Course announcement, Spring 2014

Methods of computational science:
Solving problems with computers

LB 490A Section 003, Spring 2014
3 credits
Tuesday 1:50-4:40, W-40 Holmes Hall
Faculty: Professor Brian O'Shea, Lyman Briggs/Physics & Astronomy (oshea@msu.edu)
Note: **This course is open to all MSU students, and enrollment is by override only!**

Are you interested in learning how to use computers to solve cutting-edge scientific problems? Would you like to be able to model evolutionary processes, predator-prey interactions, traffic, fluid flow, molecular dynamics, satellite orbits, and other scientifically interesting topics? Would you like to learn to do scientific visualization and write software for supercomputers? If so, this is the class for you! The goal of this course is to give science and math majors of all sorts an introduction to computational science, and to put your programming skills to use solving interesting and fun problems in a range of subjects. The course will be taught using a workshop format, with short presentations and laboratory exercises. There will also be a semester project where you will use your new skills to solve a problem that is relevant to you and your career interests!

To be successful in this course, you should have taken CSE-231 or have the equivalent Python programming experience, and have completed Calculus II or higher. Admission to the course is open to all students, and is by override only (with a max of 12 students).

If you are interested in taking this course, please contact Professor Brian O'Shea at oshea@msu.edu with questions or to request an override!
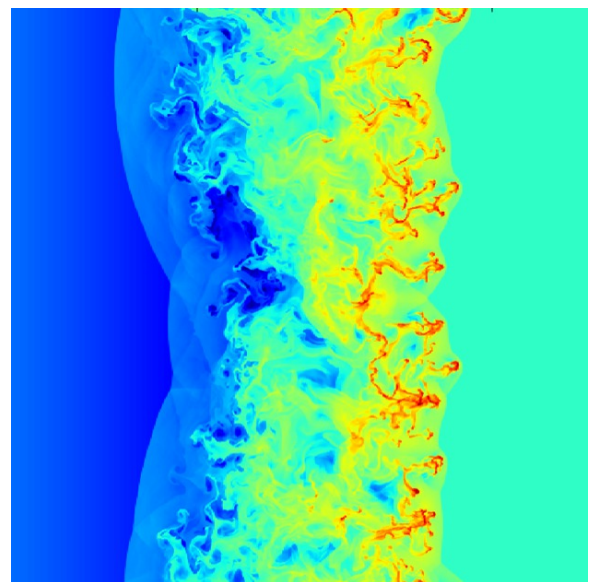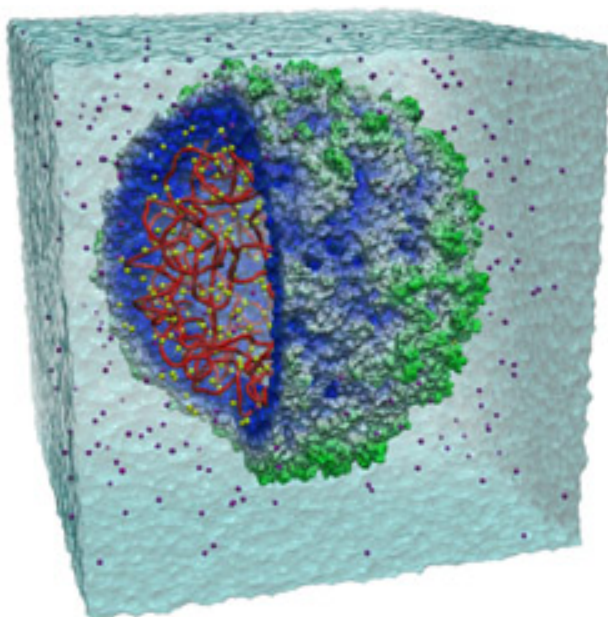
Left image: atom-by-atom simulation of tobacco mosaic virus, © 2013, Klaus Schulten (UIUC)
Right image: gas density in a rapidly cooling hydrodynamic shock © 2013, Brian O'Shea (MSU)