

## SC07 Educator Plan for Action

Name of Team Leader(s): **Midge Liggan, ITRT**

Institution/Project: *John Marshall High School, Richmond, Virginia/Creation of Computational Computer Labs*

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Team members/collaborators: *Dr. William Waller, Director of Operations, Department of Information Technologies, District Level; Shelia Demetriadis, Media Specialist, John Marshall High School, Joyce Davis, Science Department Chair, John Marshall High School, and Ronni Wiles, Coordinator, Assistive Technology.*

### **What your goals for the next 6-12 months to build upon what you have learned During SC07 in Reno?**

- 1) Describe the goal(s) of your plans and that of your team. (What do you plan to do? i.e., use, adapt and/or create new resources)

*Our project goal is to provide training in computational science for teachers and students at John Marshall High School in Richmond, Virginia. John Marshall is a comprehensive high school functioning within an inner city school district. Most students are under AYP.*

*In order for these students to be competitive, we need to provide them opportunities to engage in computational science and grid computing as well as to have access to high performance computing resources. Although we have computer labs dedicated to each core content area, the accessible machines do not have the speed and/or memory to perform grid computations or perform most of the simulations and modeling. Also, to make sure that all students have access to the lab, we plan to incorporate appropriate assistive technology with the ability to continue to adapt as needs are assessed. To effectively accomplish our goal, there will be a two phase implementation plan: Phase One—Establish a Teacher Training Lab; Phase Two—Establish a Student Computational Science Laboratory incorporating an assistive technology component.*

- What subject area(s) and/or classes will this benefit?

#### **Phase One: Teacher Training Lab**

*A mini computer lab for training teachers in computational and grid computing will be established. All Math, Science, Language Arts, and Social Studies Department Chairs will be trained first and then, they, in turn, will assist in training the other teachers in their departments. Individual departments will decide which grade levels to target.*

*Phase Two: Student Computational Science Laboratory with Assistive Technology*  
*A computer lab providing higher performance computers and computational science and grid software will be created for student engagement. As a component of our district's assistive technology plan, the lab will be equipped with appropriate assistive technology.*

- What is your estimated timeline for when you and/or your students will use the resources in the classroom?

*Phase One Timeline:*

<i>November 2007</i>	<i>Issue invitations to selected persons to serve on a Task Force committee to pursue project goal</i> <i>Establish committee member's individual tasks</i>
<i>December 2007</i>	<i>Acquire a space for Teacher mini-lab</i>
<i>January 2008</i>	<i>Acquire machines/software for Teacher mini-lab</i> <i>Search for funding through local monies and grants to fund student lab</i>
<i>February 2008</i>	<i>Establish a training schedule for Department Chairs</i>
<i>April-June 2008</i>	<i>Training for content area teachers</i>

*Phase Two Timeline:*

<i>November 2007</i>	<i>Establish a Task Force committee to pursue project goal and committee member's individual tasks</i> <i>Begin cleaning student lab space provided by high school</i>
<i>December 2007</i>	<i>Meet with Dr. Waller to review student lab and to develop design plan</i> <i>Begin search for funding</i>
<i>January 2008</i>	<i>Meet with Plant Services personnel to measure and to plan needed construction and improvements to student lab</i> <i>Meet with committee members for progress reports</i> <i>Meet with representatives from Math and Science Center; Smart Board, and Virginia Commonwealth University Information Science Department</i> <i>Continue funding initiatives</i>
<i>February 2008</i>	<i>Initiate computer lab construction</i>
<i>March-June 2008</i>	<i>Continue funding initiatives; order furniture, hardware, and software/online subscriptions</i> <i>Committee meets to develop pilot training program and to evaluate lab readiness</i>
<i>July 2008</i>	<i>Student pilot group begins training</i> <i>Meet with committee members to review progress and to evaluate pilot training initiative</i>
<i>August 2008</i>	<i>Schedule student lab for 2008-09 school year</i>
<i>September 2008</i>	<i>Student Computational Science Lab up and running</i>

2) Describe the computational resources and/or tools that you plan to use.

*Phase One Teacher Lab:*

*A minimum of 4 networked machines with internet accessibility and capabilities to access at least one per content area from the following: Molecular Workbench; Odyssey; GridChem; STELLA; Mathematica 6; Matlab; Social Explorer; STEM; Popfly; ArcGIS Explorer; Zotero, and Biology WorkBench  
Access to Shodor.org  
Possible participation in Condor*

*Phase Two Student Computational Science Lab*

*25 networked computers with appropriate processing speed and memory  
Software/Online Subscriptions: Selected from Teacher Lab load as recommended by individual Discipline Departments*

*Assistive Technology:*

*Lab Access—Universal Design Integration  
Hardware—Universal Design to include scanners, pen readers, magnifiers, sticks, and other already in use and approved by district  
Software—Text to Speech; Microsoft Reader; Text Help; Universal Reader Plus; PDF Equalizer, and other available through District's Assistive Technology Lab  
Access to Shodor.org  
Possible participation in Condor*

3) How will students' learning outcomes be assessed?

*Students' learning outcomes will be assessed through a variety of methods: achieved scores on Edusoft tests and state Standards of Learning tests; teacher observation and evaluation; student project design, simulations and modeling, and peer evaluation.*

4) What are the challenges that you face in accomplishing your team's goal?

*Since we are able to acquire machines which have standard configurations under our district guidelines, one of our challenges will be to upgrade the processing speed and increase memory on machines for the Student Computer Lab. Another challenge is in locating funding for software/online subscriptions and assistive technology. Another challenge is to continue to pursue training opportunities.*

5) What assistance would you like to receive to help you accomplish your goals?  
(training, mentoring, collaborations, etc.)

*Suggestions for possible funding sources to acquire software and online subscriptions*

*and possibly some of the assistive technology equipment. Definitely, more training in specific software and online subscription resources, as well as establishing some collaborative efforts for students with Shodor.org. In particular, I plan to apply for SC workshops and SC 08 Education Program to continue developing my knowledge base. Also, I plan to target one teacher in each core content area to do the same. Guidance in selecting appropriate software/online subscriptions to meet instructional objectives as established by departments.*

6) What plans do you have for sharing what you learn throughout the process with others?

*In order to share what we learn throughout the process, I plan to submit bi-monthly updates. Also, logs and journal entries will be kept with the idea of writing an article for our state technology society. Also, committee members have agreed that they would all be available to share their experiences at conferences and workshops.*

7) Any other project aspects you would like to share with us?

*Once teachers are trained and our first student pilot group has received instruction, software/online subscriptions will be made available to the content level computer labs as funding becomes available. For example, Molecular Workbench and Biology Workbench would be made available to the Science Content Computer Lab by increasing machine capacity. Also, we intend to develop Moodle courses focusing on increasing student knowledge in the computational sciences which we would be willing to share.*