

# LEARNING SUPPORT CENTERS PROGRAM REVIEW: SPRING 2013 SUBMISSION CYCLE

Program Name: Math Resource Center  
Center Contact: Cheryl Gregory

Academic Year: 2011-2012  
Program Review Submission Date: March 2013

## I. Description of Center

Provide a brief description of the program and how it supports the college's [College Mission and Diversity Statements](#), [Institutional Priorities, 2008-2013](#), [5 in 5 College Strategies, Spring 2011](#), and other [institutional planning documents](#) as appropriate.

The purpose of the Math Resource Center (MRC, Building 18, room 202) is to provide additional resources to support success and academic excellence among all students taking mathematics courses at CSM. The MRC is staffed with student tutors and math faculty, all of whom can assist students with course work. In addition, books, calculators, computers, printing and copying services are available to students; desk assistants help students access these materials and services. (<http://collegeofsanmateo.edu/mrc/>) .

Usual hours of operation are Monday through Thursday 8AM to 7PM. Friday 8AM to 1PM, and Saturday 11AM to 3PM. Ancillary hours are provided in the 16-111, the Statistics Computer Classroom, 6 to 8 hours per week. Typical staffing (Fall 2012 data reported here) of the MRC included 8 student tutors (about 53 hours per week), 4 desk assistants (about 45 hours per week), and 21 instructors (69 hours per week + 15 hours per week of Office Hours held in the MRC

## II. Summary of Student and Center Data

### A. Student Learning Outcomes Assessment

Summarize recent SLO assessments, identify trends, and discuss areas in need of improvement.

Both student attendance and student responses to the Math Resource Center User Survey (June 2012 submissions, [http://collegeofsanmateo.edu/programreview/docs/lsc\\_math/2013/MathResourceCtr2013UserSurvey08-08-2012.pdf](http://collegeofsanmateo.edu/programreview/docs/lsc_math/2013/MathResourceCtr2013UserSurvey08-08-2012.pdf)) indicate that students have knowledge of MRC resources, including how to access them (SLO1). More specifically, 98.5% of students reported the procedures for using the MRC were clear and easy to follow and 92.1% of students reported that they understood what MRC activities were expected of them. The survey also indicates students show improvement with the specific skills or in understanding course content for which they have requested assistance (SLO2). The survey asked for student self-assessment in ten specific areas including progress toward success in current math course, self-identification of areas they need to work on more, mastery of skills for which they asked for assistance; understanding of word problems, symbolic problems, numerical problems, graphical problems, and switching between these modes; communication of solutions in writing and effective and appropriate use of calculators. On these items students consistently reported positive progress; on average 41% reported major progress and 95% reported moderate to major progress.

### B. Center Usage Indicators

1. Review center usage and discuss any differences across demographic variables. Refer to [Planning, Research and Institutional Effectiveness \(PRIE\) reports](#), SARS records, and other data sources as appropriate.

Spring 2012 data reports 27,178 student visits (2030 non-duplicated students) for a total of 28852 hours ([http://collegeofsanmateo.edu/labs/docs/LSC\\_UsageReport.pdf](http://collegeofsanmateo.edu/labs/docs/LSC_UsageReport.pdf)). Fall 2012 data reports 26719 student visits (2047 non-duplicated students) for a total of 27079 hours ([http://collegeofsanmateo.edu/labs/docs/Copy%20of%20Usage%20Report%20for%20All%20Centers\\_Fall%202012.pdf](http://collegeofsanmateo.edu/labs/docs/Copy%20of%20Usage%20Report%20for%20All%20Centers_Fall%202012.pdf)). Intra-departmental records show that during Summer 2012 661 students attended the MRC accumulating 9288 hours.

Program Review: Math Resource Center (Final 3.21.2013)

## LEARNING SUPPORT CENTERS PROGRAM REVIEW: SPRING 2013 SUBMISSION CYCLE

Intra-departmental reports based on data collected in Spring 2011-Fall 2012 show that during the regular academic year, on average between 270 and 290 students attend the MRC during week days, with peak hours from 9AM to 1PM where average hourly attendance varied from 68 to 90 students per hour. Intra-departmental in-depth analysis of SARS data collected Fall 2011 indicated that 26% of hours were accrued by basic skills students (Arithmetic Review through Elementary Algebra), an additional 18% of hours were accrued other below transfer courses (Intermediate Algebra level). Thus, approximately 44% of hours accrued were students working below transfer level.

Spring 2012 demographic information indicated that students attending the MRC are: representative of the College demographics with respect to Ethnicity, gender and age; less likely than college wide demographics to be enrolled in one or two course, but more likely than college wide demographics to be enrolled in 4, 5, 6, 7 or 8 courses; and slightly more likely than college demographics to be day students (84% > 70%). ([http://collegeofsanmateo.edu/programreview/docs/lsc\\_math/2013/MathResourceCtr2013StudentProfile11-14-2012.pdf](http://collegeofsanmateo.edu/programreview/docs/lsc_math/2013/MathResourceCtr2013StudentProfile11-14-2012.pdf) )

2. Discuss any differences in student usage of center across modes of delivery. If applicable, refer to [Delivery Mode Course Comparison](#).

Not Applicable

### C. Center Efficiency. Is the center efficient in meeting student needs?

Discuss center efficiency, including staffing, hours of operation, tutorial and other services, space utilization, equipment, or technology as appropriate.

The Spring 2012 MRC User Survey indicated that while the majority of users are satisfied with services received 20% ranked services as fair to poor. Which raises the question, in what areas and how, can/should the services become more efficient and thus the student experience more satisfactory?

Staffing: Students indicate that the MRC staff is helpful (95%). But, only 86% indicated they were able to get help when they needed it always or most of the time. During peak usage hours students often have to wait longer than desirable for a tutor or faculty member to get to them to assist them with their question.

Staffing is capped by a FLC cap and by the budgeted funding for student tutors. To increase staff headcount (faculty and student tutor) allocated funds would have to be increased; there is no time slot over-served in which staff head-count could be reduced. The department tries to have two faculty members on duty during peak hours, augmented by "extra" student tutors, but the needs of the MRC must be balanced with course offerings. Peak MRC demand hours coincide with the times when the department offers the highest number of math courses, thus many faculty and many student tutors are in class and unavailable to work in the MRC. Adding more full time faculty to the department would make scheduling of faculty into lab hours during peak periods less problematic; however, merely adding more faculty hours is not a cost effective way to improve staffing in the MRC. Services provided could be most economically made more efficient if additional student tutor hours were added to the budget and those students hours were scheduled during peak hours.

Hours of operation: 90% of students indicate that the MRC is "always or most of the time" available when they need it. However, only 58% state that it is always available when they need it. 65% of students indicated that if hours could be extended it would be convenient for them to have the MRC open on weekdays until 9pm while 38% stated that Saturday hours are convenient. The MRC always schedules a few Saturday hours when Saturday courses are taught (usually Fall semesters only). During spring 2013 we received authorization to hold four mid-day Saturday MRC hours even though there is no regularly schedule Saturday mathematics course. We will track usage carefully to determine the efficacy of continuing this practice.

Prior to Fall 2012 the Statistics Lab was open 12 hours a week (with 4 hours on Fridays) as a satellite facility open to all Mathematics students. A cut in FLC available in the MRC caused Friday closure of that satellite and shifted a statistics instructor to the MRC at the same times. Initial impression is that Friday mornings in

## LEARNING SUPPORT CENTERS PROGRAM REVIEW: SPRING 2013 SUBMISSION CYCLE

the MRC are much busier, but no busier than peak hours during other days of the week. Also, it should be noted that many of the Friday patrons in the MRC would like to stay longer. The department will edit the student survey to collect information about student desires for additional Friday and/or evening hours.

Tutorial and other services: When surveyed about possible tutorial sessions on specific topics (graphing calculator usage, study strategies, how to use WebAccess, how to use Excel) only about ¼ of student indicated any interest in special topic workshops. The assistance-on-demand structure seems to be working well with our diverse clientele and there are no current plans to make changes.

Space Utilization: The MRC needs more space. During peak hours staff members observe students walk in the door, survey the room, and walk out because there are no seats, or no room at the tables even if there is perhaps one empty chair, or all computers are in use. Staff could be more efficient in accessing and working with the clients if they could navigate the room more freely and had space to sit beside the student they are working with rather than lean over and/or squeeze between students. At non-peak hours the room is more comfortable for staff and students alike. The crowding also leads to noise level concerns that make it hard for students to focus. [NOTE: The department has repeatedly asked to an adjacent computer classroom that could become additional MRC space when not scheduled for classes.]

Technology: 70% of students indicate that computers were always available when needed, while 20% indicated computers were only available sometimes when needed. This availability is a function of when the students attempted to access the MRC. If students arrive during peak hours, it is not unusual for all computers to be in service. 34% of students indicated they used the MRC computers to access computer based homework or tutorials.

Students are made aware of other locations on campus where they have access to computers that can be used to complete online math assignments. Students who have met their minimum TBA hours requirements and/or who can work independently without needing tutorial support frequently shift their patronage to the Learning Center or library if only computer access is needed.

The electrical and network infrastructure of the room is insufficient for modern usage. The room was recently updated to support a network of 20 slim client computers (currently 16 PCs are included in the network). The MRC retained use of 12 laptops with cabled access to the internet along the back wall, a system of network hubs and extension cords. As these laptop computers age out, which they are doing rapidly, the plan is to request four more PCs to add to the network along the window side of the room and re-purpose the back wall space to become free table space with outlet access for students to plug in their own equipment [or if the adjoining computer classroom request becomes reality, the doorway to extended lab space in that classroom would be in that back wall.]

The MRC has insufficient wall plugs available for these students to conveniently plug in and work elsewhere in the MRC. It would be helpful if outlets could be made available on the wall of the MRC adjacent to the hallway.

### D. Course Outline Updates (if applicable)

Review the [course outline update record](#). List the courses that will be updated in the next academic year. For each course that will be updated, provide a faculty contact and the planned submission month. See the [Committee on Instruction website](#) for [course submission instructions](#). Contact your division's [COI representatives](#) if you have questions about submission deadlines. Career and Technical Education courses must be updated every two years.

Courses to be updated	Faculty contact	Submission month
N/A – all Mathematics course updates are in the department program review.	N/A	N/A

## LEARNING SUPPORT CENTERS PROGRAM REVIEW: SPRING 2013 SUBMISSION CYCLE

### E. Website Review

Review the center's website(s) annually and update as needed.

Contact(s)	Date of next review/update
Cheryl Gregory and/or Lena Feinman	Reviewed during first week of each semester when MRC instructor schedule is updated

## III. Student Learning Outcomes Scheduling and Alignment

### A. Course SLO Assessment (if applicable)

Explain any recent or projected modifications to the Course SLO assessment process or schedule.

N/A

### B. Center SLO Assessment

Explain any recent or projected modifications to the Center SLO assessment process or schedule.

The MRC administers the student survey at least one semester of each academic year, late in the semester. Student participation is encouraged via emails to all students enrolled in math courses, instructor announcements in the classroom, and reminders while in attendance at the MRC. In addition, the center staff has requested a report from PRIE comparing, by course, success among math students who frequently utilize the MRC and math students who use the MRC rarely or not at all, a format similar to one recently designed for the Learning Center (bldg. 10).

### C. SLO Alignment (as applicable)

Discuss how Center SLOs support Program SLOs. Discuss how Course and/or Center SLOs support Institutional/GE SLOs. Refer to [TracDat](#) related program and institutional SLOs reports.

During 2012 all College of San Mateo learning support centers worked to align the manner in which centers were assessed. As a result all centers now have similar first SLOs that assess student knowledge about knowledge of and accessing the services provided in that center (SLO1: Students will have knowledge of MRC resources, including how to access them). The second MRC SLO, (SLO2: Students will be able to show improvement with specific skills or in understanding course content for which they have requested assistance), is in direct support of the SLOs of the Mathematics course in which the student is enrolled or preparing to enroll in. All Mathematics course SLOs are aligned with institutional (general education) SLOs; all align with GE SLOs in Quantitative Skills, many align with GE SLOs in the areas of Effective Communication and Critical Thinking.

## IV. Additional Factors

Discuss additional factors as applicable that impact the center, including changes in student populations, state-wide initiatives, transfer requirements, advisory committee recommendations, legal mandates, workforce development and employment opportunities, community needs. See [Institutional Research](#) as needed.

No additional factors reported.

## V. Institutional Planning

## LEARNING SUPPORT CENTERS PROGRAM REVIEW: SPRING 2013 SUBMISSION CYCLE

[Note: For centers that serve a single department, a portion of the information included in a departmental program review may be referred to or inserted here.]

### A. Results of Plans and Actions

Describe results, including measurable outcomes, from plans and actions in recent program reviews.

See Mathematics Program Review

### B. Center Vision

What is the program's vision for sustaining and improving student learning and success during the *next six years*? Make connections to the [College Mission and Diversity Statements](#), [Institutional Priorities, 2008-2013](#), and other [institutional planning documents](#) as appropriate. Address trends in the SLO assessment results and student usage and data noted in Section II. Summary of Student and Program Data.

[Note: Specific plans to be implemented in the *next year* should be entered in Section V.C.]

The Math Resource Center plans to continue to provide a quality student tutorial services unique to the needs of each student, including summer students, and to provide a location for small groups of students to work together on TBA projects and other small group projects/study sessions where students have immediate access to the texts, calculators, computers, and student tutor and faculty expertise to assist and provide direction as needed. In order to accomplish this vision, re-supply of materials and replacement and updating of technology and facilities need to continue on an ongoing basis. Student staffing needs to increase during Fall and Spring semester and student staffing needs to be instituted during Summer sessions.

NOTE: also See Mathematics Program Review re requested Mathematics computer classroom to be used an extension of MRC when not in use as a classroom.

1. To guide future faculty and staff development initiatives, describe the professional enrichment activities that would be most effective in carrying out the program's vision to improve student learning and success.

Keeping the MRC staffed with well-prepared staff is essential to provision of a quality center experience for our clientele and thus contributes to student learning and success.

The mathematics faculty leads in the MRC have a multi-faceted job description. The two leads coordinate, however one lead focuses on student staff hiring and training, data collection tasks and lab facility related issues, while the other focuses on faculty staff scheduling and shares in faculty training.

The lead who coordinates student staff (currently assigned equivalent of 1.4 FLC (32 lab hours per semester) to accomplish these activities) interviews, facilitates hiring process, and trains student tutors and desk assistants. Since the minimum qualification for student tutors is that they be able to tutor arithmetic through calculus 1, most tutors only remain at CSM one or two years after they are hired. Thus every semester we hire new tutors, who must be trained and observed. Mathematics tutors are now required to complete LCTR 100, Effective Tutoring, offered by the Learning Center, however, the lead mathematics faculty member must still train the students in MRC specific skills and observe/evaluate their tutoring and provide feedback to the tutors. Desk helpers (who do not tutor) are students who receive financial aid allocations (their pay does not come from the Mathematics budget). The mathematics faculty lead trains them on MRC procedures and the requirements of their job. Currently the faculty lead is assigned MRC hours as part of their load to complete these tasks, along with other MRC data collection and reporting tasks and text book collection management tasks.

## LEARNING SUPPORT CENTERS PROGRAM REVIEW: SPRING 2013 SUBMISSION CYCLE

Faculty new to the MRC are trained on MRC procedures and policies in one-on-one or small group meetings and mentored by faculty leads on an as-needed basis.

Since this employee training is essential to a quality product, these training sessions must be "institutionalized" as part of the MRC package. Additional hours should be added to the MRC FLC cap to accommodate faculty oversight, including training, without loss of Faculty "tutorial" oversight hours. In addition, funds should be made available at special rate to support new-to-the-MRC adjunct training and the student tutor budget should reflect the need for student training sessions (2 hours per student per semester).

2. To guide future collaboration across student services, learning support centers, and instructional programs, describe the interactions that would help the program to improve student success.

The faculty leads of the Math Resource Center are active participants in the Learning Support Centers Coordination Committee (LSC<sup>3</sup>). We will continue to work together to seek ways to best provide student success support while becoming more efficient in how we offer services and investigating how by acting as a unit we can employ economies of scale. Last year's endeavors have given us a much better understanding of the roles played by the many centers on campus and lead to discussion of how we might better serve students by consolidation of services at times when our individual labs are not usually open (evenings and weekends). This idea needs further investigation especially with respect to increased funding for staff and faculty assignments and the logistics of collecting SARS data for TBA requirements when faculty with the appropriate FSA are on duty.

Currently the LSC<sup>3</sup> is considering a joint contract for student printing services where student copy cards could be used in all participating centers. Also, the committee plans to discuss our equipment needs and coordinate requests.

3. To guide the [Institutional Planning Committee](#) (IPC) in long-range planning, discuss any major changes in resource needs anticipated in the *next six years*. Examples: faculty retirements, equipment obsolescence, space allocation. Leave sections blank if no major changes are anticipated. Specific resource requests for the next academic year should be itemized in Section VI.A below.

### Equipment and Technology:

2013: Four additional Slim Client computers need to be added to the network in the MRC, math specific licenses currently on some of the laptops will be shifted to these computers

2013: The department requests a computer classroom, preferable adjacent to the MRC so that the classroom may become additional MRC space when not in use as a classroom.

2013-2016: SARS login computers at front desk need to be replaced.

2016 - 2017: The existing 16 slim client computers will need to be replaced.

2018: Any new computers purchased in 2013 will need to be considered for replacement..

Instructional Materials: The Math Resource Center provides loaner texts and reference texts for use in the MRC. Traditional publishing companies provide copies free to instructors and to the Learning Centers and the Supplemental Instruction program, but charge students large amounts to purchase their personal copies of the text. A growing subset of the mathematics faculty are selecting high-quality open-source text books that are offered inexpensively to students. The open-source publishers do not provide complementary texts to faculty and to learning centers. Thus the MRC now needs funding to purchase loaner texts each semester. We estimate the cost to meet the textbooks needs of faculty, the MRC and the SI program to be about \$500



## LEARNING SUPPORT CENTERS PROGRAM REVIEW: SPRING 2013 SUBMISSION CYCLE

per semester (\$1000 year), on an ongoing basis. Experience has shown that purchasing publisher prepared copies provides a more durable and less expensive copy that could be gotten by printing from the free-on-line version of the texts. Also, the MRC tries to maintain a collection of solution manuals for reference by tutors and faculty on duty. Some publishers only make these manuals available to faculty as e-versions (previously we could get them as free print copies). The requested funds could be used in the event that a solution manual needs to be purchased as a reference for MRC staff.

The MRC provides loaner graphing and scientific calculators for use in the MRC. The current inventory includes 20 scientific calculators and 6 graphing calculators. The current collection is ageing and we need to plan to periodically replace calculators on an as needed basis. Since each graphing calculator costs approximately \$150 and each scientific calculator costs about \$15 a replacement plan needs to be put into place. Currently the 2013 needs are to purchase 2 graphing calculators. Planning for \$300 yearly would be appropriate.

The MRC provided loaner headphones and external drives to play DVDs of mathematics lectures. The drives were purchased in 2012 and will need future replacement if the media format does not change to streaming.

Classified Staff: No request for the MRC

Faculty: One of the current Faculty leads expects to retire within the next six years. As stated in the department request for three additional full time faculty, new faculty need to hire before anticipated retirements take place to facilitate sharing of past-practices and smooth transition of responsibilities.

Student Assistant: Student tutor staffing has not been provided during summer sessions. In order to better meet the needs of all students, we request a budget for 222 student tutor hours during Summer session. Further, we request the budget increase in student tutor hours during Fall and Spring semesters that was only partially met last year.

Facilities: Evaluate electrical use in the MRC and ask facilities about the cost and feasibility of (1) providing electrical sockets on the wall of the MRC that backs on the hallway (2) installing conduit and plugs at the end of each table on the wall under the windows OR installing an above floor level track to carry the extension cords. (3) Acquire an additional computer smart-classroom with a minimum of 40 student computer stations, 1 faculty computer station, 1 SARS login computer, ceiling mount projector, large electric screen, podium with power, and whiteboards (see math department program review)

### C. Plans and Actions to Improve Student Success

Prioritize the plans to be carried out next year to sustain and improve student success. Briefly describe each plan and how it supports the [Institutional Priorities, 2008-2013](#). For each plan, list actions and measurable outcomes.

#### Plan 1

Title:

Provide Student Tutors in the MRC starting in Summer 2013 (if possible but no later than Summer 2014)

Description

Make the summer Math Resource Center much more effective by adding 125 student tutor hours, thus reducing wait time for assistance and providing one more resource per hour to the students taking summer mathematics courses at CSM.

Action(s)	Completion Date	Measurable Outcome(s)
Submit Program Review	2013	Document emailed

Program Review: Math Resource Center (Final 3.21.2013)

Page 7

Form: 11/27/2012

## LEARNING SUPPORT CENTERS PROGRAM REVIEW: SPRING 2013 SUBMISSION CYCLE

Present request to IPC Task Force	2013	Dr. Frontiera and Lloyd Davis present the request
Summer Student Tutors Hired and Scheduled. (Completion year dependent on allocation of early funds for summer 2013)	2013	Funds allocated and plan implemented.

### Plan 2

Title:

Augment Computer Network in Math Resource Center

Description

Add 4 additional computers to the network in the MRC

Action(s)	Completion Date	Measurable Outcome(s)
Request Estimate	2013	Done: Estimate Received
Approval and Purchase	2013	Purchase processed
Installation	2013	System functional

For additional plans, cut/paste from above and insert here. Or add an additional page. Number your additional plans accordingly.

[Note: Itemize in Section VI.A. Any additional resources required to implement plans.]

## VI. Resource Requests

### A. Itemized Resource Requests

List the resources needed for ongoing program operation and to implement the plans listed above.

Equipment and Technology

Description (for ongoing program operation)	Cost
N/A	

Description (for prioritized plans)	Plan #(s)	Cost
4 additional Slim Client Computers with warranty and installation	2	\$1080.00

Instructional Materials

Program Review: Math Resource Center (Final 3.21.2013)

Page 8

Form: 11/27/2012



## LEARNING SUPPORT CENTERS PROGRAM REVIEW: SPRING 2013 SUBMISSION CYCLE

Description (for ongoing program operation)	Cost
Print copies of open-source texts for loan in the MRC, for use by Supplemental Instructor student leaders and as faculty loaners.	\$1000 per year
Calculator replacements	\$300 per year

Description (for prioritized plans)	Plan #(s)	Cost
N/A		

### Classified Staff

Description (for ongoing program operation)	Cost
N/A	

Description (for prioritized plans)	Plan #(s)	Cost
N/A		

### Student Assistant

Description (for ongoing program operation)	Cost
Continuation of Student Tutor in MRC for Fall and Spring Semesters with slight increase (increase of \$ 3000 /year)	\$22,000 per academic year

Description (for prioritized plans)	Plan #(s)	Cost
Implementation of Student Tutors in MRC for Summer Semester (estimated at 222 hours @ \$11/hour + 2% benefits)	1	\$2500 per summer session

### Facilities

For immediate or routine facilities requests, submit a [CSM Facility Project Request Form](#).

Description (for prioritized plans)	Plan #(s)	Cost

**LEARNING SUPPORT CENTERS PROGRAM REVIEW: SPRING 2013 SUBMISSION CYCLE**

Evaluate electrical use in the MRC and ask facilities about the cost and feasibility of (1) providing electrical sockets on the wall of the MRC that backs on the hallway		REQUEST FOR ESTIMATE
Evaluate electrical use in the MRC and ask facilities about the cost and feasibility of (2) installing conduit and plugs at the end of each table on the wall under the windows OR installing an above floor level track to carry the extension cords.		REQUEST FOR ESTIMATE

*B. Cost for Prioritized Plans*

Use the resources costs from Section VI.A. above to provide the total cost for each plan.

Plan #	Plan Title	Total Cost
1		
2		
	For additional plans, add rows and number accordingly.	