TIANJIA JESSIE GE, MD

I. IDENTIFYING DATA

Current Appointment: Clinical Instructor - Urologic Oncology
Current Affiliation: Stanford University School of Medicine
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II. EDUCATIONAL BACKGROUND

A. Education and Training

8/2025 – Present **Clinical Instructor - Urologic Oncology**
Stanford University, Stanford, CA

8/2024 – 8/2025 **Fellowship in Urologic Oncology - Clinical Scholar**
Stanford University, Stanford, CA

6/2018 – 6/2024 **Residency in Urology**
Stanford University, Stanford, CA

6/2015 – 6/2016 **HHMI Medical Research Fellow**
Stanford University, Stanford, CA

8/2013 – 5/2018 **Doctor of Medicine**
Washington University in St. Louis School of Medicine, St. Louis, MO

9/2008 – 6/2012 **Bachelor of Science, Bioengineering, with honors**
California Institute of Technology, Pasadena, CA

B. Board Certification and Licensure

2024 American Board of Urology (Qualifying - Part 1)

2022 California Department of Public Health Fluoroscopy License

2019 Medical Board of California Physician's and Surgeon's License

2019 United States Drug Enforcement License

2018 National Board of Medical Examiners

III. HONORS AND AWARDS

2024 Resident Mentorship and Teaching Award, Stanford University Department of Urology

2024 Early Career Investigator Showcase, American Urologic Association

2019 Resident Teaching Award, Stanford University Department of Surgery

2018 Front cover, *Science Translational Medicine* (February 28, 2018)

2016 First Prize, Canary Foundation Summit for Early Cancer Detection Poster Competition

2015 Howard Hughes Medical Institute Medical Research Fellow

IV. SCHOLARLY PUBLICATIONS

A. Peer-Reviewed Journal Articles – Original Research

1. Roquero, D. M., **Ge, T.J.**, Holton, G. H., Kornberg, Z., Bryan, J. T., Doevel, J., Lau, H., Sheth, K. R., Conti, S.C., Mach, K. E., Wang, S.X., Liao, J.C. Magnetic Retrieval of Kidney Stones via Ureteroscopy in a Porcine Model. *Device* 2025, 100971. DOI: 10.1016/j.device.2025.100971. *Participated in device design, experiment conceptualization, obtaining funding, and critical revision of the manuscript.*

2. Roquero, D. M., Holton, G. H., **Ge, T.J.**, Kornberg, Z., Mach, K. E., Rodriguez, G., La, V., Lau, H., Sun, R., Chang, T.C.C., Conti, S.C., Liao, J.C. Disrupting Biofilms on Human Kidney Stones: A Path Toward Reducing Infectious Complications During Stone Surgery. *Advanced Healthcare Materials* 2025, 2403470. DOI: 10.1002/adhm.202403470. *Wrote IRB and IACUC protocols for obtaining kidney stones and urothelium; participated in critical revision of the manuscript.*

3. 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. Efficient Augmented Intelligence Framework for Bladder Lesion Detection. *JCO Clinical Cancer Informatics* 2023, 7, e2300031. DOI: 10.1200/CCI.23.00031. *Participated in data annotation and revision of the manuscript.*

4. Eminaga, O., Lee, T.J., **Ge, T.J.**, Shkolyar, E., Laurie, M., Long, J., Hockman, L., Liao, J.C. Conceptual framework and documentation standards of cystoscopic media content for artificial intelligence. *Journal of Biomedical Informatics* 2023, 142, 104369. DOI: 10.1016/j.jbi.2023.104369. *Participated in revision of the manuscript.*

5. **Ge, T.J.**, Roquero, D. M., Holton, G. H., Mach, K. E., Prado, K., Lau, H., Jensen, K., Chang, T.C.C., Conti, S.C., Sheth, K.R., Wang, S.X., Liao, J.C. A magnetic hydrogel for the efficient retrieval of kidney stone fragments during ureteroscopy. *Nature Communications* 2023, 14(1), 3711. DOI: 10.1038/s41467-023-38936-1.

6. Eminaga, O., **Ge, T.J.**, Shkolyar, E., Laurie, M.A., Lee, T.J., Hockman, L., Jia, X., Xing, L., Liao, J.C. An Efficient Framework for Video Documentation of Bladder Lesions for Cystoscopy: A Proof-of-Concept Study. *Journal of Medical Systems* 2022. DOI: 10.1007/s10916-022-01862-8. *Participated in critical revision of the manuscript.*

7. Park, S., Won, D., Lee, B., Escobedo, D., Esteva, A., Aalipour, A., **Ge, T.**, Kim, J., Suh, S., Choi, E., Lozano, A., Yao, C., Bodapati, S., Achterberg, F., Kim, J., Park, H., Choi, Y., Kim, W., Yu, J., Bhatt, A., Lee, J., Spitler, R., Wang, S., Gambhir, S. A mountable toilet system for personalized health monitoring via the analysis of excreta. *Nature Biomedical Engineering* 2020, 4 (6), 624-635. DOI: 10.1038/s41551-020-0534-9. *Participated in critical revision of the manuscript.*

8. Kanada, M., Kim, B.D., Hardy, J.W., Ronald, J.A., Bachmann, M.H., Bernard, M.P., Perez, G.I., Zarea, A.A., **Ge, T.J.**, Withrow, A., Ibrahim, S.A., Toomajian, V., Gambhir, S.S., Paulmurugan, R., Contag, C. H. Microvesicle-mediated delivery of minicircle DNA results in effective gene-directed enzyme prodrug cancer therapy. *Molecular Cancer Therapeutics* 2019, 18 (12), 2331-2343. DOI: 10.1158/1535-7163.-19-0299.

9. Hochrein, L. M., **Ge, T.J.**, Schwarzkopf, M., Pierce, N. A. Signal Transduction in Human Cell Lysate via Dynamic RNA Nanotechnology. *ACS Synthetic Biology* 2018, 7 (12), 2796-2802. DOI: 10.1021/acssynbio.8b00424.

10. Vermesh, O.*, Aalipour, A.*, **Ge, T.J.***, Saenz, Y.F., Guo, Y., Park, S.-m., Mitsutake,

Y., Bachmann, M., Ooi, C.C., Lyons, J.K., Mueller, K., Arami, H., Green, A., S., Wang, S.X., Gambhir, S.S. An intravascular magnetic wire for high-throughput in vivo enrichment of rare circulating cancer biomarkers. *Nature Biomedical Engineering* 2018, 696-705. DOI: 10.1038/s41551-018-0257-3. (*=co-first author)

11. Zihni, A., Gerull, W.D., Cavallo, J.A., **Ge, T.J.**, Ray, S., Chiu, J., Brunt, L.M., Awad, M.M. Comparison of precision and speed in laparoscopic and robot-assisted surgical task performance. *Journal of Surgical Research* 2018, 223, 29-33. DOI: 10.1016/j.jss.2017.07.037.

12. **Ge, T.J.**, Vetter, J., Lai, H. H. Sleep disturbance and fatigue are associated with more severe urinary incontinence and overactive bladder symptoms. *Urology* 2017, 109, 67-73. DOI: 10.1016/j.urology.2017.07.039.

13. Liu, F., Vermesh, O., Mani, V., **Ge, T.J.**, Madsen, S., Sabour, A., Hsu, E., Liu, Q., Gowrishankar, G., Kanada, M., Jokerst, J.V., Sierra, R.G., Chang, E., Lau, K., Sridhar, K., Bermudez, A., Pitteri, S., Stoyanova, T., Sinclair, R., Gambhir, S.S., Nair, V.S., Demirci, U. The Exosome Total Isolation Chip. *ACS Nano* 2017, 11(11), 10712-10723. DOI: 10.1021/acsnano.7b04878.

14. Zihni, A., **Ge, T.J.**, Ray, S., Wang, R., Liang, Z., Cavallo, J.A., Awad, M.M. Transfer and priming of surgical skills across minimally invasive surgical platforms. *Journal of Surgical Research* 2016, 206(1), 48-52. DOI: 10.1016/j.jss.2016.06.026.

B. Peer-Reviewed Publications – Reviews and Other

15. **Ge, T.J.**, Rahimzadeh, V. N., Mintz, K., Park, W.G., Martinez-Martin, N., Liao, J.C, Park, S.M.. Passive monitoring by smart toilets for precision health. *Science Translational Medicine* 2023, 15 (681). DOI: 10.1126/scitranslmed.abk3489.

16. Lin, G. L., **Ge, T.J.**, Pal, R. Resident and Fellow Unions: Collective Activism to Promote Well-being for Physicians in Training. *JAMA* 2022, 328 (7), 619-620. DOI: 10.1001/jama.2022.12838.

17. **Ge, T.J.**, Chan, C. T., Lee, B. J., Liao, J. C., Park, S.-m. Smart toilets for monitoring COVID-19 surges: passive diagnostics and public health. *Nature Digital Medicine* 2022, 5, (39). DOI: 10.1038/s41746-022-00582-0.

18. Gambhir, S.S., **Ge, T.J.**, Vermesh, O., Spitler, R., Gold, G. E. Continuous health monitoring: An opportunity for precision health. *Science Translational Medicine* 2021, 13 (597), eabe5383. DOI: 10.1126/scitranslmed.abe5383.

19. Park, S., **Ge, T.**, Won, David. D., Lee, Jong K., Liao, Joseph C. Digital biomarkers in human excreta. *Nature Reviews Gastroenterology and Hepatology* 2021, 1-2. DOI: 10.1038/s41575-021-00462-0.

20. Gambhir, S.S., **Ge, T.J.**, Spitler, R., Vermesh, O. Toward Achieving Precision Health. *Science Translational Medicine* 2018, 10 (430), eaao3612. Cover of February 2018 issue. DOI: 10.1126/scitranslmed.aao3612.

C. Book Chapters

21. Laurie, M. A., **Ge, T.J.**, Shkolyar, E., Liao, J. C. "Chapter 8: Bladder cancer diagnosis with AI, cystoscopy and pathomics". In *Artificial Intelligence in Urology: Present and Future*, edited by Andrew J. Hung. Academic Press, 2025. ISBN: 9780443221323.

22. **Ge, T.J.**, Sheth, K.R. "Chapter 70: Combination Products". In *Translational Urology*, edited by Anthony Atala, Ali Arab, Mohummad Minhaj Siddiqui, Adam E.M. Eltorai.

Elsevier, 2023. ISBN: 9780323901871.

V. GRANTS

A. Current Funding

1/2026 - 1/2027 **Stanford SPARK Translational Research Program Pilot Grant**
The use of chitosan in the diagnosis and treatment of urothelial cancer
Role: Co-Investigator (Co-PI: Joseph Liao)

7/2025 – 7/2026 **NIH-NIDDK Multidisciplinary K12 Urologic Research (KURe) Career Development Award** (5K12DK137162-02)
Chitosan-Induced Exfoliation and Regeneration as a Tunable Model for Urothelial Repair
Role: K12 Scholar

10/2024 – 3/2026 **Stanford High Impact Technology (HIT) Fund**
MagStone Translation of a magnetic system for efficient kidney stone fragment removal during ureteroscopy
Role: Key Personnel (Co-PIs: Kunj Sheth, Joseph Liao)

B. Submitted Funding

None current

C. Past Funding

5/2024 – 11/2025 **Stanford-Coulter Translational Research Grant**
MagStone Translation of a magnetic system for kidney stone fragment retrieval
Role: Key Personnel (Co-PIs: Joseph Liao, Ross Venook)
Note: Lead writer and project director.

8/2023 – 3/2024 **Fogarty Invention Accelerator Program**
MagStone: a magnetic system for kidney stone fragment elimination
Role: Principal Entrepreneur (Co-PE: Joseph Liao)
Note: Selected as one of two teams to participate in a medical device innovation incubator and accelerate towards commercialization.

8/2022 – 8/2024 **NIH-NIDDK R21 Exploratory/Developmental Research Grant** (R21 DK131776)
MagSTONE a magnetic system for kidney stone fragment elimination
Role: Key Personnel (Co-PIs: Joseph Liao, Shan Wang)
Note: Lead writer and project director.

6/2021 – 6/2022 **American Urologic Association/Urology Care Foundation Residency Research Award**
Magnetic system for clearance of kidney stone fragments
Role: Principal Investigator
Note: Awarded to 31 urology residents to support surgeon-scientist training.

5/2021 – 3/2022 **Stanford-Coulter Translational Research Seed Grant**
MagSTONE: a magnetic system for kidney stone fragment elimination
Role: Key Personnel (Co-PIs: Joseph Liao, Paul Yock)
Note: Lead writer and project director.

VI. PATENTS

1. **Ge, T.J.**, Conti, S., Liao, J.C., Sheth, K.R., Wang, S.X. *Methods of Intracorporeal Calculi Magnetization and Uses Thereof.* US 18/397,947, filed November 16, 2023, Notice of Allowance November 25, 2025.

2. Liao, J.C., **Ge, T.J.**, Roquero, D.M. *Antimicrobial Irrigation Solutions for Endourological Procedures.* US 63/593,205, filed October 25, 2023, patent pending.

3. **Ge, T.J.**, Conti, S., Liao, J.C., Sheth, K.R., Wang, S.X., Roquero, D.M. *Systems and Methods for Hydrogel-Assisted Kidney Stone Capture.* US 18/865,312, filed May 15, 2023, patent pending.

4. Park, S.S., Chan, C.T., **Ge, T.J.**, Lee, B.J. *Smart Toilet Devices, Systems, and Methods for Monitoring Biomarkers for Passive Diagnostics and Public Health.* PCT/US2022/050489, filed November 18, 2022, patent pending.

5. **Ge, T.J.**, Conti, S., Liao, J.C., Sheth, K.R., Wang, S.X. *Magnetic Wire for Retrieval and Elimination of calculus from the Urinary Tract.* US Patent 11,903,666, filed November 11, 2021, issued September 27, 2023.

6. Vermesh, O., Gambhir, S.S., Park, S.M., **Ge, T.J.**, Aalipour, A. *Intravascular Magnetic Wire for Detection, Retrieval, or Elimination of Disease-Associated Biomarkers and Toxins.* US Patent 10,064,653, filed June 7, 2016, issued September 4, 2018.

VII. EDITORIAL SERVICE

A. Peer Review Activities

F1000 Research

VIII. UNIVERSITY ADMINISTRATIVE SERVICE

2021 – 2022	Member, Stanford Medicine Alliance for Disability Inclusion and Equity, Stanford, CA
2021 – 2022	Resident Representative, Stanford Graduate Medical Education Council, Stanford, CA
2021 – 2022	Governing Member, Stanford Hospital Leadership Committee, Stanford, CA
2021 – 2022	Resident Representative, Stanford Interventional Platform Medical Committee, Stanford, CA

IX. MEMBERSHIP AND SERVICE TO PROFESSIONAL ORGANIZATIONS

A. Membership

American Urological Association (AUA)
Society of Urologic Oncology (SUO)

B. Committee Service

2021 – 2024 Organizer, Committee of Interns and Residents, Stanford, CA

X. PRESENTATIONS

A. Invited Presentations

1. Stanford Department of Urology Research Day. Stanford, CA. August 15, 2025. "Stones, Moans, and Groans: How Does Science Leave the Lab?"

2. Stanford Urology Grand Rounds. Stanford, CA. November 19, 2024. "The Innovation Landscape for Stone Technologies"

B. National and Regional Meetings

3. American Urologic Association Annual Meeting, Endourological Society. Chicago, IL. April 28 - May 1, 2024. "Smart toilets as a precision health platform"

4. American Urologic Association Annual Meeting Early Career Investigators Showcase. Chicago, IL. April 28 - May 1, 2024. "MagSToNE – magnetic retrieval of kidney stone fragments"

5. Western Section American Urologic Association 98th Annual Meeting. Kauai, HI. October 30 - November 4, 2022. "Magnetic Clearance of Kidney Stone Fragments"

6. American Urologic Association Annual Conference. New Orleans, LA. May 13-16, 2022. "Magnetic clearance of kidney stone fragments: initial *in vitro* experience"

7. American Society for Exosomes and Microvesicles Annual Meeting. Asilomar, Pacific Grove, CA. October 24, 2016. "The Exosome Total Isolation Chip (ExoTIC) for Identification of Exosome-based Biomarkers"

8. American Society for Exosomes and Microvesicles Annual Meeting. Asilomar, Pacific Grove, CA. October 24, 2016. "Extracellular vesicle-mediated delivery of minicircle DNA encoding prodrug-converting enzymes for cancer therapy"

9. Canary Center Early Detection Summit. Stanford, CA. May 4, 2016. "Towards high-throughput *in vivo* capture of circulating tumor cells with an intravascular magnetic wire"

10. Canary Center Early Detection Summit. Stanford, CA. May 4, 2016. "A Universal Exosome Isolation Device for Identification of Lung Cancer Biomarkers"

11. Synthetic Biology: Engineering, Evolution & Design (SEED) Conference. Manhattan Beach, CA. July 2014. "Conditional siRNA production in human cell lysate via shape and sequence transduction with small conditional RNAs"

C. International Meetings

12. IEEE Intermag Conference. Rio de Janeiro, Brazil. May 5-10, 2024. "Evaluating Magnetic Nanoparticles for Efficient Magnetic Kidney Stone Extraction"

13. Society for Biological Engineering: 7th International Conference on Bioengineering and Nanotechnology. Chicago, IL. March 19-22, 2017. "Conditional siRNA production in mammalian cell lysate"

14. IEEE EMBS Micro- and Nanotechnology in Medicine Conference. Waikoloa, HI. December 12-16, 2016. "An intravascular magnetic wire for high-throughput *in vivo* enrichment of rare circulating cancer biomarkers" 1st place poster award.

15. World Molecular Imaging Conference. New York City, NY. September 08, 2016. "Towards high-throughput *in vivo* enrichment of CTCs and rare circulating tumor biomarkers with an intravascular magnetic wire"

16. World Molecular Imaging Conference. New York City, NY. September 08, 2016. "Efficient delivery of minicircle DNA by extracellular vesicles as assessed by bioluminescence imaging"

XI. TRAINEES

2025 – 2025 Sarah Do - Undergraduate, UCSD
Current Position: Undergraduate, UCSD

2022 – 2023 Grace Holton - Undergraduate, University of Missouri
Current Position: Medical Student, Tulane University School of Medicine