

Reply to College Council **Math Learning Center Director** Questions

- 1. What, if any, adjustments to the MPC math curriculum is the Math Department committed to implement in order to fully adopt the Cabrillo model and make the Math Learning Center a thriving place where students go for tutoring and instruction? What is the timeline for these curricular adjustments to take place?**

The Cabrillo MLC is open from 9 AM to 7 PM Monday through Thursday, from 9 to 3 on Friday, and from noon to 5 on Sunday. The Director and/or an Instructional aide as well as a number of student tutors are on duty at all times. Wait time to get a question answered is minimal (usually only a couple of minutes). The Cabrillo MLC generates 45 to 50 FTES per semester and an additional 15 in summer, almost entirely through Supervised Tutoring.

The Cabrillo model includes several modular algebra review courses (review of factoring, review of polynomial fractions, and using the metric system) as well as a tutor training course – all for credit through the Math Learning Center. The MPC Math Department is looking forward to being able to offer courses such as these. We have discussed other possibilities for credit courses as well, including reviews of Beginning Algebra, Intermediate Algebra, trigonometry and review for the CBEST test. We plan to work with the MLC Director to determine which courses would be most appropriate for our students and to prioritize the course creation process. We will include curriculum development in the job description and will begin the course creation process in the Director's first year of employment.

Cabrillo also attaches a Math Learning Center component to its full-year Pre-Algebra course. The MPC Math Department is currently looking at our Basic Skills classes and we plan to make changes to our courses in order to bring them into line with Basic Skills best practices. We will also be implementing mandatory math assessment next year and expect a significant increase in the number of students taking Pre-Algebra which will, in turn, increase the need for support for basic skills math students. We are strongly considering adding a lab component to be completed in the Math Learning Center. The Pre-Algebra lab component is NOT included in the MLC's FTES calculation. It is important to note that at Cabrillo, quoting Area Dean Wanda Garner,

“**ALL** the FTES that is credited to the MLC comes from the Math 502 drop-in tutoring plus a very small amount from the tutor training and algebra review modules. *The FTES that is generated by the required labs is recorded as coming from those classes, not the MLC*” (emphasis added).

Although it does not immediately increase FTES for the MLC, requiring students to use the MLC as part of a Pre-Algebra course will familiarize students with the available resources and make them more likely to continue using the MLC for drop-in tutoring (under Math 440: Supervised Tutoring) when they move on to Beginning Algebra and Intermediate Algebra. So there should be a delayed FTES-increase from adding a lab component to Pre-Algebra. This potential curriculum change could be made during the Director's first year of employment provided the learning center is ready to handle the traffic that this requirement would generate.

2. How does the Math Department envision collaborating with the Academic Support Center in order to maximize college resources and provide clear information to students about where to obtain the math tutorial services they need?

The math support services offered through Academic Support and the Math Learning Center are different in nature. The Academic Support Center primarily provides one-on-one peer tutoring for students for two hours per week (or up to 4 hours per week for supportive services students with accommodations) on a fixed schedule. The student sees the same tutor at the same times each week. Occasionally when tutors are scarce and student schedules coincide, small group tutoring is offered on a twice-a-week basis. The Academic Support Center also provides Supplemental Instruction in a few math courses each semester.

The Math Learning Center provides drop-in tutoring for students enrolled in math courses and for science students who need help with math skills. Students are allowed to use the MLC at any time the center is open and they work with the tutor(s) on duty at the time.

In the past, Marilyn Wilcox has provided training for Math Learning Center tutors when requested and she has occasionally been able to hire tutors for the MLC during summer with surplus budget dollars. Once we have a Director for the MLC, it may be possible to develop a tutor training course that serves both of our programs.

Our math instructors, especially those teaching developmental math courses, have always worked closely with Marilyn and Linda Pridmore to optimize support for our students. Our programs both make every effort to refer students to the appropriate math tutorial service. Students who come to the MLC and need more individual attention than the tutors can provide are encouraged to seek tutoring at the Academic Support Center in addition to using the MLC. Students who have unpredictable work schedules and are unable to commit to weekly tutoring through Academic Support are referred to the Math Learning Center. Once the MLC is fully staffed, it may be possible to work in conjunction with Academic Support to provide more group tutoring opportunities for students.

3. How does the Math Department plan to integrate support services available through the Math Learning Center and the curriculum taught in math courses and other college courses that require quantitative reasoning?

The Supervised Tutoring program used in the MLC, as defined and regulated in Title 5, requires such tutoring to be available only to students enrolled in math and science courses in order to generate FTES. In order to be in compliance with Title 5, The Math Learning Center already provides Supervised Tutoring for math courses and for math skills required in science courses. The MLC is used by Physics, Chemistry, Astronomy, Earth Sciences, and Life Sciences students. They enroll in Math 440 and, when they have a question requiring math skills, they are able to get assistance from a MLC tutor. The hours they spend getting help for math skills are tracked for apportionment. An effort will continue to be made (as it is now) to recruit student tutors who have successfully completed science courses. It would be the Director's responsibility to be sure that all math and science instructors are aware of the tutoring services available to their students

and to promote use of the MLC by ALL students. The computers in the MLC include software currently being used in math and science courses. The Director would need to be sure that tutors are able to assist students in locating and using the software. Our statistics course (Math 16) has a required technology component and the Director would need to be able to train tutors and assist students in using the appropriate technology.

4. How does the Math Department plan to incrementally build the capacity of the Math Learning Center to ensure that curriculum, student access, enrollment, staffing, space and other budgetary concerns are all in sync? You may wish to develop an action plan for year 1, 2, 3 and 4 that specifies space needs, costs, courses and FTES.

The Math Department has already presented a long-range plan to College Council. This plan was written with the intent of following the Cabrillo model as closely as possible as soon as possible. We did not intend to circumvent the process for requesting classified positions and did not realize that the plan would be viewed as a “package deal” with the Director position.

The Math Department intends to focus on hiring a Director for the MLC and we are presenting a scaled-down and simplified plan based on the scenario given below. We will request additional classified staffing and student help (when warranted by growth and student needs) in our Division Action Plan to be prioritized along with other Division needs.

Here it is...

Mathematics Learning Center Five Year Plan (Revised)

Introduction

The Mathematics Learning Center supports students in all levels of MPC’s math program, from arithmetic to calculus, as well as providing math support to students in science classes. Our current learning center is not able to meet the growing needs of students in MPC’s math program. We offer many evening courses and several online classes, yet our MLC is only open between the hours of 9 and 4 on weekdays and is staffed by only one tutor at a time. Most evening and online students are unable to get any drop-in assistance with their math courses. The situation will be exacerbated by the increase in the graduation requirement from beginning algebra to intermediate algebra for students entering in the 2008-2009 year, the recent increase in online and Marina offerings, and our plan for mandatory math assessment. We owe it to our students - particularly those in our well-established evening program and our successfully growing online program - to provide a fully staffed Mathematic Learning Center that is open in the evenings and for at least a few hours each weekend. It is irresponsible to grow as a department or program until we are able to provide the support that many of our students require to be successful. A Math Learning Center with a full-time Director and expanded hours of operation can provide this support and increase success and retention in our program.

Components

The realization of our long-range vision has multiple components and follows the successful model used at Cabrillo.

The first component is to hire a full time Director for the Math Learning Center. The Department has been requesting this position for some years. We unanimously feel that this is our first staffing priority. A full-time Director will provide sustained attention to developing the program to improve student success. The Director will aggressively advertise services offered to all students and will work with the math department to develop curriculum.

The second component is to supplement the Director's presence with student tutors. Student tutors are fundamental to the success of our program. It is essential that the center have enough tutors on duty to meet the tutoring demand. If students have lengthy wait times to get questions answered, they will be unlikely to use the MLC.

The third component is to expand the hours that the Center is open to evenings and weekends. Currently our MLC is open from 9 to 3 or 4 Monday through Thursday and until 1 on Friday –with only a single tutor on duty at any given time. We can meet the need to increase hours either by using the 18 hours currently assigned to faculty MLC hours or by hiring an Instructional Specialist. The request for an Instructional Specialist will be part of our Action Plan and, if approved, will reduce or eliminate our need for additional faculty hours in the MLC. Our plan to use an Instructional Specialist to expand the hours of operation is in compliance with Title 5 regulations for supervised tutoring. Under Title 5, the instructional hours an Instructional Specialist generates can be used for apportionment, if the Instructional Specialist is directly supervised by the Director, who will be an academic appointment, and if the Instructional Specialist has no other duties during the instructional hours.

The fourth component is to move the Center to a location that will support the requisite hours and the student traffic that we project the additional hours and staffing will generate. The space planned for the Mathematics Department in the Business Building includes space dedicated to a Center operating under the Cabrillo model on a scale appropriate for MPC. The move is likely to occur in three to four years. An interim location more spacious and visible than our current facility in PS 205 would provide for more immediate aggressive growth in our program, but we are able to begin building our program within our current space if no additional or alternate space is available at this time.

Benefits, Economic and Otherwise

Currently between 5 and 7 FTES per semester are generated through Math 440 (roughly 2500 – 3675 positive hours of student attendance or approximately 10 hours per student enrolled in Math 440 or .6 hours per week). The Cabrillo Math Learning Center generates 45 to 50 FTES per semester (recently corrected based on new information from Cabrillo) and an additional 15 in Summer. Given our relative size, our MLC should be able to generate approximately 5 times our

current amount. We project that the MLC could easily generate 14.5 FTES per semester in the first year of operations. (300 students enrolled in Math 440 per semester and each student in attendance for 1.5 hours per week yields 14.5 FTES per semester (roughly 7650 positive hours). At \$2626 per non-credit FTES, the first year of operation would generate per semester \$38,000 (versus \$13000 - \$18000 currently). Without including summer enrollments, this would be an increase of \$40,000 per year.

The Five Year Plan based on Director-only funding for 2008-2009

Year 1:

- Full-time Director takes over coordinating and supervising MLC.
- Director and math instructors begin developing credit courses to offer through the MLC and consider how to revise the Pre-Algebra curriculum.
- Increase hours of operation to include evenings and weekends using Director's hours and 18 hours currently assigned to faculty in MLC (or hire half time Instructional Aide if requested, approved and funded through appropriate channels).
- Aggressively advertise MLC's services to ALL math and science students.
- Ensure that other programs and services on campus are aware of the MLC's services and provide brochures for faculty and staff to distribute to students.
- Discuss possibilities for MLC presence at Marina Ed. Center.
- Increase student tutor hours *if possible* (request will be made independently of Director position request). Our budget already allows us to employ student tutors approximately 18 hours per week. We will request additional student tutor hours through the appropriate channels and would ideally employ student tutors for up to 50 hours per week (resulting in at most \$13,850 "new" dollars) during the first year.

Year 2-3:

- Continue curriculum modification and development process.
- Plan for the move to permanent space in the bottom floor of the Business building.

Depending on the actual FTES generated by the center and the needs of the students being served...

- A request would be made for a full time instructional specialist.
- Request additional student tutor hours. Twenty more weekly student tutor hours would cost an additional \$7740 per year.

Neither of these additional staffing requests would take place in the absence of additional FTES to support the growth.

Year 4:

- Re-examine curriculum to determine whether adding additional credit courses to be offered through the MLC or attaching labs for existing courses to MLC would benefit student success and retention.
- We project 25 FTES per semester generated by the MLC.
- It is also likely that the MLC will be relocated to the space currently occupied by Fiscal Services at this time.

- Request additional student tutor hours if needed to handle student traffic and if justified by FTES being generated.

Year 5:

Assuming the fourth year FTES goal is met, we would request additional staffing (student and Instructional Specialist) as warranted by growth and as necessary to meet student needs and requirements for apportionment.

Summary

A fully-staffed Math Learning Center can be profitable for the college as well as beneficial for our students. It is impossible to project the full impact of increased success and retention in math courses. The effects should reach far beyond our own program because fewer students will drop out of college due to the perceived “math barrier” and students should progress through the math sequence more efficiently therefore freeing up their schedules for other courses. A welcoming and positive learning center environment may even attract students to MPC. Hiring a full time Director is the right thing to do for the math students, the math program, the college as a whole, and the community.

5. What is the plan for the Math Learning Center if there is only adequate funding in 2008-2009 to hire a director?

See “Year 1” in plan outlined above. During the first year(s) the MLC can successfully grow without any additional staffing or space. Ideally, there will be an increase in the student tutor budget to allow several tutors to be on duty during busy hours. In the absence of additional student tutor hours, several math instructors have volunteered to hold some of their office hours in the MLC to help during busy times of day. The space limitation imposed by our current location in PS205 will be resolved when the MLC eventually moves to the bottom floor of the Business building. The FPP for this plan has been approved by the State.