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Learning Support Centers Program Review

Program Name: **Math Resource Center**

Program Contact: **Gregory, Cheryl P.**

Academic Year: **2013-2014**

Status: **Submitted**

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, 2008-2013](#), [5 in 5 College Strategies, Spring 2011](#), and other [Institutional Program Planning](#) 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 2013 data reported here) of the MRC included 13 student tutors which included one international student, (about 72 hours per week), 5 desk assistants (3 work study students and 2 international students for about 50 hours per week), and 21 instructors (71 hours per week + 10 hours per week of Office Hours held in the MRC).

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/2014/MathResourceCtr2014UserSurvey10-28-2013.pdf

Both student attendance and student responses to the Math Resource Center User Survey (Spring 2013 submissions) indicate that students have knowledge of MRC resources, including how to access them (SLO1). More specifically, 98% of students reported the procedures for using the MRC were clear and easy to follow and 93% 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 37% reported major progress and 87% reported moderate to major progress. While 87% is a strong positive report, these reported progress percentages are slightly lower than in 2012, thus the department will watch trends in 2014-2015. One possible confounding variable is the start of student tutoring in the Learning Center; the services to of a cohort of students who seek consistent regular one-on-one tutoring have shifted to that venue.

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 2013 data reports 25,658 student visits (-1520 from Spring 2012) and 1825 non-duplicated students (-205 from Spring 2012) for a total of 25,677 hours (-3175 from spring 2012)(http://collegeofsanmateo.edu/labs/docs/lsc/SARSUsageReport_Spring2013.pdf). Intra-departmental records show that during Summer 2013, 578 students attended the MRC accumulating 10,956.86 hours.

Intra-departmental in-depth analysis of SARS data collected Fall 2012 indicated that 22% of hours were accrued by basic skills students (Arithmetic Review through Elementary Algebra), an additional 19% of hours were accrued in other below transfer courses (Intermediate Algebra level). Thus, approximately 41% of hours accrued were students working below transfer level. Spring 2013 indicated that 19% of hours were accrued by basic skills students (Arithmetic Review through Elementary Algebra), an additional 19% of hours were accrued in other below transfer courses (Intermediate Algebra level). Thus, approximately 38% of hours accrued were students working below transfer level.

SARS data collected Fall 2013 indicated that 16% of hours were accrued by basic skills students (Arithmetic Review through Elementary Algebra), an additional 21% of hours were accrued other below transfer courses (Intermediate Algebra level). Thus, approximately 37% of hours accrued were students working below transfer level. The decrease in Basic Skills hours can be explained by a change in the format of Math 811 in Fall 2013. Math 811 students no longer have a TBA/HBA requirement; they meet in the classroom with their instructors an additional 2 hours a week.

Fall 2012 attendance in the MRC was, on average, 275 students per day and the most popular time of day was 10-12 am. Hourly attendance averaged 67-89 students per hour with a peak hour of 148 students. Total hours were 30,739 and total visits were 25,898. Spring 2013 was consistent with Fall 2012. During spring, daily attendance averaged 260 students, with peak hours again from 10-12 am and average hourly attendance 70-92 students per hour. The total number of hours was 29,214. Historically, Fall 2012 tends to be slightly higher than Spring attendance, which can be explained by the number and variety of courses offered.

Fall 2013 shows a slight decrease in usage, with on average 257.72 students per day but an increase to 31,046 total hours. The change in format of Math 811 is again reflected in change in usage trends.

Spring 2013 demographic information indicated that students attending the MRC are: representative of the College demographics with respect to gender and age; more likely than College demographics to be African American, Filipino, or Hispanic but less likely to be White or Asian, 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 and less likely to be evening students.(http://collegeofsanmateo.edu/programreview/docs/lsc_math/2014/MathResourceCtr2014StudentProfile10-28-2013.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 2013 MRC User Survey indicated that the majority of users are satisfied with services received; only 6% ranked services as fair to poor. This is a 16% improvement.

Staffing: Students indicate that the MRC staff is helpful (96%). However, only 83% 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. Due to a decrease in the number of books on hand, students often must share or wait to use a text book.

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. Hopefully, adding two full time faculty in Fall 2014 will 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. During 2012-2013 Saturday hours were added. In response to student feedback in Spring 2012 the student survey was modified to ask students to identify additional times and days they would like to have the MRC open; 58.5 % 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 Monday through Thursday.

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 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 for an adjacent computer classroom that could become additional MRC space when not scheduled for classes.]

Technology: 90% 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. The addition of 4 slim client computers during the past year helped relieved some of the computer congestion. 32% of students 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.

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.

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.

Four additional slim client computers were added to the network, bringing it up to its full complement of 20 computers. More students are able to work on their computer based assignments in the MRC.

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 is still under evaluation.

Other requested funding increases were not granted and are re-requested in this cycle.

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 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 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. 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. Due to the increased requirements for data collection and analysis of data for both SLOs, program review for labs and centers, and accreditation requirements, we need additional faculty to share in these responsibilities. We request short term funds to pay an additional faculty member to learn and take over part of these responsibilities. In addition, reassign time is required to support the activities of the two lead faculty.

The lead who coordinates student staff requires 2 FLC per semester. Each unit of reassign time means a commitment of 2.5 hours per week, which is the minimum required to do the work. 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 also provides weekly student attendance reports to mathematics faculty, maintains the MRC textbook collection, participates in collection of MRC data collection and reporting, and attends the Learning Support Centers Coordination Committee (LSC³) meetings. There is currently NO time allotted for these task and that is making the workload for the faculty nearly impossible to accomplish.

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 workload tied to academic support of the MRC has increased significantly over the last year! At this time, each learning center must do program review, SLO outcomes assessment, student surveys and now student focus groups. This work must be completed and put into TrackDat each semester. The second lead in the MRC also requires hours equivalent to 2FLC for completion of these tasks and other assessment related tasks. Currently no time/load/pay is allotted for completion of these tasks.

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. 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 LSC³ is still considering a joint contract (Pinnacle) for student printing services where student copy cards could be used in all participating centers. It was recently discovered that the MRC needs a new printer and computer to support their joining this process. We are working collaboratively with the Math Science Dean, the Interem Dean for Academic Support and Learning Technologies, and IT to identify acceptable equipment and/or a funding source. An estimate for the cost of this equipment is below in equipment requests.

The LSC³ plans to discuss our equipment needs and coordinate requests.

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

2013: The Math 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: Equipment needed to set up Pinacles copying needs to be purchased.

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

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

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 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 e 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). \$2000/year is requested to fill this gap. 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 4 graphing calculators. Planning for \$500 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

A part time Instructional Aide 1 is needed to coordinate with faculty and support faculty in the operation of the MRC. After discussion within the Math Science Division we feel that the Integrated Science Center and the Math Resource Center would be able to share one full time Instructional Aide.

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.

If the tutor's salary is truly going to be increased by \$1 per hour on July 1, 2014, funding for student tutors will need to be increased by approximately \$800 per semester or \$2400 a year in order to maintain the current levels of service.

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. (Plans may extend beyond a single year.)

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 budgeted.

Provide additional loaner books for use in the MRC. Some students avoid the expense of purchasing texts by using the loaner 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.

