MCC ARRA Math Course Redesign Proposal (Stage One: September 30, 2009)

1. **Project description:** To improve student performance in remedial/developmental mathematics courses, MCC proposes the following self-paced, individualized, computerized course redesign based on the emporium model used at Cleveland State. The proposed project would require funding for a consultant, and based on the consultant’s information, next steps will be taken to implement the math program redesign which may include a dedicated learning resource center-type computer lab and, and support for staffing the lab. The emporium model eliminates the traditional lecture style classes and replaces them with a once-a-week class meeting using modularized learning materials and a resource center featuring online materials and on-demand personalized assistance, using a) an open attendance model or b) a required attendance model depending on student motivation and experience levels. Students at MCC would be required to attend both a computer classroom for an hour a week with the balance of their scheduled time in a computer math lab.

John Squires has led a successful course redesign at Cleveland State Community College. Having him visit the campus to consult with both the faculty and the administration will help guide us with what additional changes and modifications we may need to make based on our current infrastructure. It has been requested and supported by this proposal that all campuses be given an opportunity to meet with John Squires on the MCC campus in fall 2009. John will present an overview of the course redesign model and consult with faculty from across the system; then work specifically with Maui CC math faculty the next day.

2. This is a new project.

3. Cleveland State Community College implemented this course redesign model with the following success (taken from http://thencat.org/Newsletters/Jan09.htm#1):

**Student Learning Outcomes**

Cleveland State assessed student learning outcomes by comparing common content items from selected departmental final exams administered in the traditional format during the previous five years to the redesigned sections in spring and fall 2008.

- In Basic Math, the number of common test items answered correctly increased from 73.3% to 86.2% in fall 2008.
- In Elementary Algebra, the number increased from 70.3% to 86.2% in spring 2008 and 83.8% in fall 2008.
- In Intermediate Algebra, the number increased from 77.3% to 90.1% in spring 2008 and 88.7% in fall 2008.

**Course Completion Rates**

Prior to the redesign, an average of 55% of students taking any developmental math course at Cleveland State earned a final grade of A, B or C. After the redesign during fall 2008, 72% earned an A, B or C, which represents a 31% increase in course completion rates.

- **Basic Math:** Course completion rates improved from 52% to 65%, and the average grade increased from 1.92 to 2.53. Students in Basic Math were required to do a mountain of work, with the average student performing more than 1,000 exercises in the semester. This amount of work will serve to better prepare the students for success in their future math courses.
- **Elementary Algebra:** Course completion rates improved from 52% to 70% in spring 2008 and 67% in fall 2008, and the average grade increased from 1.95 to 2.88 and 2.63 respectively.
Intermediate Algebra: Course completion rates improved from 56% to 71% in spring 2008 and 79% in fall 2008, and the average grade increased from 2.02 to 2.85 and 3.20 respectively.

See the complete report at the following link: http://www.pearsoned.com/pr_2009/021709b.htm along with additional information at: http://thencat.org/Newsletters/Jan09.htm#1

4. No CC partners at this time
The course redesign has the potential for packaging the model as a beta site and then sharing with other campuses. MCC will network with others in the system that are piloting math course redesigns for student success.

5. UH Strategic Outcome 2.3 (Increase Developmental Success)

6. Once infrastructure (computer lab with 65 stations) is in place, the project will be funded through continuing student enrollment- tuition and fee. Additional funding for computers will be from Laptop Initiative Phase II.

7. Evaluation will be measured with a 10% increase in student retention and a 10% increase in student persistence rates compared to student retention and persistence rates prior to redesign, student readiness in subsequent math courses, and student focus groups. (The R/D committee recommends evaluation be done by external evaluators.)

8. This project reduces delivery costs and time for students by compressing the sequence of math courses from two three-credit courses to one three-credit course (MATH 18) and two three-credit courses to one four-credit courses (MATH 82), shortening the math sequence from four semesters to two semesters.

**Chattanooga State Do the Math Redesign Consulting**

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
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<tbody>
<tr>
<td>Maui Community College Redesign Consulting</td>
<td>$2000</td>
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<tr>
<td>12/04/2009</td>
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<tr>
<td>Hawaii Community Colleges Redesign Workshop</td>
<td>$2000</td>
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<tr>
<td>12/05/2009</td>
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<tr>
<td>Materials and Shipping</td>
<td>$ 500</td>
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<tr>
<td>Ongoing Redesign Consulting - Email and Phone Support</td>
<td>$1000</td>
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<tr>
<td>Maui CC and Hawaii CCs</td>
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**Total to be paid to the Do the Math Center** $5500

**Chattanooga State Community College**
Travel Expenses

Hotel – 3 nights 12/3 – 12/5 @ $185/night $555
Airfare $670
Meals – 5 days, 2 visit, 3 travel @ $50/day $250
Car – 3 days 12/3 – 12/5 @ $75/day $225
Total to be paid to John Squires $1700

Travel for neighbor island participants $2500
(12 from Oahu at $100 airfare; 6 from Big Island and Kauai at $160 airfare; plus ground transportation)
Each campus will be able to send 3 representatives.

GRAND TOTAL $9700

Speaker Information

John Squires taught math at Cleveland State for 19 years, from 1990 – 2009, serving as the math chair for 10 years, from 1999 – 2009. In 2008, he implemented course redesign under NCAT and the department redesigned ten math courses in four semesters. Success rates in developmental math skyrocketed, going from 54% to 72%, and students leaving developmental math also showed improved success in their college level math courses. The redesign program received national recognition, winning the 2009 Bellwether Award and being featured in The Chronicle of Higher Education article, “Introducing a Remedial Program that Actually Works”. John Squires moved to Chattanooga State Community College in August 2009, where he serves as the math department chair and director of Do the Math. He speaks frequently on course redesign, and has provided help and information to over 100 colleges and universities throughout the country.