Grant Support (current)

Boston Scientific, “Optimal holmium laser settings for dusting technique during endoscopic stone surgery/ Exploration of comminution mechanism, temperature, intrarenal pressure, and visualization to enhance ureteroscopic laser lithotripsy” PIs: William W. Roberts, MD and Khurshid R. Ghani, MD 11/18/16 – 11/19/22.

NIH, R01 DK091267 “Enhanced lithotripsy through coalescence and dispersion of cavitation bubbles” PI: Timothy L. Hall, Ph.D, 7/1/17 – 4/31/22.

Grant support (applied for)

NIH R01 DK130922 “Reduction of pain and morbidity after laser lithotripsy: correlation of tissue injury with elevated temperature and pressure” PI: William W. Roberts, MD, 12/1/21 – 12/31/26.

NIH R01 DK “Improved Model Kidney Stones for Laser Lithotripsy and Fundamental Studies of the Mechanisms of Stone Comminution” PI: Adam Matzger, PhD, 12/1/21 – 12/31/26.

Grant support (previous)

Lumenis, “Ureteroscopic laser lithotripsy thermal mitigation with chilled irrigation” PI: William W. Roberts, MD. 7/1/20 – 6/30/21.

MI-Kickstart/Fast Forward Medical Innovation – MTRAC, “Suction Cone” PI: William W. Roberts, MD. 07/01/19-06/30/20.

Rocamed SAM, “Pigtail suture stent research project” Co-PIs William W. Roberts, M.D. & Khurshid R. Ghani, M.D. 1/9/19 – 6/30/19.

NIH, R01 DK091267 “Histotripsy for Urinary Stone Comminution” PI: Timothy L. Hall, PhD, 9/15/11 – 8/31/17.

HistoSonics, Inc. “Safety and Initial Efficacy Study of the VORTX RX for Treatment of Benign Prostatic Hyperplasia” PI: John T. Wei, MD, 7/1/13-9/1/16.

NIH, R01 DK087871 “Histotripsy Tissue Interactions for BPH Therapy” PI: William W. Roberts, MD, 8/1/10 – 6/30/15.

HistoSonics, Inc. “Treatment Strategy for Histotripsy Homogenization of Prostate Part 1: Management of Prostatic Urethra” PI: William W. Roberts, MD, 1/1/11 – 12/31/13.

NIH, R01 CA134579 “Imaging Feedback to Guide Ultrasonic Tissue Fractionation for Cancer Therapy” PI: Charles A. Cain, PhD, 8/1/08 – 7/31/13.

2008 AUA Foundation/Astellas Rising Star in Urology Award “Histotripsy for Benign Prostatic Hyperplasia” PI: William W. Roberts, MD, 1/1/09 – 12/31/11.

NIH, K08 DK081656 “Histotripsy for Benign Prostatic Hyperplasia” PI: William W. Roberts, MD, 7/15/08 – 6/30/11.

Urology Collaborative Research Grant Program, “Development of Histotripsy in a Dog Model of Prostate Cancer as a Novel Treatment of Primary Prostate Tumors” PI: William W. Roberts, MD & Evan Keller, DVM, PhD, 7/1/2010 – 6/30/11.

NIH, K08 DK081656-02S1 “Histotripsy for Benign Prostatic Hyperplasia (Supplement)” PI: William W. Roberts, MD, 3/19/10 – 2/28/11.

MICH-R Pilot Grant “Surgical Thermal Management System for Energy-Based Surgical Devices” PI: James D. Geiger, MD, 4/1/09 -3/31/10.

NIH SPORE Prostate Career Development Award, “Cavitational Ultrasound Tissue Ablation (Histotripsy) in the Canine Prostate” PI: William W. Roberts, M.D., 7/1/05 – 5/31/09.

NIH R01 EB000281-09, “Vascular Bubble Generation for Diagnosis and Therapy”, PI: Paul L. Carson, Ph.D., 4/1/05 – 3/31/09.

Wallace H. Coulter Translational Partners Grant Program, “Non-invasive Ultrasonic Prostate Tissue Ablation Using Histotripsy”, PI: William W. Roberts & Charles A. Cain, PhD, 4/1/06 – 3/31/09.

DOD W81XWH-07-1-0231 Prostate Cancer Research Program, “Imaging of Prostate and Response to Treatment with Photoacoustic Tomography”, PI: Xueding Wang, Ph.D., 2/15/07 – 2/14/09.

Elsa U. Pardee Foundation, “High Intensity Focused Ultrasound and Cancer Immunotherapy”, PI: James D. Geiger, M.D., 9/1/06 – 8/31/07.

Clinical Sciences Scholars Program University of Michigan, “Transcutaneous Cavitational Ultrasound Ablation of Prostate Tissue”, PI: William W. Roberts, MD., 7/1/06 – 6/30/07.

Society of Women in Urology, “Isolation of Cavitational Effects During Controlled Tissue Ablation (Histotripsy) in the Ex-Vivo Porcine Kidney and In-Vivo Rabbit Kidney”, PI: William W. Roberts, M.D., 4/19/06 – 4/18/07.

MUNN research program University of Michigan, “High Intensity Focused Ultrasound and Cancer Immunotherapy”, PI: James D. Geiger, MD., 3/1/06 – 2/28/07.

Urology Research Advisory Committee University of Michigan, “Cavitational Ultrasound Ablation of Renal Tissue: Acute and Chronic Characterization of Targeted Tissue”, PI: William W. Roberts, M.D., 8/1/05 – 7/31/06.

Kidney and Urology Foundation of America, “Pulsed Cavitational Ultrasound Ablation of Implanted VX2 Renal Tumor in a Rabbit Model”, PI: William W. Roberts, M.D., 7/1/05 – 6/30/06.

National Kidney Foundation of Maryland, “Non-invasive high intensity focused ultrasound ablation of renal tissue using magnetic resonance guidance”, PI: William W. Roberts, M.D., 7/1/01-6/30/02.

PUBLICATIONS:

1. Aldoukhi AH, Roberts WW, Hall TL, Ghani KR: Holmium laser lithotripsy in the new stone age: dust or bust? Front Surg 29; 4:57 September 2017.
2. Aldoukhi AH, Ghani KR, Hall TL, Roberts WW: Thermal response to high-power holmium laser lithotripsy. J Endourol 31: 1308-12, 2017
3. Schuster TG, Wei JT, Hendlin K, Jahnke R, Roberts WW: Histotripsy treatment of benign prostatic enlargement using the Vortx Rx system: Initial human safety and efficacy outcomes. Urology 114: 184-7, 2018
4. Aldoukhi AH, Hall TL, Ghani KR, Maxwell AD, MacConaghy B, Roberts WW: Caliceal fluid temperature during high-power holmium laser lithotripsy in an in vivo porcine model. J Endourol 32: 724-9, 2018
5. Aldoukhi AH, Roberts WW, Hall TL, Teichman JMH, Ghani KR: Understanding the popcorn effect during holmium laser lithotripsy for dusting. Urology 122: 52-7, 2018.
6. Aldokhi AH, Roberts WW, Hall TL, Ghani KR: Watch your distance: The role of laser fiber working distance on fragmentation when altering pulse width or modulation. J Endourol 33: 120-6, 2019.
7. Maxwell AD, MacConaghy B, Harper JD, Aldoukhi AH, Hall TL, Roberts WW: Simulation of laser lithotripsy-induced heating in the urinary tract. J Endourol 33: 113-9, 2019.
8. Tamaddoni HA, Roberts WW, Hall TL: Enhanced shockwave lithotripsy with active cavitation mitigation. J Acoust Soc Am 146: 3275-82, 2019.
9. Frank DS, Aldoukhi AH, Roberts WW, Ghani KR, Matzger AJ: Polymer-mineral composites mimic human kidney stones in laser lithotripsy experiments. ACS Biomater Sci Eng 5: 4970-5, 2019.
10. Aldoukhi AH, Knudsen BE, Black KM, Hall TL, Roberts WW, Ghani KR: Are we cutting ourselves short? Laser lithotripsy performance based on differences in fiber-tip preparation. Urology 134: 79-83, 2019.
11. Aldoukhi AH, Black KM, Hall TL, Ghani KR, Maxwell AD, MacConaghy B, Roberts WW: Defining thermally safe laser lithotripsy power and irrigation parameters: in vitro model. J Endourol 34: 76-81, 2020.
12. Ellison JS, MacConaghy B, Hall TL, Roberts WW, Maxwell AD: A simulated model for fluid and tissue heating during pediatric laser lithotripsy. J Pediatr Urol 16:626.e1-8, 2020.
13. Aldoukhi AH, Black KM, Hall TL, Roberts WW, Ghani KR: Frequency threshold for ablation during holmium laser lihtotripsy: how high can you go? J Endourol 34: 1075-81, 2020.
14. Shalini S, Frank DS, Aldoukhi AH, Majdalany SE, Roberts WW, Ghani KR, Matzger AJ: Assessing the role of light absorption in laser lithotripsy by isotopic substitution of kidney stone materials. ACS Biomater Sci Eng 6: 5274-80, 2020. PMID: 33455276.
15. Majdalany SE, Aldoukhi AH, Jung H, Mehra R, Roberts WW, Ghani KR: In vivo evaluation of a novel pigtail suture stent. Urology 148: 83-7, 2021. PMID 33253740.
16. Aldoukhi AH, Hall TL, Ghani KR, Roberts WW: Strike rate: analysis of laser fiber to stone distance during different modes of laser lithotripsy. J Endourol 35:355-59, 2021. PMID: 32631082.

17. Dau JJ, Hall TL, Maxwell AD, Ghani KR, Roberts WW: Effect of chilled irrigation on calyceal fluid temperature and time to thermal injury threshold during laser lithotripsy: in vitro model. J Endourol 35: 700-5, 2021. PMID: 33176475.
18. Black KM, Aldoukhi AH, Teichman JMH, Majdalany SE, Hall TL, Roberts WW, Ghani KR: Pulse modulation with Moses technology improves popcorn lithotripsy. World J Urol 39: 1699-1705, 2021. PMID: 32506386.
19. Aldoukhi AH, Dau JJ, Majdalany SE, Hall TL, Ghani KR, Hollingsworth JM, Ambani SN, Dauw CA, Roberts WW: Patterns of laser activation during ureteroscopic lithotripsy: effects on calyceal fluid temperature and thermal dose. J Endourol Jan 4, 2021[Epub ahead of print]. PMID: 33397188.
20. Levin BA, Aldoukhi AH, Black KM, Hall TL, Roberts WW, Ghani KR: Burnback: the role of pulse duration and energy on fiber-tip degradation during high-power laser lithotripsy. Lasers Med Sci Jan 9, 2021[Epub ahead of print]. PMID: 33420851
21. Rezakhan Khajeh N, Hall TL, Ghani KR, Roberts WW: Pelvicalyceal volume and fluid temperature elevation during laser lithotripsy. J Endo Jul 13, 2021[Epub ahead of print]. PMID: 34254838