Η Επιτροπή Σεμιναρίων της Σχολής Χημικών Μηχανικών έχει την ευχαρίστηση να σας προσκαλέσει σε σεμινάριο της Σχολής, που θα δοθεί από το Δρα Τριαντάφυλλο Στυλιανόπουλο, Postdoctoral Research Fellow, Edwin L. Steele Laboratory, Massachusetts General Hospital and Harvard Medical School, Charlestown, MA 02129, USA.

Το σεμινάριο έχει προγραμματιστεί για την Πέμπτη, 18 Δεκεμβρίου 2008 στις 13:30, στην Αίθουσα Κουμούτσου. Ο τίτλος της διάλεξης του κυρίου Στυλιανόπουλου είναι "Multiscale, Structure-Based Modeling for the Mechanical and Transport Properties of Soft Biological Tissues" Ακολουθεί περίληψη του σεμιναρίου.

"MULTISCALE, STRUCTURE-BASED MODELING FOR THE MECHANICAL AND TRANSPORT PROPERTIES OF SOFT BIOLOGICAL TISSUES"

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Soft biological tissues include both native and bioartificial tissues. In the human body, materials like the articular cartilage, blood vessels, and tumors are examples of structures composed of an underlying network of collagen fibers, cells, proteins and molecules. Bioartificial tissues are less complex than native tissues and mainly consist of a fiber polymer network with the intent of replacing lost or damaged tissue. Understanding the mechanical and transport properties of these materials is essential for many clinical treatments (e.g. angioplasty, drug delivery to tumors), diseases (e.g. atherosclerosis) and tissue engineering applications (e.g. bioartificial blood vessels). In both the native and engineered tissue systems, their function is inherently multiscale. The tissue dimension is on the centimeter length scale, while the underlying fibrillar network is on the micrometer scale. It is my hypothesis that the overall mechanical and transport properties of soft biological tissues are governed by the corresponding properties of their micro-structural architecture. Recent advances in histology, and microscopy have made the characterization of the microstructure conceivable, and have opened the road for the development of multiscale, structure-based methodologies. In my talk, I will present such models for studying separately the mechanical behavior, fluid flow and diffusivity of these materials. The models will be used for studying the mechanical behavior of accelular collagen gels and native blood vessels and for predicting the permeability and diffusivity of the interstitial space in tumors.

Για περισσότερες πληροφορίες μπορείτε να επικοινωνήσετε μαζί μας με e-mail στη διεύθυνση doros@central.ntua.gr.

Με θερμούς συναδελφικούς χαιρετισμούς.

Η Επιτροπή Σεμιναρίων ΣΧΜ

Κωνσταντίνα Τζιά
Ιωάννης Ζιώμας
Μιρτάτ Μπουρουσιάν
Δώρος Θεοδώρου