

CURRICULUM VITAE

Toby C. Chai, M.D., F.A.C.S.
John D. Young Professor of Surgery, Division of Urology
University of Maryland School of Medicine
Baltimore, MD

Date: October 10, 2007

B.A., Natural Sciences, Johns Hopkins University 1985

M.D., Indiana University School of Medicine 1989

Post Graduate Education and Training

Resident in General Surgery 1989-1991
University of Michigan Medical Center
Ann Arbor, MI

Resident in Urological Surgery 1991-1994
University of Michigan Medical Center
Ann Arbor, MI

Postdoctoral American Foundation for Urological Diseases 1995-1997
(AFUD) Research Fellow
Department of Urology and Neuroscience
University of Virginia, Charlottesville, VA

Certifications

Diplomate, NBME 1989

Diplomate, American Board of Urology 1998

Medical Licensures

State of Michigan Number 1992-1995

State of Virginia Number 1994-1998

State of Maryland Number 1994-2008

Employment History

Chief of Urology 1994-1995
Salem VAMC
Salem, VA

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| Research Instructor Department of Urology University of Virginia, Charlottesville, VA | 1996-1997 |
| Assistant Professor Department of Surgery, Division of Urology University of Maryland School of Medicine | 1997-2002 |
| Associate Professor with Tenure Department of Surgery, Division of Urology University of Maryland School of Medicine | 2002-present |

Professional Memberships

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| American Urological Association (AUA) | 1993 |
| Society for Urodynamics and Female Urology (SUFU) | 1995 |
| Society for Neuroscience (SNF) | 1996 |
| Society for Basic Urological Research (SBUR) | 1997 |
| Mid-Atlantic Section AUA | 1998 |
| Fellow of American College of Surgeons (FACS) | 2000 |
| American Association for Advancement of Science (AAAS) | 2002 |

Honors and Awards

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| 1. Honors Group Westinghouse Science Talent Search | 1981 |
| 2. Representative of USA International Symposium on Sciences and Humanities London, England | 1981 |
| 3. First Runner Up, Medical Student Research Day University of Maryland, Baltimore | 1986 |
| 4. First Prize, Michigan Urological Society's Residents' Day | 1991 |
| 5. American Foundation for Urologic Diseases (AFUD) Research Scholar Award | 1995 |
| 6. NIH Mentored Clinical-Scientist Career Development Award (K08 Series Award) | 1996 |
| 7. Second Prize, AUA CIRCON-ACMI Basic Science Prize Essay Contest American Urological Association Annual Meeting New Orleans, LA | 1997 |

8. Third Prize Poster (***Presenter: Jade Wong, MD***) 1999
Society of Uroradiology Annual Meeting
New Orleans, LA
9. Second Prize Poster 1999
International Bladder Symposium
Washington, DC
10. Honorable Mention 2001
Annual Jack Lapides Essay Contest in Neurourology
Anaheim, CA
11. Winner 2001
Pfizer International Cardura Competitive Awards Program
12. First Prize Winner, Basic Science Category 2001
Society for Urodynamics and Female Urology (SUFU) Annual Meeting
Anaheim, CA
13. Second Alternate, 2001
American Urological Association – European Urological Assoc.
Scholar Exchange Program
14. Young Investigator Award 2001
Society for Basic Urologic Research
15. First Prize (***Mentee: Jennifer MaLossi, MD***) 2001
Residents' Essay Contest, Basic Science
Mid-Atlantic AUA Annual Meeting
Hot Springs, VA
16. American Foundation for Urologic Disease (AFUD) 2003
(***Mentee: Yan Sun, PhD***)
Research Scholar Award
17. Marquis Who's Who in America 2003
18. Second Prize (***Mentee: Humphrey Atiemo, MD***) 2003
Resident's Essay Contest
Annual Mid-Atlantic Meeting
19. Speaker White Coat Ceremony for Class of 2007 2003
University of Maryland School of Medicine
20. Second Prize (***Mentee: Benjamin Lowentritt, MD***) 2004

- AUA-ACMI
Basic Science Prize Essay Contest
American Urological Association Annual Meeting
San Francisco, CA
21. Honorary Member of Academic Council 2004
Dnipropetrovsk State Medical Academy
Dnipropetrovsk, Ukraine
 22. Paul Zimskind Award 2005
For Continuing Excellence and Leadership
In Field of Voiding Dysfunction
Society for Urodynamics and Female Urology
 23. Member of American Board of Urology (ABU)/ 2005-2007
American Urological Association (AUA)
Examination Committee
 24. *Journal of Urology* Best Reviewer Award 2005
 25. AUA Leadership Program 2006-2007
 26. First Prize Winner (*Mentee: Gopal Gupta, MD*) 2006
Resident's Essay Contest
MidAtlantic AUA Annual Meeting
Washington DC
 27. First Prize Winner (*Mentee: Gopal Gupta, MD*) 2006
Society for Urodynamics and Female Urology (SUFU) Annual Meeting
Basic Science Essay Contest
San Diego, CA
 28. Honorable Mention (*Mentee: Gopal Gupta, MD*) 2007
Annual Jack Lapides Essay Contest in Neurourology
Anaheim, CA
 29. Third Prize Winner (*Mentee: Gopal Gupta, MD*) 2007
AUA-ACMI
Basic Science Prize Essay Contest
American Urological Association Annual Meeting
Anaheim, CA
 30. Best Basic Science Poster 2007
Society for Urodynamics and Female Urology Annual Meeting
San Diego, CA

Administrative Service

Institutional Service

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| Interviewer for Office of Admissions | 2002-2006 |
| Medical Student Research Day Judge | 2004 |
| Dept. of Surgery Representative, SOM Faculty Council | 2007-2008 |

Local and National Service

National Institutes of Health Grant Reviews:

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| Special Study Section for NIH RFA DK98-002 "The Effect of Diabetes on Urinary Bladder and Erectile Function" | 1998 |
| Special Grants Review Committee DDK-D | 1999-2000 |
| Writing Committee, NIDDK Bladder Research Progress Review Group | 2001 |
| Special Study Section for NIH RFA DK02-026 "Alternative Therapies for Benign Prostate Symptoms" | 2002 |
| Special Emphasis Panel ZRG1 SMB (05) NIH Center for Scientific Review | 2002 |
| Special Emphasis Panel ZRG1 RUS-D (01) NIH Center for Scientific Review March 24, 2004, Chris Langub, PhD (SRA) | 2004 |
| Special Emphasis Panel (SEP) ZRG1 RUS-D 50, 12 NIH Center for Scientific Review June 28, 2004, Chris Langub, PhD (SRA) | 2004 |
| Chair, SEP ZRG1 RUS-D 12 NIH Center for Scientific Review October 11, 2004, Chris Langub, PhD (SRA) | 2004 |
| Special Emphasis Panel UKGD IRG July 2005 Shirley Hilden, PhD (SRA) | 2005 |
| Special Emphasis Panel ZDK1 GRB-8 Ancillary Studies in Obesity Nov. 4, 2005 Maria Avila-Bloom. PhD (SRA) | 2005 |

Member UKGD 2005-2008
NIH Center for Scientific Review
Ryan Morris, PhD (SRA)

Foundation Grant Review Activity

Interstitial Cystitis Association – Fishbein Family 2001-05
Foundation Research Awards Study Section

Research into Ageing (United Kingdom) 2001
Fellowship Grant Reviewer

Diabetes Endocrinology Research Center (DERA) 2002
University of Washington, Seattle
Pilot and Feasibility Program Project Reviewer

American Foundation for Urologic Diseases Grant Reviewer 2004

Pfizer Detrol LA Research Grant Program 2004-06

American Urological Association Foundation Grant Reviewer 2007

Peer Reviewer – Journals

American Journal of Physiology – Renal
American Journal of Physiology – Regulatory, Integrative and Comparative
American Journal of Physiology – Cell Physiology
Asian Journal of Andrology
BJU International
Brain Research
Clinical Chemistry
FEBS Letters
Journal of Pelvic Medicine & Surgery
Journal of Surgical Research
Journal of Urology
Nature Clinical Practice Urology
Neurourology and Urodynamics
Neuroscience
Physiologic Genomics
Urology

American Urological Association

Meeting Abstract Reviewer 2005-2007

Editorial Board

Journal of Pelvic Medicine and Surgery (Williams&Wilkins) 2004-present

Current Bladder Dysfunction Reports (Current Science, Inc.) 2006-present
American Journal of Physiology – Renal 2007-2008

Community Service

Ordained Deacon at Chapelgate Presbyterian Church (PCA) 2004-present
Marriottsville, MD

Secretary of Diaconate Board, Chapelgate Presbyterian Church 2004-2006
(PCA), Marriottsville, MD

Chair of Advisory Committee for Maryland Regional Junior 2003-2005
Science and Humanities Symposium (JSHS)

Roundtable Leader “Science and Society” 2004
National Junior Science and Humanities Symposium
Hunt Valley Marriott

Medical Advisory Board, Interstitial Cystitis Association (ICA) 2004-2007.

Teaching Service

School of Medicine Students

3rd year medical student lecture in Urology (Surgery Clerkship) 1997-present
(Stephen Jacobs, MD and Eric Strauch, MD Course Directors)

School of Nursing Students

Physiology of Aging, Graduate Nursing Course 1998-present
(Robert Bennett, PhD, Course Director)

Mentored Individuals in Laboratory

| <u>MENTEE</u> | <u>CURRENT POSITION</u> | <u>YEAR</u> |
|-------------------------|--|-------------|
| Joseph DelPizzo, M.D. | Assistant Professor Weill-Cornell School of Medicine Department of Urology New York, NY | 1998 |
| Jacob Wynes, B.S., M.S. | Podiatry Student Temple School of Podiatry Philadelphia, PA | 1992-1998 |
| Yan Sun, Ph.D. | Research Instructor University of Maryland School of Medicine | 1999-2004 |

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| | Department of Surgery, Division of Urology | |
| Jennifer MaLossi, M.D. | Private Practice | 2000 |
| Lisa Nipkow, M.D. | Private Practice | 2002 |
| James Chuo, B.S. | Medical Student Class of 2009 University of Maryland School of Medicine | 2002 |
| Humphrey Atiemo, M.D. | Assistant Professor Department of Urology University of Michigan Ann Arbor, MI | 2002 |
| Benjamin Lowentritt, M.D. | Private Practice | 2003 |
| Sean Van Zijl, M.D. | Private Practice | 2004 |
| Todd Lehrfeld, M.D. | Fellow University of Pennsylvania Department of Urology Philadelphia, PA | 2005 |
| Emmanuel Graham, M.D. | Chief Resident University of Maryland Medical Center Urology Residency | 2005 |
| Julia Ahn, B.S. | Scientist Placement Agency Work | 2005 |
| Mingkai Li, M.D., Ph.D. | Post-doctoral Fellow University of Maryland School of Medicine Urology Residency | 2006 |
| Gopal Gupta, M.D. | Chief Resident University of Maryland Medical Center Urology Residency | 2006 |
| Alan Kusakabe, M.D. | Senior Resident University of Maryland Medical Center Urology Residency | 2006 |
| Jordan Gold, B.A. | Research Technician Med School Applicant University of Maryland School of Medicine Department of Surgery, Division of Urology | 2006 |

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| Jared Berkowitz, M.D. | Senior Resident University of Maryland Medical Center Urology Residency | 2007 |
| Brian Tully, M.D. | Senior Resident University of Maryland Medical Center Urology Residency | 2007 |

Attending Physician Inpatient Urology Service (2 Residents, 1 Intern, 2-3 junior students), 8 hours/day for 2 months/year

Current Grant Support

Principal Investigator (15% effort) 9/30/06-6/30/10
“Urinary Incontinence Treatment Network (UITN)” (RENEWED)
NIH-NIDDK 2U01-DK060397-01
Total Direct Costs Awarded: \$1,035,034
Total Indirect Costs Awarded: \$265,662
TOTAL COSTS: \$1,300,696

Principal Investigator (25% effort) 9/1/03 – 2/28/08
Interstitial Cystitis Clinical Research Network
NIH-NIDDK U01-DK65271-04
Total Direct Costs Awarded: \$1,280,564
Total Indirect Costs Awarded: \$311,886
TOTAL COSTS: \$1,592,450

Principal Investigator (2% effort) 9/30/04-2/28/08
Interstitial Cystitis Clinical Research Network – Ancillary Study 1
NIH-NIDDK U01-DK65271S1
Total Direct Costs Awarded: \$292,956
Total Indirect Costs Awarded: \$76,170
TOTAL COSTS: \$369,126

Principal Investigator (1% effort) 3/1/05-2/28/08
Interstitial Cystitis Clinical Research Network – Ancillary Study 2
NIH-NIDDK U01-DK65271S2
Total Direct Costs Awarded: \$89,929
Total Indirect Costs Awarded: \$23,282
TOTAL COSTS: \$113,311

Principal Investigator (1% effort) 3/1/05-2/28/08
Interstitial Cystitis Clinical Research Network – Ancillary Study 3
NIH-NIDDK U01-DK65271S3
Total Direct Costs Awarded: \$113,211
Total Indirect Costs Awarded: \$29,436

TOTAL COSTS: \$142,647

Principal Investigator (20% effort) 9/1/06-6/30/11
Human Bladder Urothelial Cell Structure and Function in Bladder Hypersensation
NIH-NIDDK R01-DK75728
Total Direct Cost: \$1,139,700
Total Indirect Cost: \$ 541,620
TOTAL COSTS: \$1,681,320

Past Grant Support

Principal Investigator (50% effort) 2/1/96-1/31/01
“Neuroplasticity of The Aging Bladder” (peer-reviewed)
NIH-NIA K08AG-000698
Total Direct Costs Awarded: \$469,800
Total Indirect Costs Awarded: \$34,060
Total Costs: \$503,860

Principal Investigator (15% effort) 9/1/01-9/29/06
“Baltimore Continence Treatment Center”
NIH-NIDDK U01-DK060397
Total Direct Costs Awarded: \$1,115,838
Total Indirect Costs Awarded: \$260,126
TOTAL COSTS: \$1,375,964

Principal Investigator (25% effort) 6/15/01-6/31/07
“Effects of stretch on IC and Normal Urothelia
NIH-NIDDK R01-DK059441-05
Total Direct Costs Awarded: \$925,000
Total Indirect Costs Awarded: \$428,013
TOTAL COSTS: \$1,353,013

Publications

Refereed Journals

1. Chai TJ, **Chai T**: Bactericidal activity of cerumen. *Antimicrobial Agents and Chemotherapy* 18(4):638-41 (1980).
2. Giam CZ, **Chai T**, Hayashi S, Wu HC: Prolipoprotein modification and processing in *E. coli*. a unique secondary structure in prolipoprotein signal sequence for the recognition by glyceryl transferase. *Eur J Biochem* 141(2):331-7 (1984).
3. **Chai TC**, Belville WD, McGuire EJ, Nyquist L: Specificity of AUA voiding symptom index: comparison of unselected and selected samples of both sexes. *J Urol* 150(5):1710-3 (1993).
4. **Chai TC**, Ohl DA. Difficult urethral catheterization due to ectopic ureter: an unusual presentation of ureteral ectopia in a male. *J Urol* 153(6):1899-1900 (1995).

5. **Chai TC**, Chung A, Belville WD, Faerber GJ: Compliance and complications of clean intermittent catheterization in the spinal cord injured patient. *Paraplegia* 33(3):161-3 (1995).
6. **Chai TC**, Gray ML, Steers WD: The incidence of a positive ice water test in bladder outlet obstructed patients: evidence for bladder neuroplasticity. *J Urol* 160(1):34-8 (1998).
7. **Chai TC**, Sklar GN: Use of the Flexible Cystoscope as a Vaginoscope to Aid in the Diagnosis of Artificial Sling Erosion. *Urology* 53(3):617-8 (1999).
8. **Chai TC**, Gemalmaz H, Andersson KE, Tuttle JB, Steers WD: Persistently Increased Voiding Frequency Despite Relief of Bladder Outlet Obstruction. *J Urol* 161:1689-93 (1999).
9. **Chai TC**, Zhang C, Shoenfelt JL, Johnson HW, Warren JW, Keay S: Bladder Stretch Alters Urinary Levels of HB-EGF and Antiproliferative Factor in Interstitial Cystitis Patients. *J Urol* 163:1440-4 (2000).
10. Warren JW, Horne LM, Hebel JR, Marvel RP, Keay SK, **Chai TC**: Pilot Study of Sequential Oral Antibiotics in the Treatment of Interstitial Cystitis. *J Urol* 163:1685-8 (2000).
11. **Chai TC**, Zhang C, Warren JW, Keay S: Percutaneous Sacral Nerve Root (S3) Neurostimulation Improves Symptoms and Normalizes Urinary HB-EGF Levels and Antiproliferative Activity in Interstitial Cystitis Patients. *Urology* 55: 643-6 (2000).
12. **Chai TC**, Andersson KE, Tuttle JB, Steers WD. Altered neural control of micturition in the aged F344 rat. *Urol Res* 28:348-54 (2000).
13. Keay S, Zhang C-O, Shoenfelt J, Erickson DR, Whitmore K, Warren JW, Marvel R, **Chai T**. Sensitivity and Specificity of Antiproliferative Factor, Heparin-Binding Epidermal Growth Factor-Like Growth Factor, and Epidermal Growth Factor as Urine Markers for Interstitial Cystitis. *Urology* 57(6A): 9-14 (2001).
14. Sun Y, Keay S, DeDeyne P, **Chai TC**. Augmented Stretch-activated ATP Release from Bladder Uroepithelial Cells in Interstitial Cystitis Patients. *J Urol* 166:1951-6 (2001).
15. **Chai TC**, Mamo GJ. Modified Techniques of S3 Foramen Localization and Lead Implantation in S3 Neuromodulation. *Urology* 58(5):786-90 (2001).
16. Sun Y, MaLossi J, Jacobs SC, **Chai TC**. Effect of Doxazosin on Stretch-activated Adenosine Triphosphate Release in Bladder Urothelial Cells from Patients with Benign Prostatic Hyperplasia. *Urology* 60(2):351-6 (2002).
17. Sun Y, **Chai TC**. Effect of DMSO and Heparin on Stretch-Activated ATP Release by Bladder Urothelial Cells from Interstitial Cystitis Patients. *BJU International* 90(4):381-5 (2002).
18. Palese MA, Colonna JO, **Chai TC**. Donor to Native Ureteroureterostomy in a Patient with Pre-existing Ileal During Renal Transplantation. *Urology* 61(3): 643 (2003).
19. Keay S, Zhang C, Shoenfelt JL, **Chai TC**. Decreased In Vitro Proliferation of Bladder Epithelial Cells from Patients with Interstitial Cystitis. *Urology* 61:1278-84 (2003).
20. Zhang C, Li Z, Shoenfelt JL, Kong C, Erickson DR, **Chai TC**, Keay S. Comparison of APF Activity and Epithelial Growth Factor Levels in Urine from Chinese, African American and Caucasian American IC Patients. *Urology* 61(5):897-901 (2003).
21. Keay S, Seillier-Moiseiwitsch, Zhang, C, **Chai TC**, Zhang J. Changes in human bladder epithelial cell gene expression associated with interstitial cystitis or antiproliferative factor treatment. *Physiol Genomics* 14(2):107-15 (2003).

22. Sun Y, **Chai TC**. Upregulation of P2X3 receptor during stretch of bladder urothelial cells from interstitial cystitis patients. *J Urology* 171(1):448-452 (2004).
23. Keay S, Zhang C-O, **Chai T**, Warren J, Koch K, Grkovic D, Colville, H, Alexander R. Antiproliferative factor, heparin-binding epidermal growth factor-like growth factor, and epidermal growth factor in men with interstitial cystitis vs. chronic pelvic pain syndrome. *Urology* 63:22-6 (2004).
24. Van Zijl S, **Chai T**. Gas-Forming Infection from *Clostridium perfringens* in a Renal Cyst of a Patient with Autosomal Dominant Polycystic Kidney Disease (ADPKD). *Urology* 63:1178-9 (2004).
25. Atiemo H, Wynes J, Chuo J, Nipkow L, Sklar GN, **Chai TC**. Effect of Botulinum Toxin on Detrusor Overactivity Induced by Intravesical ATP and Capsaicin in the Rat Model. *Urology* 65(3):622-6 (2005).
26. **Chai TC**, Keay S. New theories in interstitial cystitis. *Nature Clinical Practice Urology* 1:85-9 (2005).
27. The Urinary Incontinence Treatment Network (UITN)*. Design of the Stress Incontinence Surgical Treatment Efficacy Trial (SISTER) Study. *Urology* 66:1213-17 (2005). *UITN is a NIH multi-institutional consortium in which T.C. Chai is a PI at University of Maryland site and is part of the authorship line when UITN is used.
28. Sun Y, **Chai TC**. Augmented extracellular adenosine triphosphate (ATP) signaling in bladder urothelial cells from patients with interstitial cystitis. *Am J Physiol* 290(1):C27-34 (2006).
29. Kanai A, de Groat W, Birder L, **Chai T**, Hultgren S, Fowler C, Fry C. Symposium report on urothelial dysfunction: pathophysiology and novel therapies. *J Urol* 175(5):1624-9 (2006).
30. Sun Y, Chen M, Lowentritt BH, Van Zijl PS, Koch KR, Keay S, Simard JM, **Chai TC**. EGF and HB-EGF Modulate Inward Potassium Current in Human Bladder Urothelial Cells from Normal and Interstitial Cystitis Patients. *Am J Physiol – Cell Physiol* 292(1):C106-14 (2007).
31. Lemack GE, Xu Y, Brubaker L, Nager C, **Chai T**, Moalli P, Kraus SR, Kerr L, Sirls L, Stoddard A. Clinical and Demographic Factors Associated with Valsalva Leak Point Pressure among Women Undergoing Burch Bladder Neck Suspension or Autologous Rectus Fascial Sling Procedures. *Neurourol Urodyn* 26(3):392-6 (2007).
32. Albo M, Wruck L, Baker J, Brubaker L, **Chai T**, Dandreo KJ, Diokno A, Goode P, Kraus S, Kusek JW, Lemack G, Lowder J, Steers WD. The relationships among measures of incontinence severity in women undergoing surgery for stress urinary incontinence. *J Urol* 177(5):1810-4 (2007).
33. The Urinary Incontinence Treatment Network (UITN)*. Design of the Behavior Enhances Drug Reduction of Incontinence (BE-DRI) study. *Contemporary Clinical Trials* 28:48-58 (2007). *UITN is a NIH multi-institutional consortium in which T.C. Chai is a PI at University of Maryland site and is part of the authorship line when UITN is used.
34. Albo ME, Richter HE, Brubaker L, Norton P, Kraus SR, Zimmern PE, **Chai TC**, et al. for the Urinary Incontinence Treatment Network. Burch colposuspension versus fascial sling to reduce urinary stress incontinence. *NEJM* 356(21):2143-55 (2007).
35. Kraus SR, Markland A, **Chai TC**, Stoddard A, FitzGerald MP, Leng W, Mallett V, Tennstedt SL for the UITN. Race and ethnicity do not contribute to differences in pre-

36. Burgio KL, Kraus SR, Menefee S, Borello-France D, Corton M, Johnson HW, Mallett V, Norton P, Fitzgerald MP, Dandreo KJ, Richter HE, Rozanski T, Albo M, Zyczynsk HM, Lemack GE, **Chai TC**, Khandwala S, Baker J, Brubaker L, Stoddard AM, Goode PS, Neilsen-Omeis B, Nager C, Kenton K, Tennstedt SL, Nyberg LM, Kusek JW, Steers WD. Combined behavior and drug therapy to enable drug discontinuation in the treatment of urge incontinence in women: A randomized controlled trial. Submitted to *JAMA*.
37. Richter HE, Diokno A, Kenton K, Norton P, Albo M, Kraus S, Moalli P, **Chai TC**, Zimmern P, Litman H, Tennstedt. Predictors of treatment failure 24 months after surgery for stress urinary incontinence. Submitted to *J Urol*.
38. Nager CW, Fitzgerald MP, Kraus SP, **Chai TC**, Zyczynsk H, Sirils L, Lemack GE, Lloyd K, Littman H, Stoddard AM, Baker J, Steers W. Urodynamic measures do not predict stress incontinence outcomes after surgery for stress urinary incontinence in women. In press *J Urol*.

Non-refereed Journals:

1. **Chai TC**, Steers WD, Broder SR, Rachenwald M, Tuttle JB: Characterization of laterality of innervation of the rat bladder. *Scand J Neph Urol* 30 (Suppl 179):87-92 (1996).
2. **Chai TC**, Steers WD: Neurophysiology of micturition and continence. *Urology Clinics of North America* 23(2):221-36 (1996).
3. **Chai TC**, Steers WD: Neurophysiology of micturition and continence in women. *Int Urogynecol J* 8:85-97 (1997).
4. MaLossi J, **Chai TC**: Sacral neuromodulation for treatment of voiding dysfunction. *Current Urology Reports* 3(1):61-66 (2002).
5. MaLossi J, **Chai TC**: Interstitial Cystitis- Diagnosis and Treatment Options. *Current Women's Health Reports* 2(4):298-304 (2002).
6. Nipkow L, **Chai TC**. Interstitial Cystitis: Modern Tools for an Accurate Diagnosis. *Current Urology Reports* 4(5):381-384 (2003).
7. Chai TC: Surgical Techniques of Sacral Implantation. *Urologic Clinics of North America*, in press for December 2004 publication.
8. Chai TC. Surgical Management of Failed Sling Procedures. *AUA News* 10(6):27-29 (2005).
9. Graham ES, **Chai TC**. Dysfunction of Bladder Urothelium and Bladder Urothelial Cells in Interstitial Cystitis. *Current Urology Reports* 7(6):440-6 (2006).
10. **Chai TC**. Future pharmacotherapy in chronic bladder hypersensory conditions. *Expert Opin Emerg Drugs* 12(2):187-90 (2007).

Books and Book Chapters:

1. Townsend RR, **Chai TC**: Premature intracellular ligand uncoupling from the Gal/GalNAc lectin increases the exocytosable pool. in Davidson, EA et al (eds):

- Glycoconjugates: Proceedings of the 8th International Symposium. Praeger Scientific, NY, p. 163, 1988.
2. **Chai TC**, Steers WD: “Role of Newer Agents and Combinations”, pages 197-204, in Narayan, P: Benign Prostatic Hyperplasia, Churchill Livingstone, Harcourt Publishers, Ltd, 2000.
 3. **Chai TC**: “Emerging indications for sacral nerve stimulation : Interstitial Cystitis”, Chap 19 p 227-229 New Perspectives in Sacral Nerve Stimulation, Jonas U, Grünewald V editors, Martin Dunitz Ltd., London, England, 2002.
 4. **Chai TC** :“Diagnosis of the painful bladder syndrome/interstitial cystitis”, p 250-258 Clinical Obstetrics and Gynecology 45(1), Sant GR, Sand PK editors, Lippincott Williams & Wilkins, 2002.
 5. **Chai TC**: “Interstitial Cystitis”, Chap 21 p 307-323 Ostergard’s Urogynecology and Pelvic Floor Dysfunction, Fifth Edition, Bent AE, Cundiff GW, Ostergaard DR, Swift SE editors, Lippincott Williams & Wilkins, 2003.
 6. **Chai TC**: “Abdominal Approaches for Female Incontinence”, Chapter 35 pp 293-299, Glenn’s Urologic Surgery, Sixth Edition, editors Sam D. Graham, James F. Glenn, Thomas E. Keane, Lippincott Williams & Wilkins, 2004.
 7. **Chai TC**: Surgical Techniques of Sacral Implantation. *Urologic Clinics of North America* 32:27-35, 2005.
 8. Swift S, **Chai T**, Bent A: “Painful conditions of the lower urinary tract including painful bladder syndrome. Chap 8, Ostergard’s Urogynecology and Pelvic Floor Dysfunction, Bent AE, Cundiff GW, Ostergaard DR, Swift SE editors, Lippincott Williams & Wilkins, 2007.

Brief Communications and Editorials:

1. **Chai TC**: New Insights into the Clinical Value of Oxybutynin [editorial]: *J Urol* 160(3):643 (1998).
2. **Chai TC**: Clinical Crossroads: a 73-year-old man with symptomatic benign prostatic hyperplasia [Letter]. *JAMA* 279(14):1070 (1998).
3. **Chai TC**: Oral trazodone is not effective therapy for erectile dysfunction: a double-blind, placebo controlled trial [editorial]: *J Urol* 161:1819 (1999).
4. **Chai TC**: Re: Erosion of Woven Polyester Pubovaginal Sling [Letter]. *J Urol* 164(1):129 (2000).
5. **Chai TC**: Re: Percutaneous sacral nerve root neuromodulation for intractable interstitial cystitis [Letter]. *J Urol* 166(3):1009 (2001).
6. **Chai TC**: Textbook of prostatitis [Book Review]. *Urology* 57(2):396 (2001).
7. **Chai TC**: Re: A simplified method of implanting a neuromodulator device [Letter] *J Urol* 170(4):1328 (2003).
8. **Chai TC**: Treatment of men with lower urinary tract symptoms and overactive bladder. *JAMA* 297(11):1191-2 (2007).
9. **Chai TC**: Sacral Neuromodulation for Nonobstructive Urinary Retention—Is Success Predictable? [editorial] in press, *J Urol*.

Abstracts and Presentations (Peer Reviewed):

1. Townsend RR, **Chai TC**, Lee YC: Processing of d,beta-diaspartamide of TRIS (beta-lactosyloxamethyditrislac-6,aminohexamidino)-methane by isolated hepatocytes. Society of Complex Carbohydrates, Chicago, IL (1984).
2. **Chai TC**, Belville WD, McGuire EJ, Nyquist L: Comparison of voiding symptom scores in age matched males and females. North Central AUA Meeting, Cerromar, Puerto Rico (1992).
3. **Chai TC**, Ohl DA: Laparoscopic varicocelectomy for treatment of male infertility. North Central AUA Meeting, Milwaukee, WI (1993).
4. **Chai TC**, Belville WD, Faerber GJ: Compliance and complications of clean intermittent catheterization in spinal cord injured patients. North Central AUA Meeting, Boca Raton, FL (1994).
5. **Chai TC**, Belville WB, Faerber, GJ: Compliance and compliance of clean intermittent catheterization in SCI population. Urodynamics Society Meeting, San Francisco, CA (1994).
6. Steers W, **Chai T**, Spitsbergen J, Tuttle J: Reversibility of hyperactive voiding after bladder outlet obstruction. American Urological Association Annual Meeting, Orlando, FL (1996).
7. Steers WD, Tuttle JB, Spitsbergen JM, Clemow DB, **Chai TC**, Broder SB, Andersson KE, Perrson K: Genetic Models of Hyperactive Voiding in Rats, International Bladder Symposium, Boston, MA, (March 1996).
8. **Chai, TC**, Steers, WD, Tuttle JB: Altered neural control of micturition in the aged F344 rat. American Urological Association Annual Meeting, New Orleans, LA (1997).
9. **Chai TC**, Baker LA, Gomez AR, Tuttle JB, Steers WD: Hyperactive voiding in rats secondary to obstruction: expression of a novel gene encoding for protein D123. American Urological Association Annual Meeting, New Orleans, LA (1997).
10. **Chai TC**, Gray ML, Steers WD: Detection of a spinal reflex in patients with bladder outlet obstruction using ice water cystometry. Urodynamics Society Annual Meeting, New Orleans, LA (1997).
11. **Chai TC**, Tuttle JB, Steers WD: Neuroplasticity of the Aged Bladder: Evidence for Altered Neurotrophic Interactions. American Urological Association Annual Meeting, San Diego, CA (1998).
12. Gemalmaz H, **Chai T**, Andersson KE, Tuttle JB, Steers WD: Mechanisms Underlying Hyperactive Voiding After Relief of Obstruction. American Urological Association Annual Meeting, San Diego, CA (1998).
13. **Chai TC**, Zhang CO, Shoenfelt JL, Warren JW, Keay S: Bladder Overdistention Decreases Urine Antiproliferative Activity and Increases Urine HB-EGF Levels in Patients with Interstitial Cystitis. American Urological Association Annual Meeting, Dallas, TX (1999).
14. Berman J, Goldstein I, Werbin T, Wong J, Jacobs S, **Chai T**: Double Blind Placebo Controlled Study with Crossover to Assess Effect of Sildenafil on the Female Sexual Response. American Urological Association Annual Meeting, Dallas, TX (1999).
15. Wong, JC, Berman J, **Chai T**: Doppler evaluation of the effect of Sildenafil citrate on perineal blood flow in women. Society of Uroradiology Annual Meeting, New Orleans, LA (1999).

16. Berman JR, Wong J, **Chai TC**: Pilot Study on Effectiveness of Viagra for Treatment of Female Sexual Dysfunction: Physiologic Predictor for Success. *New Perspectives in the Management of Female Sexual Dysfunction*. October 22-34, 1999, Boston, MA.
17. **Chai Toby C.**, Zhang Chen-Ou, Warren John W., Keay Susan: Percutaneous S3 Neuromodulation Decreases Symptoms and Normalizes Urinary HB-EGF and APF Activity in IC Patients. 1999 International Bladder Symposium. November 4-7, 1999, Washington, D.C.
18. **Chai Toby C.**, Zhang Chen-Ou, Warren John W., Keay Susan: Percutaneous S3 Neuromodulation Decreases Symptoms and Normalizes Urinary HB-EGF and APF Activity in IC Patients. InterStim Symposium sponsored by Medtronic, Scottsdale, AZ, January 22, 2000.
19. **Chai Toby C**, Zhang Chen-Ou, Warren John W., Keay Susan: Percutaneous S3 Nerve Root Stimulation Decreases Symptoms and Normalizes Urinary HB-EGF and APF Activity in IC Patients. American Urological Association Annual Meeting, Atlanta, GA (2000).
20. **Chai Toby C**, Wong Jade, Berman Jennifer R: Pilot Study on Effectiveness of Viagra for Treatment of Female Sexual Dysfunction: Physiologic Predictor for Success. American Urological Association Annual Meeting, Atlanta, GA (2000).
21. Sun Yan, DeDeyne Patrick, **Chai Toby C**: Stretch Activated Release of ATP by Bladder Uroepithelia is Augmented in Interstitial Cystitis. Annual Mid-Atlantic AUA Meeting, Rio Mar, Puerto Rico (2000).
22. Sun Yan, DeDeyne Patrick, **Chai Toby C**: Stretch Activated Release of ATP by Bladder Uroepithelia is Augmented in Interstitial Cystitis. Interstitial Cystitis Association-NIDDK Bi-Annual Meeting, Minneapolis, MN (2000).
23. Sun Yan, Keay Susan, DeDeyne Patrick, **Chai Toby C**: Stretch Activated Release of ATP by Bladder Uroepithelia is Augmented in Interstitial Cystitis. International Bladder Symposium, Washington, DC (2001).
24. Sun Yan, DeDeyne Patrick, **Chai Toby C**: Stretch Activated Release of ATP by Bladder Uroepithelia is Augmented in Interstitial Cystitis. American Urological Association Annual Meeting, Anaheim, CA (2001).
25. MaLossi Jennifer, Sun Yan, Jacobs Stephen C., **Chai Toby C**: Evidence for Increased Stretch-Activated ATP Release from Bladder Epithelial Cells Obtained from BPH Patients. Annual Mid-Atlantic AUA Meeting, Hot Springs, VA (2001).
26. Sun Yan, MaLossi Jennifer, Jacobs Stephen C., **Chai Toby C**: Effect of Doxazosin on Stretch-Activated ATP Release in Bladder Urothelial Cells Obtained from BPH Patients. 4th World Congress in Urologic Research, Tucson, AZ (2001).
27. Sun Yan, MaLossi Jennifer, Jacobs Stephen C., **Chai, Toby C**: Effect of Doxazosin on Stretch-Activated ATP Release in Bladder Urothelial Cells Obtained from BPH Patients. American Urological Association Annual Meeting, Orlando, FL (2002).
28. Wynes Jacob, Sun Yan, **Chai Toby C**: Effect of Potassium Chloride on Adenosine Triphosphate (ATP) Release by Cultured Bladder Uroepithelial Cells from Interstitial Cystitis (IC) and Control Patients. Mid-Atlantic AUA Meeting, Baltimore, MD (2002).
29. Sun, Yan, **Chai, Toby C**: Upregulation of P2X3-ATP Receptor in Bladder Uroepithelial Cells from Interstitial Cystitis (IC) Patients Induced by In Vitro Cell

30. Sun Yan, **Chai Toby C.** Upregulation of ATP P2X3 Receptor in Bladder Urothelial Cells from Interstitial Cystitis (IC) Patients Induced by In Vitro Cell Stretch Suggesting Paracrine Function for Extracellular ATP. American Urological Association Annual Meeting, Chicago, IL (2003).
31. Wynes Jacob, Sun Yan, **Chai Toby C.** Effect of Potassium Chloride on Adenosine Triphosphate (ATP) Release by Cultured Bladder Uroepithelial Cells from Interstitial Cystitis (IC) and Control Patients. American Urological Association Annual Meeting, Chicago, IL (2003).
32. Atiemo Humphrey, Chuo James, Nipkow Lisa, Sklar Geoffrey N, **Chai Toby.** Effect of Botulinum Toxin on ATP-induced Bladder Contractions in Rat Bladders. Mid-Atlantic AUA Meeting, Boca Raton, MD (2003).
33. Sun Yan, **Chai Toby.** Extracellular ATP Stimulates More ATP Release from Interstitial Cystitis Bladder Urothelial Cells Compared to Control Cells. International Continence Society Meeting, Florence, Italy (2003).
34. Lowentritt BH, Sun Y, Chen M, Simard JM, **Chai TC.** Altered membrane ion channel properties in human bladder urothelial cells from interstitial cystitis patients: insights into basic urothelial cell function. American Urological Association Annual Meeting, San Francisco, CA (2004).
35. Sun Y, **Chai TC.** Extracellular adenosine triphosphate (ATP) stimulates more ATP release from interstitial cystitis bladder urothelial cells compared to control cells. American Urological Association Annual Meeting, San Francisco, CA (2004).
36. Atiemo HO, Wynes J, Chuo J, Nipkow L, Sklar GN, **Chai TC.** Effect of botulinum toxin on overactive bladder contractions induced by intravesical ATP and capsaicin in the rat model. American Urological Association Annual Meeting, San Francisco, CA (2004).
37. van Zijl PS, Chen M, Sun Y, Simard M, **Chai TC.** The effect of epidermal growth factor (EGF) on Kir2.1 Channel in Bladder Urothelial Cells. Mid-Atlantic AUA Meeting, Cambridge, MD (2004).
38. van Zijl PS, Sun Y, Chen M, Simard JM, **Chai TC.** The effect of epidermal growth factor (EGF) on inward potassium rectifying currents in bladder urothelial cells. American Urological Association Annual Meeting, San Antonio, TX (2005).
39. Holton M, van Zijl PS, Sun Y, Chen M, Simard JM, **Chai TC.** The effect of carbachol on Kir2. conductance in bladder urothelial cells. American Urological Association Annual Meeting, San Antonio, TX (2005).
40. Lehrfeld T, Sun Y, **Chai TC.** Normalization Of Epidermal Growth Factor (EGF) Mediated Alterations In Interstitial Cystitis (IC) Bladder Urothelial Cells (BUC) Correlate With Normalization Of Adenosine Triphosphate (ATP) Alterations. Mid-Atlantic AUA Meeting, Phoenix, AZ (2005).
41. Holton MR Van Zijl PS, Chen M, Sun Y, Simard JM, **Chai TC.** Effect Of Muscarinic Agonists On Outward Current In Bladder Urothelial Cells. Mid-Atlantic AUA Meeting, Phoenix, AZ (2005).
42. Lehrfeld TJ, Sun Y, **Chai TC.** Link Between Cytokine Expression and Augmented Purinergic Signaling in Interstitial Cystitis (IC) Bladder Urothelial Cells (BUC). American Urological Association Annual Meeting, Atlanta, GA (2006).

43. Lemack GE, Brubaker L, Nager C, Sirls L, **Chai TC**, Moalli PA, Kraus S, Kerr L, Xu Y. Demographic and Urodynamic Baseline Predictors of Valsalva Leak Point Pressure. American Urological Association Annual Meeting, Atlanta, GA (2006).
44. Albo M, Baker J, Brubaker L, **Chai T**, Dandreo K, Diokno A, Goode P, Kraus S, Kusek J, Lowder J, Steers W, Wruck L. Correlation of MESA and VLPP With Other Measures of Urinary Incontinence Severity. Society for Urodynamics and Female Urology International Society of Pelvic Neuromodulation 2006 Winter Meeting, Grand Bahamas (2006).
45. Kraus S, Markland A, **Chai T**, Stoddard A, FitzGerald MP, Leng W, Mallet V and Tennstedt, S for UITN. Race/Ethnic Differences in Symptoms and Impacts of Urinary Incontinence in Women Undergoing Stress Urinary Incontinence Surgery. American Urogynecological Society Meeting, Palm Springs, California (2006).
46. Kraus S, Markland A, **Chai T**, Stoddard A, FitzGerald MP, Leng W, Mallet V and Tennstedt, S for UITN. Race/Ethnic Differences in Symptoms and Impacts of Urinary Incontinence in Women Undergoing Stress Urinary Incontinence Surgery. International Continence Society Meeting, Christchurch, New Zealand (2006)
47. Graham ES, Sun Y, Ahn J, **Chai TC**. Changes In M2 Receptor Expression On Human Bladder Urothelial Cells (BUC) In Response To Carbachol and Tolterodine. Mid-Atlantic AUA Meeting, Washington, DC (2006).
48. Gupta G, Lu SG, Sun Y, Gold M, **Chai TC**. Increased Efficacy and Potency Of Carbachol In Inducing Increases In Intracellular Calcium ($[Ca^{2+}]_i$) In Overactive Bladder (OAB) and Interstitial Cystitis (IC) Bladder Urothelial Cells (BUC). Mid-Atlantic AUA Meeting, Washington, DC (2006).
49. Yan Sun, Todd Lehrfeld, Susan Keay, **Toby C. Chai**. Link Between Cytokine Expression and Purinergic Signaling in Bladder Urothelial Cells (BUC). Society for Urodynamics and Female Urology, San Diego, CA (2007).
50. Michael E. Albo, Holly E. Richter, Linda Brubaker, Peggy A. Norton, Stephen Kraus, Philippe Zimmermann, **Toby Chai**, Halina Zycsynski, Ananias C. Diokno, Charles Nager, L. Keith Lloyd, MaryPat Fitzgerald, Gary E. Lemack, Harry Johnson, Wendy Lang, Veronica T. Mallett, Sharon Tennstedt, Anne M. Stoddard, John W. Kusek, Leroy M. Nyberg, William D. Steers. Results of the SISTEr Randomized Surgical Trial Comparing the Autologous Rectus Fascia Sling to the Burch Colposuspension. American Urological Association Annual Meeting, Anaheim, CA (2007).
51. Yan Sun, Susan Keay, **Toby C. Chai**. Anti-proliferative Factor's (APF) Effect on Purinergic Signaling in Normal Human Bladder Urothelial Cells. American Urological Association Annual Meeting, Anaheim, CA (2007).
52. Gopal Gupta, Shao-gong Lu, Yan Sun, Michael Gold, **Toby C. Chai**. Increased efficacy and potency of carbachol in inducing increases in intracellular calcium ($[Ca^{2+}]_i$) and outward potassium currents (I_O) in interstitial cystitis (IC) bladder urothelial cells (BUC) : Evidence of persistent phenotypic alteration of cultured human IC BUC. American Urological Association Annual Meeting, Anaheim, CA (2007).
53. Gopal Gupta, Shao-gong Lu, Yan Sun, Michael Gold, **Toby C. Chai**. Evidence for Increased Sensitivity of Bladder Urothelial Cell to Carbachol, Based on Changes in $[Ca]_i$, in Patients with Overactive Bladder (OAB). American Urological Association Annual Meeting, Anaheim, CA (2007).

54. P Norton, H Richter, **T Chai**, M Albo, M FitzGerald, A Stoddard, P Zimmern for the Urinary Incontinence Treatment Network. Voiding symptoms are common in women planning continence surgery. American Urological Association Annual Meeting, Anaheim, CA (2007).
55. **Toby C. Chai**, Michael E. Albo, Holly E. Richter, Peggy Norton, Kimberly J. Dandreo, Kimberly Kenton, Jerry L. Lowder, Marlene M. Corton, Robert A. Starr and Anne M. Stoddard for the UITN. Adverse events from a randomized trial for the surgical treatment of stress urinary incontinence. International Continence Society Annual Meeting, Rotterdam, Netherlands (2007).
56. Ananias Diokno, Holly E. Richter, Kimberly Kenton, Peggy Norton, Michael Albo, Stephen Kraus, Pamela Moalli, **Toby Chai**, Philippe Zimmern, Heather Litman and Sharon Tennstedt for the Urinary Incontinence Treatment Network. Predictors of treatment failure 24 months after surgery for stress urinary incontinence. International Continence Society Annual Meeting, Rotterdam, Netherlands (2007).
57. **Toby C. Chai**, Michael E. Albo, Holly E. Richter, Peggy Norton, Kimberly J. Dandreo, Kimberly Kenton, Jerry L. Lowder, Marlene M. Corton, Robert A. Starr and Anne M. Stoddard for the UITN. Adverse events from the Stress Incontinence Surgical Treatment Efficacy Trial (SISTER). American Urogynecological Association Annual Meeting, Hollywood, Florida (2007).
58. C. Nager, **T. Chai**, K. Lloyd, M. FitzGerald, G. Lemack, J. Baker, L. Sirls, S. Kraus, A. Stoddard, H. Zyczynski, and W. Steers for the Urinary Incontinence Treatment Network. Valsalva leak point pressures do not predict continence outcomes after Burch or pubovaginal sling procedures. American Urogynecological Association Annual Meeting, Hollywood, Florida (2007).
59. S. Kraus, L. Sirls, M. FitzGerald, C. Nager, **T. Chai**, A. Stoddard, K. Lloyd, H. Zyczynski, G. Lemack, J. Baker, and W. Steers for the Urinary Incontinence Treatment Network. Preoperative detrusor overactivity is a poor predictor of continence outcomes after Burch or pubovaginal sling procedures. American Urogynecological Association Annual Meeting, Hollywood, Florida (2007).
60. H. Zyczynski, A. Stoddard, G. Lemack, M. FitzGerald, C. Nager, J. Baker, L. Sirls, **T. Chai**, K. Lloyd, S. Kraus, and W. Steers for the Urinary Incontinence Treatment Network. Preoperative urodynamic stress incontinence predicts continence outcomes after Burch or pubovaginal sling procedures. American Urogynecological Association Annual Meeting, Hollywood, Florida (2007).
61. Holly E. Richter, Ananias Diokno, Kimberly Kenton, Peggy Norton, Michael Albo, Stephen Kraus, Pamela Moalli, **Toby Chai**, Philippe Zimmern, Heather Litman and Sharon Tennstedt for the Urinary Incontinence Treatment Network. Predictors of treatment failure 24 months after surgery for stress urinary incontinence. American Urogynecological Association Annual Meeting, Hollywood, Florida (2007).
62. L.L. Subak, L. Brubaker, **T. Chai**, J. Creasman, A. Diokno, P. S. Goode, S. Kraus, J.W. Kusek, W. Leng, E.S. Lukacz, S. Tennstedt, for the Urinary Incontinence Treatment Network. High “costs” of urinary incontinence among women electing surgery to treat stress incontinence. American Urogynecological Association Annual Meeting, Hollywood, Florida (2007).

Grand Rounds and Invited Speeches - Regional

1. “*Overactive Bladder and Urinary Incontinence*”, Department of Family Medicine Grand Rounds, University of Maryland School of Medicine, Baltimore, MD October 21, 1998.
2. “*Neuroplasticity Diagnosed by Urodynamics*”, Maryland Urologic Society Spring Meeting, Baltimore, MD, February 6, 1999.
3. “*Urinary Incontinence and Overactive Bladder*”, Franklin Square Hospital Grand Rounds, Baltimore, MD, March 8, 1999.
4. “*Neurophysiology of Micturition and Continence*”, Department of Neurology Grand Rounds, University of Maryland School of Medicine, Baltimore, MD, February 23, 2000.
5. “*Surgical Management of Interstitial Cystitis?*”, Maryland Urologic Society Spring Meeting, Baltimore, MD, March 11, 2000.
6. “*Workup and Treatment of Urinary Incontinence*”, Peninsula Regional Medical Center Surgical Scientific Educational Session, Salisbury, MD, May 16, 2000.
7. “*Interstitial Cystitis: A Boon to Understanding Basic Bladder Physiology?*”, Department of Obstetrics and Gynecology Grand Rounds, Greater Baltimore Medical Center, Baltimore, MD, October 6, 2000.
8. “*Overactive Bladder and Urinary Incontinence*”, Fall Regional Conference of the Maryland Academy of Family Physicians, Rocky Gap, MD, October 22, 2000.
9. “*Stretch and the Bladder Urothelia: Why You Feel the Urge*”, Maryland Urologic Society Spring Meeting, Baltimore, MD, March 17, 2001.
10. “*InterStim Therapy: S3 Neuromodulation for Treatment of Voiding Dysfunction or The Bladder Matters*”, Society for Urologic Nursing Association Maryland Regional Meeting, Timonium, MD, April 21, 2001.
11. “*Urinary Incontinence*”, Suburban Hospital Grand Rounds, Bethesda, MD, May 25, 2001.
12. “*Pathophysiology of Stress Urinary Incontinence*”, Department of Obstetrics and Gynecology Grand Rounds, St. Agnes Hospital, Baltimore, MD, June 27, 2001.
13. “*Urinary Incontinence – Need for Data*”, Department of Family Medicine Grand Rounds, University of Maryland School of Medicine, Baltimore, MD, October 4, 2001.
14. “*Management of UTIs and Interstitial Cystitis*”, Fall Regional Conference of the Maryland Academy of Family Physicians, Solomons Island, MD, November 3, 2001.
15. “*Urinary Incontinence*”, 8th Annual Chesapeake Regional Osteopathic Scientific Conference, Primary Care Update: Medicine in 2003, Ocean City, MD June 30, 2002.
16. “*Stress Urinary Incontinence – The Need for Data*” Grand Rounds, Department of Family Medicine, University of Maryland School of Medicine, August 8, 2002.
17. “*Overactive Bladder and Interstitial Cystitis*”, Montgomery General Hospital Grand Rounds, Olney, MD, September 5, 2002.
18. “*Prostate Cancer 2002: New Perspectives*” – Urinary Incontinence, Baltimore, MD September 26-28, 2002.
19. “*Modern Perspectives and Historical Footnotes on Surgery for Stress Incontinence*” – Mid-Atlantic AUA Meeting, October 7, 2002.
20. “*Interstitial Cystitis*”, 8th Annual Chesapeake Regional Osteopathic Scientific Conference, Primary Care Update: Ocean City, MD June 20, 2003.

21. “*Surgery for Non-neoplastic Conditions of the Lower Urinary Tract*”, Annual American Kidney Stone Management, Inc. Meeting, Orlando, FL August 9, 2003.
22. “*Intravesical Agents and Gene Therapy in Treatment of Overactive Bladder*” Panel Presenter, Mid-Atlantic AUA Meeting, Boca Raton, FL Oct. 29, 2003.
23. “*Overactive Bladder: Form and Function*”, Department of Obstetrics and Gynecology Grand Rounds, University of Maryland Baltimore, February 6, 2004.
24. “*Overactive Bladder: Evolving Concepts*”, Department of Obstetrics and Gynecology Grand Rounds, Johns Hopkins Hospital, Baltimore, MD April 22, 2004.
25. “*Overactive Bladder: Evolving Concepts*”, Department of Medicine Grand Rounds, Harbor Hospital, Baltimore, MD June 11, 2004.
26. “*Overactive Bladder: Evolving Concepts*”, 9th Annual Chesapeake Regional Osteopathic Scientific Conference, Primary Care Update: Ocean City, MD June 19, 2004.
27. “*Overactive Bladder: Evolving Concepts*”, Department of Internal Medicine Grand Rounds, Northwest Hospital Center, Timonium, MD, July 7, 2004.
28. “*Overactive Bladder: Evolving Concepts*”, Medical Grand Rounds, Good Samaritan Hospital, Baltimore, MD, July 14, 2004.
29. “*Overactive Bladder: Form and Function*”, Obstetrics and Gynecology Grand Rounds, Frederick Memorial Hospital, Frederick, MD August 2, 2004.
30. “*Overactive Bladder: Form and Function*”, Obstetrics and Gynecology Grand Rounds, St. Joseph Medical Center, Timonium, MD, September 9, 2004.
31. “*Overactive Bladder: Evolving Concepts*”, Medicine Grand Rounds, Franklin Square Hospital, Baltimore, MD September 30, 2004.
32. “*Overactive Bladder: Evolving Concepts*”, Medicine Grand Rounds, Upper Chesapeake Hospital, Bel Air, MD, October 6, 2004.
33. “*Overactive Bladder: Evolving Concepts*”, Medicine Grand Rounds, Union Memorial Hospital, Baltimore, MD, October 7, 2004.
34. “*Hypersensitive Bladder Conditions: Overactive Bladder and Interstitial Cystitis*”, Washington Urological Society Fall Meeting, Washington, DC, October 21, 2004.
35. “*Urinary Incontinence 2006*” 12th Annual Chesapeake Regional Osteopathic Scientific Conference, Primary Care Update. July 24, 2006.
36. “*Voiding Dysfunction and the Bladder Urothelium*” MidAtlantic AUA Meeting, Washington DC, October 14, 2006.

Invited Speeches – National/International

1. “*InterStim Therapy: S3 Neuromodulation for Treatment of Voiding Dysfunction*”, Taiwanese Incontinence Society, Taipei, Taiwan, January 13, 2001.
2. “*Sacral Neuromodulation in Treatment of Voiding Dysfunction*”, Society for Basic Urologic Research, Annual Meeting Breakout Session, Anaheim, CA, June 2, 2001.
3. “*Neural Control of Bladder Function*”, 4th World Congress in Urologic Research, Tuscon, AZ, December 2, 2001.
4. “*Advancing the Treatment of Fecal and Urinary Incontinence Through Research: Trial Design, Outcome Measures, and Research Priorities*”, Consensus Conference, International Foundation for Functional Gastrointestinal Disorders, Milwaukee, WI, November 3-5, 2002.

5. “*Basic Science and Translational Research in Female Pelvic Floor Disorders*” National Institutes of Health, Bethesda, MD November 14-15, 2002.
6. “*The Role of Bladder Urothelium in Sensory Transduction: Can IC Bladder Urothelial Cells be Hypersensitive?*”, Research Insights into Interstitial Cystitis: A Basic and Clinical Science Symposium, Presented by the NIH-NIDDK and ICA, Old Town Alexandria, VA October 31, 2003.
7. “*Report on NIH Studies – Chronic Pelvic Pain Syndromes*”, Society for Urodynamics and Female Urology, First Annual Meeting, Phoenix, Arizona, February 28, 2004.
8. “*ATP Sensitization*”, AUA/SBUR Summer Research Conference, McLean, VA, August 13-15, 2004.
9. “*Antiproliferative Involvement in Interstitial Cystitis*”, Understanding urothelial dysfunction: pathophysiology and novel therapies. Workshop, International Continence Society and International Urogynecological Association 1st Annual Combined Meeting, Paris, France, August 23, 2004.
10. “*Role of bladder urothelial cell in sensory signal transduction using interstitial cystitis as a human model*”, Satellite Symposium, XXXV International Congress of Physiological Sciences, San Diego, CA, March 29, 2005.
11. “*Interstitial Cystitis – Translational Research*”, American Pain Society Annual Meeting, Symposium on Interstitial Cystitis, Boston, MA, March 30-April 2, 2005.
12. “*Role of Bladder Urothelium in Bladder Hypersensory Disease*”, International Bladder Symposium, Baltimore, MD., April 15-17, 2005.
13. “*Management of Incontinence After Sling Procedure: Surgery vs. Drugs – Point Counterpoint*” American Urological Association Annual Meeting, Plenary Session, May 23, 2005, San Antonio, TX.
14. “*Treatment of Lower Urinary Tract Symptoms (LUTS) in Men – Are We Treating BPH or Something Else?*” Taipei Veterans General Hospital Grand Rounds, Taipei, Taiwan, August 23, 2005.
15. “*Evidence Based Medicine (EBM) in Male LUTS - Review of NIH- Sponsored Clinical*” Urology Scientific Symposium, Formosa Regent Hotel, Taipei, Taiwan, August 23, 2005.
16. “*Treatment of Lower Urinary Tract Symptoms (LUTS) in Men – Are We Treating BPH or Something Else?*” Taichung Veterans General Hospital Grand Rounds, Taichung, Taiwan, August 24, 2005.
17. “*Evidence Based Medicine (EBM) in Male LUTS - Review of NIH- Sponsored Clinical*” Urology Scientific Symposium, Splendor Hotel, Taichung, Taiwan, August 23, 2005.
18. “*Treatment of Lower Urinary Tract Symptoms (LUTS) in Men – Are We Treating BPH or Something Else?*” Tri-Service General Hospital Grand Rounds, Taipei, Taiwan, August 24, 2005.
19. “*Role of Bladder Urothelium in Bladder Sensation - From Bench to Bedside*” 27th Annual Congress of the Taiwan Urological Association, Kaoshiung, Taiwan, August 27, 2005.
20. “*Bladder outlet obstruction (BOO) and Overactive Bladder (OAB) - Empiricism versus Science*”, Taiwan Urological Association Satellite Symposium, Ambassador Hotel, Kaoshiung, Taiwan, August 27, 2005.

21. “Update on mediators of bladder afferent activity” Chronic Pelvic Pain/ Chronic Prostatitis Scientific Workshop, NIH-NIDDK, Linthicum, MD, October 19, 2005.
22. “The Overactive Bladder: More Options or Differences without Distinction” Panel Discussion, MidAtlantic AUA Meeting, Phoenix, AZ (2005).
23. “IC Therapy and Role of Neuromodulation” 12th Annual Paul Peters Urology Symposium, University of Texas Southwestern, Dallas, TX Jan. 19, 2006.
24. “Relevant Surgical Pelvic Anatomy” 12th Annual Paul Peters Urology Symposium, University of Texas Southwestern, Dallas, TX Jan. 20, 2006.
25. “Update from the Urinary Incontinence Treatment Network (UITN): Work from Publications & Presentations (P&P) Committee. Podium Lecture. Society for Urodynamics and Female Urology Annual Meeting. San Diego, CA, March 23, 2007.
26. “Surgical management of erectile dysfunction”. Christian Medical and Dental Association’s (CMDA) Continuing Medical and Dental Education (CMDE) Conference, Chiangmai, Thailand, February 28, 2007.
27. “Surgical management of urolithiasis” Christian Medical and Dental Association’s (CMDA) Continuing Medical and Dental Education (CMDE) Conference, Chiangmai, Thailand, March 1, 2007.
28. “Treatment of urethral strictures” Christian Medical and Dental Association’s (CMDA) Continuing Medical and Dental Education (CMDE) Conference, Chiangmai, Thailand, March 2, 2007.
29. “Treatment of urinary incontinence” Christian Medical and Dental Association’s (CMDA) Continuing Medical and Dental Education (CMDE) Conference, Chiangmai, Thailand, March 2, 2007.
30. “Medical management of BPH” Christian Medical and Dental Association’s (CMDA) Continuing Medical and Dental Education (CMDE) Conference, Chiangmai, Thailand, March 3, 2007.

Community Service / Patient Support Group Presentations

1. “Urinary Incontinence”, American Foundation for Urologic Diseases Bladder Health Week, University of Maryland Hospital, Baltimore, MD, November 17, 1999.
2. “Surgical Management of Interstitial Cystitis”, Interstitial Cystitis Association Maryland Chapter Meeting, Columbia, MD, April 17, 2001.
3. “Effect of Prostate Cancer Treatments on Bladder Function”, Us Too, Prostate Cancer Support Group Meeting, University of Maryland Hospital, Baltimore, MD, March 15, 2001.
4. “Interstitial Cystitis, a Hypersensory Pelvic Disorder”. Interstitial Cystitis Association (ICA) Regional Support Group Meeting, Maryland City Public Library, Laurel, MD, October 19, 2003.
5. “Chronic Pelvic Pain Syndrome AKA Chronic Prostatitis”. ICA 20th Anniversary Meeting, Old Town Alexandria, VA, November 1, 2003.
6. “Treatment of IC – Anything New?” ICA Regional Meeting, Alexandria, VA, September 25, 2005.

Regional and National Courses Taught

1. Pelvic Floor Dysfunction Course, Innovations in Medical Education and Training, University of Maryland, Baltimore, MD, May 10-12, 2001
2. National InterStim Training Course, Medtronic Inc., Memphis, TN, July 13-14, 2001.
3. Onsite Regional InterStim Training Course, Medtronic, Inc., Richmond, VA, August 29, 2001.
4. Onsite Regional InterStim Training Course, Medtronic, Inc., Morristown, NJ, November 2, 2001.
5. Onsite Regional InterStim Training Course, Medtronic, Inc., Newton, MA, November 9, 2001.
6. Onsite Regional InterStim Training Course, Medtronic, Inc., Columbia, MD, November 16, 2001.
7. Modern Treatment of Urinary Incontinence, American Urological Association Annual Meeting, Orlando, FL, May 25-30, 2002.
8. Prostate Cancer 2002: New Perspectives – Urinary Incontinence. Baltimore, MD, September 28, 2002.
9. Onsite Regional InterStim Training Course, Medtronic, Inc., Columbia, MD, October 5, 2002.
10. 20th Annual Houston Everett Course in Urogynecology, Johns Hopkins Hospital, Baltimore, MD, February 20-22, 2003.
11. Modern Treatment of Urinary Incontinence, American Urological Association Annual Meeting, Chicago, IL, April 26 – May 1, 2003.
12. Modern Treatment of Urinary Incontinence, American Urological Association Annual Meeting, San Francisco, CA May 5, 2004.
13. 2007 Maryland Urological Association Annual Meeting – Course Director, Davidge Hall, University of Maryland School of Medicine, March 24, 2007
14. Advances and Controversies in Management of Overactive Bladder – Course Director, 2008 American Urological Association Meeting, Orlando, FL, 2008.

Visiting Professorships

1. Cleveland Clinic Foundation Urological Institute, Section of Voiding Dysfunction and Female Urology, October 18-19, 2001.
2. Dnipropetrovsk Medical Academy, Department of Urology, Department of Obstetrics and Gynecology, Dnipropetrovsk, Ukraine, March 29 – April 1, 2004.
3. Taipei Veterans General Hospital, Taipei, Taiwan, August 23, 2005.
4. Taichung Veterans General Hospital, Taichung, Taiwan, August 24, 2005.
5. Tri-Service General Hospital, Taipei, Taiwan, August 25, 2005.