**Curriculum Vitae**

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**Name:** Steven Lee Chang, M.D., M.S.

**Office Address:** Brigham and Women’s Hospital

Division of Urology

75 Francis Street

Boston, MA 02115

**Home Address:** 71 Meadowbrook Road

Brookline, MA 02445

**Work Phone:** (617) 525-3117

**Work Email:** SLCHANG@bwh.harvard.edu

**Work Fax:** (617) 525-6348

**Place of Birth:** Philadelphia, PA

**Education:**

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| --- | --- | --- | --- |
| Year | Degree | Field of Study | Institution |
| 1997 | BA | Biology  Asian Studies | Swarthmore College |
| 2002 | MD | Medicine | Columbia University |
| 2010 | MS | Health Services Research | Stanford University |

**Postdoctoral Training:**

|  |  |  |  |
| --- | --- | --- | --- |
| Year(s) | Title | Specialty/Discipline | Institution |
| 2002-2003 | Intern | General Surgery | Stanford University Medical Center |
| 2003-2004 | Resident | General Surgery | Stanford University Medical Center |
| 2004-2008 | Resident | Urology | Stanford University Medical Center |
| 2008-2010 | Fellowship | Urologic Oncology | Stanford University Medical Center |

**Academic Appointments:**

|  |  |  |  |
| --- | --- | --- | --- |
| Year(s) | Academic Title | Department | Academic Institution |
| 2010-2013 | Instructor | Surgery | Harvard Medical School |
| 2014- | Assistant Professor | Surgery | Harvard Medical School |

**Appointments at Hospitals/Affiliated Institutions**

|  |  |  |  |
| --- | --- | --- | --- |
| Year(s) | Position Title | Department | Institution |
| 2008-2010 | Staff Surgeon | Surgery | Department of Veterans Affairs Palo Alto Health Care System |
| 2010- | Associate Surgeon | Surgery | Brigham and Women’s Hospital |
| 2010- | Surgical Oncologist | Surgery | Dana-Farber Cancer Institute |

**Committee Service**

|  |  |  |
| --- | --- | --- |
| Years(s) | Positional Title | Institution |
| 2011-2017 | Surgical Credentialing Committee | Brigham and Women’s Hospital |
| 2011-2014 | Operating Room New Products Committee | Brigham and Women’s Faulkner Hospital |
| 2013-2014 | Clinical Competency Committee | Brigham and Women’s Hospital |
| 2015- | Quality Improvement Committee | Brigham and Women’s Hospital |

**Major Administrative Leadership Positions**

|  |  |  |
| --- | --- | --- |
| Year(s) | Position Title | Institution |
| 2013- | Associate Program Director, Urologic Oncology Fellowship | Brigham and Women’s/Massachusetts General Hospital |
| 2016- | Director of Ambulatory Clinical Operations, Division of Urology | Brigham and Women’s Hospital |
| 2016- | Co-Director of the Kidney Cancer Center | Dana-Farber Cancer Institute |
| 2019- | Section Chief of Urologic Oncology | Brigham and Women’s Hospital |

**Professional Societies:**

|  |  |
| --- | --- |
| Years of Membership | Society Name |
| 1997- | *Phi Beta Kappa Society* |
| 1997- | *Sigma Xi,* The Scientific Research Society |
| 2004- | American Urological Association |
| 2013- | Society of Urologic Oncology |
| 2013- | American College of Surgeons |
| 2015- | American Society of Clinical Oncology |

**Editorial Activities:**

|  |  |  |
| --- | --- | --- |
| Ad hoc Reviewer | Year | Journal Name |
|  | 2008- | Journal of Urology |
|  | 2008- | Urology |
|  | 2010- | Canada Journal of Urology |
|  | 2010- | International Journal of Urology |
|  | 2010- | Prostate and Prostatic Disease |
|  | 2010- | Journal of Immunotherapy |
|  | 2010- | Urologic Oncology: Seminars and Original Investigations |
|  | 2010- | European Urology |
|  | 2011- | Journal of Surgical Education |
|  | 2011- | UpToDate |
|  | 2014- | JAMA Surgery |

**Honors and Prizes:**

|  |  |  |  |
| --- | --- | --- | --- |
| Year | Name of Honor/Prize | Awarding Organization | Achievement for which awarded |
| 1995 | Summer Research Fellowship | National Institute of Health | Research |
| 1996 | Summer Research Fellowship | National Institute of Health | Research |
| 1997 | *Phi Beta Kappa* Honor Society |  | Research |
| 1997 | *Sigma Xi*, The Scientific Research Society |  | Research |
| 1999 | Medical Student Fellowship in Trauma Surgery | Lehigh Valley Hospital | Clinical Excellence |
| 1999 | Resident Trauma Essay Competition – 2nd Place | American College of Surgeons | Research |
| 2005 | Northern California Resident Research Symposium- 2nd Place |  | Research |
| 2006 | Traveling Resident Scholarship- Bhopal, India | International Volunteers in Urology | Scholarship |
| 2006 | Northern California Resident Research Symposium- 2nd Place |  | Research |
| 2006 | Earl F. Nation Resident Scholarship | Western Section American Urological Association | Scholarship |
| 2006 | Traveling Scholarship | Urologic Diseases in America | Scholarship |
| 2007 | Gerald P. Murphy Award in Prostate Cancer Research | American Urological Association and Threshold Pharmaceuticals | Research |
| 2008 | Resident Achievement Award | The Society of Laparoendoscopic Surgeons | Clinical Excellence |
| 2009 | Ambrose/Reed Socioeconomic Prize Essay Contest | American Urological Association | Research |
| 2009 | Foundation Scholarship | North American Taiwanese Medical Association | Scholarship |
| 2009 | Joseph F. McCarthy Physician Essay Contest – 1st Place | Western Section American Urological Association | Research |
| 2009 | James L. Goebel Grand Poster Prize | Western Section American Urological Association | Research |
| 2010 | Merit Award | ASCO Cancer Foundation | Research |
| 2010 | CapCURE Award | Prostate Cancer Foundation | Research |
| 2012 | Best Poster of Session | American Urological Association | Research |
| 2013 | J.Hartwell Harrison, M.D. Memorial Resident Education Award | Brigham and Women's Hospital, Division of Urology | Teaching |
| 2014 | Max K. Willscher Resident Research Award Competition, 2nd place | New England Section, American Urological Association | Research/Mentorship |
| 2018 | J.Hartwell Harrison, M.D. Memorial Resident Education Award | Brigham and Women's Hospital, Division of Urology | Teaching |

**Report of Funded and Unfunded Projects**

**Funding Information**

**Past Funding**

|  |  |  |  |
| --- | --- | --- | --- |
| Year(s) | Funding source | | Total direct costs |
| 2008-2010 | Clinical & Translational Science Award (CTSA)  Post-Doctoral Fellowship in Health Services Research | | $120,000 |
|  | Trainee | NIH KL2 RR025743 |  |
|  | The objective of this grant was for post-doctoral training in health services research. | | |
|  |  | |  |
| 2010-2011 | DF/HCC Kidney Cancer Special Program in Research Excellence, Developmental Project Grant | | ~$16,000 |
|  | Principal Investigator | 5P50CA101942-07 |  |
|  | *Cost-Effectiveness Analysis of Routine Percutaneous Renal Biopsy in the Management of Small Renal Masses* | | |
| 2011-2013 | DF/HCC Kidney Cancer Special Program in Research Excellence, Developmental Project Grant | | $20,000 |
|  | Co-Investigator |  |  |
|  | *Evaluating Comparative Effectiveness of Open and Minimally Invasive Kidney Surgery: Patient Reported QOL Outcomes and Cost* | | |
|  |  | |  |
| 2011-2013 | DF/HCC Kidney Cancer Special Program in Research Excellence, Career Development Award | | $100,000 |
|  | Principal Investigator | 5P50CA101942-09 |  |
|  | *Optimization of Surveillance Strategies Following Localized Kidney Cancer Therapy* | | |
|  |  | |  |
| 2012-2014 | Brigham and Women's Hospital, Department of Surgery, Junior Fellowship Award in Honor of Robert T. Osteen, MD | | $30,000 |
|  | Principal Investigator |  |  |
|  | *Comparative Effectiveness of Injectable Anticoagulants for Venous Thromboembolism Prophylaxis in Major Urologic Surgery* | | |
|  |  | |  |

**Current Funding**

|  |  |  |  |
| --- | --- | --- | --- |
| 2011- | Henry M Jackson Foundation for the Advancement of Military Medicine | | $1,909,656 |
|  | Co-Investigator | HU0001-11-1-0023 |  |
|  | Adil Haider, MD, MPH (PI) | |  |
|  | *Comparative Effectiveness and Provider Induced Demand Collaboration: a Clinical and Economic Analysis in Variation in Healthcare* | | |

|  |  |  |  |
| --- | --- | --- | --- |
| 2017- | Fox Chase Cancer Center (FCCC) | | $17,389 |
|  | Principal Investigator |  |  |
|  | *A Phase II Study of Sporadic Angiomyolipomas (AMLs) Growth, Size, and Interventions Rates with Everolimus (SAGE)* | | |

|  |  |  |  |
| --- | --- | --- | --- |
| 2017- | Ceevra, Inc | | $0 |
|  | Principal Investigator |  |  |
|  | *Virtual Reality Modeling for Surgical Planning and Education* | | |

**Report of Local Teaching and Training**

**Teaching of Students in Courses**

|  |  |  |  |
| --- | --- | --- | --- |
| Year(s) | Course & Audience | Role | Level of Effort |
| 2011- | The Genitourinary Examination  Harvard Medical School Students | Lecturer | 1 one-hour session per year |
| 2014 | London Society Renal Physiology and Pathophysiology Course (HT110) – Urologic Diseases  Harvard Medical School Students | Lecturer | 1 one-hour session per year |
| 2014 | Oncology Interest Group – Mock Tumor Board  Harvard Medical School Students | Lecturer | 1 two-hour session per year |
| 2013- | Upper Urinary Tract Pathophysiology and Management  Harvard Medical School Students | Lecturer | 3 one-hour sessions per year |

**Formal Teaching of Residents, Clinical Fellows and Research Fellows (post-docs)**

|  |  |  |  |
| --- | --- | --- | --- |
| Year(s) | Course & Audience | Role | Level of Effort |
| 2010- | Brigham and Women's Hospital, Urology Grand Rounds  Urology Residents & Fellows | Lecturer | 4 one-hour sessions per year |
| 2010-2015 | Laparoscopic and Open Urologic Surgical Simulation - Pig Laboratory  Urology Residents | Course Leader | 1 three-hour session per year |
| 2016- | Urologic Oncology Fellowship Monthly Didactic Sessions | Course Leader | One-hour per month |

**Clinical Supervisory and Training Responsibilities**

|  |  |  |  |
| --- | --- | --- | --- |
| Year(s) | Course & Audience | Role | Level of Effort |
| 2010- | Brigham and Women's Hospital, Housestaff Mentoring | Mentor | 4 one-hour sessions per year |
| 2010- | Brigham and Women's Hospital, Housestaff Clinical Training | Attending | 16 hours per week |

**Laboratory and Other Research Supervisory and Training Responsibilities**

|  |  |  |  |
| --- | --- | --- | --- |
| Year(s) | Course & Audience | Role | Level of Effort |
| 2013-2014 | Center for Surgery and Public Health, Cabot Fellowship Mentor | Mentor | 2-4 hours per week |
| 2014- | Center for Surgery and Public Health, Post-Doctoral Fellow Mentor | Mentor | 2 hours per week |
| 2013- | Combined Harvard Urologic Oncology Fellowship Program | Director | 6 hours per week |

**Formally Supervised Trainees**

|  |  |  |
| --- | --- | --- |
| Year(s) | Individual & Current Position |  |
| 2012-2013 | Nicole J Look-Hong, MD, MSc  Surgical Oncologist, University of Toronto  *Published one manuscript the explored the cost of competing strategies for the management of gastrointestinal stromal tumors (GIST).* | | |
| 2012-2014 | Jeffrey J Leow, MBBS  Urology Resident, MOH Holdings, Singapore  *Published >30 manuscripts on the topic of urology.* | | |
| 2012-2013 | Stephen W Reese  Urology Resident, Brigham and Women’s Hospital, Boston, MA  *Published 2 manuscripts on the topic of urologic oncology.* | | |
| 2014-2015 | Ilker Tinay, MD  Assistant Professor, Marmara University School of Medicine, Istanbul, Turkey  *Published 4 manuscripts on the topic of urologic cancer surgery.* | | |
| 2014- | Ye Wang, PhD  Post-Doctoral Fellow, Center for Surgery and Public Health  *Published 20 manuscripts on the topic of urology.* | | |
| 2014-2016 | Christopher B Allard, MD,  Urologist, Joseph Brant Memorial Hospital and McMaster University, Ontario, Canada  *Published 4 manuscripts on the topic of urologic cancer surgery.* | | |
| 2014-2016 | Francisco Gelpi-Hammerschimdt, MD, MPH  Urologist, Houston Metro Urology, Houston, TX  *Published 6 manuscripts on the topic of urologic cancer surgery.* | | |
| 2015-2017 | Nawar Hanna, MD,  Assistant Professor, Université de Montréal, Montréal, Canada  *Published 4 manuscripts on the topic of urologic cancer surgery.* | | |
| 2015-2017 | Ross Erik Krasnow, MD, MPH  Assistant Professor of Urology, MedStar Washington Hospital Center Washington, DC  *Published 6 manuscripts on the topic of urologic cancer surgery.* | | |
| 2016-2018 | Matthew Ingham, MD  Assistant Professor of Surgery, Brigham and Women’s Hospital, Boston, MA  *Published 1 manuscripts on the topic of urologic cancer surgery.* | | |
| 2016-2018 | Matthew Mossanen, MD, MPH  Assistant Professor of Surgery, Brigham and Women’s Hospital, Boston, MA  *Published 10 manuscripts on the topic of urologic cancer surgery.* | | |

**Report of Regional, National and International Invited Teaching and Presentations**

**Local Invited Presentations and Courses**

|  |  |  |  |
| --- | --- | --- | --- |
| Year | Title of presentation/name of course | Sponsor/Location | |
| 2010 | Robotic Partial Nephrectomy  *Faulkner Hospital Grand Rounds* | | Faulkner Hospital  Boston, MA | |
| 2011 | Robotic Radical Cystectomy  *Faulkner Hospital Grand Rounds* | | Faulkner Hospital  Boston, MA | |
| 2011-2013 | Diagnosis and Management of Small Renal Masses  *Internal Medicine Rounds* | | Brigham and Women’s Hospital  Boston, MA | |
| 2011 | Cost-Effectiveness Analysis in Urology  *Urology Grand Rounds* | | Brigham and Women’s Hospital  Boston, MA | |
| 2011 | The Economic and Clinical Impact of Chronic Kidney Disease Following Surgical Therapy for Kidney Cancer  *Kidney Cancer SPORE* | | Dana Farber Cancer Institute  Boston, MA | |
| 2012 | Cost-Effectiveness Analysis of Percutaneous Renal Mass Biopsy in the Management of Small Renal Masses  *Kidney Cancer SPORE* | | Dana Farber Cancer Institute  Boston, MA | |
| 2013 | Is Robotic Surgery Worth the Cost?  *Second Annual BWH Research Day* | | Brigham and Women's Hospital  Boston, MA | |
| 2013 | Is Robotic Surgery Worth the Cost?  *Second Annual BWH Research Day* | | Brigham and Women's Hospital  Boston, MA | |
| 2014 | Urology for the General Surgeon  *General Surgery Grand Rounds* | | Brigham and Women's Hospital  Boston, MA | |
| 2014 | The 101, 411, and 911 of Urologic Emergencies and Intraoperative Consults  *Urology Grand Rounds* | | Brigham and Women's Hospital  Boston, MA | |
| 2015 | Management of Advanced Kidney Cancer  *Urology Grand Rounds* | | Brigham and Women's Hospital  Boston, MA | |
| 2016 | Cancer of the Renal Pelvis and Ureter  *Urology Grand Rounds* | | Brigham and Women's Hospital  Boston, MA | |
| 2017 | Minimally Invasive Treatment of Upper Tract TCC  *Urology Grand Rounds* | | Brigham and Women's Hospital  Boston, MA | |
| 2017 | Fundamentals of Laparoscopy and Robotics  *Urology Grand Rounds* | | Brigham and Women's Hospital  Boston, MA | |
| 2018 | Advanced Kidney Cancer  *Urology Grand Rounds* | | Brigham and Women's Hospital  Boston, MA | |
| 2018 | Urologist Perspective on Renal Masses  *DFCI Cancer Imaging Program* | | Dana-Farber Cancer Institute  Boston, MA | |

**Regional Invited Presentations and Courses**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Year | Title of presentation/name of course | Sponsor/Location | | | | |
| 2011 | Diagnosis and Management of Small Renal Masses  *Grand Rounds* | | Leonard Morse Hospital Natick, MA | |
| 2012 | Who is an appropriate candidate for partial nephrectomy?  *Advances in the Treatment of Genitourinary Cancers* | Dana Farber Cancer Institute  Boston, MA | | | | |
| 2012 | Prostate Cancer  *Grand Rounds* | South Shore Hospital  South Weymouth, MA | |
| 2012 | Prostate Cancer | Health Ministry of Grace Church  Canton, MA | |
| 2012 | Robotic Partial Nephrectomy  *New England Robotics Course* | Beth Israel Deaconess Medical Center  Boston, MA | | | |
| 2013 | Robotic Partial Nephrectomy  *New England Robotics Course* | Beth Israel Deaconess Medical Center  Boston, MA | | | |
| 2014 | Update in Cystectomy and Nephroureterectomy Options  *Advances in the Treatment of Genitourinary Cancers* | Dana Farber Cancer Institute  Boston, MA | | | |
| 2014 | Robotic Partial Nephrectomy  *New England Robotics Course* | Beth Israel Deaconess Medical Center  Boston, MA | | | |
| 2015 | Robotic Nephrectomy and Prostatectomy *GI/GU Surgical Nursing Conference* | Brigham and Women’s Hospital  Boston, MA | | | |
| 2015 | Kidney Cancer Panel  *Advances in the Treatment of Genitourinary Cancers* | Dana Farber Cancer Institute  Boston, MA | | | |
| 2016 | Patient Selection for Robotic Partial Nephrectomy: Retroperitoneoscopic vs Transperitoneoscopic Approaches  *New England Robotics Course* | Beth Israel Deaconess Medical Center  Boston, MA | | | |
| 2016 | Obstruction Cases session  *Homeostasis II* | Harvard Medical School  Boston, MA | | | |
| 2017 | Obstruction Cases session  *Homeostasis II* | Harvard Medical School  Boston, MA | | | |
| 2017 | The 101, 411, and 911 of Robotic Surgery  *Lowell General Hospital Grand Rounds* | Lowell General Hospital  Lowell, MA | | | |
| 2018 | Obstruction Cases session  *Homeostasis II* | Harvard Medical School  Boston, MA | | | |
|  |  |  | | | |

**National and International Invited Presentations and Courses**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Year | Title of presentation/name of course | Sponsor/Location | | |
| 2010 | Robotic Radical Prostatectomy  *15th Annual Urologic Cancer Course* | Harvard Medical School  Boston, MA | | |
| 2012 | Laparoscopic Nephrectomy  *16th Biennial Urologic Cancer Course* | Harvard Medical School  Boston, MA | | |
| 2012 | Robotic Radical Cystectomy  *16th Biennial Urologic Cancer Course* | Harvard Medical School  Boston, MA | | |
| 2014 | Laparoscopic and Robotic Nephrectomy  *17th Biennial Urologic Cancer Course* | Harvard Medical School  Boston, MA | | |
| 2014 | Minimally Invasive Treatment of Upper Tract Urothelial Carcinoma  *17th Biennial Urologic Cancer Course* | Harvard Medical School  Boston, MA | | |
| 2014 | The proper role of robotic surgery and its future prospect  *Grand Rounds* | Koo Foundation Sun-Yat Sun Cancer Center  Taipei, Taiwan | | |
| 2015 | Surgical Crisis: Does the Robot Help or Hinder? | LSU/Oschner Health System  New Orleans, LA | | |
| 2015 | Beyond Statistics: Cost-Effectiveness Analysis in Urology | LSU/Oschner Health System  New Orleans, LA | | |
| 2015 | Upper Tract Urothelial Carcinoma: The Orphan Disease | LSU/Oschner Health System  New Orleans, LA | | |
| 2015 | Comprehensive Review of Urology: Cancer of Renal Pelvis and Ureter | Oakstone Publishing | | |
| 2015 | NCCN Kidney Tumor Board Webinar | National Comprehensive Cancer Network | | |
| 2016 | 2016 NCCN Oncology Fellows Program: New Horizons in Quality Cancer Care | Hollywood, FL | | |
| 2016 | Laparoscopic and Robotic Nephrectomy  *18th Biennial Urologic Cancer Course* | Harvard Medical School  Boston, MA | | |
| 2016 | Minimally Invasive Treatment of Upper Tract Urothelial Carcinoma  *18th Biennial Urologic Cancer Course* | Harvard Medical School  Boston, MA | | |
| 2016 | Cost Effectiveness Analyses and Their Implications in the Management of RCC *DF/HCC Kidney Cancer Program Symposium 2016* | | Harvard Medical School  Boston, MA |
| 2016 | Minimally Invasive Treatment of Upper Tract Urothelial Carcinoma  *18th Biennial Urologic Cancer Course* | Harvard Medical School  Boston, MA | | |
| 2017 | Surgical Education in the 21st Century: Combining Traditional Principles with Modern Technologies, *Symposium on Medical Education: How to educate and train health care professionals for the 21st century* | Koo Foundation Sun-Yat Sun Cancer Center  Taipei, Taiwan | | |
| 2017 | Retroperitoneoscopic Robotic Partial Nephrectomy: Patient Selection and Surgical Technique, *Grand Rounds* | Department of Urology, Taipei Veterans General Hospital, Taiwan | | |
| 2017 | Adrenal Tumors, *The 39th Annual Specialty Reviews in Urology (SRU): Chicago Course* | Naperville, IL | | |
| 2017 | Renal Pelvic and Ureteral Tumors, *The 39th Annual Specialty Reviews in Urology (SRU): Chicago Course* | Naperville, IL | | |
| 2017 | Renal Tumors, *The 39th Annual Specialty Reviews in Urology (SRU): Chicago Course* | Naperville, IL | | |
| 2017 | Management of Renal Masses and Expanded Use of Minimally Invasive Surgery, *New England American Urological Association, 2017* | Montreal, Canada | | |
| 2018 | Prehabilitation in Urology, *Taiwan Surgical Association* | Taipei, Taiwan | | |
| 2018 | Cost-Effectiveness in Urology, *Grand Rounds* | Department of Urology, Taipei Veterans General Hospital, Taiwan | | |
| 2018 | Adrenal Tumors, *The 40th Annual Specialty Reviews in Urology (SRU): Chicago Course* | Naperville, IL | | |
| 2018 | Renal Pelvic and Ureteral Tumors, *The 40th Annual Specialty Reviews in Urology (SRU): Chicago Course* | Naperville, IL | | |
| 2018 | Renal Tumors, *The 40th Annual Specialty Reviews in Urology (SRU): Chicago Course* | Naperville, IL | | |
| 2018 | Advanced Kidney Cancer, *UroFair 2018* | Singapore | | |
| 2018 | Retroperitoneoscopic Robotic Partial Nephrectomy: Patient Selection and Surgical Technique, *UroFair 2018* | Singapore | | |
| 2018 | Robotic Radical Cystectomy, *Thailand-UMPC 2018* | Chiang Mai, Thailand | | |
| 2018 | Advanced Kidney Cancer, *Thailand-UMPC 2018* | Chiang Mai, Thailand | | |
| 2018 | Cost effectiveness and Laparoscopic and Robotic Radical Nephrectomy,  *19th Biennial Urologic Cancer Course* | Harvard Medical School  Boston, MA | | |
| 2018 | Posterior Renal Tumors Debate: Retroperitoneal Approach, *Asian Summit on Robotic Surgery, 2018* | Singapore | | |
| 2018 | Intraoperative and Postoperative Complications: Troubleshooting and Practical Solutions, *Asian Summit on Robotic Surgery, 2018* | Singapore | | |
| 2018 | Delivering Cost Effective Robotic Surgery in a Multi-Specialty Hospital, *Asian Summit on Robotic Surgery, 2018* | Singapore | | |
| 2018 | Cost Implications for Renal Mass Management Choices, *American College of Surgeons, 2018* | Boston, MA | | |
| 2018 | Laparoscopic versus Robotic Radical Nephrectomy: What are the Costs and Benefits?, *Seventeenth International* *Kidney Cancer Symposium* | Miami, FL | | |

**Report of Clinical Activities and Innovations**

**Current Licensure and Certification**

|  |  |
| --- | --- |
| Year | Type of License or Certification |
| 2003 | The Medical Board of California (A85309) |
| 2003 | Drug Enforcement Agency (BC8703109) |
| 2006 | California Fluoroscopy X-ray Supervisor and Operator (RHC 164644) |
| 2010 | Board of Registration in Medicine, Commonwealth of Massachusetts (244769) |
| 2012 | American Board of Urology (17063) |

**Practice Activities**

|  |  |  |  |
| --- | --- | --- | --- |
| Type of Activity | Setting of Practice | Name and location of practice | Level of activity |
| Surgery | Hospital practice | Urology, BWH | Two days per week elective cases, plus nonelective cases |
| On-call general Urology | Hospital practice | Urology, BWH | One out of seven weeks |
| Ambulatory care | Outpatient clinic | Urology, BWH | Two days per week |

**Report of Scholarship**

**Publications**

**Peer-Reviewed Publications**

Research Investigations

1. Koo HP, Howard PS, **Chang SL**, Snyder HM, Duckett JW, Macarak EJ. Developmental expression of interstitial collagen genes in fetal bladders. *J Urol.* 1997;Sept;158(3Pt1):954-961. PMID: 9258125.
2. **Chang SL**, Howard PS, Koo HP, Macarak EJ. Role of type III collagen in bladder filling. *Neurourol* *Urodyn*. 1998;17(2):135-145. PMID: 9514146.
3. Koo HP, Macarak EJ, **Chang SL**, Rosenbloom J, Howard PS. Temporal expression of elastic fiber components in bladder development. *Connect Tissue Res.* 1998;37(1-2):1-11. PMID: 9643643.
4. **Chang SL**, Chung JS, Yeung MK, Howard PS, Macarak EJ. Roles of the lamina propria and the detrusor in tension transfer during bladder filling. *Scand J Urol Nephrol Suppl.* 1999;201:38-45. PMID: 10573775.
5. **Chang SL**, Cushman JG, Pasquale MD. The Injured Intoxicated Driver: Analysis of the Conviction Process. *J Trauma*. 2001;51(3):551-556. PMID: 11535909.
6. Hsu TH, **Chang SL**, Hsu S. Laparoscopic calicovesicostomy: a novel surgical procedure. *Urology*. 2006;68(2):413-415. PMID: 16904465.
7. **Chang SL**, Caruso T, Shortliffe LD. MRI-detected Renal Volume Reduction in Refluxing and Nonrefluxing Kidneys. *J Urol*. 2007 Dec;178(6):2550-2554.PMID: 17937957.
8. **Chang SL**, Liao JC, Shinghal R. Decreasing Utilization of LHRH-agonists in the United States is Independent of Reimbursement Changes: a Medicare and Veterans Health Administration Claims Analysis. *J Urol*.2009 July;182(1):255-260. PMID: 19450844.
9. **Chang SL**, Freedland SJ, Terris MK, Aronson WJ, Kane CJ, Amling CL, Presti JC. Freedom From a Detectable Ultrasensitive PSA at Two Years After Radical Prostatectomy Predicts a Favorable Clinical Outcome: Analysis of the SEARCH Database. *Urology*. 2010 Feb;75(2):439-444. PMID: 19819536.
10. Levesque BG, Cipriano LE, **Chang SL**, Lee KK, Owens DK, Garber AM. Cost-Effectiveness of Alternative Imaging Strategies for the Diagnosis of Small-Bowel Crohn's Disease. *Clin Gastroenterol Hepatol.* 2010 Mar;8:261-267. PMID: 19896559.
11. **Chang SL**, Harshman LC, Presti JC. The Impact of Common Medications on Serum Total Prostate-Specific Antigen Levels: Analysis of the National Health and Nutrition Examination Survey. *J Clin Oncol*. 2010 Sep 1;28(25):3951-3957. PMID: 20679596.
12. Hsu M, **Chang SL**, Ferrari M, Nolley R, Presti JC, Brooks JD. Length of Site-Specific Positive Surgical Margins Following Radical Prostatectomy as a Risk Factor for Biochemical Recurrence. *Int J Urol.* Feb 22;18:272-281. PMID: 21342296.
13. **Chang SL**, Cipriano LE, Harshman LC, Garber AM, Chung BI. Cost-effectiveness Analysis of Nephron-sparing Options in the Management of Small Renal Masses. *J Urol.* 2011 May;185(5):1591-1597. PMID: 21419445.
14. Alemozaffar M, **Chang SL**, Kacker R, Sun M, Dewolf WC, Wagner AA. Comparing Costs of Robotic, Laparoscopic, and Open Partial Nephrectomy. *J Endourol.* 2013 May;25(5):560-565.
15. Hong NL, **Chang SL**, Raut CP. The Economic Impact of Cytoreductive Surgery and Tyrosine Kinase Inhibitor Therapy in the Treatment of Recurrent or Metastatic Gastrointestinal Stromal Tumors: a Markov Chain Decision Analysis. *Eur J Cancer*. 2014 Jan;50(2):397-405.
16. Leow JJ, Martin-Doye W, Rajagopal PS, Patel CG, Anderson EM, Rothman AT Cote RJ, Urun Y, **Chang SL**, Choueiri TK, Bellmunt J. Adjuvant Chemotherapy for Invasive Bladder Cancer: a 2013 Updated Systematic Review and Meta-Analysis of Randomized Trials. *Eur Urology*. 2014 Jul;66(1):42-54.
17. Varda BK, Johnson EK, Clark CJ, Chung BI, Nelson CP, **Chang SL**. National trends of perioperative outcomes and cost for open, laparoscopic and robotic pediatric pyeloplasty. *J Urol*. 2014 Apr;191(4):1090-1095.
18. Gandaglia G, Sammon JD, **Chang SL**, Choueiri TK, Hu J, Karakiewicz PI, Kibel AS, Kim SP, Konijeti R, Montorsi F, Nguyen PL, Sukumar S, Menon M, Sun M, Trinh QD. Comparative Effectiveness of Robot-Assisted and Open Radical Prostatectomy in the “Post-Dissemination” Era.*J Clin Oncol*. 2014 May;32(14):1419-1426.
19. Antczak C, Trinh VQ, Sood A, Ravi P, Roghmann F, Trudeau V, **Chang SL**, Karakiewicz PI, Kibel AS, Krishna N, Nguyen PL, Saad F, Sammon JD, Sukumar S, Zorn KC, Sun M, Trinh QD. The health care burden of skeletal-related events in renal cell carcinoma patients with bone metastases.*J Urol*. 2014 Jun;191(6):1678-84.
20. Leow JJ, Reese SW, Jiang W, Lipsitz SR, Bellmunt J, Trinh QD, Chung BI, Kibel AS, **Chang SL**. Propensity-Matched Comparison of Morbidity and Costs of Open and Robot-Assisted Radical Cystectomies: A Contemporary Population-Based Analysis in the United States.*Eur Urol*. 2014 Sep;66(3):569-76.
21. Leow JJ, Reese SW, Trinh QD, Bellmunt J, Chung BI, Kibel AS, **Chang SL**. The Impact of Surgeon Volume on the Morbidity and Costs of Radical Cystectomy in the United States: A Contemporary Population-Based Analysis.*BJU Int.* 2015 May;115(5):713-21. doi: 10.1111/bju.12749. Epub 2015 Jan 26.
22. Shinagare AB, Silverman SG, Gershanik EF, **Chang SL**, Khorasani R. Evaluating Hematuria: Impact of Guideline Adherence on Urologic Cancer Diagnosis. *Am J Med*. 2014 Jul;127(7):625-32.
23. Bhojani N, Gandaglia G, Sood A, Rai A, Pucheril D, **Chang SL**, Karakiewicz PI, Menon M, Olugbade Jr K, Ruhotina N, Sammon J, Sukumar S, Sun M, Ghani KR, Schmid M, Varda B, Kibel AS, Zorn KC, Trinh QD. Morbidity and Mortality after Benign Prostatic Hyperplasia Surgery: Data from the American College of Surgeons National Surgical Quality Improvement Program. *J Endourol*. 2014 Jul;28(7):831-40.
24. Leow JJ, Martin-Doyle W, Fay AP, Choueiri TK, **Chang SL**, Bellmunt J. A Systematic Review and Meta-analysis of Adjuvant and Neoadjuvant Chemotherapy for Upper Tract Urothelial Carcinoma. *Eur Urol*. 2014 Sep;66(3):529-41.
25. Sammon JD, Pucheril D, Abdollah F, Varda B, Sood A, Bhojani N, **Chang SL**, Kim SP, Ruhotina N, Schmid M, Sun M, Kibel AS, Menon M, Semel ME, Trinh QD. Preventable Mortality Following Common Urologic Surgery: Failing to Rescue? *BJU Int*. 2014 Jun 10. doi: 10.1111/bju.12833. [Epub ahead of print]
26. Schmid M, Ravi, P, Abd-El-Barr A, Klap J, Sammon J, **Chang SL**, Menon M, Kibel AS, Fisch M, Trinh QD. Chronic kidney disease and perioperative outcomes in urologic oncologic surgery. *Int J Urol*. 2014 Dec;21(12):1245-52.
27. **Chang SL**, Kibel AS, Brooks JD, Chung BI. The Impact of Robotic Surgery on the Surgical Management of Prostate Cancer in the United States. *BJU Int*. 2014 Jun 23. doi: 10.1111/bju.12850. [Epub ahead of print]
28. Ruhotina N, Dagenais J, Gandaglia G, Sook A, Abdollah F, **Chang SL**, Olugbade K, Rai A, Sammon JD, Schmid M, Sun M, Varda B, Menon M, Kibel AS, Trinh QD. The Impact of Resident Involvement in Minimally Invasive Urologic Oncology Procedures. *Can Urol Assoc J*. 2014 Sep;8(9-10):334-40.
29. Schmid M, Abd-El-Barr A, Gandaglia G, Sook A, Olugbade K, Ruhotina N, Sammon JD,Varda B, **Chang SL**, Kibel AS, Chun FK, Menon M, Fisch M, Trinh QD. The Predictors of 30-day acute kidney injury following radical and partial nephrectomy for renal cell carcinoma. *Urol Oncol*. 2014 Nov;32(8):1259-66.
30. Rose BS, Chen MH, Hirsch MS, Richie JP, **Chang SL**, Hegde JV, Loffredo MJ, D’Amico AV. Maximum tumor diameter and the risk of prostate-specific antigen recurrence after radical prostatectomy. *Clin Genitourin Cancer*. 2014 Oct;12(5):e173-9.
31. Ravi O, Karakiewicz PI, Roghmann F, Gandaglia G, Choueiri TK Menon M, McKay RR, Nguyen PL, Sammon JD, Sukumar S, Varda B, **Chang SL**, Kibel AS, Sun M, Trinh QD. Mental health outcomes in elderly men with prostate cancer. *Urol Oncol*. 2014 Nov;32(8):1333-40.
32. Gandaglia G, Varda B, Sood A, Pucheril D, Konijeti R, Sammon JD, Sukumar S, Menon M, Sun M, **Chang SL**, Montorsi F, Kibel AS, Trinh QD. Short-term perioperative outcomes of patients treated with radical cystectomy for bladder cancer included in the National Surgical Quality Improvement Program (NSQIP) database. *Can Urol Assoc J*. 2014 Sep;8(9-10):E681-7.
33. Leow JJ, Gandaglia G, Sood A, Ruhotina N, Klett DE, Sammon JD, Schmid M, Sun M, **Chang** SL, Kibel AS, Trinh QD. Readmissions after major urologic cancer surgery. Can *J Urol*. 2014 Dec;21(6):7537-46.
34. Martin-Doyle W, Leow JJ, Orsola A, **Chang SL**, Bellmunt J. Improving selection criteria for early cystectomy in high-grade T1 bladder cancer: A meta-analysis of 15,215 patients. *J Clin Oncol*. 2015 Jan 5. pii: JCO.2014.57.6967.
35. Leow JJ, Orsola A, **Chang SL**, Bellmunt J. A contemporary review of management and prognostic factors of upper tract urothelial carcinoma. *Cancer Treat Rev.* 2015 Apr;41(4):310-9. doi: 10.1016/j.ctrv.2015.02.006.
36. Meyer CP, Hanske J, Friedlander D, Schmid M, Dahlem R, Trinh VQ, **Chang SL**, Kibel AS, Chun FKH, Fisch M, Trinh QD, Eswara JR. The Impact of Resident Involvement in One-Stage Urethroplasties. *Urology*. 2015 Apr;85(4):937-41. doi: 10.1016/j.urology.2015.01.010.
37. Chung BI, Leow JJ, Gelpi-Hammerschmidt F, Wang Y, Del Giudice F, De S, Chou EP, Song KH, Almario L, **Chang SL**. Racial Disparities in Postoperative Complications After Radical Nephrectomy: A Population-based Analysis. *Urology*. 2015 Jun;85(6):1411-6. doi: 10.1016/j.urology.2015.03.001.
38. Allard CB, Meyer CP, Gandaglia G, **Chang SL**, Chun FK, Gelpi-Hammerschmidt F, Hanske J, Kibel AS, Preston MA, Trinh QD. The Effect of Resident Involvement on Perioperative Outcomes in Transurethral Urologic Surgeries. *J Surg Educ*. 2015 Sep-Oct;72(5):1018-25. doi: 10.1016/j.jsurg.2015.04.012.
39. Kramann R, Fleig SV, Schneider RK, Fabian SL, DiRocco DP, Maarouf O, Wongboonsin J, Ikeda Y, Heckl D, **Chang** **SL**, Rennke HG, Waikar SS, Humphreys BD. Pharmacological GLI2 inhibition prevents myofibroblast cell-cycle progression and reduces kidney fibrosis. *J Clin Invest*. 2015 Aug 3;125(8):2935-51. doi: 10.1172/JCI74929.
40. Allard CB, Gelpi-Hammerschmidt F, Harshman LC, Choueiri TK, Faiena I, Modi P, Chung BI, Tinay I, Singer EA, **Chang SL**. Contemporary trends in high-dose interleukin-2 use for metastatic renal cell carcinoma in the United States. *Urol Oncol*. 2015 Jul 22. pii: S1078-1439(15)00323-3. doi: 10.1016/j.urolonc.2015.06.014.
41. Leow JJ, Orsola A, **Chang SL**, Bellmunt J. A contemporary review of management and prognostic factors of upper tract urothelial carcinoma. *Cancer Treat Rev*. 2015 Apr;41(4):310-9. doi: 10.1016/j.ctrv.2015.02.006.
42. Gelpi-Hammerschmidt F, Tinay I, Allard CB, Su LM, Preston MA, Trinh QD, Kibel AS, Wang Y, Chung BI, Singer EA, **Chang SL**. The contemporary incidence and sequelae of rhabdomyolysis following extirpative renal surgery: a population-based analysis. *J Urol*. 2016 Feb;195(2):399-405. doi: 10.1016/j.juro.2015.08.084.
43. Tinay I, Gelpi-Hammerschmidt F, Leow JJ, Allard CB, Rodriguez D, Wang Y, Chung BI, **Chang SL**. Trends in utilization, perioperative outcomes and costs for nephroureterectomies in the management of upper tract urothelial carcinoma (UTUC): a 10-year population-based analysis. *BJU Int*. 2016 Jun;117(6):954-60. doi: 10.1111/bju.13375.
44. Leow JJ, **Chang SL**, Trinh QD. Accurately Determining Patients Who Underwent Robot-Assisted Surgery: Limitations Of Administrative Databases. *BJU Int*. 2016 Jan 22. doi: 10.1111/bju.13423.
45. Leow JJ, **Chang SL**, Meyer CP, Wang Y, Hanske J, Sammon JD, Cole AP, Preston MA, Dasgupta P, Menon M, Chung BI, Trinh QD. Robot-assisted Versus Open Radical Prostatectomy: A Contemporary Analysis of an All-payer Discharge Database. *Eur Urol*. 2016 Feb 10. pii: S0302-2838(16)00163-9. doi: 10.1016/j.eururo.2016.01.044.
46. Cole AP, Leow JJ, **Chang SL**, Chung BI, Meyer CP, Kibel AS, Menon M, Nguyen PL, Choueiri TK, Reznor G, Lipsitz SR, Sammon JD, Sun M, Trinh QD. Surgeon and Hospital Level Variation in the Costs of Robot-Assisted Radical Prostatectomy. *J Urol*. 2016 May 6. pii: S0022-5347(16)30344-5. doi: 10.1016/j.juro.2016.04.087.
47. Steinberg PL, **Chang SL**. Pain Relief for Acute Urolithiasis: The Case for Non-Steroidal Anti-Inflammatory Drugs. *Drugs*. 2016 Jul;76(10):993-7. doi: 10.1007/s40265-016-0595-y.
48. Leow JJ, Heah NH, **Chang SL**, Chong YL, Png KS. Outcomes of Robotic versus Laparoscopic Partial Nephrectomy: an Updated Meta-Analysis of 4,919 Patients. *J Urol*. 2016 Nov;196(5):1371-1377. doi: 10.1016/j.juro.2016.06.011.
49. Wang Y, Chen YW, Leow JJ, Levy AC, **Chang SL**, Gelpi FH. Cost-Effectiveness of Management Options for Small Renal Mass: A Systematic Review. *Am J Clin Oncol*. 2016 Oct;39(5):484-90. doi: 10.1097/COC.0000000000000307.
50. Hanna N, Sun M, Meyer CP, Nguyen PL, Pal SK, **Chang SL**, de Velasco G, Trinh QD, Choueiri TK. Survival Analyses of Metastatic Renal Cancer Patients Treated With Targeted Therapy With or Without Cytoreductive Nephrectomy: A National Cancer Data Base Study. *J Clin Oncol*. 2016 Sep 20;34(27):3267-75. doi: 10.1200/JCO.2016.66.7931.
51. Dagenais J, Leow JJ, Haider AH, Wang Y, Chung BI, **Chang SL**, Eswara JR. Contemporary Trends in the Management of Renal Trauma in the United States: A National Community Hospital Population-Based Analysis. *Urology*. 2016 Nov;97:98-104. doi: 10.1016/j.urology.2016.06.051.
52. Kurtz MP, Leow JJ, Varda BK, Logvinenko T, Yu RN, Nelson CP, Chung BI, **Chang SL**. Robotic versus open pediatric ureteral reimplantation: Costs and complications from a nationwide sample. *J Pediatr Urol.* 2016 Dec;12(6):408.e1-408.e6. doi: 10.1016/j.jpurol.2016.06.016.
53. Pang P, Abbott M, **Chang SL**, Abdi M, Chauhan N, Mistri M, Ghofrani J, Fucci QA, Walker C, Leonardi C, Grady S, Halim A, Hoffman R, Lu T, Cao H, Tullius SG, Malek S, Kumar S, Steele G, Kibel A, Freedman BS, Waikar SS, Siedlecki AM. Human vascular progenitor cells derived from renal arteries are endothelial-like and assist in the repair of injured renal capillary networks. *Kidney Int.* 2017 Jan;91(1):129-143. doi: 10.1016/j.kint.2016.07.037.
54. Kurtz MP, Leow JJ, Varda BK, Logvinenko T, McQuaid JW, Yu RN, Nelson CP, Chung BI, **Chang SL**. The Decline of the Open Ureteral Reimplant in the United States: National Data From 2003-2013. *Urology*. 2017 Feb;100:193-197. doi: 10.1016/j.urology.2016.07.024.
55. Seisen T, Krasnow RE, Bellmunt J, Rouprêt M, Leow JJ, Lipsitz SR, Vetterlein MW, Preston MA, Hanna N, Kibel AS, Sun M, Choueiri TK, Trinh QD, **Chang SL**. Effectiveness of Adjuvant Chemotherapy After Radical Nephroureterectomy for Locally Advanced and/or Positive Regional Lymph Node Upper Tract Urothelial Carcinoma. *J Clin Oncol.* 2017 Mar 10;35(8):852-860. doi: 10.1200/JCO.2016.69.4141.
56. Seisen T, Krasnow RE, **Chang SL**. Reply to B. Biswas et al. *J Clin Oncol.* 2017 Jun 20;35(18):2096. doi: 10.1200/JCO.2017.72.9277.
57. Modi PK, Farber NJ, Zavaski ME, Jang TL, Singer EA, **Chang SL**. Industry Payments to Urologists in 2014: an Analysis of the Open Payments Program. *Urol Pract*. 2017 Jul;4(4):342-347.
58. Leow JJ, Leong EK, Serrell EC, **Chang SL**, Gruen RL, Siang Png K, Beaule LT, Trinh QD, Menon MM, Sammon JD. Systematic Review of the Volume-Outcome Relationship for Radical Prostatectomy: A 2017 Update. *Eur Urol Focus*. 2017 Apr 6. pii: S2405-4569(17)30076-7. doi: 10.1016/j.euf.2017.03.008. [Epub ahead of print]
59. Sun M, Vetterlein M, Harshman LC, **Chang SL**, Choueiri TK, Trinh QD. Risk Assessment in Small Renal Masses: A Review Article. *Urol Clin North Am.* 2017 May;44(2):189-202. doi: 10.1016/j.ucl.2016.12.005.
60. Leow JJ, Weissman JS, Kimsey L, Hoburg A, Helmchen LA, Jiang W, Hevelone N, Lipsitz SR, Nguyen LL, **Chang SL**. Radical prostatectomy innovation and outcomes at military and civilian institutions. *Am J Manag Care*. 2017 Jun;23(6):342-347.
61. Khandwala YS, Jeong IG, Kim JH, Han DH, Li S, Wang Y, **Chang SL**, Chung BI. The Impact of Surgeon Volume on Perioperative Outcomes and Cost for Patients Receiving Robotic Partial Nephrectomy. *J Endourol.* 2017 Jun 21. doi: 10.1089/end.2017.0207.
62. Chaudhary MA, Leow JJ, Mossanen M, Chowdhury R, Jiang W, Learn PA, Weissman JS, **Chang SL**. Patient driven care in the management of prostate cancer: analysis of the United States military healthcare system. *BMC Urol.* 2017 Jul 11;17(1):56. doi: 10.1186/s12894-017-0247-x.
63. Leow JJ, Cole AP, Seisen T, Bellmunt J, Mossanen M, Menon M, Preston MA, Choueiri TK, Kibel AS, Chung BI, Sun M, **Chang SL**, Trinh QD. Variations in the Costs of Radical Cystectomy for Bladder Cancer in the USA. *Eur Urol.* 2017 Aug 9. pii: S0302-2838(17)30640-1. doi: 10.1016/j.eururo.2017.07.016. [Epub ahead of print]
64. Cheung H, Wang Y, **Chang SL**, Khandwala Y, Del Giudice F, Chung BI. Adoption of Robot-Assisted Partial Nephrectomies: A Population-Based Analysis of U.S. Surgeons from 2004 to 2013. *J Endourol.* 2017 Aug 11. doi: 10.1089/end.2017.0174. [Epub ahead of print]
65. Meyer CP, Sun M, Karam JA, Leow JJ, de Velasco G, Pal SK, **Chang SL**, Trinh QD, Choueiri TK. Complications After Metastasectomy for Renal Cell Carcinoma-A Population-based Assessment. *Eur Urol.* 2017 Aug;72(2):171-174. doi: 10.1016/j.eururo.2017.03.005.
66. Leow JJ, Meyer CP, Wang Y, **Chang SL**, Chung BI, Trinh QD, Korets R, Bhojani N. Contemporary Trends in Utilization and Perioperative Outcomes of Percutaneous Nephrolithotomy in the United States from 2003 to 2014. *J Endourol.* 2017 Aug;31(8):742-750. doi: 10.1089/end.2017.0225.
67. Krasnow RE, Mossanen M, Koo S, Kubiak DW, Preston MA, Chung BI, Kibel AS, **Chang SL**. Prophylactic Antibiotics and Postoperative Complications of Radical Cystectomy: A Population Based Analysis in the United States. *J Urol.* 2017 Mar 4. pii: S0022-5347(17)34854-1. doi: 10.1016/j.juro.2017.02.3340.
68. Leow JJ, Chong KT, **Chang SL**, Belmunt J. Upper tract urothelial carcinoma: a different disease entity in terms of management. *ESMO Open.* 2017 Jan 24;1(6):e000126. doi: 10.1136/esmoopen-2016-000126. eCollection 2016.
69. Khandwala YS, Jeong IG, Han DH, Kim JH, Li S, Wang Y, **Chang SL**, Chung BI. Surgeon preference of surgical approach for partial nephrectomy in patients with baseline chronic kidney disease: a nationwide population-based analysis in the USA. *Int Urol Nephrol.* 2017 Aug 29. doi: 10.1007/s11255-017-1688-6. [Epub ahead of print].
70. Speed JM, Wang Y, Leow JJ, Bhojani N, Trinh QD, **Chang SL**, Korets R. The Effect of Physician Specialty Obtaining Access for Percutaneous Nephrolithotomy on Perioperative Costs and Outcomes. *J Endourol.* 2017 Oct 4. doi: 10.1089/end.2017.0441. [Epub ahead of print]
71. Khandwala YS, Jeong IG, Kim JH, Han DH, Li S, Wang Y, **Chang SL**, Chung BI. The incidence of unsuccessful partial nephrectomy within the United States: A nationwide population-based analysis from 2003 to 2015. *Urol Onc.* 2017 Sep 7. pii: S1078-1439(17)30424-6. doi: 10.1016/j.urolonc.2017.08.014. [Epub ahead of print].
72. Faiena I, Tabakin A, Leow J, Patel N, Modi PK, Salmasi AH, Chung BI, **Chang SL**, Singer EA. Adrenalectomy for benign and malignant disease: utilization and outcomes by surgeon specialty and surgical approach from 2003-2013. *Can J Urol.* 2017 Oct;24(5):8990-8997.
73. Mossanen M, Ingham MD, Leow JJ, Tinay I, Wang Y, Krasnow R, Preston MA, Bellmunt J, Chung BI, Rosenberg, JE, **Chang SL**. Exploring Patterns of Mitomycin C Use in Community Practice Urology. *Urol Pract.* 2017 Feb;5(1):7-14.
74. Von Landenberg N, Mossanen M, Wang Y, Sammon JD, Hanna N, Gild P, Noldus J, Roghmann F, Menon M, Kibel AS, Sun M, **Chang SL**, Trinh QD. Factors Influencing Prostate-Specific Antigen Testing in the United States. *Urol Pract.* 2018 [in press].
75. Mossanen M, Krasnow RE, Lipsitz SR, Preston MA, Kibel AS, Ha A, Gore JL, Smith AB, Leow JJ, Trinh QD, **Chang SL**. Associations of Specific Postoperative Complications with Costs after Radical Cystectomy. *BJU Int.* 2017 Oct 24. doi: 10.1111/bju.14064. [Epub ahead of print]
76. Jeong IG, Khandwala YS, Kim JH, Han DH, Li S, Wang Y, **Chang SL**, Chung BI. Association of Robotic-Assisted vs Laparoscopic Radical Nephrectomy With Perioperative Outcomes and Health Care Costs, 2003 to 2015. *JAMA.* 2017;318(16):1561-1568. doi:10.1001/jama.2017.14586
77. Wang Y, Mossanen M, **Chang SL**. Cost and cost-effectiveness studies in urologic oncology using large administrative databases. *Urol Oncol*. 2018 Apr;36(4):213-219. doi: 10.1016/j.urolonc.2018.01.015.
78. Varda BK, Wang Y, Chung BI, Lee RS, Kurtz MP, Nelson CP, **Chang SL**. Has the robot caught up? National trends in utilization, perioperative outcomes, and cost for open, laparoscopic, and robotic pediatric pyeloplasty in the United States from 2003 to 2015. *J Pediatr Urol*. 2018 Feb 22. pii: S1477-5131(18)30023-8. doi: 10.1016/j.jpurol.2017.12.010.
79. Mossanen M, **Chang SL**, Kimm S, Sonpavde GP, Kibel AS. Current Staging Strategies for Muscle-Invasive Bladder Cancer and Upper Tract Urothelial Cell Carcinoma. *Urol Clin North Am*. 2018 May;45(2):143-154. doi: 10.1016/j.ucl.2017.12.001.
80. Modi PK, Wang Y, Kirk PS, Dupree JM, Singer EA, **Chang SL**. The Receipt of Industry Payments is Associated With Prescribing Promoted Alpha-blockers and Overactive Bladder Medications. *Urology*. 2018 Jul;117:50-56. doi: 10.1016/j.urology.2018.04.008.
81. McClintock TR, Wang Y, Cole AP, Chung BI, Kibel AS, **Chang SL**, Trinh QD. Contemporary trends in the utilisation of radical prostatectomy. *BJU Int*. 2018 May 24. doi: 10.1111/bju.14411.
82. Ha A, Krasnow RE, Mossanen M, Nagle R, Hshieh TT, Rudolph JL, **Chang SL**. A contemporary population-based analysis of the incidence, cost, and outcomes of postoperative delirium following major urologic cancer surgeries. *Urol Oncol*. 2018 Jul;36(7):341.e15-341.e22. doi: 10.1016/j.urolonc.2018.04.012.
83. Sun M, Meyer CP, Karam JA, de Velasco G, **Chang SL**, Pal SK, Trinh QD, Choueiri TK. Predictors, utilization patterns, and overall survival of patients undergoing metastasectomy for metastatic renal cell carcinoma in the era of targeted therapy. *Eur* *J Surg Oncol*. 2018 Jun 5. pii: S0748-7983(18)31103-X. doi: 10.1016/j.ejso.2018.05.026.
84. Leow JJ, Valiquette AS, Chung BI, **Chang SL**, Trinh QD, Korets R, Bhojani N. Costs variations for percutaneous nephrolithotomy in the U.S. from 2003-2015: A contemporary analysis of an all-payer discharge database. *Can Urol Assoc J*. 2018 Jun 19. doi: 10.5489/cuaj.5280.
85. McClintock TR, Mossanen M, Shah MA, Wang Y, Chung BI, **Chang SL**. Charge-to-Cost Ratio Varies among Common Urological Surgery Procedures. *Urol Pract* 2018 [in press]
86. Chiang HA, Cheng PJ, Speed JM, Steinberg J, Najjar PA, Steele GS, Trinh QD, Eswara JR, **Chang SL**, Kibel AS, Stopfkuchen-Evans MF, Preston MA. Implementation of a Perioperative Venous Thromboembolism Prophylaxis Program for Patients Undergoing Radical Cystectomy on an Enhanced Recovery After Surgery Protocol. *Eur Urol Focus* 2018 Sep 15. pii: S2405-4569(18)30244-X. doi: 10.1016/j.euf.2018.08.025. [Epub ahead of print]
87. Krasnow RE, Rodríguez D, Nagle RT, Mossanen M, Kibel AS, **Chang SL**. The impact of age at the time of radiotherapy for localized prostate cancer on the development of second primary malignancies. *Urol Oncol* 2018 Sep 21. pii: S1078-1439(18)30209-6. doi: 10.1016/j.urolonc.2018.06.007. [Epub ahead of print]
88. Li K, Brandes ER, **Chang SL**, Leow JJ, Chung BI, Wang Y, Eswara JR. Trends in penile prosthesis implantation and analysis of predictive factors for removal. *World J Urol* 2018 Sep 24. doi: 10.1007/s00345-018-2491-4. [Epub ahead of print]
89. Berg S, Cole AP, Fletcher SA, Pucheril D, Nabi J, Lipsitz SR, **Chang SL**, Sun M, Noldus J, Harshman LC, Choueiri TK, Trinh QD. Investigating the effect of treatment at high-volume hospitals on overall survival following cytoreductive nephrectomy. *Urol Oncol* 2018 Sep;36(9):400.e15-400.e22. doi: 10.1016/j.urolonc.2018.06.005.
90. McClintock TR, Mossanen M, Shah MA, Wang Y, Chung BI, **Chang SL**. Gupta S, Cole AP, Marchese M, Wang Y, Speed JM, Fletcher SA, Nabi J, Berg S, Lipsitz SR, Choueiri TK, Chang SL, Kibel AS, Uhlig A, Trinh QD. Use of Preventive Health Services Among Cancer Survivors in the U.S. *Am J Prev Med* 2018 Oct 20. pii: S0749-3797(18)32136-6. doi: 10.1016/j.amepre.2018.07.021. [Epub ahead of print]
91. Mossanen M, Wang Y, Szymaniak J, Tan WS, Huynh MJ, Preston MA, Trinh QD, Sonpavde G, Kibel AS, Chung BI, **Chang SL**. Evaluating the Cost of Surveillance for Non-Muscle Invasive Bladder Cancer: an Analysis Based on Risk Categories. *World J Urol* 2018 Nov 16. doi: 10.1007/s00345-018-2550-x. [Epub ahead of print]
92. von Landenberg N, Mossanen M, Wang Y, Sammon JD, Hanna N, Gild P, Noldus J, Roghmann F, Menon M, Kibel AS, Sun M, **Chang SL**, Trinh QD. Factors Influencing Prostate Specific Antigen Testing in the United States. *Urol Practice* 2018 [in press]
93. McClintock TR, Wang Y, Shah MA, Chung BI, **Chang SL**. How have hospital pricing practices for surgical episodes of care responded to Affordable Care Act-related Medicaid expansion? *Urology* 2018 [in press]
94. McClintock TR, Wang Y, Cole AP, Chung BI, Kibel AS, **Chang SL**, Trinh QD. Contemporary trends in the utilisation of radical prostatectomy. *BJU Int.* 2018 Nov;122(5):726-728. doi: 10.1111/bju.14411. Epub 2018 Jun 13.
95. Mossanen M, Krasnow RE, Zlatev DV, Tan WS, Preston MA, Trinh QD, Kibel AS, Sonpavde G, Schrag D, Chung BI, **Chang SL**. Examining the relationship between complications and perioperative mortality following radical cystectomy: a population-based analysis. *BJU Int.* 2018 in press.
96. Gupta S, Cole AP, Marchese M, Wang Y, Speed JM, Fletcher SA, Nabi J, Berg S, Lipsitz SR, Choueiri TK, **Chang SL**, Kibel AS, Uhlig A, Trinh QD. Use of Preventive Health Services Among Cancer Survivors in the U.S. *Am J Prev Med*. 2018 Dec;55(6):830-838. doi: 10.1016/j.amepre.2018.07.021. Epub 2018 Oct 21.
97. McClintock TR, Wang Y, Shah MA, Mossanen M, Chung BI, **Chang SL**. Hospital charges for urologic surgery episodes of care are rising in spite of declining costs. *Mayo Clin Proc.* 2019 Jun;94(6):995-1002.
98. McClintock TR, Wang Y, Shah MA, Chung BI, **Chang SL**. How Have Hospital Pricing Practices for Surgical Episodes of Care Responded to Affordable Care Act-Related Medicaid Expansion? *Urology* 2019 in press.
99. McClintock TR, Shah MA, **Chang SL**, Kaplan RS, Haleblian GE. Time-driven activity-based costing in urologic surgery cycles of care. *Value in Health* 2019 in press.
100. Psutka SP, **Chang SL**, Cahn D, Uzzo RG, McGregor BA. Reassessing the Role of Cytoreductive Nephrectomy for Metastatic Renal Cell Carcinoma in 2019. *Am Soc Clin Oncol Educ Book.* 2019 Jan;39:276-283.
101. **Chang SL**, Choueiri TK, Harshman LC. Does CARMENA Mark the End of Cytoreductive Nephrectomy for Metastatic Renal Cell Carcinoma? *Urol Onc* 2019 in press.

**Non-peer Reviewed Publications**

1. **Chang SL**, Shortliffe LD. Pediatric urinary tract infections. *Pediatr Clin North Am*. 2006 Jun; 53(3):379-400.
2. **Chang SL**, Brooks JD. Nutrition, Lifestyle Interventions and Prevention. In: Feneley M, Payne H, editors. *Therapeutic Strategies in* *Prostate Cancer*. Oxford, UK: Clinical Publishing, 2007:2-38.
3. **Chang SL**, Gonzalgo ML. Laparoscopic prostatectomy: learning curve and cancer control. *Nat Rev Urol*. 2009 July;6:361-362.
4. Lucca I, Leow JJ, Shariat SF, **Chang SL**. Diagnosis And Management Of Upper Tract Urothelial Carcinoma. *Hematol Oncol Clin North Am*. 2015 Apr;29(2):271-88, ix. doi: 10.1016/j.hoc.2014.10.003.
5. Raup VT, **Chang SL**, Eswara JR. Post-Renal Acute Kidney Injury: Epidemiology, Presentation, Pathophysiology, Diagnosis, and Management. In press *Core Concepts in Acute Kidney Injury*.

Abstracts, Poster Presentations and Exhibits Presented at Professional Meetings (past 3 years)

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| 1. Rowe CK, Leow JJ, Wang Y, Chung BI, Trinh QD, Kibel AS, Yu RN, **Chang SL**. Surgical crisis: Is the robot friend or foe? Presented at the 2015 American Urological Association National Meeting, May 2015. 2. Rowe CK, Hess DS, Hwong JS, Gelpi-Hammerschmidt F, Chung BI, **Chang SL**. NSAIDs for acute urolithiasis: Racial disparities in pain medication for stones: results of a nationwide hospital database analysis. Presented at the 2015 American Urological Association National Meeting, May 2015. 3. Rowe CK, Hess DS, Hwong JS, Gelpi-Hammerschmidt F, Chung BI, **Chang SL**. NSAIDs for acute urolithiasis: Underutilized analgesics with potential for cost savings. Presented at the 2015 American Urological Association National Meeting, May 2015. 4. Preston MA, Cheng JS, Sanchez A, Graff RE, Rodriguez D, Feldman AS, Barrisford GW, Bechis S, Blute ML, Stampfer M, **Chang SL**, Giovannucci E, Albiges L, Choueiri TK, Cho E, Wilson KM. The association between obesity and incidence of total and fatal renal cell carcinoma in two prospective cohorts. Presented at the 2015 American Urological Association National Meeting, May 2015. 5. Allard CB, Gelpi-Hammerschmidt F, Harshman LC, Choueiri TK, Faiena I, Modi P, Chung BI, Tinay I, Singer EA, **Chang SL**. Contemporary trends in high-dose interleukin-2 use for metastatic renal cell carcinoma in the United States. Presented at the 2015 Genitourinary Cancers Symposium, February 2015 and 2015 American Urological Association National Meeting, May 2015. 6. Leow JJ, Meyer CP, Hanske J, Schmid M, Chung BI, Trinh QD, **Chang SL**. Open versus robot-assisted radical prostatectomy: a contemporary analysis of an all-payer discharge database. Presented at the 2015 Genitourinary Cancers Symposium, February 2015 and 2015 American Urological Association National Meeting, May 2015. 7. Gelpi-Hammerschmidt F, Tinay I, Allard CB, Leow JJ, Wang Y, Chung BI, **Chang SL**. Changing practice patterns for the management of upper tract urothelial carcinoma with nephroureterectomy: a 10-year population-based analysis. Presented at the 2015 American Urological Association National Meeting, May 2015. 8. Gelpi-Hammerschmidt F, Tinay I, Allard CB, Su LM, Preston MA, Trinh QD, Kibel AS, Wang Y, Chung BI, Singer EA, **Chang SL**. The contemporary incidence and sequelae of rhabdomyolysis following extirpative renal surgery: a population-based analysis. Presented at the 2015 Genitourinary Cancers Symposium, February 2015 and 2015 American Urological Association National Meeting, May 2015. 9. Faiena, I, Tabakin A, Leow JJ, Patel N, Mode P, Salmasi A Chung BI, **Chang SL**, Singer EA. Adrenalectomy for Benign and Malignant Disease: A Population-based Study on Utilization and Outcomes from 2003-2013. Presented at the American Urological Association National Meeting, May 2016. 10. Hanna N, Meyer C, Vetterlein M, Cole A, Seisen T, Leow JJ, Cheng P, Gelpi-Hammerschmidt F, Zavaski M, **Chang SL**, Choueiri T, Sun M, Trinh QD. TRENDS IN TREATMENT STRATEGIES FOR METASTATIC RENAL CELL CARCINOMA. Presented at the American Urological Association National Meeting, May 2016. 11. Meyer C, Trinh QD, Vetterlein M, Loppenberg B, Adollah F, Seisen T, Hanske J, Leow JJ, Sammon J, Menon M, Kibel AS, **Chang SL**, Choueiri T, Sun M. TRENDS OF METASTASECTOMY FOR METASTATIC RENAL CELL CARCINOMA AND THEIR IMPACT ON OVERALL SURVIVAL. Presented at the American Urological Association National Meeting, May 2016. 12. Hanna N, Meyer C, Vetterlein M, Cole A, Seisen T, Leow JJ, Cheng P, Faiena, I, Tabakin A, Leow JJ, Cheng P, Gelpi-Hammerschmidt F, Zavaski M, **Chang SL**, Choueiri T, Sun M, Trinh QD. CYTOREDUCTIVE NEPHRECTOMY IN THE TARGETED THERAPY ERA: AN ANALYSIS OF THE NATIONAL CANCER DATA BASE. Presented at the American Urological Association National Meeting, May 2016. 13. Gelpi-Hammerschmidt F, Leow JJ, Roderiguez D, Tinay I, Allard CB, Hanna N, Krasnow RE, Meyer C, Zavaski M, Kibel AS, Preston MA, Trinh QD, **Chang SL**. Oncologic and Perioperative Outcomes Of “Cytoreductive” Radical Cystectomy For Patients with Metastatic Bladder Cancer in The United States. Presented at the American Urological Association National Meeting, May 2016. 14. Gelpi-Hammerschmidt F, Roderiguez D, Tinay I, Allard CB, Hanna N, **Chang SL**, Trinh QD, Preston MA. The potential impact of neoadjuvant chemotherapy on patients undergoing radical cystectomy for non-urothelial muscle invasive bladder cancer. Presented at the American Urological Association National Meeting, May 2016. 15. Tinay I, Wang Y, Gelpi-Hammerschmidt F, Chung BI, **Chang SL**. The Impact of Intravenous Acetaminophen on Outcomes for Patients Undergoing Extirpative Kidney Surgery. Presented at the American Urological Association National Meeting, May 2016. 16. Preston MA, Zhang X, Graff R, Sanchez A, **Chang SL**, Stampfer M, Choueiri T, Wilson K, Cho E. Analgesic Use and Risk of Renal Cell Cancer: Results from Two Prospective Cohort Studies. Presented at the American Urological Association National Meeting, May 2016. 17. Dagenais J, **Chang SL**. Eat Right and Wake Up Less? Exploring the Link Between Socioeconomic and Dietary Factors and Nocturia. Presented at the American Urological Association National Meeting, May 2016. 18. Dagenais J, **Chang SL**. The Impact of Exercise on Nocturia: Breaking Down the Inflammatory cycle. Presented at the American Urological Association National Meeting, May 2016. 19. Hanske J, Allard CB, Reznor G, Meyer C, **Chang SL**, Kibel AS, Trinh QD, Preston MA. Impact of weekday on radical prostatectomy outcomes. Presented at the American Urological Association National Meeting, May 2016. 20. Leow JJ, Cole A, **Chang SL**, Meyer C, Kibel AS, Menon M, Seisen T, Sammon J, Preston M, Chung BI, Sun M, Trinh QD. Surgeon variation in the costs of radical cystectomy. Presented at the American Urological Association National Meeting, May 2016. 21. Krasnow RE, Koo S, Kubiak D, Gelpi-Hammerschmidt F, Preston MA, Chung BI, Kibel AS, **Chang SL**. The Optimal Antibiotic Prophylaxis for Radical Cystectomy: a population-based analysis. Presented at the American Urological Association National Meeting, May 2016. 22. Krasnow RE, Gelpi-Hammerschmidt F, Preston MA, Chung BI, Kibel AS, **Chang SL**. Validation of the Caprini Risk Assessment Model in Radical Cystectomy Patients. Presented at the American Urological Association National Meeting, May 2016. 23. Cole A, Leow JJ, **Chang SL**, Meyer C Hanna N, Kibel AS, Menon M, Sammon J, Abdollah F, Chung BI, Sun M, Trinh QD. Surgeon and hospital variation in the costs of robot-assisted radical prostatectomy in the United States. Presented at the American Urological Association National Meeting, May 2016. 24. Rosen D, Hanske J, Reznor G, Allar CB, Meyer C, Eswara J, **Chang SL**, Sun M, Nguyen PL, Kibel AS, Trinh QD, Preston MA. The Influence of Board Certification on Outcomes after Radical Prostatectomy. Presented at the American Urological Association National Meeting, May 2016. 25. Dagenais J, Wang Y, Althaus A, Kathrins M, **Chang SL**. Prevalence and Predictors for Testosterone Deficiency in the United States. Presented at the American Urological Association National Meeting, May 2016. 26. Mossanen M, Krasnow RE, Ingham MD, Preston MA, Trinh QD, Kibel AS, Chung BI, **Chang SL**. Characterizing the costs of complications after cystectomy: Can we target the primary drivers? Presented at the 2017 Genitourinary Cancers Symposium, February 2017 and American Urological Association National Meeting, May 2017. 27. Leow JJ, Mills G, **Chang SL**, Von Landerberg N, Gild P, Trinh QD, Sammon JD. Trends in Minimally Invasive Simple Prostatectomy For Benign Prostatic Enlargement in the United States. Presented at the American Urological Association National Meeting, May 2017. 28. Khandwala Y, Jeong IG, Wang Y, Han DH, Kim JH, Li S, **Chang SL**, Chung BI. The Impact of Surgeon and Hospital Experience on the Perioperative Outcomes of Patients Receiving Robotic Partial Nephrectomy. Presented at the American Urological Association National Meeting, May 2017. 29. Meyer CP, Hanna J, Von Landenberg N, Gild P, Chun FK, Fisch M, Menon Mani, **Chang SL**, Cheng P, Sun M, Trinh QD. Racial disparities in the treatment and survival of metastatic renal cell carcinoma. Presented at the American Urological Association National Meeting, May 2017. 30. Ha A, Krasnow RE, Hsieh T, Kibel AS, Rudolph J, Chung BI, **Chang SL**. A Population-Based Analysis of the Incidence, Cost, and Outcomes of Post-operative Delirium Following Major Urologic Cancer Surgeries. Presented at the American Urological Association National Meeting, May 2017. 31. Gild P, von Landenberg N, Hanna N, Wang Y, **Chang SL**, Menon M, Chung FK, Fisch M, Trinh QD. Refusal of prostate-specific antigen testing in the united states. Presented at the American Urological Association National Meeting, May 2017. 32. Korets R, Speed JM, Wang Y, **Chang SL**. Percutaneous Access Obtained By Urologist Is Associated With Decreased Complications, Shorter Length of Stay, and Lower Hospital Costs in PCNL. Presented at the American Urological Association National Meeting, May 2017. 33. Leow JJ, Meyer C, Chung BI, **Chang SL**, Trinh QD. Costs Variations For Percutaneous Nephrolithotomy In The United States From 2003 To 2013: A Contemporary Analysis Of An All-Payer Discharge Database. Presented at the American Urological Association National Meeting, May 2017. 34. Leow JJ, Chung BI, **Chang SL**. Trends in Surgical Approach and Outcomes for Radical Cystectomy: A Contemporary Population-Based Analysis. Presented at the American Urological Association National Meeting, May 2017. 35. Modi P, Ingham M, Singer EA, **Chang SL**. Pharmaceutical industry payments and physician prescribing of urologic drugs. Presented at the American Urological Association National Meeting, May 2017. 36. Khandwala Y, Jeong IG, Wang Y, Han DH, Kim JH, Li S, **Chang SL**, Chung BI. Receipt of Mannitol Use in Partial Nephrectomy and Rates of Conversion to Radical Nephrectomy After Mannitol Administration. Presented at the American Urological Association National Meeting, May 2017. 37. Krasnow RE, Preston MA, Chung BI, Kibel AS, **Chang SL**. Validation of Venous Thromboembolism Risk Assessment Score in Major Urologic Cancer Surgery: A Population Based Study. Presented at the American Urological Association National Meeting, May 2017. 38. Ingham MD, Krasnow RE, Mossanen M, Wang Y, **Chang SL**. Perioperative Outcomes of Aspirin Use in Radical Prostatectomy. Presented at the New England American Urological Association Meeting, September 2017. 39. Ingham MD, Krasnow RE, Mossanen M, Wang Y, Althaus A, **Chang SL**. Perioperative Outcomes of Aspirin Use in Partial Nephrectomy. Presented at the New England American Urological Association Meeting, September 2017. 40. Speed JM, Wang Y, Leow JJ, McClintock JT, Bhojani N, Trinh QD, **Chang SL**, Korets R. Percutaneous Renal Access by Urologist vs Radiologist: Trends and Perioperative Outcomes in PCNL. Presented at the New England American Urological Association Meeting, September 2017. 41. Reese S, Mossanen M, **Chang SL**. Nation-Wide Utilization of Chemoprophylaxis for the Prevention of VTE in Radical Cystectomy: How Well Do Urologists Follow the Guidelines?. Presented at the New England American Urological Association Meeting, September 2017. 42. Speed JM, Cole AP, Latini JM, McClintock JT, Wang Y, **Chang SL**, Korets R. The Effect of Marital Status on Post-Operative Outcomes after PCNL. Presented at the New England American Urological Association Meeting, September 2017. 43. Mossanen M, Krasnow RE, Ingham MD, Preston M, Ha A, Lipsitz S, Kibel AS, **Chang SL**. Characterizing the Costs of Complications after Cystectomy. Presented at the New England American Urological Association Meeting, September 2017. 44. Reese S, McClintock T, Krasnow RE, Mossanen M, **Chang SL**, Korets R. Prophylactic Antibiotic Utilization Patterns and Postoperative Infectious Complications Following Percutaneous Nephrolithotomy. Presented at the World Congress of Endourology, September 2017. 45. McClintock T, Friedlander D, Feng A, Ganeshan S, Shah M, **Chang SL**, Feeley T, Bader A, Haleblian G. Modeling operating room costs for treatment of ureteral calculi using time-driven activity-based costing. Presented at the World Congress of Endourology, September 2017. 46. McClintock T, Friedlander D, Ganeshan S, Shah M, **Chang SL**, Feeley T, Haleblian G. Improving value in urologic surgery episodes of care through time-driven activity-based costing. Presented at the World Congress of Endourology, September 2017. 47. Harmouch S, Leow JJ, Meyer C, Wang Y, **Chang SL**, Chung BI, Trinh QD, Korets R, Bhojani N. Contemporary Trends In Utilization And Outcomes Of Percutaneous Nephrolithotomy In The United States From 2003 To 2014. Presented at the World Congress of Endourology, September 2017. 48. Meskawi M, Leow JJ, **Chang SL**, Trinh QD, Korets R, Bhojani N, Valiquette AS, Chung BI. Costs Variations For Percutaneous Nephrolithotomy In The United States From 2003 To 2015: A Contemporary Analysis Of An All-Payer Discharge Database. Presented at the World Congress of Endourology, September 2017. 49. Hwong J, **Chang SL**, Korets R. Serial Hem-o-lok Application for Robotic Partial (SHARP) Nephrectomy. Presented at the World Congress of Endourology, September 2017. 50. Mossanen M, Krasnow RE, Lipsitz S, Preston MA, Kibel AS, Ha A, Gore J , Smith A, Leow JJ, Trinh QD, **Chang SL**. Associations of specific postoperative complications with costs after radical cystectomy. Presented at the Society of Urologic Oncology Annual Meeting 2017. 51. Ingham MD, Krasnow RE, Mossanen M, Wang Y, **Chang SL**. Perioperative outcomes of aspirin use in partial nephrectomy. Presented at the Society of Urologic Oncology Annual Meeting 2017, 2018 Genitourinary Cancers Symposium. 52. Pucheril D, Wang Y, Zlatev DV, Nguyen P, Kibel A, **Chang SL**. Contemporary trends in abiraterone and enzalutamide prescription by provider specialty: Analysis of Medicare Part D, 2013-2015. Presented at the Society of Urologic Oncology Annual Meeting 2017. 53. Mossanen M, Krasnow RE, Zlatev DV, **Chang SL**. Incidence and predictors of mortality following major urologic cancer surgery. Presented at the 2018 Genitourinary Cancers Symposium. 54. Ingham MD, Krasnow RE, Mossanen M, Wang Y, **Chang SL**. Perioperative outcomes of aspirin use in radical prostatectomy. Presented at the 2018 Genitourinary Cancers Symposium. 55. Zlatev DV, Ozambela M, Salari K, Wang Y, Mossanen M, Pucheril D, Ingham MD, Chung BI, **Chang SL**. Trends and morbidity for minimally invasive versus open cytoreductive nephrectomy in the management of metastatic renal cell carcinoma. Presented at the 2018 Genitourinary Cancers Symposium. 56. Zlatev DV, Friedlander DF, Tinay I, Wang Y, Pucheril D, Chung BI, **Chang SL**. Impact of intravenous acetaminophen on outcomes following radical nephrectomy. Presented at the 2018 Genitourinary Cancers Symposium. 57. Reese S, Mossanen M, Zlatev DV, Pucheril D, Chung BI, **Chang SL**. Utilization and outcomes of chemoprophylaxis for the prevention of venous thromboembolism following radical cystectomy: A population-based study. Presented at the 2018 Genitourinary Cancers Symposium, American Urological Association Annual Meeting 2018. 58. Pucheril D, Zlatev DV, Mossanen M, Cole AP, Ingham MD, **Chang SL**, Kibel AS, Trinh QD. Impact of late Medicaid expansion on prostate cancer screening. Presented at the 2018 Genitourinary Cancers Symposium, American Urological Association Annual Meeting 2018. 59. Pucheril D, Ingham MD, Zlatev DV, Berg S, Mossanen M, **Chang SL**, Kibel AS, Trinh QD. Impact of sexual orientation on contemporary rates of prostate cancer screening. Presented at the 2018 Genitourinary Cancers Symposium, American Urological Association Annual Meeting 2018. 60. Bosse D, Lin X, Simantov R, Lalani AA, Derweesh I, **Chang SL**, Choueiri TK, McKay RR. Renal cell carcinoma (RCC) primary tumor shrinkage on vascular endothelial growth factor (VEGF)-targeted therapy (TT): A pooled analysis. Presented at the 2018 Genitourinary Cancers Symposium. 61. Bosse D, Lin X, Simantov R, Lalani AA, Derweesh I, **Chang SL**, Choueiri TK, McKay RR. Renal cell carcinoma (RCC) primary tumor shrinkage on vascular endothelial growth factor (VEGF)-targeted therapy (TT): A pooled analysis. Presented at the 2018 Genitourinary Cancers Symposium. | | | |
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**Narrative Report**

As a urologic oncologist at Brigham and Women’s Hospital (BWH) and Dana-Farber Cancer Institute (DFCI), I have devoted my career to improving the lives of individuals with cancers of the genitourinary tract, namely kidney cancer, bladder cancer, and prostate cancer. To achieve my goal, my time is spent 1) directly participating in patient care (65%), 2) conducting research evaluating treatment options and identifying strategies that are both effective and cost-effective (15%), 3) educating medical students, residents, and fellows through didactic teaching and mentorship (15%), and 4) providing leadership as Director of Ambulatory Clinical Operations at Brigham and Women’s Hospital, Division of Urology (5%).

As a clinician, my first responsibility is to guide patients, often with a new diagnosis of cancer, through the complex landscape of treatment options. At BWH and DFCI, I have the benefit of working alongside world class medical oncologists and radiation oncologists, which gives me the opportunity to offer patients a personalized and often multi-disciplinary treatment plan. For those who elect to pursue surgical treatment, my goal is to perform surgery in a manner with the least amount of operative trauma, fewest complications, and quickest recovery. Thus, whenever possible, I employ minimally invasive laparoscopic and robotic surgical techniques, and this now represents over 85% of my clinical practice. My efforts have resulted in a robust practice leading to patient referrals regionally, nationally, and internationally as well as recognition as one of the “Top Doctors” in Boston. Beyond lecturing on surgical techniques locally and nationally, I have also had the pleasure of sharing my clinical expertise with colleagues internationally in Taiwan, Thailand, and Singapore where I have collaborated with local surgeons to start, develop, or enhance programs in robotic surgery, respectively.

As an investigator, my aim is to improve the delivery of care of patients with urologic cancers. Since receiving my master’s degree in health services research in 2010, my research has revolved primarily around decision-analytic modeling and the analysis of large national databases as the main tools for investigation. My research has been supported by both institutional and national funding sources and presented at regional, national, and international conferences. Unlike the traditional surgical research evaluating the experience of a single surgeon or institution, I favor using complex modeling techniques that take a comprehensive view of the natural history of disease and population-based research techniques that yield findings applicable to the larger medical community. The ultimate goal is for these investigations to develop clinical guidelines and inform health policy. An example where my research impacted practice was in 2016, when I authored a paper with a study cohort of over 600,000 men undergoing study for prostate cancer, the largest study to date, and the findings of my study directly influenced decisions regarding reimbursement changes for prostate cancer surgery by the Centers for Medicare & Medicaid Services. Furthermore, over the past several years, I have complemented my work in health services research by becoming an active co-investigator with colleagues at BWH and DFCI performing basic science research. I am now participating in promising studies identifying stem cells from the kidney, characterizing epigenetic markers of kidney cancer, and creating of a personalized vaccine for kidney cancer. Despite my primary effort as a clinician, I remain committed to performing research both primarily and through collaborative efforts to improve the treatment of urologic cancers.

Equally as important as discovery through research is teaching and mentorship. I deeply value the opportunity to develop the next generation of urologists and researchers. Since joining the faculty at BWH in 2010, I have actively engaged in teaching Urology residents essentially on a daily basis with interactive discussions formally in Division conferences and informally before and after clinical encounters. Beginning in 2011, my teaching responsibilities expanded to 2nd year medical students at Harvard Medical School with annual lectures on genitourinary physical examination and pathophysiology. And then in 2014, I became the co-program director of the Combined Harvard Urologic Oncology Fellowship Program, which afforded me the chance for specialized instruction to fellows on the management of the most complex clinical conditions faced by urologic oncologists. Among my most gratifying achievements have been recognition of teaching excellence by residents with the *J.Hartwell Harrison, M.D. Memorial Resident Education Award* in 2013 and 2018 as well as a nomination for the American Urological Association Residents Committee Teaching Award in 2017. Perhaps an even greater privilege than teaching, however, is mentorship, which gives me the opportunity to influence the career trajectory of a mentee based on his or her unique goals, personality, and strengths. Now as a senior member of the Division of Urology, I have mentored a diverse pool of talented and creative individuals with various background and at different timepoint in their training. Mentorship of medical students, residents, fellows, and visiting researchers has not only led to numerous collaborations and publications but more importantly professional development. I believe I learn as much from my mentees as they do from me and feel I have succeeded when my mentees achieved their own success.

In my role as Director of Ambulatory Clinical Operations at Brigham and Women’s Hospital, Division of Urology since 2016, I am charged with the responsibility of maintaining and optimizing the outpatient clinics such that patients with all urologic diseases are seen efficiently and in a timely manner by our clinicians. Annually, my colleagues and I see over 20,000 clinic visits in the Division of Urology outpatient clinics, and this volume is expected to continue increasing. Urology is a procedural specialty and there are over 8,000 office procedure each year in our clinics. To accommodate this large volume of patients and procedures, it is necessary to coordinate the efforts of 15-20 medical assistants and licensed practical nurses that work in our clinics across three different campuses. I have spearheaded the recent effort to expand office procedures through the overhaul of our clinic equipment which in turn allows for many office procedures that were formally reserved for the operating room including injection of bladder Botox to treat bladder overactivity and new treatments for enlarged prostate to address male voiding dysfunction.

As an academic urologist at BWH and DFCI, I am perfectly situated within the forward-thinking, multi-disciplinary Harvard community. I look forward to continuing my contributions to urologic oncology through the direct care of patients, the development of evidence-based practice guidelines and healthy policy through research, and my involvement with teaching and mentorship.