# Current On-Going Research Projects

## Plastic, Reconstruction & Aesthetic Surgery

<table>
<thead>
<tr>
<th>No.</th>
<th>Researcher</th>
<th>Project Details</th>
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</table>
| 1   | Assoc Prof Lim Thiam Chye | • Controlling Stem Cell Differentiation through Scaffold Design and Systems Biology (Collaborator)  
• Development of Novel Chemical Probes for Different Stages and Types of Stem Cells *(Site PI)*  
• Adipose Tissue Regeneration using Adipocytes and Peptide-based Hydrogel material containing bFGF *(Site PI)*  
• Abdominal Wall Closure after TRAM/DIEP flap - comparison of TIGR mesh vs Polypropylene mesh *(Site PI)*  
• Biobanking of Cells from Redundant Surgical Waste Skin Tissue *(Site PI)*  
• An Automated Platform for Complex Bony Reconstruction using Medical Modelling Techniques *(Site PI)*  
• Lymphatic Channels in the Anterior Abdominal Wall/Fat *(Site PI)*  
• Artificial blood with Waseda University & DMRI *(Site PI)*  
• CranioMex - Medical Data Management and Exploration for Craniomaxillofacial Fracture Planning, Audit and Clinical Improvement *(PI)*  
• Comparing the reconstruction of the Orbit Fracture with a Poly Caprolactone / Tri-Calcium Phosphate (PCL/TCP) Implant vs a Titanium Mesh Implant *(PI)*  
• Vision-Aided Active Handheld Instrument for Microsurgery *(Co-I)*  
• Clinical, Histological and Biochemical Characterization of Hyperpigmented Lesions *(PI)* |
| 2   | Dr Jane Lim | • Barrier Membrane for Cardiovascular and Skin Tissue Engineering *(PI)*  
• To Compare the Depth of Thermal Injury between Single Pass and Multiple Pass Erbium : YAG (Sciton ®) Laser Ablation *(PI)*  
• Changes in Breast Sensibility after Reconstructive with(out) Intercostal-Segmental Nerve Reconstruction and Aesthetic procedures *(PI)* |
| 3   | Dr Lee Shu Jin | • Development of a Finite Element Model of the Foot and Usage of Pressure Sensor Pads to study the 3D Pressure Distribution of the Footwear on the Foot *(PI)*  
• Acoustic Characteristics of the Attractive Voice and its Comparison with Voices with Speech Impediment *(PI)*  
• Assessment of Potential Dynamic Vascular Changes associated with Carpal Tunnel Syndrome – Correlation of Vascular Changes on 4D Duplex Ultrasound with Clinical Symptoms, Median Nerve Deformation Patterns and Nerve Conduction Studies *(PI)*  
• Elucidation of the Fracture Patterns of Nasal Septal Cartilage and the Inter-Relationships between the Bony and Cartilaginous Nasal septum using the Leonardo (Siemens®) System for Analysis of CT scans of the Nose *(PI)*  
• CT Analysis of Structural Buttresses in the Traumatised Nose – A basis for Decision making for Early Open Rhinoplasty and Biomechanical Study of Nasal Structural Support *(PI)*  
• Characterization and Comparison of the Attractive Southern Chinese, Eurasian and Caucasian Nasal Shapes using 3D Laser Scanning *(PI)*  
• Delineation of Normal Forehead and Midface sensibility - a Baseline for Assessment of forehead and Midface Trigeminal Nerve Injuries *(PI)* |
| 4   | Dr Ong Wei Chen | • Analysis of Motor and Sensory components of Segmental Nerves supplying the Rectus Abdominis Muscle and the Overlying Skin *(PI)*  
• Liver Tissue Engineering Utilizing a Vascularized Scaffold Model *(PI)*  
• Changes in Breast Sensibility after Reconstructive With(out) Intercostal-Segmental Nerve Reconstruction and Aesthetic Procedures *(PI)* |

*Updated as at 17 Mar 2011*