Rocky Mountain Section
Mathematical Association of America
Awards for Distinguished College or University Teaching
Nomination Form
January 1996

Name of Nominee: Hartvigson, Zenas

Name of University: University of Colorado at Denver

Address: P.O. Box 173364, Denver, CO 80217-3364

Phone: 556-3075 (w), 573-7718 (h)

Years teaching mathematics: 30 years

Nominee has taught full-time for the least three years (not counting sabbatical).

Activities: As elaborated in the nomination letter, Zenas is an inspiring classroom teacher; a leader in the integration of computing technology with the undergraduate curriculum; a creator of courses; a fundraiser for computing laboratory equipment; a teacher of graduate student instructors, public school teachers and other college\university teachers; and a writer of curriculum material. Specific activities include: workshops and presentations on technology in the classroom throughout this country and in England; keynote speaker at various national meetings; regional director for the Ohio State University TRANSIT project; reviewer and consultant for Addison-Wesley Publishing Company and Soft Warehouse (producers of DERIVE); director of the Mathematics Education Resource Center at CU-Denver and director of CU-Denver's Master of Basic Science program.

Publications related to teaching:

Comparing Graphic Calculators and DERIVE, *Mathematically Speaking*, 5, Spring 1992.

How the University of Colorado Integrated Technology into its Calculus Curriculum, *Mathematically Speaking*, 5, Fall 1992.

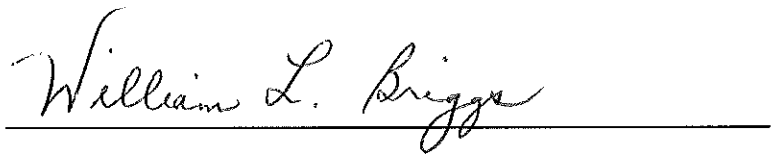
Membership in professional organizations:

Mathematics Association of America (MAA), National Council of Teachers of Mathematics (NCTM), Colorado Council of Teachers of Mathematics (CCTM), Association for Computing Machinery (ACM)

Previous Awards:

CU-Denver College of Liberal Arts and Sciences Outstanding Teaching Award, 1993
Teacher of the Year Award, College of Engineering, CU-Denver, 1993

Name of nominator:



William L. Briggs
Mathematics Department, Box 170
University of Colorado at Denver
P.O. Box 173364
Denver, CO 80217-3364

Letter of Nomination - Zenas Hartvigson

January 9, 1996

It is a pleasure to nominate Zenas Hartvigson of the Mathematics Department at the University of Colorado at Denver for the Rocky Mountain Section Distinguished Teaching Award. This is a recognition that Zenas assuredly deserves and has deserved for a long time.

Zenas' contributions to teaching are multi-dimensional and wide-ranging; indeed the sheer energy that he brings to teaching in the widest sense of the word is astonishing. It seems natural to begin in the classroom. With the exception of short leaves and sabbaticals, Zenas has taught mathematics continuously for 30 years. During those years I am sure that Zenas has evolved and improved sa a teacher; but I am also certain that there have been several enduring aspects of his teaching, all of which can be seen today.

One of these qualities is a selfless devotion to his students, expressed in everything from generous office hours to prolific course material to assiduously planned lectures. Another constant in Zenas' teaching is an untiring joy simply to be working with students and facilitating the learning of mathematics. He is a natural communicator; and he has an informal, absolutely unpresumptuous, occasionally folksy style which puts audiences of students or professionals at ease. His breadth in the classroom is remarkable: He has taught throughout the undergraduate mathematics curriculum including a full-year geometry course (his first love); he teaches mathematics education courses regularly; he teaches and designs innovative courses in computer science; and he has offered graduate courses in topology and automata theory.

Zenas has the rare ability to teach demanding courses with high standards and still command the respect and admiration of students. He inspires hard work and instills curiosity in students through his own inimitable example. Just a few of many possible testimonials to Zenas' teaching effectiveness are attached to this letter.

In many ways it is Zenas' work outside the classroom that truly distinguishes him as an educator. The second arena in which Zenas has made significant contributions is course and curriculum design. He has created several successful undergraduate courses at CU-Denver, only two of which I will mention. His *Computers in the Arts and Sciences* is a respectable, mathematically sound computer literacy course for non-science-and-mathematics students that enrolls 100-150 students each semester. On a higher level, he has created a full-year alternative programming course called *Problem Solving with PASCAL* that is required of all mathematics majors (and also attracts a few defectors from computer science). Both of these courses reflect Zenas' re-tooling as a computer scientist several years ago and both were developed with elaborate course materials that Zenas still updates religiously every year.

On a broader scale Zenas initiated the reform of the entire lower division mathematics curriculum at CU-Denver five years ago to reflect the use of computing technology. Beginning with the precalculus courses, he progressed systematically through the entire calculus sequence, restructuring each course to take advantage of a computer laboratory and writing the necessary laboratory material. Today the department has a coherent and integrated five-course sequence that

links College Algebra to Calculus III. Each course makes judicious use of personal computers and graphing calculators in a system that has become a model for other mathematics programs in the country.

Zenas's involvement with the technology-in-the-classroom project went beyond redesigning the curriculum. A crucial aspect of such an effort is the training of graduate student and part-time teachers in the use of technology. Toward this end Zenas designed and now conducts regular training sessions for all teachers in technology-impacted courses. This is a permanent and critical feature of the entire enterprise. Lastly, technology in the classroom makes no sense without the equipment. Let me abbreviate years of dedication and persistence on Zenas' part by saying simply that Zenas single-handedly gathered from diverse sources the funds required to assemble a 30-station laboratory of networked 486 computers that supports all of the computer-based mathematics courses at CU-Denver. This lab is now used by approximately 700 students per semester and is a testimony to Zenas' vision and heroic efforts.

Another area in which Zenas has devoted tremendous time and thought is the in-service training of public school teachers. A recipient of NSF support form 1980-1984, he devoted those funds to a program designed specifically for elementary and middle school mathematics teachers. His involvement with retraining teachers has taken many forms and been directed at different levels. He designed and taught a year-long course for high school mathematics teachers that explores the use of both applications and technology in teaching mathematics. He is frequently invited to conduct one day in-services for mathematics teachers in the Denver area. His accumulated experience with technology in the classroom has led to many invitations to give workshops and invited talks at individual schools, at regional meetings and at national conferences. A fair assessment is that Zenas is recognized widely as an expert in the challenging field of technology in the mathematics classroom.

If, as the guidelines suggest, success in teaching is determined by having an influence beyond one's own institution, Zenas has certainly achieved that measure of success. His influence began in his own classes at CU-Denver, and then rapidly spread to other teachers in his department and in colleges and public schools in the Denver area. Most recently he has had an impact on the teaching of mathematics a national scale. I know of no one else whose work, largely behind the scenes and unrecognized, has impacted mathematics education so broadly and deeply. I enthusiastically recommend that the mathematics community of Colorado and the West give long overdue recognition to Zenas Hartvigson.

William L. Briggs

William L. Briggs
Mathematics Department, CU-Denver

VITA

Zenas R. Hartvigson **January 10, 1996**

EDUCATION

Institution	Date	Degree	Major
Oregon College of Education	1965	B.S. (with Honors)	Mathematics
Harvard University	1966	MA in Teaching	Mathematics
Oregon State University	1973	Ph.D.	Mathematics
Clarkson University*	1986	Certificate	Computer Science

(*Institute for Retraining in Computer Sciences -- 1985-1986)

PROFESSIONAL EXPERIENCE

1973-Present	Associate Professor of Mathematics, CU-Denver
1981-1984	Mathematics Department Chairman, CU-Denver
1972-1973	Teaching Assistant, Mathematics, Oregon State University
1966-1970	Instructor in Mathematics, Oregon College of Education
1964-1965	Mathematics Teacher (part time), Hillcrest School for Girls, Salem, Oregon and Central High School, Independence, Oregon

REFEREED AND NON-REFEREED PUBLICATIONS

1992 Hartvigson, Z. R., How the University of Colorado Integrated Technology into Their Calculus Curriculum *Mathematically Speaking*, The Addison-Wesley Newsletter for the Mathematical Community, Volume 5, #4/Fall 1992.

Hartvigson, Z. R., Comparing Graphic Calculators and *DERIVE* (software), *Mathematically Speaking*, The Addison-Wesley Newsletter for the Mathematical Community, Volume 5, #3/Spring 1992.

1982 Hartvigson, Z. R., Mathematics through Activities and Models. Source Book of Projects: U.S. Department of Education, October 1982, pp. 15-16.

1974 Hartvigson, Z. R., A non-Desarguesian Space Geometry, Fundamenta Mathematicae 86:143-147

PRESENTATIONS AT MEETINGS OR SEMINARS PRESENTED

1994 December 15, 1994 Two-hour workshop for fifty-four teachers grades three-five Fabins Independent School District, Fabins, Texas. Topic: Using models effectively to teach mathematics concepts.

November 19, 1994 Presented a sixty minute paper *Animated 3-D graphics in Calculus III* at the Seventh Annual International Conference on Technology in Collegiate Mathematics, Orlando, Florida.

November 3, 1994 Colloquium: *Computer Graphics as Tools to Teach Mathematics*, University of Nottingham, Nottingham, England.

1993 December 4, 1993 Key-note speaker/presenter: three-hour presentation on techniques for effective use of technology to teach calculus track mathematics. Also, I was a panelist in a discussion *Technology in Teaching Mathematics and its Challenges.* Conference for California Community and Four-year Colleges at Monterey, California sponsored by Addison-Wesley.

November 6, 1993 presented a paper *Instructor Training for Technology Based Calculus Track Courses in a Research Department* at the Sixth Annual International Conference on Technology in Collegiate Mathematics at Parsippany, New Jersey.

March 6, 1993 Four presentations: I was the key-note speaker, conducted two workshops (*Beginning Graphing Calculators* and *Advanced Graphing Calculators*) and lead a panel discussion on Technology in Teaching Mathematics, Addison-Wesley Conference: **Using Technology in Teaching Precalculus and Calculus: Issues, Techniques, and Applications**, at Montgomery College, Rockville, Maryland.

1992 December 4, 1992 Three presentations: I was the key-note speaker, conducted one workshop (introduction to *Derive*), and lead a panel discussion on Technology in Teaching Mathematics, Addison-Wesley Conference: **Technology in the Mathematics Curriculum**, at the Nassau Community College, Garden City (Long Island), NY.

April 10, 1992 Panel member: Curriculum Reform (technology in undergraduate courses), Rocky Mountain Section -- Mathematics Association of America, Colorado Springs, CO.

March 13, 1992 Presentation: *Using DERIVE software to teach Pre-Calculus Mathematics*, Colorado Mathematical Association of Two-Year Colleges, Denver, CO.

1991 Presentation: *Computers and Calculators in Pre-calculus at CU-Denver*, Addison-Wesley Conference on Technology in the Mathematics Curriculum, Denver Weston Hotel, November 22, 1991.

1988 Two invited keynote presentations on modeling mathematics foundations of arithmetic at Cherry Creek SWAP (Share With Another Professional) conference.

1987 Two presentations re. problem solving and modeling: Fall Staff Development Conference, Cherry Creek Schools, September 25.

1986 Where Math = Computer Science: Problem Solving, Solvability, and Mathematical Proof -- Invited paper Western Regional Conference, National Council of Teachers of Mathematics, Casper, Wyoming October 1986.

1985 More modeling of mathematics foundations--invited seminar for faculty at Village East Elementary School, Cherry Creek School District.

1985 Modeling in mathematics and problem solving--invited seminar for faculty at Woodland Park Elementary School, Teller County School District.

1984 Fraction Models -- Invited workshop seminar for Cherry Creek School teachers.

1983 Problem Solving Using Microcomputers -- Invited paper at the November 1983 Colorado Springs of the National Council of Teachers of Mathematics.

1982 Modeling Mathematics Foundations I, II, III, and IV -- Four invited seminars for Cherry Schools.

1982 Mathematics Models for Handicapped Students -- 2 invited seminars for Denver Public Schools' Diagnostic Teaching Centers Annual Mini-Conference.

RECOGNITION, HONORS, ETC.

1993 Teacher of the Year Award, College of Liberal Arts and Sciences, University of Colorado at Denver.
1993 Teacher of the Year Award, Engineering Students, CU-Denver.
1983 Commencement speaker: Western Oregon State College.
1970 National Science Foundation Science Faculty Fellowship.
1965 Harvard Prize Award Fellowship in Mathematics.
1965 Graduation with Honors, Oregon College of Education.

PROFESSIONAL ORGANIZATIONS

Mathematical Association of America
National Council of Teachers of Mathematics
Colorado Council of Teachers of Mathematics

OTHER PROFESSIONAL ACTIVITIES

1992-1993 Reviews:

- Detailed chapter reviews of Addison/Wesley Publishers' *Calculus: A graphing approach -- (Preliminary edition)* by Ross Finney, George Thomas, Jr., Frank Demana, and Bert Waits.
- Review of a prospectus, table of contents, and chapter of a proposed manuscript for *Algebra and Trigonometry: with graphing calculator applications* for Harper Collins Publishers.
- Review of Addison/Wesley Publishers' *College Algebra & Trigonometry: A graphing approach* by Frank Demana, Bert Waits, and Stanley Clemens, Second edition, preliminary to a planned Third edition.

1991-1993 Director, Colorado Project -- Technology Reform and Network Specialist In-service Training (TRANSIT) funded by NSF through Ohio State University, a project for training secondary teachers in Colorado to use technology to teach mathematics effectively.

1992 External reviewer for mathematics accreditation, Front Range Community College, Westminster, CO.

1989-1993 Member ACM Planning Group for Minorities in Computer Science.

1987 Member of the Jefferson County Public Schools Computer Education External Audit Committee. April 6-10, 1987.

1983-1984 Invited consultant to serve on the Montbello High School Science and Mathematics Project Planning Committee (20-member joint public school, college/university, and industry planning committee organized by Denver Public Schools).

1983-1986 University representative for Mathematical Association of America.

1982-1983 Served as consultant to assist the Village East School (Cherry Creek Schools) prepare a successful grant proposal to implement model-based instruction in mathematics.

1982-1983 Member of the Local Arrangements Committee for the 1983 Combined Mathematics Association of America and American Mathematics Society

Denver Meeting.

1982 Participant in NSF Chautauqua-Type short course "Patterns of Problem Solving" conducted by Moshe Rubinstein (UCLA) University of Utah, March 1982.

1982 Presider/Section Leader Colorado Council of Teachers of Teachers of Mathematics (Colorado Springs 10/29/82).

1982 Served on the Denver committee for the College Board's Project EQuality (sic). This was an invited position to help prepare pre-college guidelines for mathematics preparation and testing by CEEB.

1981 Section leader at the NSF Conference on Cooperative Relationships between University Scientists and Pre-college Teachers (Los Angeles, May 14-16).

OTHER INDICATORS OF SCHOLARSHIP

Faculty development support

1991 Ohio State University/NSF Technology Reform And Network Specialist In-service Training (TRANSIT) grant. Training for me and two high school teachers in the use of technology for teaching mathematics and for training resource teachers in schools.

1984 Release time grant (one course in Spring 1984) for work on simulator software for MATH-A-MODELS materials.

1983 Faculty Development Award -- to buy an IBM-PC with printer and software. ($4,000)

Other grant awards

1993 January: Student Information Technology Fee Advisory Committee grant for $13,000, Teacher Enhancement Grant for $1,000 to buy eight 486/33 color-VGA computers, to upgrade licenses, and network hardware and software to upgrade labs in the Mathematics Resource Center (Science 130-132).

Colorado Commission of Higher Education. *The Great CU-Denver Learning Machine: A blueprint for the Development of an Information Technologies Network to Enhance, Supplement Traditional Teaching and Learning Methods in Science and Mathematics,* co-authored with Doug Dykes (chemistry) and Connie Plank and Joan Van Becelaere (proposal writers).

The project is a five year coordinated program of all CLAS science departments and mathematics that will allow us to enhance the current technology initiative in our lower-division courses. The first year budget of $229,361 and five-year total budget of $839,834 has been recommended for funding ... funding withdrawn due to Colorado State budget reductions. (Marvin Loflin is named as Project Director and I am named as Coordinator of the Mathematics Education Resource Center).

1992 February: Student Information Technology Fee Advisory Committee grant for $51,500 to buy sixteen 486/33 color-VGA computers, to upgrade licenses, and to buy a server and all of the network hardware and software to upgrade labs in the Mathematics Resource Center (Science 130-132).

April: Teaching Enhancement Grantor $1,000 to help buy color projection equipment for use in the technology supported mathematics classes.

December: Student Information Technology Fee Advisory Committee grant for $13,000 to further upgrade of labs in Science 130-132.

1991 CU President's Technology fund grant (with Bill Briggs) to buy an 80366/25 computer and a color projection panel for use in teaching mathematics courses ($6,000)

1989 CU President's Technology fund grant (with Bill Briggs) to buy a laptop computer and to be used in teaching mathematics courses ($1,000)

1987 AT&T Equipment Donation Program Grant (PI -- submitted with Peter Hoffman, Harvey Greenberg, and Jonathan Hazen). Funded with the donation of 3 AT&T 6312 personal computers with LAN cards.

1986-1987 Mathematics through Activities and Models with Calculator and Computer Support -- a project funded by Cherry Creek Schools to train 26 K-6 district teachers using the materials and techniques developed in the CU-Denver NSF MATH-A-MODELS Projects.

1982 Wrote and directed NSF-CAUSE grant project for designing a series of 5 Computer Literacy and Applications Modules ($15,751)

1981-1983 Wrote and directed NSF grant #81-01288 (extension) for 52 K-9 teachers for intensive summer training (1982) and academic year (1982-1983) follow-up. ($20,914)

1980-1982 Wrote and directed NSF grant #81-01288 for 52 K-9 1982 teachers for intensive summer training (1980) and academic year follow-up. ($23,266). Also wrote and directed a joint NSF/Department of Education grant

#80-01261 for 52 5-9 teachers (NSF) and 26 K-4 teachers (Dept. of Ed) for 1980-1981. ($30,246)

Letters of Support
Zenas Harvigson

University of Colorado at Denver

Department of Mathematics

Campus Box 170
P.O. Box 173364
Denver, Colorado 80217-3364
Phone: (303) 556-8442 • Fax: (303) 556-8550

MEMORANDUM

TO: Distinguished Teaching Award
Rocky Mountain Section of MAA

FROM: Stan Payne, Chair, Dept of Mathematics SEP
CU-Denver

RE: Nomination of Zenas Hartvigson

DATE: 10 January 1996

This memorandum is on behalf of Dr. Zenas Hartvigson, who is being nominated for a Distinguished Teaching Award from the Rocky Mountain Section of the MAA. Let me start by saying that it is my belief that no one could possibly deserve such an award any more than Zenas does. Here are some of my reasons for feeling this way.

First, several of our lower level courses have evolved into their present form because of the foresight, leadership and hard work of Zenas. He is the person primarily responsible for bringing technology into the calculus sequence and into several other courses at the freshman and sophomore levels. He has designed and prepared all the materials for the teaching of our course on computers in the arts and sciences, and he is the primary resource for preparing teachers of this course.

Second, not only has Zenas been the primary leader in developing several of our courses, he has been primarily responsible for developing and maintaining our Mathematics Education Resource Center, commonly known as the math lab. This has become a major resource for the entire campus, since many students have come to think of the math lab as the place to go to use PC's to prepare all sorts of reports, term papers, etc., both for math courses and for many others.

Third, Zenas has not only developed several of our lower level courses, he consistently receives very high evaluations as the instructor in these courses. He is a gifted teacher who takes very seriously both the teaching of mathematics and the preparation of teachers of mathematics. Zenas has been around longer than most of us and we are aware that when he retires we will require more than one ordinary faculty member to replace him.

Finally, Zenas has played a great role in the Denver metropolitan area preparing teachers of mathematics for the public schools. When I meet high school teachers and identify myself as the chair of the CU-Denver math department, I am usually asked if Dr. Hartvigson is still around and whether he is planning another special workshop or short course in the teaching of mathematics. There often follows a glowing account of some great learning experience that was organized and led by Zenas in the recent past.

I feel that the teaching of mathematics in Colorado owes a great deal to Dr. Zenas Hartvigson, and the Rocky Mountain Section of the MAA could do no better than to select him for a Distinguished Teaching Award.

University of Colorado at Denver

Department of Mathematics

Campus Box 170
P.O. Box 173364
Denver, Colorado 80217-3364
Phone: (303) 556-8442 • Fax: (303) 556-8550

January 10, 1996

To whom it may concern:

This letter is in support of Dr. Zenas Hartvigson who is being nominated for special recognition as a teacher. I have known Zenas for about 14 years now, and I have found that his qualities are as follows:

1) He is always willing to learn new ideas about teaching more effectively. He has gone to summer institutes, he has worked with new ideas. He is willing to stick his neck out to bring to his students the best possible approach and material.

2) He is on the cutting edge of the use of technology in the classroom. He has fought exceedingly hard with an administration that is slow, at best, for bringing technological approaches to Calculus. He also was one of the pioneers in the teaching of parallel processing to our students, many years ago.

3) He is always there for his students and those of us that wish to learn from his teaching experience.

4) He has started new programs both at the undergraduate and the graduate levels. His work with the masters of basic sciences is a case in point. He almost single-handedly has nurtured that program on our campus.

Please let me know if I can amplify what I have written.

Sincerely,

Weldon A. Lodwick
Associate Professor

Date: January 9, 1996

To: Whom It May Concern,
From: Monica Geist, University of Colorado at Denver graduate student
Subject: Dr. Zenas Hartvigson, Professor of Mathematics, University of Colorado at Denver

I strongly endorse Dr. Zenas Hartvigson's nomination to receive the Rocky Mountain Section (MAA) Distinguished Teaching Award this year.

Dr. Hartvigson is a truly great professor. He is very committed to the idea of teaching so that students understand concepts and not just memorize steps to a problem. Dr. Hartvigson goes to great lengths to find methods of teaching concepts that will make the students understand mathematics better. He spends many many hours each semester working on new ways to present material that he may have been teaching for years. It is always fresh and exciting for him.

Dr. Hartvigson is also dedicated to bringing technology into the mathematics classroom. He insists on the very latest computers and software packages. He does not want to waste the student's time learning old software or technology. He is genuinely concerned that students learn mathematics with the help of technology and not use technology to replace the learning of mathematics. Keeping the correct balance between the two can be difficult for many math instructors. Dr. Hartvigson is determined to keep himself and the rest of the mathematics teaching faculty at CU-Denver focused on that philosophy.

Of the many responsibilities that he has, one of them is to train graduate student teaching assistants. He is devoted to training graduate students who have never taught before. He exudes genuine concern for mathematics instruction. He offers an incredible wealth of experience and expertise to the graduate students. I am one of those students. I have benefitted greatly, as have the other teaching assistants.

The combination of Dr. Hartvigson's love for math and his deep concern for students, brings a productive learning environment to the classroom like no other.

Monica Geist

Noriyuki Kume
755 South Dexter Street #633
Denver Colorado 80222
Phone: 303.758.8630 Internet: nkume@carbon.cudenver.edu

Dear Sirs or Madam,

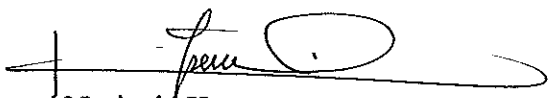
It was five(5) years ago, I took my first junior level software engineering course taught by Zenas as an undergraduate student who were looking for a new direction in his life. When I look back, I realize that I was never an easier student to deal with for any teacher. But, Zenas never looked the other way and was always motivated to teach me no matter how many of those often illogical questions I asked during lectures. Today, I teach the very course that I took from him as a graduate teaching assistant.

What kind of quality does a person has to have to be a good teacher? Let's start with the knowledge of subject matter, patience, passion to teach, and ability to motivate students. These are only few prerequisites. Unfortunately, it is a truth of college students' life, there are so many P.h.D.s' who meet these prerequisites, yet, they just cannot explain the materials to students the way students can intuitively understand them.

So, what makes Zenas one of the kind? Above all, Zenas can actually "explain" and "present" the material in such a way, we, the students can actually understand the material. Speaking from experience, Zenas literally has 100 different ways to explain the same thing. Moreover Zenas often leaves questions open-ended and allows students to freely explore the topic as much as we want. Thereby he'd never force anybody to fit in a predefined mold.

I also have been working for Zenas as a coordinator/computer network administrator at the department's Math Education Resource Center. There has been more than several occasions where if it wasn't for Zenas I would have completely lost my mind over these jobs. Whenever things just start rolling down the hill like a snowball, Zenas has been always there to listen to me, gives me advice which I can actually use and oversees, I can succeed in the situations. Even when I feel like "nobody just don't understand." Zenas is standing there and tell me, "Nori, I really do understand what you are going through, and gives me a new direction I need."

With best regards,



Noriyuki Kume
2nd year Graduate Student, M.S. Applied Math O.R. Option Candidate
Network Administrator - Math Education Resource Center
Graduate Teaching Assistant - Math 3250/3260

MAA Distinguished Teacher Award

Dr. Zenas Hartvigson was my professor while I was an undergraduate student. I took one of his classes, because it was a requirement, but I had no interest in the topic of the class. This class was Problem Solving with Pascal. As the class progressed, the assignments given to us by Dr. Hartvigson were both entertaining, and challenging. From that class, I learned about computer algorithms, and I ended up getting my graduate degree in the Computer Science option in Mathematics.

I believe Dr. Hartvigson's class, and the quality of his teaching gave me the interest that I now have in computers. Dr. Zenas Hartvigson was a good professor, and deserves an award for his teaching.

Ricardo E. Keyman

MAA Distinguished Teaching Award

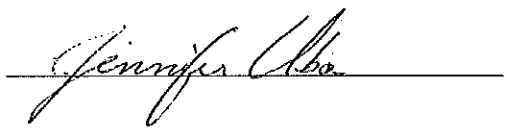
I had Dr. Zenas Hartvigson for two courses, Introduction to Computers and Calculus I. He also trains and supervises the teacher assistants in the Math-Computer Lab, which I am also a part of. I see him alot during the school sessions, therefore, I feel that I have good credibility. He has alot of life experiences to share with his students, he makes his student "think", he is devoted to educating people to use problem-solving skills in the "outside world." I feel very fortunate to have him as my instructor.

Many times in class, Dr. Hartvigson would tell short stories about his previous occupations, to enhance our knowledge on the subject or a related subject. He has shown me some of his projects using computer programs. One project was teaching some children in Texas near the Mexican border fractions and decimals by the use of a spreadsheet program. He would also talk about current events and how it effects his and our lives. He told us about his ranch in Utah and how wolves that are being place there are causing problems that the government said would not happen. He explained that the model they were using did not take in consideration of the natural nature of the wolves. These and other stories makes it easier to remember, and makes him more than an instructor. It makes him a friend.

He makes his student try to reason out problems. In calculus, there were many formulas to remember. Dr. Hartvigson made it easier for us to remember by mnemonics, or made us remember one formula and build from it to find the other two. Several times students would make a problem more difficult than it really is. Dr. Hartvigson brings us back to the basic and tries to explain the concept, so we can use it in other types of problems. He does not teach directly from the textbook or by a set of rigid outline. He interacts with his students and encourage us to interact with each other and him. This feedback or communication make learning more personal.

Through observing him in my classes and with other students, I realize how dedicated he is to educating, and helping us become better people. He has made up many tutorials for the different computer programs available in the Math Lab and calculators that students may have. He would go out of his way to find tutor or translator to help a student. He would set-up individual time to explain a problem one-on-one. He has a strong concept on how mathematics is suppose to be taught, and does not let students and adminstrators discourage him. I agree with him about learning to learn mathematics with todays technology.

Dr. Zenas Hartvigson as my admiration, and respect as a instructor and a mentor. The mention qualities of this man, I know to be just a few of his many talents. I am looking forward in listening to more of his life experiences and learning more about his projects.



Linda Holmes
11517 Wray Ct.
Parker, CO 80134
(303) 841-8009

January 18, 1996

MAA Distinguished Teaching Award

To Whom It May Concern,

I, Linda Holmes, am writing in regard to the nomination of Dr. Zenas Hartvigson for the Distinguished Teaching Award. I am currently, and have previously been, a student of Dr. Hartvigsons. He has truly been an inspiration to me. When I first became a student of the Dr., I was feeling more than a little inadequate in mathematics, which is my major field of study. Within a very short amount of time under his guidance this feeling was replaced by the confidence I had previously enjoyed. Dr. Hartvigson teaches with a down-to-earth style that incorporates the latest in technology and is still easy to understand and exciting to watch.

I truly look forward to his classes, where I have learned new ways of thinking about problems, as well as mathematics. Further I have begun to see a rich history in a subject I used to think of only as problems and answers. Things that used to seem intuitive I now question, and for good reason. This thing we call mathematics has gotten much bigger as I have gazed at it through Dr. Hartvigsons eyes. And this, it turns out, is a very good thing.

Sincerely,

Linda Holmes

Linda Holmes