Cells & Materials: at the Tissue Engineering Interface

Tuesday February 18, 2003

12:00	*Tissue Engineering Application - Mechanical Forces in Development and Healing*
8:30–9:20	*Check-In/Light Breakfast (Hosted by IPAM)*
9:20–9:30	*Welcome Remarks - Stan Osher & Ben Wu (UCLA)*
9:30–10:30	**Dennis Carter** (Stanford University) *Mechanobiology of Skeletal Development and Regeneration*
10:30–11:00	*Coffee Break*
11:00–12:00	**Michael Longaker** (Stanford University) *Endogenous Models of Bone Tissue Engineering*
12:00–2:00	*Lunch (on your own)*
2:00–3:00	**Tom Hou** (California Institute of Technology) *Multiscale Modeling and Computation of Incompressible Flow in Heterogeneous Porous Media*
3:00–3:30	*Coffee Break*
3:30–4:30	**Li-Tien Cheng** (University of California at San Diego) *HMM for Interface Motion in Heterogeneous Media*
4:30–5:30	**Frederic Gibou** (Stanford University) *A Level Set Approach for the Numerical Simulation of Dendritic Growth.*
5:30–7:00	*Wine/Cheese Reception (Hosted by IPAM)*

Wednesday February 19, 2003

12:00	*Tissue Engineering Application - Microfluid Flow in Nature*
8:30–9:30	*Continental Breakfast*
9:30–10:30	**Howard Winet** (UCLA /Orthopaedic Hospital) *Challenges to modeling the links between muscle pumps, microcirculation and fluid flow to scaffold implants in bone*
10:30–11:00	*Coffee Break*
11:00–12:00	**John Frangos** (La Jolla Bioengineering Institute)
12:00–2:00	*Lunch (on your own)*
2:00–3:00	**Jon Dantzig** (University of Illinois) *Multiscale Modeling in Engineering Problems*
3:00–3:30	*Coffee Break*
3:30–4:30	**Dimitri Vvedensky** (Imperial College, London, UK) *Multi-Scale Modelling in Materials*
4:30–5:30	**Qing Nie** (University of California at Irvine) *Tissue Patterning During Development*

Thursday February 20, 2003

12:00	*Tissue Engineering Application - The Role of Fibrin in Past, Present and Future*
8:30–9:30	*Continental Breakfast*
9:30–10:30	**Michael Mosesson** (Blood Center Southeastern Wisconsin) *The structure and biology of fibrinogen and fibrin*
10:30–11:00	*Coffee Break*
11:00–12:00	**James DiOrio** (Baxter Technology Resources) *Structural and Mechanical Properties of Fibrin*
12:00–2:00	*Lunch (on your own)*
2:00–3:00	**Bill Tawil** (Baxter Biosciences) *Fibrin Sealant as a Cell Delivery Vehicle*
3:00–3:30	*Coffee Break*
3:30–4:30	**David Amrani** (Baxter Healthcare) *Fibrin and Wound-healing matrix macromolecular interactions*
4:30–5:30	**Sam Helgerson** (Baxter Biosciences) *Fibrin Biomatrix For Tissue Regeneration*
5:30–7:00	*Dinner (Hosted by IPAM)*

Friday February 21, 2003

12:00	*Tissue Engineering Application - Nutrient Transport in 3D Scaffolds*
8:30–9:30	*Continental Breakfast*
9:30–10:30	**Melissa Knothe Tate** (The Cleveland Clinic Foundation) *Emerging Insights into the "Cellular Physiology" of Bone: Experiments, Computational Modeling & Applications for Surgeons & Tissue Engineers*
10:30–11:00	*Coffee Break*
11:00–12:00	**Barry Merriman** (UCLA) *Gene Expression Profiling of Normal Tissues*
12:00–2:00	*Lunch (on your own)*
2:00–3:00	**James Dunn** (UCLA) *Diffusion-Limited Cell Growth in Scaffolds*
3:00–3:30	*Coffee Break*
3:30–4:30	**Ichiro Nishimura** (UCLA) *Tissue Engineering: Technology without equations (yet..)*
4:30–5:30	**John Lowengrub** (University of Minnesota / UC Irvine) *Nonlinear Simulations of Tumor Growth*
5:30–12:00	*Conclusion*