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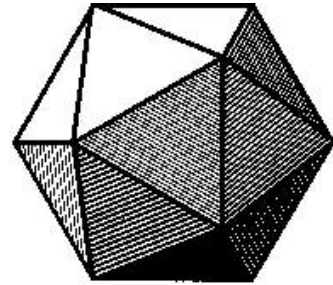
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Bronx	**Brooklyn**	**Columbia**	**Dutchess**
Greene	**Manhattan**	**Nassau**	**Orange**
Putnam	**Queens**	**Richmond**	**Rockland**
Suffolk	**Sullivan**	**Ulster**	**Westchester**

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A N N U A L   M E E T I N G

Saturday, 3 May 2003
9:00 AM − 5:00 PM

LaGuardia Community College (CUNY)
Long Island City, New York

(*Inquire Within for More Information*)

E L E C T I O N   B A L L O T   E N C L O S E D

SECTION OFFICERS

Section Governor (2002 – 2005)	**Raymond N. Greenwell** Hofstra University	(516) 463-5573 matrng@hofstra.edu
Chair (2001 – 2003)	**John (Jack) Winn** Farmingdale (SUNY)	(631) 420-2182 winnja@farmingdale.edu
Chair-Elect (2001 – 2003)	**Abraham S. Mantell** Nassau Community College (SUNY)	(516) 572-8092 mantell@ncc.edu
Secretary (2000 – 2003)	**Dan King** Sarah Lawrence College	(914) 395-2424 dking@slc.edu
Treasurer (2000 – 2003)	**Dean Nataro** Nassau Community College (SUNY)	(516) 572-7203 natarodc@juno.com
Vice-Chair for Four-Year Colleges (2001 – 2003)	**Henry Ricardo** Medgar Evers (CUNY)	(718) 270-6429 henry@mec.cuny.edu
Vice-Chair for Two-Year Colleges (2001 – 2003)	**Emad Alfar** Nassau Community College (SUNY)	(516) 572-7268 alfare@sunynassau.edu
Vice-Chair for High Schools (2001 – 2003)	**Judith E. Broadwin** Jericho High School (retired)	(516) 681-1697 broadwin@aol.com
Math Fair Chair – NYC	**Peter Shenkin** John Jay College (CUNY)	(212) 237-8742 pshenkin@jjay.cuny.edu
Math Fair Chair – Long Island	**Joseph Quartararo** Northport-East Northport Public Schools	(631) 584-2016 cmleague@optonline.net
Speakers Bureau Chair	**Dan King** Sarah Lawrence College	(914) 395-2424 dking@mail.slc.edu
Joint Directors: American Mathematics Contest (formerly the AHSME)	**Gillian Elston** Hofstra University	(516) 463-6038 matgze@hofstra.edu
	Daniel Seabold Hofstra University	(516) 463-5569 matdes@hofstra.edu
Newsletter Editor	**Abraham S. Mantell** Nassau Community College (SUNY)	(516) 572-8092 mantell@ncc.edu
Public Relations Coordinator	**Lily E. Christ** John Jay College (CUNY)	(212) 237-8926 christle@jjay.cuny.edu
Book Exhibit Coordinator	**Henry Ricardo** Medgar Evers College (CUNY)	(718) 270-6429 henry@mec.cuny.edu
Liaison Coordinator	**Raymond N. Greenwell** Hofstra University	(516) 463-5573 matrng@hofstra.edu
Section Archivist	**Bernard Sohmer** City College (CUNY)	(212) 650-5102 bescc@cunyvm.cuny.edu

Section Web Page – www.maa.org/metrony
Contact Ray Greenwell at matrng@hofstra.edu if you wish to add some interesting or useful information to the section web site. The section gratefully thanks Ray for maintaining the site over the past few years!

National Web Page – www.maa.org (both sites are linked to each other)

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Metropolitan New York Section Membership: 1153 as of January 2003

MESSAGE FROM THE SECTION GOVERNOR

My first duty as the newly elected governor for the Metropolitan New York Section was to attend a dessert for new governors before MathFest in Burlington, Vermont last summer. This sounded (and tasted) like a duty I could enjoy. Immediately after the dessert, I attended an ice cream social for the new members of Project NExT, to which the governors had been invited. Two desserts in one evening may seem like a lot, but if this was why the Metropolitan Section had elected me, I was determined not to disappoint them.

Things got less fun fast as my next duty was to attend the day-long governors meeting, a rather long and tedious parade of reports, punctuated by the occasional need for the governors to vote. At least the lunch served at the Sheraton was good. But as the day wore on, and I wore out, I became impressed with the large number of activities in which the MAA is involved. If you don't realize this yourself, an easier way than attending a governors meeting is to visit the MAA website at www.maa.org. You can spend a lot of time wandering around to see what the MAA is doing to improve collegiate mathematics education in the United States, helping the faculty to be better informed, better able to teach, and better equipped with the tools they need.

One item that the governors passed was a resolution recommending that mathematics departments not rely excessively on temporary and part-time faculty. This resolution may give your department some support, as well as persuasive power with your dean, if you are fighting this battle. The resolution should eventually be on the MAA website; meanwhile, if you want a copy, you can either contact MAA headquarters, or ask me and I'll contact them. The guidelines for departmental staffing in the 2000 CBMS report are at www.maa.org/guidelines/guidelines.html.

The governors considered ways to introduce electronic voting to reduce costs and maybe increase the percent of members who vote. This fall the governors took an e-mail vote on a proposal to mail abbreviated (4-page) candidate information to members with a return ballot card and envelope, along with instructions to vote online but allowing for use of the ballot card and envelope instead. Full candidate information will appear online. The results of this vote should be available by the time you read this; I suspect that it will pass.

Another issue with which the governors are struggling is whether a substitute should be allowed to vote when a governor is unable to attend a governors meeting. I was impressed with the fact that governors are not just representatives of their sections; they are legally responsible for the wellbeing of the MAA, just as the trustees of a college are. This issue will also be revisited at the January meeting.

If any of you want to become more involved with the MAA, please look at the list of MAA committees at www.maa.org/aboutmaa/commlist.html. Find a committee on which you would like to serve, and then let me know. One of the jobs of governor is to nominate section members for national committees. The committees ordinarily meet at the summer and January MAA meetings.

There are many of you reading this whom I've never had the opportunity to meet. So if you see me at an MAA meeting, feel free to come up and introduce yourself. Of course, that assumes that you're there at the meeting. So please consider coming to our section meeting at LaGuardia Community College in May, or to MathFest at Boulder in August, or to the joint meetings in Phoenix next January. There should be some great opportunities to meet other mathematicians and to grow professionally. And there might be some good desserts.

Raymond N. Greenwell

MESSAGE FROM THE SECTION CHAIR

As I complete my term as Section Chair, I would like to thank the Section officers who have contributed so much to the Section during my term: Joe Malkevitch (Governor – 2001/2002), Ray Greenwell (Governor – 2002/Present, Web Page Coordinator, Liaison Coordinator), Abe Mantell (Chair-Elect, Newsletter Editor), Henry Ricardo (Vice-Chair, Four Year Colleges, Book Exhibit Coordinator), Emad Alfar (Vice-Chair,Two-Year Colleges), Judy Broadwin (Vice-Chair, High Schools), Dean Nataro (Treasurer), Dan King (Secretary, Speakers Bureau Chairperson), Peter Shenkin (Math Fair Chairperson), Gillian Elston (American Math Contest Coordinator), Daniel Seabold (American Math Contest Coordinator), and Lily Christ (Public Relations Coordinator). It obviously takes many people to do the Section's work and I was very lucky to have an Executive Board that made the job of chairing the Section a pleasurable experience.

During the last year, the Section became an official sponsor of the Long Island Math Fair held annually at Hofstra University as well as continuing to sponsor the NYC Math Fair held at Pace University. Starting in May 2003 we will implement Section bylaw changes that extend the terms of the Chair and Chair-Elect from two years to three years. We anticipate that the longer terms will enhance the smooth running and work of the section. The Executive Board of the Section has also clarified travel reimbursement policies for officers who are required to attend national MAA meetings. In the Spring of 2002, the Section sponsored a Project Next panel discussion on tenure, which was held at the Courant Institute, NYU. We currently have liaisons for about 55 different academic departments and we have approximately thirteen student chapters within the Section. We are currently making special efforts to encourage student participation in the annual meeting. Our Section treasury remains one of the most robust in the MAA and is envied by many other sections. The Executive Board is currently exploring various ways in which we might use our funds to advance the cause of mathematics and mathematics education within our section. If you have any suggestions, please let us know. Our Speakers Bureau continues to serve the local schools by providing interesting speakers on a wide variety of mathematical topics. Thus our Section is strong. However, we always need new people to help with the Section's work and contribute new ideas for Section activities. Also on the national level, people are always needed to serve on the approximately 130 national committees.

Once again we are planning an exciting Spring meeting to be held May 3, 2003 at LaGuardia Community College. Our keynote speakers will be Lenore Blum of Carnegie Mellon University and Erica Flapan of Pomona College. Lenore Blum's talk is titled *"Computing over the Reals: Where Turing Meets Newton"* and Erica Flapan's talk is titled *"When Topology Meets Chemistry."* The panel discussion will be on *Assessment and Strengthening the Undergraduate Mathematics Major.* Keeping with tradition we will also have a full complement of contributed papers. As part of the contributed paper session, Bonnie Gold will conduct an MAA sponsored workshop on assessment.

I would like to close by saying that I am grateful for having had the opportunity to serve as Chair of the Metropolitan NY Section of the MAA. The Section will most assuredly be in good hands when Abe Mantell assumes the duties of Chair at the conclusion of the Spring meeting and I am confident that we will all be ready and willing to help him get the job done.

Jack Winn

MESSAGE FROM THE SECTION CHAIR-ELECT

First, let me echo the thanks of Jack Winn (one advantage of being newsletter editor is I get to see the *Chair's Message* in advance!). I want to thank all the Section officers who share the responsibility of managing our Section, as well as all Department Liaison's who are persistent in keeping their colleagues informed about sectional activities. On that note, I'd like to ask all readers of this message to check our Section's web-page and make sure your department/school has an MAA liaison! If you do not see one listed for your institution, then please, please get someone!!! The success of our organization depends on getting members involved, which requires keeping them informed!!!

Second, I encourage you to attend our upcoming Annual Meeting. Our Governor and Chair have, in their *Messages*, already encouraged participation. So, I will simply suggest you look at the program (on the following page) and keep in mind that we will have a nice variety of contributed papers. This meeting marks the end of my term as Chair-Elect, but the beginning of my term as Chair. I am quite eager to take on this leadership position and endeavor to serve the Section to the best of my ability.

I look forward to the Annual Meeting, seeing familiar faces as well as many new ones!

Abe Mantell

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TREASURER'S REPORT
(as of 1/15/03)

Business Checking	$12,672.57
Business Money Market	$ 8,683.03
6-Month Business CD	$28,061.09
Total	$49,416.69

All accounts are with J.P. Morgan Chase Bank.
Further details will be provided at the annual meeting.

Dean Nataro

2003 SPRING MEETING PROGRAM

(Preliminary)

8:45	–	9:30 AM	Registration, Refreshments, Book Exhibits
9:30	–	9:40 AM	Welcoming Remarks
9:40	–	10:30 AM	Presentation: *Computing over the Reals: Where Turing Meets Newton* [1]

by Lenore Blum, Carnegie Mellon University

10:30	–	10:50 AM	Break
10:50	–	12:20 PM	Panel: *Assessment and Strengthening the Undergraduate Mathematics Major*

Moderator: Joseph Malkevitch, York College (CUNY)
Panelists: Amy Cohen-Corwin, Rutgers University
Bonnie Gold, Monmouth University
Ann Stehney, Moravian College

12:20	–	1:25 PM	Lunch (with time to visit exhibits)
1:30	–	2:00 PM	Business Meeting
2:10	–	3:00 PM	Presentation: *When Topology Meets Chemistry* [2]

by Erica Flapan, Pomona College

3:10	–	4:40 PM	Workshop: The SAUM (Supporting Assessment in Undergraduate Mathematics) Project [3]

Bonnie Gold, Monmouth University

3:10	–	5:00 PM	Contributed Paper Sessions (see final program)

[1] See page 10 for Abstract and brief Bio of Lenore Blum
[2] See page 11 for Abstract and brief Bio of Erica Flapan
[3] Participants in this Workshop should plan to stay for its duration.
    More information about SAUM can be found at www.maa.org/saum/index.html

Call For Abstracts: General Contributed Paper Sessions

The Metropolitan New York Section of the MAA is currently soliciting abstracts for the Contributed Paper Sessions of its 2003 Spring Meeting on Saturday, May 3 at LaGuardia Community College. All interested professionals and students are encouraged to submit an abstract. Once again this year the Contributed Paper Sessions will feature presentations on mathematical research as well as mathematics education.

As always, students are especially encouraged to submit an abstract discussing their experiences regarding research at the undergraduate level. To further encourage student participation at the Spring Meeting, the Metropolitan New York Section is pleased to waive the registration fee and lunch fee and to provide a gratis 2003 MAA membership (including a journal subscription) for all student presenters! Professors: please encourage your students to present a talk!

Presentations will be of fifteen minutes in duration followed by a five minute question period. All presenters will be recognized in the final program of the Spring Meeting.

In addition to the abstract (not to exceed 300 words), all proposals should include the name of the author(s) and presenter(s), postal address, email address, phone number, and title of the proposed presentation. Please indicate any special equipment needs. Student presenters should also submit the name and telephone number of their mathematics teacher or advisor.

Please submit proposals electronically to dking@slc.edu by Friday, April 4 for full consideration. All abstracts will be examined by a committee of reviewers. The outcome of their deliberations will be announced by mid-April.

For additional information regarding the Contributed Paper Sessions of the 2003 Spring Meeting, please contact Dan King (dking@slc.edu).

Directions to: **LaGuardia Community College**
of The City University of New York
The "Little Theater" at the Main Bldg.
31-10 Thomson Avenue
Long Island City, NY 11101

By Subway

Via 7 Train: Get off at 33rd Street station. Walk two blocks westbound to Thomson Avenue and Van Dam Street.

Via E, V & R Trains: Get off at Queens Plaza Station and exit the station at Jackson Avenue and Queens Boulevard exit. Walk over the Queens Boulevard Bridge (over the Sunnyside train yards) until you reach the corner of Van Dam Street and Thomson Avenue.

Via G Train: Get off at Court Square Station (at the CitiCorp Building). Walk across the Thomson Avenue Bridge.

Via N & W Trains: At Queensboro Plaza station transfer to 7 Train (Local to Main Street) and get off at the 33rd Street station. Walk two blocks westbound to Thomson Avenue and Van Dam Street.

By Bus

From Queens: Take the Q60 or Q32 to Queens Boulevard and Skillman Avenue. Walk one block west to corner of Van Dam Street and Thomson Avenue.
OR Take Q39 to Thomson Avenue and Van Dam Street.

From Brooklyn: Take the B61 to the Citicorp Building in Long Island City. Walk across the Thomson Avenue Bridge.

From Bronx: Take the QBx1 bus from Coop City to Main Street, Flushing. OR take the Q44 bus to Main Street Flushing. At Main Street, take the No. 7 Subway to the 33rd Street Station. Walk two blocks westbound to Thomson Avenue and Van Dam Street.

From Manhattan: Take the Q32 bus along Madison Avenue and across 59th Street. Get off at the intersection of Queens Boulevard and Skillman Avenue and walk one block to the intersection of Thomson Avenue and Van Dam Street.
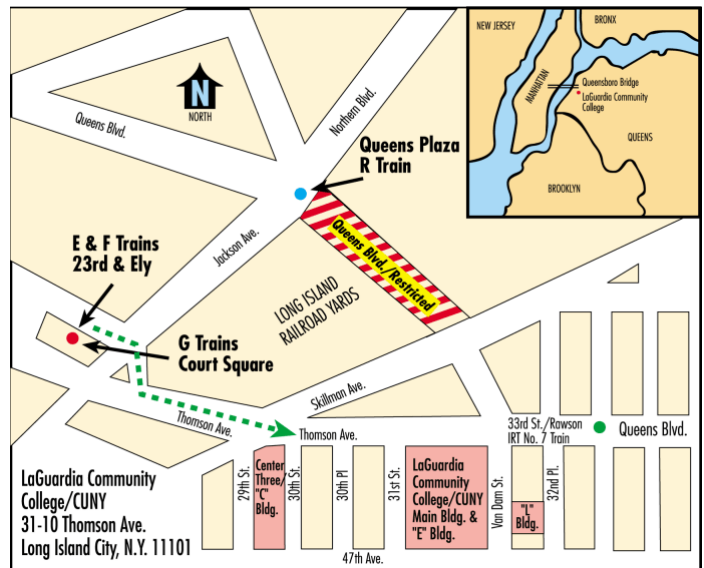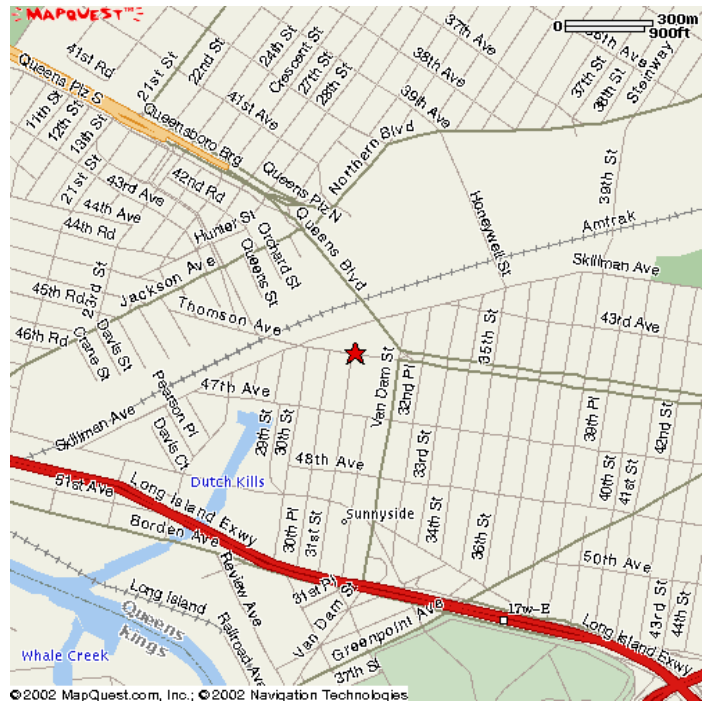
By Car

From the LIE take the Van Dam Street exit (last exit before the Midtown Tunnel, traveling west). The Main Building is located on Thomson Avenue and 31st Street. A parking lot can be found at 29-11 47th St. off Skillman Ave. (3 blocks from the Main Bldg.).

2003 SECTION MEETING REGISTRATION FORM

First Name:_____ M.I.:_____ Last Name:_____

Badge Name or Nickname:_____ Affiliation:_____

Address:_____

City:_____ State:_____ Zip+4:_____-_____

Phone Numbers: Day:_____ Eve:_____ Fax:_____

Internet address: E–mail:_____

               Web-Page URL:_____

$\rightarrow$ Special diet: (circle one)   Yes / No.   Please specify: _____

$\rightarrow$ Automobile parking (circle one)   Yes / No

Registration Fee: On/Before 11 April $ 5.00 _____
                             After 11 April $10.00 _____
Student Registration * $ 3.00 _____
Luncheon: Number ____ @ $15.00 _____
                               TOTAL: _____

* Registration and lunch fee waived for students presenting papers.

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Copy this form and make payment with **check** made payable to The MAA. Do not send cash.
Mail completed form with payment to:

           Prof. Dean Nataro
           Department of Mathematics
           Nassau Community College
           Garden City, NY 11530-6793

Computing over the Reals: Where Turing Meets Newton
Lenore Blum, Distinguished Career Professor of Computer Science
Carnegie Mellon University

The classical (*Turing*) *theory of computation* has been extraordinarily successful in providing the foundations and framework for theoretical computer science. Yet its dependence on 0's and 1's is fundamentally inadequate for providing such a foundation for modern scientific computation where most algorithms – with origins in Newton, Euler, Gauss, et. al. – are real number algorithms.

In 1989, Mike Shub, Steve Smale and I introduced a theory of computation and complexity over an arbitrary ring or field R. If R is Z_2 = {0,1}, the classical computer science theory is recovered. If R is the field of real numbers, *Newton's algorithm*, the paradigm algorithm of numerical analysis, fits naturally into our model of computation.

Complexity classes P, NP and the *fundamental question* "Does P = NP?" can be formulated naturally over an arbitrary ring R. The answer to the fundamental question depends on the complexity of deciding feasibility of polynomial systems over R. When R is Z_2, this becomes the classical *satisfiability* problem of Cook-Karp-Levin. When R is the field of complex numbers, the answer depends on the complexity of *Hilbert's Nullstellensatz*.

The notion of *reduction* between problems (e.g. between traveling salesman and satisfiability) has been a powerful tool in classical complexity theory. But now, in addition, the *transfer of complexity* results from one domain to another becomes a real possibility. For example, we can ask: Suppose we can show P = NP over the complex numbers (using all the mathematics that is natural here). Then can we conclude that P = NP over another field such as the algebraic numbers or even over Z_2? (Answer: Yes and essentially yes.)

In this talk, I will discuss these results and indicate how basic notions from numerical analysis such as *condition*, round off and approximation are being introduced into complexity theory, bringing together ideas germinating from the real calculus of Newton and the discrete computation of computer science.

Brief Bio of Lenore Blum

Dr. Blum received her Ph.D. in mathematics from M.I.T. in 1968 (the same year Princeton first allowed women to enter their graduate program). She then went to UC Berkeley as a Postdoctoral Fellow and Lecturer in Mathematics. In 1974 she founded the Mathematics and Computer Science Department at Mills College (serving as its Head or co-Head for 13 years). In 1988 Blum joined the Theory Group of the newly formed International Computer Science Institute in Berkeley. From 1992 to 1996 she also served as Deputy Director of the Mathematical Sciences Research Institute in Berkeley.

Straddling the historic handover of Hong Kong from Britain to China on July 1, 1997, Blum spent two years, 1996-1998, at the City University of Hong Kong as Visiting Professor of Mathematics and Computer Science. Here she completed her book, *Complexity and Real Computation*, with colleagues and co-authors Felipe Cucker, Mike Shub and Steve Smale.

In the fall of 1999, Blum joined the faculty of the School of Computer Science at Carnegie Mellon University where she is Distinguished Career Professor of Computer Science and co-Director of the NSF-ITR ALADDIN Center for **AL**gorithm **AD**aptation **D**issemination and **IN**tegration.

Lenore Blum's research, from her early work in model theory and differential fields (logic and algebra) to her more recent work with Shub and Smale in developing a theory of computation and complexity over the real numbers (mathematics and computer science), has focused on merging seemingly unrelated areas. She has given invited talks at international conferences in the US, Europe, Asia, the former Soviet Union, Latin America and Africa.

Blum is also well known for her work in increasing the participation of girls and women in mathematics and scientific fields. She was instrumental in founding the Association for Women in Mathematics (serving as its President from 1975 to 1978), the Math/Science Network and its Expanding Your Horizons conferences for middle and high school girls (serving as co-Director from 1975 to 1981). Since its inception, well over ½ million girls have attended EYH conferences nationwide. Blum's recent work at Carnegie Mellon with Women@SCS has received national attention for transforming the culture of computing.

When Topology Meets Chemistry
Erica Flapan, Professor of Mathematics
Pomona College

Stereochemistry is the study of the 3-dimensional structure of molecules, and topology is the study of those properties of geometric objects that are invariant under deformations. It is not obvious that these two fields have anything in common. In fact, not long ago there was little communication between researchers in these two areas. Prior to forty years ago, analyzing the topological properties of existing molecular structures was not very difficult, because as topological objects, the graphs of all of the molecular structures known at the time could be deformed into a plane. Thus understanding the stereochemistry of a molecule only required the evaluation of its geometry and not its topology. Recently, knots and links and other non-planar molecules have been synthesized whose structures and properties come from their topology as well as their geometry. These molecules are often large enough that they no longer have the rigidity that is characteristic of small molecules; so understanding their deformations is an important part of understanding their structure. In this talk we will discuss how topology can be used to help us analyze the symmetries of such flexible molecules.

Brief Bio of Erica Flapan

Dr. Flapan received her Ph.D. in 1983 from the University of Wisconsin in the field of Knot Theory. She was a post-doc for two years at Rice University, and for one year at the University of California at Santa Barbara and arrived at Pomona College in 1986 and has been there since. Dr. Flapan has numerous publications in both 3-dimensional topology and applications of topology to chemistry. In 2000, the MAA and Cambridge University Press jointly published her book *When Topology Meets Chemistry*. In addition to her interests in interdisciplinary research between math and chemistry, she is also interested in the educational links between these two disciplines. Flapan is currently the PI on an NSF- CCLI grant entitled *Enhancing the mathematical understanding of students in chemistry*. As part of this grant, Flapan has developed a course to help students with weak math skills succeed in general chemistry that is entitled *Problem Solving in the Sciences*. Dr. Flapan has also developed an interdisciplinary upper division course on Chirality that she is co-teaching with an organic chemist.

NOMINATIONS AND ELECTIONS

We received the following nominations for the offices indicated. Please send completed ballots (page 13) to Dean Nataro. <u>Note</u>: The annual meeting registration and this ballot both go to Dean Nataro. If you want anonymity for your votes, then photocopy the next page and enclose the ballot in a separate envelope with the word *BALLOT* in large print. **DEADLINE**: April 11.

Office	Chair-Elect
Nominee & Affiliation	Dan King, Sarah Lawrence College
Bio	Dan King is a tenured professor of mathematics at Sarah Lawrence College where he has taught for six years. He previously taught at Oberlin College and The University of Ottawa. He is a graduate of Lafayette College and The University of Virginia, where he obtained his Ph.D. in the area of non-associative algebra and Jordan theory. His most recent research has been in fair division theory and mathematical education. Dr. King is a strong advocate of the seminar approach to undergraduate-level mathematics education and conducts all of his courses in a lecture-free, discussion-oriented format. Dan King has served the Metro New York Section as secretary for three years, as chair of the Mathematical Speakers Bureau since 1994, and as co-chair of the contributed papers sessions at the 2000 and 2001 annual meetings.

Office	Secretary
Nominee & Affiliation	Henry Ricardo, Medgar Evers College (CUNY)
Bio	Henry Ricardo received his B.S. (with honors) from Fordham College and his M.A. and Ph.D. from Yeshiva University. He is a member of Phi Beta Kappa and Sigma Xi. He has taught at Manhattan College, worked for IBM, and is currently Professor of Mathematics at Medgar Evers College (CUNY), where he has served as Secretary of the College-wide Curriculum Committee. He is a member of the AMS, MAA, NAM, NCTM, and SIAM. He is a referee for the Mathematics Teacher and for Mathematics and Computer Education. His book, *A Modern Introduction to Differential Equations*, was published by Houghton Mifflin in January, 2002; and he is currently writing a linear algebra book. He has been a member of the Metropolitan NY Section for 40 years. He has been the section's Book Exhibit Coordinator since 1995 and he is currently finishing a term as Vice-Chair for Four-Year Colleges.

Office	Treasurer
Nominee & Affiliation	Dean Nataro, Nassau Community College (SUNY)
Bio	I am currently an Assistant Professor at Nassau Community College, where I have worked since 1996. My previous full time positions were at Marist College and SUNY Farmingdale. I was elected to a full term as Treasurer three years ago and, with the approval of the membership, would be honored to continue on in this post.

Office	Vice-Chair for Four-Year Colleges
Nominee & Affiliation	Sandra Monteferrante, Dowling College
Bio	Sandy Monteferrante received her B.S. M.A. and Ph.D. from SUNY Stony Brook in mathematics, an M.Ed. from Washington State University and an IFRICS certificate in computer science from Clarkson University. She has taught at Dowling College since 1968 and is currently a Professor of Mathematics. She is a member of the MAA, HOMSIGMAA, AWM, AMTNYS and NCTM. She is an AP Calculus reader for ETS and collegiate textbook reviewer for McGraw-Hill, Prentice Hall, West Publishing and Addison-Wesley Longman. She has published and given presentations in Number Theory, History of Mathematics and Mathematics of Choice. She has received grants for projects in collegial mathematics education.

Office	Vice-Chair for Two-Year Colleges
Nominee & Affiliation	Laurie Delitsky, Nassau Community College (SUNY)
Bio	Laurie Delitsky received her B.S.N. in 1981 from Pace University. In 1998, after nursing for 22 years, she returned to Nassau Community College to study mathematics. She earned 36 credits in mathematics and began as a TA in NCC's Math (tutoring) Center in the spring of 2000. In December of 2002, Laurie completed her Masters in Math Education at Hofstra University. She is presently a full-time instructor at Nassau Community College. Laurie is a member of the MAA, NCTM, NYSMATYC and NADE.

Office	Vice-Chair for High Schools
Nominee & Affiliation	Ann Davidian, MacArthur High School, Levittown (Long Island)
Bio	Ann Davidian has been teaching in the Levittown School district for 31 years. At the present time, she is the department chairperson at MacArthur H.S. where she teaches AP Calculus. She is also an adjunct professor at Nassau Community College. In 2001, she received both the Presidential Award for Excellence in Mathematics and Science Teaching and the Radio Shack National Teacher Award. Ann is a co-author of the precalculus textbook, *Functions Modeling Change*, published by John Wiley and Sons, and the recently released *Preparing for the Regents Examination in Mathematics B*, published by Amsco School Publications. She is on the test development committee for the SAT II in Mathematics, and has served on the test development committee for the Sequential Mathematics Course III Regents examination. Ann has presented at AMATYC, ICTCM, NCTM, NYSMATYC, ICTCM, and Limacon conferences, and conducted various workshops throughout the country on precalculus and AP Calculus.

– –

BALLOT for the Metro NY Section of the MAA 2001 Elections (Must be received by April 11)

Chair-Elect: __ Dan King   __ Write–in: _____

Secretary: __ Henry Ricardo   __ Write–in: _____

Treasurer: __ Dean Nataro   __ Write–in: _____

Vice-Chair for Four-Year Colleges: __ Sandy Monteferrante   __ Write–in: _____

Vice-Chair for Two-Year Colleges: __ Laurie Delitsky   __ Write–in: _____

Vice-Chair for High Schools: __ Ann Davidian   __ Write–in: _____

– –

Mail completed ballots, as well as annual meeting registration, by April 11 to:

    Prof. Dean Nataro
    Department of Mathematics
    Nassau Community College
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FEATURED ARTICLE

Preparing Mathematicians to Educate Teachers
by Alan Tucker, SUNY @ Stony Brook

The Mathematical Association of America, in collaboration with other mathematical science organizations, has launched a multifaceted project, titled Preparing Mathematicians to Educate Teachers (PMET), to help mathematics departments enhance their capacity to improve K-12 mathematics teaching. It is supported by a $3,000,000 grant from the National Science Foundation. The PMET initiative will have three major components:

(i)   Faculty Training: mini-courses at professional meetings and a variety of longer summer workshops;

(ii)   Information and Resources: articles in professional journals, panels at meetings, multi-media websites and hard-copy material dissemination to support faculty instruction for teachers;

(iii) Mini-grants and Regional Networks: to nurture and support grassroots innovation in teacher education on individual campuses.

Alan Tucker of SUNY-Stony Brook is the PMET project director. New York is one of five states with a regional PMET network to assist faculty interested in strengthening the mathematical education of teachers. Jack Narayan of SUNY-Oswego is the coordinator of the New York state PMET network.

This summer from June 8th to June 20th there will be a PMET faculty workshop at Potsdam on secondary school mathematics. This workshop will have a second 12-day component in the summer of 2004. The PMET grant will cover room and board for participants. See the PMET website, www.maa.org/pmet. Additional faculty workshops in New York will be held in future summers. There will also be mini-grants of $3000 available each year to mathematics faculty in New York State to support the design of innovative courses and instructional materials for teachers.

With Congress having recently mandated annual national math tests, society's interest in school mathematics has never been higher. Surveys consistently indicate that the American public believes that well prepared teachers are the most important factor in a good education for children. Thus the mathematical education of teachers is receiving considerable national attention from policy makers and politicians. Among the mathematics community, there has been a renewed interest in the mathematical education of teachers. This MAA initiative will help nurture and support this interest by providing a broad array of educational, organizational and financial assistance to mathematicians.

In New York State, there are now very different Regent's Exams in mathematics, Math A and Math B that require much greater understanding of concepts and give more weight to explanations of how answers are obtained. Practicing teachers who focused on drilling students to be proficient at solving simply structured problems that could be answered with predictable procedures now need help in strengthening their own mathematics knowledge.

In the SUNY system, there is a new effort paralleling PMET to improve the mathematical education of teachers involving a Mathematics Education Task Force organized by the SUNY Provost. The Task Force has working groups looking at (i) pre-service education of teachers, (ii) professional development and in-service education for teachers, and (iii) alignment of school and college mathematics instruction. The overall task force and each working group are co-chaired by a mathematician and a mathematics educator. As an example of the task force goals, the second working group is: (a) formulating models for a mathematics course that would be part of the curriculum in the Master's degree required for permanent certification of all New York elementary school teachers; and (b) designing a set of professional development workshops to help New York high school mathematics teachers develop the deeper mathematical knowledge required for teaching the new Regent's mathematics curriculum. There will be close cooperation between the PMET project and the SUNY Task Force; PMET project director Alan Tucker is co-chair of the SUNY Task Force. More information about the work of this task force is available at www.sysadm.suny.edu/metf.

The prime reason for the PMET project is the shortage of mathematics education specialists. As mathematics departments seek to offer high-quality preservice and in-service courses on the mathematical knowledge needed for K-12 teaching, they face a major challenge in finding qualified instructors. Mathematics faculty know the mathematics well but are normally ill prepared to help teachers connect it appropriately to K-12 instruction. Many need assistance with appropriate instructional strategies for helping their students make these connections as well as information about the mathematical issues that arise in day-to-day K-12 classroom lessons. The PMET initiative will provide training and assistance for mathematics faculty teaching courses for future and current teachers.

In New York State, the PMET initiative combined with the SUNY Mathematics Education Task Force will promote collaboration by mathematicians with education faculty and with teachers in local schools; e.g., a math educator and teacher must be partners in each PMET mini-grant. It will facilitate greater involvement of mathematicians in professional development activities for current teachers and in helping local and state administrators develop sensible mathematics curricula and testing standards. Finally a major goal of PMET initiative and the SUNY task force will be to connect mathematicians with the numerous ongoing efforts of state education agencies and national organizations to improve school mathematics instruction.

More information about PMET is available at: www.maa.org/pmet/

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CALL FOR PARTICIPANTS & INVOLVEMENT

A History of the Linear Algebra Curriculum

Joe Malkevitch – York College, Walter Meyer – Adelphi University, Jack Winn – SUNY @ Farmingdale

We are investigating the development of the undergraduate linear algebra curriculum during the second half of the twentieth century. We welcome input from the community regarding how the teaching of linear algebra has evolved at particular schools and by individuals since 1950. The teaching of linear algebra has undergone many changes in the last half-century including splitting off from abstract algebra, becoming more applied, moving down to freshman and sophomore levels, and the addition of technology. What were the reasons for these changes? How did the relationship between "linear algebra" and "matrix theory evolve? What were the forces internal to the mathematics community and external to the mathematics community that impacted upon the teaching of linear algebra?

Some curricular innovations catch on and some do not. We have little way of judging in advance. We might be wiser in our efforts if there were a better history of curricular changes. With respect to linear algebra, although it is now a required course for almost all mathematics majors this was not true only fifty years ago. Mathematics grows and changes and one of the factors that affects the way mathematics changes is the mathematics curriculum, the mathematics we teach. Unfortunately, it appears that little attention has been given to the history of the mathematics curriculum: should we not reflect on how and why we teach the way we do and how our insights into this can strengthen mathematics, the teaching of mathematics and mathematical applications? Thus we invite you participate in this "new" area of investigation: the history of the undergraduate mathematics curriculum. Please email us (see email addresses above) brief remarks that you feel might be relevant to the evolution of the teaching of linear algebra. We hope that this will lead to wider investigations in the history of the mathematics curriculum and a possible session devoted to this subject at the Joint Mathematics Meetings in the near future. Please let us know if you are interested in this area of investigation: Joe Malkevitch (joeyc@cunyvm.cuny.edu), Walter Meyer (meyer@panther.adelphi.edu), Jack Winn (winnja@farmingdale.edu).

Greater Metropolitan New York Math Fair: Call for Judges

The 35th Greater Metropolitan New York Math Fair will take place on March 2, 2003 and March 23, 2003 at Pace University in Manhattan. The MATH FAIR was created to encourage high school students in public, private and parochial schools in the New York Metropolitan Area to pursue a phase of mathematics in which they are interested. This pursuit takes the form of researching a topic and writing a paper on the subject. This paper is presented by the student to a panel of judges who have previously been given copies of the papers. During Round 1 (March 2) the judges decide which contestants advance to Round 2 (March 23). Students not advancing receive a personalized Letter of Achievement. All students advancing to Round 2 receive a medal, either bronze, silver, or gold and a personalized Certificate of Merit. During the second round of judging the panel of judges studying a student paper and listening to the student presentation decides upon the medal that the student should receive.

The FAIR could not exist without the judges who volunteer their talents to encourage these young people in the study of mathematics. We would appreciate your judging in this year's Fair, either for Round 1, Round 2 or both. You will note that these sessions are both held on Sunday so as not to conflict with your other professional responsibilities. Judging usually starts between 12:30 and 1:00 P.M. but judges usually arrive between 11 A.M. and noon to discuss the papers with other judges on the same panel. Many judges also like to arrive early in order to socialize with other mathematicians who may be judging. For Round 1 there may be up to 100 Mathematicians judging.

A judge application is available via the section web-page. If you would like to judge in this year's FAIR fill in the application and return to Peter Shenkin at the address on the application. Feel free to duplicate the application and give copies to colleagues who might be interested in judging. New judges are always welcome.

Please contact Peter Shenkin for further information. E-mail him at pshenkin@jjay.cuny.edu or call him at (212) 237–8742.

Long Island Math Fair: Call for Judges

The Al Kalfus Long Island Math Fair wants you. Treat yourself; let the students lecture. Sit back and listen to papers written and presented by bright and interested high school students from Nassau and Suffolk counties. Judges are needed for the two first rounds and the final round. The Nassau first round will be held on Friday, March 14, 2003 at Hofstra University. The Suffolk first round will be held on Friday, March 21, 2003 at Half Hallow Hills East HS and West HS. The final round is Friday, April 11, 2003 at Hofstra University. All rounds begin at 3:00 p.m. For more information, call Joseph Quartararo at (631) 584-2016.

Go Back to School, Join *The Mathematics Speakers Bureau*!!!

The community needs you! Do you have a talk which would be suitable for local area students or their faculty? We are seeking out mathematicians interested in sharing their knowledge, enthusiasm, and love of mathematics. Now in its 44th year, The Mathematics Speakers Bureau (MSB) is composed of dedicated mathematicians who volunteer to speak to students and faculty of regional middle schools, high schools, colleges and universities on topics reaching beyond the traditional mathematics curriculum.

The primary goals of the MSB are to stimulate the interests of local youth in mathematics, to provide opportunities for students to meet active and enthusiastic mathematicians, to motivate students towards careers in the mathematical sciences, and to encourage cooperation between corporate and academic institutions in the mathematical education of area youth. Volunteers provide information about talks they are willing to give and the Bureau, in turn, advertises these talks to the faculty of local area schools. Schools contact speaker volunteers directly to make specific arrangements for a visit. Volunteers determine the number of presentations they give in any given academic year and always maintain the right to refuse a school invitation for any reason. The official Bureau webpage,

accessible at www.maa.org/MetroNY, contains an up-to-date listing of available speakers and their proposed talks. Additional information regarding the goals, history and operation of the Bureau can also be found at this site. If you wish to volunteer with the MSB, please contact Bureau Chair Dan King at dking@slc.edu.

MAA Summer 2003 *Professional Enhancement Program* (PREP)

The MAA's Professional Enhancement Program (PREP) will offer a wide variety of workshops during summer 2003. PREP workshops offer you the chance to spend a few days exploring topics of mutual interest with colleagues from other institutions, with experienced leaders to guide the group towards a deeper understanding and broader perspective. Most of the cost of attending a PREP workshop is covered by the program, so what are you waiting for? Visit the PREP web site, www.maa.org/prep to see this year's schedule and to obtain registration materials.

MetroMATH Needs You!!!

Consider submitting a short announcement, commentary, article, study, experience, or other newsworthy item in the next issue of *MetroMath*. Contact the editor, Abe Mantell, via e-mail: mantell@ncc.edu

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EVENTS

Greater Metropolitan New York Math Fair 2003
> March 2, Sunday, (Round 1) Pace University in Manhattan
> March 23, Sunday, (Round 2) Pace University in Manhattan
> For more information contact Peter Shenkin at (212) 237–8742 or
> e-mail at pshenkin@jjay.cuny.edu or check the section web-page for
> more info and the judging request form.

Al Kalfus Long Island Math Fair 2003
> March 14, Friday, (Round 1 – Nassau County) Hofstra University
> March 21, Friday, (Round 1 – Suffolk County) Half Hollow Hills HS East and West
> April 11, Friday, (Final Round) Hofstra University
> All rounds begin at 3:00 PM. Grade Levels are 7-12 for math and 10-12 for computers.
> For more information, call Joseph Quartararo at (631) 584-2016.

MAA New Jersey Section
> April 5, 2003, Saturday, Kean University, Union, NJ
> For more information visit: orion.ramapo.edu/~ldant/maa-nj.html

NCTM Annual Meeting
> April 9–12, 2003, San Antonio, TX
> For more info visit: www.nctm.org/meetings/sanantonio/

NYSMATYC Annual Conference
> April 11-13, 2003, Radisson Hotel Rochester Airport, Rochester, NY
> For more information visit: www.nysmatyc.org/conf2003/

MAA Seaway Section Spring Meeting
> April 4-5, 2003, Alfred University, Alfred, NY
> For more information visit:
> http://www.math.binghamton.edu/menger/maa_seaway/meetings.html

Metropolitan New York Section Meeting

        May 3, 2003, Saturday, LaGuardia Community College, Long Island City, NY

2003 SIAM Annual Meeting

        June 16-20, Queen Elizabeth Hotel, Montreal, QC, Canada
        For more info visit: www.siam.org/meetings/an03/index.htm

ICIAM 2003: 5th International Congress on Industrial and Applied Mathematics

        July 7-11, Sydney, Australia
        For more info visit: www.iciam.org/iciamHome/iciamHome_tf.html

MathFest   July 31-August 2, 2003, Boulder, CO

ICTCM (International Conference on Technology in Collegiate Mathematics)

        October 30 – November 2, 2003, Hyatt Regency O'Hare, Rosemont, IL
        For more information visit: http://www.ictcm.org/

MAA Seaway Section Fall Meeting

        November 7-8, 2003, Rochester Institute of Technology, Rochester, NY
        For more information visit:
        http://www.math.binghamton.edu/menger/maa_seaway/meetings.html

AMATYC Annual Conference

        November 13-16, 2003, Salt Lake City, Utah
        For more information visit: www.amatyc.org/

MAA/AMS National Joint Meetings

        January 7-10, 2004, Phoenix, AZ
        For more information visit: www.ams.org/amsmtgs/2004_intro.html

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METROPOLITAN NEW YORK SECTION

OF THE

MATHEMATICAL ASSOCIATION OF AMERICA
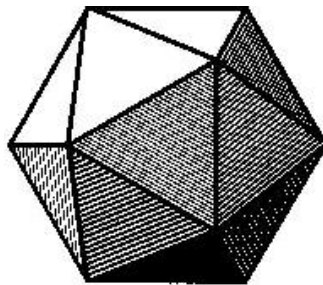
ANNUAL SPRING MEETING
SATURDAY, MAY 3, 2003
LaGUARDIA COMMUNITY COLLEGE
LONG ISLAND CITY, NY

INVITED SPEAKERS

Lenore Blum, Carnegie Mellon University
Computing over the Reals: Where Turing Meets Newton

Erica Flapan, Pomona College
When Topology Meets Chemistry

FOR MORE INFORMATION PLEASE VISIT OUR WEBSITE AT
www.maa.org/metrony

Mark Your Calendars!!!

Spring Meeting

LaGuardia Community College

Saturday, 3 May 2003

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