Proposal for Sabbatical Leave for Ben Rode

Purpose:
The purpose of my sabbatical leave is to improve the success rate for ACCESS students in the two-semester Intermediate Algebra sequence at Moorpark College.

Background:
For the past 21 years I have been a full-time math faculty member at Moorpark College and have taught the full range of mathematics course offerings. Each semester I have taught at least one of the basic skills math classes (Pre-Algebra, Elementary Algebra, or Intermediate Algebra). Over the years I have been involved in a number of attempts to improve student success in these classes. For six years, I helped organize and teach a "self-paced" series for all three of the basic skills courses. Before the self-paced program, another faculty member and I adapted and used the "Kumon" approach for Pre-Algebra and Algebra. I have also experimented with the University of Chicago Algebra series. Most recently, I led in the development of a two-semester version of Elementary Algebra (Math M01A and M01B) and Intermediate Algebra (Math M03A and Math M03B). These courses were developed to serve ACCESS students (students at Moorpark College who have verified disabilities) and other students interested in having the pace of algebra slowed down without omitting any topics. A large proportion of the students in Math M01A, M01B, M03A and M03B are ACCESS students.

Rationale:
The goal of my sabbatical leave is to improve the success rate for ACCESS students in the two-semester Intermediate Algebra sequence. The two-semester Elementary Algebra sequence has been very successful for ACCESS students, but the success rate is noticeably lower at the higher level. Since Fall 2006, I have been teaching the courses in a four-semester cycle that starts with Math M01A, and continues with Math 01B, Math 03A, and ends with Math 03B. The courses are popular and have an average enrollment of 40 students. I am on my third cycle, and I typically work with a core group of students who take all four courses in the cycle. After four semesters, I know these students quite well, and I see how they struggle with the more advanced material in Math M03A and M03B, which is now required for the AA degree. I would like to find out as much as possible about why ACCESS students have trouble with the intermediate algebra concepts, and what can be done to help them overcome their difficulties.

My interest in teaching students with disabilities goes back to the start of my teaching career at Moorpark College. I structure my classes in a way that seems to attract students with learning disabilities, and so I always have had more ACCESS students than other math instructors in developmental math classes. I enjoy the challenge of trying to help these students learn math, and I have worked closely with ACCESS (and its earlier incarnations) for 20 years. One of the most effective program improvements for ACCESS students in mathematics has been the creation of the Math M01A and M01B courses. The success of these courses has sent more ACCESS students than ever before into Intermediate Algebra, and we expected to see a similar success rate with the Math M03A and M03B courses. We have not seen the expected success rate for ACCESS

students in intermediate algebra, and that is why I am interested in improving these courses. A sabbatical leave is the only realistic way that I can achieve this goal.

Schedule/Plan for Sabbatical Work:
The following schedule outlines how I would use a one semester sabbatical to help ACCESS students improve their success rate in Math M03A and M03B:

January 2012	<u>Research and data gathering.</u> • Gain an overview of mathematical learning disabilities by researching educational databases. • Interview experts in math education and learning disabilities to understand the interaction between algebra and mathematical learning disabilities. I will use contacts at Moorpark College ACCESS, CSUN, UCLA, and UCSB to focus on algebra learning and adult students with learning disabilities.
February/March 2012	<u>Curriculum research.</u> • Interview faculty at community colleges who have experience in developing math courses for students with learning disabilities. Specifically, I will be interviewing faculty at Santa Barbara City College and Saddleback College about their programs and curricula. • Locate and interview others who work with adult education or high school algebra programs that address students with learning disabilities. • Continue to coordinate with Moorpark's ACCESS program in sharing information.
March/April 2012	<u>Develop a Teacher's Guide for Math M03A, M03B</u>. • Develop a Teacher's Guide that will describe how to craft lesson plans, group work, and other classroom activities that will help students with learning disabilities be more successful in the two-semester intermediate algebra course. • Incorporate in the Teacher's Guide the results of my research on students with math learning disabilities and on curricular ideas. • Create a course outline that suggests how and when to cover the standard topics in Intermediate Algebra. • Cross-reference the topics in the newly created course outline with the popular texts being used for Intermediate Algebra at Moorpark College.

May 2012	Develop a *Handbook of Mathematics Strategies* for teaching math to students with disabilities. • Create a Handbook intended for all math faculty in the Ventura Community College District, which will be available online. It will contain the best ideas garnered from the research and the creation of the teacher's guide for Math M03A and Math M03B. • Work closely with Moorpark College ACCESS faculty in the development of this Handbook.
Sabbatical Ends	----------
August 2012 to December 2012	• Implement the Teacher's Guide in a Math M03A class at Moorpark College. Fine tune the Teacher's Guide based on the results in the classroom. • Prepare a presentation for the spring California Mathematics Council Community College (CMC3) conference about attempts to improve the success rate for ACCESS students in Intermediate Algebra.
January 2013 to May 2013	• Implement the Teacher's Guide in a Math M03B class at Moorpark College. Fine tune the Teacher's Guide based on results in the classroom.
August 2013 and beyond	• Continue to experiment with strategies to increase the success rate of ACCESS students in my Intermediate Algebra classes. Continue to work closely with the math department and the ACCESS program at Moorpark College. Continue to share my experiences teaching students with learning disabilities in math.

Benefits of Sabbatical Leave:

Benefit to Faculty: Faculty member Ben Rode will gain an increased understanding of learning disabilities that affect mathematics learning, as well as expertise in teaching techniques that address those disabilities in order to support students in learning mathematics.

Benefit to Students: Reconfiguring the way Math M03A/M03B is presented, with features designed to help students with learning disabilities, should increase the success rate in the two-semester version of Intermediate Algebra for all mathematics students.

Benefit to Moorpark College: The Teacher's Guide for Math M03A/M03B will focus on strategies for teaching Intermediate Algebra so that other instructors in the college will be able to effectively teach Math M03A/M03B to all students, and especially to ACCESS students. I will be working closely with the ACCESS faculty at Moorpark College; my research and results will be shared with the ACCESS program.

Benefit to District: In addition to the Teacher's Guide, I will produce a *Handbook of Mathematics Strategies* to use for students with learning disabilities. This Handbook will be available to mathematics instructors throughout the district. I will arrange meetings with ACCESS departments at Oxnard and Ventura Colleges to share my findings. I will submit a proposal to present my research at the California Mathematics Council Community College Conference or other regional conferences for community college mathematics instructors. The presentation will include my research findings, teaching guidelines, and specific math strategies to use when teaching Intermediate Algebra to students with learning disabilities.

Feasibility of Implementation:

The benefits of this sabbatical leave can be implemented immediately upon my return to teaching. No additional funding is required and the current facilities are adequate. I have spoken with Dean Lisa Miller, who is dean of Mathematics, about this project, and she has encouraged me to apply for the sabbatical. I have also spoken with several of the ACCESS faculty, and they are very supportive of my project and have offered to help me with my initial research. I have contacts in the Special Education and Math Departments at CSUN who can also help me with the research.