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Professor, Thoracic Surgery,
BSc (Hons), MBBS (Hons) (Imperial), MD (Res) (Lond), FRCSEd, FCCP, FAPSR

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Biography

Dr Ng is Professor in Thoracic Surgery at Prince of Wales Hospital, The Chinese University of Hong Kong, and Honorary Consultant Surgeon at New Territory East Cluster (NTEC) hospitals in Hong Kong. He graduated from Imperial College, London in 1999 with BSc (1st Class Honours and 1st in his class), and MBBS (Honours, Distinction in Surgery, Anthony de Rothschild Medal 1st in surgery).

He spent time working under Lord Sir Ara Darzi in London and Prof. Anthony P.C. Yim in Hong Kong, and later as Specialist Registrar and Honorary Research Fellow at the Queen Elizabeth Hospital, University of Birmingham for Mr. Timothy R Graham. He was awarded FRCSEd(CTh) in 2007, and subsequently Doctorate of Medicine in Research (MD(Res)) from University of London for his work on ventilator induced and IR lung injury.

Dr Ng is a pioneer in Single Port (Uniportal) VATS in the Asia-Pacific region, performing the first single port VATS lobectomy in Hong Kong in 2012. His interest in hybrid operating room (HOR) image-guided surgery led to world's first publications of HOR use in single port VATS major lung resection (iVATS) in 2015, and image-guided electromagnetic navigation bronchoscopy (iENB) in 2016. He led his world renowned HOR-iENB team to perform Asia-Pacific's first HOR SuperDimension non-invasive transbronchial microwave ablation of lung cancer in March 2019, and World first HOR Illumisite transbronchial microwave ablation in July 2022. He is Co-PI of NAVABLATE, the international study on transbronchial microwave ablation for lung cancer treatment, and has one of world's largest experience of this technique. His team also performed the first Auris robotic bronchoscopy procedure outside of US in 2021 and is Co-PI of TARGET & POWER trials, investigating utilization of robotic assisted bronchoscopy in diagnosis and therapy.

His academic contributions include 24 book chapters (including in Pearson's Thoracic & Esophageal Surgery 3rd & 4th Eds, Shield's Thoracic Surgery 8th Eds), and more than 260 publications in indexed international journals. Dr Ng is the corresponding Editor of the book Atlas of Uniportal Video Assisted Thoracic Surgery (Springer Science), the standard text for uniportal VATS surgeons, and Associate Editor of the book Lung Cancer (1st & 2nd Editions).

Dr Ng supervises a team of postgraduate students to study molecular biology of lung cancer and therapeutic role of ablation for lung diseases. He closely collaborates with Departments of Clinical Oncology (led by Prof Tony Mok), Anatomical Cellular Pathology and Biomechanical Engineering, through several competitive grants to study targeted therapies in lung cancer, magnetic actuated surgical endoscopes, organoids and nanoparticles in cancer therapy.

Research Interests

- Single Port (Uniportal) Minimally Invasive Video-Assisted Thoracic Surgery (VATS)
- Hybrid Operating Room Image-Guided VATS (iVATS) for Small Lung Lesions
- Image-Guided Electromagnetic Navigation Bronchoscopy (iENB)
- Microwave & Novel Ablation Techniques for Lung Cancer
- Magnetic Actuated Surgical Endoscopes
- Chest Wall Reconstruction
- Molecular Biology of Lung Cancer
- Nanoparticles & Aptamers in Cancer Therapy
- Education and Training in VATS & ENB
- Inflammatory & Immune Dysfunction following Thoracic Surgery

Additional Information

- Elected Fellow, American College of Chest Physicians (FCCP)
- Elected Fellow, Asian Pacific Society of Respiriology (FAPSR)
- Honorary Consultant, Lung Center of the Philippines.
- Visiting Professor, IRCAD (2018)
- Founder, Asian Single Port VATS Symposium (ASPVS) series
- Program Director, ENB Workshop & ENB PACES Clinical Immersion Program
- Director, Asia-Pacific Advanced & Novel Approaches to VATS Workshop
- Founder & Director, Asia Thoracic Cancer Care Summit (ATCCS) series
- co-Editor-in-Chief, Annals of Translational Medicine
- Editorial Boards of European Journal of Cardio-Thoracic Surgery (EJCTS); Innovations; Journal of Thoracic Disease (JTD); and Frontiers in Surgery.
- Board of Directors of International Society of Minimally Invasive Cardiothoracic Surgery (ISMICS)
- Committee Member (CME), International Association for the Study of Lung Cancer (IASLC)
- Board member of Asia-Pacific Thoracic Advisory Board (APTAB); Executive Board member of Asia Thoracoscopic Education Platform (ATEP); Council member of Association of Thoracic and Cardiovascular Surgeons of Asia (ATCSA); Council member of IGNITE innovation & LCI.

- Council Member, Hong Kong Society of Endosonography, Editorial Board of Surgical Practice (CSHK Journal)
- Fellowship examiner for the Royal College of Surgeons of Edinburgh, Academy of Medicine Singapore, Academy of Medicine Malaysia and CSHK
- ISMICS Annual Best Presentation (2016), APSR Annual Travel Scholarship (2016), EACTS Techno-College Innovation Award Finalist (2019) and CSHK Award (2019) for research in HOR iVATS & iENB.
- International Exhibition of Inventions, Geneva, Switzerland- Surgery Innovation Bronze Medal Award (2021)
- Team Leader (2021)- Hospital Authority Outstanding Team Award for “Lung Cancer Multidisciplinary Team”

Selected Publications

1. Chan JWY, Chang ATC, Yu PSY, Lau RWH, Ng CSH. Robotic Assisted-Bronchoscopy with Cone-Beam CT ICG Dye Marking for Lung Nodule Localization: Experience Beyond USA. *Frontiers in Surgery* 2022 Jun 28;9:943531. <https://www.frontiersin.org/articles/10.3389/fsurg.2022.943531/full>
2. Huang, Yisen; Li, Jian; Zhang, Xue; Xie, Ke; Li, Jixiu; Liu, Yue; Ng, Sze Hang ; Chiu, Philip, Wai-yan; Li, Zheng. A Surgeon Preference-Guided Autonomous Instrument Tracking Method With a Robotic Flexible Endoscope Based on dVRK Platform. *IEEE Robotics and Automation Letters (RA-L)* 2022 Apr;7(2):2250-2257
3. Hongsheng Deng, Jun Liu, Xiuyu Cai, Jiawei Chen, Rocco Gaetano, René Horsleben Petersen, Alex Brunelli, Calvin S H Ng, Thomas A D'Amico, Wenhua Liang, Jianxing He. Radical Minimally Invasive Surgery following Immuno-chemotherapy in Initially-unresectable Stage IIIB Non-small cell lung cancer. *Ann Surg* 2022 Mar;275(3):e600-e602. doi: 10.1097/SLA.0000000000005233
4. Chan JWY, Lau RWH, Chu CM, Ng CSH. Expanding the Scope of Electromagnetic Navigation Bronchoscopy-guided Transbronchial Biopsy and Ablation with Mobile 3D C-arm Machine Cios Spin® - Feasibility and Challenges. *Transl Lung Cancer Res* 2021 Oct;10(10):4043-4046
5. Yu PSY, Chan KW, Lau RWH, Wan IYP, Chen GG, Ng CSH. Uniportal Video-Assisted Thoracic Surgery for Major Lung Resection is Associated with Less Immunochemokine Disturbances than Multiportal Approach. *Scientific Reports* 2021 May;11:10369
6. Chan JWY, Lau RWH, Ngai JCL, Tsoi C, Chu CM, Mok TSK, Ng CSH. Transbronchial Microwave Ablation of Lung Nodules with Electromagnetic Navigation Bronchoscopy Guidance – A Novel Technique and Initial Experience with 30 Cases. *Transl Lung Cancer Res* 2021 Apr;10(4):1608-1622.
7. Yu PSY, Chu CM, Lau RWH, Ng CSH. Hybrid Theatre Facilitates Lung-Preserving Multimodal Treatment for Multiple Pulmonary Metastases. *Ann Thorac Surg* 2021 Feb;111(2): e89-92

8. Chan JWY, Lau RWH, Ng CSH. Electromagnetic Navigation Bronchoscopy Fiducial Marker Margin Identification plus Triple Dye for Complete Lung Nodule Resection. *J Thorac Cardiovasc Surg Techniques* 2020 Sept;3:P329-333
9. Bertolaccini L, Batirel H, Brunelli A, Gonzalez-Rivas D, Ismail M, Ucar AM, Ng CSH, Scarci M, Sihoe ADL, Ugalde PA, Abu Akar F, Bedetti B, Nadal SB, Brandolini J, Crucitti P, Enyedi A, Fernando HC, Furak J, Gallego-Poveda J, Galvez-Munos C, Hanke I, Janik M, Juhos P, Libretti L, Lucciarini P, Macrì P, Margaritora S, Mahoozi HR, Nachira D, Pardolesi A, Pischik V, Sagan D, Schreurs H, Sekhniaidze D, Tosi D, Turna A, Vannucci F, Zielinski M, Rocco G. Uniportal video-assisted thoracic surgery lobectomy: a consensus report from the Uniportal VATS Interest Group (UVIG) of the European Society of Thoracic Surgeons (ESTS). *Eur J Cardiothorac Surg*. 2019 Aug 1;56(2):224-229
10. Chan AW, Chau SL, Tong JH, Chow C, Kwan JS, Chung LY, Lung RW, Tong CY, Tin EK, Law PP, Law WT, Ng CS, Wan IY, Mok TS, To KF. The landscape of actionable molecular alterations in immunomarker-defined large cell carcinoma of lung. *J Thorac Oncol*. 2019 Jul;14(7):1213-1222
11. Zhang L, Wang L, Kadeer X, Zeyao L, Sun X, Sun W, She Y, Xie D, Li M, Zou L, Rocco G, Yang P, Chen C, Liu CC, Petersen RH, Ng CSH, Parrish S, Zhang YS, Giordano R, di Tommaso L; AME Thoracic Surgery Collaborative Group. Accuracy of a 3-Dimensionally Printed Navigational Template for Localizing Small Pulmonary Nodules: A Noninferiority Randomized Clinical Trial. *JAMA Surg*. 2019 Apr 1;154(4):295-303
12. Ng CSH, MacDonald JK, Gilbert S, Khan AZ, Kim YT, Louie BE, Marshall MB, Sales dos Santos R, Scarci M, Shargall Y, Fernando HC. Optimal Approach to Lobectomy for Non-Small Cell Lung Cancer: Systemic Review and Meta-Analysis. *Innovations* 2019 Apr;14(2):90-116
13. Zhao ZR, Lau RWH, Long H, Mok TSK, Chen GG, Underwood MJ, Ng CSH. Novel method for rapid identification of micropapillary or solid components in early-stage lung adenocarcinoma. *J Thorac Cardiovasc Surg* 2018 Dec; 156:2310-8
14. Zhao ZR, Lau RWH, Ng CSH. Hybrid theatre and uniportal VATS: the perfect match for lung nodule localization. *Thorac Surg Clin* 2017 Nov;27(4):347-55
15. Yang SC, Liu Y, Li MY, Ng CSH, Yang SL, Wang SS, Zou C, Dong YJ, Du J, Long X, Liu LZ, Wan IYP, Mok TSK, Underwood MJ, Chen GG. FOXP3 promotes tumor growth and metastasis by activating Wnt/ β -catenin signaling pathway and EMT in non-small cell lung cancer. *Mol cancer* 2017 Jul 17;16(1):124
16. Zhao ZR, Situ DR, Lau RWH, Mok TSK, Chen GG, Underwood MJ, Ng CSH. Comparison of segmentectomy and lobectomy in stage IA adenocarcinomas. *J Thorac Oncol* 2017 May;12(5):890-896
17. Liang WH, He JX, Shen YX, Shen JF, He QH, Zhang JR, Jiang GN, Wang Q, Liu LX, Gao SG, Liu DR, Wang Z, Zhu ZH, Ng CSH, Liu CC, Petersen RH, Rocco G, D'Amico T, Brunelli A, Chen HQ, Zhi XY, Liu B, Yang YX, Chen WS, Zhou Q, He

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18. Ng CSH, Zhao ZR, Lau RWH. Tailored Therapy for Stage I Non-small Cell Lung Cancer. *J Clin Oncol* 2017 Jan;35(3):268-70
19. Dai CY, Shen JF, Ren YJ, Zhong SY, Zheng H, He JX, Xie D, Fei K, Liang WH, Jiang G, Yang P, Petersen RH, Ng CSH, Liu CC, Brunelli A, Chen C, He JX, written on behalf of the AME Thoracic Surgery Collaborative Group. Choice of surgical procedure for patients with NSCLC ≤ 1 cm or >1 to 2 cm among lobectomy, segmentectomy and wedge resection: A population-based study. *J Clin Oncol* 2016 Sept 10;34(26):3175-82
20. Tong JH, Yeung SF, Chan AWH, Chung LY, Chau SL, Lung RWM, Tong CY, Chow C, Ng CSH, Mok TSK, To KF. MET amplification and exon 14 splice site mutation define unique molecular subgroups of Non-small Cell Lung Carcinoma with poor prognosis. *Clin Cancer Res* 2016 Jun 15;22(12):3048-56
21. Ng CSH, Yu SCH, Lau RWH, Yim APC. Hybrid Dyna- CT Guided Electromagnetic Navigational Bronchoscopic Biopsy. *Eur J Cardiothorac Surg* 2016 Jan;48(S1):i87-88
22. Ng CSH, Chu CM, Kwok MWT, Yim APC, Wong RHL. Hybrid DynaCT Guided Localization Single Port Lobectomy. *Chest* 2015 Mar 1;147(3):e76-8
23. Ng CSH, Rocco G, Wong RHL, Lau RWH, Yu SCH, Yim APC. Uniportal and Single Incision Video Assisted Thoracic Surgery- The State of the Art. *Interact Cardiovasc Thorac Surg* 2014 Oct;19(4):661-6
24. Ng CSH, Wong RHL, Lau RWH, Yim APC. Minimizing Chest Wall Trauma in Single Port Video-Assisted Thoracic Surgery. *J Thorac Cardiovasc Surg* 2014 Mar;147(3):1095-6