

Metropolitan State College of Denver

Department of Mathematical and Computer Sciences

December 21, 1994

Dr. William C. Ramaley
Secretary, Rocky Mountain Section of MAA
Department of Mathematics
Fort Lewis College
Durango, Colorado 81301

Dear Dr. Ramaley:

I am most pleased to be able to write this letter recommending Dr. William D. (Bill) Emerson for the Rocky Mountain Section of the MAA Distinguished Teaching Award. I feel strongly that he is most deserving of this award. Over the course of his career at Metropolitan State College of Denver (MSCD), he has been a significant factor toward improving the teaching dynamics within the Department and has made a major contribution toward innovative teaching within the region.

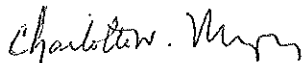
I left the Department ten years ago, when Bill was a relative new faculty member, to pursue positions in the administration. I returned to the Department three and one-half years ago (and have been the Department Chair for two and one-half years). Upon my return, I found that there was an energy in the Department that had not been there when I left. I noticed there was much discussion of curriculum and interest in pedagogy and technology. Professors were meeting weekly to discuss new techniques being tried in calculus and other classes. There was intense caring about the students' learning as a result of these new techniques. A mathematical computing laboratory was on its way and the entire department was excited about the first NSF grant we had ever received. There were courses in problem-solving and modeling. The same caring for students had become more focused and resulted in activities that were making more of a difference. There was a sense of team and teamwork.

In addition, there were several traditions that had been institutionalized. MATH day was looked forward to by the entire department as a "fun" time to interact with high school and middle school students as well as a way to gain newspaper coverage for mathematics activities. Our best students were being rewarded with graduate teaching assistantships and job offers based on their participation in the Putnam competition. The Department was being recognized externally for its contribution to curriculum reform and several faculty were speaking at regional, national and international meetings on this topic. In general, the Department was a more exciting place to be.

When I analyzed the reasons for all the positive differences mentioned above, my conclusion was that they were largely attributable to Bill. The Department contains many good mathematicians who are master teachers and caring faculty. However, Bill emerged as the leader who focused all those positive attributes of the faculty. He is the one who goes the "extra mile" with students, preparing them for competitions. He is the one who initiated the process of obtaining guest lecturers, the one who wrote the grants and professional development proposals, the one who made sure the computing laboratory actually happened, the one who did the writing and editing for the *Mathematica* Notebook. He is the one who started MATH Day when the rest of the faculty were skeptical, the one who still writes up the questions for the students participating in Math Day, the one who, most recently, started the Faculty/Student/Staff Fall Math and Computer Science Picnic. He is one of a few who has made sure the Department's successes in curriculum reform are known to the larger mathematics community and one of those called upon by that larger mathematics community for positions of leadership and as a significant voice on issues of curriculum reform.

In conclusion, the Department knows that Bill has made a major contribution to our own program and permanently changed it for the better. We feel he has done this for the larger mathematics community as well. He is one of our respected and well-liked leaders and we hope you find his merits deserving of your prestigious award.

Sincerely,



Charlotte W. Murphy, Chair
Department of Mathematical and Computer Sciences

MATHEMATICAL ASSOCIATION OF AMERICA
AWARDS FOR DISTINGUISHED COLLEGE OR UNIVERSITY TEACHING OF MATHEMATICS
Nomination Form

Name of Nominee: **Emerson, William D.**
Name of College or University: **Metropolitan State College of Denver**
College of University Address: **Campus Box 38**
P.O. Box 173362
Denver, Colorado 80217-3362
College Telephone: **(303)-556-3930** Home Telephone: **(303)-425-0415**

Number of years of teaching experience in a mathematical science: **24 years**

Has the nominee taught at least half time in a mathematical science for the past three years (not counting a sabbatical period)? **Yes**

Activities related to teaching:

1. Principal Investigator for NSF Instrumentation and Laboratory Improvement Grant: Integrating *Mathematica* into a Reformed Calculus Curriculum, 1992-1994;
2. Putnam Competition Sponsor, 1984-Present;
3. Originator and Problem Coordinator of MSCD MATH Day, 1986-Present;
4. MSCD Departmental Calculus Reform Leader and Activity Sponsor, 1986-Present;
5. Consultant and Speaker on Technology and Teaching Reform in Mathematics, 1987-Present.
6. Principal Investigator for seven MSCD Professional Development Grants to integrate technology into the curriculum, 1986-1993.

Publications related to teaching, if any:

1. Programming the Fast Fourier Transform with Mathematica, The Journal of Computing in Small Colleges, March 1995.
2. Least Squares Approximation and the Fast Fourier Transform, Denver Metropolitan Journal of Mathematics and Computer Science, Summer 1994.
3. Integrating Mathematica into the Calculus Curriculum, The Journal of Computing in Small Colleges, March 1994.
4. Mathematica Notebooks for Calculus with Thomas Kelley, Kenneth Rager and Louis A. Talman, Auraria Reprographics, Preliminary Edition, August, 1993.
5. Methods of Numerical Integration in Symbolic Excursions: Student Activities with Computer Mathematics Systems, ed. by Elson, Constance and Seltzer, Stan, Department of Mathematics and Computer Science, Ithaca College, 1993.

Membership and significant activities in relevant professional organizations:

1. National Mathematical Association of America Activities: Speaker on Technology and Calculus Reform, International Joint Meeting of the AMS/MAA/CMS, 1993;
2. Rocky Mountain Section of the Mathematical Association of America activities: Secretary-Treasurer, 1986-1990; Committee on Distinguished Teaching Award, 1992-93; Speaker and Discussion Leader on Technology and Calculus Reform, 1987-Present.

Previous awards for teaching, if any:

1. Recognized for Inspirational Teaching Style by Golden Key Honor Society, 1992;
2. Outstanding Faculty Member in the MSCD Department of Mathematical and Computer Sciences, 1989.

Name of Nominator: **Murphy, Charlotte W.**
Chair, Department of Mathematical and Computer Sciences, MSCD
Address of Nominator: **Campus Box 38, P.O. Box 173362**
Denver, Colorado 80217-3362

William D. Emerson

Education and Experience

Degrees

Doctor of Philosophy in Mathematics, University of Utah	1979
Master of Arts in Mathematics, University of Illinois	1971
Bachelor of Arts in Mathematics, Emporia State University	1970

Recent Professional History

Metropolitan State College of Denver (MSCD)	1983-Present
University of Denver, Visiting Research Associate	1992
Colorado School of Mines, Visiting Professor	1991-92
MSCD Professor	1991-Present
MSCD Associate Professor	1986-91
MSCD Assistant Professor	1983-86
Texas Tech University, Assistant Professor	1980-83

Courses Taught

Twenty-nine of forty-five courses offered in the department, including ten of the twelve Freshman courses, all the five Sophomore courses, six of the fifteen Junior courses, and eight of the thirteen Senior courses.

Evidence of Successful Teaching

In order to better understand the context of the teaching environment at Metropolitan State College of Denver (MSCD), some history is appropriate. MSCD is an undergraduate-only, urban institution of around 17,000 students. Its role and mission is to be an open admission College for those students over age twenty. Consequently, the average age of the students is around 28 and over 65% are part-time. The Department of Mathematical and Computer Sciences has a full-time faculty of 28 noted as a group of exceptional teachers and a part-time staff of around 40. There are approximately 300 mathematics majors spread over five emphasis areas. Dr. William Emerson, (Bill), has taught at Metropolitan State College of Denver for the last eleven years. During this time, he has distinguished himself in all aspects of teaching as noted by both his in-class performance and out-of-class activities. Because of his consistent, outstanding performance (he has been given the highest rating allowed by the College since 1984-85) his nomination is the result of a unanimous vote of the faculty.

Bill's support by the Department faculty is consistent with his reputation and contributions over the years. He was recognized in 1989 by the President of MSCD as the Outstanding Mathematics Faculty Member and was again honored in 1992 by the Golden Key organization for his outstanding teaching style. (He was one of twelve faculty honored out of approximately 350.) These are typical of the types of recognition that Bill has had on a less formal basis from his colleagues and students. Part of his exceptional style is the result of his extending his teaching efforts beyond the classroom and into the student's larger learning environment.

Individually he has met with students and mentored them both on-campus and off. He has given them the encouragement and support to continue to graduate school or enter challenging areas of the mathematics profession through generous giving of his private time and by welcoming the students into his home and family. For a commuter campus where students have very little off-campus support from faculty, this has lead more students than would do so otherwise to pursue graduate school and the most challenging mathematics careers. In addition, in order to promote interest in mathematics,

Bill initiated the MATH Day competition in 1986 with a small group of high school mathematics students from a few of the local high schools. Over the last eight years, this activity has grown to be one of the major competitions for local high-school level mathematics students with the attendance now over 140 students representing over 20 high schools from as far away as Colorado Springs.

Bill's mathematical interests are widespread and this is reflected by the fact that he has taught all course levels and subject areas; from College Algebra and Calculus I through ODE and PDE to Stochastic Processes, Numerical Analysis, Complex Variables and a Seminar on Problem Solving. One indication of his master teaching over this wide range of courses is his student evaluations. Between Spring 1990 and Spring 1993, he was evaluated by students in 20 classes from Freshman to Senior level. When asked to rank Bill on the question "The instructor was one of the best I have had at this college", Bill averaged a 6.00 on a scale from 1.00 to 7.00. When this is put in the context of the excellent teachers with whom he is compared, it is an obvious indication of exceptional teaching. While comparative data is not available for the question, students comments for his classes are. Three pages of comments from student evaluations are attached.

Bill's approach to teaching combines a very caring concern for students' mathematical careers with a high standard of excellence. One manifestation has been the overloads he has taught at the senior level. For example, Spring semester 1988 he taught 16 hours in order to insure that graduation was not delayed for students who needed senior level courses. Along with his research activities, his teaching load that semester was comprised of Calculus II, Numerical Analysis II, Stochastic Processes, and two sections of Business Calculus. In addition, in order to individualize the curriculum to the needs of the students, he has taught, since 1985, eight independent studies at the senior level. Examples of titles include: Differential Manifolds, Dynamical Systems, Differential Equations and Stability, and Fourier and Laplace transforms using Residue Theory.

Along with the independent studies, Bill has incorporated mathematics problems into a new course: Seminar in Problem Solving. This course develops various problem solving approaches that students may use at the Putnam competition level. This course has proved an invaluable tool for our alumni (see the letters of recommendation from students) who are solving problems in industry. In addition, Bill has coached students taking the Seminar in Problem Solving in order to prepare them for the Putnam competition. Under his tutelage, the College has competed in nine of the last twelve years with anywhere from four to twelve students.

Bill's interest in teaching has led him, during the last eight years, to issues of technology and curriculum reform. In 1986 he initiated department activities centered on integrating technology into the curriculum by obtaining MSCD professional development grants to supplement the calculus curriculum with graphing programs on microcomputers. With other departmental faculty expressing an interest in his projects, he arranged during the Fall semester of 1989 for Professor Ronald G. Douglas to be named a MSCD Distinguished Visiting Professor. Dr. Douglas, a founder of the calculus reform movement, directed a week-long series of workshops, seminars and colloquia centered on calculus reform. These activities were attended not only by the faculty in the department but also by faculty from most of the institutions of higher education in the state. Subsequently, with the help of Professor Jerry Uhl at the University of Illinois, Bill arranged for MSCD to be a test site for the University of Illinois *Mathematica* project. By this time he had built a team of four departmental faculty concerned with integrating technology in the calculus. Experience with the University of Illinois program led to the conclusion that modifications were needed to better serve the MSCD

students. The form of the modifications was a blend of the traditional calculus and the unique presentations of material available through *Mathematica*. Bill took a half-time sabbatical during the 1991-92 academic year to write notebooks that focused on using the graphical, symbolic, and numerical capabilities of *Mathematica* to explore the central ideas of calculus in a new way. While on sabbatical he also wrote a NSF Instrumentation and Laboratory Improvement proposal for a *Mathematica* computing laboratory. The grant was awarded in the Spring semester of 1992 and a NeXT computing laboratory with *Mathematica* was installed in the summer of 1992. The team he had formed has successfully taught experimental sections using Bill's *Mathematica* notebooks since the Fall semester of 1992.

At this time, the *Mathematica* calculus notebooks have been used by nine members of the department with more expecting to use them when they have an opportunity to teach the calculus sequence. In addition, the Department approved this semester a two-hour course in *Mathematica*. We also approved a change in the Applied Mathematics emphasis of the Mathematics major: *Mathematica* will now be required for all upper division courses in this emphasis, including the courses in ODE, PDE, and Numerical Analysis I and II. In addition, in Fall of 1994, Bill's class in differential equations became a test site for a new text by Lomen and Lovelock which incorporates *Mathematica* into the teaching of the subject. His leadership and efforts have thus resulted in the department having a new and unified approach toward technology into the curriculum. *Mathematica* and the use of technology in the curriculum are now accepted and the talents of the other faculty have enhanced the overall level and depth of our course offerings.

External to the College, Bill's influence began when he arranged for MSCD to sponsor the activities of Dr. Ronald Douglas in 1989. Since that time he has been increasingly in demand to give papers and presentations regarding technology and the curriculum. One recent example occurred at the International Joint MAA/AMS/CMS meeting in August 1993. In addition to the presentations listed on the following page, he has acted as a project participant and a resource to the Colorado Higher Education community. As an example, he was a co-principal investigator in an NSF Calculus Reform grant proposal submitted in 1993 by Frank Hagin and other members of the Mathematics Department at the Colorado School of Mines. As another example, he was a consultant on technology in education and a co-principal investigator for another NSF proposal prepared by LuAnn Malik and a consortium of Community College Faculty from across the state. Further, when the Air Force Academy decided to integrate *Mathematica* in their mathematics curriculum, they contacted Bill about setting up a series of seminars for their faculty to discuss the use of his notebooks in their classes. Finally, during the summer of 1994, Bill was given release time to work with Denver CONNECT, the collaborative between MSCD and the Denver Public School system, part of the Colorado State-wide Systemic Initiative (SSI), to reform the K-12 science and mathematics curriculum. In this capacity he is currently a member of the Task Force on Technology which will deal with the integration of computers and calculators into the mathematics curriculum.

In conclusion, the faculty of the Department of Mathematical and Computer Sciences at MSCD hopes that you will concur with our assessment that Bill Emerson has made an exceptional contribution to the teaching of mathematics. He is one of our finest teachers in a department of master teachers, is a model and inspiration for students, and is a leader for faculty. He has both motivated and focused the department's activities and has made significant contributions at the regional and national level as well. Along the way, he has added a sense of camaraderie and fun for both the faculty and students.

Presentations

Programming the Fast Fourier Transform with *Mathematica*, Third Annual Rocky Mountain Small College Computing Conference, University of Northern Colorado, October 21, 1994.

Curricular Implications of Technology in Calculus, State Colleges in Colorado Trustee/FACT Teaching

Excellence Conference, April, 1994.

Integrating *Mathematica* into the Calculus Curriculum, Second Annual Rocky Mountain Small College Computing Conference, Longmont, Colorado, October 15, 1993.

Doing More Calculus with *Mathematica*, International Joint Mathematics Meetings, Vancouver, British Columbia, August 17, 1993.

Curricular Implications of *Mathematica*, invited address, United States Air Force Academy, June 1993.

Interactive *Mathematica* Texts, workshop, Annual Meeting of the Rocky Mountain Section of the Mathematical Association of America, Colorado School of Mines, April 1993.

Use of Technology and Cooperative Projects in the Classroom, Panel Discussion, Annual Meeting of the Rocky Mountain Section of the Mathematical Association of America, Colorado School of Mines, April 1993.

Mathematica and the NeXT Laboratory, Open House, Colorado/Wyoming Academy of Science, February 1993.

Mathematica and the NeXT Lab, invited address, Metropolitan State College of Denver Computing Club, December 1, 1992.

CAS in Upper-Level Mathematics Courses: Results of a Five-Day Conversation, Panel Discussion, Fifth Annual International Conference on Technology in Collegiate Mathematics, November 15, 1992.

Mathematica and Calculus I and II, 1992 Colorado Council of Teachers of Mathematics Annual Conference, Denver, Colorado, October 16, 1992.

Integrating Computer Algebra Systems into the Calculus, A Computer on Every Desk: Implications for Mathematics Courses, Workshop at Ithaca College, June, 1992.

Curricular Implications of Integrating Technology into Calculus, Conference on Computing in the Calculus, Rensselaer Polytechnic Institute, May 30, 1992.

Panel: Calculus Reform, Panel Discussion, 1992 Regional Meeting, Rocky Mountain Section of the Mathematics Association of America, Colorado College, April 10, 1992.

Using "Calculus & *Mathematica* in the Classroom", Invited Talk, Addison-Wesley Workshop, Technology in the Mathematics Curriculum, Denver, CO, November 21, 1991.

Calculus and *Mathematica* at Metropolitan State College, Invited Colloquium, University of Colorado at Colorado Springs, March 1992.

Teaching Calculus with *Mathematica*, Address, 1991 Regional Meeting, Rocky Mountain Section of the Mathematics Association of America, University of Northern Colorado, April 12, 1991.

Calculus Reform and *Mathematica*, Invited Colloquium, Metropolitan State College of Denver, April 5, 1991.

Integrating Technology into a Reformed Calculus Curriculum, Invited Colloquium, University of Southern Colorado, February 4, 1991.

Teaching Calculus with *Mathematica*, The 1991 Mathematica Conference, San Francisco, January, 1991.

Written Comments from Student Evaluations
for
William D. Emerson

Mr. Emerson is an excellent instructor, he cares about his students and goes out of his way to offer extra help and support. Dr. Emerson is one of the best instructors I have ever had. *Spring 1994, Calculus I*

Mr. Emerson was interested in the subject and pushed to help us (students) to learn and understand. He made taking calculus ... fun and enjoyable. *Spring 1994, Calculus I*

Highlighted the myriad problem solving techniques with a great array of problems! I really enjoyed the thought provoking problems and analysis of problem solving, I would recommend this class to everyone. *Spring 1994, Seminar on Problem Solving*

Professor Emerson is by far the best math professor I have had. He has a talent for teaching and a knack for illustrating concepts in an easily understood fashion. I would definitely recommend him to other students. *Fall 1993, Calculus III*

Best professor I ever had at Metro. Has a style that emphasizes *understanding* processes rather than memorizing and doing things by rote. *Summer 1993, Calculus I*

Dr. Emerson is the most approachable teacher I've had. I'm usually too shy to say anything in class or to talk to an instructor outside of class, but with Dr. Emerson, I felt it was okay to let him know when I didn't have a clue. I wish he was my dad. *Summer 1993, Calculus I*

!Outstanding in a field! I will select him again and will recommend him to others. *Summer 1993, Calculus I*

I feel that Dr. Emerson was really concerned on how the students were progressing. He was available for help and would make the effort to make sure the students understood what was going on. Excellent job, Professor! *Fall 1992, Calculus I*

Dr. Emerson is one of the best math teachers I have had here at Metro. His style of teaching is geared towards learning and not just expressing his knowledge and losing the students in the process. I have enjoyed taking his class and being able to have the opportunity to take Calculus I under his guidance and teaching. *Fall 1992, Calculus I*

I can honestly say that Dr. Emerson is one of the two best math instructors I have had in college. He presents material clearly and in a relaxed atmosphere. He has a genuine concern for his students' progress and won't hesitate to re-explain anything. *Spring 1992, Complex Variables*

I feel that Dr. Emerson is an excellent instructor who cares about the learning experience of his students above everything else even if it means taking a little extra time here and there for certain sections. *Summer 1991, Probability and Statistics*

Bill is a great instructor. His best quality is to portray the attitude of a mathematician as it should be. His attitude and approach helped bring a new perspective. *Spring 1991, Partial Differential Equations*

Emerson is one of my favorite teachers here at Metro. I've had him for two semesters, and I really appreciate his concern that we understand the material. I also like the way he takes the abstract ideas and makes sense of them through graphs (computer and on the board) and description of the physical events involved. *Spring 1991, Partial Differential Equations*

Teacher was great! His enthusiasm is contagious and he really cared whether we understood the material or not. He was also one of the fairest teachers I've had. I particularly like the way he tied in the math to real life situations, including the chance to use the computer for some problems. I also like the way he presented the theory without getting too abstract, but giving us enough to understand why we were doing what we were. *Fall 1990, Differential Equations*

After the third math course with Mr. Emerson, I have enjoyed the creative and interesting methods of teaching he used. It seems that he really tries to relate to the students. *Fall 1990, Differential Equations*

I feel Dr. Emerson was the most enthusiastic instructor I have had in 2 1/2 years at Metro. He was always presented material in a clear way and all the homework and tests were very straight forward. I have learned a great deal more in this class from Dr. Emerson than any class I have taken. Even though I dreaded this class, it was the most motivating. *Summer 1990, College Algebra*

One of the best teachers I have had. He makes a difficult subject fun to learn. I hope to have him again. *Summer 1990, College Algebra*

Instructor was fantastic. I learned more from his explanations than from almost all my other math teachers, including those I had at CU Boulder. Presented fabulous uses of matrices, made the material come alive, had a real interest in students. Overall, Great. *Spring 1990, Matrix Algebra*

Dr. Emerson is probably the best instructor of math I have yet to experience. He was always available and always took time to explain when we didn't understand. His personality and sense of humor was a pleasure to be around. He is a teacher in the true sense of the word. *Spring 1990, Calculus II*

Great, good enthusiasm, preparation, fairness all around. By far the best Metro prof I've had. Makes class fun and is available for individual help. *Spring 1990, Complex Variables*

Dr. Emerson was one of the best professors I've ever had at MSC. He knew exactly what was going on and knew how to best approach a problem or an abstract idea, which enabled him to present concepts so the student would do well. *Spring 1990, Complex Variables*

The best math instructor I've had in my 3 years of college. Dr. Emerson does an excellent job of instilling enthusiasm in his students. He has a superb grasp of the subject. I've really enjoyed/learned a lot in this class. *Fall 1989, Calculus III*

The instructor was by far the most enthusiastic, well-prepared, concerned, teacher I have ever had! His strong point is that he does a *very* good job of teaching an intuitive feeling and description of what is being taught. This also helps in teaching students who don't catch the meaning the first time around. *Fall 1989, Calculus III*

I feel Dr. Emerson is one of the best instructors I have had at Metro. He thoroughly knows the material that he is teaching, he brings in down to earth examples, is personable. He actually makes calculus 3 fun - a great feat indeed. It has been a pleasure to be a student of his. *Fall 1989, Calculus III*

Dr. Emerson was one of the best math professors I ever had. He knew how to explain abstract ideas so that I could learn. *Fall 1989, Differential Equations*

I feel it was a privilege being his student. He taught me well!! *Fall 1989, Differential Equations*

Dr. Emerson is the finest teacher I have ever encountered, no lie. *Fall 1989, Differential Equations*

Dr. Emerson is the *best* instructor I've had. He has enthusiasm that is contagious. He knows his math and is able to relate it in a way I can understand. He's also the first math teacher I've had with personality! He has the *gift of teaching*. *Fall 1989, Differential Equations*

Dr. Emerson is fantastic. I was able to understand the course. He made it very enjoyable and this math course actually fun. Dr. Emerson is the best instructor (math or otherwise) I've had here at Metro. He was always there to help. I hope I have another class with Dr. Emerson. Thanks for the summer. *Summer 1989, Linear Algebra*

Dr. Emerson is one of the very best instructors I have ever had at Metro! (or anywhere else, for that matter.) He was always willing to answer my questions completely, and he made class fun (that's hard to do in the summer!) *Summer 1989, Linear Algebra*

I consider William Emerson to be one of the most outstanding teachers I have ever had. He showed by his teaching methods that he wanted the students to learn. Calculus could be a boring class, but it isn't. I look forward to going to class because I learn something everyday. *Fall 1988, Calculus I*

Bill Emerson is one of the best instructors I've had in my seven years of college experience. I hope that if credit is due to an instructor in the math department, it's given to him. *Fall 1988, Calculus III*

I think that Dr. Emerson is a very effective teacher. He gives a lot of work, but I've learned more in his classes than I have in many others. *Fall 1988, Calculus III*

This guy is the best. *Fall 1988, Calculus III*

Dr. Emerson made every effort to rephrase explanations until everyone understood. He also was very good at slowing down the pace when difficult material was being covered. He's one of the best instructors as far as wanting the student to learn vs. other instructors that just want to show off what they know. *Fall 1988, Advanced Calculus I*

Dr. Emerson's enthusiasm and originality toward the subject matter made the class enjoyable. He possesses the unique ability to communicate with a class and thus maintain the students' interest. I believe without a doubt that Bill Emerson is the best teacher that Metropolitan State's math department has to offer - a talent that must be recognized. *Fall 1988, Seminar in Problem Solving*

Dr. Emerson taught this class better than any other MSC teacher has taught his courses. He knew the subject very well and taught it in a professional manner. He related these ideas to you in a manner that you could understand. I fell as though he's the best teacher I've had yet at MSC. *Spring 1988, Calculus for Management and Social Sciences*

Calculus used to be pure, boring drudgery before Dr. Emerson. Now, for the first time in my life, I actually love calculus. His lecturing skills are excellent. His analysis of problems in the course is brilliant. Besides, he's human, warm, and funny. The longer I study under Dr. Emerson, the stronger my liking is for the course and math in general. *Spring 1988, Calculus II*

Metropolitan State College of Denver

Department of Mathematical and Computer Sciences

December 21, 1994

To Whom It May Concern:


I take great pleasure in writing this letter in support of Bill Emerson's nomination for the Rocky Mountain Section Award for Distinguished College or University Teaching of Mathematics. Over the past ten years, Bill and I have developed a close working relationship involving collaboration on a variety of curriculum projects, including several funded by Professional Development grants from our own institution and one funded by an NSF grant; because of this close relationship, I believe I am in a better position than his other colleagues to evaluate Bill's contributions and accomplishments. Our goal in all of these projects has been the improvement of classroom instruction in mathematics, both at our own institution and elsewhere. Bill's contribution to these projects has been central, indeed, essential. His insights into how students learn mathematics have produced ways of integrating computer technology into the calculus curriculum that have attracted attention in national forums and have made our institution a leader in this area.

Bill's presence has had a profound effect upon our department. I have had the privilege of serving with him, alongside other members of our department, on committees dealing with promotion and retention, with curriculum, and with recruitment, and of participating under similar circumstances in faculty seminars. He characteristically undertakes a role of leader and we value him in that role. One of the most senior members of our department, who has been our department chair, who was once an acting dean, and who served as acting vice president for academic affairs, spoke a year or so ago of his appreciation for Bill's leadership and remarked on how Bill's activities have helped to raise the intellectual level of our department.

Bill's contributions to curriculum development by no means overshadow his performance in his own classrooms. Students consistently give him highest marks for teaching effectiveness and seek him out for assistance even when they are not enrolled in his courses. His response has been to undertake even more responsibility, for example, by encouraging them to prepare for the Putnam Exam and providing them with direction in doing so. In connection with this effort, he offers each semester a highly regarded and well-attended problem-solving seminar whose enrollment is not limited to potential Putnam scholars.

Bill has indeed brought himself distinction in college teaching of mathematics. Our department is unanimous in its support of this nomination; we believe he deserves the recognition of his colleagues throughout the region. Accordingly I recommend him whole-heartedly for the Rocky Mountain Section Award for Distinguished College or University Teaching of Mathematics.

Sincerely yours,



Louis A. Talman

Associate Professor of Mathematical Sciences

Campus Box 38
P.O. Box 173362
Denver, Colorado 80217-3362
Office: (303) 556-3208




U.S. DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration
INSTITUTE FOR TELECOMMUNICATION SCIENCES
325 Broadway
Boulder, Colorado 80303-3328

9 December 1994

Reply to the attention of: ITS.N1

TO: The Mathematical Association of America - Rocky Mountain Section

FROM: 
David A. Sutherland Jr.
Mathematician
Wireless Networks Group

SUBJECT: Letter of Recommendation for Dr. William D. Emerson

I strongly recommend Dr. William D. Emerson for MAA's Distinguished Teaching of Mathematics Award. Dr. Emerson has had a profound influence on my academic and professional career in Mathematics.

Dr. Emerson offered the opportunity to the students at Metro State to participate in the Putnam Math Competition. I hadn't heard of the Putnams, but I knew that they had never been offered before at MSC. Bill encouraged, recruited, and hornswoggled a few of us into participating. That first year, I didn't score anything. A class mate, Steve Binka, scored about fifteen points. Steve went on to pursue a Ph.D. in Physics at North Carolina. The second time Bill convinced me to take the Putnams I scored 19 points. On the basis of this "nice" score I was offered a graduate teaching assistantship at Oklahoma State and later I was awarded a Ford Foundation Fellowship.

Dr. Emerson offered a reading class for me in the Mathematics of Control Theory. This was a one semester class in Control Theory which was intended for me to get my feet wet in Applied Mathematics. The idea was to learn Mathematics outside of a structured class. This was a good preparation for graduate school.

At about the same time that Bill began offering the opportunity to compete in the Putnams he began a yearly workshop class in problem solving. This was the most valuable class I have ever had. Problem solving techniques are usually never emphasized. I came away with a better appreciation for Mathematics and with the confidence and ability to use my mathematical knowledge to solve problems creatively. One of Bill's basic techniques: Make the problem simpler and solve and understand that first, then go back to the more complicated solution. I use this daily in my projects at work. I also use this when I can spend time with the problem sections in my MAA Journals.

I took Numerical Analysis, PDE's, ODE's, and Introduction to Mathematical Proofs from Dr. Emerson. His classroom skills are marked by preparedness and thorough knowledge. I don't remember that he ever got stumped on a question. He also did something that many math professors do not even attempt or care about. He would look at us to see if he was getting through. I think our expressions "huh?" tipped him off. He would not proceed until he was certain that most of us got the point.

Outside of class Dr. Emerson was always approachable and available to answer questions, give advice, and generally socialize with students. During these advice and socializing sessions he encouraged me to consider graduate school in Math. Without Bill's encouragement and support I would not have begun pursuing a graduate education.

Bill Emerson served the role of mentor for me. I believe that he is still doing so for the Metro State Math student who demonstrates a desire to learn Mathematics. He helped foster a lasting fascination for Mathematics that helped me see beyond the drudgery of homework and studying for finals. He also emphasized that those who work hard, succeed. With him around a good student will be encouraged to go farther than a bachelor's degree. He continually strives to help students realize and reach their potentials in Mathematics.

MEMORANDUM


DATE: December 18, 1994
TO: MAA Rocky Mountain Section Distinguished
Teaching Award Committee
FROM: John Starrett
RE: Bill Emerson

I am a graduate student in mathematics at the University of Colorado at Denver. I attended MSCD for my undergraduate studies and had the pleasure of taking two classes, Complex Variables and Problem Solving, from Bill Emerson.

Three things stand out in my mind about Bill's teaching. First, he has a style in the classroom that draws you into the subject. His enthusiasm is contagious, and the clear and vital way in which he presents the material makes it impossible not to be engaged.

Second, he insists that his students communicate results clearly. The emphasis he places on communication is apparent in his Problem Solving class. We were given three easily stated problems every week from areas such as number theory, geometry and game theory. We presented our solutions to the class and wrote them up as short informal journal articles, with the opportunity to resubmit with corrections, clarifications and improvements in style. My experience writing in this class gave me confidence and practice in writing mathematics that has been extremely useful in my graduate studies.

Third, he is not stingy with his time. I was always able to get help during office hours, and in off hours he was always eager to discuss mathematics. It is obvious that Bill Emerson loves teaching, and that made it a pleasure to be his student.



Metropolitan State College of Denver

Department of Mathematical and Computer Sciences

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Rocky Mountain Section Award
Mathematical Association of America

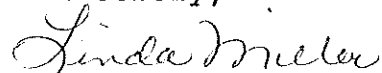
To Whom It May Concern:

I highly recommend Dr. William D. Emerson as a nominee for Distinguished College or University Teaching of Mathematics. As a three-time former student of Dr. Emerson, I found his lectures to be well organized, effective, and thought provoking. The way he developed complex mathematical concepts is a credit to both his outstanding sense of logic and superior command of mathematical operations. I was particularly impressed with his derivation of the Integration by Parts formula and subsequent ease of utilization. The classes I took from Dr. Emerson were Differential Equations (Fall 1990), Partial Differential Equations (Spring 1990), and Probability and Statistics (Summer 1991).

Dr. Emerson's demeanor as a teacher is impeccable. He always had time to answer questions regarding homework assignments and provide counseling services as needed. There was a point in my life when I had to make a career decision and Dr. Emerson encouraged me to finish my education. As a result, I obtained a Bachelor of Science degree in Applied Mathematics and have secured a part-time mathematics teaching position with Metropolitan State College.

Dr. Emerson's fervor and dedication to excellence in education is extraordinary. He was instrumental in incorporating Mathematica with the Calculus sequence and is active in other professional organizations as well. I feel Dr. William Emerson is most qualified to receive the prestigious award as 1994 Rocky Mountain Section recipient.

Sincerely,



Linda Miller
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