



January 2012 Workshop
Shaw Foundation Alumni House
11 Kent Ridge Drive, Singapore 119244

Aims: Reunion of BioSyM team collaborations, and preparation of BioSyM renewal proposal's key ideas and content. Identification of seed projects in Years 4-5 that will contribute to renewal proposal for Years 6-10.

January 16, 2012 (Monday)

Morning:

MIT Faculty only, due to late request by NRF for tour of BioSyM facilities

Afternoon:

All BioSyM Collaborators, Researchers, and Potential Collaborators Expected

2-2:30pm Team review of BioSyM renewal proposal (Van Vliet)

2:30-5pm Thrust Breakouts*

» Focus on Renewal Proposal Goals

» Brainstorm on fits into Cross-Thrust Initiatives (CTIs) of interest

Coffee/Tea & Snacks available in Auditorium Foyer

6pm Dinner at One Rochester Park; transportation provided
(Faculty & Faculty Collaborators only)

January 17, 2012 (Tuesday)

All BioSyM Collaborators, Researchers, and Potential Collaborators Expected

8:30-9am Breakfast (Auditorium Foyer)

9-9:30am Cross-Thrust Initiative Overview (all)

9:30-12am CTI Breakouts**, co-led by one MIT PI and one Singapore Collaborator
Coffee/Tea & Snacks available in Auditorium Foyer

12-1pm Lunch

1-2:30pm Presentation of CTI drafts

2:30-4pm Mapping of CTIs to Thrusts/Faculty Goals

4-4:30pm Wrap-up and plan for proposal writing

***Anticipated Outcomes from Thrust Breakouts (Monday 16 January)**

1. Key Aims for this Thrust in BioSyM Years 6-10
Example: Aim 1. Develop platform to isolate rare cells from raw marrow
 Aim 2. Fabricate patterned materials for naïve stem cell proliferation
 Aim 3. Demonstrate new biophysical markers to predict pluripotency
2. Collaborating teams that will work toward these aims
Example: Aim 2. Doyle, Lang (MIT), Yie (NUS), Jones (NTU) and Siew (KKH).
3. Key requirements/contributions to Cross-Thrust Initiatives
Example: Our thrust develops imaging platforms with 10 um resolution and 10 s between image frames. We can image tissues or 100s of cells that change slowly over time, but not molecular scale events. We do not require staining of samples, so we can assist with biomarker identification related to local stiffness or translucence. We have most experience in imaging disease states related to fibrosis and cancer, and have a longtime clinical collaborator in fibrosis.
4. Value to Singapore created by Thrust
Example: Training of skilled researchers, patents or companies in Singapore, focus on diseases prevalent in Southeast Asia, uniquely enabling collaboration with Singapore institutions and clinicians
5. Anticipated resource requirements
Example: To meet the aims of this Thrust, we anticipate a staff of 4 postdocs and 3 students each year, and \$100K/year in supplies and equipment.

****Anticipated Outcomes from Cross-Thrust Initiative Breakouts (17 January 2012)**

1. Identify three (maximum) CTIs that
 - a. Have potentially high intellectual impact in the world
 - b. Have clear translational targets
 - c. Require engineering expertise and clinical collaborations unique to Singapore
 - d. Include components of research that credibly draw on capabilities from all four thrusts
2. Identify current and required new collaborators for CTI success
 - a. Current collaborators at MIT and Singapore
 - b. Required new collaborators in academia
 - c. Required new collaborators in clinics
3. Identify any unique research resources required of this effort, outside of Thrust needs.

Note that in our August 2011 Workshop, we brainstormed around three CTI areas. We are open to expanding these, and to considering different/modified CTIs that take shape over this workshop:

- A: “Stem” cell identification and delivery
- B: Biomarkers of endometriosis
- C: Anti-metastatic maintenance of cancer

Please review the attached slides from that August Workshop session, as only a starting point, and bring your own ideas as we create these CTIs together.