

Mathematics Program 2011-2012 Budget Requests and Fall 2010 Update on Mathematics Program Review (2008-2010)

Below are budget requests for the mathematics program (11026001) for the 2011-2012 academic year. They are based on the current update to the action recommendations in the mathematics program review conducted primarily in 2008-2009 and concluded in Spring 2010 (but with an external review yet outstanding).

Budget Requests for 2011-2012

1. The current full-time temporary mathematics position now held by Frank Ives needs to at a minimum be extended for another year, but it *really* needs to be converted to a full-time (non-tenured) instructor position. There are persons (such as Frank) who can be extremely effective without a Ph.D. degree in mathematics at teaching the large numbers of remedial math students who are admitted to La Verne, and who need to be retained on a permanent basis with a reasonable salary for a permanent position. If this one year temporary position is not renewed, then 75% of all mathematics students will be in courses taught by part-time faculty, an untenable situation.
2. A full-time tenure track faculty position in Math Education is needed that could cover all sections of MATH 389 Developmental Mathematics for preparing K-8 teachers of mathematics. See action item status (1) below.
3. Initiate stipend for physics program chair. (\$ = ?)
(Note: this is for the physics program; account 1102600-1 covers both mathematics and physics.)
4. Hire half-time physics lab manager. (\$ = ? See David Chappell's notes)
(Note: this is for the physics program; account 1102600-1 covers both mathematics and physics.)
5. Restore funding to 2009 levels in object codes 6403, 6415, and 6416:

	Object	2009-2010	2010-2011	Difference
Equip. (not computer)	6403	\$8000	\$4000	-\$4000
Computer Hardware	6415	\$1300	\$2000	+\$700
Computer Software	6416	\$800	\$0	-\$800

6. The compensation for part-time mathematics instructors needs to be increased to around \$4500 to be competitive with other schools that draw from the same hiring pool. It is understood that this is not within the purview of the dean's office, but it is an acute need and should be noted, since it directly impacts our ability to hire high quality part-time faculty, who play such an important role in the mathematics program. It is a very simple situation to describe: the pool of well-qualified candidates is smaller than the total employment needs in

the local area, therefore, the most qualified part-time faculty will end up at the highest paying schools, and La Verne, paying among the lowest stipends around, will have to settle for lower quality instructors for its students. The current year was a rare exception to this general state of affairs in that the Cal State system crashed and released many part-time faculty, in essence flooding the market. This is not an event that can be counted on to occur each year, and the part-time salary policy needs to be based on fair market price, which La Verne is well below.

Action Recommendations/Status from the Mathematics Program Review, Spring 2010

The following is a cumulative list of the action recommendations in the last mathematics program review, which was conducted primarily during the 2008-2009 academic year, but not completed until the spring of 2010. The sequencing numbers have been changed from the program review to permit grouping by categories as **Completed**, **In progress**, and **Not addressed yet**. The **In progress** and **Not addressed yet** items have been roughly prioritized by the department chair.

1. **Highest Priority** Continue to apply for a full-time tenure track faculty position in Math Education which could be responsible for all sections of MATH 389 Developmental Mathematics for preparing K-8 teachers of mathematics, *and* a full-time non-tenure track position of instructor or lecturer to teach a full eight remedial mathematics classes per year (Intermediate Algebra, College Algebra) and organize and administer lab sections for said classes.

Status: **In progress**. A full-time non-tenure track faculty position (Frank Ives) was hired in August, 2010 for a year to teach 8 sections of lower level mathematics classes per year. This removed some of the strain that was imposed by the huge influx of new students in Fall 2010, but the original request was made to address the number of students and sections taught by part-time faculty *before* this new class of record-breaking size, and as such, the new position did not make a dent in the overall percentage of students taught by part-time faculty, it just stemmed the flow of the new tide, and the original problem is still there. If this one year temporary position is *not* renewed, then 75% of all mathematics students will be in courses taught by part-time faculty, an untenable situation.

As for the full-time tenure track position, it is being currently requested for the 2011-2012 academic year. A minimum of four sections of MATH 389 (required of all teacher candidates) are taught annually by Joan Marge (Ph.D. in Education with emphasis in Mathematics), and she is also responsible for all 2-3 sections of Math 001 Math Workshop each year. There simply is nobody with full-time status who is knowledgeable about mathematics education to the depth necessary for preparing our students to be quality teachers of mathematics, which is a real concern in a school that prides itself on producing the highest quality teaching candidates in all disciplines, considering the crucial shortages of highly qualified teacher candidates in mathematics.

2. Obtain and place high-powered computing workstations in a secure location for use by both

faculty for research and demonstration to classes, and students for senior project work. Status: **Completed**. Two high-powered quad core workstation-grade PC's with 16GB of RAM each and terabyte hard drives have been purchased with STEM funds, and currently reside in the front part of MA 64, which will become part of the new Complex Dynamical Systems Laboratory. One of these computers may be moved to the new student collaborative area in FH 8.

3. Work to maintain MATH 170 enrollments as the most appropriate general education mathematics course for most students.

Status: **Completed**. Enrollments are way up for this course, due to stepped up advertising to advisors by the chair, and a large influx of new students. Two sections will be offered in January, 2011 with at least 16 students in each (a first for January Interterm!), and two more sections in the 2010-11 academic year, one in fall 2010 and one in spring 2011. The word seems to be getting out to faculty advisors about the value and appropriateness of the course for most undergraduates, and as long as advisors are reminded each new registration period about the course, and good experiences for students are maintained in the course, this concern can be considered as having been successfully addressed.

4. Reduce the need for faculty overloads by petitioning for appropriate salary increases to obviate their need.

Status: **Completed**. The very small number of overloads requested by faculty over the past few years seems to indicate that salaries have increased enough to eliminate this as an issue.

5. Actively seek out possibilities for enhancing the success of incoming STEM freshmen by being willing to participate in summer math camp activities.

Status: **Completed**. Yousef Daneshbod will be teaching a math summer boot camp for a week in summer 2011.

6. Forcefully recommend that all students take CORE/INTD 320 *The Mysterious Dance of Art, Mathematics, and Music*.

Status: **Completed**. This is already happening through the department chair, and will be emphasized to the other department faculty.

7. Seek to obtain a computer lab dedicated to mathematics classes, so entire classes could be either taught in such a lab, or taken in as needed for demonstrations and work on sophisticated mathematical software. Also increase the available space (MA 54) for mathematics and physical science majors to gather and collaborate with each other with appropriate computing facilities at hand. This is tantamount to a request for a new science building, since there is currently no possibility for such space.

Status: **In Progress**. To repeat: it is evident that a math-dedicated computer lab will have to wait for a new academic building to be built, which the administration has announced is in

the works, but may not be completed for another 4-5 years at a minimum. There simply is no other space currently available. The space for mathematics and physical science majors to collaborate in is being shifted from MA 54 to FH 8, which is being remodeled into what will be a much nicer space than the current one in MA 54, although it will not be any larger.

8. Introduce a mandatory structured MATH 499 Senior Project class that would be taken for 4 units, but would only meet one hour per week, in order to force students to keep on schedule with their independent work and to give them a forum to discuss their work and practice presenting with other students. It would help build confidence in the students' ability to work independently in mathematics, and could also serve as a forum for faculty to disseminate career and graduate school information. Publish a Senior Project Handbook in conjunction with this new course.

Status: **In progress.** Discussion continues on the creation of such a structured course, all of it positive, but no formal proposals have appeared yet, and the Senior Project Handbook is still a work in early progress.

9. Determine whether or not to continue requiring the GRE Advanced Subject Mathematics Exam for all mathematics majors, and whether or not to re-write the in-house departmental exam.

Status: **In progress.** Discussed, but not formally addressed yet

10. Revisit the decision to not apply for the state subject matter program in mathematics, and affirm the previous negative decision, or start the application process.

Status: **In progress.** The department has shown very little interest in committing to the work required for state approval for a mathematics subject matter program, but the department chair attended a meeting in Fall 2010 of the education faculty and chairs of other undergraduate disciplines impacted by the teacher education program, and came away with the hope that much of the work involved in a new program submission could be taken care of by boilerplate files already generated for other programs. The department will revisit the possibility in spring 2011, as there is great interest from the education faculty in having a mathematics subject matter program.

11. Update faculty and department web pages more frequently to keep them more current, more informative, and more interesting to our students. All mathematics faculty need to maintain web pages with current and relevant information about themselves and the courses they teach. In addition, web pages should be set up within the department pages to provide information on suggested course schedules for majors and minors, as well as senior comprehensive and senior project information, and current events and news in the mathematics program. A web "problem of the week/month" type of page would also be nice.

Status: **In progress.** With the introduction of a new content management system (and its successor this spring), it should become very easy for full-time faculty to all maintain their own personal web pages. Links have been established to major and minor requirements, but

further links are needed to suggested course schedules for majors and the two year cycle of courses that mathematics majors courses are offered on. There is also still a need to develop components of the department pages addressing senior comprehensive exam and senior project information, and current events and news in the mathematics program, and a web "problem of the week" (or month) type of page.

12. Institute a Career Night when former alumni could return to campus and speak to majors about employment opportunities for bachelor's degree holders. It might be possible to combine this with information about graduate schools from former or current graduate students in mathematics. Provide opportunities for mathematics students to obtain internships.

Status: **In progress.** The biology chair has invited the math faculty to join them in their annual career night, which is a fair-type of experience with current students and alumni providing information about the programs to prospective high school and college students, but the timing was not right to take advantage of it in Fall 2010. This should be possible in Fall 2011. One of our most successful alumni, Amy Attiyah, now in a supervisor's position at JPL, visited the university on Dec. 17, 2010 to address two separate groups of mathematic, physics, and computer science majors on the type of work she does at JPL, the possibilities for internships and employment, and the kinds of undergraduate preparation crucial for being successfully employed at an organization like JPL. Her own supervisor, Bill Taber, also gave a presentation in Science Seminar in November, 2010 about similar topics, and which was regarded as one of the best presentations in recent years. A true career/grad night for just math, physics, and computer science majors would probably still be a good idea, however, and needs to be planned out for the future. A tour of JPL is planned for early spring 2011, guided by alumnus Amy Attiyah.

13. Reexamine all prerequisites for mathematics courses, particularly courses for majors, such as possibly requiring MATH 311 Calculus III for MATH 351 Probability.

Status: **In progress.** This has been discussed, will be more formally addressed at the next departmental/program faculty meeting(s).

14. Obtain easy access for faculty to check math placement test scores for students in remedial math classes.

Status: **In progress.** This needs follow-up with the registrar once Banner 8 has been settled into.

15. Keep evaluating web-based online tutoring systems to see whether they might be appropriate for use by the Learning Enhancement Center.

Status: **In progress.** Although no concerted effort has been made, faculty are constantly on the lookout for good web-based online tutoring systems. A more organized, focused effort should be undertaken to evaluate current tutoring systems, and the effort already initiated by Yousef Daneshbod to try Web Assign for homework assignments should be expanded to

other faculty interested and willing to pilot such online homework systems, although initial feedback is not terribly positive.

16. Promote collegial visits by faculty within the program, low-stress, with no written report, and a follow-up lunch (paid for by ULV) to discuss the visit.

Status: **In progress.** The chair has announced the availability of this option, but needs to do a better job of encouraging and promoting it, as nobody has taken advantage of it yet.

17. Encourage faculty to seek out course release time from the administration for curriculum development when appropriate.

Status: **In progress.** Nobody has done this yet, but the chair will remind them of the possibility.

18. A Mathematics Club needs to be formed to stimulate and maintain interest in mathematics. *[Note: this was a carry-over item from the 2004-2009 program goals update list, but did not appear in the action items in the Spring 2010 Program Review document.]*

Status: **In progress.** Such a club existed at one time long ago, was revived for a year recently, and another revival should be considered now to generate more interest in mathematics and to help attract and retain a critical mass of students and interest.

19. Seek out ways to obtain tutors for more advanced mathematics classes, and/or work with professors to make them easier to talk to.

Status: **In progress.** Several mathematics students are currently able to do this type of tutoring, but emphasis needs to be placed on persuading them to do so, and professors need to work on having more success with students being more willing to seek out help from them in their offices.

20. Make it a habit to select several goals each May or August to focus on addressing for the upcoming academic year.

Status: **Not addressed yet.**

21. Institute an annual retreat of mathematics faculty to discuss key issues related to the program.

Status: Has been discussed but not yet implemented. Should be a priority for Spring 2011.

22. Re-examine the Calculus II-III sequencing to make sure that it is serving our students as well as possible.

Status: **Not addressed yet.**

23. Consider whether or not to require probability and statistics in some form for mathematics majors.

Status: [Not addressed yet.](#)

24. Determine whether MATH 315 Differential Equations should be a required core class for all mathematics majors.

Status: [Not addressed yet.](#)

25. Institute required corequisite 1-unit lab courses for MATH 001, 102, 104, and possibly 170 and 105, staffed by?

Status: [Not addressed yet.](#)

26. Consider developing a new general education course or changing the content of MATH 104 to a more modeling-based curriculum, centered around environmental concerns.

Status: [Not discussed yet.](#)

27. Consider implementing some type of review course or workshop for students to help prepare for their senior comprehensive exam in order to boost scores and reduce first-attempt failures; also consider a workshop for CSET preparation.

Status: [Not addressed yet.](#)

28. Determine how to better evaluate learning outcome 5 (“Developed a sense of the interconnectedness of concepts in seemingly disparate fields of mathematics, as well as how techniques in one area of mathematics can be applied to solve problems in another area”), perhaps via questions on the graduating senior surveys or alumni surveys.

Status: [Not addressed yet.](#)

29. Examine organizational change literature referred to by the 2003 external review team.

Status: [Not addressed yet.](#)