



Shum Cheuk Fan

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Research Interests:

- Minimally Invasive Surgery
- Kidney Cancer
- Artificial Intelligence

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Biography

Dr Shum completed a Fellowship in Minimally Invasive Urology in Indiana University School of Medicine in 2017 and was awarded the Advanced Clinical Training Certificate in Laparoscopic / Robotic Surgery. With a subspecialty interest in kidney cancer, he published multiple scientific papers on treatment outcomes of renal masses. His publications can be found in top-tiered journals and featured in online resource platforms such as UroToday®. Some of his clinical research areas include intra-operative fluorescence for accurate tumor identification during partial nephrectomy, prediction of renal function, impact of tumor margin status, and survival after partial nephrectomy. He is also a strong believer in medical innovation and leveraging artificial intelligence on cancer diagnosis and treatment. He received the NMRC Clinician Innovator Award in 2022 and the NHIC I2A Fund in 2024. His current innovation projects include the use of artificial intelligence in cancer prediction of renal masses on radiologic imaging, and in getting access during endourologic stone surgeries.

Dr Shum is also an enthusiastic teacher and serves as Adjunct Assistant Professor for the Yong Loo Lin School of Medicine, National University of Singapore. He received the NUS Dean's Award for Teaching Excellence in 2020 and 2023, NUS Special Recognition Award in 2024 and 2025, and the NHG Teaching Award for Senior Doctors in 2021.

Selected Publications

- Sulek JE, Steward JE, Bahler CD, Jacobsen MH, Sundaram A, Shum CF, Sandusky GE, Low PS, Sundaram CP. Folate-Targeted Intraoperative Fluorescence, OTL38, in Robotic-Assisted Laparoscopic Partial Nephrectomy. Scand J Urol 2021;55:331-6

- Cooper CA, Shum CF, Sundaram CP. Robotic Partial Nephrectomy for a Peripheral Renal Tumor. J Endourol 2018;32(S1):S55-S62
- Patnaik R, Shum CF, Sundaram CP. Robot-Assisted Laparoscopic Partial Nephrectomy of Hilar Renal Tumor. Videourology 2018;32. <https://doi.org/10.1089/vid.2017.0028>
- Shum CF, Bahler CD, Sundaram CP. Impact of positive surgical margins on overall survival after partial nephrectomy-A matched comparison based on the National Cancer Database. Urol Oncol 2018;36:90.e15-21
- Shum CF, Bahler CD, Sundaram CP. Matched Comparison between Partial Nephrectomy and Radical Nephrectomy for T2N0M0 Tumors, a Study Based on the National Cancer Database. J Endourol 2017;31:800-05
- Shum CF, Bahler CD, Cary C, Masterson TA, Boris RS, Gardner TA, Kaimakliotis HZ, Foster R, Bihrlle R, Koch M, Slaven JE Jr, Sundaram CP. Pre-Operative Nomograms for Predicting Renal Function at 1 Year after Partial Nephrectomy. J Endourol 2017;31:711-8
- Sulek JE, Steward JE, Bahler CD, Jacobsen MH, Sundaram A, Shum CF, Sandusky GE, Low PS, Sundaram CP. Folate-Targeted Intraoperative Fluorescence, OTL38, in Robotic-Assisted Laparoscopic Partial Nephrectomy. Scand J Urol 2021;55:331-6
- Shum CF, Bahler CD, Low PS, Ratliff TL, Kheifets SV, Natarajan JP, Sandusky GE, Sundaram CP. Novel Use of Folate-Targeted Intraoperative Fluorescence, OTL38, in Robot-Assisted Laparoscopic Partial Nephrectomy: Report of the First Three Cases. J Endourol Case Rep 2016;2:189-97
- Bahler CD, Maniar V, Marley KN, Kheifets SV, Shum CF, Sundaram CP. [OTL-38-Guided Fluorescent Imaging in Renal Cell Cancer Robotic Partial Nephrectomy](#). Videourology 2017;31.

Notable Research and Innovation Awards & Grants from Past 5 Years

Name of Awards & Grants	Year Obtained
NMRC Clinician Innovator Award (CIA)	2021/2022
NHIC Innovation to Adopt Fund	2024

Translating Research and Innovation Into Healthcare

- Innovation work on novel indwelling urinary catheter. *Channel News Asia 938 Health Matters*. Featured on 26 November 2020 & 22 December 2020.