CrossSections

November 1992

CrossSections is a newsletter for Section Officers and is distributed to improve communications. The Committee on Sections hopes that you will share your copy of *CrossSections* with as many members of MAA as possible. This newsletter is mailed to all Section Officers.

Quebec Section Officers Meeting

It was a packed room in Quebec City on August 16, 1992 - packed with ideas as well as with people. Those present heard many good ideas from the Sections: Texas Section recognizes the work horses of the Section; North Central Section is working toward a Joe Konhauser room at the MAA headquarters; Eastern Pennsylvania/Delaware Section is responsible for an MAA Professional Chapter meeting; 23 three-student teams participated in Indiana Section's competition ; Michigan Prize Section attracted 18,000 high school student participants; in Kansas, KAYMATC, KNCTM, and KMAA held a joint meeting; the Northeast Section sponsored a Saturday minicourse in April and regional dinner meetings with speakers in March and April in addition to the two meetings per year ; Metropolitan New York Section has a speaker's bureau for high schools and a high school mathematics fair. This is definitely a short list from a long list of very good ideas. For more Section activities, see the September issue of *FOCUS* as well as the attached summary of the 15th Annual Report from Sections.

Following the introductions and sharing of highlights of Section activities, Section Officers discussed the Distinguished Teaching Award and compared ideas for selecting, recognizing and advertising. For example, at least one Section gave a cash award to the Section winner. The ideas and suggestions from Section officers have been communicated by Laura Kelleher to the Committee on Awards for Distinguished College or University Teaching of Mathematics.

This opportunity to hear Section issues, ideas and goals led to discussions of minicourses, e-mail services, advising, job opportunities brochure, newsletters, MAA institutional representatives, non-profit status, subvention to Sections, Fund for Aid to Sections, and the news clipping service. We learned from each other and have tried to respond to the particular requests.

San Antonio Section Officers Meeting

The Section Officers will meet in San Antonio on Wednesday, January 13, 4:30-6:30 p.m. All Section Officers are invited to participate in this meeting. Again it will provide the opportunity for officers to share ideas, ask questions, and communicate directly with members of the Committee on Sections and National MAA Officers. One of the questions raised at the Quebec Section Officers meeting concerned the role of MAA institutional representatives. If the institutional representatives in your Section have played an interesting or significant role, please share that at the meeting.

Polya Lecturer

Sections are eligible to have a Polya Lecturer speak once every five years. Those Sections which are eligible during the 1993-94 year are Eastern Pennsylvania and Delaware, Iowa, Metropolitan New York, North Central, Pacific Northwest, and Southwestern. These Sections should contact Jane Heckler (MAA Sections Coordinator at the National MAA Office) or Barbara Faires, Chair of the Committee on Sections, by April 30, 1993 to coordinate a lecture.

Sections which are eligible for a Polya Lecturer remain eligible for a speaker from the list of National Officers to visit the Section.

Patricia Roberts, New York University, will be one of the Polya Lecturers for 1993-94. The other lecturer is to be selected by the Board of Governors.

Fund for Aid to Sections

Four Sections have received support from the Fund during this year: Southeastern Section, to help defray cost of printing and distributing copies of the history of the Southeastern Section; Illinois, Indiana, and Michigan Sections each received grants to support and enhance participation at the joint meeting of these three Sections to observe the 50th anniversary of a similar meeting in April of 1943.

The guidelines for the Fund for Aid to Sections were recently updated and mailed to Section Officers in late June. If you do not have a copy of these guidelines, please contact the Sections Coordinator at the National Office. Proposal submission deadlines are July 1 and December 1 of each year. Proposals received by December 1 will be reviewed in January with Sections receiving notification as to approval of the funds in late January.

Wish List

As we read the replies to the Annual Section Survey and participate in discussions at the Section Officers Meeting, we see the role which finances play in program designs. This has led the Committee on Sections to wonder if new funds were made available to Sections, what projects might they undertake. Please help us by sending ideas from your Section which you would pursue were the funds available. You can send these to any member of the Committee on Sections.

Computer Minicourses

The MAA and IMTP are sponsoring six computer minicourses during 1993 at regional IMTP sites. Each minicourse will be held in a computer lab with 15 late model IBM computers. The first minicourse of the series will be held at the downtown campus of the University of Houston on April 23 and 24. Jerry Johnson and Benny Evans of Oklahoma State University will present an eight-hour minicourse "Using Derive and Gyrographics in Calculus and Linear Algebra." For more information contact Lisa Johnson, MAA Minicourse Coordinator, 1529 18th Street, N.W., Washington D.C. 20036; e-mail - ljohnson@MAA.org.

15h Annual Reports Survey

This edition of CrossSections concludes with a summary of the Annual Reports from Sections. The results of the question as to how the Committee on Sections can assist Sections have been shared with the Committee, but to save space, are not included here. We welcome your suggestions for ways we can assist you. The Annual Survey is one opportunity for input; the Section Officers meetings at the winter and summer meetings provide other opportunities. Let us hear from you.

MEMBERS OF THE COMMITTEE ON SECTIONS

Yousef Alavi	Western Michigan University
Howard C. Anton (ex. off. as Chair of the Committee on Student Chapters)	Drexel University
Barbara T. Faires	Chair, MAA Committee on Sections Westminster College X852BF0A @Vb.cc.cmu.edu
Deborah T. Haimo	President of MAA Univ. of Missouri-St. Louis
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Laura Kelleher	Massachusetts Maritime Academy
Genevieve Knight	Coppin State College
Jacqueline Moss	Paducah Community College
John D. Neff	Georgia Institute of Technology
Stephanie Sloyan	Georgian Court College
John M. Smith	George Mason University
Marcia P. Sward (ex. off)	Executive Director of MAA Washington Office
Eileen T. Wu	Menlo College

MAA Sections Coordinator - Jane Heckler
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FIFTEENTH ANNUAL REPORT OF THE MAA SECTIONS
Year Ending June 30, 1992

Section	#Membs	Meeting Attend	Student Attend	Vend Space	Reg Fee	#News ltrs	Mini Course	Summer Short Course	#Student Chapters
Allegheny	716	100	15	$59	$15	2	No	$115	4
DC/Mary/VA	2236	118 121	18	$40-$60	$ 5	2	2-$20 2-$35	None	?
EPenn/Del	1291	175 100	? ?	$50	$ 2-$15	2	No	Yes	19
Florida	1090	200	40	$75	$ 5-7	3	1-N/C	None	10
Illinois	1400	110	26	$60	$12	2	$25	None	12
Indiana	605	87 134	17 17	No	$ 3	2	No	None	8
Intermountain	224	70	10	Yes	$ 5	1-2	$20	None	3
Iowa	295	NO REPORT AS OF JULY 22, 1992							
Kansas	325	126	15	$25	$10	None	5-N/C	None	5
Kentucky	405	110	21	No	$10	3	1-N/C	None	7
LA/Mississippi	576	198	70	No	$ 5-10	2	No	None	8
Metro NY	1621	75	8	$75	$ 3-5	1	No	None	6
Michigan	1007	130	30	$80	$10	2	1-N/C	None	11
Missouri	583	200	20	No	$ 5	2	1-N/C	None	5
Neb/SD	179	30	0						3?
New Jersey	1054	110 185	20 25	$50	N/C	2	No	None	?
North Cent	874	77 100	19 11	No	$ 6	1	No	$125	8
North Calif	1836	150	16	No	$ 8	1	No	None	6
Northeast	2391	180 107	30 10	$100	$ 5-15	2	3-N/C	$130-$150	24
Ohio	1267	125 160	10 60	$100	$10	2	2-N/C	$ 90	20
Okla/Ark	509	196	83	$50	$ 2-10	1	1-$35 1-N/C	None	15
Pac NW	1284	85-90	12	No	$15	2	1-$20 1-N/C	None	9
ky Mtn	617	175	25	$35	$ 5	3-4	No	None	5

tion	#Membs	Meeting Attend	Student Attend	Vend Space	Reg Fee	#News ltrs	Mini Course	Summer Short Course	#Student Chapters
South Calif	1885	289 152	76 41	$20	$ 8- $15	3	1-$10	None	?
Seaway	1500	150 120	15-20 20-25	No	$10	2	No	None	?
Southeast	2534	440	95	$100- $150	$ 7	2	3-$20	None	34
Southwest	580	60	8	$50	$ 6	3	1-N/C	None	0
Texas	1521	285	68	$75- $100	$20- $25	2	2-$25	None	22
Wisconsin	561	250 250	10 30	$50	$15	2	1-$5	None	1

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Year Ending June 30, 1992

Section	MAA Reps Mtg	Dept. Chair Session	Lunch or Banquet	MAA Book Sale	# Invited Address	# Contr Papers (Non-Stu)	# Student Papers	SUMMA Workshop
Allegheny	No	No	Yes	Yes	4	11	10	
DC/Mary/VA	No	No	Yes	Yes	2 1	11 13-1/2	0 8-1/2	Bill Hawkins
EPenn/Del	No	No	Yes	Yes	4 4	0 0	5 9	
Florida	Yes	Yes	Yes	Yes	6	18	10	Bill Hawkins
Illinois	No	Yes	Yes		4	10	8	Bill Hawkins
Indiana	No	No	Yes	Yes	3 2	3 2	1 3	
Intermountain	Yes	No	Yes	Yes	3	5	10	
Iowa			NO REPORT AS OF JULY 22, 1992					
Kansas	No	No	Yes	Yes	4	11	5	
Kentucky	Yes	Yes	Yes	Yes	2	17	1	
Mississippi	No	No	No	Yes	2	22	11	
Metro NY					1	12	3	
Michigan	No	Yes	Yes	Yes	10	6	16	Florence Fasanelli
Missouri	Yes	Yes	Yes	Yes	7	39	6	Christine Stevens
Neb/SD	No	No	Yes					
New Jersey	No	No	Yes	Yes	5 4	0 0	0 3	
North Cent	No	No	Yes	Yes	2 2	8 9	2 2	Manuel Berriozabal
North Calif	Yes	Yes	Yes	Yes	5	0	0	
Northeast	No	No	Yes	No	7 7	6 2	6 3	Florence Fasanelli
Ohio	Yes	Yes	Yes	Yes	1 3	17 15	0 24	Florence Fasanelli
Okla/Ark	No	Yes	Yes	Yes	2	76	14	
Pac NW	No	No	Yes	No	5	15	8	Bill Hawkins

Rocky Mtn	No	No	Yes	Yes	2	13	9	Florence Fasanelli
South Calif	No	No	Yes	Yes	3 5	6 6	0 15	
Seaway	No	No	Yes	Yes	4 4	8 10	0 9	Florence Fasanelli
Southeast	Yes	Yes	No	Yes	3	73	16	Bill Hawkins
Southwest	No	No	Yes	Yes	3	3	6	
Texas	Yes	Yes	Yes	Yes	4	43	16	Florence Fasanelli
Wisconsin	No	No	Yes	Yes	6	34	6	Bill Hawkins

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WORKSHOP OR SHORT COURSE AT MEETING

Florida
      Challenging Students with Research Projects in Calculus, Arthur Knoebel
   (New Mexico State University)

Illinois
      The Use of Graphing Calculators in the Classroom, Jon Johnson (Elmhurst
   College) - $25

Intermountain
      Models for Conservationa dn Resource Management, Roland Lamberson (Humboldt
   State University) - $20

Kentucky
      Challenging Students with Research Projects in Calculus, Art Knoebel (New
   Mexico State University)

Maryland/DC/Virginia
      DERIVE, Wilkin, Teles, Abbey - $35   *Microcale*, Bessman - $35   *SUMMA*,
   Hawkins - $20   *EXP*, Jon Wilkin - $20

Michigan
      Proposed Writing Workshop, Florence Fasanelli - SUMMA
      Using Student Projects in Calculus, Doug Kurtz

Missouri
      Workshop on Writing Successful Mathematics Education Proposals, Christine
   Stevens

Northeastern
      SUMMA Workshop, Florence Fasinelli (Director of SUMMA)
      Graphing Calculators in the Mathematics Classroom, Mary Margaret Grubbs
   (Columbia University)
      Workshop on Teaching Calculus and Linear Algebra, Gilbert Strang (MIT)

Ohio
      SUMMA Workshop, Florence Fasinelli (Director of SUMMA)
      Kaleidoscopes, Joseph Kennedy (Miami)

Oklahoma-Arkansas
      Challenging Students with Projects in Calculus, Edward Gaughan - $35

Pacific Northwest
      Teaching Reform Calculus, William McCallum (U. of Arizona) - $20
      Strengthening Underrepresented Minority Mathematics Achievement, William
   Hawkins (SUMMA)

Southeastern - $20
      Earth Algebra, Nancy Zumoff and Chris Schaufele (Kennesaw State College)
      Statistics with the TI-81 Graphing Calculator, Iris Fetta (Clemson
   University) and Richard Stephens (Western Carolina University)

Implementing Calculus as Formal Laboratory Courses Using Mathematica, Martha Abell, James Davenport, James Braselton, Arthur Sparks (Georgia Southern University)

Southern California
Computer Technology in the Classroom, David Lovelock (University of Arizona) - $10

Southwestern
University of Arizona Software - Demonstration and Handson Practice, David Lomen and David Loveluck

Texas
Some Mathematical Problems in Artificial Intelligence, Andre de Korvin (University of Houston-Downton) - $25
New Mexico State University's Student Research Projects in Calculus, Douglas Kurtz (New Mexico State University) - $25

Wisconsin
The short course was NSF supported; run by Ed Gaughan - $5

SUMMER SHORT COURSE

Allegheny
A History of Calculus, Fred Rickey (Bowling Green State University) - $115

Eastern PA and Delaware
Laboratory Approach to Calculus
Discrete Algorithmic Analysis
Symmetry and Group Theory

North Central
Chaotic Dynamical Systems, Robert Devaney (Boston University) - $125

Northeastern
Exploratory Data Analysis, Col. Rickey Kolb (U.S. Military Academy, West Point) - $130

Ohio
Problem Solving, Edward Barbeau (University of Toronto) - $90
Fractals, Robert Devaney (Boston University) - $90

PUBLIC AWARENESS ACTIVITIES PERFORMED

Eastern PA and Delaware: Newspaper publicity

Illinois: Publicity Committee has annually been successful in obtaining Illinois legislative support for a proclamation for Mathematics Awareness Week.

Indiana: The Section Executive Committee obtained a proclamation from the Governor of Indiana for Mathematics Awareness Week.

Maryland/DC/Virginia: Section members involved with Mathematics Coalitions

Metropolitan New York: The Section Governor obtained proclamations from both the governor and the mayor. Some institutions provided special activities for Mathematics Awareness week.

Michigan: The Section has a Mathematic Awareness Committee which solicited mathematicians to write short newspaper-style articles on various aspects of mathematics. These were distributed to the daily papers around the state for publication during Math Awareness Week. The Section's Public Information Officer keeps the media posted on results of the Michigan Mathematics Prize Competition.

New Jersey: The New Jersey Mathematics Coalition helped with coordinating local MAW activities. Family Math Workshops were planned at sties around the state, aimed at families of elementary and middle school students. The Governor of New Jerse signed a proclamation for Mathematics Awareness Week.

North Central: None at the Section level - some individual campuses have had activities

Northeastern: Some of our dinner meetings were held during Mathematics Awareness Week.

Ohio: Notices in local papers about Section and meetings and student speakers. General press release on the Distinguished Teaching Award to Fred Rickey.

Oklahoma-Arkansas: Activities in the States of Oklahoma dn Arkansas are being sponsored by the State Coalitions, which have some overlap in membership with our MAA Section.

Pacific Northwest: Little or none. We tried to coordinate the publicity for the winner of our Distinguished Teaching Award with Math Awareness Week but were unsuccessful getting any newspaper to pick it up.

Seaway: The Public Information Officer has submitted copy to the local newspapers on Section activities, student involvement and the Seaway Section Distinguished Teaching Award. Campus activities were left to local institutions and local student chapters. Math Awareness Week ended with our joint meetings with the 91st Ontario Mathematics Meeting at Queen's University.

Southeastern: State Directors are doing a good job of publicizing mathematical events and staying in touch with schools located in their respective states.

Texas: The Section spring *Newsletter* included an article on how to promote Mathematics Awareness Week and a number of campuses throughout the Section conducted activities to focus attention on mathematics and the environment.

ACTIVITIES PROVIDED FOR STUDENT CHAPTERS

Allegheny: Make sure there is something of interest to students at Spring Meeting; encourage student talks.

Eastern PA and Delaware: One-day student conference on careers; student talks at Section meetings; student paper competition; encourage participation in problem-solving competitions

Florida: 1) Students are encouraged to present papers at Section meetings. Those
    giving papers are given a MAA membership, a MAA book, or a meeting attendance
    expense payment from the Section. 2) Students are encouraged to attend national
    MAA meetings. The Section donates up to $500 per year to help students defray
    their expenses to do so. 3) There is a social time at every annual meeting with
    food and entertainment provided for students attending.

Illinois: Encouragement of participation in annual conference through separate
    agenda (professional and social), a student papers section at annual conference,
    and some financial support.

Indiana: At the fall meeting, student chapter members gathered for a pizza party
    and had their own invited speaker. A list of speakers for student chapters has
    been formed.

Intermountain: 2 socials per year.

Kentucky: They are included in all Section meeting activities. At this Section
    meeting, there were two special interest panel discussions: Graduate Education
    in Mathematics, and Careers in Mathematics

Metropolitan New York: 1) Primarily, the advisors encourage students in chapters
    to keep active in mathematics. There are often student presentations at
    individual schools. 2) There was a student paper session at the Section
    meeting. 3) Our Section met the Exxon $500 matching grant.

Michigan: Participation in annual meeting - pizza party on Friday evening (of 2
    day Fri-Sat.)

New Jersey: Encouragement for students to attend, to speak at meetings. List
    of speakers to use for their own meetings.

North Central: Our programs have included many talks accessible to students.
    Students are not charged a registration fee. Free or low cost housing and meals
    are provided for students attending Section meetings.

Northeastern: Student minicourse held at fall meeting. Topic was *Mathematical
    Models of Epidemics*. The speaker was Sonja Sandberg of Framingham State
    College. Our spring meeting included a Student Chapter Session with Thomas
    Moore of Bridgewater State College presenting *Game Theoryplay*. We also held a
    student swap session at lunch at the fall meeting to provide an opportunity for
    students from different Student Chapters to exchange ideas about successful
    activities. We offered support in the form of registration and luncheon for two
    students from each Student Chapter at each of our Section meetings. These
    activities were in addition to our student paper sessions.

Ohio: provides a list of speakers for chapter meetings.

Oklahoma-Arkansas: A noon luncheon for Faculty Sponsors of Student Sections is
    held at the annual Spring Meetings. It is chaired by Professor Robert Eslinger
    of Hendrix College, the Student Chaper Coordinator for the Section. There were
    13 people in attendance this year. A few of them did not yet have a student
    chapter on their campuses, but were interested in starting one. Topics dis-
    cussed were the Student Conference to be held in Ohio this summer. Also dis-

cussed were the Problem Solving Competition being led by Richard Neal of the University of Oklahoma and Chapter Fundraising. It was suggested that next year there be a "student officers" meeting and a special session Student Chapter Activities.

Pacific Northwest: We support all students who give papers at sectional meetings by providing free registration, meals, and two night's lodging in the host school's dorm. Next year we are going to initiate a student modeling competition, hopefully coordinated with the national competition spear-headed by Ben Fusaro.

Seaway: At the fall meeting, a special afternoon session devoted to students and student chapters was arranged. The program involved a mathematical talk, discussion among the students and chapter leaders on chapter concerns, and a session of information on careers, graduate school, etc. The emphasis of the spring meeting was on student papers and student presentations.

Southeastern: A pizza party was held at the Kennesaw meeting for all students and their advisors who attended. Response was excellent. Presentation of papers by students is encouraged. TA Rush undoubtedly is attractive to students.

Southern California: At both meetings this year the program included a special "student strand." At the Fall meeting the activities especially for students included a panel of recent graduates speaking on various careers in mathematics (entitled *Is There Life After A Bachelor's Degree in Mathematics?*), followed by a presentation by Art Benjamin on the art of mental calculation, and a "punch and cookies" social hour. In addition to a session for student contributed papers the program at the Spring meeting included a special half-hour talk on Mananujan's mathematics by UCLA Professor Basil Gordon followed by a showing of the Public Broadcasting System's *Nova* video program on Ramanujan's life.

Other Section sponsored activities for student organizations (not necessarily Student Chapters) include: 1) Support of student groups willing to staple label the Section Newsletter. (A Math Club or Student Chapter receives $150 for this service to the Section. 2) The AHSME coordinator receives funds to support a mailing to 1200 high schools encouraging participation in the AHSME examinations. 3) The Section gave $150 to the Cal Poly, Pomona Math Club for their services at the Spring Meeting. In addition to acting as hosts and hostesses throughout the day, the Math Club members made information and direction posters, posted them about the campus, set up the registration and vendor tables, manned the registration and T-shirt sale tables, helped with the lines at the luncheon, and baked the cookies for the afternoon break. This was such a successful venture that the Section intends to continue this practice at our meetings. 4) There is a "mini-newsletter" included in the May Section Newsletter which provides an opportunity for student organizations throughout the Section to report on their activities.

Southwestern: We have just found a new Student Chapter Coordinator - Bill Kaigh (University of Texas at El Paso)

Texas: There are student papers sessions at the Annual Meeting along with a student workshop and a breakfast for student chapter advisors and student representatives. Representatives of graduate schools are invited to come to the meeting to talk with prospective graduate students. Materials from student

workshops are made available to all student chapters in the Section.

Wisconsin: None. (We do give free banquet tickets to student presenters.)

RECOMMENDED SPEAKERS AND THEIR TOPICS

Thomas F. Banchoff (Brown University), *Computer Graphics and Surfaces in Four-Space: Visualizing Characteristic Classes* - Eastern PA & Delaware Sections

Richard Schaefer (U. of Florida), *Introducing Statistical Education at the College Level* - Florida Section

William Caldwell (U. of North Florida), *The Law of Cosines and the Pythagorean Theorum* - Florida Section

Steven Krantz (Washington U.), *Rigidity in Complex Analysis* - Florida Section

John Ewing (MAA Polya Lecturer), *Can We See the Mandelbrot Set?* - Illinois, Kentucky and Wisconsin Sections, and *Mathematics and Modems* - Kentucky Section

John Anderson (Eli Lilly Corp.), *Applications of Decision Analysis in the Pharmaceutical Industry* - Indiana Section

Joseph Gallian (U. of Minnesota at Duluth), *The Mathematics of Identification Numbers* - Kentucky and Michigan Sections

William Dunham (Hanover College), *Constructing a Regular Heptadecagon: Ingenuity or Just a Lucky Gauss?* - Kentucky Section

Bob Devaney, *Chaos and Fractals* - Maryland/DC/Virginia Section

Art Benjamin, *The Art of Mental Calculation* - Maryland/DC/Virginia Section

James Leitzel, *Addressing the Call for Change* - Missouri Section

Mary Ellen Rudin, *Genereal Topology for the 1990's* - New Jersey Section

Ronald Graham, *Juggling Drops and Descents* - New Jersey Section

Manfred Schroeder, *Number Theory in Science, Music and Communication* -NJ Section

Robert Earles, *A Search for Mathematics in American Museums* - North Central Sec.

Michael Gregory, *Functions that Operate* - North Central Section

M. B. Rao, two different statistics talks - North Central Section

Sonja Sandberg (Framingham State College), *Mathematical Models of Epidemics* - Northeastern Section

William Dunham (Hanover College - Muhlenberg College next year), *Constructing the Regular Heptadecagon: Ingenuity or Just a Lucky Gauss?* - Northeastern Section

Thomas Moore (Bridgewater State), *Game Theoryplay* - Northeastern Section

Bruce Berndt, *The Life and Legacy of India's Greatest Mathematician*, and *The Unorganized Portions of Ramanujan's Notebooks* - Pacific Northwest Section

Andrew Granville (U. of Georgia), *Primality Testing and Carmichael Numbers* - Seaway Section

Carl Pomerance (U. of Georgia), *The Factorization of the Ninth Fermat Number* - Southeastern Section

Michael Townsend, *Look What They've Done to My Song, Ma! The Use of Computers in Mathematical Proofs* - Southern California Section

Mario Martelli, *Calculus, Conjugacy and Chaos* - Southern California Section

David Lovelock, *Computer Usage in Search and Rescue* - Suthwestern Section

Deborah T. Haimo, *Problems with an <u>American Mathematical Monthly</u> Connection* - Texas Section

James C. Bradford (Abilene Christian U.), *Humor in Calculus or Toward a Fat and Funny Calculus* - Texas Section