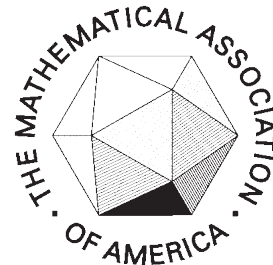


Norman Richert, Editor
Michigan Section-MAA Newsletter
Mathematical Reviews
University of Michigan
P.O. Box 8604
Ann Arbor, MI 48107-8604

Non-Profit Org.
U. S. POSTAGE
PAID
Ann Arbor, Mich.
Permit No. 144

**DATED MATERIAL
PLEASE EXPEDITE**

www.michmaa.org

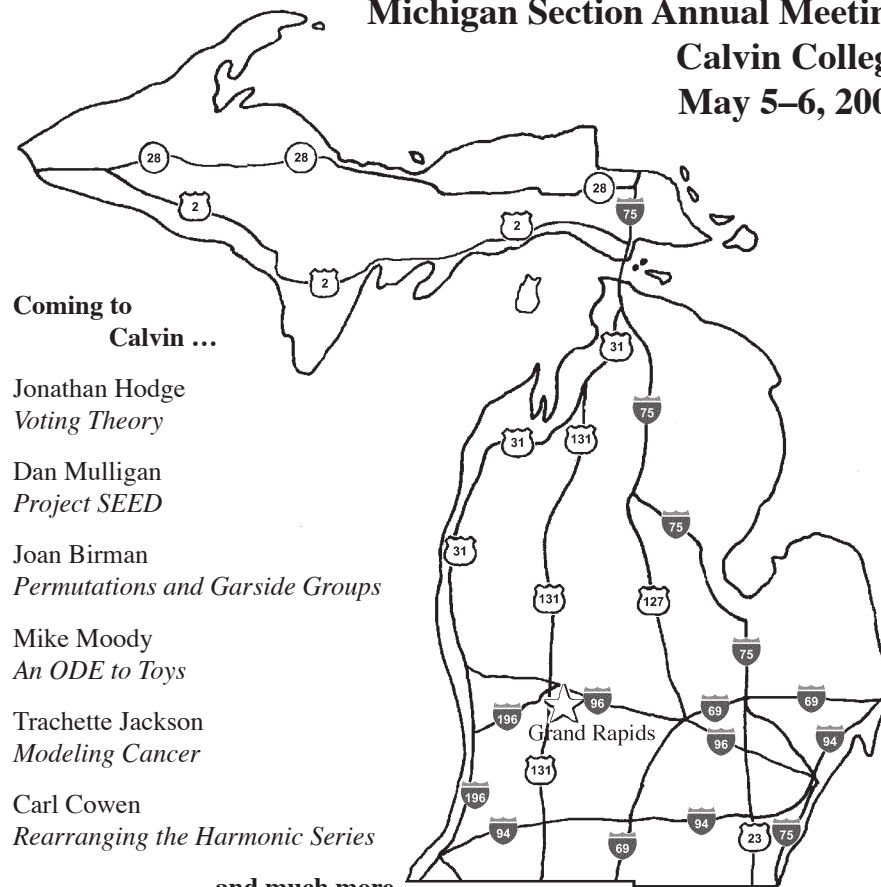


Michigan Section – MAA NEWSLETTER

Volume 32, Number 2

April 2006

**Michigan Section Annual Meeting
Calvin College
May 5–6, 2006**



**Coming to
Calvin ...**

Jonathan Hodge
Voting Theory

Dan Mulligan
Project SEED

Joan Birman
Permutations and Garside Groups

Mike Moody
An ODE to Toys

Trachette Jackson
Modeling Cancer

Carl Cowen
Rearranging the Harmonic Series

... and much more

IN THIS ISSUE:

**49th Annual Michigan Mathematics Prize Competition
Retirement Views and Experience**

Mathematical Association of America
Michigan Section Newsletter
Volume 32, Number 2

Contents	Pages
Section Officers' Reports	1
Janet Andersen: A Memorial	8
From the Origin: <i>Retirement Views and Experience</i>	10
Michigan Undergraduate Mathematics Conference	13
Call for Nominations.....	14
Michigan NExT.....	14
Michigan Mathematics Prize Competition	16
Positions Available.....	21
Student Chapter News.....	23
News from the Campuses	24
Election of Officers.....	27
Contest News	31
Proposed Amendments to the Bylaws.....	31
Officers and Committees: Contact Information	34
Calendar of Events.....	Inside Back Cover

Editor: Norman Richert, Mathematical Reviews, P.O. Box 8604, Ann Arbor, MI 48107-8604; 734-996-5254; fax 734-996-2916; nrichert@ams.org.

www.michmaa.org

Abbreviations

C = College	MTU = Michigan Technological U
CC = Community College	NMU = Northern Michigan U
CMU = Central Michigan U	OU = Oakland U
EMU = Eastern Michigan U	SHU = Siena Heights U
FSU = Ferris State U	SVSU = Saginaw Valley State U
GVSU = Grand Valley State U	U = University
KU = Kettering U	UDM = U of Detroit Mercy
LSSU = Lake Superior State U	UM = U of Michigan
LTU = Lawrence Technological U	WMU = Western Michigan U
MSU = Michigan State U	WSU = Wayne State U

Calendar of Events

April 26–29, 2006	NCTM Annual Meeting, St. Louis
May 5–6, 2006	Michigan Section Meeting, Calvin C, Gr. Rapids
August 10–12, 2006	MAA MathFest, Knoxville
October 21, 2006	MUMC, Hopc C
November 2–5, 2006	AMATYC Annual Meeting, Cincinnati
January 5–8, 2007	MAA/AMS Annual Meeting, New Orleans
March 21–24, 2007	NCTM Annual Meeting, Atlanta
April or May, 2007	Michigan Section Meeting, UM-Dearborn
August 3–5, 2007	MAA MathFest, San Jose
November 15–18, 2007	AMATYC Annual Meeting, New Orleans
January 6–9, 2008	MAA/AMS Annual Meeting, San Diego
April 9–12, 2008	NCTM Annual Meeting, Salt Lake City
November 20–23, 2008	AMATYC Annual Meeting, Washington, D.C.
January 7–10, 2009	MAA/AMS Annual Meeting, Washington, D.C.
January 6–9, 2010	MAA/AMS Annual Meeting, San Francisco
January 5–8, 2011	MAA/AMS Annual Meeting, New Orleans

Organizational Web sites

Michigan Section–MAA	www.michmaa.org
MAA	www.maa.org
NCTM	www.nctm.org
MCTM	www.mictm.org
AMATYC	www.amatyc.org
MichMATYC	www.michmatyc.org
MMPC	www.math.oakland.edu/main/mmppc
MiNExT	www.calvin.edu/~rpruim/next/mich

Annual Meeting May 5–6

The annual meeting of the Michigan Section–MAA and MichMATYC (the Michigan Mathematical Association of Two-Year Colleges) will be held on Friday and Saturday, May 5–6, at Calvin College in Grand Rapids. Our program this year offers a wide range of invited talks devoted to mathematics, its applications, and its teaching. In what follows, we offer a brief preview of the planned events.

This year we are delighted to welcome **Dan Mulligan** of Project SEED to give the Friday luncheon address. Project SEED is a nonprofit organization that works in partnership with all levels of education and industry with the goal of increasing the educational options of urban youth. Now over four decades old, the program carries a national reputation for excellence and maintains a cutting edge approach. The Project employs highly-trained mathematicians and master teachers to work with low-achieving students and bring them socratically into the world of higher mathematics.

Friday afternoon, **Joan Birman**, Research Professor Emeritus at Barnard C, will deliver the plenary address “Permutations, the Braid Group and Garside Groups”. **Frank Garside** was the headmaster in a boys’ school in Oxford when he began the work that became his 1968 Oxford Ph.D. thesis, where he uncovered hitherto unknown structure, which has since had wide applications and generalizations that reach far beyond his thesis topic. For example, there are ongoing applications to public key cryptography, and there is a large class of infinite groups that are called “Garside groups”. In this talk, Prof. Birman will describe Garside’s discoveries and some of their subsequent generalizations.

Following dinner and the Friday evening awards ceremony, **Mike Moody**, Dean of the Faculty at the Franklin W. Olin College of Engineering, will entertain us with “An ODE to Toys: Motivating Mathematics with



Matt Boelkins (top) and Randy Pruim.

Physical Models and Demonstrations". Using ropes, chains, tuning forks, chemical reactions, pendulums, and other objects, Prof. Moody will lead a discussion of problems from physics, chemistry, and engineering and their mathematical analysis.

Mathematical biology has recently emerged as one of the fastest-growing areas of applied mathematics. On Saturday morning, **Trachette Jackson** of UM-Ann Arbor will deliver a plenary address on her work in mathematics that is related to the fight against cancer. Prof. Jackson is particularly interested in applications of mathematics (involving partial differential equations) to tumor biology, chemotherapeutic strategies, and cell signaling.

Do you remember Riemann's Theorem from your analysis class? A *conditionally convergent series can be rearranged to sum to any number*. During the Saturday luncheon address, **Carl Cowen**, Dean of the Indiana University-Purdue University Indianapolis School of Science, will use the alternating harmonic series and show how to actually find the sum of any rearrangement in which the positive terms and the negative terms are each in their usual order. Participants will leave the talk with ideas for examples and exercises for use in calculus, advanced calculus, and real analysis courses.

In addition to the plenary talks, we are excited to add the new class of "local invited" talks to this year's conference. **Jonathan Hodge** (GVSU), **Melinda Koelling** (WMU), **Kristen Moore** (UM-AA), **Nathalie Sinclair** (MSU), and **Jennifer Zhao** (UM-Dearborn) will be giving 30-minute presentations on topics related to their research. More details about these talks (including titles and abstracts) can be found at www.michmaa.org/section2006/abstracts.php.

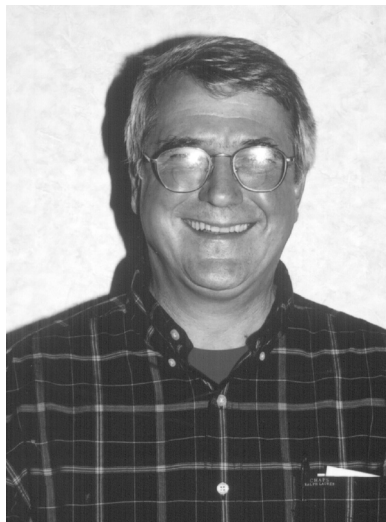
In addition, as always we will have a variety of contributed talks on topics of interest from various areas of mathematics and on pedagogical issues related to particular courses. There will also be sessions devoted to talks by undergraduate and graduate students as well as book exhibits from the MAA and other publishers. Details about the schedule (including abstracts), registration, and accommodations are contained in the Program for the Annual Meeting, which is included with this *Newsletter*. Information may also be found online at www.michmaa.org/section2006/.

Please note that advance reservations for all meals must be made by April 21 and that reservations for rooms in the Prince Conference Center must be made by April 4 in order to receive the conference rate (\$70 per room, 1–4 people). See the Web page for descriptions and photographs of these rooms.

In November of 2005, the Michigan MAA lost one of its prized members
See Annual Meeting on page 15

Chairperson's Report

We mourn the loss of our friend and colleague **Janet Andersen**, Professor of Mathematics at Hope College and Four-Year College Vice Chair of the Michigan Section, who was killed in an automobile accident on Thanksgiving Day, 2005. **Darin Stephenson**, Chair of Mathematics at Hope C, has written an eloquent obituary appearing on page 8. As head of the Program Committee, Janet brought new energy to the planning for the annual Spring meeting, and before she died had put together an exciting program. Her characteristic cheerfulness and efficiency will have a lasting impact on the Michigan Section.



After Janet's death, Program Committee members **Matthew Boelkins** (GVSU) and **Randy Pruim** (Calvin C) agreed to oversee the final details of the spring program. Matt and Randy also agreed to act as Co-Four-Year College Vice Chairs for the remainder of Janet's term. We are indebted to them for their willingness to step in so generously and effectively.

The main event in the Section each year is the Annual Meeting in the Spring. This year the meeting will take place at Calvin College in Grand Rapids on May 5 and 6. The traditional Friday evening banquet will be held at nearby Meijer Gardens. You can read about the details on page 1. [Also see www.michmaa.org/section2006]. The 2007 meeting will be held at UM-Dearborn.

One of the official duties and privileges of the Section Chair is to participate in the Upper Peninsula Regional Meeting of the Michigan Section. This year the meeting was held on the last weekend of September at Northern Michigan University in Marquette, and was beautifully organized by **John Kiltinen**. One of the other invited speakers was **Tom Sibley**, from St. John's U in Minnesota. On Saturday morning, after an interesting talk on map coloring, Tom held a donut-coloring contest, complete with plain donuts from a local Marquette bakery and at least seven different pots of colored frosting. We made the front page of the *Sunday Mining Journal*.

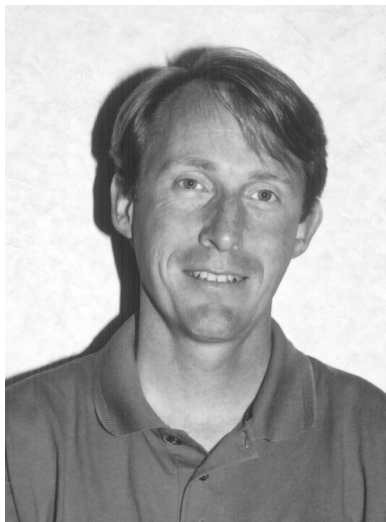
I look forward to seeing you at Calvin in May!

John Fink, Chair

Two-Year College Vice Chair's Report

Looking to spice up your calculus classes? Try fractional order integrals and/or derivatives. These are great products, and they have been around since almost the beginning of calculus. In fact, these operators have quite an extensive history, so much so that I do not have space to go into it here.

Applications for fractional calculus are quite numerous. They are found mostly in the study of systems that exhibit memory: anomalous diffusion, fractional relaxation and the like (a good place to find information is the arXive, arxiv.org).



The most common formulation of fractional integration is the Riemann-Liouville fractional integral. There are other formulations of fractional integration but most of them can be shown to be special cases of Riemann-Liouville. It is relatively easy to obtain the Riemann-Liouville fractional integral in a manner accessible to students that have got at least one calculus course under their belts. Denote the integral of $f(x)$ over the interval (a, x) as

$${}_a I_x^1(f(x)) = \int_a^x f(x_1) dx_1.$$

Note that this operator, ${}_a I_x^1$, has a left inverse, namely, d/dx

$$\frac{d}{dx} {}_a I_x^1(f(x)) = f(x).$$

Now consider the following identity

$$\frac{d}{dx} \int_a^x (x - x_1) f(x_1) dx_1 = \int_a^x f(x_1) dx_1. \quad (1)$$

Verifying this formula in class is a nice way to see if they get differentiating an integral. Once the students believe equation (1) it is easy to build up to higher orders:

$$\frac{d^n}{dx^n} \int_a^x \frac{(x - x_1)^n}{n!} f(x_1) dx_1 = \int_a^x f(x_1) dx_1. \quad (2)$$

Now if you apply d/dx to equation (2) you get back your original function

$$\frac{d^{n+1}}{dx^{n+1}} \int_a^x \frac{(x-x_1)^n}{n!} f(x_1) dx_1 = f(x).$$

Since d/dx is a left inverse for ${}_a I_x^1$ we can make a leap in logic and identify the $n+1$ iteration of ${}_a I_x^1$

$${}_a I_x^{n+1} (f(x)) = \int_a^x \frac{(x-x_1)^n}{n!} f(x_1) dx_1, \quad (3)$$

or,

$${}_a I_x^n (f(x)) = \int_a^x \frac{(x-x_1)^{n-1}}{(n-1)!} f(x_1) dx_1 \quad (4)$$

(4) is the Cauchy formula for iterated integration. At this point you might want to do something to verify the formula (maybe let $n=3$ and apply it to a polynomial or a trig function).

To obtain the Riemann-Liouville fractional integration formula from (4) first exchange the factorial for its gamma function equivalent

$${}_a I_x^n (f(x)) = \int_a^x \frac{(x-x_1)^{n-1}}{\Gamma(n)} f(x_1) dx_1$$

In this form there is nothing to stop us from letting n take on values that are not whole numbers. To make note of this new freedom, replace n with the Greek letter ν

$${}_a I_x^\nu (f(x)) = \frac{1}{\Gamma(\nu)} \int_a^x \frac{f(x_1)}{(x-x_1)^{1-\nu}} dx_1 \quad (5)$$

(5) is the Riemann-Liouville formulation of a fractional integral. There are more rigorous derivations of (5), but what is presented above should be accessible to undergraduate calculus students. The domain of ν can be extended in various directions. I was able to show [arXiv: math-ph/0312051] that ν could even take on matrix values. Roughly speaking, an integral of almost any order of almost anything can be defined. We should note that (5) is well defined for negative values of ν (provided ν is not a negative integer) but it should not be interpreted as a fractional derivative.

For many functions the integral in (5) can be somewhat difficult to evaluate. Fortunately there are CAS, such as MAPLE, that can come

See Nabers on page 6

Naber continued from page 5

to the rescue (doing a few fractional integrals is good practice for gaining proficiency with MAPLE).

Over the past few semesters I have been introducing fractional calculus when and if I get ahead of schedule. Of the 30 or so students in class about half do not appear interested. Though the look of relief on their faces is quite entertaining when they find out that the material will not be on the exam. The other half of the class finds the material interesting, a couple even find it very interesting. The presentation of this material usually starts a good discussion about what an integral really is and how to interpret it. This discussion benefits all the students, even the ones that were not interested. So, if you are looking for some spice for your calculus class, try a dash of fractional integration.

Mark Naber, Two-Year College Vice Chair

Governor's Report

Here are some highlights from the Board of Governors meeting at the Joint Math Meetings in San Antonio.

Membership has been stable and receives continued attention. Attrition is being examined; for example, how many Project NExT members continue as members of MAA.

The dues restructuring that has been discussed over the past year was passed. Currently, dues + journal subscriptions do not cover operating costs + cost of providing journals. The proposal is to change the fees in increments over four years.

Don Albers, who has overseen the acquisition of many excellent books, is retiring from his position as publications head. Among a variety of new books this year are some with a Michigan connection. Our colleague **Bob Messer** (Albion C) and Phil Straffin's *Topology Now!* book proofs were displayed; the book is due out in March. A book titled *Infinite Series* was co-authored by Don Bonar and **Mike Khoury**. Mike, now a graduate student at OSU, was an MMPC winner



See Governor on page 32

Secretary/Treasurer's Report

I would like to thank everyone who has sent in a dues payment for 2006. At this time there are 144 dues-paying members. Among these, there are 52 sustaining members, who have paid dues of \$30 or more. In addition, the Michigan Section also received a private donation of \$500 this year. The list of sustaining members can be found on page 28.

We now have 18 institutional members, which is down from the 25 institutional members this time last year. The list of institutional members can be found on page 33. If your school is not listed, you might want to remind your department chair. On the other hand, at this time last year there were 139 dues-paying members, so we're doing slightly better this year. If you have not yet sent in a dues payment and wish to do so, the membership form can be found on page {insert page number}. Remember, dues-paying members pay no registration fee for the annual meeting.



	3/'01	3/'02	3/'03	3/'04	3/'05	3/'06
<i>dues-paying members</i>	115	102	103	96	90	93
<i>sustaining members</i>	61	60	60	58	51	52
<i>institutional members</i>	25	27	16	26	25	18

The Michigan Section's current bank balance is \$7,085.42, which is consistent with the balance from last year at this time, \$7,710. We have a good balance of income and expenses. The Section is in good shape financially.

Nancy Colwell, Secretary/Treasurer

Calvin in May

Janet Andersen: A Memorial

(On November 24, 2005, Professor Janet Andersen of the Hope College Mathematics Department was killed in an automobile accident. This tribute is adapted from remarks made at her memorial service.)

There are so many wonderful things that I could say about my close friend and colleague, Janet Andersen, that it's hard to know where to begin. I simply cannot sum up Janet's academic life and what she meant to the Mathematics Department and to Hope College—not to mention her roles as wife, mother, and church member—in a few paragraphs. Janet was one of those rare individuals who could carry out many different responsibilities simultaneously with the highest levels of excellence, while at the same time maintaining a sense of vitality, enthusiasm, and fun. She was known locally for her dedication to students and to scholarship, and nationally for being a leader in mathematics education and mathematical biology.

Janet's long list of academic accomplishments—including publishing three books (two co-authored with Todd Swanson and Bob Keeley and the other with Todd Swanson), writing numerous research and expository articles, being Principal Investigator on three NSF grants and co-PI on several more, giving invited lectures, serving on panels, and organizing conferences—gives the clear impression that Janet was an extremely hard working person. This is true. What I would rather focus on, however, is who Janet was as a person, and what motivated her to work so incredibly hard. Janet, quite simply, had a deep and profound concern for the people around her—in particular, for her students and fellow faculty members.

Janet had a boundless love and concern for students. She was willing to go to any lengths necessary to challenge students with difficult ideas, motivate them to learn, and offer them encouragement and support along the way. Late last fall, a student shared that the week before her death, Janet had sat with him for over two hours during an evening, helping him to work through a difficult part of an independent project. He and Janet hadn't been able to resolve the issue completely, so Janet had spent another hour working on the problem that night, and had brought him information leading to a solution the next day. Janet had that kind of commitment to each individual student—multiply that by 60 or 70 students each semester, and you'll begin to realize not only the huge amount of time Janet was willing to invest in her students, but also the enormity of Janet's impact on her students' lives. Janet showed a special concern for those students who struggled academically, lacked confidence, or might be less inclined to seek necessary support—students who, as she put it, would “fall through the cracks” if someone didn't take the time to get to know them and their

unique gifts and challenges. Janet was willing to invest the time to teach these students how to do the hard work of learning – how to question, explore, analyze, assess, and then be willing to start the entire process over again until deeper understanding was achieved. Most importantly, she stood beside the students during that difficult process, and offered support when students were frustrated or doubtful of their own abilities.

In our department and among faculty across the campus, Janet was known as a builder of community. She had a unique ability to get people of differing opinions or backgrounds together and encourage them to talk. She was good at helping people to address controversial issues and build consensus, while at the same time respecting one another and even having fun. Janet was fond of hallway conversations and inviting others for trips to the coffee shop, during which important relationships developed and flourished. On a personal level, I remember that she was willing to work closely with me and support me, but also to tell me honestly and directly when she thought I was wrong. She challenged me to analyze and often rethink my assumptions. My view of education and of other people is fundamentally changed because of Janet's role in my life. I've adapted my teaching techniques because of my interactions with Janet more than for any other reason. Most of what I've learned about being a department chairperson, I learned from Janet's example.

The thing I'll remember most about Janet is that, despite being such a hard working, innovative teacher and scholar, she really knew how to have fun. Her distinctive laugh echoed down the halls of our department on a daily basis—we didn't have to wonder whether Janet was in her office on any given day. We would know. Janet also didn't like to wear shoes, and she was well known for teaching and going to meetings barefoot – so much so that she was given about 20 pairs of shoes along with her Hope College Provost's Teaching Award last year. (This yearly award has recently been renamed the "Janet L. Andersen Memorial Teaching Award" in her honor.) Janet started the traditions of our department having lunch together once a week and a faculty and staff Christmas party each year. Janet also loved to play games, whether it was "convincing" us at the yearly Christmas party that we really wanted to play Pictionary or playing board games in the department at lunchtime in the summer. She did so many of the things that made work days fun, and she played a major role in making the department a wonderful place to work.

The loss of Janet will be hard to bear on so many levels. I've lost one of my closest friends, as have many of you. The mathematics department has lost an outstanding teacher and educator, as well as a person who was

See Andersen on page 25

Retirement Views and Experience

William Miller

Central Michigan University, Retired

The April 29, 2005 issue of the *Chronicle of Higher Education* included a number of short articles about things University Professors are doing in retirement. *Newsletter* Editor Norman Richert saw the articles, which included my retirement, and asked me to write something for “From the Origins”, say “a view from retirement”, which would be of interest to the Michigan mathematical community. This has been a difficult assignment for me. I will share my thoughts about retirement and some of the things I have done in retirement. I hope this article is of interest to all readers and generates a sharing of views from retired colleagues and those contemplating retirement. Eventually, if nothing bad gets us in our younger years, we must all retire at some time. Teaching, even if one neglects research, is sufficiently demanding so that one cannot remain in position until death.

When to Retire?

As I see it, this is an independent decision for each individual to make, dependent on health, financial resources, job satisfaction, family considerations, retirement options, and so on. I retired from the Mathematics Department at Central Michigan University in 2000, at age 65, after 42 years of teaching, the last 32 at CMU. Making the decision to retire was not easy for me. I enjoyed teaching, keeping up on current activities in mathematics education, and working with my colleagues in the mathematics department. I felt that I was always well treated and respected by my mathematics colleagues at CMU; but this is not the case in some other departments. However, I was losing energy and knew I could no longer serve as well as I wanted to. I thought that my decline in energy was part of the aging process; however, three years later I learned that I have a heart problem which also contributed to my energy decline.

I have shared my thoughts that went into my retirement. Each individual must make their own decision about their energy level, their job satisfaction, and about what they can still do. I recall my days as an undergraduate in the early 1950's. This was the period after World War II when there was a shortage of teachers and some professors stayed into

their 70's. I had professors who had been well known earlier in their careers, but were "out of it" later in their careers. I decided then, that if I could afford it, I would not teach when that happened to me.

How Should One Retire?

By this I mean, should one completely retire or should one phase their way into retirement by taking a reduced load. For example one could teach the Fall semester in Michigan and go to a warmer climate during the winter. In my case, I had 30 years in the Michigan Teachers Retirement and felt I really did not have that option. If I retired, my take home pension amounted to more than a one semester salary. Had I been in the TIAA-CREF program, I might have phased my way out. Again, each individual must make their own decision.

Funds Needed for Retirement

Unless you are independently wealthy, this is a very tricky question. However, retirement income goes much farther. First, you do not pay Social Security-Medicare tax and the income tax on your income is at a lower rate. We do not know how long we will live, what the rate of inflation will be, or what the rate of return on investments will be. Younger individuals may not realize it, but investments with moderate risk grew at rates in excess of 10% per year in the 1980's and 90's. However, the bubble burst in 2000, but it does appear to me that long term investment returns will not match the 80's and 90's but overall will be good in the future. This is one question to discuss with your financial planner.

Another question to consider is what will it cost me to live. What are my family responsibilities? Do my children still need help with their education costs? Do I have a child with special needs? It has been my observation that most retired educators do not change their living habits very much. Many do more traveling the first few years after retirement, but other than having living facilities in a warmer climate for the winter, they settle into their old patterns. When I visit my retired colleagues and ask where they have been and they tell me city X, often they have children and grandchildren in city X. The exception is going to warmer climates during the Michigan winter.

My Retirement

For me the decision to retire was difficult, but Dee (my wife) and I

have come into a very satisfying retirement. Retirement has allowed us to do things we would not be able to do before and at a more leisurely pace. For example, we like to take 2 to 4 week trips to warmer climates during the period from January through March. We have four children and eight grandchildren. Three of these families live in Michigan, but our youngest and her young family live in Minneapolis. Since I have retired we have made about five trips a year to visit them. It is much easier for us to travel than it is for them with jobs and young children. Because of health problems our activities have been limited the past two years. Last year Dee had by-pass surgery, which limited our travel. This year I had hip replacement surgery, which has limited mine.

Now for the retirement activity that caught Norman's eye. I began as a high school agriculture and mathematics teacher in 1956. Our agriculture teaching philosophy was "learning by doing". I applied this philosophy to mathematics. I do remember using point plotting activities to introduce rectangular coordinates in the late 50's. Students would draw or select a picture, overlay it with a grid and assign coordinates to key points on the picture. They listed these points in a sequential order. They then traded coordinates with a classmate and each produced a picture on a grid. If the pictures were not the same as the original, the students knew some one made an error and they would find it.

In 1973, we purchased a farm near Mt. Pleasant and I returned to agriculture on a part time basis. In the 70's and early 80's chemicals were developed so that one could control weeds in corn and soybeans without cultivation. I thought about planting corn in a rectangular grid and making a map of Michigan in a corn field, but never had enough time. When I retired I made a map of the lower peninsula of Michigan, in a corn field which contained the major roadways that wind throughout the state. The students' 1/4-inch graph paper was replaced with 2-1/2-foot squares. When I saw an aerial view I was surprised; it was a very good map. I also achieved good weed control.

The *Mt. Pleasant Morning Sun* newspaper published an article with an aerial view, which was picked up by a number of Michigan newspapers. We opened the farm to the public that fall and the response was very good. I had also planted 3 acres of pumpkins. This was my first experience with more than 10 plants in a garden. The demand for pumpkin was such that I had to locate a wholesale supplier. Some teachers asked to bring their classes and used the corn maze as a teach-

ing experience.

After the first year experience, I decided to develop an educational recreational farm. We named it Papa's Pumpkin Patch, "Home of the Michigan Maze". Since the first year we have continued to improved the Michigan Maze and add other educational recreational activities. I learned how the state was originally surveyed with a Baseline and Meridian road. The most recent version contains roadways that reach each of Michigan's 83 county seats which are labeled with a map of that county in Michigan. For an aerial view of the last maze and a list of activities, see www.papasfamilyfarm.com

In two different years, I planted soybeans in overlapping concentric circles and lines and constructed the conic sections. I also constructed walking mazes of geometric figures and algebraic curves. These turned out to be good problems for me, but did not seem to interest anyone else so I have dropped them. Three years ago I built Michigan's Field of Dreams, a little league baseball field modeled from Kevin Costner's Iowa Field of Dreams with a corn field around the outfield. This has been popular with children.

In the early years my son Bill helped me on weekends. As I have aged my energy has continued to decline, and I decided to cut back. However, Bill left his job to work full time on the farm. He now manages it and has taken over the demanding aspects of the farm with my help. If things work out, I may be able to help him until the Lord calls me.

I think we now have one of Michigan's premier educational recreational farms. When in the Mt. Pleasant area, I invite you to visit Papa's Pumpkin Patch and Country Farm Market. We enjoy visiting with people and sharing our beautiful farm with others.

Michigan Undergraduate Mathematics Conference

The 9th Annual Michigan Undergraduate Mathematics Conference will take place at Hope College in Holland on Saturday, October 21, 2006. **Bob Devaney** of Boston University has agreed to serve as the keynote speaker. There will be opportunities for student talks, as well as presentations by faculty representatives from graduate schools and local mathematics REU programs. Further information will be posted to www.math.hope.edu/mumc.html when available.

Darin Stephenson, Hope C

Teaching Award Nominations Sought

This is a preliminary announcement that the Distinguished Teaching Award Committee will be seeking nominations for the fifteenth annual (2007) MAA Award for Distinguished College or University Teaching of Mathematics. The committee will choose one of the nominees for the Michigan Section Award, and he or she will be honored at the Spring 2007 meeting of the Section. The awardee will also become the Section's candidate for the national MAA's Deborah and Franklin Tepper Haimo Award.

This year's committee recently selected **Tim Carroll** (EMU) to receive the 2006 award. In his 26 years of teaching, Tim has distinguished himself through his dedication to helping at-risk and minority students succeed in their mathematical studies (through Project SEED and EMUs 4-S Program) and his commitment to the preparation of teachers (through development of a History of Mathematics course for prospective elementary education students including writing an accompanying text). Further details about his award will appear in the Fall 2006 *Newsletter*.

Dr. Carroll joins the continuing members of the committee, **Brian McCartin** (KU), chair, and **Ted Sundstrom** (GVSU), the previous recipients, for next year's selection process.

Anyone, other than the candidate him/herself, is entitled to make a nomination. To be eligible, a candidate must be a college or university teacher teaching a mathematical science at least halftime during the academic year in a two- or four-year college or university, have at least five years teaching experience, and be a member of the MAA. Nominations are due by December 31, 2006. More information will be available in the Fall *Newsletter*. Please start thinking now about nominating your department's best teacher.

On a related note, Past Chair **Gerard Venema** (Calvin C) reports that **Janet Andersen** (Hope C) was selected to posthumously receive the Section's 2005–2006 Distinguished Service Award. Details will appear in the Fall 2006 *Newsletter*.

Michigan NExT

The Seventh Annual Michigan NExT Symposium will be held in conjunction with the 2006 Section Meeting at Calvin College. Michigan Project NExT Fellows are cordially invited to participate in an afternoon session designed specifically for them on the afternoon of Thursday, May 4, 2006. The program will address issues of importance to new faculty, such as developing successful teaching and assessment strategies, mentoring undergraduate research projects, planning new courses and selecting texts, and balancing

the responsibilities of an academic career.

Co-organizers **Mark Pearson** (Hope C) and **Paul Yu** (GVSU) are currently soliciting suggestions for topics and speakers. If you have recommendations for either a topic or a speaker, please contact Mark (pearson@hope.edu) or Paul (yupaul@gvsu.edu). Self-nominations are welcome. Information about the 2006 Symposium will be posted on <http://www.math.hope.edu/pearson/MINExT.html>.

To be eligible for Michigan NExT, faculty must be in their first four years of full-time teaching and have a strong commitment to undergraduate mathematics education. Applicants should provide a letter of support from their department chair or dean guaranteeing financial support for transportation, meals, and lodging at the Section Meeting. Limited support for travel and lodging may be available for faculty whose departments cannot support faculty travel. Application procedures will be posted on the Michigan NExT website by early January. National Project NExT fellows are encouraged to apply. Each year between five and ten Michigan NExT Fellows will be selected for two-year terms. Their fellowship will pay the conference registration fee and entitle them to participate in the special session on Thursday, which includes dinner on Thursday evening.

As always, past Michigan Project NExT fellows are warmly invited to attend and participate in the Thursday session. Graduate students are also welcome to join us; if interested, please contact one of the organizers. We are looking forward to building on the successes of past Michigan NExT Symposia, and we hope to see you in May.

Mark Pearson, Hope C

Annual Meeting continued from page 2

and major contributors. **Janet Andersen**, the Four-Year College Vice Chair of the Section and Professor of Mathematics at Hope College, died in an automobile accident. She was 47. Janet's loss will be deeply felt by all of the professional colleagues who enjoyed the privilege of working with her.

At the time of her death, Janet was leading the program committee in the development and organization of the schedule of speakers for the 2006 Section Meeting. The remaining members are **Matthew Boelkins** (GVSU), **Randall Pruim** (Calvin C), and **Mark Naber** (Monroe County CC). The local arrangements committee consists of **Gerard Venema** (chair), **Sharon Gould** (administrative assistant), **Michael Bolt**, **Earl Fife**, **Thomas Jager**, **Randall Pruim**, and **George VanZwalenberg**.

We look forward to seeing you at Calvin the first weekend in May!

Matt Boelkins and Randy Pruim, Four-Year College Co-Vice Chairs

MMPC Honors Top High School Students

A total of 101 Michigan high school students, from 47 different schools, were honored for their achievement in the 49th Annual Michigan Mathematics Prize Competition at the Awards Day program held on Saturday, February 25 at Oakland University. This was the first year of the three-year term of Director **Eddie Cheng** (Oakland U).

Brian McCartin (Kettering U) spoke on “Mathematics of Music”, and **Allen Schwenk** (WMU) lectured on “A Plethora of Perplexingly Persistent Paradoxes”.

The first-place Gold Award winner and Ford Motor Company Scholar was **Frederic Sala** (Troy High School). The second-place Gold Award went to **John Zhou** (Detroit Country Day). The third-place Gold Award went to **Dawson Zhou** (Troy High School, Taipei American School). Silver Award winners at the first level were: **Sunil Agarwal** (Troy High School) and **Alex Xu** (Andover High School); at the second level, **Vivek Behera** (Detroit Country Day) and **Alan Huang** (Detroit Country Day); at the third-level, **Juwon Lee** (Ann Arbor Huron), **Daniel Echlin** (Luke M Powers) and **Chaitanya Malla** (Northville High School). In addition 41 Bronze Awards were given, and 50 students received Honorable Mention.

The top 51 students received \$32,900 in scholarships in amounts ranging from \$500 to \$2,600. Thanks go to the corporate and other donors to the MMPC scholarship fund. The Honorable Mention winners received copies of the MAA publication *Mathematical Diamonds*, by Ross Honsberger. We would like to thank the MAA and the Michigan Council of Teachers of Mathematics for their generous donations that covered a portion of the cost of these books.

Part I of the MMPC is a 40-question multiple choice test, which this year was administered on October 5. The top 1,182 participants from Part I were invited to take Part II on December 7. There were 1,119 Part II participants.

The official Web site of the MMPC (www.math.oakland.edu/main/mmpc/index.html) contains information about the competition. Part I of the competition is given in the Fall of each year.

Calvin in May

MMPC Top 100 Statistics

- *Top Gold Award winner Frederic Sala is a senior, who won the second-place Gold Award last year. The second-place Gold Award winner, John Zhou, is also a senior. He was the top Gold Award last year. The third-place Gold Award winner, Dawson Zhou, is a sophomore who was in the top ten last year. All three students have perfect score in Part II.*
- *Of the seven Silver Award winners, five are seniors, one is a juniors, and one is a freshman.*
- *Among the 41 Bronze Award winners are 15 seniors, 16 juniors, seven sophomores, three freshman, and two eighth-grade students.*
- *Twenty-eight seniors, fourteen juniors, six sophomores, and six freshman received Honorable Mention.*

Top MMPC Results for Each Grade

<u>Grade</u>	<u>Place</u>	<u>Score</u>	<u>Grade</u>	<u>Place</u>	<u>Score</u>
12	1	99.0	8	12	77.2
11	4	92.2	7	129	42.6
10	3	95.0	6	NA	30.4
9	7	81.0	5	NA	NA

Top 103 Results by Grade

<u>Grade</u>		<u>12</u>	<u>11</u>	<u>10</u>	<u>9</u>	<u>8</u>
Scholarships	N=51	24	17	6	2	2
Honorable Mention	N=50	17	18	10	4	1
Total	N=101	41	35	16	6	3

- *About 45% of the original contestants were female, as were about 31% of those who qualified for Part II. There were 18 young women among the Top 101 (including eight scholarship winners).*
- *The total score for the competition is the sum of the Part I points (out of 40) and 1.2 times the Part II points (out of 50). The highest score was 99.0 out of 100. The cutoff score for scholarships was 58.4. The cutoff score for the Top 101 was 49.2.*
- *The cutoff score to qualify for Part II this year was 16.*

MMPC Awards Day, Oakland



Gold and Silver Award Winners, (l to r): Daniel Echlin, II, Chaitanya Malla, Frederic Sala, John Zhou, Alexander Xu, Alan Huang, Vivek Behera.



First Place Winner Frederic Sala is congratulated by Gerard Venema.

10pt

Since $A = \pi - (B + C)$, $\cos A = -\cos(B + C) = \sin B \sin C - \cos B \cos C$

LHS = $(\cos A + \cos B \cos C)^2 + \cos^2 B + \cos^2 C - (\cos B \cos C)^2$

$$= (\sin B \sin C)^2 + \cos^2 B (1 - \cos^2 C) + \cos^2 C$$

$$= (\sin B \sin C)^2 + \cos^2 B (1 - \cos^2 C) + \cos^2 C - 1 + 1$$

$$= (\sin B \sin C)^2 - (1 - \cos^2 C)(1 - \cos^2 B) + 1$$

$$= (\sin B \sin C)^2 - (\sin B \sin C)^2 + 1$$

$$= 1$$

J2



Section Governor Ruth Favro recognizes Asra Shaik as the top female contestant.

University, February 25, 2006



Brian McCartin, Kettering U, spoke in the afternoon on "Mathematics and Music".



Allen Schwenk, WMU, spoke on "A Plethora of Perplexingly Persistent Paradoxes".



Jim Egan, Washtenaw CC, does his bit on Grading Day, January 21. Volunteer graders are needed every year.



Matthew Wang is presented a T-shirt by Allen and Eddie Cheng for correctly solving the secret code in the slide show.



49th MMPC Part II Problems

The top 1,119 students had 100 minutes to solve these five problems.

1. Two perpendicular chords intersect in a circle. The lengths of the segments of one chord are 3 and 4. The lengths of the segments of the other chord are 6 and 2. Find the diameter of the circle.
2. Determine the greatest integer that will divide 13,511, 13,903 and 14,589 and leave the same remainder.

3. Suppose A , B and C are the angles of a triangle. Show that

$$\cos^2 A + \cos^2 B + \cos^2 C + 2 \cos A \cos B \cos C = 1.$$

4. Given the linear fractional transformation

$$f_1(x) = (2x - 1)/(x + 1),$$

define $f_{n+1}(x) = f_1(f_n(x))$ for $n = 1, 2, 3, \dots$.

It can be shown that $f_{35} = f_5$.

(a) Find a function g such that $f_1(g(x)) = g(f_1(x)) = x$.

(b) Find f_{28} .

5. Suppose a is a complex number such that $a^{10} + a^5 + 1 = 0$.

Determine the value of $a^{2005} + 1/a^{2005}$.

Calvin in May

Thanks from the MMPC Director

You might know some of the people behind the scenes of the competition, but we would still like to bring them to your attention and formally thank them. We apologize in advance if we do not mention all of the significant contributions to the competition.

The examination committee works diligently behind the scenes preparing Part I and Part II: **John Clifford** (UM-Dearborn, Chair), **Patrick Pan** (SVSU), **Akalu Tefera** (GVSU), and **Lazaros Kikas** (UDM). They patiently work with the Director and the reports of the various reviewers, who in turn deserve a great deal of thanks, though they are too numerous to mention here. The examination committee also provides the Director with a valuable sounding board and advisory group.

The volunteers from various institutions around the state who attended Grading Day did a wonderful job. They are listed on the MMPC Web site.

The MMPC supervisors at the participating schools are essential, collecting information and organizing participants, keeping timely and frequent contact with the Director. If you know a supervisor at a participating school, thank them, and if you have any contacts in your local high schools encourage them to consider participating if they do not already do so.

Eddie Cheng, Oakland University

Positions Available

NOTE: Most positions in the mathematical sciences, including many of the ones listed here, are advertised in Employment Information in the Mathematical Sciences (www.ams.org/eims). The MAA also has a Web site for employment opportunities (www.maa.org/pubs/employ.html). All openings are for Fall 2006 unless otherwise stated, and further information is available from the department.

Alma College anticipates a one-year sabbatical leave replacement position for the 2006–2007 academic year. For further information contact Mel Nyman, chair, Department of Mathematics and Computer Science, Alma College, Nyman@alma.edu.

Ferris State University (www.ferris.edu/htmls/jobs/) is searching for a new Department Head. They are also searching for a new tenure-track faculty member with a Computer Science background.

Schoolcraft College (www.schoolcraft.edu/jobs) will be posting to fill a vacancy for a full-time mathematics instructor, with selection during Spring/Summer 2006.

Somewhere in your classroom could
be the person who makes cars run on
water.

But first they need to pass
College Algebra.

80% of students surveyed said the online teaching and learning resources in *WileyPLUS* helped them improve their understanding. That's 80% who were able to realize their potential.

WileyPLUS is available with many of Wiley's best-selling mathematics and statistics texts.



For more information, visit
www.wiley.com/college/wileyplus



js/sk 6-01528

A UNIQUE PhD in Applied Mathematical Sciences

Exciting collaborations in medical, environmental, and automotive research form the core of this program for research in industry and academe.

- Teaching Associateships for full-time students on a competitive basis.
- Other Degrees: MA, MS in Applied Statistics, and MS in Industrial Applied Mathematics.

Oakland University

Student Chapter News

Alma College

Our Pi Mu Epsilon Chapter and the Math Club continue to support a variety of student mathematical activities. Two Alma students, **Melissa Snyder** and **Kathy Miller**, attended the Eighth Annual Nebraska Conference for Undergraduate Women in Mathematics held February 3–5, 2006.

Alpena College

The Sigma Zeta Math/Science honor society is in its second semester and is planning several activities for the year. Officers for the 2005–2006 school year are **Rebecca Rasmussen** (President), **Genevieve (Claire) Lafleur** (Vice President), **Evonne Jasman** (Secretary), and **Lisa Coggins** (Treasurer). The group plans to tour Dow Chemical in Midland this February. New members will be inducted this Spring.

Andrews University

Chantel Blackburn, a senior mathematics major, participated in the GVSU REU during the summer of 2005, and her presentation at the Pi Mu Epsilon sessions at the Mathfest at Albuquerque won the Counsel on Undergraduate Research award. Her mentor at GVSU was **Steve Schlicker**.

Grand Valley State University

The GVSU Math and Stats Club started the Winter semester with bowling and rock climbing events, and later will host a Pi Week Celebration and seminars on LaTeX and Maple. As a service activity the club conducted an advisory panel for fellow students prior to registration for next year's classes. The officers for this year are **Brian Hanson**, **Matt Stamps**, **Janelle Lautzenheiser**, **Becky Twing**, **Betz Lund**, and **Eric Simon**.

Lawrence Technological University

The LTU Student Chapter of MAA is holding a Hackenbush tournament on February 28. A used math book sale was recently held. Officers are **Luke Ewalt**, **Patricia Braschayko**, **Steve Kryskalla**, and **Chris Sera**.

Western Michigan University

Our department has two active student groups, Pi Mu Epsilon and ScMaTA (Science and Mathematics Teacher Association). ScMaTA hosted a T³ College Short Course calculator workshop for preservice mathematics teachers in the Fall that was well received by all. Participants all received a FREE calculator and workshop materials plus a certificate that allows them to get more FREE technology when they get their first teaching job (see emptweb.mps.ohio-state.edu/shortcourse/ for more information on these workshops).

News from the Campuses

Albion College [reported by Robert Messer]

Mark Bollman and **Darren Mason** have been granted tenure in the Department of Mathematics and Computer Science. • The Math/CS Department at Albion encourages everyone to celebrate International Plaid Day on April 28, the final Friday of Mathematics Awareness Month. Join people from around the world by wearing plaid in a show of support for mathematics. [ram@albion.edu]

Alma College [reported by Mel Nyman]

Zhewei Dai joined the department in August 2005. She received her Ph.D. in Applied Mathematics from MSU in 2005. We are pleased to welcome Zhewei to our department. **Robert Molina** plans to be on sabbatical leave for the 2006–2007 academic year. • **John Berry** of the University of Plymouth and Professor in Residence at Wells Cathedral School visited the Mathematics and Computer Science department from February 10 to February 17. • **Mel Nyman** received a 2005 Posey Award for Faculty Excellence. This was one of five Posey Awards made by Alma C for the 2005–2006 academic year. • **Aklilu Zeleke** is now on the faculty of the Lyman Briggs College at MSU with a joint appointment in the Probability and Statistics Department at MSU. [nyman@alma.edu]

Alpena Community College [reported by Dan Rothe]

The 2006 Spring semester is off to a productive start for the Math/Science Department. **Meghan Cameron** was changed from temporary instructor to regular instructor (0.6) at our Huron Shores Campus in Oscoda. We look forward to Spring events, including the Regional Science Olympiad and Physics Olympics. We were proud to have one of our students, **Rebecca Rasmussen**, win the MichMATYC student scholarship this past Fall. [rothed@alpenacc.edu]

Andrews University [reported by Don Rhoads]

Keith Calkins, a teacher in the Berrien County ISD Math and Science Center, which is sponsored by Andrews University, received his Ph.D. in Physics under **Carol Tanner**. • **Robert C. Moore**, Professor of Mathematics at Southern Adventist U in Tennessee, will be the new Chair of the Department of Mathematics, replacing **Don Rhoads**, who is retiring at the end of the Spring semester. Don has chaired the department for six years. [dhr@andrews.edu]

Central Michigan University [reported by James Angelos]

Arthur Powell, Department of Urban Education, Rutgers-Newark, spoke in February. **Shyamal Peddada**, Director of Statistical Consulting Division, Biostatistics Branch, National Institute of Environmental Health Science also spoke in February. • **Sivaram Narayan** received an NSF Research Experience for Undergraduates grant for the next three years. Working with him will be **Ken Smith**, as well as **Sid Graham**, **John Daniels**, and **Boris Bekker** from St.

Andersen continued from page 9

instrumental in building and sustaining community within the department. The college has lost a well-known and respected scholar and one of its most caring and effective teachers. The mathematical community has lost a dedicated servant, an outstanding researcher, and a tireless advocate for students and student learning. The world has lost a bright light – someone who lived out the grace and love of her Lord Jesus Christ in tangible and sacrificial ways each day.

Most of all, we will miss Janet's personality: her laugh, her smile, her contagious enthusiasm. Our continued love and prayers go out to Janet's husband, Jim, and their children and extended family. In the coming months, we will rest in the steadfast hope of glory that Janet shared, and be assured that she is now somewhere better, doing things even greater, in the presence of the One who made her and who gave her life. And I am willing to bet that she is not wearing shoes.

Darin Stephenson, Hope C



THOMSON

BROOKS/COLE

For every way you teach. For every way they learn.

VISIT OUR EXHIBIT

Learn more about recent publications by these stellar authors!

<p>DEVELOPMENTAL MATHEMATICS</p> <p>Mark Clark R. David Gustafson and Peter D. Frisk Lewis R. Hirsch and Arthur Goodman Jerome E. Kaufmann and Karen L. Schwitters Charles P. McKeague Alan S. Tussy and R. David Gustafson James Van Dyke, James Rogers, and Hollis Adams</p>	<p>COLLEGE ALGEBRA</p> <p>R. David Gustafson and Peter D. Frisk Michael Holtfreich and Jack Haughn Scott R. Herriott Jerome E. Kaufmann and Karen L. Schwitters Earl W. Swokowski and Jeffery A. Cole</p> <p>PRECALCULUS</p> <p>David Cohen Thomas W. Hungerford James Stewart, Lothar Redlin and Saleem Watson Earl W. Swokowski and Jeffery A. Cole</p>	<p>FINITE MATHEMATICS/ APPLIED CALCULUS</p> <p>Jean Marie McDill and Agnes M. Rash Michael Piant, Janice Epstein, Kathryn Bollinger, Robert Hall, Yvette Hester and Arlen Strader Howard L. Rolf Soo T. Tan</p> <p>CALCULUS</p> <p>Dennis Ebersole, Doris Schattschneider, Alicia Sevilla and Kay Somers James Stewart</p>
<p>LIBERAL ARTS MATHEMATICS</p> <p>Harold Parks, Gary Musser, Lynn Trimpe, Vikki Maurer, and Roger Maurer Kar J. Smith Ronald Staszko and Robert Bradshaw Daniel L. Timmons, Sonya McCook, and Catherine W. Johnson</p>	<p>TRIGONOMETRY</p> <p>Thomas W. Hungerford Kar J. Smith</p>	<p>Ask for a demonstration of technology solutions that can ease your workload and help your students make the most of their study time.</p>

To order a review copy:

Phone: 1-800-423-0563
Fax: 1-859-647-5020
E-mail: review@kdc.com
Source Code: 7TPMAREG

Grand Valley State University [reported by Reva Kasman]

Mary Ellen Barber retired from the department. **Edward Aboufadel** and **David Austin** were both promoted to Prof., and **Esther Billings**, who is currently on sabbatical, received tenure and was promoted to Assoc. Prof. We have welcomed new visiting faculty **Jacob Heidenreich** and **Joe Fox**, and new affiliate faculty **Tatiana Mihaylova** and **Lindsay Henning**. **Jody Sorensen** is on a leave of absence. • **Edward Aboufadel** is the new Secretary of Section A (Mathematics) of the American Association for the Advancement of Science (AAAS). His term of office runs through February 2010. • Once again GVSU is hosting an REU program in mathematics during the Summer of 2006. Students will research projects on wavelets, Hausdorff metric geometry, San Gaku geometry problems, and optimization. The faculty mentors this summer are Ed Aboufadel, **Steve Schlicker**, **Clark Wells**, and **Will Dickinson**. [kasmanr@gvsu.edu]

Hope College [reported by Todd Swanson]

We are happy to report that **Aaron Cinzori** was granted tenure and promoted to Assoc. Prof. • Hope will host the 30th Annual Lower Michigan Mathematics Competition on Saturday, April 1. Teams of up to three students compete in this state competition solving ten challenging problems. Contact Aaron Cinzori at cinzori@hope.edu for more details. • We will also host the 9th Annual Michigan Undergraduate Mathematics Conference on Saturday, October 21. We hope that faculty who work with undergraduate students on research projects encourage them to present their results at this popular conference. For more information about the MUMC contact **Darin Stephenson** at stephenson@hope.edu. • We would like to thank the mathematical community of Michigan for the condolences and kind words given to us following the death of **Janet Andersen** this past Fall. [swansont@hope.edu]

Lawrence Technological University [reported by Mike Merscher]

The World Robofest 2006 championship will be held at LTU on May 13. Top qualifying teams from regional and international competition will vie for the world title. **C.J. Chung** heads up the festival. • The 37th Annual LTU High School Mathematics Competition will be held on April 23. **Mike Merscher** authors the competition. • **Guong-Chong Zhu** has been instrumental in organizing a faculty seminar series of interesting talks in fields of mathematics, science, and the humanities. • We are being visited this semester by 24 students from Saudi Arabia, who are being guided by **Gus Azar**. [merscher@ltu.edu]

Schoolcraft College [reported by Randy Schwartz]

Schoolcraft C will be hosting the 13th annual conference of the Midwest Institute for International and Intercultural Education (MIIE) on April 21–22. Two of the sessions will take up multicultural dimensions of mathematics education, with

presenters **Javad Abdollahi-Alibeik** (WSU), **Khadija Ahmed** (Monroe County CC), **Amy Jeppsen** and **Jenny Sealy** (UM-Ann Arbor), **Barbara Jur** (Macomb CC), and **Randy Schwartz** (Schoolcraft C). Information and registration forms can be accessed at puma.kvcc.edu/Midwest. [rschwartz@schoolcraft.edu]

University of Detroit Mercy [reported by John O'Neill]

A number of programs for high school and grade school students will be held at UDM from March through August: STEPS, Dapcep, Unite, etc. There is even a program investigating the Rouge River Watershed: its problems, causes and cures. Those interested should contact **Dan Maggio** (maggiodd@udemercy.edu or 313-993-1435). [oneilljd@udmercy.edu]

University of Michigan-Flint [reported by Steven C. Althoen]

Joan Hellmann is retiring this semester after 30 years service as a lecturer. • **Richard Alfaro** and **Steve Althoen** have assumed the co-editor position for the Classroom Capsules section of the *College Mathematics Journal*. [salthoen@umflint.edu]

Western Michigan University [reported by Paul Eenigenburg]

Henry Escuadro successfully defended his Ph.D. dissertation, "Detectable Colorings of Graphs", under the supervision of **Ping Zhang**. [paul.eenigenburg@wmich.edu]

New Officers to be Elected at Annual Meeting

The annual business meeting of the Michigan Section-MAA will take place at 5:00 p.m. on May 6, 2006 at Calvin College during the Annual Meeting. One of the major items of business is the election of officers. The Nominating Committee, chaired by **Gerard Venema** (Calvin C), will propose a slate of candidates. **Randy Pruim** (Calvin C), will be nominated for Chair. **Tom Zerger** (SVSU) will be nominated for Four-Year College Vice Chair. **David Redman** (Delta C) will be nominated for Two-year College Vice Chair. Nominations from the floor are also accepted (permission of the nominees should be secured in advance). The Annual Meeting will also have reports on Section activities during the year, as well as an opportunity for members to raise other issues. The Nominating Committee is listed on page 35.

Sustaining Members Listed

The Michigan Section dues structure includes a sustaining individual member category for those who make a \$15 contribution beyond the basic dues rate of \$15. For 2005–2006, as of February 23, the 52 members of the Section listed below are sustaining members. The Section is grateful to those several individuals who generously exceeded the suggested sustaining member contribution. If you have not already sent in your dues, please do so, using the form on page 33, and please be generous!

Aboufadel, Edward

Althoen, Steve

Bix, Robert

Bruner, Robert

Buckley, Joseph

Chandler, Gregg

Clifford, Loren

Dickinson, William

Dudziak, James

Eenigenburg, Paul

Favro, Ruth

Fleming, Richard J

Frohardt, Daniel

Gardiner, Chris

Gilbert, R Kent

Gilpin, Michael

Gioia, Tony

Graham, Sid

Grossman, Jerry

Ham, Jim

Hammel, Arnold

Höft, Margret

Jur, Barbara A

Kaplan, Wilfred

Kiltinen, John D

Miles, Tom

Miller, Jack M

Moore, W Keith

Mosier, Ronald G

Moultine, Gerry

Myers, Robert

Nace, Doru

Nyman, Melvin A

Petro, John

Rahn, Joan M

Redman, B David

Rescorla, Kim

Richert, Norman

Sherburne, Frank, Jr

Slaby, Harold T

Smyrski, Larry

Stich, Philip

Stob, Michael

Trojanowski, William

Van Zwalenberg, George

Venema, Gerard

Verdonk, Sylvia H

Warren, Bette

Wasserman, Robert

Winter, Dale

Wyneken, Matthew

Xeras, Robert

Doctoral Studies at
Central Michigan University

PhD with Concentration in
the Teaching of College Mathematics

This PhD is a content-based degree designed to prepare individuals for a career in college teaching. The program consists of broadly distributed coursework, professional pedagogical components, teaching internships, and a dissertation. Areas of research strength include approximation theory, combinatorics, fluid dynamics, functional analysis, operator theory, number theory, algebraic geometry, algebra, differential geometry, statistics, and mathematics education. For information contact: Sivaram Narayan, Graduate Coordinator, Department of Mathematics, Central Michigan University, Mt. Pleasant, MI 48859; phone 989-774-3596, fax 989-774-2414, mthgrad@cmich.edu, <http://www.cst.cmich.edu/units/mth>.

CMU, an AA/EO institution, is strongly and actively committed to increasing diversity within its community (www.cmich.edu/aaeo.html).

University of Michigan
Biostatistics Department
MS, MPH, PhD Degree Programs

Our department offers training in the development and application of statistical and mathematical methods to the design and analysis of biomedical research. We offer course work leading to the degrees of Master of Science, Master of Public Health, and Doctor of Philosophy. We have a large number of funding opportunities for our students including graduate student instructorships, graduate student research assistantships, training grants, scholarships, and fellowships. The faculty conduct cutting-edge research in bioinformatics, imaging, longitudinal data, missing data, survival analysis, statistical genetics, and many other areas. Our graduates have great job opportunities in fields such as government, industry (e.g. biotech, pharmaceuticals), medical research institutions, and universities.

For further information and application materials, please contact sph.bio.inquiries@umich.edu. Detailed information is also available on our web site at www.sph.umich.edu/biostat.

MICHIGAN STATE UNIVERSITY

Department of Mathematics

The Department offers coursework leading to the degrees of

Master of Science
Master of Science in Applied Mathematics
Master of Science in Industrial Mathematics
Master of Arts for Teachers
Doctor of Philosophy

Doctoral candidates may pursue study and research in the areas of

Algebra
Analysis
Applied Mathematics
Combinatorics and Graph Theory
Dynamical Systems
Geometry
Mathematics Education
Number Theory
Topology

Assistantships are available. The Department awards 100 graduate teaching Assistantships to new and returning graduate students on the basis of merit. Duties include classroom instruction, preparation, paper grading, and learning center duties. An assistantship provides a stipend of at least \$1400 per month and includes a nine-credit tuition waiver, a waiver of fees, and health insurance for each Fall and Spring semester.

Detailed information is available on our web page:

www.math.msu.edu

For further information and application material, contact

Director of Graduate Studies
Department of Mathematics
Michigan State University
East Lansing, MI 48824-1047
Telephone: 517-353-4650
E-mail: grad@math.msu.edu

Contest News

The American Mathematics Competitions are sponsored by the MAA and the University of Nebraska-Lincoln. The AMC 8 Exam, given to students in grade 8 and below, is a 25-question, 40-minute multiple-choice contest with no penalty for guessing. A student's score is the number of problems correctly solved. The 2005 AMC 8 Exam was taken by 7340 students from 95 schools in Michigan on November 15, 2005. The overall Michigan average score was 8.91.

Perfect scores were achieved by seven Michigan students: six eighth graders and one seventh grader. They were **Whit Froehlich** and **Robin He**, Greenhills School in Ann Arbor; **Michael Dimattia**, Detroit County Day Middle School in Beverly Hills; **J. J. Treadway**, Central Middle School in Midland; **Steven Chang** and **Jaewon Kim**, Boulton Park Middle School in Troy; and **Randy Jia**, ICAE in Troy. The Edyth May Sliffe Award recognizes the excellence of 50 exam managers whose students are most successful on the AMC 8. The 2005 recipients of the award in Michigan were **Roy Kenneth Downie**, Smith Middle School in Troy, and **Randall C. Meono**, Detroit County Day Middle School in Beverly Hills.

Proposed Amendments to the Section Bylaws

The Executive Committee of the Michigan Section recommends the following amendments to the Section Bylaws. The intent is to include the MMPC director as an ex officio member of the Executive Committee. The proposed amendments will be voted on during the Business Meeting at the Annual Meeting May. If approved by a majority of those attending the Business Meeting, they will be submitted to the Board of Governors for approval.

(1) to change Article III, section 2, sentence 2 of the Bylaws

from: The Newsletter Editor, the Public Information Officer, and the Webmaster shall serve as ex-officio non-voting members

to: The Newsletter Editor, the Public Information Officer, the Director of the Michigan Mathematics Prize Competition, and the Webmaster shall serve as ex-officio non-voting members.

(2) to change Article VI, section 4a. of the Bylaws

from: serve as an ex-officio member of the Examination Committee

to: serve as an ex-officio member of the Examination Committee and serve as an ex-officio member of the Executive Committee.

The current Bylaws of the Section can be found at michmaa.org/bylaws.html.

Nancy Colwell, Secretary/Treasurer

PRENTICE HALL

PRECALCULUS

New editions for these Precalculus titles are available!

To order, contact your local Prentice Hall representative.

By Sullivan/Sullivan

Precalculus: Concepts Through
Functions, A Unit Circle
Approach to Trigonometry

Precalculus: Concepts Through
Functions, A Right Triangle
Approach to Trigonometry

College Algebra: Concepts
Through Functions

By Blitzer

College Algebra, 4/E

Algebra & Trigonometry, 3/E

Precalculus, 3/E

Precalculus Essentials, 2/E

College Algebra Essentials, 2/E

College Algebra: Early Functions

Algebra & Trigonometry:
Early Functions

For more information, please visit

www.prenhall.com



Governor continued from page 6

and ARML team member when at Brother Rice HS in Birmingham.

MAA Online Web development continues. *Focus* is online, with back issues to 2003.

New columns include Convergence (Math History); MAA Reviews (replaces Telegraphic Reviews); and Classroom Capsules online (taken from *The College Mathematics Journal*). Some features are accessed in a Members Only site. Check these out in MathDL. *Focus* can use short math articles, cover images, book reviewers.

In the program area, SUMMA received funding for 12 sites for the summer 2005 NREUP, minority-participation REUs (up from 6 in 2004). MAA President **Carl Cowen** attended meetings of a new interprofessional committee, "Finding Common Ground in K–12 Mathematics Education". A new award called the Euler Prize has been funded by the Halmos's.

In the area of public policy, the MAA has teamed with other organizations such as AIP to produce 90 second spots on TV in the form of stories, to promote public awareness of math and science.

Ruth Favro, Governor

Institutional Members

As of February 23, the 18 colleges and universities listed below have begun or renewed their institutional memberships in the Michigan Section for 2005–2006. Tardy institutions and others who wish to join are encouraged to send in their dues, using the form below.

Adrian College

Alma College

Calvin College

Central Michigan University

Eastern Michigan University

Grand Valley State University

Hillsdale College

Hope College

Kalamazoo College

Lake Michigan College

Lawrence Technological

University

Michigan Technological

University

Muskegon Community College

Oakland University

University of Detroit-Mercy

University of Michigan-Ann

Arbor

University of Michigan-Dearborn

Section Dues: Individual • Institutional

The 2005–2006 individual and institutional membership dues for the Michigan Section are now being accepted. The \$15 individual dues payment (or \$30 contributing member payment) and the \$40 (small school) or \$70 (large school) institutional dues help support the activities of the Section such as its annual meeting and *Newsletter*. This coupon may be used to submit dues payments.

Enclosed is a check for:	Regular Dues	@ \$15	<input type="checkbox"/>
	Contributing Membership	@ \$30	<input type="checkbox"/>
	Small Institutional Dues	@ \$40	<input type="checkbox"/>
	Large Institutional Dues	@ \$70	<input type="checkbox"/>

Name: _____

Institution: _____

Mailing Address _____

E-mail Address _____

Make checks payable to the Michigan Section–MAA, and mail them to: **Nancy Colwell, Secretary/Treasurer, Michigan Section–MAA, Department of Mathematical Sciences, Saginaw Valley State University, University Center, MI 48710-0001.**

COMMITTEES AND APPOINTMENTS

Michigan Section

Mathematical Association of America

Contact Information

Executive Committee

<i>Chair</i>	John Fink (06)	Kalamazoo C	fink@kzoo.edu	269-337-7062
<i>Vice Chair</i>	Mark Naber (06)	Monroe County CC	mnaber@monroeccc.edu	734-384-4252
<i>Co-Vice Chair</i>	Matthew Boelkins (06)	GVSU	boelkinm@gvsu.edu	616-331-3384
<i>Co-Vice Chair</i>	Randall Pruim (06)	Calvin C	rpruim@calvin.edu	616-526-7113
<i>Sec/Treas</i>	Nancy Colwell (07)	SVSU	nccolwel@svsu.edu	989-964-4353
<i>Past Chair</i>	Gerard Venema (06)	Calvin C	venema@calvin.edu	616-526-6402
<i>Governor</i>	Ruth Favro (07)	LTU	favro@ltu.edu	248-204-3531

High School Visiting Lecture Program (HSVLP)

<i>Co-Dir.</i>	Brian Snyder (08)	LSSU	bsnyder@lssu.edu	906-635-2658
<i>Co-Dir.</i>	Kimberly Muller (08)	LSSU	kmuller@lssu.edu	906-635-2170

Michigan Mathematics Prize Competition (MMPC)

<i>Director</i>	Eddie Cheng (08)	Oakland U	echeng@oakland.edu	248-370-4024
-----------------	------------------	-----------	--------------------	--------------

Exam Committee:

<i>Chair</i>	John Clifford (06)	UM-Dearborn	jcliff@umd.umich.edu	313-593-4259
<i>Member</i>	Patrick Pan (07)	Saginaw Val. SU	pan@svsu.edu	989-964-7357
<i>Member</i>	Akalu Tefera (08)	GVSU	teferaa@gvsu.edu	616-331-3746
<i>Member</i>	Lazaros Kikas (09)	UDM	kikasld@udmercy.edu	

Program Committee: 2006 Annual Meeting

<i>Co-Chair</i>	Janet Andersen	Hope C	jandersen@hope.edu	616-395-7123
<i>Co-Chair</i>	Mark Naber	Monroe County CC	mnaber@monroeccc.edu	734-384-4254
<i>Member</i>	Randy Pruim	Calvin C	rpruim@calvin.edu	616-526-7113
<i>Member</i>	Matt Boelkins	GVSU	boelkinm@gvsu.edu	616-331-3384

Local Arrangements Committee: 2006 Annual Meeting

<i>Chair</i>	Gerard Venema	Calvin C	venema@calvin.edu	616-526-6402
<i>Member</i>	Michael Bolt	Calvin C	mdb7@calvin.edu	616-526-6719
<i>Member</i>	Earl Fife	Calvin C	fife@calvin.edu	616-526-6403
<i>Member</i>	Sharon Gould	Calvin C	eseg5@calvin.edu	616-5267163
<i>Member</i>	Tom Jager	Calvin C	jage@calvin.edu	616-526-6405
<i>Member</i>	Randy Pruim	Calvin C	rpruim@calvin.edu	616-526-7113
<i>Member</i>	George Van Zwalenberg	Calvin C	vanzwalenberg@sbcglobal.net	

Michigan Section Newsletter

<i>Editor</i>	Norman Richert	Math. Reviews	nrichert@ams.org	734-996-5254
<i>Assoc. Ed.</i>	Jerrold W. Grossman	Oakland U	grossman@oakland.edu	248-370-3443
<i>Ad Manager</i>	John Stoughton	Hope C	stoughton@hope.edu	616-395-7526

Distinguished Service Award Committee

<i>Chair</i>	Gerard Venema (07)	Calvin C	venema@calvin.edu	616-526-6402
<i>Member</i>	Steve Schlicker (06)	GVSU	schlicks@gvsu.edu	616-331-2305
<i>Member</i>	John Fink (08)	Kalamazoo C	fink@kzoo.edu	616-337-7062

Distinguished Teaching Award Committee

<i>Chair</i>	Brian McCartin (07)	Kettering U	bmccarti@kettering.edu	810-762-7802
<i>Member</i>	Steve Kahn (06)	WSU	skahn@math.wayne.edu	313-577-3471
<i>Member</i>	Ted Sundstrom (08)	GVSU	sundstr@t@gvsu.edu	616-331-2041

Nominating Committee

<i>Chair</i>	Gerard Venema (06)	Calvin C	venema@calvin.edu	616-526-6402
<i>Member</i>	Mark Naber (06)	Monroe County CC	mnaber@monroeccc.edu	734-384-4254
<i>Member</i>	Jerrold W. Grossman (06)	Oakland U	grossman@oakland.edu	248-370-3443

Audit Committee

<i>Member</i>	Chris Gardiner	EMU	cgardiner@emich.edu	734-487-3386
<i>Member</i>	Gerald D. Ludden	MSU	ludden@math.msu.edu	517-353-6335

MMPC Audit Committee

<i>Member</i>	Margret Höft	UM-Dearborn	mhoft@umd.umich.edu	313-593-5007
<i>Member</i>	John Mooningham	SVSU	jwm@svsu.edu	989-964-4183

Organizing Committee: Upper Peninsula Regional Meeting

<i>Co-Chair</i>	Al Baartmans	MTU	baartman@mtu.edu	906-487-2068
<i>Co-Chair</i>	John Kiltinen	NMU	kiltinen@nmu.edu	906-227-1600
<i>Co-Chair</i>	Brian Snyder	LSSU	bsnyder@gw.lssu.edu	906-635-2158

Other Appointments and Contacts

<i>Webmaster</i>	Scott Barnett (08)	Henry Ford CC	sebarnett@hfcc.edu	313-845-6496
<i>Pub. Inf. Off.</i>	Bob Xeras	Siena Heights U	rxeras@sienahts.edu	517-265-5832
<i>St. Act. Coord.</i>	Randall Pruim (06)	Calvin C	rpruim@calvin.edu	616-526-7113
<i>AMC Coord.</i>	Ada Dong (08)	ICAE	acdong@gmail.com	810-762-3304
<i>WAM</i>	Toni Carroll	Siena Heights U	toni@alpha.sienahts.edu	517-264-7658
<i>Liaison Coord.</i>	Reva Kasman	GVSU	kasmanr@gvsu.edu	616-331-8561
<i>Archivist</i>	John W. Petro	WMU	john.petro@wmich.edu	616-387-4591
<i>Mich NExT</i>	Mark Pearson (08)	Hope C	pearson@hope.edu	616-395-7522
<i>Mich NExT</i>	Paul Yu (08)	GVSU	yupaul@gvsu.edu	616-331-2826
<i>MCTM Lia.</i>	Ruth Favro (07)	LTU	favro@ltu.edu	248-204-3531

Michigan Section-MAA Web Site

www.michmaa.org

National MAA Headquarters, Washington, DC

www.maa.org, 800-741-9415



THE MATHEMATICAL ASSOCIATION OF AMERICA

P.O. Box 90973 • Washington, DC 20090-0973
Telephone (800) 331-1622 *US and Canada Only*
(301) 617-7800 *International* • Fax (301) 206-9789
Email member@maa.org • Website www.maa.org

2006 INDIVIDUAL MEMBERSHIP FORM

1. APPLICANT INFORMATION

Prefix:	First Name:	Middle Initial:	Last Name:
Street Address 1:			
Street Address 2:			
City:	State:	Zip:	
Telephone:	Email:	Date of Birth	
Highest Degree Earned:	Year Awarded:	Awarding Institution:	
Employer:	Position:		

2. SELECT YOUR OPTIONS

All members receive FOCUS, the official newsletter of the MAA.

Please activate my (check one)

- ☐ 1 JOURNAL MEMBERSHIP \$ 99.00
- ☐ 2 JOURNAL MEMBERSHIP \$109.00
- ☐ 3 JOURNAL MEMBERSHIP \$119.00
- Receiving**
- ☐ THE AMERICAN MATHEMATICAL MONTHLY (10 ISSUES)
- ☐ MATHEMATICS MAGAZINE (5 ISSUES)
- ☐ THE COLLEGE MATHEMATICS JOURNAL (5 ISSUES)

INTRODUCTORY RATE FOR FIRST-TIME MAA MEMBERS ONLY.
OTHERS CALL 1-800-331-1622 FOR RATE INFORMATION.

3. ADD A SIGMAA

*Adding a SIGMAA membership requires a small additional fee:

- ☐ SIGMAA FOR BUSINESS INDUSTRY AND GOVERNMENT.....\$10.00
- ☐ SIGMAA ON ENVIRONMENTAL MATHEMATICS.....\$10.00
- ☐ SIGMAA ON THE HISTORY OF MATHEMATICS.....\$10.00
- ☐ SIGMAA ON THE PHILOSOPHY OF MATHEMATICS.....\$10.00
- ☐ SIGMAA ON RESEARCH IN UNDERGRADUATE MATHEMATIC EDUCATION.....\$10.00
- ☐ SIGMAA ON STATISTICS EDUCATION....\$10.00
- ☐ SIGMAA ON TEACHING ADVANCED HIGH SCHOOL MATHEMATICS.....\$10.00
- ☐ SIGMAA ON MATHEMATICS INSTRUCTION USING THE WEB.....\$10.00
- ☐ SIGMAA ON QUANTITATIVE LITERACY....\$10.00

* Include your email address above.

TOTAL REMITTANCE: \$ _____

4. PAYMENT INFORMATION

Check enclosed made payable to Mathematical Association of America
(US funds/US bank required)

Charge my credit card

- ☐ VISA ☐ MasterCard

Account # _____ Exp. Date _____

Signature _____



Telephone to:
800/331-1622 (Toll Free)
301/617-7800 (Outside US)



Mail to:
P.O. Box 90973
Washington, DC 20090



Fax to:
(301) 206-9789

A06WEB