



## **Supplementary Material for Computational Thinking in Biology for All Students Session at NABT November 2009**

### **Some Freely Available Resources:**

Biology-in-a-Box (<http://eeb.bio.utk.edu/biologyinbox/>) On-line instructional materials to accompany boxes containing many hands-on activities for high-school biology tied into standards for both biology and mathematics.

BioQUEST (<http://bioquest.org/>) Large collection of resources on simulations in many areas of biology, including the BioQUEST Library Online, a peer-reviewed community publication of software simulations, tools, and datasets, and Biological ESTEEM (Excel Simulations and Tools for Exploratory, Experiential Mathematics), a collection of freely downloadable modules in many areas of biology.

Concord Consortium (<http://www.concord.org/>) Collection of resources including software for simulations and probeware useful in teaching biology and other subjects.

iPlant Collaborative (<http://iplantcollaborative.org/communities/educators>) Modules that integrate mathematics into high school biology and biology into mathematics and distributed research projects for precollege and higher education levels.

Netlogo (<http://ccl.northwestern.edu/netlogo/>) Collection of easily used simulation models for many problems in biology, chemistry, physics, etc. all using agent-based approaches. Able to run in a browser, but also available for download and the code to be modified.

Shodor Foundation (<http://www.shodor.org/>) Includes many resources for computational science education.

Society for Mathematical Biology (<http://www.smb.org/>) Links to many programs and instructional resources for mathematics in biology.

### **Reports on Quantitative Biology Education:**

BIO2010: Transforming Undergraduate Education for Future Research Biologists. National Academies report (2003) encouraging interdisciplinary education (<http://www.nap.edu/openbook.php?isbn=0309085357>)

Vision and Change Transforming Undergraduate Education in Biology: Mobilizing the Community for Change (<http://www.visionandchange.org/>) Reports on conversations to reinvigorate undergraduate biology education.

Scientific Foundations for Future Physicians (HHMI and AAMC)  
(<http://www.hhmi.org/grants/sffp.html>) Report on both medical school and undergraduate competencies for educating physicians.

Transforming Agricultural Education for a Changing World.  
([http://www.nap.edu/catalog.php?record\\_id=12602](http://www.nap.edu/catalog.php?record_id=12602)) National Academies Report encouraging move towards broader education for agriculture students.