

**Indiana University Course**  
**Developing Multi-Scale, Multi-Cell Developmental and Biomedical**  
**Simulations with CompuCell3D and SBW**

August 13<sup>th</sup>-19<sup>th</sup> 2011

**Lecturers: Maciej Swat, Randy Heiland, James Glazier, Julio Belmonte,**  
**Mitja Hmeljak, Abbas Shirinifard**

**The following materials will be provided to Participants of for the Course:**

- 1. CompuCell3D Manuals and Workshop Power Point Presentations*
- 2. Tutorial Materials.*
- 3. Model Files available from the course web site.*

Saturday, August 13<sup>th</sup> 9am-12pm (session subject to change)

**9.00-12.00** Randy Heiland

*Introduction to Python programming I*

Sunday, August 14<sup>th</sup> 4pm-7pm

Barbecue – James Glazier House of Rock

Monday August 15<sup>th</sup> 9am-6pm

**9.15-9.15** James Glazier

*Welcoming Remarks*

**9.15-10.45** James Glazier

*Introduction to Modeling using Glazier Graner Hogeweg Model (aka Extended Potts Model)*

**10.45-11.00**

*Break*

**11-12.30** Maciej Swat

*CompuCell3D 101 – Introduction*

**12.30-2.00**

*Lunch*

**2.00-3.30** Maciej Swat

*Tutorials with basic CompuCell3D Simulations*

**3.30-3.45**

*Break*

**3.45-5.15** Mitja Hmeljak

*Graphical generation of initial cell layout with CellDraw*

**5.15-6.00** Randy Heiland

*Introduction to Python programming II*

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Tuesday August 16<sup>th</sup> 9am-6pm

**9.00-10.30** Randy Heiland

*Python programming - tutorials*

**10.30-10.45**

*Break*

**10.45-12.00** Maciej Swat

*Overview of CompuCell3D's Features/Modules Part I*

**12.00-12.30**

*Participants Talks*

**12.30-1.30**

*Lunch*

**1.30-2.15**

*Participants Talks*

**2.15-4.15** Maciej Swat

*Overview of CompuCell3D's Features/Modules Part I*

**4.15-4.30**

*Break*

**4.30-6.00** Maciej Swat

*Tutorials – building advanced CompuCell3D simulations*

Wednesday August 17<sup>th</sup> 9am-6pm

**9.00-10.30** Abbas Shirinifard

*Model Parameters in CompuCell3D – Rules, Recipes and Disasters*

**10.30-10.45**

*Break*

**10.45-12.15** Maciej Swat

*Introduction to Python programming in CompuCell3D part I*

**12.15-1.45**

*Lunch*

**1.45-2.45**

*Participants' Talks*

**2.45-4.15**

*Introduction to Python programming in CompuCell3D part II*

**4.15-4.30**

*Break*

**4.30-6.00**

*Advanced CompuCell3D Python Programming Tutorials*

Thursday August 18<sup>th</sup> 9am-6pm

**9.00-10.30** Maciej Swat

*Advanced Python Scripting in CompuCell3D*

**10.30-10.45**

*Break*

**10.45-12.15** Maciej Swat

*Advanced CompuCell3D Python Programming Tutorials*

**12.15-1.45**

*Lunch*

**1.45-4.15 Julio Belmonte**

*Merging CompuCell3D and SBW/SBML – Running Reaction Kinetics Models in CompuCell3D*

**4.15-4.30**

*Break*

**4.30-6.00**

*Advanced CompuCell3D/SBML Python Programming Tutorials*

Friday August 19<sup>th</sup> 9am-6pm

**9.00-10.30** Maciej Swat

*Developing C++ modules for CompuCell3D*

**10.30-10.45**

*Break*

**10.45-12.15** Maciej Swat

*Developing C++ modules for CompuCell3D – hands-on exercises/demo*

**12.15-1.45**

*Lunch*

**1.45-4.15**

*Work on individual projects*

**4.15-4.30**

*Break*

**4.30-6.00**

*Work on individual projects*