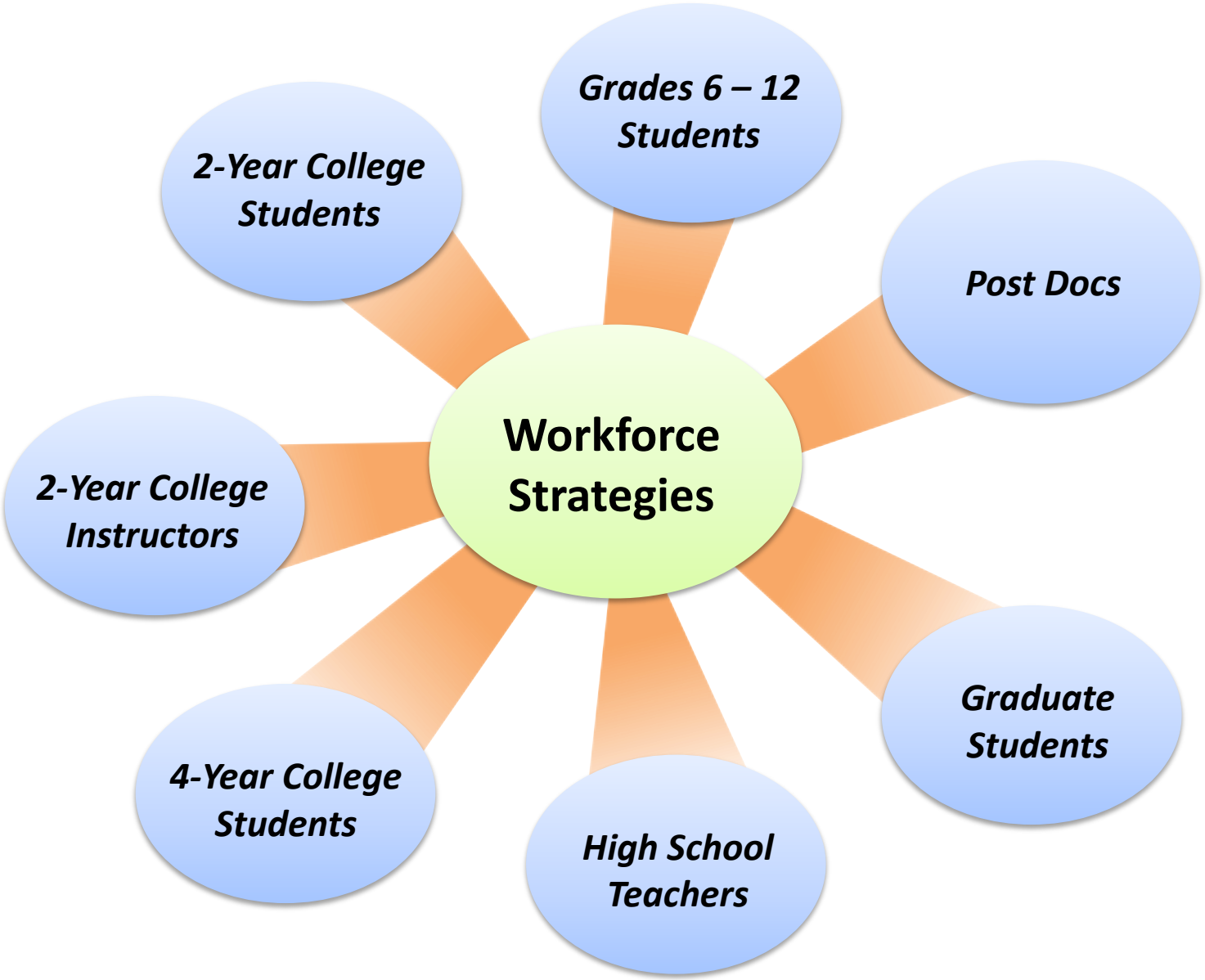
Workforce Development

Juana Moreno

LA-SiGMA will address all levels of the educational ladder, including two-year colleges, through a range of training and educational activities, contributing to a well-trained and diverse professional workforce that can support advanced materials research and industries as well as education.

Workforce Development Strategies



Grades 6-12

Two graduating Louisiana School for Math, Science, and the Arts were selected to participate in the LSU REU program.

LA Tech/Grambling Open House

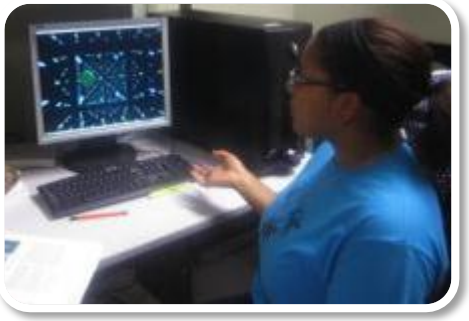
Tulane Open House

High School Teachers

Leveraged LSU's LaMSTI teacher program

Undergraduates

31 REU students statewide Summer 2011



Graduate Students

Graduate level courses
1 course Fall 2010, 3 courses Spring 2011, 2 courses Fall 2011

LA-SiGMA

Louisiana Alliance for Simulation-Guided Materials Applications

Courses

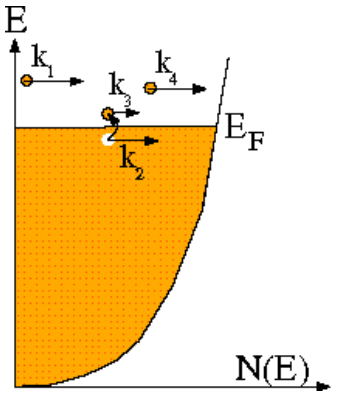
LA-SiGMA provides an education plan that includes new materials science graduate courses delivered across the State. A core set of interinstitutional graduate level courses (three in the first year, six more in subsequent years) in computational science, multiscale modeling methods, advanced experimental techniques, and other topics are being developed and broadcast throughout the State using synchronous HD video as well as asynchronous methods. These courses will be integrated into existing and new graduate curricula on each campus, providing graduate students a transformative educational experience in materials science, who who will enter the workforce as highlyskilled, well-trained computational materials scientists.

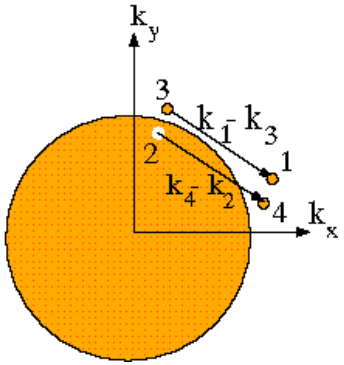
Distance Learning courses offered in a regular basis

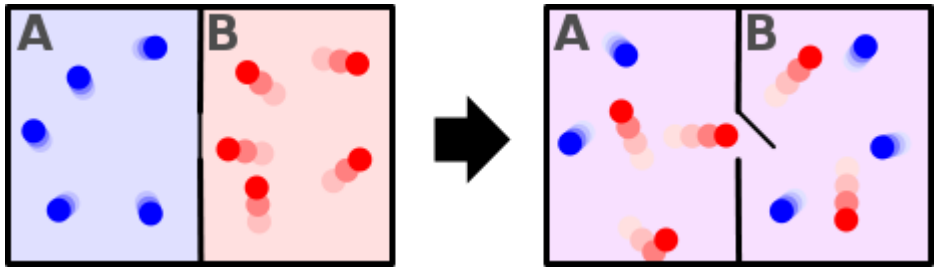
- Simulations of quantum many body systems (international course), http://www.phys.lsu.edu/~jarrell/Green/index.html
- Advanced solid state physics, http://www.phys.lsu.edu/~jarrell/COURSES/ADV_SOLID_HTML/course_advss.html
- Other online course materials, http://www.phys.lsu.edu/~jarrell/TEACH.html
- Computational Physics: Computing for Petascale Systemse, http://www.pirealps.org/Courses/CompScience/Syllabus.html

Graduate Level Courses Fall 2011

- **Solid State Physics** by Adrienn Ruzsinszky (Tulane):
  Tuesdays & Thursdays
  9:30-10:45
- **Statistical Mechanics** by Randy Hall (LSU):
  Tuesdays & Thursdays
  8:00-10:00







Graduate Students and Postdocs

Density Functional Workshop, Summer 2011
(40 registrants, 5 speakers, LA Tech, LSU, SUBR, Tulane, Xavier)

John Perdew
Tulane

Shobhana Narasimhan
Jawaharlal Nehru Centre

Kieron Burke
UC Irvine

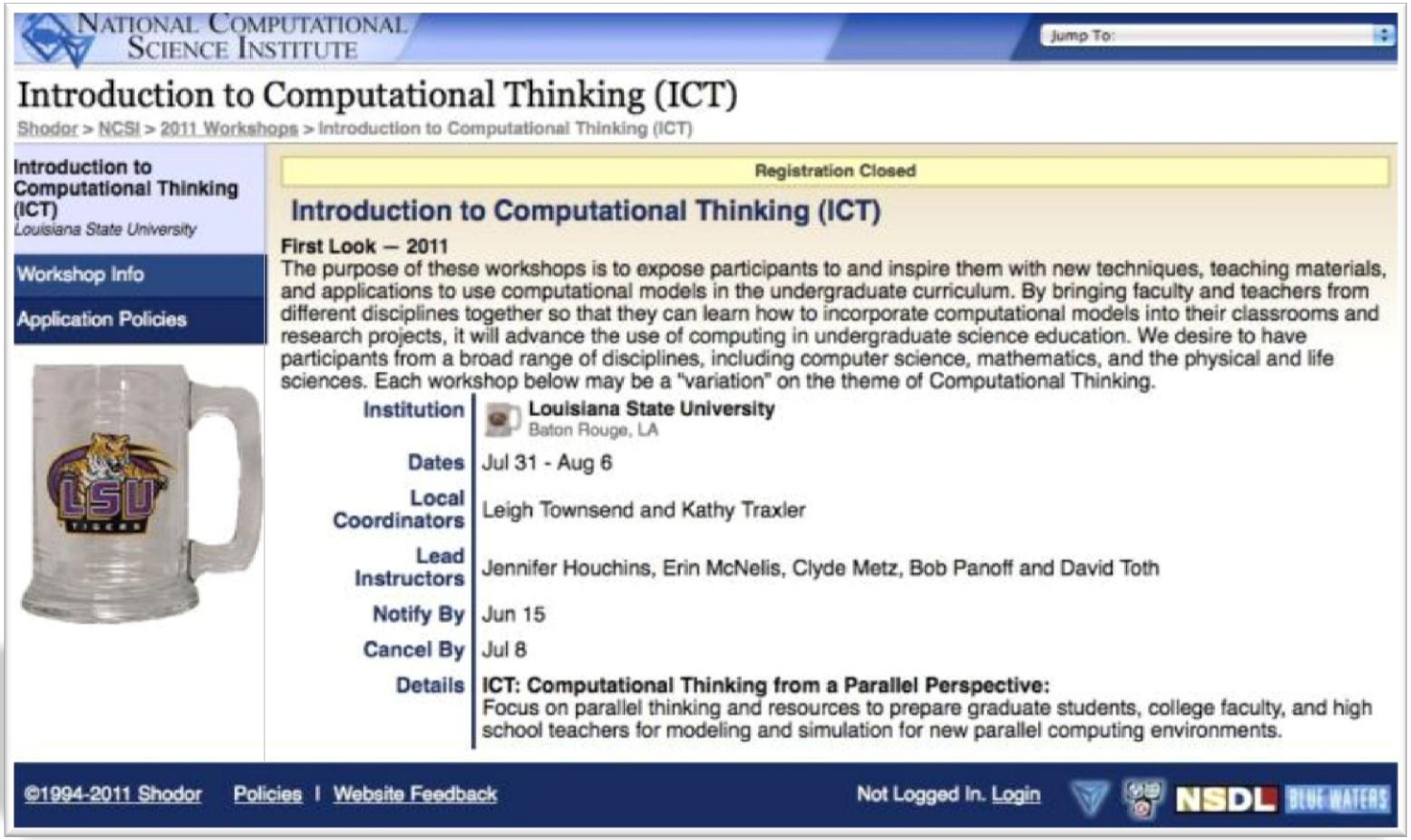
Mel Levy
Tulane & N.C. A&T

Weitao Yang
Duke

Tanusri Saha-Dasgupta
S.N. Bose National Centre

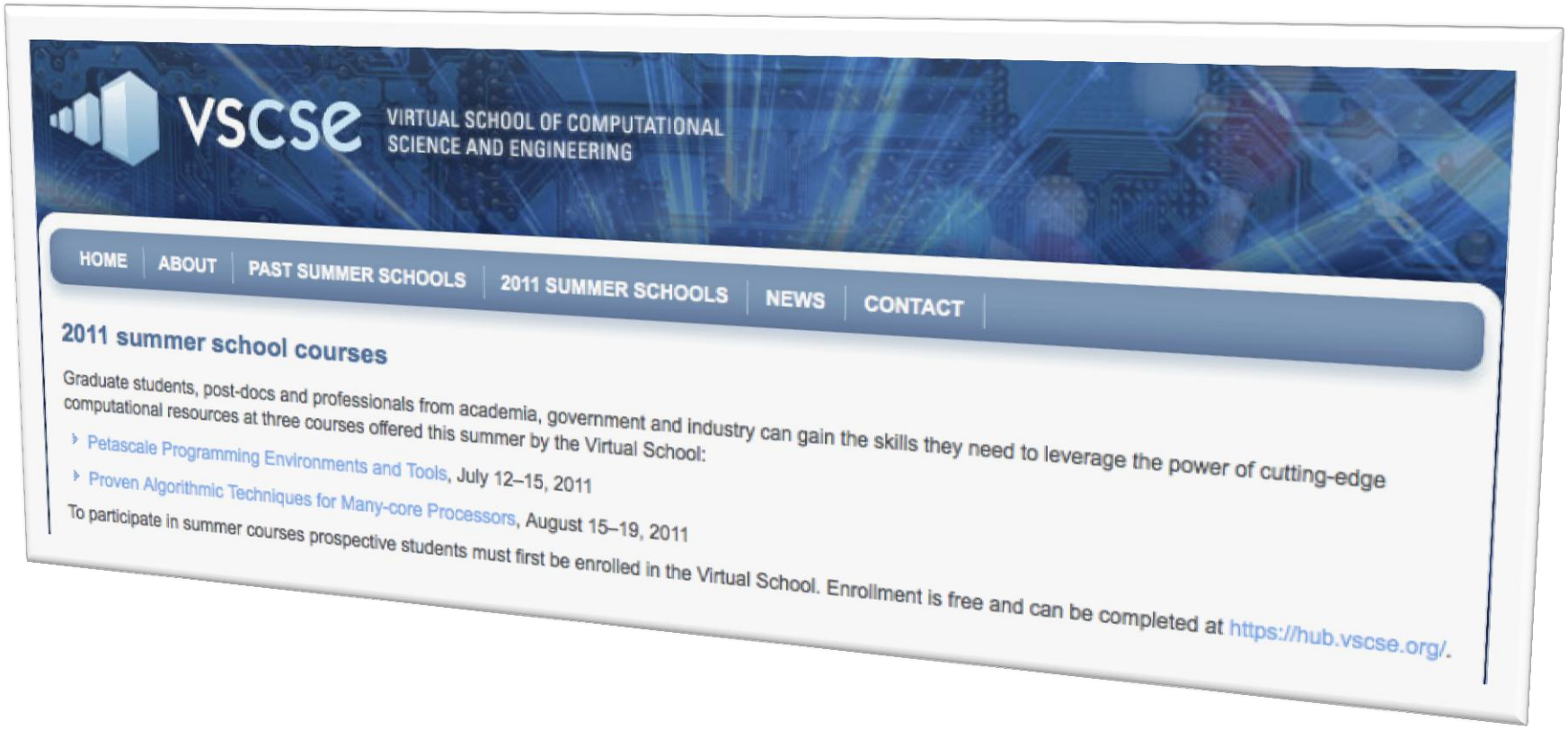
Graduate Students and Postdocs

Workshop on Computational Thinking

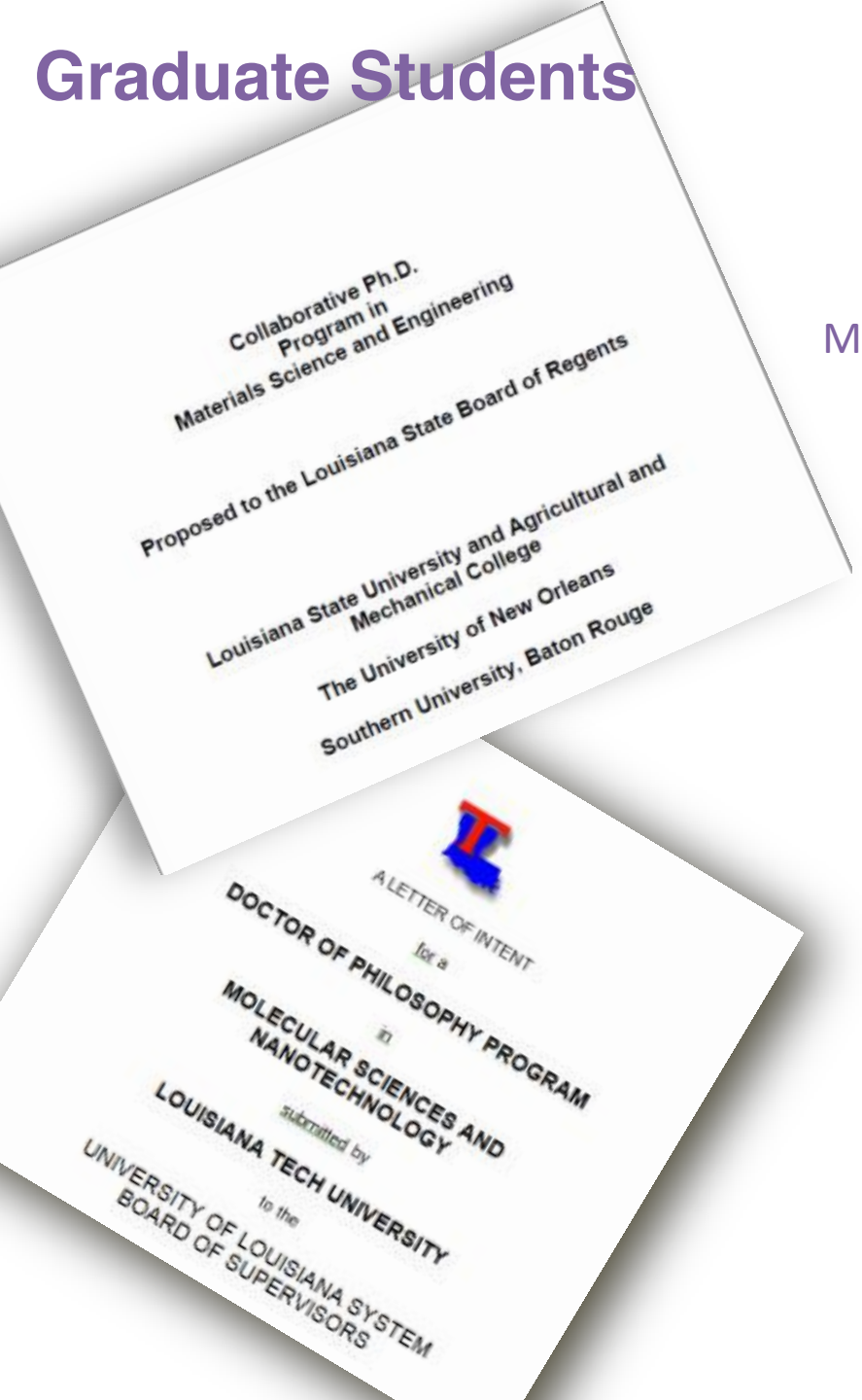


Graduate Students and Postdocs

Workshops on GPU Algorithms and Programming Tools



Graduate Students



Materials Science PhD Programs

LSU-SU-UNO joint PhD in Materials Science & Engineering:
Proposal approved by LSU system, being considered by the Louisiana Board of Regents.

LA Tech PhD in Molecular Science & Nanotechnology:
Letter of Intent being reviewed by University of Louisiana System, should go to Board of Regents in September. Expect to receive permission to submit proposal for the degree.

Graduate Students and Postdocs

Internships

Supada Loasooksathit from LA Tech spent one quarter at University of Hertfordshire in the UK

Marielle Soniat from UNO visited Susan Rempe at Sandia Albuquerque

Chinedu Ekuma and Ryky Nelson from LSU will visit Brookhaven National Laboratory in September

Chinedu Ekuma from LSU will visit Pacific Northwest National Laboratory in August 2011

Workforce Development Milestones

Milestones	Y1	Y2	Y3	Y4	Y5	
Open House for MS/HS	X	X	X	X	X	*On Track*
Research Experiences for Teachers	X	X	X	X	X	*On Track*
Research Experiences for Undergraduates	X	X	X	X	X	*On Track*
Graduate Courses via Synchronous Video	X	X	X	X	X	*On Track*
Internships at National Labs/Industry	X	X	X	X	X	*On Track*
Graduate Curricula		X	X	X	X	*Ahead of Schedule*

Workforce Development Milestones

Milestones	Y1	Y2	Y3	Y4	Y5	
Summer Workshops for HS/MS	X	X	X	X	X	*Behind*
Short Courses and Modules for CC	X	X	X	X	X	*Behind/Obstacle**
Beowulf Boot Camp for CC	X	X	X	X	X	*Obstacle**
Effective Teaching Workshops for GS/PD	X	X	X	X	X	*Behind*

Challenge/Barrier: Logistical issues (e.g., housing minors on campus) hindered HS/MS Summer Workshop.
*BRCC volunteers instructors for modules and Boot Camp unable to participate.
Dobbins was to teach a short course.
Logistical issues prevented Effective Teaching Workshops

Mitigation Plan: Year 1 experience with running RET will allow HS/MS Summer Workshop in Year 2.
Re-engaged BRCC Science Dean and new instructors on modules and Boot Camp.
Effective Teaching Workshop to be presented in Year 2