

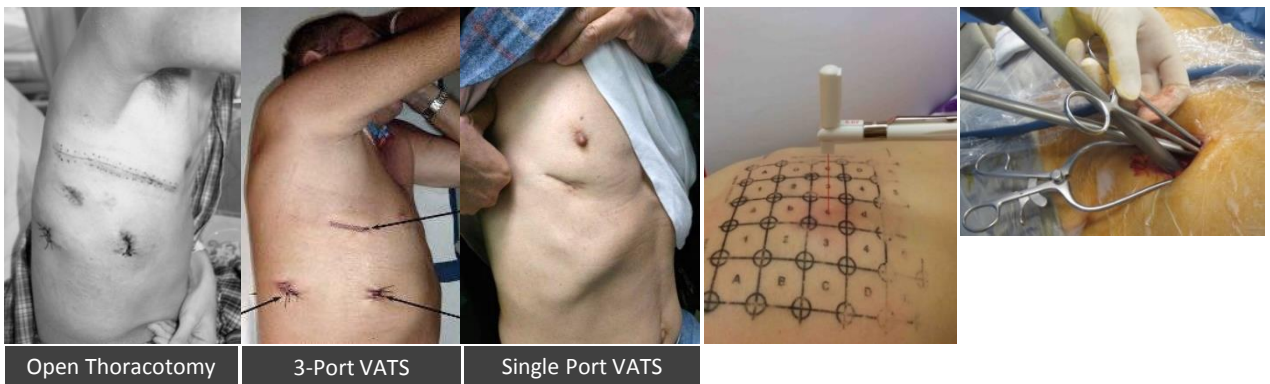


# Projects for Postgraduate Students

## Research Topic 1

### Immediate and Early Outcomes following Conventional versus Single Port VATS

The Chinese University of Hong Kong has been at the forefront of VATS development from the first VATS major lung resection performed in 1994 at the Prince of Wales Hospital. Since 2012, a significant proportion of our VATS major lung resections are performed through single-port VATS. The centre has become a pioneer and leader of this technique in the region, and have subsequently founded the “Asian Single-Port VATS Symposium & Live Surgery” series in 2013 (<http://www.surgery.cuhk.edu.hk/vats2015/>); hosted Single Port VATS Centre of Excellence Course to train regional surgeons several times per year; and the Asia-Pacific Advanced & Novel Approaches to VATS Animal Workshop to promote the approach. Although there are many publications reporting feasibility and safety of the single port approach, there has been a paucity of evidence on other potential benefits of the single port approach. Based on our previous experience and studies comparing open and conventional (3-port) VATS approaches, we are conducting similar studies to compare conventional and single port approaches. Parameters that may be of interest include, inflammatory & immune response, pulmonary function, pain & paraesthesia, shoulder function, QOL, survival etc. It is hoped that well conducted prospective studies will provide the answers.



Interested candidates please send your CV and a brief research interest statement to [postgrad@surgery.cuhk.edu.hk](mailto:postgrad@surgery.cuhk.edu.hk) for consideration. Applications are open year round.

#### Selected Publications (relating to research topic 1) :

1. Li WWL, Lee TW, Lam SSY, Ng CSH et al. QOL following lung CA resection:VATS v. thoracotomy.*Chest* 2002;122:584
2. Li WWL, Lee RLM, Lee TW, Ng CSH, et al. Impact of thoracic surgical access on early shoulder function: VATS v. posterolateral thoracotomy. *EJCTS* 2003;23:390-6
3. Ng CS et al. Thoracotomy is associated with significantly more profound suppression in Lymphocytes and NK cells than VATS following major lung resections for CA. *J Invest Surg* 2005;18:81-8
4. Garzon JC, Ng CSH, Sihoe AD, Manlulu AV, Wong HL, Lee TW, Yim APC. VATS Pulmonary Resection for Lung Cancer in Patients with Poor Lung Function. *Ann Thorac Surg* 2006;81:1996-2003
5. Ng CS al.VATS lobectomy lung CA associated with less immunochemokine disturbances than thoracotomy.*EJCTS* 2007;31:83-7
6. Ng CS et al. Angiogenic Response to Major Lung Resection for NSCLC with VATS & Open. *ScientificWorldJournal*.2012:636754
7. Ng CSH et al. Evolution in Surgical Approach & Techniques for Lung Cancer. *Thorax* 2013;68:681
8. Ng CSH. Uniportal VATS in Asia. *J Thorac Dis* 2013;5(S3):S221-S225
9. Ng CSH et al. Minimizing Chest Wall Trauma in Single Port VATS. *J Thorac Cardiovasc Surg* 2014;147(3):1095-6
10. Ng CSH, Rocco G, Wong RHL, et al. Uniportal and Single Incision VATS-The State of the Art. *ICVTS* 2014;19:661-6
11. Ng CSH, et al. Uniportal VATS – A New Era in Lung Cancer Surgery. *J Thorac Dis* 2015 Aug;7(8):1489-91
12. Ng CSH. Uniportal VATS – a look into the future. *Eur J Cardiothorac Surg*. 2016 Jan;48(S1):i1-i2
13. Yu PSY, Capili F, Ng CSH. Single Port VATS: Recent developments in Asia. *J Thorac Dis* 2016 Mar; 8(S3):S302
14. Ng CS et al. Single Port VATS Major Lung Resections:150 Consecutive Cases. *Thorac Cardiovasc Surg* 2015.DOI: 10.1055/s-0034-1396789 [Epub]

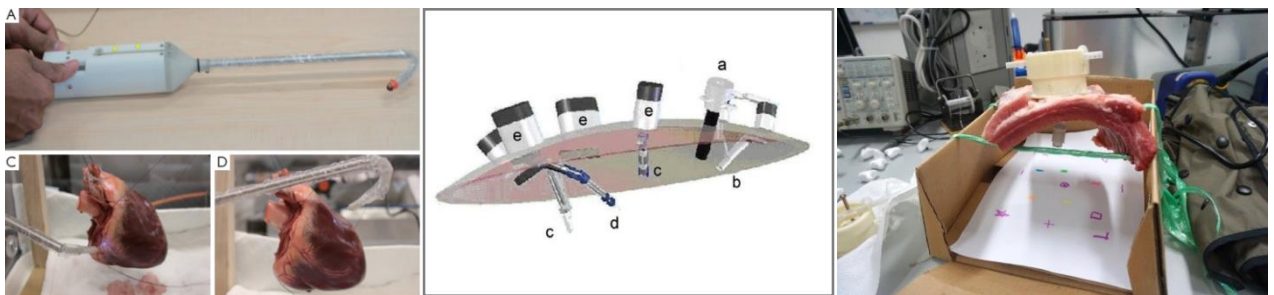


# Projects for Postgraduate Students

## Research Topic 2

### Magnetic Platform for Remote and Wireless Instrumentation during VATS

Summary: Minimally invasive thoracic surgery continues to seek new ways to reduce the number of ports, and size of incision required to perform intra-thoracic procedures, especially lung resections. By making the access incision number and size less, inevitably there will be increase instrument fencing and interference. Furthermore, the demands on the instruments to operate through a narrow incision and more acute angles have led to a new niche in biomedical engineering that tries to address these problems. We are currently developing instruments that have increased degrees of freedom that are more ergonomic, as well as the magnetic platform for remote and wireless instrumentation during VATS procedures. These include high definition multi-site cameras, and retracting devices which can facilitate these ultra-minimally invasive procedures. Recently, our university has gained US patent for this technology which have significantly speeded up the development and enthusiasm for this technology. There is planned research collaboration with Kyoto University for development of the magnetic technology in conjunction with image projection onto surgical glasses and similar interface.



Interested candidates please send your CV and a brief research interest statement to [postgrad@surgery.cuhk.edu.hk](mailto:postgrad@surgery.cuhk.edu.hk) for consideration. Applications are open year round.

#### Selected Publications (relating to research topic 2) :

1. 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
2. Ng CSH, Wong RHL, Lau RWH, Yim APC. Single Port Video-Assisted Thoracic Surgery: Advancing Scope Technology. *Eur J Cardiothorac Surg* 2015 Apr;47(4):751
3. Ng CSH. Uniportal VATS – a look into the future. *Eur J Cardiothorac Surg*. 2016;48(S1):i1-i2
4. Ng CSH, Pickens A, Siegel JM, et al. A novel narrow profile articulating powered vascular stapler provides superior access and hemostasis equivalent to conventional devices. *Eur J Cardiothorac Surg* 2016;48(S1):i73-i78
5. Li Z, Ng CSH. Future of Uniportal Video-Assisted Thoracoscopic Surgery – Emerging Technology. *Ann Cardiothorac Surg* 2016 Mar;5(2):127-32. doi: 10.21037/acs.2016.02.02
6. Gonzalez-Rivas D, Yang Y, Ng C. Advances in Uniportal Video-Assisted Thoracoscopic Surgery: Pushing the Envelope. *Thorac Surg Clinics* 2016 May; 26(2):187-201. DOI: 10.1016/j.thorsurg.2015.12.007
7. Zhao ZR, Li Z, Situ DR, Ng CSH. Recent Clinical Innovations in Thoracic Surgery in Hong Kong. *J Thorac Dis* [in press 3-2016] doi: 10.21037/jtd.2016.03.93

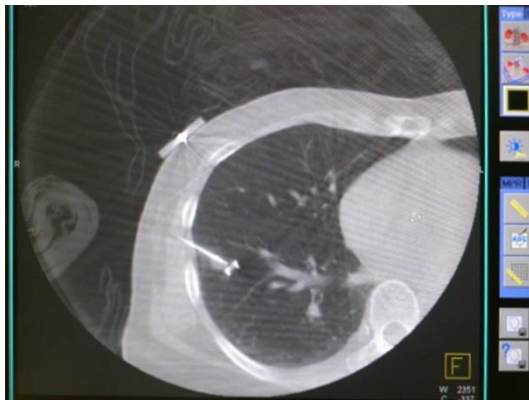


# Projects for Postgraduate Students

## Research Topic 3

### Optimizing use of hybrid operating theatre for thoracic surgery

Summary: The availability of real-time high quality imaging in the operating room has opened new opportunities for thoracic surgeons to perform more precise, and personalized surgery for our patients. Its use include pulmonary nodule localization, image overlay for real-time guided surgery, local therapies in conjunction with electromagnetic navigational bronchoscopy (ENB) technologies, chest wall reconstruction, just to mention a few. At The Chinese University of Hong Kong, we are leading authority on hybrid OR use with world 1<sup>st</sup> publications of hybrid OR image guided single port lung resection, and hybrid OR ENB biopsy. We have also produced workflow booklets with Siemens, necessary for success in these procedures. The current study interests are related to new ways to utilize the hybrid OR, and refining current practises and protocols.



Interested candidates please send your CV and a brief research interest statement to [postgrad@surgery.cuhk.edu.hk](mailto:postgrad@surgery.cuhk.edu.hk) for consideration. Applications are open year round.

#### Selected Publications (relating to research topic 3) :

1. 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
2. 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
3. Ng CSH. Recent and Future Developments in Chest Wall Reconstruction. *Semin Thorac Cardiovasc Surg* 2015 Summer;27(2):234-239. doi: 10.1053/j.semtcvs.2015.05.002.
4. Ng CSH. Uniportal video assisted thoracic surgery – a look into the future. *Eur J Cardiothorac Surg*. 2016 Jan;48(S1):i1-i2 doi: 10.1093/ejcts/ezv302
5. 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. doi: 10.1093/ejcts/ezv405
6. Zhao Z, Lau RWH, Ng CSH. Hybrid theatre & Alternate Localization Techniques in Single Port VATS. *J Thorac Dis* 2016 Mar; 8(Suppl 3):S319-27. doi: 10.3978/j.issn.2072-1439.2016.02.27
7. Gonzalez-Rivas D, Yang Y, Ng C. Advances in Uniportal Video-Assisted Thoracoscopic Surgery: Pushing the Envelope. *Thorac Surg Clinics* 2016 May; 26(2):187-201. DOI: 10.1016/j.thorsurg.2015.12.007