students rotating through the pediatric urology service as well as general urology fellows. He/she will be responsible for reviewing both out patient and inpatient evaluations and work ups of the other fellows and students as well as assisting the general urology fellows in the operating room when appropriate. These educational responsibilities will always be under the supervision of the chief of the service or another attending pediatric urologist.

Children's National Medical Center has an internationally recognized state of the art diagnostic radiology and imaging department with a first class faculty. For the past 27 years there has been a weekly case-management conference with the review of all pertinent studies for the week attended by radiology faculty, radiology trainees, and all members of the urology division. Fellows present cases that are discussed in detail. All complex problems are brought to this conference for treatment planning and group discussion. At the end of training the fellow will be well versed in this area.

Children's National Medical Center provides a full service Spina Bifida Clinic that manages over 350 active patients with neuropathic bladder disease. The pediatric fellow will participate in those clinics with progressive responsibility throughout the year. All intersex patients referred to Children's National Medical Center are managed by a multidisciplinary team including pediatric urology, endocrinology, genetics and psychology. The pediatric fellow will be involved in the evaluation and management of all of those patients.

Finally, the pediatric urology fellow will be expected to pursue academic activities, both clinical and laboratory based, with the production of at least one paper suitable for presentation at an academic meeting and publication in the appropriate literature. This would be done in conjunction with an attending pediatric urologist, and, when possible, a general urology fellow and/or student.

The pediatric urology fellow is expected to be at one of the assigned facilities each workday and on weekends when the situation arises. He/she will take secondary call by phone on a daily basis unless there are scheduling conflicts, the general urology fellow taking primary call. He or she will have alternate weekends free of call. The general urology fellow will consult with the pediatric urology fellow when appropriate. An attending pediatric urologist will always be on call and will be called by the pediatric urology fellow, or general urology fellow if the pediatric urology fellow is not immediately available, for any problem that requires his/her input or when surgical intervention is required. The pediatric urology fellow will **never** be on call without attending backup and the attending will be available as dictated by the guidelines of Children's National Medical Center. .

The pediatric urology fellow will have no completely independent patient care; all outpatient and surgical activities will be supervised directly by an attending pediatric urologist. However, the goal is to establish a qualified pediatric urologist. Therefore, as the year progresses the pediatric fellow will gradually establish his/her own clinical practice to be done in conjunction with the practice of one of the attending physicians. The pediatric fellow will independently evaluate these patients and plan a course of management, presenting that plan to the supervising attending physician. Management both pre and post treatment will be the responsibility of the trainee.

The pediatric urology fellow will be evaluated quarterly by all attending physicians involved in the training program as well as by the general urology fellows he/she has supervised. The pediatric urology fellow will meet with the Program Director quarterly to review these evaluations and discuss his/her progress. At that time the fellow will have the opportunity to discuss the program and any recommendations by the fellow as to how it can be improved.

RESEARCH EXPERIENCE

The Pediatric Urology Fellow will spend 1 full year in research under the supervision of Dr. Craig Peters, Director of Surgical Innovation in the Sheikh Zayed Institute as a Joseph E. Robert Jr. Fellow. Education is an integral part of the Sheikh Zayed Institute. Every member is expected to engage actively in the on-going activities of the Institute, including attending conferences, lectures, clinical rounds, journal clubs, and laboratory meetings. The Institute also offers specific educational programs in the theory, practice, and management of biomedical innovation to high school, college, and graduate students, as well as to clinicians, researchers, and engineers at all career levels. These programs immerse the innovation-minded in the art and science of developing new approaches to making surgery for children more precise, less invasive, and pain free.

Training for young innovators focuses on the multi-disciplinary approaches that move cutting-edge ideas from concept to product development and implementation, including scientific validation, navigating regulatory requirements, and creation of clinical study and testing protocols.

Joseph E. Robert, Jr. Fellowships

The Joseph E. Robert, Jr. Fellowships in Pediatric Surgical Innovation offer a year-long immersion in the theory, process, and practice of biomedical innovation at the Sheikh Zayed Institute for Pediatric Surgical Innovation. Robert Fellows come from a variety of backgrounds. They can be surgical, radiology, or anesthesia trainees and junior faculty; nurses in pediatric surgical disciplines; post-masters and post-doctoral bioengineers; and scientists with an interest in biomedical innovation. The diversity of backgrounds for the Robert fellows provides the pediatric urology fellow with an enriched experience during his/her research year.

The Robert Fellows program equips trainees with the skills they need to develop and translate new research concepts into pediatric surgical clinical practice. Robert Fellows with a surgical background may have the option of joining the Minimally Invasive Surgery Track, where the innovation experience will focus on basic, clinical, and translational research and development specifically for minimally invasive surgical techniques. The SZI draws expertise by collaborating with investigators in adjunct research centers located atop Children's National Medical Center.

Thus, the proximity of the SZI to other research cores and the main hospital provides access to the locations where the trainee may be involved in clinical research in addition to the basic science research. Among these collaborating centers is the Center for Genetic Medicine/CRI which has a mission "to promote translational research on human disease using genome-wide approaches". In order to accomplish this goal, a molecular genetics core facility exists. The role of this core is to provide investigators with both basic and advanced molecular biology and molecular genetics tools to enhance research studies. In addition to providing direct research support to investigators, the core provided training in state-of-the-art molecular methods for young investigators, fellows and fellows. More specifically, the core provides access to extensive expertise and technology in molecular diagnosis, microarray analyses (both Affymetrix and spotted cDNA arrays), automated sequencing (both capillary, and gel-based systems), quantitative nucleic acid analyses (TaqMan, QMF-PCR), robotics for high throughput assays, laser capture microdissection (both Arcturus and Leica systems), and high-pressure liquid chromatography (DHPLC, multiple platforms). A computing network and bioinformatics facility exists as well. The role of this core is to provide CRI investigators with a research-only computer network, hardware and software support, personnel, web site design and hostings, and database development and management.

Goals

- Train the best of our future providers of pediatric surgery in the process of innovation
- Provide a real-life experience that produces innovation and patient benefit as well as learning

Vision

- Develop a self-perpetuating cadre of pediatric surgical health care providers trained and experienced in innovation to advance pediatric surgical care internationally

Structure

- 1) The Robert Fellows will work in **innovation teams** with faculty, post-doctoral students, and fellows in other disciplines, including LEAP Fellows (tentative)
- 2) A targeted **Needs Assessment** spanning all levels of Pediatric Surgical care will be undertaken with each fellow class.
- 3) **The Robert Fellows will engage in three projects:**
 - a) A joint, collaborative Institute project
 - b) A personal project, designed and managed by the individual fellow
 - c) A clinical research project with a clinical mentor
- 4) By the end of the fellowship period, fellows will have mastered the following key areas of learning/experience:
 - a) Have in-depth knowledge of the research performed in one of the Institute programs and a general understanding of the research performed in the other Institute programs

- b) Use of both basic and advanced innovation and product development terminology
- c) Identify, define, analyze and propose workable solutions to define an organization's research and development strategy
- d) Identify, define, analyze and propose workable solutions to manage innovation projects
- e) Ability to judge the appropriateness of the processes, tools and communication skills applied to manage and organize for innovation at the project and organizational level
- f) Ability to write, present and evaluate a development plan for an innovation trajectory
 - 6) Fellows will also develop the following scholarly skills:
 - a) Identify the methodologies applied in scientific research
 - b) Identify the character of the most important journals in their field
 - c) Judge the results of research based on different methodologies and on the journals in which it has been published
 - d) Translate the findings of research into practice
 - e) Improve your written and oral presenting skills

GENERAL UROLOGY FELLOWS AND MEDICAL STUDENTS

General urology residents from four programs rotate through Children's Hospital. These include George Washington University, Georgetown University, Walter Reed Army Hospital and the Washington Hospital Center. Additionally, 4th year medical students from George Washington University who are interested in either pediatrics or urology may elect a two-week rotation on the pediatric urology service.

An integral part of the responsibilities of the service is the education of these fellows and students. Students and fellows participate both in the operating room and also in the outpatient areas and are given the opportunity to carry out the initial evaluation of patients. They then present these patients either directly to an attending urologist or the pediatric urology fellow who then verifies his/her recommendation with the supervising attending urologist. Supervision of all fellows is carried out all the time.

Additionally, many of the surgical cases are relatively minor and are repetitive for the pediatric urology fellow. Thus, to further sharpen his/her surgical skills he/she serves as the teaching assistant on many of these cases with the attending surgeon taking a less active supervisory role

CONFERENCES

The weekly uroradiology/case management conference covers the major diagnostic imaging studies of the week with presentations of the pertinent details by all the fellows on the service and discussion of the studies by an attending radiologist as well as the attending pediatric urologists. This conference gives the fellows and the staff the opportunity to better understand the diagnostic studies, their science and applicability and other options in terms of evaluation. The topics covered are dependent upon cases as they present. Sonograms, cystograms, nuclear medicine studies, CT scans and MRI studies are reviewed as they may apply.

The material pertinent to the organization of the monthly Saturday All-City Grand Rounds are primarily case records and diagnostic imaging studies. This conference is attended by all fellows from four urology residency training programs in Washington DC and by attending pediatric and some general urologists. The fellows present cases to other fellows who have previously rotated through pediatric urology. The case is presented much as is done for oral boards in that a history is given, pertinent physical findings are asked for by the presentee and studies are read by the fellow called upon to discuss the case. Then, the presentee is asked to discuss management options. This is done without the fellow discussing the case having any previous knowledge of the case and allows him/her to learn to "think on his feet", much as he/she would do for ABU boards. The case is subsequently discussed by the Urology attendings at the conference when appropriate.

One of the cases presented at the monthly Saturday Grand Rounds is then discussed in depth by one of the general urology fellows on rotation. This constitutes a literature review and organization of a formal presentation using audio-visual aids. Questions then follow the presentation. This format enables the fellow to become familiar with formal medical presentations.

The Thurs. AM topic oriented conference is designed to cover the full scope of pediatric urology over a 2 year period (although the fellow training program is one clinical year, the fellow is actually present for two consecutive years, one being unaccredited and in the laboratory. The conference schedule is thus designed with this in mind). Chapters from Clinical Pediatric Urology are covered sequentially during this time. Presentations are given by the various fellows on the service, including both pediatric urology and general

urology fellows. At least one attending pediatric urologist is present at these meetings to add depth and supervise the learning process.

1. Embryology of genitourinary tract.
2. Fetal urology and prenatal diagnosis
3. Pediatric endourology
4. Urinary tract infections
5. Neurourology and the neuropathic bladder
6. Dysfunctional elimination; evaluation and treatment
7. Treatment of bladder outlet obstruction and urinary incontinence
8. Bladder augmentation
9. Urinary Diversion
10. Renal and ureteral anomalies; evaluation and treatment
11. Cystic kidney disease
12. Anomalies of the urinary bladder
13. Vesicoureteral reflux and prune belly syndrome
14. Urogenital sinus, cloaca and imperforate anus
15. Urethral valvular anomalies
16. Hypospadias and epispadias
17. Ambiguous genitalia and gender assignment
18. Testicular and scrotal abnormalities
19. Tumors of the kidney and retroperitoneum
20. Tumors of the lower urinary tract and genitalia
21. Urinary trauma and stone disease

Finally, there is a monthly research conference held either before the Saturday Grand Rounds or on Thursdays after the topic review conference. This is lead by Dr. Pohl who is Director of research. An update is given regarding both clinical and laboratory research projects with all those involved in attendance

CLINICAL AND CONFERENCE SCHEDULE

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Surgery	Surgery	Surgery	Research/ Topic Oriented Conference	Surgery	All City Grand Rounds
Surgery	1-4:30 Spina Bifida 4:30-6 UroRad Conf	Surgery	Outpatient Clinic	Surgery	

Week 2

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Surgery	Surgery	Surgery	Research/ Topic Oriented Conference	Surgery	
Surgery	1-4:30 Spina Bifida 4:30-6 UroRad Conf	Surgery	Outpatient Clinic	Surgery	

Week 3

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Surgery	Surgery	Surgery	Research/ Topic Oriented Conference	Surgery	
Surgery	1-4:30 Spina Bifida 4:30-6 UroRad Conf	Surgery	Outpatient Clinic	Surgery	

Week 4

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Surgery	Surgery	Surgery	Research/ Topic Oriented Conference	Surgery	
Surgery	1-4:30 Urodynamic Studies 4:30-6 UroRad Conf	Surgery	Outpatient Clinic	Surgery	

