



# Mathematics Department – 2014 Hiring Justification

## CRITERIA FOR USE IN DEVELOPING PROPOSALS FOR FACULTY HIRES

### A. Department/Discipline/Program Criteria

1. Identify current Comprehensive Program Review (in cycle) and current Annual Program Plan documents with position need and justification in the annual plan.

Comprehensive program review was completed in 2010 and presented to the curriculum committee on April 27, 2010. The program review has been posted to the IPC sharepoint. The most recent annual plan, filed in March 2013, identified a need for 1 – 2 more full time math faculty.

2. Identify specialized knowledge (area expertise) or training needed for the discipline/program.

Specialized knowledge beyond the standard FSA is not needed.

3. Identify extraordinary program development and/or needs (for example: are there laboratory oversight, industry connections, student mentoring, etc.).
  - We have been expanding the use of calculators and computers in the curriculum and this work needs to continue.
  - We offer classes in a variety of formats, including on-line classes, learning communities, and honors sections. In addition we have created both StatPath and Fast Track to Calculus classes designed to accelerate the paths to Statistics and Calculus. We have begun teaching both of these this past year. This work needs to continue.
  - We have successfully developed and implemented the MathJam program and this needs continual monitoring of outcomes and program needs. The MathJam program continues to grow.
  - Many of our basic skills classes and some of our transfer classes use an on-line homework system. The use of this system needs to be carefully evaluated and (if warranted) expanded.

- Basic skills classes have recently adopted textbooks that are more application based and faculty development is needed to improve use of these books.
- In recent years our focus has been on improving our success in the basic skills courses in order to get more students to the transfer level classes. Over the past 5 years the number of students whose goal is transfer has gone from 1034 in 2008/09 to 1772 in 2011/12, an increase of 71% !

Department	Metric	Academic Year				
		2007/08	2008/09	2009/10	2010/11	2011/12
MATH	Transfer (w/ or w/o Degree)	1034	1190	1371	1578	1772
	Career Dev (Degree, Certificate, License)	211	263	342	391	431
	Educational Development	261	200	341	357	313
	4 Yr College Student attending Cañada	350	342	337	271	184
	Undecided on Goal	141	192	219	275	270
	% Transfer (w/ or w/o Degree)	51%	53%	52%	55%	60%
	% Career Dev (Degree, Certificate, License)	10%	12%	13%	14%	14%
	% Educational Development	13%	9%	13%	12%	11%
	% 4 Yr College Student attending Cañada	17%	15%	13%	9%	6%
	% Undecided on Goal	7%	9%	8%	10%	9%

Data Definitions: All counts & percentages reflect the student's primary educational goal as indicated on their first application.

Note 1: Percentages do not sum to 100% because the Transfer category also includes some degree seeking students.

Although their goal is to transfer many of the students need to start in remedial courses. To meet their needs we plan to

- Continue to offer and improve the StatPath and Fast Track accelerated pathways.
- Continue to offer and improve accelerated algebra.
- Continue the overhaul of Math 811. So far we have
  - implemented mastery level testing
  - raised the grading scale (80% for C, passing)
  - increased contact hours (2 lecture and 3 lab hours per week).

#### 4. Describe PT/FT faculty needs for the discipline/program.

We have 6 full time math instructors: Rich Follansbee, Michael Hoffman, Denise Hum, Evan Innerst, Po Tong and Ray Lapuz.

Adjunct instructors include Adam Fahey, Teresa Zemla, Hongyan Meng, Tai Nguyen, Radu Toma, Judy Choy, Vera Klimkovsky, Rama Akkaraju, Alpona Banerjee, Elena Ivanova, Kazumi Tsuchiyose, David Monares, and Danielle Ta.

In the learning center we have Catherine Lipe and Frank Austin.

This spring, only 36% of the units taught in the math department and 31% of the classes are taught by full time faculty. Several areas of importance, including intermediate algebra, statistics, and the second semester of calculus are taught almost entirely by adjunct faculty. Although our adjunct faculty are some of the best, it is important to have a fulltime faculty presence in these areas.

5. Describe any future economic, community or governmental initiatives/mandates this proposal is addressing?

Three years ago the state changed the graduation requirement in math for high school students to intermediate algebra. This necessitated a change in the graduation requirement for math for an associate's degree. The Math Department has set as a goal to improve retention and success rates and this is even more critical as the math requirement is higher.

With the adoption of the common core in math by our local feeder high schools, the next 2-3 years will be quite busy with curriculum re-design. We have the opportunity to completely re-think the developmental math sequence and the transfer pathways. Students will be coming to us in a different 'place' than they do now. In addition, the UC system has declared that with the implementation of the common core, they will no longer require intermediate algebra as the prerequisite for transfer-level math classes. We need to take advantage of these events and develop the math sequence that works best for our students.

6. Describe any budgetary implications of the proposal.

The new position would be funded from Fund 1.

## **B. College Mission and Goals Criteria**

1. Explain how the request supports the goals of the college strategic plan.

The mission of the Cañada Mathematics department is to provide a foundation for a liberal arts education and for the study of the sciences. This is accomplished by providing students with a broad range of courses designed to develop basic skills in computation and quantitative reasoning, to meet the transfer requirements for colleges and universities, and to meet the needs of occupational training programs.

Every student has to take math either for basic skills, or transfer, or vocational certificates. Math supports the mission of the college by supporting virtually every academic program on campus.

2. What unmet needs will this position address (student, district, community)?

Our continued goal is to hire at least two full time math instructors. We have hired Denise Hum, Michael Hoffman, Po Tong, and Cathy Lipe (MESA only, not instructional faculty), but lost Steve Gavazza, Jack Preston, Rich Anderson, and Judy Liteky to retirement. Last year we lost Chuck Iverson to retirement. He primarily taught computer science, but was the key instructor for Linear Algebra and Differential Equations. Both of these classes are very important for engineering and science majors. Even with the addition of Po Tong in the Fall of 2013, we are still lacking the full-time faculty necessary to effectively implement the improvements outlined in section A number 3.

3. How will this position enhance retention or produce college wide growth?

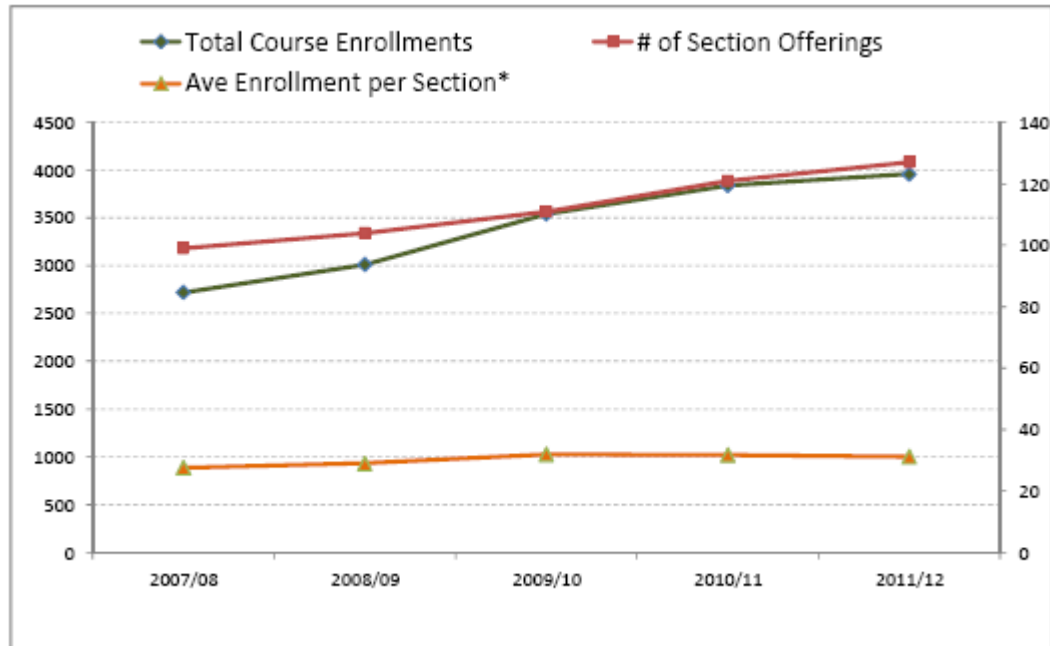
Every student has to take math either for basic skills, or transfer, or vocational certificates. Math supports the mission of the college by supporting virtually every academic program on campus. The Math Department has set as a goal to improve retention and success rates and this is even more critical as the math requirement is higher. Development of new retention activities will require additional faculty. The six faculty we currently have are stretched thin.

4. Describe how the position supports a pathway to student educational goal completion (certificate and/or degree) or GE transfer certification.

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**C. Historical data criteria supporting request.**

1. Discuss Department/Discipline/Program enrollment and student service trends the proposal addresses.



The department continues to grow in the number of sections offered and the total number of students served. These increases have been filled using adjunct faculty.

**Statistics from the U.S. Department of Education show that success in algebra is the single best predictor of success in college--not just for engineering and science majors, but for students in all fields.**