



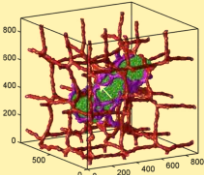
2020 Multicell Virtual Tissue Modeling ONLINE Summer School & Hackathon

Summer School: August 3rd – 6th, 2020 (Monday – Thursday)

Model-Building Hackathon: Aug. 7th – 9th, 2020 (Friday – Sunday)

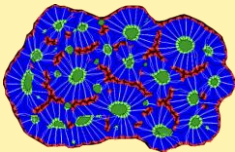
Indiana University, Bloomington, IN, USA

Background: Mechanistic modeling is an integral part of contemporary bioscience, used for hypothesis generation and testing, experiment design and interpretation and the design of therapeutic interventions. The CompuCell3D modeling environment allow researchers with modest programming experience to rapidly build and execute complex Virtual Tissue simulations of development, homeostasis, toxicity and disease in tissues, organs and organisms, covering sub-cellular, multi-cell and continuum tissue scales. Virtual Tissue simulations developed using CompuCell3D run on Windows, Mac and Linux. CompuCell3D is open source, allowing users to extend, improve, validate, modify and share the core software.



Vascular Tumor Growth

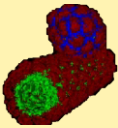
Goal: By the end of summer school and hackathon, participants will have implemented a basic simulation of their particular biological problem of interest. Post-course support and collaboration will be available to continue simulation development



Somitogenesis

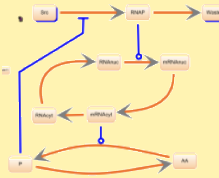
Topics: Python scripting. Introduction to Virtual-Tissue simulations. Introduction to CompuCell3D. Basics of model building. Combining RK and Virtual-Tissue models. Extending CompuCell3D. Building a basic simulation of your system.

Format: Daily video tutorial (asynchronous) with live zoom support & daily group discussion sections (zoom).



Polycystic Kidney Disease

Summer school will be four days of lectures & hands-on computer tutorials. This will be immediately followed by a modeling hackathon in which teams of advanced and beginner modelers develop research-grade models of biological systems. Participants will be able to further customize models with their own data and publish.



Biochemical Network Modeling

Instructors: James A. Glazier (Indiana University), Julio Belmonte (North Carolina State University), Maciek Swat, Juliano Gianlupi (Indiana University), Andy Somogyi (Indiana University), James Sluka (Indiana University), Gilberto L Thomas (UFRGS), Bobby Madamanchi (Purdue University).

Target Audience: Experimental Biologists, Medical Scientists, Biophysicists, Mathematical Biologists and Computational Biologists from advanced undergraduates to senior faculty, who have an interest in developing multi-scale Virtual-Tissue simulations, or learning how such simulations might help their research. No specific programming or mathematical experience is required.



Cell Migration Modeling

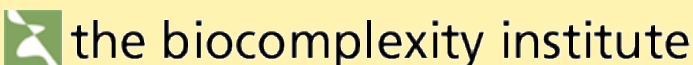
Fees: There is no registration fee. We will provide coffee, tea, lunch, and snacks.

Registration: Enrollment is limited and by application only. Kindly apply online with a c.v., a brief statement describing your current research interests and the specific problem you would like to model. Students should also include a letter of support from their current advisor. Please submit all application materials by **May 1, 2020**.

Supported and funded by:

For more information:

Email: compuccell3d.iu@gmail.com | twitter: @compuccell3d | website: www.compuccell3d.org



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