Mathematics Division Initiatives 2007-2008

These initiatives will assist the Mathematics Division in articulating the College's vision of providing learning opportunities for our students to transform their lives. These initiatives will further enable the Mathematics Division to align with the College's Mission of providing quality educational opportunities for our students. These initiatives support Lane's Core Values by enabling the Mathematics Division to provide an environment that respects the needs and potential of each student through fairness, honesty, and openness.

These **three** prioritized initiatives, ***beginning on the next page***, will enable the Mathematics Division to:

- Cultivate respectful, inclusive, and accessible learning environments;
- Respond to demographic changes and internal challenges;
- Consistently and effectively respond to the challenges of a changing technological community and workplace;
- Remove barriers to learning for our students;
- Improve and strengthen our students' quantitative literacy;
- Address specific challenges identified in Chapter 3 (05/06 Unit Plan).

Note: as funding (once the General Fund is stabilized) becomes available, a number of initiatives that involve staffing levels and broad-based curricular development will be brought forth in future unit plans.

Mathematics — Division Priority #1

Initiative Title: *Math Open Tutoring 16/177 and Computer Lab 16/222 Aides Hourly Funding*

Improve Student Retention and Improve Capacity for Data Gathering and Assessment through increased Technical Support and Tutoring

1. How is the initiative linked to your 2005-2006 unit plans or Plans for Budget Development?
What program level outcomes do you expect to achieve?

This addresses challenges identified in Chapter 3 (05/06 Unit Plan), including:

- Student retention;
- Creating an accessible learning environment;
- Removing barriers to learning for students;
- Lack of mechanisms for data collection;
- Giving evening students comparable support.

The initiative will address these challenges by improving tutorial and computer lab open hours and staffing levels, and by providing support staff to collect and manage data for program assessment.

2. Describe the initiative

Drop-in tutoring in the Math Resource Center is among our best mechanisms for promoting student learning and increasing student retention. However, limited staffing creates long lines of students waiting to see tutors during the MRC's busiest hours, and limits the MRC's ability to serve transfer level students and, especially, students in evening classes.

Sometimes 5 or 6 students at a time are waiting up to 15 or 20 minutes for tutoring assistance. The demand adds to students' frustration and creates a significant stress level for contracted staff. The Division is concerned that we might lose talented and experienced tutors due to burnout.

We are open 40 hours per week, but we have only one 25 hour per week testing specialist (service counter person), and only 5 tutors, two of whom work 25 hours per week (including summer term) and three who work 30 hours per week (and do not work summer term). They are classified as instructional support specialists and work in room 163 that serves developmental math students. We also allocate about 20-25 hours per week from Division ICP funds for timesheet staffing and tech support.

At the service counter our testing aide handles make-up lecture class testing and MRC testing intake (40-98 tests per day), check-in/out videos on all math topics, and the MRC

Director handles enrollment clearing and advising. Frequently there are several students waiting for assistance. The MRC Director spends a significant portion of each day assisting our aide at the counter.

In our developmental math tutoring room, #163, we average over 700 student contacts per week.

In room 177, we provide tutoring for transfer level math students (Math 105-256). One faculty member staffs this room each hour from 9am to 3pm daily. These positions are part of six full-time faculty assignments. Tutoring Services and Learn & Earn tutors help in this room. They provide 50 to 60 hours per week and 28 to 32 hours of tutor time per week, respectively. Their schedules provide coverage from 8am until 7pm. Frequently there are 3 or 4 students waiting for assistance.

This initiative seeks **25 hours per week in hourly MRC lab assistance**. This increase in staffing would lessen student waiting time, offer some flexibility to tutors for breaks, and would allow for a tutor to assist the aide at the service counter during peak demand answering questions and administering computerized testing for MRC courses and Mth 095 FSA.

As discussed in Chapter 3 (05/06 Unit Plan), the Mathematics Computer Lab is open 8:30am to 5pm with mixed use for testing, classes, and individual students. We would not be able to utilize the lab to this extent without the help of our classified technical administrative support person, Robin Geyer, whose position is currently supported by minimal department funds and a FIPSE grant (for Flexible Sequence Algebra) that will expire in Summer 2007. So this initiative also seeks **25 hours per week in hourly computer lab assistance**.

The technical support person's responsibilities include opening and closing the lab, lab security and maintenance, keeping software and equipment organized and up-to-date, helping instructors and students use the lab, troubleshooting equipment and software problems, and coordinating with the faculty lab supervisor.

All Mathematics Division students will benefit from additional tutorial or technical support staff, particularly evening students.

3. Describe the resources needed

Mathematics Division requests from **Student Technology Funding** two (2) less than 1040 time sheet hour amounts (at the Instructional Support Specialist level 8 step 4, currently is $14.73 /hr.) not to exceed $40,130.

$14.73 * 1039 *1.311 = $20,065
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Totals = **$40,130**

This initiative could *reluctantly* be **partially funded** at a minimum annual cost (for one ISS) of **$20,065**.

4. List the possible funding sources

Student Technology Fee Funding time sheet dollars **(**'07/'08**)** (non-recurring)
Note: will be requested each year from Student Technology Funds.

Category of request:
Maintain existing and/or supporting technology.

How does this request fit in with other unit or college technology plans?
An integral part of the College and the Mathematics Division mission is to provide adequate staffing support wherever computer technology is used. Developmental, Professional-Technical, and Lower Division College Transfer courses are scheduled in this room throughout the year. The room is also used as a drop-in mathematics open computer lab for students with assistance provided.

5. Org & Prog codes

Math Org: 681001
Math Prog: 111100

6. How does this project articulate with the college's vision, mission & goals and contribute toward meeting the President's/Board's approved goals?

Additional classified instructional and technical support staff will better enable the Mathematics Division to address Lane's core values of *learning* and *accessibility*.

7. The Mathematics Division **does not have** an **active advisory committee.**

Mathematics — Division Priority #2

Initiative Title: *Part-Time Faculty Participation Compensation—Course & Program Assessment, etc.*

Involve Part-Time Instructors by Compensating for Data Analysis, Curriculum Research and Related Committee Work.

1. How is the initiative linked to your 2005-2006 unit plans or Plans for Budget Development?
What program level outcomes do you expect to achieve?

This addresses challenges identified in Chapter 3 (05/06 Unit Plan), including:

- Difficulty in getting part-time faculty involved in division committees and seminars;
- Not enough full-time faculty to do the work of the division.

The initiative will address these challenges by compensating part-time instructors to assist in the work of course & program assessment, data collection & analysis, and curriculum research which are needed to move a variety of college and division goals forward.

2. Describe the initiative

As described in Chapter 3 (05/06 Unit Plan), the main barrier to achievement of Math Division goals in the area of assessment, curriculum development, and bringing our programs into alignment with national standards is a lack of full-time instructors. We think the best response is to add full-time faculty, but another approach (alternative or supplemental) is to involve more part-time instructors in this work. Among the Division's part-time faculty are some PhD's, some with special expertise in mathematics education and curriculum development, some with extensive knowledge of the Division and the College, and many with talents for leadership and teamwork. This initiative seeks to utilize this untapped resource in order to address Division challenges.

3. Describe the resources needed

Annual funding to pay part-time instructors for research, data analysis, and related committee work: **100 hours** = 100*27.97*1.311 = **$3,667.**

4. List the possible funding sources

Curriculum Development (non-recurring but may request in additional year's unit plans)

This initiative could be **partially funded** at ($3,667)/2 = **$1,834** (for **50 hours**).

5. Org & Prog codes

Math Org: 681001
Math Prog: 111100

6. How does this project articulate with the college's vision, mission & goals and contribute toward meeting the President's/Board's approved goals?

Greater involvement of part-time instructors will help us achieve our assessment and curriculum development goals in support of Lane's vision and mission of providing quality educational opportunities.

Mathematics Division Priority #3

Initiative Title: *Part-Time Faculty Participation Compensation—Developmental Math Course Sequences Re-Org*

Improve student learning and retention, and facilitate effective transitions to and among the many programs that Mathematics serves at LCC through a complete review, assessment, and reorganization of the developmental mathematics course sequences. (The courses in the sequences are Math 10, 20, 52, 60, 65, 70 and 95).

1. How is the initiative linked to your 2005-2006 unit plans or Plans for Budget Development?
What program level outcomes do you expect to achieve?

The Mathematics Division is primarily a service division. It serves to equip students with the technical and problem-solving skills required by many programs, from professional technical programs such as nursing and welding to university transfer programs such as business, physics and engineering.

We strive each year, individually and as a division, to find and implement practices that improve student learning. In particular, we:

- work to incorporate national mathematics education standards (NCTM and AMATYC).
- experiment with alternate delivery methods [open-entry/exit, variable credit, self-paced courses offered through the Math Resource Center (MRC), Computer-Based Instruction (CBI), telecourses, and now Flexible Sequence Algebra (FSA) and web-based supplements].
- have begun a project to reexamine the developmental mathematics sequences, as a whole, with regard to content and delivery.

We are now at a stage where we need to integrate these efforts in a systematic way to redesign our developmental mathematics program. The need for integration of this work into a comprehensive curriculum redesign is taking on a special urgency at this time for three reasons. First, we are facing an increase in the number of vocational/technical students in our developmental math courses, and we need to make our classes more responsive to the needs of these populations. Second, the Nursing Program recently changed its math requirement from 52 to 95. This will require immediate adjustments to the curriculum in 60, 65, and 95 to include content and notation Nursing students require. Third, we have successfully created and piloted Flexible Sequence Algebra for Math 95. The task of assessing the FSA Mth 95 curriculum and integrating FSA methods into our general curriculum is yet to be accomplished but our FSA grant funding ends in August 2007.

Whatever success we achieve in improving the learning and retention of our students will be leveraged by the programs we serve. Increasing the success rate and preparedness of our developmental math students will in turn increase the retention and performance of the students in their professional and academic programs.

2. Describe the initiative

We will embrace the above opportunities and challenges by creating a small team of principal investigators with a supporting team of part-time and full-time instructors to carry out the necessary ***data collection, analysis and related curriculum re-design.***

We plan to extend our study (begun in 2004/05) of the most effective models for the developmental mathematics programs at our sister community colleges in Oregon, and to integrate their successes with our own best-practice experience in existing programs at LCC (e.g., MRC, lecture, group activities) along with new innovations and efforts currently evolving here (FSA, better retention of non-traditional students, and web-based instruction). We will complete an aggressive study of curriculum research on how these types of courses are taught at other similar schools. We will pay attention to class structure, pedagogical methods, improvement of learning environments and student success, and methods used to assess student, class, and program success. This study will be done locally, statewide, regionally, and nation-wide, tapping colleagues through regional and national organizations such as ORMATYC, AMATYC, NCTM, and MAA. Many of our part-time faculty members also have special expertise in this area, which will be especially valuable for this study.

Specifically, we will utilize the lessons from FSA and the MRC to build more flexibility into the scheduling and delivery of our courses through modularization, flexible scheduling, trailer sections, and the use of technology, thus improving student retention and efficiency of instruction. We will utilize the special expertise of a number of our part-time faculty to ensure that our curriculum is inclusive of students having diverse learning styles. Combined with our Scope and Sequence document (developed in 2004) and the work of our Developmental Math Task Force and Retention Task Force (both begun in 2005), our experience with FSA will allow us to redesign the content of these courses, creating a more efficient and flexible format. Finally, by systematically researching and integrating best practices from other Oregon community colleges, and tapping the expertise of our own staff we will be assured of obtaining the best possible synthesis for Lane's diverse student populations and multi-layered programs.

3. Describe the resources needed

Funding to pay part-time instructors (07-08) for research, data analysis, and related committee work.

100 hours = 100*27.97*1.311 = **$3,667**

4. List the possible funding sources

Curriculum Development

This initiative could be **partially funded** at ($3,667)/2 = **$1,834** (for **50 hours**).

5. Org & Prog codes

- Math Org: 681001

- Math Prog: 111100

6. How does this project articulate with the college's vision, mission & goals and contribute toward meeting the President's/Board's approved goals?

This initiative will dramatically improve the ways in which the Mathematics Division can support Lane's core values of *learning, innovation* and *accessibility*.