College of San Mateo — Program Review Submission



# 2014-2015 Learning Support Centers Program Review

Program Name: **Math Resource Center**
Program Contact: **Gregory, Cheryl P.**
Academic Year: **2014-2015**
Status: **Submitted for review**
Updated on: **03/25/2015 04:33 PM**

## 1. Description of Center

Provide a brief description of the program and how it supports the college's **College Mission and Diversity Statements**, **Institutional Priorities, 2013/14-2015/16**, **5 in 5 College Strategies, Spring 2011**, and other **Institutional Program Planning** as appropriate.

The Math Resource Center (MRC, Building 18, room 202) provides 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 2PM. Ancillary hours are provided in the 16-111, the Statistics Computer Classroom, 6 to 8 hours per week.

Staffing consists of student tutors, student desk workers, assigned faculty and faculty office hours scheduled in the MRC. The student tutor staff of 12 to 13 per semester together account for an average of 56 hours a week. Student tutors are funded from departmental funds unless another funding source is available (Spring included 3 work study students and 2 international students while Fall included only 1 work study student). The student desk worker staff or 2 to 4 per semester (varies bases on availability of work study students) provide service of 20-40 hours per week. MRC faculty included 18 to 19 mathematics instructors. Assigned faculty hours were 75 per week plus weekly office hours held in the MRC (18.5 Fall, 12.5 Spring). (Source: Spring 2014/Fall 2014 data departmental data).

The center plays an essential role in support of the College Mission and Diversity Statements, to improve student success and promote academic excellence. The Faculty and student tutors create a student centered learning environment that provides equal opportunity to all students. The Center's Faculty and student tutors reflect the diversity of the student body and thus models a positive, collaborative environment amongst a diverse population in support of student learning and academic success.

The center supports the 5 in 5 College Strategies for Basic Skills/Below Transfer students, non-STEM Transfer students, and STEM Transfer students. The faculty and student tutors provide core support as they are competent to support student learning across the mathematics curriculum from arithmetic to calculus and to assist students in learning to effectively use graphing calculators, online resources, and engage with multiple online learning platforms. The Math Resource Center in conjunction with the Supplemental Instruction Program is an integral part of support for all math students, especially our basic skills and below transfer courses. In addition the center provides students access to print materials in support of learning. Students at all levels, but especially STEM students find the center a supportive place to meet as study groups and access support from both faculty and peer tutors and resource texts.

Almost all math classes have Hours by Arrangement attached to them. The Math Resource Center supports students in meeting these requirements. Many math faculty have taught with Supplemental Instruction Leaders in their class room and many student tutors in the MRC have also been trained and served as Supplemental Instruction Leaders. This cross-over between these two means of support brings increased strength to our efforts to ensure student success and persistence through basic skills mathematics to transfer mathematics.

## 2. Student Learning and Center Data

A. Discuss Student Learning Outcomes Assessment

Reflect on recent SLO assessment results for courses and degrees and certificates offered by the program.

**http://collegeofsanmateo.edu/programreview/docs/lsc_math/2015/MathResourceCenterUserSurvey_01-20-2015.pdf**

Both student attendance and student responses to the Math Resource Center User Survey (Fall/Spring 2014 submissions) indicate that students have knowledge of MRC resources, including how to access them (SLO1). More specifically, 97% of students reported the procedures for using the MRC were clear and easy to follow and 90% of students reported that they understood what MRC activities were expected of them. There were no significant changes from the previous program review.

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 38% reported major progress and 88% reported moderate to major progress. There were no significant changes from the previous program review.

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 2014 data reports 23,289 student visits and 1877 non-duplicated students for a total of 25,293 hours (**http://collegeofsanmateo.edu/labs/docs/lsc/Spring%202014%20Usage%20Data.pdf** )

Intra-departmental records show that during Summer 2014, 532 students attended the MRC accumulating 9906 hours.

Intra-departmental in-depth analysis of SARS data collected Spring 2014 indicated that 11% of hours were accrued by basic skills students (Arithmetic Review through Elementary Algebra), an additional 24% of hours were accrued in other below transfer courses (Intermediate Algebra level). Thus, approximately 35% of hours accrued were students working below transfer level. Fall 14 indicated that 12% of hours were accrued by basic skills students (Arithmetic Review through Elementary Algebra), an additional 16% of hours were accrued in other below transfer courses (Intermediate Algebra level). Thus, approximately 28% - of hours accrued were students working below transfer level.

We see a decrease in the percentage of hours accrued by basic skills students. Effective Fall 13, Math 811 students no longer have a TBA/HBA requirement; they meet in the classroom with their instructors an additional 2 hours a week. Also, an increase in below transfer level sections participating in Supplemental Instruction finds a portion of those students choosing to participate in SI and forgo “extra hours” in the MRC.

Fall 2014 demographic information indicated that students attending the MRC are: representative of the College demographics with respect to gender and age; generally representative of demographics with respect to ethnicity but more likely to be Asian and less likely to be white, less likely than college wide demographics to be enrolled less than full time; and more likely to be day only or a mix of day and evening students (http://collegeofsanmateo.edu/programreview/docs/lsc_math/2015/MathResourceCtr2015StudentProfile01-05-2014.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 2014 MRC User Survey indicated that the majority of users are satisfied with services received; only 11% ranked services as fair to poor. This is an increase in fair to poor ratings from 2013, but still an improvement of 11% over 2012.

Staffing: Students indicate that the MRC staff is helpful (91%). 88% indicated they were able to get help when they needed it always or most of the time, an increase of 5%. The increase of 6 faculty hours per week may have contributed to this marginally improved rating. Also, some groups of math students, especially upper level students, have moved study sessions to white boards posted near math faculty offices, relieving some of the pressure on the MRC (These hours are not currently captured as TBA). However, efficiently meeting the needs of students in the MRC during peak hours of 10-2pm is still problematic.

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. With the addition of two full time faculty in Fall 2014 it was hoped that scheduling of faculty into lab hours during peak periods would become less problematic; however, demand for upper level courses has increased and multiple class sections were added. Also, 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, with additional student tutor hours focused in peak hours, and an Instructional Aide position was allotted to the MRC. The presence of an Instructional Aide would release the faculty and student staff from operational tasks that take away from content based interaction time with students.

In spring 2014, the MRC Leads chose survey the student tutors for additional feedback. The fourteen student tutors working that semester were on average in their second semester as tutors. They reported that they were most frequently asked questions about trigonometry topics/applications. The courses for which the students most often requested assistance were Arithmetic and Calculus 1. The tutors strongly felt the need for tutors trained to assist with statistics. (Typically Math/CIS/Engineering majors who form the bulk of the tutor pool do not take Introductory Statistics). To meet this need, identified by both faculty and tutors, the Leads have: continued to recommend Statistics tutors to the Learning Center, established one section of SI in a statistics class, identified one student tutor who is competent to tutor statistics. The effort to improve campus wide assistance to statistics students will continue.

Hours of operation: 88% of students indicate that the MRC is “always or most of the time” available when they need it. The Spring 2014 student survey was modified to ask students to identify additional times and days they would like to have the MRC open; 58 % of respondents indicated that if more hours could be added to the MRC they should be to extend the Friday hours of operation into the afternoon. Observationally, the presence of many student at the 1pm close time on Fridays corroborates this data. Around 10% of respondents advocate extended evening hours each day past 7pm on Monday thru Thursday. These data are consistent with Spring 13.

Tutorial and other services: When surveyed about possible tutorial sessions on specific topics (graphing calculator usage, study strategies, 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. If additional space becomes available, there is faculty interest in scheduling facilitated course related study sessions.

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 for an adjacent computer classroom that could become additional MRC space when not scheduled for classes.] Additionally, the MRC would like to acquire 18-201 (the classroom immediately across the hall) as part of its space. This is one of the departments “assigned” classrooms and would need to be replaced with another classroom assigned to the department. The leads see this ancillary space as the location for scheduled facilitated sessions (SI or other) and as quieter work space during peak-hours.

Technology: 83% of students indicate that computers were always or most of the time available 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. There is simply no space to add more computers to the room without sacrificing non-computer workspace that is highly utilized. 40% of students (+8% over 2013) indicated they used the MRC computers to access computer based homework or tutorials.

Students are 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.

## 3. 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.

NONE

## 4. Planning

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.

Additional graphing calculators were purchased to replace those that had worn out. Students use these for assignments requiring their use. Since the cost is $100 per calculator, some students use the MRC calculators instead of purchasing their own.

The addition of Saturday hours to the MRC for both Spring and Fall semester are gaining popularity and will remain in the schedule during the next academic year.

Requested funding increases for student tutor hours were not granted and are re-requested in this cycle. Also, it is difficult for the Leads to plan a budget and stay within that student tutor budget when they are unaware of changes in amount allocated in a timely manner. A process is needed whereby the Leads in the center have the information needed to budget for and hire student tutors for the next academic year during May/June of the previous academic year. The process of vetting and hiring student tutors for fall semester takes place over the summer so that the MRC is staffed for the first day of classes.

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, 2013/14-2015/16**, and other **Institutional Program Planning** as appropriate. Address trends in the SLO assessment results and student usage and data noted in Section 2.
[**Note:** Specific plans to be implemented in the *next year* should be entered in Section 4C.]

The Math Resource Center plans to continue to provide a quality student 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. An instructional aide is needed to support the daily operation of the MRC.

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. One lead focuses on student staff hiring and training, data collection tasks and lab facility related issues, while the other lead focuses on MRC faculty staff scheduling, coverage for faculty absences, shares in faculty training and does data reports and program review. In 13-14 the Center leads were allocated 3 FLC release time to share for the accomplishments of these tasks. This allocation, while appreciated is insufficient and should be increased to 6 FLC. The work load justifies the increase.

The lead who coordinates student staff tasks include interviews, facilitation of the hiring process, student tutors and desk assistants training and scheduling, time sheet approval, and budget adherence. This faculty member is learning Accudemia processes to provide bi-weekly student attendance reports to mathematics faculty and capture summary data, maintains the MRC textbook collection, participates in collection of MRC objective data collection and reporting, and attends the Learning Support Centers Coordination Committee (LSC3)meetings. With training, many of the routine tasks could be shifted to an instructional aide.

The faculty lead who focuses on MRC faculty staff scheduling, faculty training, coverage for faculty absences, data reports, and also attends the Learning Support Centers Coordination Committee (LSC3) meetings. The two leads share the workload of program review, SLO outcomes assessment, student surveys and student focus groups.

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 (LSC3). 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.

In 2014, the LSC3 joined together in establishing Pinnacle printing in most centers. The MRC received a new printer and computer to support Pinnacles. The MRC also join other centers in switching from SARS to Accudemia for data collection. We will need to continue coordination as we learn the strengths and weaknesses of this new system.

In Spring and Fall 2014 the LSC3 identified and/or refined joint Mission Statement, Goals, and Priorities. (**http://collegeofsanmateo.edu/labs/lsccommittee.asp**).

Priorities:

- Coordinate marketing efforts to inform the CSM community about the variety of student instruction and other services available at CSM's learning support centers.
- Provide specific recommendations to incorporate some uniformity in operations/procedures across all support centers while encouraging each center to maintain its individuality.
- Consult with PRIE to identify and collect pertinent data related to student success and completion.
- Identify areas of needed improvement in the centers and advocate for additional resources through the Program Review process.
- Encourage the development and modification of curriculum and support services based on student needs.
- Identify and address gaps in center instruction and services for particular student populations and/or courses.
- Promote fiscal responsibility by sharing center resources when possible.

In Fall 2014 the LSC agreed to use a cycle so that 1-2 Best Practices are assessed each year with all assessed at least once within a six-year cycle. From the list that the Centers and Labs and agreed to focus on the following list of Best Practices:

1. The LSC has a mission statement congruent with department and institutional missions.

2. The LSC has adequate resources, including but not limited to budget, space, staff and faculty, furniture, equipment/software, technology, and IT support.

3. The LSC serves a targeted, well-defined campus community.

4. The LSC offers services that support student learning amongst the target audience.

5. The LSC uses technology effectively to capture, analyze, and report usage data.

6. The LSC uses technology effectively to enhance individual student learning.

7. LSC partners with other instructional programs and/or support services (EOPS, DSPS, Veterans, Learning Communities, etc.) as appropriate.

8. The LSC assesses its SLOs and prepares and disseminates a program review

3. To guide the **Institutional Planning Budget Committee** (IPBC) in long-range planning, identify any major changes in resource needs anticipated during the next three years. Examples: faculty retirements, equipment obsolescence, space allocation.

Equipment and Technology

2015: The Math department again 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.

We understand that tracking of computer replacement is now in the hands of IT. Below is the continuation of our previous record keeping:

2015: The MRC 3 of the 4 MRC log-in computers are very old, often down, and need to be replaced.

2016 - 2017: The existing 20 slim client computers will need to be replaced.

Instructional Materials

No major changes are anticipated. Funding is requested at the same level as in the previous year: $1000/yr for textbook and solution manual needs, $500/year for calculator needs.

Classified Staff

An Instructional Aide is needed to coordinate with Lead faculty and support faculty in the operation of the MRC. The Aide's responsibilities would include but not be limited to: preparation and/or tracking completion of student tutor and desk students PAFs and pay paperwork, timesheets, coordination with financial aid and other entities to identify students eligible for funding from those sources, working with Pinnacles vendor as needed, providing to faculty regular reports from Accudemia, training desk workers, collaboration with Lead Faculty tracking textbook/calculator usage and replenishment needs, oversight of the MRC during faculty and student tutor shift changes, and facilitate small group student learning.

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Student Assistant

As stated last year, student tutor staffing has not been funded 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.

Total annual funding request (Fall, Spring, Summer) of $28,000 is requested. ($12750 each for Fall and Spring semesters + $2500 for Summer semester).

Facilities

See request in Math Department program review for an additional computer classroom. Ideally the computer classroom would be located adjacent to the MRC so that it could be accessed as additional MRC space when not in use as a classroom.

The MRC requests reassignment of 18-201 as ancillary space and assignment of another classroom to the Math Department for class scheduling.

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, 2013/14-2015/16**. For each plan, list actions and measurable outcomes. (Plans may extend beyond a single year.)

To support student success and retention:

Make the summer Math Resource Center much more effective by adding 222 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. The addition should become a permanent part of the MRC student tutor budged.

Provide support to student learning with additional loaner books for use in the MRC. Some students avoid the expense of purchasing texts by using the loander books in the MRC for the entire semester. Other students use the loaner books until their class schedule is determined and the books they ordered come in. In the past publishers have provided "desk copies" for this purpose, however the large publishers are switching to e-copies for instructor desk copies and severely restricting print "desk copies." To assist students in cutting book expenses many instructors have switched to open-source books. These are available at low cost in print, but desk copies are unavailable. In order to continue to provide book loaners to students the MRC needs a book budget for each semester.

## 5. Resource Requests

Itemized Resource Requests

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

Equipment and Technology

| Description | Cost |
|---|---|
| 3 replacement log-in computers | ~ $3000 |
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Instructional Materials

| Description | Cost |
|---|---|
| Purchase print copies of open-source texts for loan in the MRC and for use by Supplemental Instructor student leaders and as faculty loaners. | $1000 per year |
| Calculator replacements | $500 per year |
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Classified Staff

| Description | Cost |
|---|---|
| Instructional Aide | $45,732 – $55, 872 plus benefits |
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Student Assistant

| Description | Cost |
|---|---|
| Continuation of Student Tutor in MRC for Fall and Spring Semesters | $25,500 per academic year |
| Implementation of Student Tutors in MRC for Summer Semester | $2500 per summer session |
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Facilities

**For immediate or routine facilities requests, submit a CSM Facility Project Request Form.**

| Description | Cost |
|---|---|
| none | |
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**6. Program Maintenance**

A. Course Outline Updates

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.

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

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

| Faculty 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 |
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C. SLO Assessment Contacts

| Faculty contact(s) | Date of next review/update |
| --- | --- |
| Cheryl Gregory and/or Lena Feinman | Fall 2015 |
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