

Pediatric Urology

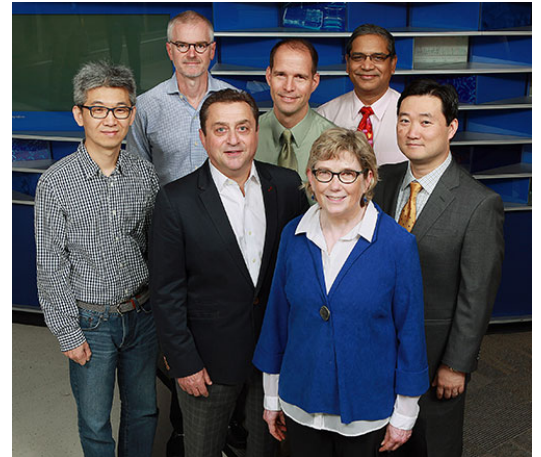
Division Details

RESEARCH AND TRAINING DETAILS

Faculty	6
Joint Appointment Faculty	2
Research Fellows and Post Docs	1
Total Annual Grant Award Dollars	\$346,800
Total Publications	16

CLINICAL ACTIVITIES AND TRAINING

Clinical Fellows	4
Inpatient Encounters	774
Outpatient Encounters	18,007



Row 1: JS Park, E Minevich, E Jackson, P Noh

Row 2: W DeFoor Jr, B VanderBrink, P Reddy

Research Highlights

Divisional Research Recognition

The Division of Pediatric Urology had two abstracts selected as clinical prize finalists at the Society for Pediatric Urology (SPU) Fall Congress. One of the finalists, "Prospective evaluation of urinary incontinence in morbidly obese adolescents presenting for weight loss surgery", was a collaborative project with other Cincinnati Children's divisions and outside institutions. The second abstract, "Clinical and urodynamic outcomes in children with anorectal malformation subtype of recto-bladder neck fistula", also was collaborative in nature, as it included team members from the Cincinnati Children's [Division of Pediatric General and Thoracic Surgery](#).

W. Robert DeFoor, MD, MPH

[Dr. DeFoor](#) served as an abstract reviewer for several national and international meetings and conducted a panel on "Kidney Stones" at the Pediatric Urology Fall Congress in Prague, Czech Republic.

Elizabeth C. Jackson, MD and W. Robert DeFoor, MD, MPH

Drs. [DeFoor](#) and [Jackson](#) presented research at the [Society for Pediatric Urology](#) annual meeting in Dallas, September, 2016, on the use of calcium to citrate ratios in the urine of children with stones. This ratio was different between children with on stone compared with children who had recurrent stones, and may help identify children who need to be followed more closely and aggressively.

Denise Ferguson, APRN

[Denise Ferguson](#) received a grant from the Cincinnati Children's Cooperative Society for the purchase of bedwetting alarms to use in order to study the most effective way to teach families to use the alarms. Bedwetting alarms lead to the best long term cure of nocturnal enuresis. Using the alarm consistently is difficult for the child and the family. Proper coaching may allow families to continue the alarm use until the child is dry every night.

Elizabeth Mann, PhD, and Melissa Mogle

Dr. Mann and Melissa Mogle have initiated research of a mouse model of bladder organ development with the goal of understanding basic mechanisms of bladder detrusor muscle patterning and growth. Loss of the transcription factor Tcf21 is sufficient to delay muscle formation and leads to a reduction in bladder size. Hope is that further study of this novel molecular pathway will provide new insights into bladder muscle pathology in patients with voiding dysfunction.

Significant Publications

DeFoor WR, Bischoff A, **Reddy P**, **VanderBrink B**, **Minevich E**, **Schulte M**, **Sheldon C**, Pena A. **Chronic Kidney Disease Stage Progression in Patients Undergoing Repair of Persistent Cloaca**. *J Urol*. 2015 Jul;194(1):190-4.

Children born with persistent cloaca undergo complex pelvic reconstruction early in life. Long-term risks of bladder dysfunction and chronic kidney disease are well described. We report upper urinary tract outcomes and the risk of chronic kidney disease stage progression in this patient population. Early outcomes in patients with stage I to III chronic kidney disease demonstrate that maintained renal function is possible despite a high rate of lower urinary tract dysfunction. Aggressive bladder management may help prevent progressive renal injury in this population.

Greenfield SP, Cheng E, **DeFoor W**, Kropp B, Rushton HG, Skoog S, Carpenter M. **Vesicoureteral Reflux and Antibiotic Prophylaxis: Why Cohorts and Methodologies Matter**. *J Urol*. 2016 Oct;196(4):1238-43.

Published cohorts of children with vesicoureteral reflux placed on antibiotic prophylaxis differ in baseline characteristics and methodology. Researchers combined these data in meta-analyses to derive treatment recommendations. We analyzed these cohorts in an attempt to understand the disparate outcomes reported. Subpopulations and methodologies vary significantly in published series of children with vesicoureteral reflux on antibiotic prophylaxis. It is inappropriate to combine outcomes data from these series in a meta-analysis, which would serve to blur distinctions between these subpopulations. View with caution broad recommendations or guidelines based on meta-analyses.

Barthold JS, Wang Y, Kolon TF, Kollin C, Nordenskjold A, Fisher AO, Figueroa TE, BaniHani AH, Hagerty JA, Gonzalez R, **Noh PH**. **Pathway analysis supports association of nonsyndromic cryptorchidism with genetic loci linked to cytoskeleton-dependent functions**. *Hum Reprod*. 2015 Oct;30(10):2439-51.

A genome-wide association study (GWAS) suggests that susceptibility to cryptorchidism is heterogeneous, with a subset of suggestive signals linked to cytoskeleton-dependent functions and syndromic forms of the disease. As the only GWAS to date of nonsyndromic cryptorchidism, these data will provide a basis for future efforts to understand genetic susceptibility to this common reproductive anomaly and the potential for additive risk from environmental exposures.

DeFoor WR, Asplin JR, Kollar L, **Jackson E**, Jenkins T, **Schulte M**, Inge T. **Prospective evaluation of urinary metabolic indices in severely obese adolescents after weight loss surgery**. *Surg Obes Relat Dis*. 2016 Feb;12(2):363-7.

Observational studies in obese adults have found abnormal urinary metabolic indices that predispose to nephrolithiasis. There have been few studies performed in severely obese adolescents. Elevated excretion of oxalate in the urine of severely obese adolescents and in those who have undergone RYGB may portend increased risk for kidney stone formation. Researchers will need to conduct larger longitudinal studies to verify these findings, and to determine the clinical risk of developing stone disease in these patient populations.

Mann EA, Alam Z, Hufgard JR, **Mogle M**, Williams MT, Vorhees CV, **Reddy P**. **Chronic social defeat, but not restraint stress, alters bladder function in mice**. *Physiol Behav*. 2015 Oct 15;150:83-92.

Voiding disorders in humans, particularly in children, associate with increased incidence of behavioral issues as well as past history of childhood abuse. We hypothesized that creating stress in mice, utilizing either a chronic social defeat model (SD) or restraint stress in shallow water model (RSSW) would engender changes in bladder function, morphology, and behavior, thereby enabling us to study the resultant voiding dysfunction. Mice exposed to repeated SD (14 days) respond with altered voiding indicative of urine

retention, and exhibit bladder wall changes consistent with hypertrophy while maintaining the urothelial barrier. These changes were not observed with repeated RSSW. SD, in contrast to RSSW, provides a model of psychological stress to further study the interplay of behavior and bladder dysfunction, enabling an improved understanding of voiding dysfunction, and the ability to create innovative and more effective management pathways for children who present with voiding dysfunction.

Division Publications

1. Barthold JS, Wang Y, Kolon TF, Kollin C, Nordenskjold A, Olivant Fisher A, Figueroa TE, BaniHani AH, Hagerty JA, Gonzalez R, Noh PH, Chiavacci RM, Harden KR, Abrams DJ, Kim CE, Li J, Hakonarson H, Devoto M. **Pathway Analysis Supports Association of Nonsyndromic Cryptorchidism with Genetic Loci Linked to Cytoskeleton-Dependent Functions.** *Hum Reprod.* 2015; 30:2439-51.
2. Bischoff A, DeFoor W, VanderBrink B, Goebel J, Hall J, Alonso M, Reddy P, Pena A. **End Stage Renal Disease and Kidney Transplant in Patients with Anorectal Malformation: Is There an Alternative Route?** *Pediatr Surg Int.* 2015; 31:725-28.
3. Dangle PP, Akhavan A, Odeleye M, Avery D, Lendvay T, Koh CJ, Elder JS, Noh PH, Bansal D, Schulte M, MacDonald J, Shukla A, Kim C, Herbst K, Corbett S, Kearns J, Kunnavakkam R, Gundeti MS. **Ninety-Day Perioperative Complications of Pediatric Robotic Urological Surgery: A Multi-Institutional Study.** *J Pediatr Urol.* 2016; 12:102 e1-6.
4. DeFoor WR, Jr. **Challenges in Predicting Renal Outcomes in Boys with Posterior Urethral Valves.** *J Urol.* 2016; 196:639-40.
5. DeFoor WR, Asplin JR, Kollar L, Jackson E, Jenkins T, Schulte M, Inge T. **Prospective Evaluation of Urinary Metabolic Indices in Severely Obese Adolescents after Weight Loss Surgery.** *Surg Obes Relat Dis.* 2016; 12:363-7.
6. DeFoor WR, Bischoff A, Reddy P, VanderBrink B, Minevich E, Schulte M, Sheldon C, Pena A. **Chronic Kidney Disease Stage Progression in Patients Undergoing Repair of Persistent Cloaca.** *J Urol.* 2015; 194:190-4.
7. Franklin A, VanderBrink B, DeFoor WR. **A Fast-Growing, Painless, Solid Scrotal Mass.** *JAAPA.* 2015; 28:35-8.
8. Greenfield SP, Cheng E, DeFoor W, Kropp B, Rushton HG, Skoog S, Carpenter M. **Vesicoureteral Reflux and Antibiotic Prophylaxis: Why Cohorts and Methodologies Matter.** *J Urol.* 2016; 196:1238-43.
9. Hass MR, Liow HH, Chen X, Sharma A, Inoue YU, Inoue T, Reeb A, Martens A, Fulbright M, Raju S, Stevens M, Boyle S, Park JS, Weirauch MT, Brent MR, Kopan R. **Spdamid: Marking DNA Bound by Protein Complexes Identifies Notch-Dimer Responsive Enhancers.** *Mol Cell.* 2015; 59:685-97.
10. Hawkins CM, Kukreja K, Singewald T, Minevich E, Johnson ND, Reddy P, Racadio JM. **Use of Cone-Beam Ct and Live 3-D Needle Guidance to Facilitate Percutaneous Nephrostomy and Nephrolithotripsy Access in Children and Adolescents.** *Pediatr Radiol.* 2016; 46:570-74.
11. Khan MK, VanderBrink BA, DeFoor WR, Minevich E, Jackson E, Noh P, Reddy PP. **Botulinum Toxin Injection in the Pediatric Population with Medically Refractory Neuropathic Bladder.** *J Pediatr Urol.* 2016; 12:104 e1-6.
12. Liu X, Li H, Rajurkar M, Li Q, Cotton JL, Ou J, Zhu LJ, Goel HL, Mercurio AM, Park JS, Davis RJ, Mao J. **Tead and Ap1 Coordinate Transcription and Motility.** *Cell Rep.* 2016; 14:1169-80.
13. Lucas EJ, Baxter C, Singh C, Mohamed AZ, Li BR, Zhang JW, Jayanthi VR, Koff SA, VanderBrink B, Justice SS. **Comparison of the Microbiological Milieu of Patients Randomized to Either Hydrophilic or Conventional Pvc Catheters for Clean Intermittent Catheterization.** *J Pediatr Urol.* 2016; 12.
14. Mann E, Alam Z, Hufgard J, Mogle M, Williams M, Vorhees C, Reddy P. **Chronic Social Defeat, but Not Restraint Stress, Alters Bladder Function in Mice.** *Physiol Behav.* 2015; 150:83-92.

15. Sheldon C. **Thriving in Adversity: Psychotherapeutic Experiences in a Bone Marrow Transplant Unit.** *Camb Q Healthc Ethics.* 2016; 25:113-20.
16. VanderBrink BA, Reddy PP. **Early Urologic Considerations in Patients with Persistent Cloaca.** *Semin Pediatr Surg.* 2016; 25:82-9.

Grants, Contracts, and Industry Agreements

Annual Grant Award Dollars

Investigator	Title	Sponsor	ID	Dates	Amount
Elizabeth C Jackson, MD	Theracran Chewable Cranberry Tablets for the Prevention of Urinary Tract Infections in Children: A Randomized Controlled Trial.	American Assoc of Pediatric Urology (University of Oklahoma)	RV20132025-01	6/15/2015 - 6/15/2016	\$2,500
Joo-Seop Park, PHD	Cell Fate Regulation of Nephron Progenitors	National Institutes of Health	R01 DK100315	1/1/2014 - 12/31/2018	\$339,300
Pramod Reddy, MD	Short-term Outcomes of Genitoplasty in DSD	National Institutes of Health (University of Oklahoma)	R01 HD074579	7/5/2013 - 4/30/2018	\$5,000
Total Annual Grant Award Dollars					\$346,800