

**2003 Joint Annual Meeting
Michigan Section – MAA
& MichMATYC**

The 2003 Joint Annual Meeting of the Michigan Section of the Mathematical Association of America and MichMATYC, the Michigan Mathematical Association of Two Year Colleges, will be held on Friday and Saturday, May 2–3, 2003, at Saginaw Valley State University in University Center.

Most activities will take place in Curtiss Hall and the Rhea Miller Recital Hall, which are joined by a large meeting area called Groening Commons. Registration will be in Groening Commons from 8:00 a.m. to 5:00 p.m. on Friday, May 2, and from 8:30 a.m. to 11:00 a.m. on Saturday, May 3. The noon luncheons on both Friday and Saturday and the Annual Banquet on Friday evening will be in Banquet Rooms A and B in Curtiss Hall. The AWM-WAM Breakfast on Saturday morning will be in Seminar Room F in Curtiss Hall.

Advance reservations are required for all scheduled meals. The registration form is on page 20 of this program. It should be mailed in time to reach the Department of Mathematics no later than Friday, April 18, 2003. Complimentary refreshments will be available in Seminar Rooms D, E in Curtiss Hall, which is also the location of the book and computer exhibits.

A campus map can be found on the inside back cover, and a general area map is on the back cover. Hotel information is on page 18. Reservations should be made directly with the hotels. To assure your room, please reserve at the Holiday Inn Express and Bay Valley Resort by April 8, at the Four Points Sheraton by April 10, and at the Hampton Inn by April 17.

PROGRAM
Friday, May 2, 2003

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| 8:00–8:50 Registration | | Groening Commons |
| 8:50–9:00 Welcome | | Rhea Miller Recital Hall |
| Eric R. Gilbertson President Saginaw Valley State University | | |
| 9:00–9:50 Plenary Address | | Rhea Miller Recital Hall |
| <i>Solitons and other Longwave Phenomena</i> Jerry Bona , University of Illinois at Chicago | | |
| 10:00–10:15 Coffee Break | | Curtiss Hall, Seminar Rooms D and E |
| Sponsor: Addison-Wesley | | |
| 10:15–10:35 222 CH | 10:15–10:35 224 CH | |
| Mehrdad Simkani , U of M - Flint <i>The Delian Problem</i> | John Stoughton , Hope College <i>Using the Irrationality of Pi to Introduce the Mathematics Major</i> | |
| 10:40–11:00 222 CH | 10:40–11:00 224 CH | |
| Paul Fishback , GVSU <i>Mandelbrot Sets in Matrix Rings: Tales of Binary and Ternary Number Systems</i> | Reva Kasman , GVSU <i>Teaching by Example: Case Studies for Mathematics Instructors</i> | |
| 11:05–11:25 222 CH | 11:05–11:25 224 CH | |
| Steven Sepanski , SVSU <i>A Metric Not to Fret About</i> | John Whitaker , Wittenberg University <i>Actuarial Seminar: Preparing Students for the First Actuarial Exam</i> | |
| 11:30–11:50 222 CH | 11:30–11:50 224 CH | |
| John O. Kiltinen , NMU <i>Like “15”, but “8-on-a- torus”:</i> Analysis of a Puzzle | Ada C. Dong , Lawrence Technological University <i>Mathematics in Computing Science—Discrete Structures</i> | |
| 12:00–1:45 Luncheon | | Curtiss Hall, Banquet Rooms A and B |
| <i>Preparing Teachers for the Mathematical Work of Teaching</i> Deborah Ball , University of Michigan, Ann Arbor | | |

Friday, May 2, 2003 (continued)

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| 2:00–2:50 Plenary Address | | Rhea Miller Recital Hall |
| <i>The State of Dynamical Systems in Ecology</i> | | |
| Shandelle M. Henson , Andrews University | | |
| 3:00–3:15 Coffee Break | | Curtiss Hall, Seminar Rooms D and E |
| Sponsor: Prentice Hall | | |
| 3:15–3:35 222 CH | 3:15–3:35 224 CH | |
| Christina Burden , student, Andrews University <i>Modeling the Dynamics of Seabird Habitat Occupancy</i> | Garnet Hauger , Spring Arbor University <i>Using Geometer's Sketchpad to Teach Geometry</i> | |
| 3:40–4:00 222 CH | 3:40–4:00 224 CH | |
| Gerry Cox , Lake Michigan College <i>Leibniz's Proof That the Alternating Odd Harmonic Series Equals $\pi/4$</i> | Matt Boelkins , GVSU <i>A Capstone Course on the Nature of Modern Mathematics</i> | |
| 4:05–4:25 222 CH | 4:05–4:25 224 CH | |
| Hamza Ahmad , SVSU <i>The Quadratic Zariski Birational Cancellation Problem and Pfister Neighbors</i> | JingLing Wang and Michael Masterson , Lansing CC <i>Reconciling Differences in Calculus and Physics Curricula to Better Prepare Students</i> | |
| 4:30–4:50 222 CH | 4:30–4:50 224 CH | |
| Mark Naber , Monroe County CC <i>Multi-time-scale Fractional Sub-diffusion</i> | Dyana Harrelson , Hope College <i>A Second Course in Statistics for Math Majors</i> | |
| 5:00–5:30 Business Meeting | | Curtiss Hall 224 |
| 5:30–6:00 Chairs and Liaisons Meeting | | Curtiss Hall 224 |
| 6:15–7:15 Social Hour | | Curtiss Hall, Banquet Rooms A and B |
| Sponsored in part by Brooks-Cole | | |
| 7:15–9:30 Awards Banquet | | Curtiss Hall, Banquet Rooms A and B |
| <i>What is Algebra and Why Is It So Important - A Historical Survey</i> | | |
| Victor Katz , University of the District of Columbia | | |

Saturday, May 3, 2003

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| 7:30–8:30 AWM-WAM Breakfast | | Curtiss Hall, Seminar Room F |
| 8:30–9:00 Registration | | Groening Commons |
| 9:00–9:50 Plenary Address | | Rhea Miller Recital Hall |
| <i>Ideals Defining Projective Varieties</i> | | |
| Peter J. Vermeire , Central Michigan University | | |
| 10:00–10:15 Coffee Break | | Curtiss Hall, Seminar Rooms D and E |
| Sponsor: Wolfram | | |
| 10:15–10:35 222 CH Brian McCartin , Kettering <i>Geometric Structure of the Octatonic Musical Scale</i> | 10:15–10:35 224 CH Richard Hill , MSU <i>On the Transition from High School Mathematics to University Mathematics</i> | |
| 10:40–11:00 222 CH William C. Dickinson , GVSU <i>Spherical Trilateral Theorems</i> | 10:40–11:00 224 CH Ruth Favro and David Bindschadler , LTU <i>Visualizing Core Mathematical Concepts</i> | |
| 11:05–11:25 222 CH James Angelos , CMU <i>CMET Capstone Scholars Program</i> | BUILDING BRIDGES 11:05–11:50 224 CH Esther Billings, Matt Boelkins, David Coffey, John Golden, Karen Novotny, Steven Schlicker, Akalu Tefera, and Clark Wells , GVSU <i>Enhancing the Mathematical Core</i> | |
| 11:30–11:50 222 CH Radu Teodorescu , WMU <i>Solving Linear Recurrence Relations (II)</i> | | |
| 12:00–2:00 Luncheon | | Curtiss Hall, Banquet Rooms A and B |
| <i>The Curvature of Space</i> | | |
| Jeff Weeks | | |
| Workshop | | |
| <i>Mathematics for Business Decisions</i> | | |
| 2:15–4:15 Richard B. Thompson , University of Arizona | | Curtiss Hall 235 |

Abstracts

Plenary Talks

Jerry Bona, University of Illinois at Chicago
Friday, 9:00–9:50 am

Rhea Miller Recital Hall

Solitons and other Longwave Phenomena

The solitary wave was discovered nearly 170 years ago. In the 19th century, it was an object of some contention, but the first half of the 20th century saw very little interest in this special traveling wave. This changed utterly in the second half of the twentieth century when it and its relatives became a central object of mathematical and physical investigation.

After a précis of its historical development, the lecture will go into some of the remarkable properties of these waveforms. Emphasis will be placed on both some of the interesting mathematics arising from the study of this phenomenon and upon what we have learned about the world around us as a result of these investigations. The lecture concludes with a description of one of the many practical applications of what we have learned.

Deborah Ball, University of Michigan, Ann Arbor
Friday Luncheon Address

Curtiss Hall, Banquet Rooms A and B

Preparing Teachers for the Mathematical Work of Teaching

Teaching well depends on more than "knowing mathematics," understanding learning, and being able to present material clearly. Teaching is itself a specialized form of mathematical work that entails substantial mathematical problem solving and reasoning. This presentation will probe examples of such work, examine what it requires of teachers, and will engage participants in considering the implications of this perspective for the mathematical education of teachers.

Shandelle M. Henson, Andrews University
Friday, 2:00–2:50 pm

Rhea Miller Recital Hall

The State of Dynamical Systems in Ecology

Understanding and predicting fluctuations in numbers of organisms is a fundamental issue in ecology with broad implications for pressing world problems ranging from the spread of disease to the conservation of species diversity. During the last few decades, the predictions of dynamical systems theory have been tested in controlled laboratory studies. Robust qualitative and quantitative prediction has become possible for several laboratory population systems, as well as a few field systems. A whole zoo of nonlinear phenomena has been documented in population data, including equilibria, cycles, bifurcations, multiple attractors, resonance, basins of attraction, saddle influences, stable and unstable manifolds, transient phenomena, lattice effects, and chaos. Despite rich interdisciplinary opportunities for progress, there remains a serious schism between mathematics and biology. This separation, which begins in the undergraduate curriculum, must be addressed by both disciplines.

Victor Katz, University of the District of Columbia
Friday Banquet Address

Curtiss Hall, Banquet Rooms A and B

What is Algebra and Why Is It So Important - A Historical Survey

Algebra has been with us in some form for some 4000 years. During that long history it has both changed drastically and remained the same. The notation has changed from pure words through abbreviations to our current symbolism. The underlying concepts have changed from geometrical manipulation to pure numerical equation solving to the more dynamic idea of a function. But algebra has remained a tool for problem solving - and many of the problems have remained the same. In this talk, we will take a rapid journey through the history of algebra, noting the important changes and reflecting on the importance of this history in the teaching of algebra in secondary school or college.

Peter J. Vermeire, Central Michigan University

Saturday, 9:00–9:50 am

Rhea Miller Recital Hall

Ideals Defining Projective Varieties

Algebraic Geometry is concerned with the study of solution sets of systems of polynomial equations; these sets are called algebraic varieties. We begin with an elementary sketch of algebraic geometry with the goal of identifying complex projective space as a natural place to study solutions of polynomial equations. We will then discuss the various types of questions one is interested in when studying the interplay between a variety and the ideal generated by the polynomials defining the variety. Computational examples from the computer algebra system "Macaulay" will be presented to demonstrate how this program can be used to guide the researcher.

Jeff Weeks

Saturday Luncheon Address

Curtiss Hall, Banquet Rooms A and B

The Curvature of Space

In March 2003 the first full-sky measurements of the Cosmic Microwave Background radiation will be made public. These measurements will determine the curvature of the universe to unprecedented precision, and may hold clues to its topology as well. This Luncheon Address will survey the results from a geometrical viewpoint.

The presentation will begin with an elementary introduction to curved space, using physical models and interactive 3D graphics to build intuition and demonstrate some surprising visual effects. We'll then see how physicists' understanding of a curved, expanding universe evolved over the 20th century, leading to the current measurements. The remainder of the session will depend on exactly what is announced in March, but at a minimum we'll see how the curvature measurements imply the existence of a still-mysterious vacuum energy.

Contributed Talks

Hamza Ahmad, Saginaw Valley State University
Friday, 4:05 – 4:25 pm

222 CH

The Quadratic Zariski Birational Cancellation Problem and Pfister Neighbors

The Classical Zariski birational cancellation problem asks: If K_1 and K_2 are finitely generated extensions of a (common) subfield k , and if $K_1(x)$ and $K_1(y)$ are k -isomorphic for some elements x and y transcendental over K_1 and K_2 respectively, should K_1 and K_2 be k -isomorphic? This question has a classical counter example which a function field of cubic form. We will discuss a version of this problem when K_1 and K_2 are function fields of quadratic forms and list some situations where the quadratic Zariski cancellation problem has an affirmative answer.

James Angelos, Central Michigan University
Saturday, 11:05 – 11:25 am

222 CH

CMET Capstone Scholars Program

The CMET Capstone Scholars Program and Central Michigan University is a NSF funded (CSEMS) scholarship program that has as its centerpiece a capstone experience. In conjunction with the departments of computer science, industrial & engineering technology, and mathematics, 22 students at the junior and senior level participate. We report on the research experiences of the mathematics students as part of the capstone experience.

Esther Billings, Matt Boelkins, David Coffey, John Golden, Karen Novotny, Steven Schlicker, Akalu Tefera, and Clark Wells, Grand Valley State University
Saturday, 10:40–11:50 am

224 CH

Enhancing the Mathematical Core

The Departments of Mathematics and Statistics at Grand Valley State University are engaged in a program to address mathematical concepts in core courses in the mathematics major through concepts addressed in K-12 mathematics curricula. We have examined the NSF-supported K-12 curricula projects and other NCTM standards-based materials to find topics\ideas in these materials through which we can launch the discussions of related core concepts in the program courses. This session will describe the work completed in three of the courses: Linear Algebra, Modern Algebra, and Discrete Mathematics.

Matt Boelkins, Grand Valley State University
Friday, 3:40 – 4:00 pm

224 CH

A Capstone Course on the Nature of Modern Mathematics

At GVSU, we recently instituted a capstone requirement for all math majors. Most fulfill this by completing a course titled "The Nature of Modern Mathematics". This is rather different from a traditional history of mathematics course; the focus (as the title suggests) is more modern, plus there is this curious emphasis on the 'nature' of mathematics.

I will share some reflections from teaching the course the past two semesters, ranging from book selection and choice of mathematical topics to student assignments, activities, and projects. We'll also discuss student reactions to the course and their understanding of the nature of mathematics.

Christina M. Burden, student, Andrews University
Friday, 3:15 – 3:35 pm

222 CH

Modeling the Dynamics of Seabird Habitat Occupancy

A central goal of ecology is the explanation and prediction of numbers of organisms in time and space. Fundamental challenges include the identification of scales at which asynchronous individual-level behaviors coalesce into patterns, and the determination of mechanisms driving these patterns. We studied habitat patch occupancy within a large breeding colony of seabirds. Clear dynamic patterns emerge for small aggregates of seabirds even though individuals move asynchronously among habitats. Remarkably, habitat occupancy can be forecast at three temporal scales by a simple algebraic equation based on three environmental determinants: day of year, solar elevation, and height of tide.

Gerry Cox, Lake Michigan College
Friday, 3:40 – 4:00 pm

222 CH

Leibniz's Proof That the Alternating Odd Harmonic Series Equals $\pi/4$

Leibniz thought this proof was his greatest achievement in mathematics. This is a proof that both calculus teacher and student would enjoy. It's different from the proof in most calculus texts.

Leibniz believed that the English mathematicians had discovered a formula for the

partial sums of the harmonic series. To get this formula, Leibniz offered his derivation of $\pi/4$.

William C. Dickinson, Grand Valley State University

Saturday, 10:40 – 11:00 am

222 CH

Spherical Trilateral Theorems

The textbooks of the 1850's and most modern textbooks define a spherical triangle as a three-sided figure contained entirely in an open hemisphere. In joint work with a student, we considered a larger (and much more interesting) class of figures called trilaterals. Trilaterals are three-sided figures which are not necessarily contained in an open hemisphere. We wanted to discover which Euclidean triangle theorems (Angle Side Angle, Side Angle Side, etc.) extend to the class of trilaterals. Our progress toward this goal will be presented along with a classification theorem for trilaterals. The basics of spherical geometry will also be introduced.

Ada C. Dong, Lawrence Technological University

Friday, 11:30 – 11:50 am

224 CH

Mathematics in Computing Science—Discrete Structures

The publication of the first computing curriculum recommendation to require discrete mathematics in its core, the Computing Curricula 2001, marked a new milestone in computing science education. It encourages the introduction of discrete mathematics early; emphasizes the importance of mathematics throughout the curriculum; and restates the belief that mathematics techniques and formal mathematical reasoning are integral to computing science, and hence is one of the primary foundations of the discipline.

In this talk, I would like to share my understanding of the new knowledge area Discrete Structures in Curricula 2001 through personal experiences on teaching discrete mathematics.

Ruth Favro and David Bindschadler, Lawrence Technological University

Saturday, 11:30 – 11:50 am

222 CH

Visualizing Core Mathematical Concepts

Geometry and Art is a course we developed which addresses mathematical ideas through visualization and art. It is designed to satisfy the core curriculum requirements that all our students be exposed to key mathematical concepts through

calculus and to present meaningful mathematics using the visual skills of the target audience (B.A. degrees in interior design, imaging, and others).

The approach was chosen to stimulate the interest of students that have found the structured formalism of mathematics foreign to their view of the world. Among the connections made are symmetry with groups, perspective with vectors, motion of objects and reflections from surfaces with calculus.

Paul Fishback, Grand Valley State University
Friday, 10:40 – 11:00 am

222 CH

Mandelbrot Sets in Matrix Rings: Tales of Binary and Ternary Number Systems

The Mandelbrot Set is one of the most spectacular images in mathematics and showcases a variety of important ideas in quadratic dynamics, including bifurcations, period-doubling, Sharkovskii's ordering, and chaos. This talk will focus on Mandelbrot Sets associated with two- and three-component number systems isomorphic to certain matrix rings. Describing such Mandelbrot Sets utilizes both a variety of important ideas from linear algebra, advanced calculus, and complex variables as well as some very recent, major results concerning real quadratic dynamics.

Dyana Harrelson, Hope College
Friday, 4:30 – 4:50 pm

224 CH

A Second Course in Statistics for Math Majors

In this presentation I will describe a new course in statistics that is a follow up to a one-semester calculus based introductory probability and statistics course. The students are taught the mathematical underpinnings of p-value and confidence interval calculations while being introduced to non-parametric techniques and multiple regression analysis. The focus of the course is on statistical thinking and effectively communicating statistical results which the students practice through weekly presentations and a culminating individual project. The use of Minitab® software is integrated into the course.

Garnet Hauger, Spring Arbor University
Friday, 3:15 – 3:35 pm

224 CH

Using Geometer's Sketchpad to Teach Geometry

Many colleges use *Geometer's Sketchpad*. Spring Arbor University uses this software in its geometry course that prepares mathematics majors and minors to teach geometry in middle or high school. We were interested in finding out how these college students were able to use the software to help middle and high school students learn geometry. Each of the 40 students in the class were required to teach a middle or high school student a geometry concept using *Geometer's Sketchpad* and to devise a way of evaluating the student's learning. This talk reports on the results of this effort.

Richard O. Hill, Michigan State University
Saturday, 10:15 – 10:35 am

224 CH

On the Transition from High School Mathematics to University Mathematics

We examined high school and MSU math data of just under 3000 students from 34 high schools who entered MSU in '96 - '99. Some results are: Schools matter! What school a student attended affected how well the student did at MSU. Generally AP calculus works very well, but not for students who underperformed in HS. Generally, AP statistics or statistics by itself did not do well. 80% of the students who place in remedial math either took no senior math, or took a non-academic senior math, or did very badly in HS math. In a substudy of a few Core-Plus schools, and we found their students enrolled into increasingly lower level courses ($p < .0001$) with lower grades ($p < .01$). ACT scores significantly underpredicted the severity of these trends and AP Calc. masked the effects.

Reva Kasman, Grand Valley State University
Friday, 10:40 – 11:00 am

224 CH

Teaching by Example: Case Studies for Mathematics Instructors

As teachers of mathematics, we expect our students to study examples in order to develop intuition and general strategies. The same philosophy can be used when learning how to teach, with fictionalized classroom scenarios and other teaching situations as our “examples”. The Boston College Mathematics Case Studies Project created a series of these narratives, designed primarily for use in the training of

graduate teaching assistants and instructors. We will discuss some of these cases, as well as issues surrounding their facilitation.

John O. Kiltinen, Northern Michigan University
Friday, 10:15 – 10:35 am

224 CH

Like “15”, but “8-on-a-torus”: Analysis of a Puzzle

My puzzle software (soon to be published by MAA) is generating some interesting and challenging mathematics. We discuss a variant of the familiar "15" puzzle which has 8 tiles on a 3 by 3 torus. This version is symmetric in the sense that every location has exactly 4 neighbors. All $9!$ arrangements are possible. A study of this puzzle makes use of ideas from group theory and graph theory, and requires some careful computer programming. We'll tell how many moves it takes on average to solve the puzzle, and what arrangements take the most steps to solve.

Brian McCartin, Kettering University
Saturday, 10:15 – 10:35 am

222 CH

Geometric Structure of the Octatonic Musical Scale

In *Prelude to Musical Geometry* (CMJ, Vol. 29, No. 5, Nov. 1998, pp. 354-370), a geometrical analysis of the diatonic music scale was presented. In a similar vein, the geometric structure of the octatonic musical scale will herein be outlined.

Mark Naber, Monroe County Community College
Friday, 4:30 – 4:50 pm

222 CH

Multi-time-scale Fractional Sub-diffusion

A multi-time-scale (also called distributed order) fractional sub-diffusion equation is considered. Multi-time-scale derivatives are fractional derivatives that have been integrated over the order of the derivative over a given range. In this paper sub-diffusive cases are considered. That is, the order of the time derivative ranges from zero to one. The equation is solved for the Dirichlet, Neumann, and Cauchy boundary conditions. The time dependence for each of the three cases is found to depend on a functional of the diffusion parameter. This functional is shown to have decay properties. Upper and lower bounds are computed for the functional.

Steven Sepanski, Saginaw Valley State University
Friday, 11:05 – 11:25 am

222 CH

A Metric Not to Fret About

In this talk we will define a class of metrics on the guitar that will measure the distance between both notes and chords. We will show how chords are really equivalence classes of objects in a six dimensional space and then describe how to measure the distance between these equivalence classes in many interesting ways.

Mehrdad Simkani, The University of Michigan – Flint
Friday, 10:15 – 10:35 am

222 CH

The Delian Problem

In this talk we will revisit an old problem, known in the Greek mythology as "The Delian Problem." The problem is to find the side of a cube whose volume is twice that of a given cube. First, we will look at a modern approach to the problem, and then we will propose an infinite method in the spirit of the traditional Greek rules, by using only an unmarked ruler and a collapsible compass.

John Stoughton, Hope College
Friday, 10:15–10:35 am

224 CH

Using the Irrationality of Pi to Introduce the Mathematics Major

In 1947 Ivan Niven published a beautiful (and much simpler than had previously existed) proof of the irrationality of pi. This proof is accessible to students in a first year calculus course, but unfortunately is not well known enough to be presented regularly in the classroom. In this talk we outline Niven's proof and examine how it might lead naturally to a discussion of such concepts as countability, uncountability, denseness, separable spaces, transcendental numbers, and, more generally, abstract algebra -- all of which come much later in a formal study of mathematics.

Radu Teodorescu, Western Michigan University
Saturday, 11:30–11:50 am

222 CH

Solving Linear Recurrence Relations (II)

Last year we presented a new method of solving linear recurrence relations with constant coefficients. In this presentation we apply that method to solving linear nonhomogeneous recurrence relations with constant coefficients as well as to linear recurrence relations with variable coefficients.

JingLing Wang and Michael Masterson, Lansing Community College
Friday, 4:05 – 4:25 pm

224 CH

*Reconciling Differences in Calculus and Physics Curricula
to Better Prepare Students*

In this presentation, we first demonstrate key differences among terminology, notations and the way we use or apply calculus between physics courses and math courses. Then, we provide sample projects that can be incorporated in teaching and learning of calculus. The purpose of the projects is to guide and help our students to apply calculus efficiently and effectively in their study of physics.

John Whitaker, Wittenberg University
Friday, 11:05 – 11:25 am

224 CH

Actuarial Seminar: Preparing Students for the First Actuarial Exam

This talk will begin by describing the organization of the course including recruitment of students, study materials, class lectures, student participation, and grading. Several examples of typical homework problems will be shown. The talk will conclude by examining the participating students' passing rates on the first actuarial exam, internship possibilities, and most importantly, students' improved understanding of Calculus and Probability concepts.

Building Bridges Workshop

Saturday, 11:05 – 11:50 am

224 CH

Enhancing the Mathematical Core

The Building Bridges sessions at the annual meeting of the Michigan Section–MAA and MichMATYC have promoted an ongoing dialogue between high school and college mathematics teachers. The dialogue centers on issues and concerns that impact the transition from high school to college mathematics. This year, the session will be a continuation of last year's.

MAA Workshop on *Mathematics for Business Decisions*

Saturday, 2:15 – 4:15 pm

235 CH

After five years of development, and testing by thousands of students, the Mathematical Association of America is publishing the electronic texts ***Mathematics for Business Decisions, Parts 1 and 2***. Jointly written by a mathematician and a professor of finance, these texts feature four interdisciplinary, multimedia projects for lower division students in business and public administration. The two semester sequence, including probability, simulation, calculus, and optimization, is designed to replace the traditional combination of finite mathematics and brief calculus. We will demonstrate the new materials, discuss the challenges and rewards of teaching the program, and allow plenty of time for hands-on computer experimentation with the texts.

You can learn more about the course by going to <http://business.math.arizona.edu/MBD/mbd.html>.

The workshop can accommodate 10-12 participants. The registration fee for the workshop is \$20. These fees will be turned over to the Michigan Section. Since business mathematics courses are greatly enhanced by collaboration with business school faculty, we are especially interested in having business - mathematics faculty teams from the same institution attend. To foster attendance by business faculty, we will support their lodging expenses up to \$75 for one night.

Participants will receive two CDs containing all of the materials for the year-long course, a guided tour of the course in CD format, and an extensive instructor training & resource manual.

Travel, Parking, and Hotels

Travel:

The following directions lead to Saginaw Valley State University. An area map is included on the back cover.

From the North: From I-75, Exit 160 (Bay Road - M84), travel south on Bay Road for 4.5 miles. SVSU entrance is on the east side.

From the South: From I-75, Exit 150 onto I-675 to Saginaw. Take Exit 6 onto Tittabawassee road. Turn left (west) onto Tittabawassee to Bay Road. (You will pass all but one of the hotels.) Turn right (north) onto Bay Road, travel about 2.5 miles to the SVSU entrance on the right (east).

From the West:

From M-46 E, as you enter Saginaw, M-46 E is Gratiot Road. Turn left (north) onto Center Road, travel about 4.5 miles to Tittabawassee Road. Turn right (east) onto Tittabawassee and travel 2 miles to Bay Road – M84. Turn left (north) onto Bay Road and travel about 2.5 miles to the SVSU entrance on the right (east).

From US –10 E, merge onto I–75 S/US-23 toward Flint/Detroit. Exit 160 (Bay Road- M84) toward Saginaw Road and travel south on Bay Road for 4.5 miles. SVSU entrance is on the East side.

From MBS Airport:

At the airport exit turn left (South) for 0.5 miles to Freeland Road, then turn left (east). Travel east along Freeland Road (5 miles), turn right, travel south on Bay Road – M84 (0.5 miles). SVSU entrance is on the East side.

Address:

Saginaw Valley State University
7400 Bay Road
University Center, MI 48710-0001

Campus Directions/Parking:

All events will take place in Curtiss Hall, Groening Commons, and the Rhea Miller Recital Hall, which are all connected. **Free parking** is available in the J1, J2, and J3 lots which are just West of the entrance to Groening Commons. As you come through the main entrance into the university off of Bay Road (M-84), you will be on College Drive West. Turn right (South) onto University Drive and lots J1, J2, J3 will be on your right and Groening Commons will be on the left, which is where registration will take place.

Hotel Accommodations

Please inform the following hotels that you are with the Mathematical Association of America (except for the Super 8 Motel—see below). Please note that all hotel reservation deadlines range from **April 8 – April 17**. A map, which includes hotel locations by number, is located on the back cover.

1. Bay Valley Resort

2470 Old Bridge Road, Bay City, MI 48706; (800) 292-5028 (989) 686-3500

\$74.50 + tax (**reserve by April 8**)

(Complimentary Continental Breakfast)

Located two miles North of the SVSU campus, just west of Bay Road (M-84).

2. Four Points Sheraton Hotel Saginaw

4960 Towne Centre Road, Saginaw, MI 48604; (800) 428-1470 (989) 790-5050

\$69.00 + tax (**reserve by April 10**)

(Complimentary Shuttle service to and from MBS International Airport and to SVSU with prior notification)

Located two miles South of the SVSU campus, just off of Tittabawassee Road on the South side. A Damon's Restaurant is adjoined to the Four Points Sheraton.

3. Hampton Inn

2222 Tittabawassee Road, Saginaw, MI 48604; (800) 426-7866 (989) 792-7666

\$55.00 + tax (**reserve by April 17**)

(Complimentary Continental Breakfast)

Located two miles South of the SVSU campus on Tittabawassee Road.

4. Holiday Inn Express

2501 Tittabawassee Road, Saginaw, MI 48604; (989) 792-7500

\$69.99 + tax (**reserve by April 8**)

(Deluxe Complimentary Continental Breakfast Bar)

Located two miles South of the SVSU campus on Tittabawassee Road.

5. Super 8 Motel – Saginaw

4848 Town Centre, Saginaw, MI 48604; (989) 791-3003

\$46.80 + tax (They have quoted this rate, but they will not reserve rooms especially for the MAA, so it is by availability only.)

(Complimentary continental breakfast)

Meals

The Friday noon luncheon, the Annual Banquet on Friday evening, and the Saturday luncheon will all be held in Banquet Room A on the second floor of Curtiss Hall. The Saturday morning breakfast, organized by AWM, WAM, and Women's Study Group, is open to all and will be in Seminar Room F on the second floor of Curtiss Hall. Advance registrations are required for all of these meals! Please use the registration form on page 20 to register for the meeting, and to make your reservations for meals and the Saturday afternoon workshop. Meal reservations must be received no later than April 18, 2003. Other food service is available off campus.

Friday Luncheon \$11.00

Mediterranean Chicken
- OR -
Roasted Pork Loin

Salad (mixed field greens with
champagne raspberry vinaigrette)
Rolls and butter
Vegetable du jour
Beverage

Friday Evening Banquet Prices below

Grilled New York Steak with roasted
skinned potatoes and caramelized onions
(\$20.00)
- OR -
Pan Seared Salmon with spinach and
black pepper fettuccini
(\$17.00)

Spinach salad with orange vinaigrette
Vegetable du jour
Rolls and butter
Carrot Cake
Beverage

Saturday Breakfast Buffet \$3.00

French Grilled Waffles
Bacon
Fresh fruit bowl
Breakfast breads
Beverage

Saturday Buffet Luncheon \$10.00

Assorted lunch meats
Assorted breads and condiments
Pasta salad
Tossed garden salad
Potato chips
Cookies
Beverage

Registration Form

Name _____

Affiliation _____

Phone _____ E-Mail _____

MEAL RESERVATIONS MUST BE RECEIVED BY: April 18, 2003

Friday Luncheon (\$11.00)

Chicken entrée Number _____ Cost _____

Pork entrée Number _____ Cost _____

(Vegetarian entrée – please e-mail)

Friday Banquet

Steak entrée (\$20.00) Number _____ Cost _____

Salmon entrée(\$17.00) Number _____ Cost _____

(Vegetarian entrée – please e-mail)

Saturday Breakfast (\$3.00) Number _____ Cost _____

Saturday Luncheon (\$10.00) Number _____ Cost _____

Name(s) of Guest(s) _____

Mathematics for Business Decisions Workshop (\$20.00) Cost _____

Section Dues/Registration Fee (\$15.00) Cost _____

Participants who have already paid their 2002–2003 annual Section dues do not need to pay any additional registration fees. No dues or fees are charged for student participants or for family members who do not attend sessions.

Total Enclosed _____

Please check the category that best describes your situation:

Undergraduate student _____ Graduate Student _____

Educator: K-12 _____ 2-year College _____ 4-year College _____ University _____

Business/Industry _____ Government _____ Retired _____

Other (please specify) _____

Make your check for registration and meals payable to Michigan Section–
MAA and mail it with this form (or a copy of this form) to:

Tom Zerger

MAA/MichMATYC Registration

Department of Mathematics

Saginaw Valley State University

7400 Bay Road

University Center, MI 48710

Phone: 989-964-4334

Fax: 989-790-7638

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