# Current On-Going Research Projects

## Cardiac, Thoracic & Vascular Surgery

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<tr>
<th></th>
<th>Prof/Adj A/Assoc Prof</th>
<th>Project Description</th>
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| 1 | Prof Lee Chuen Neng  | • Ultrasonic Imaging Transducers for Precision Needle Intervention *(Med-PI)*  
|   | michael_george_caleb@nuhs.edu.sg | • Barrier Membrane for Cardiovascular and Skin Tissue Engineering *(Collaborator)*  
|   |   | • Biomarkers & Management of Cardiovascular Disease - Phase-specific, minimally invasive, myocardial restoration as stand-alone clinically oriented strategy for the therapy of ischemic heart failure *(Co-I)*  
|   |   | • Regenerative Medicine Initiative in Cardiac Restoration Therapy - Cell Therapy Using Injectable, Resorbable, Biocompatible Materials *(PI)*  
|   |   | • Development of a Biosensor Prosthetic Vascular Graft *(Collaborator)*  
|   |   | • Development of a Pressure Sensor Guided Steerable Endovascular Catheter *(Collaborator)*  
|   |   | • Athero-express: Differential atherosclerotic plaque expression protein in relation to cardiovascular events and patient characteristics *(PI)*  
|   |   | • In vivo vascularization and maturation of bioartificial grafts for organ restoration *(Co-I)*  
|   |   | • Prospective Randomised Controlled Study of the Effects of N-acetylcysteine in Patients with Pre-operative Renal Impairment Undergoing Coronary Revascularization Surgery with Cardiopulmonary Bypass *(PI)*  
| 2 | Adj A/Prof Michael George Caleb | • Comparison of Mini-Bypass to Conventional Cardiopulmonary Bypass in small Asian patients undergoing Coronary Artery Bypass Grafting Surgery *(Co-I)*  
|   | michael_george_caleb@nuhs.edu.sg |   |
| 3 | Assoc Prof Theodoros Kofidis | • Promoting Effective Lymphatic Drainage of the Arteries as a New Therapeutic Intervention for Atherosclerosis *(Co-I)*  
|   | kofidis_theodoros@nuhs.edu.sg | • Biomarkers & Management of Cardiovascular Disease - Phase-specific, minimally invasive, myocardial restoration as stand-alone clinically oriented strategy for the therapy of ischemic heart failure *(PI)*  
|   |   | • Regenerative Medicine Initiative in Cardiac Restoration Therapy - Cell Therapy Using Injectable, Resorbable, Biocompatible Materials *(PI)*  
|   |   | • Novel, less invasive mitral valve implantation method involving a bayonet insertion and release mechanism *(PI)*  
|   |   | • Athero-express: Differential atherosclerotic plaque expression protein in relation to cardiovascular events and patient characteristics *(Co-I)*  
|   |   | • A Retrospective Study of Pre-operative continuation of Anti-Platelet Therapy with Aspirin & or Clopidogrel: Peri-Operative Outcomes of Coronary Artery Bypass Grafting *(PI)*  
|   |   | • A retrospective study on Coronary Artery Bypass Grafting: SYNTAX score and previous stents affecting decision of operation procedure and outcomes of surgery *(PI)*  
|   |   | • Antibacterial Suture Reduces Surgical Infections in Coronary Artery Bypass Grafting *(PI)*  
|   |   | • Predictors of adverse neurological outcome following cardiac surgery *(PI)*  
|   |   | • eSVS External Saphenous Vein Support Trial *(PI)*  
|   |   | • In vivo vascularization and maturation of bioartificial grafts for organ restoration *(PI)*  
|   |   | • Multicellular angiogenic spheroids to improve engraftment of stem cells and bioartificial tissue for myocardial restoration *(Co-I)*  

*Updated as at 17 Mar 2011*
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<th>No.</th>
<th>Researcher</th>
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<tr>
<td>4</td>
<td>Asst Prof Ooi Oon Cheong</td>
<td>Post-Coronary Artery Bypass Grafting Surgery Atrial Fibrillation: Is Dual Antiplatelet Therapy as Safe and Effective as Anticoagulation Therapy in Preventing Major Thromboembolic Events?</td>
<td>• Determine the Incidence &amp; Prevalence of Renal Failure in Patients Undergoing Open Heart Surgery</td>
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<td>5</td>
<td>Dr Kristine Teoh Leok Kheng</td>
<td>Surgical Performance Indicators: Choosing the Right Measure (PI)</td>
<td>• 3 Atypical Cases of Aortic Dissection Presenting With Isolated Pyrexia (PI) • eSVS External Saphenous Vein Support Trial (Co-I) • RIME Trial - Randomised Ischaemic Mitral Evaluation Trial looking at moderate ischaemic Mitral Regurgitation, whether to do annuloplasty ring or not along with CABG for IHD (Co-I)</td>
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<td>6</td>
<td>Asst Prof Jimmy Hon Kim Fatt</td>
<td>Outcome of Aortic Valvular Surgery in Octogenarians (PI)</td>
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<td>7</td>
<td>A/Prof Peter Ashley Robless</td>
<td>Development of a Biosensor Prosthetic Vascular Graft (Collaborator)</td>
<td>• Development of a Pressure Sensor Guided Steerable Endovascular Catheter (Collaborator) • A Phase III, randomised, double blind, parallel group study of the efficacy and safety of oral dabigatran etexilate (150mg bid) compared to warfarin (NR 2.0-3.0) for 6 months treatment of acute symptomatic venous thromboembolism, following initial treatment (PI) • Determinants of Premature Atherosclerosis in Patients with Systemic Lupus Erythematosus in Singapore (PI)</td>
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<td>8</td>
<td>Asst Prof Jackie Ho Pei</td>
<td>Analysis of the Patency of Dialysis Access in End Stage Renal Failure Patients after Endovascular Treatment (PI)</td>
<td>• Outcome analysis for patients suffered from peripheral arterial occlusive disease (PI) • Novel Preferential Covered Carotid Stent for Embolic Stroke Prevention in Carotid Stenting (Med-P) • Bioactive scaffold with sustained release of Vascular Endothelial Growth Factor for vascular tissue (Co-I) • Anatomical analysis of Acute Aortic Dissection in Elderly using Computed Tomography post-processing measurement (PI) • Intravascular ultrasound guided infra-inguinal endovascular intervention compared with angiography guided intervention - the pilot study (PI) • Analysis of aortic arch anatomy of elderly patients using computer tomography data reconstruction (PI)</td>
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| 9 | Adj Asst Prof Benjamin Chua Soo Yeng | drbenchua@hotmail.com | **Cardiac, Thoracic & Vascular Surgery**  
• Development of Flow Diversion Device for the Treatment of Aortic Aneurysms (PI)  
• Surgical Performance Indicators: Choosing the Right Measure (Co-I)  
• Development of a Biosensor Prosthetic Vascular Graft (Med-PI)  
• Development of a Pressure Sensor Guided Steerable Endovascular Catheter (Med-PI)  
• Development of a Novel Endovascular Stent Graft Device (PI) |
| 10 | Asst Prof John Tam Kit Chung | john_tam@nuhs.edu.sg | • Minimally Invasive Thoracic Surgery (PI)  
• Regulatory Factors of CD151 Expression in Non-Small Cell Lung Cancer (PI)  
• Role of CD151 in the Modulation of Airway Smooth Muscle Contraction (Co-I)  
• Establishment and characterization of Patient-Derived Non-Small Cell Lung Cancer Xenografts and cell cultures (PI)  
• Cellular and molecular characterization of CD151 in human airway smooth muscle cells (PI)  
• Lung Cancer in Singapore: Molecular Profiling, Genotyping and Epidemiological Assessment (PI) |
| 11 | Dr Atasha Asmat | atasha_asmat@nuhs.edu.sg | • Long-Term Glycemic Control And Early Outcomes In Diabetic Patients Undergoing Coronary Artery Bypass Graft Surgery (PI)  
• Endovascular Management of Traumatic Thoracic Aortic Transection (PI) |
| 12 | Asst Prof Graeme Maclaren | graeme_maclaren@nuhs.edu.sg | • Extracorporeal Life Support Organization (PI)  
• Estimation Of Left Atrial Pressure With Echocardiography In Patients After Cardiac Surgery (PI) |
| 13 | Dr Vitaly Sorokin | vitaly_sorokin@nuhs.edu.sg | • Athero-express: Differential atherosclerotic plaque expression protein in relation to cardiovascular events and patient characteristics (Co-I) |
| 14 | Dr Tay Jia Sheng | jia_sheng_tay@nuhs.edu.sg | • Pulmonary metastasectomy in Singapore: a single centre experience (PI) |
| 15 | Dr Eliana C Martinez Valencia | elaina_martinez@nuhs.edu.sg | • Efficacy of Regenerative Stem Cell Grafts: An In Vivo Assessment (Collaborator)  
• Promoting Effective Lymphatic Drainage of the Arteries as a New Therapeutic Intervention for Atherosclerosis (Co-I)  
• Multicellular angiogenic spheroids to improve engraftment of stem cells and bioartificial tissue for myocardial restoration (PI)  
• In vivo vascularization and maturation of bioartificial grafts for organ restoration (Co-I) |