**Symposium Programme**

0845  Registration and coffee

0930  **Welcome and Introduction** - Professor Ara Darzi and Professor Guang-Zhong Yang, Co-Directors of the Hamlyn Centre for Robotic Surgery

0945  **Keynote lecture – Compensation of Physiological Motion for Surgical Accuracy Enhancement**
Cameron Riviere, Carnegie Mellon University, Robotics Institute, Pittsburgh

**Session 1: Platforms and System Development**

1030  **Robotic Platform for an Interactive Tele-echographic System: The PROSIT ANR-2008 project**
T. Essomba¹⁴, P. Vieyres¹, J. Canou², P. Fraisse³, S. Zeghloul⁴, A. Krupa⁵, P. Arbeille⁶, A. Fonte⁵*

The PROSIT consortium:
² PRISME institute, Orleans University
² Robosoft, URM Montpellier University II
³ PPRIMME, Poitiers University
⁴ INRIA Rennes, INSERM 930-UMPSS Tours University

1045  **Evaluation of Robotic Endovascular Catheters in Arch Vessel Cannulation**
C. Riga*¹,², NJW Cheshire¹,², M Hamady³, CD Bicknell¹,²

¹ Division of Surgery, Imperial College London, UK
² Department of Vascular Surgery, Imperial College Healthcare Trust, UK
³ Department of Interventional Radiology, Imperial College Healthcare Trust, UK

1100  **COFFEE AND POSTER SESSION**

1130  **Software & Hardware Integration of a Biomimetic Flexible Probe within the ROBOCAST Neurosurgical Robotic Suite**
S. Y Ko*, L. Frasson¹,², B. L. Davies¹,³, F. Rodriguez y Baena¹,²

¹ Department of Mechanical Engineering, Imperial College London, UK
² Institute of Biomedical Engineering, Imperial College London, UK
³ Italian Institute of Technology, Italy

1145  **Clinical Accuracy of Robot-Assisted Prostate Biopsy in Closed MRI Scanner**
H. Xu*, A. Lasso¹, S. Vikal¹, P. Guion², A. Krieger³, A. Kaushal², L.L. Whitcomb⁴, G. Fichtinger¹,⁴

¹ Queen’s University, Kingston, Canada
² National Institutes of Health, Bethesda, USA
³ Sentinel Medical Inc., Toronto, Canada
⁴ Johns Hopkins University, Baltimore, USA

1200  **Haptic Feedback Modelling during Tool-Tissue Interaction with an Arthorscopic Hooked Probe**
Y. Tenzer*, C. Schwingshackl, A. Gondhalekar, B.L. Davies, F.M. Rodriguez y Baena

* Mechanical Engineering Department, Imperial College London
Improving System Accuracy in Computer Aided Robotic ORL Surgery
B. Bell*, N. Gerber¹, J. Salzmann¹, E. Nielsen³, G. Zheng¹, C. Stieger², L.P. Nolte¹, M. Caversaccio², S. Weber¹
¹ Institute for Surgical Technologies and Biomechanics, University of Bern
² Department ENT Surgery, University Hospital Bern
³ NTB Buchs, University of Applied Sciences Bern

1230 LUNCH

1300 POSTER SESSION

Debate: Social, economic and patient benefits of robotic surgery: Science or bubble? Panel members include Lord Winston (Imperial College London), Professor Chris Thompson (Harvard Medical School), Professor Hubertus Feussner (Technical University Munich) and Mr Azad Najmaldin (Leeds Teaching Hospitals)

Session 2: Clinical Experience and Trials

A dual-centre, cohort comparison of open, laparoscopic and robotic-assisted radical cystectomy
O. Elhage*, B. Challacombe¹, M. S. Khan¹, P. Rimington², B. Coker³, D. Murphy¹, A Grieve³, P. Dasgupta¹, ⁴
¹ Urology Centre, Guy’s & Thomas’ NHS Foundation Trust, London, UK
² Department of Urology, East Sussex Hospitals, Eastbourne, UK
³ Division of Health & Social Care Research, Department of Public Health Sciences, King’s College London, UK
⁴ MRC Centre for Transplantation, NIHR Biomedical Research Centre, Guy’s Hospital, King’s College London, UK

Robotic Partial Nephrectomy – First UK Series
A. Alleemudder*, T. Dudderidge, A. Rao, D. Hrouda, J. Vale, B. Khoubehi ²
¹ Imperial College Healthcare NHS Trust, Urology
² Chelsea and Westminster Hospital NHS Foundation Trust, Urology

First 500 cases of robotic-assisted laparoscopic prostatectomy from a single UK centre: Learning curves of two surgeons
N.L. Sharma*, D. Lee¹, A. Papadopolous³, S. Vowler², N.C. Shah¹, D.E Neal¹
¹ Department of Urology, Addenbrooke’s Hospital, Cambridge UK
² Cambridge Research Institute, Cambridge UK

1545 COFFEE AND POSTER SESSION

Session 3: Technological and Clinical Developments

EVOLAP, an Active Laparoscope Positioner devoted to Ergonomics
B. Herman*, B. Rauenct, J. Donnez, E. Dombre
¹ Center for Research in Mechatronics, Université catholique de Louvain, Belgium
² Department of Gynecology, Cliniques universitaires Saint-Luc, Belgium
³ LIRMM, CNRS – Montpellier University of Science and Technology, France
J. Clark¹, M. Sodergren¹, D. Noonan², J. Shang¹, C. Payne², D. James¹, T. Athanasiou¹, J. Teare¹, A. Darzi¹, G.Z. Yang¹  
¹ Department Surgical Technology; Imperial College London, UK  
² The Institute of Biomedical Engineering; Imperial College London, UK

1645  Single port manipulator for minimally invasive surgery  
S. Can*¹, ³, A. Fiolka¹, A. Schneider¹, A. Knoll³, H. Feussner¹,²  
¹ Research Group MITI, Klinikum rechts der Isar der TUM, Germany  
² Department of surgery, Klinikum rechts der Isar der TUM, Germany  
³ Chair of Robotics and Embedded Systems, Technische Universität München, Germany

1700  Force Sensor Free Bilateral Teleoperation for Robotic Surgery Feasibility Evaluation through Human Perception Test  
E. Naerum*¹,², B. Hannaford³ and O.J. Elle¹,²,⁴  
¹ The Interventional Centre, Oslo University Hospital, Oslo, Norway  
² Institute of Clinical Medicine, University of Oslo, Oslo, Norway  
³ Department of Electrical Engineering, University of Washington, Seattle, WA, USA  
⁴ Department of Informatics, University of Oslo, Oslo, Norway

1715  Bimanual Robot for Single-Port Laparoscopic Surgery with on-board actuation  
U. Scarfogliero*, M. Piccigallo, C. Quaglia, G. Petroni, P. Valdastri, A. Menciassi, and P. Dario  
CRIM Lab, Scuola Superiore Sant’Anna, Pisa, Italy

1730  CLOSING REMARKS AND PRESENTATION OF BEST PAPER AWARDS

1800  DRINKS RECEPTION
1. The oncological outcomes of Robotic-assisted Radical Prostatectomy in a high volume UK institution
   T.Dudderidge*, L. Lavan, J. Beatty, T. Rashid, E. Wan, B. Challacombe and C. Ogden
   Royal Marsden Hospital, London

2. Robotic-Assisted Surgery in the Gulf Cooperation Council
   J. Abi-Nahed*, J. Nuyens, B. Abulaban
   Qatar Robotic Surgery Centre, Qatar Science & Technology Park, Doha, Qatar

3. Randomised controlled trial of Laparoscopic, OPEN and Robot Assisted prostatectomy as treatment for organ-confined prostate cancer
   1 Department of Surgery and Cancer, Imperial College London
   2 Clinical Trials and Statistics Unit, The Institute of Cancer Research, Sutton
   3 Department of Cellular Pathology, St George’s Healthcare NHS Trust, London

4. Stereo Video Reconstruction for Registration in Augmented Reality Robotic Radical Prostatectomy
   Department of Cancer and Surgery, Imperial College London

5. Using ECG in Motion Prediction for Radiosurgery of the Beating Heart
   F. Ernst*, B. Stender, A. Schlaefer, A. Schweikard
   Institute for Robotics and Cognitive Systems, University of Lübeck

6. Spatial awareness enhancement in Natural Orifice Translumenal Endoscopic Surgery (NOTES) by means of an additional visualisation
   1 Department of Surgery and Cancer, Imperial College London, UK
   2 Institute of Biomedical Engineering, Imperial College London, UK

7. Image Guided Robotic Radical Prostatectomy
   S. Thompson*, G. Penney, D. Hawkes, O. Elhage, and P. Dasguta
   1 Center for Medical Image Computing, UCL, London
   2 Interdisciplinary Medical Imaging Group, Kings College London
   3 Department of Urology, Guys and St Thomas Hospital, London
   4 MRC Centre for Transplantation, NIHR Biomedical Research Centre, King's Health Partners, Guy's Hospital, London

8. A Single Centre Experience of Robot-Assisted Laparoscopic Pyeloplasty
   C. Sławinski*, O. Elhage, B. Challacombe, N. Hegarty, P. Dasgupta
   Urology Centre and MRC Centre for Transplantation, Guy's Hospital and King's College London

   G. Kósa*, G. Székely
   Computer Vision Laboratory, D-ITET, ETH Zurich

10. Analysis of endorectal probe kinematics during prostate biopsies
    C. Torterotot*, P. Mozer, M. Baumann, M.-A. Vitrani, G. Morel
    1 ISIR laboratory, University Pierre and Marie Curie, CNRS-UMR7222, Paris, France
    2 La Pitié-Salpêtrière hospital, urology dpt, Paris, France
    3 TIMC laboratory, University Joseph Fournier, Grenoble, France
11. Three Dimensional Tracking and Image Registration Using a da Vinci Triple Endoscope System
N.T. Clancy1,2, D. Stoyanov1, V. Sauvage1,2, D. James1,2, G.Z. Yang1,3, D.S. Elson1,2
1Institute of Biomedical Engineering, Imperial College London
2Department of Surgery and Cancer, Imperial College London
3Department of Computing, Imperial College London

12. Design of A Robotic Accessory for Abdominal Surgery
B.R. Reddi1, U. Grandhi2
1Associate professor of Surgery, Rangaraya Medical college, Kakinada, INDIA
2Mechanical Engineering Group, Birla Institute of Technology and Science, Pilani, INDIA

13. An assessment of the physical impact of a complex surgical task on surgeons: comparison between robotic assisted, laparoscopic and open techniques.
O. Elhage1, B. Challacombe1, A. Shortland2, P. Dasgupta3
1Urology Centre, Guy’s & Thomas’ NHS Foundation Trust, London, UK
2One Small Step Gait Laboratory, Guy’s & St Thomas’ NHS Foundation Trust, London
3MRC Centre for Transplantation, King’s College London, UK

14. First Surgical Procedures under Camera-Augmented Mobile C-arm (CamC) guidance
S. Weidert1, L. Wang2, J. Landes1, A. von der Heide3, N. Navab2, E. Euler1
1Chirurgische Klinik und Poliklinik Innenstadt, LMU Munich
2Chair for Computer Aided Medical Procedures, TU Munich

15. Realistic simulation of catheters and guidewires in vascular interventional radiology
V. Luboz1, T. Odetoyinbo2, J. Zhai3, P. Littler2, T. How3, D. Gould2, F. Bello1
1Department of Surgery and Cancer, Imperial College London, UK
2Royal Liverpool Hospital, Liverpool, UK
3University of Liverpool, School of Clinical Sciences, Liverpool, UK

E. S. Nobari*, F. Rodriguez y Baena
Imperial College London Mechanical Engineering Department

17. Force vs. Displacement during Tool Insertion: Techniques and Modelling Approaches
T. Parittotokkaporn1,2, P. Degenaar2,3, B.L. Davies1, F. Rodriguez y Baena1,2
1Mechatronics in Medicine Lab, Department of Mechanical Engineering
2Institute of Biomedical Engineering,
3Centre for Neuroscience, faculty of Medicine Imperial College London

18. Design of a Magnetically Activated Stereoscopic System for Single Port Laparoscopy
M. Silvestri*, M. Simi, C. Cavallotti, M. Vatteroni, P. Valdastri, A. Menclissi, P. Dario
CRIM Lab, Scuola Superiore Sant’Anna, Pisa 56100, Italy

19. A Multimodal Silicone Phantom for Robotic Surgical Training and Simulation
M. Lerotic and S. Lee*
Institute of Biomedical Engineering, Imperial College London

20. Health Economics and Robotic Knee Replacement Surgery
S.A. Hurst*, J.P. Cobb
Department of Orthopaedics, Imperial College Academic Health Science Centre, Charing Cross Hospital, London, UK

21. Maintaining Constant Tissue Contact Force for an Imaging Probe during Confocal Laser Endomicroscopy
D.P. Noonan1,2, C.J. Payne1, J. Shang1, R. Newton1,2, A. Darzi2, G.-Z. Yang1
1Institute of Biomedical Engineering, Imperial College London, UK
2Department of Surgery and Cancer, Imperial College London, UK
22. Design of a Flexural Transmission for a Dexterous Telesurgical Robot for Throat and Upper Airway: A Preliminary Result
   C.H. Kuo*1, I. Iordachita2, R.H. Taylor2, J.S. Dai1
   1Department of Mechanical Engineering, King’s College London, UK
   2ERC-CISST, The Johns Hopkins University, USA

23. Robotic Assisted Parathyroidectomy
   N. Tolley1, A. Arora*1, F. Palazzo1, G. Garas1, E. Edwards2, R. Dhawan1, J. Cox1, A. Darzi2
   1Department of Endocrine and Thyroid Surgery, Imperial Healthcare NHS Trust, UK
   2Department of Surgery and Cancer, Imperial College London, UK