



Joseph C. Liao

Kathryn Simmons Stamey Professor

Urology

 NIH Biosketch available Online

CLINICAL OFFICE (PRIMARY)

- **VA Palo Alto Health Care System**

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Palo Alto, CA 94304

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ACADEMIC CONTACT INFORMATION

- **Administrative Contact**

Kyra Cronin

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Bio

BIO

Joseph Liao is the Kathryn Simmons Stamey Professor and professor of urology at Stanford University. Dr. Liao is a board-certified urologic surgeon and a physician scientist who is nationally recognized for his contributions in optical imaging and image-guided surgery of urological cancers, and development of urine-based precision diagnostics for bladder cancer and urinary tract infections. Fellowship-trained in endourology and minimally invasive surgery, his clinical practice focuses on care of patients with early-stage high risk urothelial and prostate cancer.

Dr. Liao graduated with honors from Harvard College and earned his medical degree from Stanford School of Medicine. He completed his urology residency and clinical fellowship at UCLA Medical Center and a research fellowship at UCLA School of Engineering. He joined the faculty in the Department of Urology at Stanford in 2006 and currently serves as vice chair for academic affairs, director of research, and co-director of the endourology fellowship. For 15 years, he served as the chief of urology at VA Palo Alto Health Care System. Dr. Liao is a member of Stanford Bio-X, Cancer Institute, Center for Artificial Intelligence in Medicine and Imaging, and Canary Center for Early Cancer Detection.

Dr. Liao's scholarship focuses on development of precision diagnostics and therapy for major urological diseases including bladder cancer, urinary tract infections, and kidney stone disease. His multidisciplinary laboratory interfaces genomics, imaging science, data science, and clinical medicine. He has served as the principal investigator on several NIH R01's on molecular imaging, liquid biopsy, and AI-augmented surgery for bladder cancer; as well as development of integrated biosensors for rapid uropathogen identification and antimicrobial susceptibility testing. He has authored over 180 publications in top journals including Science Translational Medicine, Nature Medicine, Cell, Cancer Cell, PNAS, JAMA Surgery, and European Urology, and served as a reviewer on over 30 NIH study sections. Dr. Liao is committed to the training of next generation of physician scientists and researchers and directs the K12 Urology Research (KURe) career development program at Stanford. Many of his over 50 students and trainees are leaders and emerging leaders in academia and industry.

Dr. Liao is an elected member of the American Society of Clinical Investigation. He is active in major national urology organizations and formerly served as the president of the Engineering and Urology Society and member of the board of the directors for the Endourology Society.

CLINICAL FOCUS

- Urology
- Urologic Neoplasms
- Minimally Invasive Surgical Procedures
- Urolithiasis
- Urinary Tract Infections

ACADEMIC APPOINTMENTS

- Professor, Urology
- Member, Bio-X
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Stanford Cancer Institute

ADMINISTRATIVE APPOINTMENTS

- Program Director, NIH/NIDDK K12 Urology Research at Stanford (KUREs) Career Development Program, (2023- present)
- National Co-Chair, VA Multi-Cancer Early Detection (MCED) Partnership with NCI Cancer Screening Research Network (CSRN), (2023- present)
- Associate Member, Canary Center at Stanford for Early Cancer Detection, (2022- present)
- Vice Chair for Academic Affairs, Department of Urology, Stanford University, (2021- present)
- Director of Research, Department of Urology, Stanford University, (2017- present)
- Standing Member, Assistant Professors Review Committee (APRC), Stanford School of Medicine, (2017-2023)
- Standing Member, NIH Study Section - Instrumentation and Systems Development (ISD), (2013-2017)
- Chief of Urology, VA Palo Alto Health Care System, (2006-2021)

HONORS AND AWARDS

- Elected Member, American Society for Clinical Investigation (2022)
- Scholar, AUA/CUA International Exchange Program (2012)
- First Place, AUA Foundation Young Investigator Research Forum (2009)
- Faculty Fellows Leadership Program, Stanford University School of Medicine (2008)
- Research Scholar, American Foundation for Urologic Disease (2003 - 2005)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, New Technologies & Imaging Committee, American Urological Association (2024 - present)
- Board of Directors, Endourology Society (2022 - 2023)
- President, Engineering and Urology Society (2022 - 2023)
- Programming Committee, SPIE BiOS (2017 - present)
- Diplomate, American Board of Urology (2008 - present)

PROFESSIONAL EDUCATION

- Board Certification: Urology, American Board of Urology (2008)
- Fellowship: UCLA Dept of Urology (2006) CA
- Residency: UCLA Dept of Urology (2003) CA
- Internship: UCLA Dept of Surgery (1998) CA

- Medical Education: Stanford University School of Medicine (1997) CA
- Clinical Fellowship, UCLA Medical Center , Endourology / Minimally Invasive Surgery (2006)
- Research Fellowship, UCLA School of Engineering , Molecular Diagnostics (2005)
- Residency, UCLA Medical Center , Urology (2003)
- Internship, UCLA Medical Center , Surgery (1998)
- MD, Stanford University , Medicine (1997)
- AB, Harvard University , Biology (1993)

LINKS

- Stanford Medicine Breakthroughs in Bladder Cancer: <https://youtu.be/psh-1jjas4E>
- Liao Lab Website: <https://med.stanford.edu/liolab/People.html>
- Stanford News: 3D bladder: <https://med.stanford.edu/news/all-news/2017/03/scientists-create-three-dimensional-bladder-reconstruction.html>
- Stanford News: bladder molecular imaging: <https://med.stanford.edu/news/all-news/2014/10/new-molecular-imaging-technology-could-improve-bladder-cancer-de.html>
- Stanford News: potential new bladder cancer therapy: <https://med.stanford.edu/news/all-news/2014/10/drug-may-prevent-development-of-invasive-bladder-cancer--research.html>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

1. Multimodal optical imaging of bladder cancer

A major focus of my lab is to develop enhanced endoscopic imaging technologies (e.g. fluorescence, endomicroscopy, molecular imaging, computer vision, and artificial intelligence) to improve bladder tumor detection and resection. We have investigated CD47, an innate immune checkpoint, as a bladder cancer imaging and therapeutic target. We identified and validated CD47 as a promising cancer imaging target and proposed a strategy for intravesical administration of imaging agents based on therapeutic antibodies (Pan 2014). In animal models, we investigated the biodistribution and systemic toxicity of nanoparticle-labeled anti-CD47 (Pan 2017) and demonstrated that CD47-mediated near-infrared photoimmunotherapy, a novel form of targeted phototherapy, led to enhanced tumor destruction and prolonged survival (Kiss 2019). In the clinical arena, we pioneered the urological applications of confocal endomicroscopy for bladder cancer (Sonn 2009), upper tract urothelial carcinoma (Bui 2015) and prostate cancer (Lopez 2015). This optical biopsy technology enables real-time intraoperative imaging with spatial resolution comparable to histology. Finally, we are developing computer vision and artificial intelligence tools to enhance cystoscopic navigation and tumor identification. We have an ongoing effort to curate a high quality annotated cystoscopy imaging dataset of diverse bladder cancer variants and recently reported the first AI-assisted cystoscopy using convolutional neural networks for automated tumor annotation (Shkolyar 2019).

2. Precision diagnostics for bladder cancer

Another major focus is identification and validation of urine-based biomarkers to inform bladder cancer diagnosis, prognosis, and treatment response. Given its abundance and non-invasive nature of sample collection, urine serves as an ideal source of liquid biopsy. To overcome the diagnostic shortcomings of standard urine cytology, we have utilized high throughput sequencing technology as a discovery and diagnostic tool. We applied bulk RNA sequencing to urinary pellets for biomarker discovery and developed a diagnostic 3-marker urinary RNA panel (Sin 2017), and led a multi-center effort to validate another urinary RNA panel using an integrated microfluidic cartridge (Wallace 2019). Collaboratively with other colleagues at Stanford, we are developing an ultrasensitive targeted sequencing approach

called uCAPP-Seq (urine tumor DNA Cancer Personalized Profiling by deep sequencing) for bladder cancer (Dudley 2019) and have started prospective longitudinal validation studies of these precision diagnostic platforms.

3. Precision diagnostics of urinary tract infections

A longstanding focus of my lab has been the development of molecular diagnostics for bacterial infections to direct evidence-based utilization of antibiotics and curtail the proliferation of multidrug resistant pathogens. We focus on urinary tract infections, the most common urological disease and healthcare-associated infection. We have made broad advances in molecular probe development for amplification-free bacterial detection, microfluidic-based antimicrobial susceptibility testing (AST), sample preparation strategies compatible with matrix effects from clinical samples, system integration, and single cell analysis. Representative works include rapid, sensitive pathogen identification through 16S rRNA targeting (Ouyang 2013, Mach 2019), validation of integrated AST in clinical samples (Altobelli 2016), and single cell analysis (Hsieh 2018, Li 2019). Most recently, we report a 30-minute sample-to-answer assay based on single-cell measurements of bacterial 16S rRNA in picoliter droplets to achieve simultaneous molecular pathogen identification and phenotypic antimicrobial susceptibility assessment (Kaushik 2021).

Teaching

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Daniel Massana Roquero

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Bioengineering (Phd Program)

Publications

PUBLICATIONS

- **Real-time Detection of Bladder Cancer Using Augmented Cystoscopy with Deep Learning: a Pilot Study.** *Journal of endourology*
Chang, T. C., Shkolyar, E., Del Giudice, F., Eminaga, O., Lee, T., Laurie, M., Seufert, C., Jia, X., Mach, K. E., Xing, L., Liao, J. C.
2023
- **A magnetic hydrogel for the efficient retrieval of kidney stone fragments during ureteroscopy.** *Nature communications*
Ge, T. J., Roquero, D. M., Holton, G. H., Mach, K. E., Prado, K., Lau, H., Jensen, K., Chang, T. C., Conti, S., Sheth, K., Wang, S. X., Liao, J. C.
2023; 14 (1): 3711
- **Single-cell pathogen diagnostics for combating antibiotic resistance** *NATURE REVIEWS METHODS PRIMERS*
Li, H., Hsieh, K., Wong, P., Mach, K. E., Liao, J. C., Wang, T.
2023; 3 (1)
- **Bladder cancer risk stratification using a urinary mRNA biomarker panel - A path towards cystoscopy triaging.** *Urologic oncology*
Shkolyar, E., Zhao, Q., Mach, K. E., Teslovich, N. C., Lee, T. J., Cox, S., Skinner, E. C., Lu, Y., Liao, J. C.
2021
- **Droplet-Based Single-Cell Measurements of 16S rRNA Enable Integrated Bacteria Identification and Pheno-Molecular Antimicrobial Susceptibility Testing from Clinical Samples in 30 min** *ADVANCED SCIENCE*
Kaushik, A. M., Hsieh, K., Mach, K. E., Lewis, S., Puleo, C. M., Carroll, K. C., Liao, J. C., Wang, T.
2021
- **CD47-targeted Near-Infrared Photoimmunotherapy for Human Bladder Cancer.** *Clinical cancer research : an official journal of the American Association for Cancer Research*
Kiss, B., van den Berg, N. S., Ertsey, R., McKenna, K., Mach, K. E., Zhang, C. A., Volkmer, J., Weissman, I. L., Rosenthal, E. L., Liao, J. C.

2019

- **Augmented Bladder Tumor Detection Using Deep Learning.** *European urology*
Shkolyar, E. n., Jia, X. n., Chang, T. C., Trivedi, D. n., Mach, K. E., Meng, M. Q., Xing, L. n., Liao, J. C.
2019
- **Detection and surveillance of bladder cancer using urine tumor DNA.** *Cancer discovery*
Dudley, J. C., Schroers-Martin, J. n., Lazzareschi, D. V., Shi, W. Y., Chen, S. B., Esfahani, M. S., Trivedi, D. n., Chabon, J. J., Chaudhuri, A. A., Stehr, H. n., Liu, C. L., Lim, H. n., Costa, et al
2018
- **New and developing diagnostic technologies for urinary tract infections.** *Nature reviews. Urology*
Davenport, M., Mach, K. E., Shortliffe, L. M., Banaei, N., Wang, T., Liao, J. C.
2017
- **Image-Guided Transurethral Resection of Bladder Tumors - Current Practice and Future Outlooks.** *Bladder cancer (Amsterdam, Netherlands)*
Chang, T. C., Marcq, G. n., Kiss, B. n., Trivedi, D. R., Mach, K. E., Liao, J. C.
2017; 3 (3): 149–59
- **Endoscopic molecular imaging of human bladder cancer using a CD47 antibody.** *Science translational medicine*
Pan, Y., Volkmer, J., Mach, K. E., Rouse, R. V., Liu, J., Sahoo, D., Chang, T. C., Metzner, T. J., Kang, L., van de Rijn, M., Skinner, E. C., Gambhir, S. S., Weissman, et al
2014; 6 (260): 260ra148-?
- **Electronic Documentation of Intraoperative Observation of Cystoscopic Procedures Using the cMDX Information System.** *JCO clinical cancer informatics*
Eminaga, O., Lee, T. J., La, V., Breil, B., Xing, L., Liao, J. C.
2024; 8: e2300114
- **PolypMixNet: Enhancing semi-supervised polyp segmentation with polyp-aware augmentation.** *Computers in biology and medicine*
Jia, X., Shen, Y., Yang, J., Song, R., Zhang, W., Meng, M. Q., Liao, J. C., Xing, L.
2024; 170: 108006
- **Revealing hidden patterns in deep neural network feature space continuum via manifold learning.** *Nature communications*
Islam, M. T., Zhou, Z., Ren, H., Khuzani, M. B., Kapp, D., Zou, J., Tian, L., Liao, J. C., Xing, L.
2023; 14 (1): 8506
- **Efficient Augmented Intelligence Framework for Bladder Lesion Detection.** *JCO clinical cancer informatics*
Eminaga, O., Lee, T. J., Laurie, M., Ge, T. J., La, V., Long, J., Semjonow, A., Bogemann, M., Lau, H., Shkolyar, E., Xing, L., Liao, J. C.
2023; 7: e2300031
- **Tumor detection under cystoscopy with transformer-augmented deep learning algorithm.** *Physics in medicine and biology*
Jia, X., Shkolyar, E., Laurie, M. A., Eminaga, O., Liao, J. C., Xing, L.
2023; 68 (16)
- **Long noncoding RNA MALAT1 is dynamically regulated in leader cells during collective cancer invasion.** *Proceedings of the National Academy of Sciences of the United States of America*
Zhu, N., Ahmed, M., Li, Y., Liao, J. C., Wong, P. K.
2023; 120 (27): e2305410120
- **Laying the Groundwork for Optimized Surgical Feedback.** *JAMA network open*
Shkolyar, E., Pugh, C., Liao, J. C.
2023; 6 (6): e2320465
- **Conceptual Framework and Documentation Standards of Cystoscopic Media Content for Artificial Intelligence.** *Journal of biomedical informatics*
Eminaga, O., Jiyong Lee, T., Ge, J., Shkolyar, E., Laurie, M., Long, J., Graham Hockman, L., Liao, J. C.
2023: 104369
- **EFFICACY AND SAFETY OF A MAGNETIC HYDROGEL FOR STONE FRAGMENT REMOVAL: AN IN VITRO AND IN VIVO STUDY**
Roquero, D., Ge, T., Holton, G. H., Mach, K. E., Kornberg, Z., Sun, R., Conti, S., Wang, S. X., Liao, J. C.
LIPPINCOTT WILLIAMS & WILKINS.2023: E819

- **ANTIMICROBIAL AND ANTIBIOFILM PROPERTIES OF CHITOSAN: AN EX VIVO STUDY ON KIDNEY STONES**
Holton, G. H., Roquero, D., Ge, T., Mach, K. E., Lee, T. J., Chang, T. C., Liao, J. C.
LIPPINCOTT WILLIAMS & WILKINS.2023: E45
- **Kawain Inhibits Urinary Bladder Carcinogenesis through Epigenetic Inhibition of LSD1 and Upregulation of H3K4 Methylation.** *Biomolecules*
Xu, X., Tian, X., Song, L., Xie, J., Liao, J. C., Meeks, J. J., Wu, X. R., Gin, G. E., Wang, B., Uchio, E., Zi, X.
2023; 13 (3)
- **Passive monitoring by smart toilets for precision health.** *Science translational medicine*
Ge, T. J., Rahimzadeh, V. N., Mintz, K., Park, W. G., Martinez-Martin, N., Liao, J. C., Park, S. M.
2023; 15 (681): eabk3489
- **Is a restaging TURBT necessary in high-risk NMIBC if the initial TURBT was performed with blue light?** *Urologic oncology*
Alsyouf, M., Ladi-Seyedian, S. S., Konety, B., Pohar, K., Holzbeierlein, J. M., Kates, M., Willard, B., Taylor, J. M., Liao, J. C., Kaimakliotis, H. Z., Porten, S. P., Steinberg, G. D., Tyson, et al
2023; 41 (2): 109.e9-109.e14
- **PlexusNet: A neural network architectural concept for medical image classification.** *Computers in biology and medicine*
Eminaga, O., Abbas, M., Shen, J., Laurie, M., Brooks, J. D., Liao, J. C., Rubin, D. L.
2023; 154: 106594
- **Potential of educational cystoscopy atlas for augmented intelligence**
Eminaga, O., Laurie, M., Lee, T., Jia, X., Liao, J. C.
2023
- **Bladder Cancer and Artificial Intelligence: Emerging Applications** *Urologic Clinics North America*
Laurie, M., Zhou, S. R., Islam, M., Shkolyar, E., Xing, L., Liao, J. C.
2023
- **Flat lesion detection of white light cystoscopy with deep learning**
Jia, X., Shkolyar, E., Eminaga, O., Laurie, M., Zhou, Z., Lee, T., Islam, M., Meng, M. Q., Liao, J. C., Xing, L.
2023
- **Sequential modeling for cystoscopic image classification**
Laurie, M., Eminaga, O., Shkolyar, E., Jia, X., Lee, T., Long, J., Islam, M., Lau, H., Xing, L., Liao, J. C.
2023
- **An Efficient Framework for Video Documentation of Bladder Lesions for Cystoscopy: A Proof-of-Concept Study.** *Journal of medical systems*
Eminaga, O., Ge, T. J., Shkolyar, E., Laurie, M. A., Lee, T. J., Hockman, L., Jia, X., Xing, L., Liao, J. C.
2022; 46 (11): 73
- **Artificial Intelligence-Based Prognostic Model for Urologic Cancers: A SEER-Based Study.** *Cancers*
Eminaga, O., Shkolyar, E., Breil, B., Semjonow, A., Boegemann, M., Xing, L., Tinay, I., Liao, J. C.
2022; 14 (13)
- **Diagnosis of Bloodstream Infections: An Evolution of Technologies towards Accurate and Rapid Identification and Antibiotic Susceptibility Testing.** *Antibiotics (Basel, Switzerland)*
Tjandra, K. C., Ram-Mohan, N., Abe, R., Hashemi, M. M., Lee, J., Chin, S. M., Roshardt, M. A., Liao, J. C., Wong, P. K., Yang, S.
2022; 11 (4)
- **Smart toilets for monitoring COVID-19 surges: passive diagnostics and public health.** *NPJ digital medicine*
Ge, T. J., Chan, C. T., Lee, B. J., Liao, J. C., Park, S.
2022; 5 (1): 39
- **Utility of Blue Light Cystoscopy for Post-bacillus Calmette-Guérin Bladder Cancer Recurrence Detection: Implications for Clinical Trial Recruitment and Study Comparisons.** *The Journal of urology*
Chappidi, M. R., Yang, H., Meng, M. V., Bivalacqua, T. J., Daneshmand, S., Holzbeierlein, J. M., Kaimakliotis, H. Z., Konety, B., Liao, J. C., Pohar, K., Steinberg, G. D., Taylor, J. M., Tyson, et al
2022; 207 (3): 534-540

- **A Cascaded Droplet Microfluidic Platform Enables High-Throughput Single Cell Antibiotic Susceptibility Testing at Scale.** *Small methods*
Zhang, P., Kaushik, A. M., Hsieh, K., Li, S., Lewis, S., Mach, K. E., Liao, J. C., Carroll, K. C., Wang, T. H.
2022; 6 (1): e2101254
- **Renal Morbidity Following Radical Cystectomy in Patients with Bladder Cancer.** *European urology open science*
Schmidt, B., Velaer, K. N., Thomas, I., Ganesan, C., Song, S., Pao, A. C., Thong, A. E., Liao, J. C., Chertow, G. M., Skinner, E. C., Leppert, J. T.
1800; 35: 29-36
- **Combating Antimicrobial Resistance via Single-Cell Diagnostic Technologies Powered by Droplet Microfluidics.** *Accounts of chemical research*
Hsieh, K., Mach, K. E., Zhang, P., Liao, J. C., Wang, T.
1800
- **A Cascaded Droplet Microfluidic Platform Enables High-Throughput Single Cell Antibiotic Susceptibility Testing at Scale** *SMALL METHODS*
Zhang, P., Kaushik, A. M., Hsieh, K., Li, S., Lewis, S., Mach, K. E., Liao, J. C., Carroll, K. C., Wang, T.
2021
- **Postoperative opioid-free ureteroscopy discharge: A quality initiative pilot protocol.** *Current urology*
Kasman, A. M., Schmidt, B., Spradling, K., Chow, C., Hunt, R., Wu, M., Sockol, A., Liao, J., Leppert, J. T., Shah, J., Conti, S. L.
2021; 15 (3): 176-180
- **Risk of Postpartum Urinary Stone Disease in Women with History of Urinary Stone Disease During Pregnancy.** *Journal of endourology*
Spradling, K., Zhang, C. A., Pao, A. C., Liao, J. C., Leppert, J. T., Elliott, C. S., Conti, S. L.
2021
- **Development and Validation of an Interpretable Artificial Intelligence Model to Predict 10-Year Prostate Cancer Mortality** *CANCERS*
Bibault, J., Hancock, S., Buyyounouski, M. K., Bagshaw, H., Leppert, J. T., Liao, J. C., Xing, L.
2021; 13 (12)
- **Facile syringe filter-enabled bacteria separation, enrichment, and buffer exchange for clinical isolation-free digital detection and characterization of bacterial pathogens in urine.** *The Analyst*
Zhang, P., Kaushik, A. M., Mach, K. E., Hsieh, K., Liao, J. C., Wang, T. H.
2021; 146 (8): 2475-2483
- **Current Trends in Artificial Intelligence Application for Endourology and Robotic Surgery.** *The Urologic clinics of North America*
Chang, T. C., Seufert, C., Eminaga, O., Shkolyar, E., Hu, J. C., Liao, J. C.
2021; 48 (1): 151-60
- **Digital biomarkers in human excreta.** *Nature reviews. Gastroenterology & hepatology*
Park, S. M., Ge, T. J., Won, D. D., Lee, J. K., Liao, J. C.
2021
- **A Rapid Single-Cell Antimicrobial Susceptibility Testing Workflow for Bloodstream Infections.** *Biosensors*
Forsyth, B., Torab, P., Lee, J. H., Malcom, T., Wang, T. H., Liao, J. C., Yang, S., Kvam, E., Puleo, C., Wong, P. K.
2021; 11 (8)
- **Longitudinal Follow-up and Performance Validation of a mRNA-based Urine Test (Xpert® Bladder Cancer Monitor) for surveillance in Non-Muscle Invasive Bladder Cancer Patients.** *BJU international*
Cowan, B. n., Klein, E. n., Jansz, K. n., Westenfelder, K. n., Bradford, T. n., Peterson, C. n., Scherr, D. n., Karsh, L. I., Blair Egerdie, R. n., Witjes, J. A., Trainer, A. n., Harris, R. n., Goldfarb, et al
2021
- **Evaluation of Patient Treatment Preferences for 15-20mm Kidney Stones: A Conjoint Analysis.** *Journal of endourology*
Spradling, K., Bhambhani, H. P., Chang, T. C., Pao, A. C., Liao, J. C., Leppert, J. T., Welk, B., Harris, C. R., Conti, S. L., Elliott, C. S.
2020
- **Development of robust artificial neural networks for prediction of 5-year survival in bladder cancer.** *Urologic oncology*
Bhambhani, H. P., Zamora, A., Shkolyar, E., Prado, K., Greenberg, D. R., Kasman, A. M., Liao, J., Shah, S., Srinivas, S., Skinner, E. C., Shah, J. B.
2020
- **Magrolimab and gemcitabine-cisplatin combination enhance phagocytic elimination of bladder cancer.**

Kiss, B., Volkmer, A., Feng, D., McKenna, K., Mihardja, S., Chao, M., Takimoto, C. M., Liao, J. C., Volkmer, J., Weissman, I. L.
LIPPINCOTT WILLIAMS & WILKINS.2020

- **SLIPS-LAB-A bioinspired bioanalysis system for metabolic evaluation of urinary stone disease.** *Science advances*
Li, H., Shkolyar, E., Wang, J., Conti, S., Pao, A. C., Liao, J. C., Wong, T. S., Wong, P. K.
2020; 6 (21)
- **Editorial Comment.** *The Journal of urology*
Shkolyar, E., Mach, K. E., Liao, J. C.
2020: 101097JU000000000000078601
- **REAL-TIME AUGMENTED BLADDER TUMOR DETECTION WITH DEEP LEARNING**
Chang, T., Shkolyar, E., Jia, X., Lee, T., Mach, K., Conti, S., Xing, L., Liao, J.
LIPPINCOTT WILLIAMS & WILKINS.2020: E1110
- **Prostate multiparametric magnetic resonance imaging features following partial gland cryoablation.** *Urology*
Al Awamlh, B. A., Margolis, D. J., Gross, M. D., Natarajan, S., Priester, A., Hectors, S., Ma, X., Mosquera, J. M., Liao, J., Hu, J. C.
2020
- **Robotic-Assisted Radical Prostatectomy Associated With Decreased Persistent Postoperative Opioid Use.** *Journal of endourology*
Shkolyar, E. n., Shih, I. F., Li, Y. n., Wong, J. n., Liao, J. C.
2020
- **Urinary Stone Disease in Pregnancy: Current Management Practices in a Large National Cohort.** *Urology*
Spradling, K. n., Sohlberg, E. M., Li, S. n., Zhang, C. A., Brubaker, W. D., Dallas, K. n., Pao, A. C., Liao, J. n., Leppert, J. T., Elliott, C. S., Chung, B. I., Min, G. E., Conti, et al
2020
- **SLIPS-LAB-A bioinspired bioanalysis system for metabolic evaluation of urinary stone disease.** *Science advances*
Li, H. n., Shkolyar, E. n., Wang, J. n., Conti, S. n., Pao, A. C., Liao, J. C., Wong, T. S., Wong, P. K.
2020; 6 (21): eaba8535
- **Urinary Stone Disease in Pregnancy: A Claims-Based Analysis of 1.4 Million Patients.** *The Journal of urology*
Sohlberg, E. M., Brubaker, W. D., Zhang, C. A., Anderegg, L. D., Dallas, K., Song, S., Ganesan, C., Chertow, G., Pao, A., Liao, J., Leppert, J. T., Elliott, C. S., Conti, et al
2019: 101097JU00000000000000657
- **Simultaneous transrectal ultrasound and photoacoustic human prostate imaging.** *Science translational medicine*
Kothapalli, S., Sonn, G. A., Choe, J. W., Nikoozadeh, A., Bhuyan, A., Park, K. K., Cristman, P., Fan, R., Moini, A., Lee, B. C., Wu, J., Carver, T. E., Trivedi, et al
2019; 11 (507)
- **Adaptable microfluidic system for single-cell pathogen classification and antimicrobial susceptibility testing** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Li, H., Torab, P., Mach, K. E., Surette, C., England, M. R., Craft, D. W., Thomas, N. J., Liao, J. C., Puleo, C., Wong, P.
2019; 116 (21): 10270–79
- **THE EPIDEMIOLOGY OF URINARY STONE DISEASE IN PREGNANCY: A CLAIMS-BASED ANALYSIS OF 1.2 MILLION PATIENTS**
Sohlberg, E., Brubaker, W., Zhang, C., Dallas, K., Ganesan, C., Song, S., Pao, A., Liao, J., Leppert, J., Elliott, C., Conti, S.
LIPPINCOTT WILLIAMS & WILKINS.2019: E846
- **Nanotube assisted microwave electroporation for single cell pathogen identification and antimicrobial susceptibility testing** *NANOMEDICINE-NANOTECHNOLOGY BIOLOGY AND MEDICINE*
Gao, J., Li, H., Torab, P., Mach, K. E., Craft, D. W., Thomas, N. J., Puleo, C. M., Liao, J. C., Wang, T., Wong, P.
2019; 17: 246–53
- **Optimizing peptide nucleic acid probes for hybridization-based detection and identification of bacterial pathogens** *ANALYST*
Mach, K. E., Kaushik, A. M., Hsieh, K., Wong, P., Wang, T., Liao, J. C.
2019; 144 (5): 1565–74
- **Prevalence of twenty-four hour urine testing in Veterans with urinary stone disease.** *PLoS one*

- Ganesan, C. n., Thomas, I. C., Song, S. n., Sun, A. J., Sohlberg, E. M., Kurella Tamura, M. n., Chertow, G. M., Liao, J. C., Conti, S. n., Elliott, C. S., Leppert, J. T., Pao, A. C.
2019; 14 (8): e0220768
- **Optical biopsy of penile cancer with in vivo confocal laser endomicroscopy.** *Urologic oncology*
Shkolyar, E. n., Laurie, M. A., Mach, K. E., Trivedi, D. R., Zlatev, D. V., Chang, T. C., Metzner, T. J., Leppert, J. T., Kao, C. S., Liao, J. C.
2019
 - **Twenty-Four Hour Urine Testing and Prescriptions for Urinary Stone Disease-Related Medications in Veterans.** *Clinical journal of the American Society of Nephrology : CJASN*
Song, S. n., Thomas, I. C., Ganesan, C. n., Sohlberg, E. M., Chertow, G. M., Liao, J. C., Conti, S. n., Elliott, C. S., Pao, A. C., Leppert, J. T.
2019
 - **Organoid Modeling of the Tumor Immune Microenvironment.** *Cell*
Neal, J. T., Li, X., Zhu, J., Giangarra, V., Grzeskowiak, C. L., Ju, J., Liu, I. H., Chiou, S., Salahudeen, A. A., Smith, A. R., Deutsch, B. C., Liao, L., Zemek, et al
2018; 175 (7): 1972
 - **Surface-Enhanced Raman Scattering Nanoparticles for Multiplexed Imaging of Bladder Cancer Tissue Permeability and Molecular Phenotype.** *ACS nano*
Davis, R. M., Kiss, B., Trivedi, D. R., Metzner, T. J., Liao, J. C., Gambhir, S. S.
2018
 - **Rapid Microbiology Screening in Pharmaceutical Workflows.** *SLAS technology*
Surette, C., Scherer, B., Corwin, A., Grossmann, G., Kaushik, A. M., Hsieh, K., Zhang, P., Liao, J. C., Wong, P. K., Wang, T. H., Puleo, C. M.
2018; 23 (4): 387-394
 - **Blue light cystoscopy for the diagnosis of bladder cancer: Results from the US prospective multicenter registry.** *Urologic oncology*
Daneshmand, S., Bazargani, S. T., Bivalacqua, T. J., Holzbeierlein, J. M., Willard, B., Taylor, J. M., Liao, J. C., Pohar, K., Tierney, J., Konety, B.
2018
 - **HUMANIZED ANTI-CD47 ANTIBODY (HU-5F9-G4) FOR METASTATIC BLADDER CANCER IS SUPERIOR TO CONVENTIONAL CHEMOTHERAPY WITH CISPLATIN AND GEMCITABINE IN A MURINE BLADDER CANCER MODEL.**
Kiss, B., Volkmer, A., Liao, J., Volkmer, J., Weissman, I.
ELSEVIER SCIENCE INC.2018: E864
 - **Unplanned Emergency Department Visits and Hospital Admissions Following Ureteroscopy: Do Ureteral Stents Make a Difference?** *Urology*
Mittakanti, H. R., Conti, S. L., Pao, A. C., Chertow, G. M., Liao, J. C., Leppert, J. T., Elliott, C. S.
2018
 - **Optical and Cross-Sectional Imaging Technologies for Bladder Cancer.** *Cancer treatment and research*
Kiss, B., Marcq, G., Liao, J. C.
2018; 175: 139-63
 - **Validation of Confocal Laser Endomicroscopy Features of Bladder Cancer: The Next Step Towards Real-time Histologic Grading.** *European urology focus*
Liem, E. I., Freund, J. E., Savci-Heijink, C. D., de la Rosette, J. J., Kamphuis, G. M., Baard, J. n., Liao, J. C., van Leeuwen, T. G., de Reijke, T. M., de Bruin, D. M.
2018
 - **Simple and Precise Counting of Viable Bacteria by Resazurin-Amplified Picoarray Detection.** *Analytical chemistry*
Hsieh, K. n., Zec, H. C., Chen, L. n., Kaushik, A. M., Mach, K. E., Liao, J. C., Wang, T. H.
2018
 - **A MICROFILTRATION DEVICE FOR DIAGNOSIS OF UROGENITAL SCHISTOSOMIASIS**
Xiao, Y., Lu, Y., Hsieh, M., Liao, J., Wong, P. K.
AMER SOC TROP MED & HYGIENE.2017: 384
 - **3D reconstruction of cystoscopy videos for comprehensive bladder records** *BIOMEDICAL OPTICS EXPRESS*
Lurie, K. L., Angst, R., Zlatev, D. V., Liao, J. C., Bowden, A. K.
2017; 8 (4): 2106-2123
 - **3D reconstruction of cystoscopy videos for comprehensive bladder records.** *Biomedical optics express*
Lurie, K. L., Angst, R., Zlatev, D. V., Liao, J. C., Ellerbee Bowden, A. K.
2017; 8 (4): 2106-2123

- **Integrated Biosensor Assay for Rapid Uropathogen Identification and Phenotypic Antimicrobial Susceptibility Testing.** *European urology focus*
Altobelli, E., Mohan, R., Mach, K. E., Sin, M. L., Anikst, V., Buscarini, M., Wong, P. K., Gau, V., Banaei, N., Liao, J. C.
2017; 3 (2-3): 293–99
- **Deep Sequencing of Urinary RNAs for Bladder Cancer Molecular Diagnostics.** *Clinical cancer research : an official journal of the American Association for Cancer Research*
Sin, M. L., Mach, K. E., Sinha, R., Wu, F., Trivedi, D., Altobelli, E., Jensen, K. C., Sahoo, D., Lu, Y., Liao, J. C.
2017
- **Accelerating bacterial growth detection and antimicrobial susceptibility assessment in integrated picoliter droplet platform.** *Biosensors & bioelectronics*
Kaushik, A. M., Hsieh, K. n., Chen, L. n., Shin, D. J., Liao, J. C., Wang, T. H.
2017; 97: 260–66
- **Image-guided urologic surgery: intraoperative optical imaging and tissue interrogation (Conference Presentation)**
Liao, J. C., Pogue, B. W., Gioux, S.
SPIE-INT SOC OPTICAL ENGINEERING.2017
- **Image-Guided Transurethral Resection of Bladder Tumors - Current Practice and Future Outlooks** *BLADDER CANCER*
Chang, T. C., Marcq, G., Kiss, B., Trivedi, D. R., Mach, K. E., Liao, J. C.
2017; 3 (3): 149–59
- **Proceedings of the 3rd Annual Albert Institute for Bladder Cancer Research Symposium.** *Bladder cancer (Amsterdam, Netherlands)*
Flaig, T. W., Kamat, A. M., Hansel, D. n., Ingersoll, M. A., Barton Grossman, H. n., Mendelsohn, C. n., DeGraff, D. n., Liao, J. C., Taylor, J. A.
2017; 3 (3): 211–23
- **Redefining the Stone Belt: Precipitation is Associated with Increased Risk of Urinary Stone Disease.** *Journal of endourology*
Dallas, K. B., Conti, S. L., Liao, J. C., Sofer, M. n., Pao, A. C., Leppert, J. T., Elliott, C. S.
2017
- **In vivo biodistribution and toxicity of intravesical administration of quantum dots for optical molecular imaging of bladder cancer.** *Scientific reports*
Pan, Y. n., Chang, T. n., Marcq, G. n., Liu, C. n., Kiss, B. n., Rouse, R. n., Mach, K. E., Cheng, Z. n., Liao, J. C.
2017; 7 (1): 9309
- **Development of a 90-minute integrated non-invasive urinary assay for bladder cancer detection.** *The Journal of urology*
Wallace, E. n., Higuchi, R. n., Satya, M. n., McCann, L. n., Sin, M. L., Bridge, J. A., Wei, H. n., Zhang, J. n., Wong, E. n., Hiar, A. n., Mach, K. E., Scherr, D. n., Egerdie, et al
2017
- **Oncologic Procedures Amenable to Fluorescence-guided Surgery.** *Annals of surgery*
Tipirneni, K. E., Warram, J. M., Moore, L. S., Prince, A. C., de Boer, E., Jani, A. H., Wapnir, I. L., Liao, J. C., Bouvet, M., Behnke, N. K., Hawn, M. T., Poultides, G. A., Vahrmeijer, et al
2016
- **Registration of free-hand OCT daughter endoscopy to 3D organ reconstruction** *BIOMEDICAL OPTICS EXPRESS*
Lurie, K. L., Angst, R., Seibel, E. J., Liao, J. C., Bowden, A. K.
2016; 7 (12): 4995-5009
- **Long-range electrothermal fluid motion in microfluidic systems** *INTERNATIONAL JOURNAL OF HEAT AND MASS TRANSFER*
Lu, Y., Ren, Q., Liu, T., Leung, S. L., Gau, V., Liao, J. C., Chan, C. L., Wong, P. K.
2016; 98: 341-349
- **Long-range electrothermal fluid motion in microfluidic systems.** *International journal of heat and mass transfer*
Lu, Y., Ren, Q., Liu, T., Leung, S. L., Gau, V., Liao, J. C., Chan, C. L., Wong, P. K.
2016; 98: 341-349
- **Editorial Comment.** *journal of urology*
Davenport, M. T., Liao, J. C.
2016; 195 (6): 1703-?
- **Editorial Comment.** *journal of urology*

- Liao, J. C.
2016; 195 (5): 1585-?
- **A Multiplex Electrochemical Biosensor for Bloodstream Infection Diagnosis.** *Journal of laboratory automation*
Gao, J., Jeffries, L., Mach, K. E., Craft, D. W., Thomas, N. J., Gau, V., Liao, J. C., Wong, P. K.
2016: 2211068216651232-?
 - **A Microfiltration Device for Urogenital Schistosomiasis Diagnostics** *PLOS ONE*
Xiao, Y., Lu, Y., Hsieh, M., Liao, J., Wong, P. K.
2016; 11 (4)
 - **Intraoperative Optical Biopsy during Robotic Assisted Radical Prostatectomy Using Confocal Endomicroscopy** *JOURNAL OF UROLOGY*
Lopez, A., Zlatev, D. V., Mach, K. E., Bui, D., Liu, J., Rouse, R. V., Harris, T., Leppert, J. T., Liao, J. C.
2016; 195 (4): 1110-1117
 - **Fiber-Optic Confocal Laser Endomicroscopy of Small Renal Masses: Toward Real-Time Optical Diagnostic Biopsy** *JOURNAL OF UROLOGY*
Su, L., Kuo, J., Allan, R. W., Liao, J. C., Ritari, K. L., Tomeny, P. E., Carter, C. M.
2016; 195 (2): 486-492
 - **Multimodal 3D cancer-mimicking optical phantom** *BIOMEDICAL OPTICS EXPRESS*
Smith, G. T., Lurie, K. L., Zlatev, D. V., Liao, J. C., Bowden, A. K.
2016; 7 (2): 648-662
 - **Multimodal 3D cancer-mimicking optical phantom.** *Biomedical optics express*
Smith, G. T., Lurie, K. L., Zlatev, D. V., Liao, J. C., Ellerbee Bowden, A. K.
2016; 7 (2): 648-62
 - **Optical Biopsy of Bladder Cancer Using Crowd-Sourced Assessment.** *JAMA surgery*
Chen, S. P., Kirsch, S., Zlatev, D. V., Chang, T., Comstock, B., Lendvay, T. S., Liao, J. C.
2016; 151 (1): 90-93
 - **ULTRA-THIN ELASTOMER MEMBRANE ARRAY WRINKLING FOR BLADDER CANCER DIAGNOSIS**
Appel, J. H., Sin, M. Y., Liao, J. C., Chae, J., IEEE
IEEE.2016: 419-22
 - **Multimodal, 3D pathology-mimicking bladder phantom for evaluation of cystoscopic technologies**
Smith, G. T., Lurie, K. L., Zlatev, D. V., Liao, J. C., Ellerbee, A. K., Choi, B., Kollias, N., Zeng, H., Kang, H. W., Wong, B. J., Ilgner, J. F., Tearney, G. J., Gregory, et al
SPIE-INT SOC OPTICAL ENGINEERING.2016
 - **Virtual 3D bladder reconstruction for augmented medical records from white light cystoscopy**
Lurie, K. L., Zlatev, D. V., Angst, R., Liao, J. C., Ellerbee, A. K., Choi, B., Kollias, N., Zeng, H., Kang, H. W., Wong, B. J., Ilgner, J. F., Tearney, G. J., Gregory, et al
SPIE-INT SOC OPTICAL ENGINEERING.2016
 - **Successful Translation of Fluorescence Navigation During Oncologic Surgery: A Consensus Report** *JOURNAL OF NUCLEAR MEDICINE*
Rosenthal, E. L., Warram, J. M., de Boer, E., Basilion, J. P., Biel, M. A., Bogyo, M., Bouvet, M., Brigman, B. E., Colson, Y. L., DeMeester, S. R., Gurtner, G. C., Ishizawa, T., Jacobs, et al
2016; 57 (1): 144-150
 - **Ultra-thin elastomer membrane array wrinkling for bladder cancer diagnosis** *IEEE 29th International Conference on Micro Electro Mechanical Systems (MEMS)*
Appel, J. H., Sin, M. L., Liao, J. C., Chae, J.
2016: 419
 - **Rapid bladder cancer cell detection from clinical urine samples using an ultra-thin silicone membrane** *ANALYST*
Appel, J. H., Ren, H., Sin, M. L., Liao, J. C., Chae, J.
2016; 141 (2): 652-660
 - **AC Electrokinetics of Physiological Fluids for Biomedical Applications** *JALA*
Lu, Y., Liu, T., Lamanda, A. C., Sin, M. L., Gau, V., Liao, J. C., Wong, P. K.

2015; 20 (6): 611-620

- **A Pilot Study of In Vivo Confocal Laser Endomicroscopy of Upper Tract Urothelial Carcinoma** *JOURNAL OF ENDOUROLOGY*
Bui, D., Mach, K. E., Zlatev, D. V., Rouse, R. V., Leppert, J. T., Liao, J. C.
2015; 29 (12): 1418-1423
- **DEVELOPMENT OF A BIOSENSOR-BASED RAPID URINE TEST FOR DETECTION OF UROGENITAL SCHISTOSOMIASIS**
Mach, K., Mohan, R., Patel, S., Wong, P. K., Hsieh, M., Liao, J. C.
AMER SOC TROP MED & HYGIENE.2015: 562
- **Optical Biopsy of Peripheral Nerve Using Confocal Laser Endomicroscopy: A New Tool for Nerve Surgeons?** *Archives of plastic surgery*
Crowe, C. S., Liao, J. C., Curtin, C. M.
2015; 42 (5): 626-629
- **Role of Narrow Band Imaging in Management of Urothelial Carcinoma** *CURRENT UROLOGY REPORTS*
Altobelli, E., Zlatev, D. V., Liao, J. C.
2015; 16 (8)
- **Advances in Imaging Technologies in the Evaluation of High-Grade Bladder Cancer** *UROLOGIC CLINICS OF NORTH AMERICA*
Zlatev, D. V., Altobelli, E., Liao, J. C.
2015; 42 (2): 147-?
- **OPTICAL BIOPSY OF SUSPECTED PENILE CANCER USING CONFOCAL LASER ENDOMICROSCOPY: INITIAL FEASIBILITY STUDY**
Zlatev, D. V., Lopez, A., Mach, K. E., Rouse, R. V., Leppert, J. T., Liao, J. C.
ELSEVIER SCIENCE INC.2015: E327
- **MOLECULAR IMAGING OF ORTHOTOPIC MOUSE BLADDER CANCER MODEL USING A CD47 ANTIBODY**
Zlatev, D. V., Kang, L., Hsu, M., Pan, Y., Mach, K. E., Volkmer, J., Weissman, I. L., Liao, J. C.
ELSEVIER SCIENCE INC.2015: E559
- **Editorial Comment.** *The Journal of urology*
Zlatev, D. V., Liao, J. C.
2015
- **Development of a Biosensor-Based Rapid Urine Test for Detection of Urogenital Schistosomiasis.** *PLoS neglected tropical diseases*
Mach, K. E., Mohan, R. n., Patel, S. n., Wong, P. K., Hsieh, M. n., Liao, J. C.
2015; 9 (7): e0003845
- **Rapid Antimicrobial Susceptibility Testing with Electrokinetics Enhanced Biosensors for Diagnosis of Acute Bacterial Infections** *ANNALS OF BIOMEDICAL ENGINEERING*
Liu, T., Lu, Y., Gau, V., Liao, J. C., Wong, P. K.
2014; 42 (11): 2314-2321
- **Hedgehog Signaling Restrains Bladder Cancer Progression by Eliciting Stromal Production of Urothelial Differentiation Factors** *CANCER CELL*
Shin, K., Lim, A., Zhao, C., Sahoo, D., Pan, Y., Spiekerkoetter, E., Liao, J. C., Beachy, P. A.
2014; 26 (4): 521-533
- **Confocal laser endomicroscopy of bladder and upper tract urothelial carcinoma: a new era of optical diagnosis?** *Current urology reports*
Chen, S. P., Liao, J. C.
2014; 15 (9): 437-?
- **A Cell Phone-Based Microphotometric System for Rapid Antimicrobial Susceptibility Testing** *JALA*
Kadlec, M. W., You, D., Liao, J. C., Wong, P. K.
2014; 19 (3): 258-266
- **Emerging endoscopic imaging technologies for bladder cancer detection.** *Current urology reports*
Lopez, A., Liao, J. C.
2014; 15 (5): 406-?
- **OPTICAL BIOPSY OF PROSTATE CANCER THROUGH CONFOCAL LASER ENDOMICROSCOPY**
Lopez, A., Mach, K., Bui, D., Rouse, R., Liao, J.

ELSEVIER SCIENCE INC.2014: E658–E659

- **Advances and challenges in biosensor-based diagnosis of infectious diseases.** *Expert review of molecular diagnostics*
Sin, M. L., Mach, K. E., Wong, P. K., Liao, J. C.
2014; 14 (2): 225-244
- **Three-dimensional, distendable bladder phantom for optical coherence tomography and white light cystoscopy.** *Journal of biomedical optics*
Lurie, K. L., Smith, G. T., Khan, S. A., Liao, J. C., Ellerbee, A. K.
2014; 19 (3): 36009-?
- **Intraoperative optical imaging and tissue interrogation during urologic surgery.** *Current opinion in urology*
Hsu, M., Gupta, M., Su, L., Liao, J. C.
2014; 24 (1): 66-74
- **WRINKLE CELLOMICS: SCREENING BLADDER CANCER CELLS USING AN ULTRA-THIN SILICONE MEMBRANE**
Appel, J., Sin, M. Y., Liao, J. C., Chae, J., IEEE
IEEE.2014: 889–92
- **Electrokinetic stringency control in self-assembled monolayer-based biosensors for multiplex urinary tract infection diagnosis** *NANOMEDICINE-NANOTECHNOLOGY BIOLOGY AND MEDICINE*
Liu, T., Sin, M. L., Pyne, J. D., Gau, V., Liao, J. C., Wong, P. K.
2014; 10 (1): 159-166
- **A Universal Electrode Approach for Automated Electrochemical Molecular Analyses** *JOURNAL OF MICROELECTROMECHANICAL SYSTEMS*
Sin, M. L., Gau, V., Liao, J. C., Wong, P. K.
2013; 22 (5): 1126-1132
- **A Universal Electrode Approach for Automated Electrochemical Molecular Analyses.** *Journal of microelectromechanical systems : a joint IEEE and ASME publication on microstructures, microactuators, microsensors, and microsystems*
Sin, M. L., Gau, V., Liao, J. C., Wong, P. K.
2013; 22 (5): 1126-1132
- **Turning on the lights: new technologies in optical diagnostics and therapeutics.** *journal of urology*
Liao, J. C., Leppert, J. T.
2013; 190 (2): 381-382
- **Interobserver agreement of confocal laser endomicroscopy for bladder cancer.** *Journal of endourology*
Chang, T. C., Liu, J., Hsiao, S. T., Pan, Y., Mach, K. E., Leppert, J. T., McKenney, J. K., Rouse, R. V., Liao, J. C.
2013; 27 (5): 598-603
- **Single Cell Antimicrobial Susceptibility Testing by Confined Microchannels and Electrokinetic Loading** *ANALYTICAL CHEMISTRY*
Lu, Y., Gao, J., Zhang, D. D., Gau, V., Liao, J. C., Wong, P. K.
2013; 85 (8): 3971-3976
- **Multiplex detection of urinary biomarkers for rapid bladder cancer diagnosis using an automated cartridge-based platform.**
Wallace, E., Lai, E. W., Mach, K. E., Haque, N., McCann, L., Hsiao, S., Bui, D., Mohan, R., Satya, M., Wong, E., Bridge, J. A., Persing, D., Higuchi, et al
AMER ASSOC CANCER RESEARCH.2013
- **Integrated Microfluidic Systems for Molecular Diagnostics A universal electroce platform for rapid diacnosis of urinary tract infections** *IEEE NANOTECHNOLOGY MAGAZINE*
Sin, M. Y., Gau, V., Liao, J. C., Wong, P. K.
2013; 7 (1): 31–37
- **An AC electrokinetics facilitated biosensor cassette for rapid pathogen identification** *ANALYST*
Ouyang, M., Mohan, R., Lu, Y., Liu, T., Mach, K. E., Sin, M. L., McComb, M., Joshi, J., Gau, V., Wong, P. K., Liao, J. C.
2013; 138 (13): 3660-3666
- **Probe-based confocal laser endomicroscopy of the urinary tract: the technique.** *Journal of visualized experiments : JoVE*
Chang, T. C., Liu, J., Liao, J. C.
2013: e4409-?

- **New Optical Imaging Technologies for Bladder Cancer: Considerations and Perspectives** *JOURNAL OF UROLOGY*
Liu, J., Droller, M. J., Liao, J. C.
2012; 188 (2): 361-368
- **Rapid hybridization of nucleic acids using isotachopheresis** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Bercovici, M., Han, C. M., Liao, J. C., Santiago, J. G.
2012; 109 (28): 11127-11132
- **Endoscopic imaging of Cerenkov luminescence** *BIOMEDICAL OPTICS EXPRESS*
Kothapalli, S., Liu, H., Liao, J. C., Cheng, Z., Gambhir, S. S.
2012; 3 (6): 1215-1225
- **Molecular imaging of urothelial cancer using EGFR-binding peptides**
Pan, Y., Liu, J., Chang, T. C., Hsiao, S., Mach, K. E., Liao, J. C.
AMER ASSOC CANCER RESEARCH.2012
- **Seeing it through: translational validation of new medical imaging modalities** *BIOMEDICAL OPTICS EXPRESS*
Aldrich, M. B., Marshall, M. V., Sevick-Muraca, E. M., Lanza, G., Kotyk, J., Culver, J., Wang, L. V., Uddin, J., Crews, B. C., Marnett, L. J., Liao, J. C., Contag, C., Crawford, et al
2012; 3 (4): 764-776
- **INTEROBSERVER AGREEMENT AND ACCURACY OF CONFOCAL LASER ENDOMICROSCOPY FOR IN VIVO DIAGNOSIS OF BLADDER CANCER**
Chang, T., Liu, J., Hsiao, S., Pan, Y., McKenney, J., Liao, J.
ELSEVIER SCIENCE INC.2012: E716
- **In Situ Electrokinetic Enhancement for Self-Assembled-Monolayer-Based Electrochemical Biosensing** *ANALYTICAL CHEMISTRY*
Sin, M. L., Liu, T., Pyne, J. D., Gau, V., Liao, J. C., Wong, P. K.
2012; 84 (6): 2702-2707
- **Next generation of optical diagnostics for bladder cancer using probe-based confocal laser endomicroscopy** *Conference on Photonic Therapeutics and Diagnostics VIII*
Liu, J., Chang, T. C., Pan, Y., Hsiao, S. T., Mach, K. E., Jensen, K. C., Liao, J. C.
SPIE-INT SOC OPTICAL ENGINEERING.2012
- **In vivo Cellular and Molecular Imaging: Future of Cancer Diagnosis and Surgery?**
Liao, J. C., IEEE
IEEE.2012
- **A Universal Electrode Approach for Automated Electrochemical Detection of Bacterial 16S rRNA**
Sin, M. Y., Gau, V., Liao, J. C., Wong, P., IEEE
IEEE.2012
- **A Universal Electrode Approach for Automated Electrochemical Detection of Bacterial 16S rRNA** *6th IEEE International Conference on Nano/Molecular Medicine and Engineering (IEEE-NANOMED)*
Sin, M. L., Gau, V., Liao, J. C., Wong, P. K.
IEEE.2012: 96-100
- **Clinical Validation of Integrated Nucleic Acid and Protein Detection on an Electrochemical Biosensor Array for Urinary Tract Infection Diagnosis** *PLOS ONE*
Mohan, R., Mach, K. E., Bercovici, M., Pan, Y., Dhulipala, L., Wong, P. K., Liao, J. C.
2011; 6 (10)
- **Molecular Detection of Bacterial Pathogens Using Microparticle Enhanced Double-Stranded DNA Probes** *ANALYTICAL CHEMISTRY*
Riahi, R., Mach, K. E., Mohan, R., Liao, J. C., Wong, P. K.
2011; 83 (16): 6349-6354
- **Dynamic Real-time Microscopy of the Urinary Tract Using Confocal Laser Endomicroscopy** *UROLOGY*
Wu, K., Liu, J., Adams, W., Sonn, G. A., Mach, K. E., Pan, Y., Beck, A. H., Jensen, K. C., Liao, J. C.

2011; 78 (1): 225-231

- **Comparison of 2.6-and 1.4-mm Imaging Probes for Confocal Laser Endomicroscopy of the Urinary Tract** *JOURNAL OF ENDOUROLOGY*
Adams, W., Wu, K., Liu, J., Hsiao, S. T., Jensen, K. C., Liao, J. C.
2011; 25 (6): 917-921
- **Rapid Detection of Urinary Tract Infections Using Isotachophoresis and Molecular Beacons** *ANALYTICAL CHEMISTRY*
Bercovici, M., Kaigala, G. V., Mach, K. E., Han, C. M., Liao, J. C., Santiago, J. G.
2011; 83 (11): 4110-4117
- **Biosensor diagnosis of urinary tract infections: a path to better treatment?** *TRENDS IN PHARMACOLOGICAL SCIENCES*
Mach, K. E., Wong, P. K., Liao, J. C.
2011; 32 (6): 330-336
- **Phage display selection of cancer-specific peptides on human bladder for molecular imaging of bladder cancer**
Pan, Y., Volkmer, J., Liu, J., Wu, K., Mach, K. E., Weissman, I. L., Liao, J. C.
AMER ASSOC CANCER RESEARCH.2011
- **Optical imaging of bladder cancer with cancer-specific molecular contrast agents**
Pan, Y., Liu, J., Mach, K. E., Volkmer, J., Weissman, I. L., Liao, J. C.
AMER ASSOC CANCER RESEARCH.2011
- **URINARY PROTEOMIC ANALYSIS TO IDENTIFY HOST RESPONSE PROTEINS IN CATHETER-ASSOCIATED URINARY TRACT INFECTION**
Mach, K., Ling, X., Liao, J.
ELSEVIER SCIENCE INC.2011: E474
- **Advances in the field of urinary tract infections** *European Urology Today Congress News*
Bjerkklund Johansen TE, Liao JC
2011; 23: 27
- **System Integration - A Major Step toward Lab on a Chip** *JOURNAL OF BIOLOGICAL ENGINEERING*
Sin, M. L., Gao, J., Liao, J. C., Wong, P. K.
2011; 5 (1)
- **Hybrid electrokinetic manipulation in high-conductivity media** *LAB ON A CHIP*
Gao, J., Sin, M. L., Liu, T., Gau, V., Liao, J. C., Wong, P. K.
2011; 11 (10): 1770-1775
- **Real Time Diagnosis of Bladder Cancer with Probe-Based Confocal Laser Endomicroscopy** *Conference on Imaging, Manipulation, and Analysis of Biomolecules, Cells, and Tissues IX*
Liu, J., Wu, K., Adams, W., Hsiao, S. T., Mach, K. E., Beck, A. H., Jensen, K. C., Liao, J. C.
SPIE-INT SOC OPTICAL ENGINEERING.2011
- **A Biosensor Platform for Rapid Antimicrobial Susceptibility Testing Directly From Clinical Samples** *JOURNAL OF UROLOGY*
Mach, K. E., Mohan, R., Baron, E. J., Shih, M., Gau, V., Wong, P. K., Liao, J. C.
2011; 185 (1): 148-153
- **System Integration - A Major Step toward Lab on a Chip.** *Journal of biological engineering*
Sin, M. L., Gao, J., Liao, J. C., Wong, P. K.
2011; 5: 6-?
- **Statistical Metamodeling for Revealing Synergistic Antimicrobial Interactions** *PLOS ONE*
Chen, C. H., Gau, V., Zhang, D. D., Liao, J. C., Wang, F., Wong, P. K.
2010; 5 (11)
- **Electrochemical immunosensor detection of urinary lactoferrin in clinical samples for urinary tract infection diagnosis** *BIOSENSORS & BIOELECTRONICS*
Pan, Y., Sonn, G. A., Sin, M. L., Mach, K. E., Shih, M., Gau, V., Wong, P. K., Liao, J. C.
2010; 26 (2): 649-654

- **DYNAMIC REAL TIME MICROSCOPY OF THE URINARY TRACT: AN IMAGING ATLAS BASED ON CONFOCAL LASER ENDOMICROSCOPY**
Adams, W., Wu, K., Sonn, G., Jensen, K., Liao, J. C.
MARY ANN LIEBERT INC.2010: A278–A278
- **Matrix Effects-A Challenge Toward Automation of Molecular Analysis** *JALA*
Chiu, M. L., Lawi, W., Snyder, S. T., Wong, P. K., Liao, J. C., Gau, V.
2010; 15 (3): 233-242
- **Nanomedicine: About This Special Issue** *JALA*
Liao, J. C., Huang, T.
2010; 15 (2): A10
- **Antimicrobial Susceptibility Testing Using High Surface-to-Volume Ratio Microchannels** *ANALYTICAL CHEMISTRY*
Chen, C. H., Lu, Y., Sin, M. L., Mach, K. E., Zhang, D. D., Gau, V., Liao, J. C., Wong, P. K.
2010; 82 (3): 1012-1019
- **Laparoscopic Radical Nephrectomy in a Pelvic Ectopic Kidney: Keys to Success** *JSLs-JOURNAL OF THE SOCIETY OF LAPAROENDOSCOPIC SURGEONS*
Chung, B. I., Liao, J. C.
2010; 14 (1): 126-129
- **Electrothermal Fluid Manipulation of High-Conductivity Samples for Laboratory Automation Applications** *Journal of the Association for Laboratory Automation*
Sin ML, Gau V, Liao JC, Wong PK
2010; 15 (6): 426-432
- **Nanomedicine: About This Special Issue** *Journal of the Association for Laboratory Automation*
Liao JC, Huang TJ
2010; 15 (2): A10
- **Matrix Effects?A Challenge Toward Automation of Molecular Analysis** *Journal of the Association for Laboratory Automation*
Chiu ML, Lawi W, Snyder ST, Wong PK, Liao JC, Gau V
2010; 15 (3): 233-242
- **Multiplex Pathogen Identification for Polymicrobial Urinary Tract Infections Using Biosensor Technology: A Prospective Clinical Study** *JOURNAL OF UROLOGY*
Mach, K. E., Du, C. B., Phull, H., Haake, D. A., Shih, M., Baron, E. J., Liao, J. C.
2009; 182 (6): 2735-2741
- **A Microfluidic Cartridge System for Multiplexed Clinical Analysis** *JALA*
Lawi, W., Wiita, C., Snyder, S. T., Wei, F., Wong, D., Wong, P. K., Liao, J. C., Haake, D., Gau, V.
2009; 14 (6): 407-412
- **Matrix-insensitive protein assays push the limits of biosensors in medicine** *NATURE MEDICINE*
Gaster, R. S., Hall, D. A., Nielsen, C. H., Osterfeld, S. J., Yu, H., Mach, K. E., Wilson, R. J., Murmann, B., Liao, J. C., Gambhir, S. S., Wang, S. X.
2009; 15 (11): 1327-U130
- **Optical Biopsy of Human Bladder Neoplasia With In Vivo Confocal Laser Endomicroscopy** *JOURNAL OF UROLOGY*
Sonn, G. A., Jones, S. E., Tarin, T. V., Du, C. B., Mach, K. E., Jensen, K. C., Liao, J. C.
2009; 182 (4): 1299-1305
- **Decreasing Use of Luteinizing Hormone-Releasing Hormone Agonists in the United States is Independent of Reimbursement Changes: A Medicare and Veterans Health Administration Claims Analysis** *JOURNAL OF UROLOGY*
Chang, S. L., Liao, J. C., Shinghal, R.
2009; 182 (1): 255-260
- **Active Manipulation of Quantum Dots using AC Electrokinetics** *JOURNAL OF PHYSICAL CHEMISTRY C*
Sin, M. L., Gau, V., Liao, J. C., Haake, D. A., Wong, P. K.
2009; 113 (16): 6561-6565

- **DECREASING UTILIZATION OF LHRH-AGONISTS IN THE UNITED STATES IS INDEPENDENT OF REIMBURSEMENT CHANGES: A MEDICARE AND VETERANS HEALTH ADMINISTRATION CLAIMS ANALYSIS**
Chang, S. L., Liao, J. C., Shinghal, R.
ELSEVIER SCIENCE INC.2009: 77
- **Fibred Confocal Microscopy of Bladder Tumors: An ex Vivo Study** *JOURNAL OF ENDOUROLOGY*
Sonn, G. A., Mach, K. E., Jensen, K., Hsiung, P., Jones, S., Contag, C. H., Wang, T. D., Liao, J. C.
2009; 23 (2): 197-201
- **Rapid multiplex identification of pathogens in polymicrobial urinary tract infections**
Mach, K. E., Du, C. B., Liao, J. C.
ELSEVIER SCIENCE INC.2008: 82-83
- **A case of prostatic adenocarcinoma recurrence presenting as ductal carcinoma of the prostate** *NATURE CLINICAL PRACTICE UROLOGY*
Tu, W. H., Jensen, K., Freiha, F., Liao, J. C.
2008; 5 (1): 55-58
- **Use of haemostatic agents and glues during laparoscopic partial nephrectomy: A multi-institutional survey from the United States and Europe of 1347 cases** *EUROPEAN UROLOGY*
Breda, A., Stepanian, S. V., Lam, J. S., Liao, J. C., Gill, I. S., Colombo, J. R., Guazzoni, G., Stifelman, M. D., Perry, K. T., Celia, A., Breda, G., Fornara, P., Jackman, et al
2007; 52 (3): 798-803
- **Positive margins in laparoscopic partial nephrectomy in 855 cases: A multi-institutional survey from the United States and Europe** *JOURNAL OF UROLOGY*
Breda, A., Stepanian, S. V., Liao, J., Lam, J. S., Guazzoni, G., Stifelman, M., Perry, K., Celia, A., Breda, G., Fornara, P., Jackman, S., Rosales, A., Palou, et al
2007; 178 (1): 47-50
- **Association of bowel rest and ketorolac analgesia with short hospital stay after laparoscopic donor nephrectomy** *UROLOGY*
Breda, A., Bui, M. H., Liao, J. C., Schulam, P. G.
2007; 69 (5): 828-831
- **Development of an advanced electrochemical DNA biosensor for bacterial pathogen detection** *JOURNAL OF MOLECULAR DIAGNOSTICS*
Liao, J. C., Mastali, M., Li, Y., Gau, V., Suchard, M. A., Babbitt, J., Gornbein, J., Landaw, E. M., McCabe, E. R., Churchill, B. M., Haake, D. A.
2007; 9 (2): 158-168
- **Complications of laparoscopic living donor nephrectomy and their management: The UCLA experience** *UROLOGY*
Breda, A., Veale, J., Liao, J., Schulam, P. G.
2007; 69 (1): 49-52
- **A Microfluidic System for Rapid Bacterial Pathogen Detection** *7th IEEE Conference on Nanotechnology*
Mai, J. D., Gaster, R. S., Wu, A., Gu, W., Mach, K. E., Liao, J. C.
IEEE.2007: 1341-1345
- **Laparoscopic renal surgery for benign disease.** *Current urology reports*
Liao, J. C., Breda, A., Schulam, P. G.
2007; 8 (1): 12-18
- **Incidence of ureteral strictures after laparoscopic donor nephrectomy** *JOURNAL OF UROLOGY*
Breda, A., Bui, M. H., Liao, J. C., Gritsch, H. A., Schulam, P. G.
2006; 176 (3): 1065-1068
- **Use of electrochemical DNA biosensors for rapid molecular identification of uropathogens in clinical urine specimens** *JOURNAL OF CLINICAL MICROBIOLOGY*
Liao, J. C., Mastali, M., Gau, V., Suchard, M. A., Moller, A. K., Bruckner, D. A., Babbitt, J. T., Li, Y., Gornbein, J., Landaw, E. M., McCabe, E. R., Churchill, B. M., Haake, et al
2006; 44 (2): 561-570
- **Design of Microfluidic T-Form Mixer Utilizing Pressure Disturbances** *IEEE Nanotechnology Council Review on Advances of Micro, Nano, and Molecular Systems*
Ma Y, Fields M, Sun C-P, Zhang F, Liao JC, Li Y, Churchill BM, Ho C-M

2006; 1: 595

- **A point-of-care micro-laboratory for direct pathogen identification in body fluids** *IEEE International Conference of Nano/Micro Engineered and Molecular Systems*
Liao, J. C., Ma, Y., Gau, V., Mastali, M., Sun, C., Li, Y., McCabe, E. R., Landaw, E. M., Bruckner, D., Churchill, B. M., Haake, D. A., Ho, C.
IEEE.2006: 1109–1112
- **Rapid, species-specific detection of uropathogen 16S rDNA and rRNA at ambient temperature by dot-blot hybridization and an electrochemical sensor array** *MOLECULAR GENETICS AND METABOLISM*
Sun, C. P., Liao, J. C., Zhang, Y. H., Gau, V., Mastali, M., Babbitt, J. T., Grundfest, W. S., Churchill, B. M., McCabe, E. R., Haake, D. A.
2005; 84 (1): 90-99
- **Microelectromechanical systems in urology** *UROLOGY*
Kristo, B., Liao, J. C., Neves, H. P., Churchill, B. M., Montemagno, C. D., Schulam, P. G.
2003; 61 (5): 883-887
- **Case scenario: 26-year-old male with right scrotal pain and swelling.** *Reviews in urology*
Garraway, I., Liao, J., Rajfer, J.
2002; 4 (1): 43-?
- **Pediatric urine testing** *PEDIATRIC CLINICS OF NORTH AMERICA*
Liao, J. C., Churchill, B. M.
2001; 48 (6): 1425-?
- **Coccidioidomycosis presenting as testicular mass** *JOURNAL OF UROLOGY*
Liao, J. C., Reiter, R. E.
2001; 166 (4): 1396-1396
- **Sarcomatoid renal cell carcinoma: Biologic behavior, prognosis, and response to combined surgical resection and immunotherapy** *JOURNAL OF CLINICAL ONCOLOGY*
Cangiano, T., Liao, J., Naitoh, J., Dorey, F., Figlin, R., Beldegrun, A.
1999; 17 (2): 523-528
- **Pelvi-ureteric junction obstruction treated with Acucise (TM) retrograde endopyelotomy** *BRITISH JOURNAL OF UROLOGY*
Gill, H. S., Liao, J. C.
1998; 82 (1): 8-11
- **Chromophore assisted laser inactivation of cellular proteins** *Proc SPIE*
Jay DG, Wang FS, Chang HY, Sydor AM, Liao JC
1997; 2983: 30-6
- **Isolation of a cDNA encoding a UV-damaged DNA binding factor defective in xeroderma pigmentosum group E cells** *MUTATION RESEARCH-DNA REPAIR*
Hwang, B. J., Liao, J. C., Chu, G.
1996; 362 (1): 105-117
- **CHROMOPHORE-ASSISTED LASER INACTIVATION OF SUBUNITS OF THE T-CELL RECEPTOR IN LIVING CELLS IS SPATIALLY RESTRICTED** *PHOTOCHEMISTRY AND PHOTOBIOLOGY*
Liao, J. C., Berg, L. J., Jay, D. G.
1995; 62 (5): 923-929
- **CHROMOPHORE-ASSISTED LASER INACTIVATION OF PROTEINS IS MEDIATED BY THE PHOTOGENERATION OF FREE-RADICALS** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Liao, J. C., Roeder, J., Jay, D. G.
1994; 91 (7): 2659-2663
- **SPATIAL SPECIFICITY OF CHROMOPHORE ASSISTED LASER INACTIVATION OF PROTEIN FUNCTION** *BIOPHYSICAL JOURNAL*
Linden, K. G., Liao, J. C., Jay, D. G.
1992; 61 (4): 956-962
- **Real time diagnosis of bladder cancer with probe-based confocal laser endomicroscopy** *Proc. SPIE 7902, 79021V (2011); doi:10.1117/12.874243*

Liu J-J, Wu K, Adams W, Hsiao ST, Mach KE, Beck AH, Jensen KC, Liao JC

- **Hybrid electrokinetic manipulation in high-conductivity media** *Lab Chip* (DOI: 10.1039/C1LC20054B)

Gao J, Sin MLY, Liu T, Gau V, Liao JC, Wong PK