Department of Urology

Edward M Schaeffer, MD/PhD
Edmund Andrews Professor of Urology
Chair, Department of Urology
Urologist-in-Chief, NMH
Key Facts about Northwestern Urology

- One of the oldest Urology departments in the country (established 1900)

- Residency program began in 1945
  - 161 alumni

- 41 Faculty
  - 27% women
  - 15% African-American

- Faculty achievements include:
  - 193,000 citations
  - 3 of the top cited articles in urology
  - AAGUS Keyes Medal
  - AUA Distinguished Scholar Alumni Award
  - American Society for Clinical Oncology – Clinical Cancer Advance of the Year
  - Castle Connolly Physician of the Year
  - President of the American Urological Association
  - 2 American Urological Association Eugene Fuller Triennial Prostate Awards
Department Philosophy

• Patient-centric, highly agile program

• Clinical questions and clinical need drive our programs and discoveries
  o Apply key basic science discoveries to “real life” problems
  o Improve the understanding of urologic subspecialties and the conditions we treat

• Strong partnerships with patients
  o “Partners in discovery”
Northwestern Urology is a Leader in Clinical Care

- **Adult Urology:**
  - Top Urology program in Illinois in *U.S. News & World Report* rankings for past 22 years
  - Market leader in Illinois

- **Pediatric Urology:**
  - 5th in *U.S. News and World Report* rankings
  - Highest ranked program in Illinois
  - Market leader in Illinois

- **Northwestern Memorial Hospital**
  - 13th on *U.S. News* Best Hospitals Honor Roll

- **2017 Clinical Performance**
  - 4,313 surgical cases
  - 30,456 clinic visits
  - 12,474 new patient appointments

- **2018 resident graduate case log average: 2,468**
Unique Features of Northwestern Urology Residency

• Urology training begins in year one
  – 2017-18 PGY1 resident average cases - 663

• Personalized, integrated and flexible curriculum
  – 6 months of resident-driven elective rotations
  – ANY specialty
  – National and international away electives
  – Subspecialty experience with fellowship-trained faculty

• Clinical training combined with laboratory/clinical research
  – Fully-funded research year
  – Dedicated research mentor for each resident
  – Statistical, database construction/maintenance, and editorial support

• American Urological Association and Chicago Urologic Society memberships
  – Expenses paid by department for residents with abstracts accepted to AUA meeting
  – Residents attend CUS monthly meetings Nov-April
Leader in Research & Discovery

Clinical Research

- More than 9,000 patients currently enrolled in 37 clinical trials
- $10.1 M research funding
- #2 Urology NIH Funding
- 150 publications in 2017-18 academic year
Northwestern Medicine

- 12 hospitals
- 36 locations
- 33,700 physicians, nurses and staff
  - 4,400 aligned physicians
  - 1,159 residents and fellows
  - 46 NM urologists
- 85,000 inpatient admissions and 2.2 million outpatient encounters
Our Approach: Complete Resident Training

- Education
- Clinical
- Research
Educational Opportunities

Protected time for residents

All residents attend

• Conferences (Thursday PM)
  – Resident Teaching Conference
    – Topic-based lectures
    – Board review
    – AUA Clinical Practice Guidelines
  – Urology Grand Rounds
    – Presented by Northwestern Urology faculty
    – Journal club
    – Resident case presentations
    – Guest speakers
  – Practice-Based Learning & Improvement
    – Senior residents teach junior residents
    – Board reviews
    – Clinical questions and discussion

• Conferences (Friday AM)
  – Morbidity and Mortality Conference
  – Pre-operative Conference
  – Site-specific didactics (i.e. pediatric urology during Lurie Children’s rotations)
  – NM Multi-Disciplinary GU Oncology
Educational Opportunities

Simulation

Northwestern Simulation
• State-of-the-art simulation education center
• Residents have 24 hour access to simulation lab
• Laparoscopic trainer, TURP trainer, Mimic robotic trainer

Robotic trainers
• VA
• Lurie
• Northwestern

Resident Simulation Labs
(1-2 Full days)
• 2018: Open pelvic & open scrotal surgery
• 2017: Open abdominal surgery, bowel handling
• 2016: Anatomical approach to the pelvis
Educational Opportunities

Visiting Professorships

**Adult Urology Visiting Professor**

- 2018 - Shahrokh Shariat (Medical University of Vienna)
- 2017 - Colin Dinney (MD Anderson)
- 2016 - Margaret Pearle (UT Southwestern)

**Pediatric Urology Visiting Professor**

- 2018 - Joao Luiz Pippi Salle (Sidra Medical & Research Center)
- 2017 - Patrick Cartwright (University of Utah)
- 2016 - Douglas Canning (Children’s Hospital of Philadelphia)
Educational Opportunities
Local and National Meetings

Chicago Urological Society
- First Wednesday November-April
- Resident time protected to go to every meeting

AUA Annual Meetings
- All research residents attend the national meeting
- Residents who have abstracts accepted attend the meeting
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Keynote</th>
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<tbody>
<tr>
<td>November 7, 2018</td>
<td>Surgical Management of Renal Masses</td>
<td>Christopher Wood, MD (MD Anderson)</td>
</tr>
<tr>
<td>December 5, 2018</td>
<td>Prostate Cancer: From Active Surveillance to Locally Advanced/Oligometastatic Disease – Updates in the Management Across the Disease Spectrum</td>
<td>H. Ballentine Carer, MD (Johns Hopkins)</td>
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<tr>
<td>January 9, 2019</td>
<td>Socioeconomic Issues in Urology</td>
<td>Christopher Gonzalez, MD, MBA (Loyola)</td>
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<tr>
<td>February 6, 2019</td>
<td>What’s New in Bladder Cancer/Medicolegal Issues in Urology</td>
<td>Toby Williams, MD (CEO SCRUBS Risk Retention Group)</td>
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<tr>
<td>March 6, 2019</td>
<td>Erectile Dysfunction</td>
<td>Wayne J.G. Hellstrom, MD (Tulane)</td>
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<tr>
<td>April 3, 2019</td>
<td>What’s New in Radiology &amp; Interventional Radiology</td>
<td>Daniel Dalton, MD (Northwestern)</td>
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</tbody>
</table>
Northwestern Urology Resident Education

100% Board Pass Rate

Simulation

Didactics

Conferences
Mentorship
Clinical & Research

Career

1:1 Mentorship

Clinical Training

Research

Well-Being

Example
Chris Morrison
Mentor: Robert Brannigan
Career: Ted Schaeffer
Well-Being: Stephanie Kielb
Research Mentor: Arun Sharma & Joshua Meeks
Our Approach: Complete Resident Training

Education

Clinical

Research
Training in all Urologic Subspecialties

- Female Pelvic Medicine & Bladder Health
- Benign Conditions
  - BPH
  - Kidney Stones & General Urology
  - Pelvic Pain
- Male Fertility
  - Sexual Dysfunction
- Urologic Oncology
- Pediatric Urology
- Transitional Urology
- Reconstructive Surgery
## Training Sites

<table>
<thead>
<tr>
<th>Hospital/Center</th>
<th>Duration</th>
<th>Year-Level</th>
<th>Additional Details</th>
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<tbody>
<tr>
<td>Northwestern Memorial Hospital</td>
<td>27 Months</td>
<td>General Surgery (PGY1-PGY2), Urology (PGY1-PGY6)</td>
<td>#1 Hospital in Illinois, 894 beds, Level I trauma center</td>
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<tr>
<td>Jesse Brown VA Medical Center</td>
<td>12 Months</td>
<td>PGY1, 2, 3 &amp; 6</td>
<td>Serves 62,000 veterans, 200 beds, VA: 3.3 miles</td>
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<tr>
<td>John H. Stroger Jr. Hospital of Cook County</td>
<td>3 months</td>
<td>PGY5</td>
<td>464 beds, Level I adult and pediatric trauma center, County: 3.1 miles</td>
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<tr>
<td>Ann &amp; Robert H. Lurie Children’s Hospital of Chicago</td>
<td>6 months</td>
<td>PGY1 &amp; PGY 3</td>
<td>288 beds, Level I pediatric surgery center</td>
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</table>
6 Year Rotation Schedule: Chris Morrison

**PGY1**
- Pediatric Urology (Green)
- Urology Consults (Yellow)
- VA Urology (Red)
- General Surgery (Purple)

**PGY2**
- Elective Plastics (Green)
- VA Urology (Red)
- Outpt Urology (Yellow)
- NM Urology (Blue)
- General Surgery (Purple)

**PGY3**
- VA Urology (Red)
- Electives: Med onc, rad onc, peri-op (Purple)
- Outpt Urology (Yellow)
- NM Urology (Blue)
- Pediatric Urology (Green)

**PGY4**
- Research Year (White)

**PGY5**
- Electives: MRI fusion biopsy, urogynecology, colorectal (Green)
- Outpt Urology (Yellow)
- Stroger Urology (Orange)
- NM Urology (Blue)

**PGY6**
- NM Urology (Blue)
- VA Urology (Orange)

Northwestern Medicine
Electives

 Resident Selected

**PGY2 & PGY3 (3 months)**

- Plastics
- Colorectal
- Radiology
- Pathology
- Radiation oncology
- Medical oncology

**PGY5 (3 months)**

- **Either on campus or away**
- National
  - Children’s Hospital of Philadelphia-Pediatric Urology
  - Indiana Urology
  - Cincinnati Children’s Hospital- Pediatric and Adolescent Gynecology
  - Vanderbilt Urology
  - UT Southwestern
  - International
Recent International Electives:
• Vienna General Hospital- Andlinger Residency Exchange
• Kibagabaga Hospital- Fistula Program, Kigali, Rwanda

This Year’s International Electives:
• Sri Lanka
• Nigeria
• Japan
Our Approach: Complete Resident Training

Education

Clinical

Research
Research Programs

**Andrology**
- Nelson Bennett
- Robert Brannigan

**Endourology**
- Robert Nadler

**GU Oncology**
- William Catalona
- Shilajit Kundu*
- Adam Murphy*
- Edward Schaeffer*

**Health Services & Outcomes**
- Greg Auffenberg
  - Karl Bilimoria*
- Emilie Johnson
  - David Victorson*

**Inflections, Inflammation & Pelvic Pain**
- Sarah Flury
  - Anthony Schaeffer*

**Reconstruction**
- Matthias Hofer*

**Regenerative Medicine**
- Earl Cheng*
- Edward Gong*
  - Jason Wertheim*

**Translational Urology**
- Diana Bowen
- David Chu
- Stephanie Kielb

**Physician Scientists**

*Lab Year Mentor
Italics = Other FSM Department
Areas of Benchtop Research

- **Cancer Biology & Epigentics**
  - Sarki Abdulkadir
  - Qi Cao
  - David Gius
  - Ali Shilatifard

- **Immunotherapy**
  - Jennifer Wu
  - Jindan Yu

- **Infections, Inflammation & Pelvic Pain**
  - David Klumpp
  - Praveen Thumbikat*

- **Nanotechnology**
  - Shad Thaxton
  - Vadim Backman*

- **Regenerative Medicine**
  - Arun Sharma*

*Lab Year Mentor
Italics = Other FSM Department

To learn about individual expertise and collaborations: [https://www.scholars.northwestern.edu/](https://www.scholars.northwestern.edu/)
Resident Research and Productivity

• 150 publications in 2017-18 academic year
  – 66% are led by residents
  – Select publications
PGY 4: The Research Year

- Full year of protected research time
- Work with Northwestern faculty member of your choice based on your research interests
- Limited clinical responsibilities
  - 4 weeks of night float (20 calls) during lab year
- Lab residents receive normal resident stipend and $5,000 allocated for research-related supplies

2018-19 Lab Residents

Jason Cohen  
Mentor: Anthony Schaeffer

Adarsh Manjunath  
Mentor: Jason Wertheim

Mehul Patel  
Mentor: Edward Gong

Emmy Yura  
Mentor: Matthias Hofer
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<tr>
<td><strong>Joceline Fuchs:</strong> Reducing the Inflammatory Milieu in a Rat Model of Substitution Urethroplasty with Bone Marrow Stem Cell Populations (Arun Sharma, urology)</td>
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<td><strong>Richard Matulewicz:</strong> Cystectomy care redesign (Christopher Gonzalez, urology and Karl Bilimoria, surgery and quality)</td>
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<td><strong>Daniel Oberlin:</strong> Identification of a Serum MicroRNA signature for the Diagnosis of Prostate Cancer (Shad Thaxton and Shilajit Kundu, urology)</td>
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<td><strong>Channa Amarasekera:</strong> disparities in prostate cancer treatment in sexual minorities (Som Kundu, urology)</td>
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<td><strong>Brian Jordan:</strong> Development of a molecular signature for high grade T1 bladder cancer to predict response to BCG therapy (Joshua Meeks, Urology)</td>
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<td><strong>Rotimi Nettey:</strong> Prostate cancer prevalence and aggression in Nigerian men (Adam Murphy, urology)</td>
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<tr>
<td><strong>Ashima Singal:</strong> Adherence to active surveillance for localized prostate cancer (Ted Schaeffer, urology and Emilie Johnson, pediatric urology)</td>
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**2014-2015**

**Diana Bowen:** The role of the androgen receptor and effect of AR pathway blockade on bladder detrusor hypertrophy in the setting of partial bladder obstruction (Edward Gong, pediatric urology)

**Amanda Chi:** Northwestern Center for Device Development (CD2) Innovation Fellowship— (Maryam Saleh, INVO)

**Daniel Mazur:** Using ultrasound elastography to measure changes in the elastic properties of the corporal bodies and bladder wall (Praveen Thumbikat, urology)

**2015-2016**

**2016-2017**

**J.O. DeLancey:** Disparities, quality indicators and outcomes in urologic oncology (Karl Bilimoria, surgery and quality)

**Alexander Glaser:** Immune response to urothelial carcinoma in a mouse model and alterations of the immune response via immune checkpoint inhibitors (Joshua Meeks, Urology)

**Christopher Morrison:** Improving Neovascularization and Wound Healing using Pro-Angiogenic Nanofibers in a Rat Urethroplasty Model (Arun Sharma, urology)

**Kalen Rimar:** PARP1 inhibition in bladder cancer (Joshua Meeks, urology)
How do I do research?

**Resources**
- Data warehouse
- Pilot funding for trainees
- Editorial & IRB support
- Statistical services
- Database development
- Research Coordinator

**Mentoring**
- Selected PGY1 year
- Structured research meetings with Drs. Meeks & Thaxton
- Lab year mentor

**Design your project**
- Which PI and Lab?
  - Choose from any department
  - Write proposal

**12 month protected research**
- Only 4 weeks of night float
- Department funds for supplies
- Fully supported

**Goals**
- 1 review paper or chapter
- AUA abstract submission
- 4 original manuscripts
Our Residents
Current Residents: PGY1 and PGY2

Dylan Isaacson
UCSF

Neil Mistry
OHSU

Rashid Siddiqui
Univ. Wisconsin

Aisha Siebert
Univ. Rochester

Lauren Cooley
VA Commonwealth

Matthew Hudnall
UCSF

Jeremy Lai
Northwestern

Minh Pham
Univ. of N. Carolina
Current Residents: PGY3 and PGY4

Anuj Desai
Temple University

Oliver Ko
Case Western

Amanda Vo
Northwestern

Adam Weiner
Univ. of Chicago

Jason Cohen
Johns Hopkins

Adarsh Manjunath
Northwestern

Mehul Patel
Univ. of Virginia

Emily Yura
Rush University
Current Residents: PGY5 and PGY6

Channa Amarasekera  
Harvard

Rotimi Nettey  
Yale

Ashima Singal  
Northwestern

J.O. DeLancey  
Univ. of Michigan

Brian Jordan  
Univ. of Washington

Chris Morrison  
UCLA
Current Resident Demographics

**Race/Ethnicity**
- African American: 23%
- Asian: 9%
- Caucasian: 9%
- Hispanic: 59%

**Gender**
- Female: 27%
- Male: 73%

n=22
Medical Schools

- 28 medical schools represented over the past 10 years
  - Midwest: 50%
  - South: 14%
  - Northeast: 14%
  - West: 20%
  - Outside US: 2%

n=49 residents
Career Paths Following Graduation

34 Graduates (past 10 years)

- Private Practice: 12 (33%)
  - Academic Medical Center: 2 (17%)
  - Traditional Private Practice: 10 (83%)
- Research: 1 (3%)
- Fellowship: 21 (64%)
  - Academic Practice: 14 (67%)
  - Private Practice: 6 (29%)
  - Currently in Fellowship: 1 (4%)
Alumni Fellowship Training

Fellowship Programs

- Baylor (Andrology)
- Children’s Hospital of Philadelphia (Peds)
- Cleveland Clinic (Reconstruction)
- MD Anderson (Oncology)
- Memorial Sloan-Kettering (Oncology)
- Michigan (Oncology)
- UCSF (Reconstruction)
- USC (Oncology)
- UT Southwestern (Reconstruction)
- Vanderbilt (Endourology)

Alumni Fellowship Training Past 10 Years

- Andrology: 38%
- Urologic Oncology: 14%
- Pediatric Urology: 33%
- Reconstruction: 5%

n=21 residents
Resident Wellness: An Institutional Priority

- Residency training is fundamentally stressful
- Rate of depression among residents is 22% to 35%
- Physicians in practice have a substantially elevated risk of suicide compared to the general population

Northwestern is committed to ensuring that residents remain physically and mentally healthy

- Institutional goal to create a supportive culture to improve resident wellness and to proactively address mental health issues faced by residents
  - Providing resources to our department to improve educational experience
    - For example, we are hiring 2 APP’s in addition to our existing four NP’s and PA’s to reduce the service burden on residents
  - Increase awareness of depression risk during training
  - Destigmatizing depression through education
  - Resident Wellness Inventory and Wellness Toolbox containing self-appraisal tools
  - Wellness liaison provides confidential mental health evaluation and treatment to residents
Resident Wellness: An Institutional Priority
Housestaff Wellness Program Liaison: Ashley Bassett

- Available to housestaff through a direct line 24/7
- Resource for wellness or mental health concerns
- Maintains trainee confidentiality
  - Nothing communicated with the program, faculty, or institution
Diversity and Inclusion

• Goal: Create a medical campus environment of belonging and inclusion for all regardless of race, ethnicity, gender, sexual orientation, socio-economic status, marital status, language, education, age, physical abilities, religious and political beliefs

• Feinberg School of Medicine Initiatives
  – Goal: Raise awareness, expand engagement and promote discovery
    • Underrepresented Residents and Fellows Forum
    • Diversity and Inclusion Council
    • Feinberg OutList and AllyList
    • Women’s Health Research Forum
    • Community partnerships

• Department of Urology Initiatives
  – LGBT Safe Space Training
  – Health education, screening and outreach to at-risk communities and underserved populations
Future Direction and Growth
Recent Programmatic Expansion

• Programmatic Growth
  – Oncology - Qi Cao, PhD
    • Basic Science - histone modification and cancer progression
  – Oncology and Health Services - Greg Auffenberg, MD MPH
    • Clinician Educator - Cancer survivorship, medical informatics, quality improvement
  – Transitional Urology - Diana Bowen, MD
    • Clinician Educator - Transition of care for young adults with congenital urologic conditions
  – Male Fertility/Andrology - James Wren, MD
    • Clinician Educator - male reproductive medicine and surgery, oncofertility
  – Genetic Counselor- Brittany Szymaniak

• Physical Expansion
  – New office space with dedicated resident touchdown space and work stations
  – Clinic build out and renovations completed by January 2019
    • 26 additional exam rooms (16 → 42)
    • 9 additional procedure rooms (5 → 14)
    • Integrated GU Oncology program
Departmental Vision for Growth and Discovery

Transitional Urology Program

• Joint program between Lurie Children’s / Northwestern Urology / Shirley Ryan AbilityLab

• Adolescents and Young Adult patients that require long-term urologic care
  – Coordinates care of patients with complex congenital urologic problems across multiple disciplines and bridges institutions
  – Promotes collaboration between adult urology, neurosurgery, nephrology, physiatry and gastroenterology/motility
  – Academic infrastructure for clinical outcomes research with longitudinal studies beginning in childhood
Departmental Vision for Growth and Discovery
Program for Innovation and Quality in Urology

• System wide initiative to understand and improve GU cancer care
  – Based on real-time data acquired from all NM hospitals
  – Data used to support collaborative efforts to improve quality and efficiency of care
  – Integrate data to point of care to impact quality and decision making
  – Unique data stream with many opportunities for resident research and quality improvement activities
Urology Residency Match Guidelines for Programs

• All vacancies in each program will be offered as part of the match.
• No offers or commitments to "rank an applicant first on my list" will be made to applicants before the match.
• No verbal contact with applicants will be made by anyone from a program after the interviews. Contact by letter is permissible.
• No offers will be made to an applicant outside the match until after the match is completed.
• Programs agree to accept any applicant submitted on their ranking list.
• Programs agree that after the match no commitments will be made with an applicant matched with a different program unless there is mutual agreement between all three parties including both program directors and the applicant.
Second Looks

• If you want to come back, you are welcome (contact Kelly Ross)
  – 312-694-6083
  – K-ross@northwestern.edu

• Coming for a second look does not impact your rank
Thank you!