




## Joseph C. Liao

Kathryn Simmons Stamey Professor

Urology

 NIH Biosketch available Online

### CLINICAL OFFICE (PRIMARY)

- **Stanford Cancer Center**

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### ACADEMIC CONTACT INFORMATION

- **Administrative Contact**

Tisha Thimbunjuad

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## Bio

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### BIO

Joseph Liao is the Kathryn Simmons Stamey Professor and a professor of urology at Stanford University. Dr. Liao is a board-certified, fellowship-trained urologic surgeon and a physician scientist who is nationally recognized for his contributions in cancer imaging and diagnostics. His clinical practice focuses on care of patients with early-stage bladder and prostate cancer.

Dr. Liao graduated magna cum laude with highest honors from Harvard College and earned his medical degree from Stanford School of Medicine. He completed his urology residency and fellowship in endourology and minimally invasive surgery at UCLA Medical Center. He joined the faculty in the Department of Urology at Stanford in 2006 and currently serves as the executive vice chair. 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, kidney stone disease, and urinary tract infections. 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 artificial intelligence (AI)-assisted 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. Dr. Liao is committed to the training of next generation of physician scientists and researchers and directs the NIH-funded K12 Urology Research 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 including American Urological Association, Endourology Society, and Society of Urologic Oncology.

## **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**

- Executive Vice Chair, Department of Urology, Stanford University, (2025- present)
- Interim Chair, Department of Urology, Stanford University, (2024-2025)
- Program Director, NIH/NIDDK K12 Urology Research at Stanford (KUReS) Career Development Program, (2023- present)
- Co-Chair, Department of Veterans Affairs ACCESS Hub, NCI Cancer Screening Research Network Vanguard Study, (2023- present)
- Associate Member, Canary Center at Stanford for Early Cancer Detection, (2022- present)
- Vice Chair for Academic Affairs, Department of Urology, Stanford University, (2021-2025)
- Director of Research, Department of Urology, Stanford University, (2017-2025)
- 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 Photonics West - Urology (2017 - present)
- Diplomate, American Board of Urology (2008 - present)

## **PROFESSIONAL EDUCATION**

- 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

- AUA TV 2024 - Liao Lab Research Innovations: <https://youtu.be/4kD2uHe2xZk?si=cMSFS6dAzKb31bPa>
- Liao Lab Website: <https://med.stanford.edu/laolab/People.html>
- Stanford Medicine Breakthroughs in Bladder Cancer: <https://youtu.be/psh-1jjas4E>
- 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

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### 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

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### STANFORD ADVISEES

#### Doctoral Dissertation Reader (AC)

Kevin Liu, William Shi

#### Postdoctoral Faculty Sponsor

Liang Qiu

#### Postdoctoral Research Mentor

Liang Qiu

### GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Bioengineering (Phd Program)

## Publications

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### PUBLICATIONS

- **Large multicenter validation of urine RNA profile for urothelial carcinoma detection and surveillance.** *The Journal of clinical investigation*  
Mach, K. E., Kornberg, Z., Shkolyar, E., Long, J., Lee, T. J., La, V., Yoo, I., Rodriguez, G., Thong, A. E., Prado, K. B., Shah, J. B., Leppert, J. T., Skinner, et al  
2026
- **CystoDS: a multiclass endoscopy image dataset for artificial intelligence-assisted bladder cancer detection.** *Scientific data*  
Lee, T. J., Qiu, L., Long, J., Mach, K. E., Peterson, D., Yao, Q., Shkolyar, E., Islam, M. T., Xing, L., Liao, J. C.  
2026
- **Field-effect-informed urine liquid biopsy for bladder cancer.** *Cell*  
Shi, W. Y., Liu, K. J., Esfahani, M. S., Mach, K. E., Phillips, N. A., Almanza, D., Bajpai, R. K., Schroers-Martin, J. G., Trabanino, L., Lee, T. J., La, V., Rodriguez, G., Holton, et al  
2026
- **Magnetic retrieval of kidney stones via ureteroscopy in a porcine model** *DEVICE*  
Roquero, D., Ge, T., Holton, G. H., Kornberg, Z., Bryan, J. T., Doeve, J., Lau, H., Sheth, K., Conti, S., Mach, K. E., Wang, S. X., Liao, J. C.  
2026; 4 (1)
- **Microbial Product Cocktails for Personalized Cancer Immunotherapy.** *Nature communications*

- Yan, Y., Yang, S., Mach, K. E., Chen, G., DeGraff, D. J., Liao, J. C., Wong, P. K.  
2025; 16 (1): 10625
- **Optimizing cystoscopy and TURBT: enhanced imaging and artificial intelligence.** *Nature reviews. Urology*  
Shkolyar, E., Zhou, S. R., Carlson, C. J., Chang, S., Laurie, M. A., Xing, L., Bowden, A. K., Liao, J. C.  
2024
  - **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
  - **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-?
  - **Histopathologic and spatial transcriptomic analyses of en bloc resections of de novo and recurrent bladder tumors.**  
Peterson, D., Pacheco, R., Lu, G., Liao, J. C., Dong, F., Chan, E., Prado, K.  
LIPPINCOTT WILLIAMS & WILKINS.2026
  - **An Organoid Biosensing Platform for Personalized Prognosis of Bladder Cancer.** *ACS nano*  
Yan, Y., Ahmed, M., Mach, K. E., Liao, J. C., Wong, P. K.  
2025
  - **AI-Driven Defecation Analysis by Smart Healthcare Toilet: Exploring Biometric Patterns and Eu-Tenesmus.** *Advanced science (Weinheim, Baden-Wuerttemberg, Germany)*

- Song, Z., Kwon, T., Lee, J., Won, D. D., Lee, B. J., Choi, H. S., Liao, J. C., Park, W. G., Sonu, I., Rogalla, S., Rosen, M. J., Hu, D. L., Ziyang, et al  
2025: e2503247
- **Perspective on the use of optics in bladder cancer detection and diagnosis.** *Journal of biomedical optics*  
Rommelink, M. J., Peterson, D. J., Nieuwenhuijzen, J. A., van Leeuwen, T. G., Liao, J. C., de Bruin, D. M.  
2025; 30 (4): 040601
  - **Limitations of ultrasound compared with computed tomography for kidney stone surveillance.** *Canadian Urological Association journal = Journal de l'Association des urologues du Canada*  
Sun, R., Sommer, E., Ganesan, C., Pao, A. C., Liao, J., Leppert, J., Chang, H., Conti, S., Chang, T.  
2025
  - **Disrupting Biofilms on Human Kidney Stones-A Path Toward Reducing Infectious Complications During Stone Surgery.** *Advanced healthcare materials*  
Massana Roquero, D., Holton, G. H., Ge, T. J., Kornberg, Z., Mach, K. E., Rodriguez, G., La, V., Lau, H., Sun, R., Chang, T. C., Conti, S., Liao, J. C.  
2025: e2403470
  - **Upstaging and risk migration with blue light cystoscopy for non-muscle-invasive bladder cancer: Results from a prospective multi-center registry.**  
Ghoreifi, A., Konety, B. R., Pohar, K. S., Holzbeierlein, J., Taylor III, J., Kates, M., Willard, B., Taylor, J. M., Liao, J. C., Kaimakliotis, H. Z., Porten, S. P., Steinberg, G. D., Tyson, et al  
LIPPINCOTT WILLIAMS & WILKINS.2025
  - **Precision single cell analysis to characterize host dependent antimicrobial response heterogeneity in physiological medium.** *Lab on a chip*  
Abe, R., Lee, J. H., Chin, S. M., Ram-Mohan, N., Tjandra, K. C., Bobenchik, A. M., Mach, K. E., Liao, J. C., Wong, P. K., Yang, S.  
2025
  - **The Management of Non-Muscle-Invasive Bladder Cancer in a Veteran Patient Population: Issues and Recommendations.** *Current oncology (Toronto, Ont.)*  
Taylor, J., Patel, S., Gaitonde, K., Greene, K., Liao, J. C., McWilliams, G., Sawyer, M., Schroeck, F., Alrabaa, A., Saffati, G., Kronstedt, S., Jones, J.  
2024; 31 (11): 6686-6698
  - **Deconvolution of Human Urine across the Transcriptome and Metabolome.** *Clinical chemistry*  
Vorperian, S. K., DeFelice, B. C., Buonomo, J. A., Chinchinian, H. J., Gray, I. J., Yan, J., Mach, K. E., La, V., Lee, T. J., Liao, J. C., Lafayette, R., Loeb, G. B., Bertozzi, et al  
2024
  - **Rapid Microbial Profiling through Multimodal Biosensors for Transversal Analysis.** *Analytical chemistry*  
Lee, J. H., Chin, S. M., Chan, D. C., Liao, J. C., Yang, S., Zhang, N., Wong, P. K.  
2024
  - **ULTRASENSITIVE URINARY LIQUID BIOPSY ANALYSIS FOR BCG RESPONSE ASSESSMENT IN HIGH-RISK NON-MUSCLE INVASIVE BLADDER CANCER**  
Shi, W. Y., Liu, K. J., Esfahani, M. S., Schroers-Martin, J. G., Nesselbush, M., Chen, S. B., Alig, S. K., Mullane, P., Mach, K. E., Trabanino, L., Lee, T. J., Yoo, I., Vinh La, et al  
LIPPINCOTT WILLIAMS & WILKINS.2024: E1169
  - **BACTERIA PROMOTES CALCIUM OXALATE CRYSTAL AGGREGATION THROUGH BIOFILM FORMATION**  
Doeve, J., Roquero, D., Holton, G. H., Mach, K., Liao, J.  
LIPPINCOTT WILLIAMS & WILKINS.2024: E1037-E1038
  - **DEVELOPING AN ANTIMICROBIAL IRRIGATION SOLUTION FOR ENDOUROLOGICAL PROCEDURES: EX VIVO EFFICACY AND IN VIVO SAFETY**  
Roquero, D., Holton, G. H., Ge, T., Kornberg, Z., Rodriguez, G., La, V., Lau, H., Mach, K., Liao, J.  
LIPPINCOTT WILLIAMS & WILKINS.2024: E1119-E1120
  - **Ensuring Successful Biomarker Studies in Bladder Preservation Clinical Trials for Non-muscle Invasive Bladder Cancer.** *Bladder cancer (Amsterdam, Netherlands)*  
McConkey, D. J., Baumann, B. C., Cooper Greenberg, S., DeGraff, D. J., Delacroix, S. E., Efstathiou, J. A., Foster, J., Groshen, S., Kadel, E. E., Khani, F., Kim, W. Y., Lerner, S. P., Levin, et al  
2024; 10 (1): 1-8

- **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
- **LEVERAGING DIGITAL SPATIAL PROFILING TO IDENTIFY TRANSCRIPTIONAL SIGNATURES ASSOCIATED WITH UROTHELIAL CARCINOMA IN SITU**  
Frydenlund, N., Meeks, J. J., Lu, X., Choy, B., Yang, R., Mach, K., Liao, J., Lau, H.  
ELSEVIER SCIENCE INC.2024: S37
- **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
- **Ensuring Successful Biomarker Studies in Bladder Preservation Clinical Trials for Non-muscle Invasive Bladder Cancer** *BLADDER CANCER*  
McConkey, D. J., Baumann, B. C., Greenberg, S., DeGraff, D. J., Delacroix, S. E., Efstathiou, J. A., Foster, J., Groshen, S., Kadel, E. E., Khani, F., Kim, W. Y., Lerner, S. P., Levin, et al  
2024; 10 (1): 1-8
- **Translating microbiota analysis for clinical applications** *Nature Reviews Bioengineering*  
Lee, J., Chin, S., Mach, K. E., Bobenchik, A. M., Liao, J. C., Yang, S., Wong, P.  
2024; 2 (4): 284-286
- **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)

- **Single-cell pathogen diagnostics for combating antibiotic resistance.** *Nature reviews. Methods primers*  
Li, H., Hsieh, K., Wong, P. K., Mach, K. E., Liao, J. C., Wang, T. H.  
2023; 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
- **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., Rubin, D. L.  
2023: 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.  
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