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MetroMath

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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

Sunday, 5 May 2013
8:30 AM − 5:15 PM

Farmingdale State College (SUNY)
Farmingdale, NY

(*More Information Contained Within*)

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SECTION OFFICERS

Section Governor (2011 – 2014)	**Dan King** Sarah Lawrence College	(845) 365-0117 dking@sarahlawrence.edu
Chair (2012 – 2015)	**Jerry G. Ianni** LaGuardia Community College (CUNY)	(718) 482-5739 iannije@lagcc.cuny.edu
Chair-Elect (2012 – 2015)	**Elena Goloubeva** Webb Institute	(516) 671-2215 x111 egoloubeva@gmail.com
Secretary (2012 – 2015)	**Emad Alfar** Nassau Community College (SUNY)	(516) 572-7383 x 26865 Emad.Alfar@ncc.edu
Treasurer (2012 – 2015)	**Mohammad Javadi** Nassau Community College (SUNY)	(516) 572-7383 x 26882 javadim@ncc.edu
Vice-Chair for Four-Year Colleges (2012 – 2015)	**Janet Liou-Mark** NYC College of Technology (CUNY)	(718) 260-5929 jliou-mark@citytech.cuny.edu
Vice-Chair for Two-Year Colleges (2012 – 2015)	**Chia-Ling Lin** Nassau Community College (SUNY)	(516) 572-7383 x 26866 Chia-ling.Lin@ncc.edu
Vice-Chair for High Schools (2012 – 2015)	**Ken Gittelson** Benjamin Cardozo High School	(718) 279-6527 kgitt@optonline.net
Math Fair Chair – NYC	**Randy J. Asher** Brooklyn Technical High School	(718) 804–6500 rasher@schools.nyc.gov
Math Fair Chair – Long Island	**Joseph Quartararo** Northport-East Northport Public Schools	(631) 584-2016 cmleague@optonline.net
Newsletter Editor and Speakers Bureau Chair	**Abraham S. Mantell** Nassau Community College (SUNY)	(516) 572-7383 x 26841 mantell@ncc.edu
Student Chapter Coordinator	**David Seppala-Holtzman** St. Joseph's College	(718) 636-7254 dholtzman@sjcny.edu
Public Relations Chair	**David Seppala-Holtzman** St. Joseph's College	(718) 636-7254 dholtzman@sjcny.edu
Book Exhibit Coordinator	**Elena Goloubeva** Webb Institute	(516) 671-2215 x111 egoloubeva@gmail.com
Liaison Coordinator and Webmaster	**Raymond N. Greenwell** Hofstra University	(516) 463-5573 matrng@hofstra.edu
Graph Theory Notes Liaisons	**John W. Kennedy,** Queens College **Louis V. Quintas,** Pace University **Daniel Gagliardi,** SUNY Canton	johnwken@gmail.com lquintas@pace.edu gagliardid@canton.edu
Section Archivist	**Agnes M. Kalemaris** Farmingdale State College (SUNY)	(631) 420-2217 kalemaam@farmingdale.edu

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Section Web Page – sections.maa.org/metrony

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

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Metropolitan New York Section of the MAA

Membership Count: 609 as of 18 March 2013

MESSAGE FROM THE SECTION CHAIR

I would like to begin this message by thanking the previous Section Chair, Farley Mawyer, for his service in this position and for many years of service to the Section in various other capacities. As I proceed through my first year as Chair, I am grateful to be able to draw from the collective wisdom of Farley and several other former Chairpersons. One of the most comforting and enjoyable aspects that I have experienced in my service as an officer of the Section is consistent support from a team of professional colleagues. It is my hope to develop that camaraderie further so that the programming of the Section remains diverse, meaningful, and rewarding for the entire membership.

Among the activities planned during the next couple of years is another joint meeting with the New Jersey Section. We had a joint meeting back in 2007 that was well received by all participants. The current team of officers has started talking with the New Jersey Section about conducting a joint meeting in November 2014. I will also try to encourage more interdisciplinary activities during the next couple of years. Such activities might be part of the Annual Meeting or they might take place in other meetings during the year.

Finally, one new idea that the team of officers is beginning to discuss is to create guidelines and an application process for support (financial and/or otherwise) from the Section for meetings and/or workshops. I can see the potential for several half-day meetings with one invited speaker each year in various locations throughout our Section. We have a very healthy operating budget that should be used to increase opportunities to promote interactions, to stimulate creativity, and to foster professional growth. I hope that the Section will be able to pilot such an application process sometime during the next couple of years.

I look forward to greeting all of you at the upcoming Annual Meeting on May 5 at Farmingdale State College. We have two invited speakers giving exciting talks: David Gleich from Purdue University will discuss the mathematics of search processes on the internet, and Alan Tucker from Stony Brook University will discuss the history of undergraduate mathematics programs in the United States. Please look elsewhere in this newsletter for more details. As always, I welcome your input and feedback on all Section matters.

Jerry G. Ianni, Fiorello H. LaGuardia Community College (CUNY)

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MESSAGE FROM THE SECTION CHAIR-ELECT

Dear Metro New York Members and Friends,

The section appreciates you, needs you and it is here for you.   We need your help, your ideas, and your participation!

We encourage you to visit the MAA Metro North Website and see what is happening. Contact section officers or committee chairs to seek more information and to share ideas with them. Express your interest in committees or offices that become open on an annual basis, nominate colleagues who would be interested and make a valuable contribution if they thought they were needed. We are constantly looking for opportunities to meet other mathematicians, to grow professionally and to improve the MAA Metropolitan section program. Finally if you would like to extend your participation in the MAA beyond the section, we support and strongly encourage you to seek involvement in MAA at the state and national levels.

We cordially invite you to attend our section meeting at Farmingdale State College on May 5. Please consider giving a talk at this meeting. A Call for Papers, Meeting Registration Form, and Lodging & Directions are on our web page http://sections.maa.org/metrony/. Consider coming to MAA MathFest at Hartford Connecticut in July- August. This meeting will be a Joint Meeting with the Canadian Society for

The History & Philosophy of Mathematics. Come to the Joint Mathematics Meetings in Boston on January 4-7. If you come to any of these meetings and see me, please feel free to come up and introduce yourself. Tell us about your concerns, suggestions and ideas. We will be happy to hear them.

I am grateful for the opportunity to serve as Chair-Elect of the Metropolitan NY Section of MAA, and to be a part of an amazing team of section officers. I look forward to seeing you on May 5 at Farmingdale State College.

Elena Goloubeva, Webb Institute

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MESSAGE FROM THE SECTION GOVERNOR

Hi Section Members!

I hope this message finds you well. Now that winter is coming to an end, I hope you will consider coming out of hibernation to attend our annual Spring Meeting to be held Sunday, May 5 at Farmingdale State College.   The Section officers have put together a very promising schedule of events (details inside this newsletter), and we hope to see you there!

Let me report on some news from the Board of Governors meeting held at the Joint Meetings in San Diego on January 8, 2013.   (Though the locals were complaining about the cool weather, the 60 degree temperatures felt good to me!)   MAA President Paul Zorn presided over the meeting. Numerous important items were discussed over the daylong event, the highlights of which I summarize here.

Paul Zorn announced that Jennifer Quinn has been appointed as the Chair of the search committee for the new *Mathematics Magazine* editor. Nominations and suggestions should be sent to her.

Here are the dates and locations of the upcoming national MAA meetings:

> Mathfest, July 31, 2013, Hartford, CT
> Joint Meetings, January 14, 2014, Baltimore, MD
> Mathfest, August 6, 2014, Portland, OR
> Joint Meetings, January 9, 2015, San Antonio, TX
> Mathfest, August 4, 2015, Washington, DC,
> Joint Meetings, January 5, 2016, Seattle, WA
> Mathfest, August 3, 2016, Columbus OH
> Joint Meetings, January 3, 2017, Atlanta, GA
> Joint Meetings, January 9, 2018, San Diego, CA

Secretary Barbara Faires reminded governors to help with the national committee nomination process by recruiting interested individuals in the sections. If you are a Metro NY Section member and wish to serve on any of the national committees, please send me a message expressing your interest (dking@sarahlawrence.edu). I will forward all self-nominations to the national selection committee.

Associate Treasurer Rick Cleary presented the budget for 2013. The large operating deficit forecast (approximately $627,000) reflects the start-up costs associated with the strategy that was adopted at the Board of Governors meeting in August to aggressively pursue new sources and avenues of revenue. Rick and the budget committee have explained,

> "We do expect that many of these changes will have short 'pay back periods.' In particular, the $200,000 budgeted to bring customer service in house could be recovered in the 2014 budget. Likewise the addition of a full time acquisitions editor who can also coordinate with marketing could boost book revenues."

The MAA is majorly revamping and substantively simplifying the membership category structure. The proposal for calendar year 2014 and beyond, approved unanimously by the Board, is to have only five membership categories (as compared to the current 300 options!): member, member plus, K-12 teacher, student and departmental. Prior categories of new member, unemployed, underemployed, associate and family membership will be phased out. Though there will no longer be a retired or emeritus membership category, long-term members (25 years of membership) and older members (70+ years) will be eligible for a discount on the regular member rate.

Proposed regular membership ($169) will come with section membership and electronic versions of each of the *Monthly, CMJ, Mathematics Magazine* and *Math Horizons*. Both print and electronic versions of *MAA FOCUS* will also be included. Various other benefits will be associated with regular membership as well including meeting registration discounts and access to online MAA resources. The proposed Member Plus option (working name) will come with a copy of the MAA Book of the Year, free membership in any 3 of MAA's SIGMAA's and other additional benefits to be decided. Add-on subscriptions to print versions of the journals and SIGMAA's will also be available.

Good news regarding book sales at the annual meeting! Director of MAA Publications Ivars Peterson discussed the desire to have book sales resume at Section meetings. If you recall, state tax code issues forced a termination of that long tradition. Starting this spring, 'Book Sales in a Box' will give members a 35% discount. Each section will receive a code from the MAA bookstore that they can relay to section members who can shop one-week before, during or as much as one-week after the meeting to use the special discount.

It's national MAA election time again. The Nominating Committee has provided the following slate of nominees:

President-Elect: Frank Farris, Santa Clara University; Deanna Haunsperger, Carleton College; and Francis Su, Harvey Mudd College

First Vice-President: Jenna Carpenter, Louisiana Tech University ; Michael Dorff, Brigham Young University; and James Sellers, Pennsylvania State University

Second Vice-President: Minerva Cordero-Epperson, University of Texas, Arlington; Stephen Davis, Davidson College; and Karen Saxe, Macalester College

Ballots for the election will be distributed to MAA members this Spring.

The meeting ended with acknowledgement of the outstanding service provided by President Paul Zorn. This was the last Board of Governors meeting over which Paul will preside. President-Elect Bob Devaney will preside over the next Board of Governors meeting at the Hartford Mathfest in July.

If you have any questions or comments regarding the Board of Governor's meeting or the Metro New York Section, please don't hesitate to contact me (dking@sarahlawrence.edu).

Hoping to see you on May 5 for the Spring Meeting at Farmingdale State College!

Dan King, Sarah Lawrence College

TREASURER'S REPORT
(as of 2/28/13)

Business Checking	$10,838.24
Business Money Market	$16,279.60
6-Month Business CD	$1,761.09
Total	$28,878.93

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

Mohammad Javadi, Nassau Community College (SUNY)

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25 and 50 Year Members

The following members will be recognized during the Awards Ceremony at our May meeting. The 25 year members are offered free registration, the 50 year members free registration *and* lunch (who said there's no such thing as a *free lunch*?!!). ☺

<u>25 Years</u>: Hamid Ahmad (The Cooper Union), David Hankin, Jerry Ianni (LaGuardia CC – CUNY), Agnes Kalemaris (Farmingdale State College – SUNY), Michel Lobenberg (Polytechnic University of NYU), George Shapiro, Dexter Senft, Gilbert Traub (SUNY Maritime College), Alun Wyn-Jones (Mathematical Models, Inc.),

<u>50 Years</u>: Michael Anshel, Barry Cherkas (Hunter College – CUNY), Frank Destefano, Mark Fineman, Gerald Freilich (Queens College – CUNY), Ronald Hirshon, Peter Lax (NYU), Donald Small (US Military Academy), Stanley Taback (Lehman College – CUNY), Peter Weinberger (Google, Inc.).

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2013 SPRING MEETING PROGRAM (Preliminary)
Sunday, May 5 Ñ Farmingdale State College (SUNY), Farmingdale, NY

8:30 – 9:30 AM	Registration and Refreshments
	Book Exhibits Open (continuing until 3:30 PM)
9:30 – 9:50 AM	Welcoming Remarks:
	College Official, Farmingdale State College
	Jerry Ianni, MAA Metropolitan New York Section Chair
9:50 – 10:50 AM	Invited Speaker:
	The History of the Undergraduate Program in Mathematics in the United States*
	Alan Tucker, Stony Brook University
10:50 – 11:00 AM	Break - coffee and refreshments
11:00 – 12:00 PM	Presentation:
	The Design Team of the National Museum of Mathematics*
	Glen Whitney, Executive Director & Founder
	Cindy Lawrence, Associate Director & Chief of Operations
	Tim Nissen, Chief of Design
12:10 – 1:25 PM	Lunch (with time to visit the exhibits)
1:30 – 1:55 PM	Awards Ceremony - including Prize Raffle with some Sectional Business
2:00 – 3:00 PM	Invited Speaker:
	How does Google Google? A journey into the wondrous mathematics behind your favorite websites*
	David F. Gleich, Purdue University
3:15 – 5:35 PM	Contributed Paper and Poster Sessions

* See page 8 for Abstracts and brief Speaker Biographies

Presentation Abstracts and Speaker Biographies

The History of the Undergraduate Program in Mathematics in the United States
Alan Tucker, Stony Brook University

Abstract: The undergraduate program in mathematics in America has had a punctuated evolution. The Mathematical Association of American was organized in 1915 at the end of a period of dramatic rethinking of American education at all levels, one product of which was the introduction of academic majors in higher education. The mathematics major was static in its first 40 years, followed by great changes from 1955 to 1975, and then a period of relative stability to the present. This talk is based on a paper solicited by the MAA as part of its 100th anniversary activities.

Biography: Alan Tucker received his Ph.D. from Stanford in 1969 and has been at Stony Brook University ever since. He has been involved in many national and regional projects to improve undergraduate mathematics education. He has served the MAA in numerous roles, including First Vice-President, Chair of the Publications Committee and founding Chair of the Education Council. He has been a recipient of the MAA Award for Distinguished Teaching of Mathematics and MAA Award for Meritorious Service. He is a Fellow of the Amer. Math. Society and a Fellow of the Amer. Assoc. for the Advancement of Science.

The Design Team of the National Museum of Mathematics
Glen Whitney, Executive Director & Founder
Cindy Lawrence, Associate Director & Chief of Operations
Tim Nissen, Chief of Design

Abstract: Sequences of symbols on a page hold singular power to express the ideas of mathematics with precision and rigor. Yet are they sometimes ironically an obstacle to transmitting those ideas to new initiates of math? Might other modes of presentation sometimes convey the essence of mathematics more intuitively? The design team of the National Museum of Mathematics will discuss the process they used to create hands-on exhibits with broad public appeal, taking several exhibits designed for the Museum as case studies.

How Does Google Google? A journey into the wondrous mathematics behind your favorite websites
David F. Gleich, Purdue University

Abstract: We all Google. Some of us Yelp, Netflix, Tweet, and Facebook too. What you may not know is that behind the Google search engine and other search websites is beautiful and elegant mathematics. In this talk, I will try to explain the workings of page ranking, search engines, and recommenders using only rusty calculus.

Biography: David Gleich is an assistant professor in the Computer Science Department at Purdue University. His research is on high performance and large scale mathematical methods for analyzing data from internet problems such as page ranking and social network analysis, as well as large scale datasets generated in scientific simulations. He held the John von Neumann post-doctoral fellowship at Sandia National Laboratories in Livermore CA before joining Purdue in Fall 2011.

2013 METRO NY SECTION OF THE MAA MEETING REGISTRATION FORM
(* PLEASE PRINT ***)**

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

Badge Name or Nickname: _____ Affiliation: _____

Address: _____

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

Phone Number: Day: (____)_____ E–mail: _____

Special diet? (circle one) Yes / No. Please specify: _____

Any other special needs? (wheelchair access, etc. – please specify) _____

The MAA national office requests the following information. Please check the appropriate responses.

Current MAA Member: ☐ Yes ☐ No   First Metro NY Section Meeting? ☐ Yes ☐ No

Faculty members at a college or university, please check the highest <u>mathematics</u> degree offered by your <u>current</u> institution: ☐ Associate ☐ Bachelors ☐ Masters ☐ Doctorate ☐ None

Current employment/student status (check all that apply):
☐ High School Student ☐ Undergraduate Student ☐ Graduate Student

☐ High School Teacher ☐ College/University Professor ☐ Business, Industry, Government Employee

☐ Retired (from?) _____ ☐ Other (please specify) _____

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Registration Fee*: On/Before 19 April	$15.00	_____	* Registration and lunch fees waived for:
(<u>Postmarked</u>) After 19 April	$20.00	_____	• students presenting papers or posters
Student Registration	$ 5.00	_____	• 50-Year Members (see page 7)
Luncheon*? (circle one) Yes / No	$15.00	_____	* Registration fee waived for:
	TOTAL:		• 25-Year Members (see page 7)
		=======	

Important Note: On-site registration will be available (at the higher registration fee), but all members are encouraged to pre-register by mail as early as possible. Registration forms received on or after April 26 will not be processed in advance of the meeting. Luncheons are not guaranteed for attendees registering on-site.

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Mail completed form with payment payable to *The Metropolitan New York Section of the MAA* (do not send cash) to:

Mohammad Javadi, MetroNY MAA Treasurer
Mathematics, Computer Science, and Information Technology
Nassau Community College
One Education Drive
Garden City, NY 11530-6793

Directions to: **Farmingdale State College (SUNY)**
Farmingdale, NY 11735

Via Automobile:

Northern State Parkway - to Exit 40 (Route 110). Travel south on Route 110 for approximately 3 miles. On the right hand side you will see the Broad Hollow Bioscience Park. Turn right into the campus at the College sign.

Southern State Parkway - to Exit 32 - (Route 110). Travel north on Route 110, approximately 3 miles. Turn left at the College sign onto the Melville Road. Proceed approximately 1/4 mile to College entrance. Turn right into the College.

Long Island Expressway - to Exit 49 South (Route 110). Travel south on Route 110, approximately 2 miles. On the right hand side you will see the Broad Hollow Bioscience Park. Turn right into the campus at the College sign.

Via Train:

Long Island Railroad - Pennsylvania Station. Take the Ronkonkoma line to Farmingdale. Check with the Conductor for any necessary changes. Take a taxi from the Farmingdale Station to the College.

Mailing Address: Farmingdale State College, 2350 Broadhollow Road, Farmingdale, NY 11735-1021
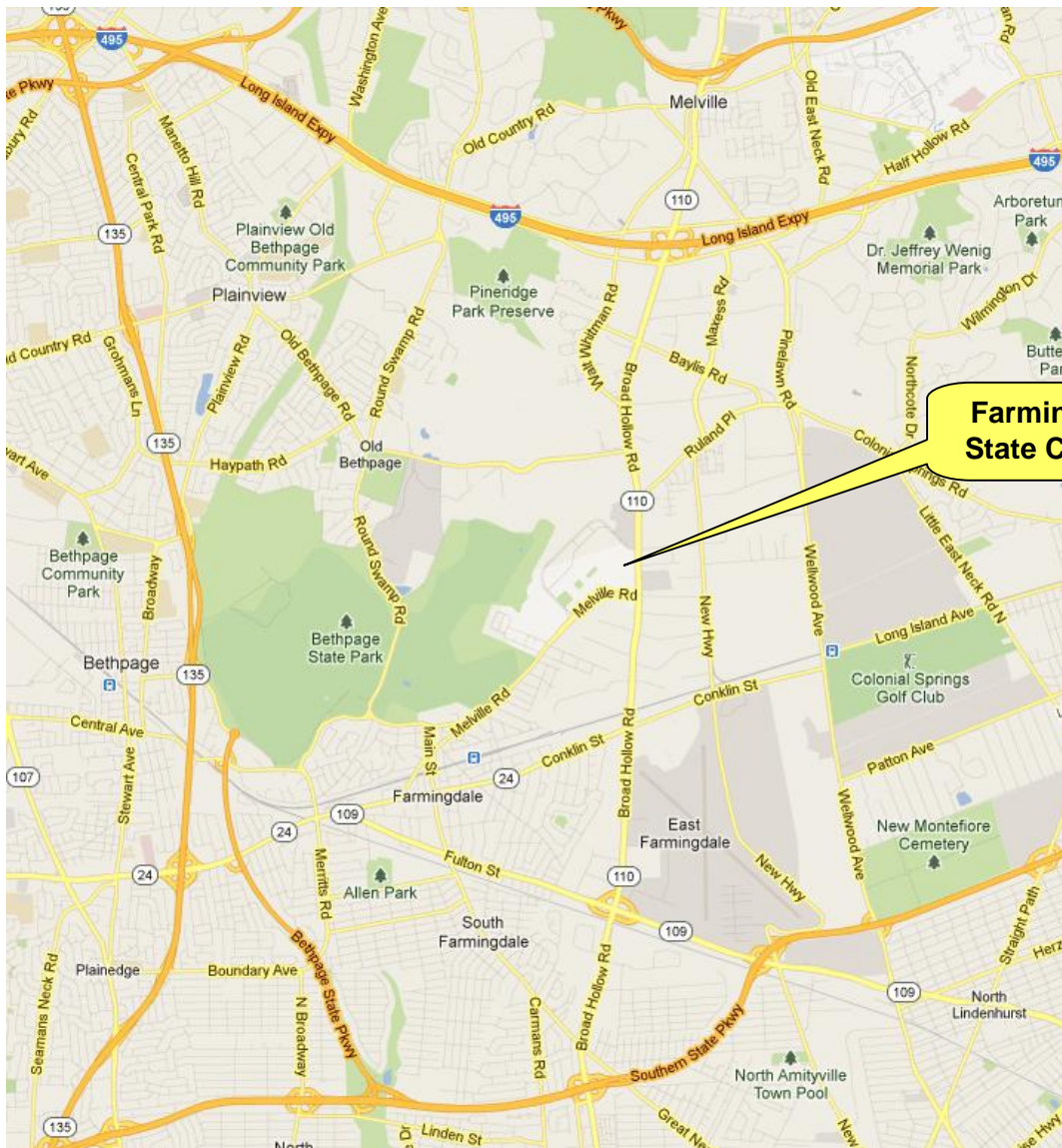
FEATURED ARTICLES

The Cajori Two Project Wants You!
Walter Meyer, Adelphi University

If you have a desire to contribute to scholarly work in the history of college mathematics teaching, and work collaboratively with like-minded math teachers, you should contact us about Cajori Two. The only specialized knowledge needed is the general experience any math professor would have with undergraduate math curricula.

Our work so far centers on the project *Cajori Two: Survey of American Undergraduate Mathematics Courses in the 20th Century*. This project is nearly done and involves reading catalog material from a sample of American institutions and entering data about the courses into a database that can be manipulated by computer software. The idea is that tabulations and summations can be generated for individual institutions or sums over institutions.

A second project is under consideration in which the main activity will be reading articles and segments of textbooks from the first half of the 20th century. Participants should have access to a good library and be willing to acquire relevant library skills (electronic databases, interlibrary loan).

The projects are named after Florian Cajori (1859-1930) who was a mathematician who took a strong interest in the history of mathematics. In his day, Cajori was one of America's leading scientific intellectuals. He was elected president of the Mathematical Association of America in 1917-18, and vice-president of the American Association for the Advancement of Science in 1923.

In 1890 Cajori published *The Teaching and History of Mathematics in the U. S* and included a survey of the mathematics curricula of some 20 or so American colleges and universities. It is the only widely accessible information we have on post-secondary math curricula and pedagogy in the late 19th century. *Between then and now, there is only one other "datapoint," a survey taken by the MAA in 1960 and published by CUPM in December of 1961*. The lack of information in other years leaves us with only the sketchiest ideas of how curricula have evolved. For example, there is probably no one on earth who can say what the main trends were between 1915 and 1935. The teaching work of the professors of the time is deeply buried, as our work in today's classrooms will be deeply buried (in crumbling catalogs stored in the archives of libraries), unless we bolster the study of curricular history. Cajori Two should help do this. We expect publications to result from our data.

If this interests you, please get in touch with Walter Meyer (Project Leader) at: meyer1@adelphi.edu

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Going Back in Time for the New York Metro Section of the MAA
Agnes M. Kalemaris, Farmingdale State College and Section Archivist

The MAA was founded in 1915 in the Midwest. Although the New York Metro Section did not exist until the 40s, we had a Governor of the region for most of that time. David Eugene Smith of Teachers' College, Columbia University served as Governor from 1917-1919, 1921-1930, and 1934-1939. Lao Genevra Simons of Hunter College served from 1931-1933 and Thornton C. Fry of Bell Labs served from 1931-1933. One possible reason for the delay in organizing a section was the strong presence of the AMS in New York.

Our first organizational meeting was held on April 19, 1941 at Queens College with 108 present. The first annual meeting occurred on April 18, 1942 at Hunter College. Of the approximately 136 who attended, seventy were members of the MAA. From its earliest days, the MAA was inclusive--women and high school teachers were welcome.   The New York Metro Section was no exception.   The first

officers who were elected were Chair: Harris Franklin MacNeish (Brooklyn College); Vice-Chair: Edna E. Kramer Lassar (Thomas Jefferson High School); Secretary: H.E. Wahlert (New York University); and Treasurer: Frederic Howell Miller (The Cooper Union).

Although many sections did not hold meetings during the war years, New York continued to do so. Papers were often given on war-related topics. At the meeting in 1942 the presentations included cryptography, teaching of mathematics at a defense training institute, and mathematical training for aeronautical engineers.

Note: Earlier files of our history are currently unavailable. While there is much information on our website including a history of our first forty years and JSTOR has minutes of those early meetings, personal reminisces and anecdotes would add much to our story. Please contact me if you have anything to share or would be willing to participate in a brief interview. If you have any old newsletters, contest or speakers information, or other materials relating to our section, would you consider donating them or lending them to us to be scanned? Your help will be greatly appreciated.

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A High School Mathematics Magazine
Deborah Stepelman, SAR High School

SAR High School, in the Riverdale section of the Bronx, opened its doors in September 2003 with a 9th grade class of approximately 70 boys and girls. Now in its 10th year, the school has a capacity population of nearly 500 students.

Although the school is young and relatively small, its mathematics co-curricular offerings are robust, varied and extensive. One of the most successful of these activities is the mathematics magazine, the *Math Mag*.

While the school was still in its infancy, was composed of only 9th and 10th grades and as yet had no other official student publication, as the Coordinator of Math Enrichment, I pushed forward the first edition of the *Math Mag*. Except for the cover which had color, it was a black and white compilation of shortened student Math Fair submissions, original puzzles, brain teasers, school math news and a little bit of artwork. Papers, which included The Magic of Digital Square Roots, Taxicab Geometry and Pascal's Triangle – A Study of Powers and Bases, all contained sections of mathematics which the student author had not read while doing research but rather figured out and/or proved independently. The cover had been created by the "artist" while doodling in one of his classes.

The Math Mag was such a success within the school that we no longer had to hunt for staff. We held a school wide competition, with numerous entries, for cover design, had an assortment of papers to choose from for inclusion, began including an interview, a book review and a wider range of puzzles. Volume 2 saw the introduction of articles of interest to the general, non-mathematician reader. Topics included Superheroes and Math, The Monty Hall Problem, Statistics Can Fool You and A 21st Century Launch – about a student built trebuchet which would ultimately be entered in a regional pumpkin hurling competition. It also featured, "Our Mathematical Lens," – color photos of mathematics around us, such as the sections in a cut grapefruit, a bicycle wheel, spiral staircase and more. We successfully solicited ads from within the school community as well as from local businesses which helped defray costs of publication.

We followed a similar path for volume 3, with a few new features. *The Math For Fun* section included not only a cross word and a cross number puzzle, but math jokes as well. One student wrote an op-ed piece, "Is Math Cool at SAR High School?" He concluded that it is. The papers, which included original work by the students, were on Biblical Hebrew Scrabble, Happy Numbers, Arrays of Squares and Cubes and more. Various math contests and competitions as well as the Probability Carnival were also written up.

The SAR HS *Math Mag* catapulted to external success with its 4th edition. Although we had already been earning Gold Medalist from the Columbia Scholastic Press Association and First Place with Special Merit as well as Best Math Magazine from the American Scholastic Press Association, Volume 4 was awarded a most prestigious Silver Crown Award from the CSPA. The cover was simple yet magnificent and the student layout editor did a masterful job. We still barely used any interior color. But, the content was even more exciting. We added a math haiku, other poetry, an Equation Sudoku and a humorous Dictionary of Math Terms. We included more articles than ever, with such wide ranging titles as The Mathematical Golfer, Patterns in the Jewish Calendar, Fractions and Basimals, and Magic of M C Escher, as well as Inside Outside, a completely original paper about 'special' triangles and special ratios which the author discovered and verified.

By 2009, we moved to full color with Volume 5. At that point we began earning "All Columbian" status from the CSPA in at least one category. One very talented student offered an amazing full page comic strip titled "Pi Dates the Base of the Natural Logarithm, e" which she based on an Olde English Comedy Sketch. Another innovation was an original short story, "Chances Are," set in a bar. For the first time, we included 3 very different articles about the same topic – The Fibonacci Sequence. They varied in approach as well as in level of mathematics involved. Other topics included The Mathematics and Physics of Figure Skating, Mathematics and the Renaissance of Origami and Finding Order in a Rough World.

The Math Mag featured an "interview" between Ellen Degeneres and Pythagoras in its 6th edition. Pythagorean TheoRAP and QuadRAPtic Equations added a little pizazz to this issue. Since a decade was closing, we included information about some new mathematical discoveries of the previous ten years. We added a creative Map Hunt, using Google Earth and mathematical clues and an original proof of the area of a circle, using a triangle. An article on Epidemiology focused on the spread of the widespread disease, Senioritis. Other topics included Mathemagic, Settling on Catan and Calendar Conundrums.

Volume 7 was divided into sections – Math for English Lovers, Math for Math Lovers, Math for Number Lovers, Math for Miscellaneous Lovers, Math for Fun Lovers and Math for SAR Lovers. We opened with Fibs, a special kind of mathematical poem, included 2 articles on baseball, a poem and an article about each author's favorite number as well as puzzles, raps and other items described previously and much more.

Our students really outdid themselves in our most recent, 8th issue. We not only continued to earn those excellent ratings from the scholastic press associations, but we became "All-Columbian" in all three categories – Content, Organization and Design – from the CSPA. We included the same types of articles, poems, stories, puzzles, book reviews and even had a review of Pi: The Movie. As usual, articles were quite varied and geared to a wide audience. The strictly mathematical items which contained original material included SSA: A Unique Triangle, Sums of Consecutive Prime Numbers, Parity is an Odd Thing and The Vigenere Cipher: How to Break a Code. Some of the topics of more universal interest were Speed Up My Bike, Surprise Onside Kicks and Sudoku difficulty Capped.

The *Math Mag* is entirely a student publication. The SAR HS students write the articles, poems, puzzles, etc., do all the illustrations, create the cover and arrange the entire layout. As faculty advisor, I help to co-ordinate. My main job is nudging and pestering to make sure that the *Math Mag* does finally get published each year. I am always delighted to work with so many young people with such varied talents and abilities. When it does come out, I take great pride in my students' accomplishments.

A sample issue (Spring 2012) is available via the link: http://www.polar.ncc.edu/~mantell/MathMag2012.pdf

CALL FOR PARTICIPANTS AND INVOLVEMENT

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

Do you have a talk which would be suitable for local area students or their faculty? We are seeking mathematicians interested in sharing their knowledge, enthusiasm, and love of mathematics. Now in its 51st 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 decline any invitation to speak. The Bureau web-page (www.maa.org/metrony/speakers) 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 Abe Mantell at mantell@ncc.edu.

MetroMath Needs You!!!

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

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NEWS FROM THE MAA
(much more can be found at: http://www.maa.org/news/news.html and http://mathdl.maa.org)

MAA and Mathematics of Planet Earth 2013
Source: NASA

The MAA is a participating partner in Mathematics of Planet Earth 2013, a year-long program to publicize and promote the role of mathematics in developing a better understanding of dynamic processes affecting Planet Earth, ranging from geophysical systems governing climate to economic and financial activity.

The MPE 2013 effort will provide a platform to showcase the essential relevance of mathematics to planetary problems, encourage research to identify and address fundamental questions, coalesce activities currently dispersed among institutions, and create a context for mathematical and interdisciplinary developments that will be necessary to address myriad issues and meet global challenges in the future.

Harvard Wins Putnam Competition – Again

The results are in for the 73rd annual William Lowell Putnam Mathematical Competition, and Harvard has done it—won, that is—again. Ranked first for the 29th time in the Putnam's seven-decade history, the Crimson will take home a $25,000 reward, plus a $1,000 individual award for each of its team members (Eric K. Larson, Evan M. O'Dorney, and Allen Yuan).

A total of 4,277 students from 578 colleges and universities in the United States and Canada participated in the Putnam on December 1, 2012. Over the course of two three-hour sessions, competitors tackled two sets of six questions prepared by a committee comprising George T. Gilbert (Texas Christian University), Djordje Mili evi (Bryn Mawr College), and Hugh Montgomery (University of Michigan, Ann Arbor).

The Massachusetts Institute of Technology team took second place honors, the University of California, Los Angeles placed third, **Thao T. Do, Dat Pham Nguyen, and Kevin R. Sackel took fourth place for Stony Brook University** and the team from Carnegie Mellon University rounded out the top five in the team rankings.

The 2012 Putnam Fellows—the five highest ranking individuals, each of whom receives a $2,500 prize—are (listed alphabetically) Benjamin P. Gunby (MIT), Eric K. Larson (Harvard), Mitchell M. Lee (MIT), Zipei Nie (MIT), and Evan M. O'Dorney (Harvard).

Readers struggling to square the individual and team results should recall that team scores are calculated by summing the ranks of three team members designated in advance of the contest. As *The Tech* out of MIT noted in its coverage of the 2012 competition: "Though MIT fielded three of the five Putnam Fellows and 12 of the top 25 contestants, the MIT team fell to Harvard's because the school awards only depend on the three members selected for the team. Neither of the two teams ended up being the optimal choice for its school."

More complete details of the 2012 William Lowell Putnam Mathematical Competition will appear in the October 2013 *American Mathematical Monthly* and readers interested in the history of the Putnam Competition may consult the article (http://www.d.umn.edu/~jgallian/putnam.pdf) by Joe Gallian.

Monthly *Paper Breathes New Life into Old Number Theory*

You probably know how Cantor proved the countability of the rational numbers. Give it a little thought and you'll likely be able to reconstruct the zigzag path the nineteenth-century German mathematician took through the upper half-plane to derive the result.

What, though, is the 25th rational number in Cantor's bijection? What natural number does the fraction 5/17 correspond to?
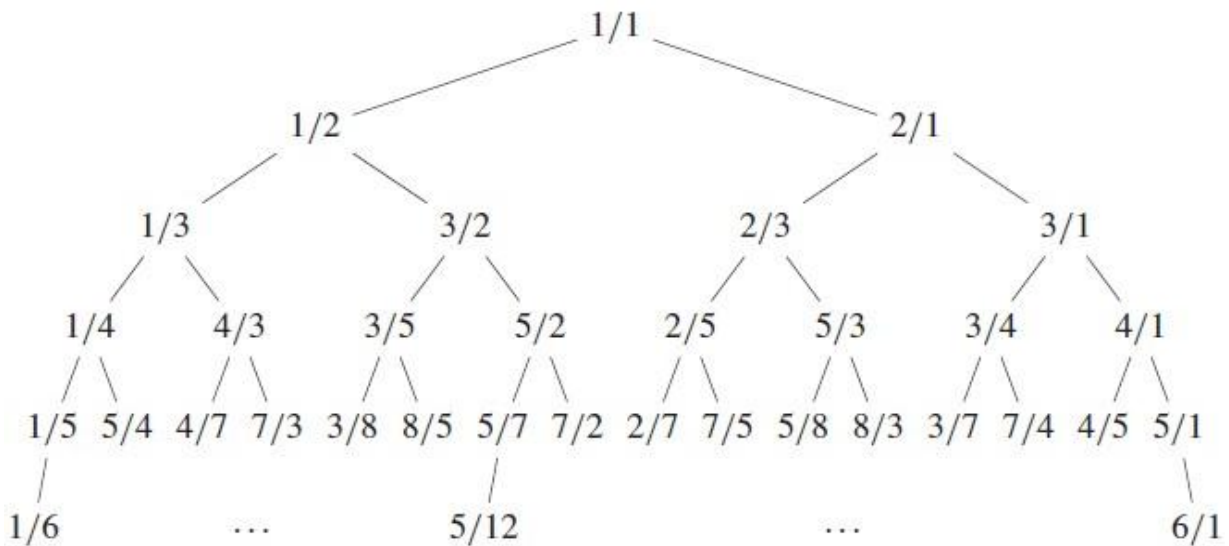
Aimeric Malter, Dierk Schleicher, and Don Zagier ask these questions in the first of the three sections that comprise their paper "New Looks at Old Number Theory," which appears in the March 2013 special issue of *The American Mathematical Monthly*.

Their goal in Part I is to "breathe new life into the . . . hoary theorem" that the rational numbers are countable, to provide a bijection that's different from—and "nicer" than—the standard one.

And that's just the beginning. As Malter, Schleicher, and Zagier write in the paper's abstract:
We present three results of number theory that all have classical roots but also modern aspects. We show how to (1) systematically count the rational numbers by iterating a simple function, (2) find a representation of any prime congruent to 1 modulo 4 as a sum of two squares by using simple properties of involutions and pairs of involutions, and (3) find counterexamples to Euler's conjecture that a fourth power can never be the sum of three fourth powers by using properties of quadratic polynomials with rational coefficients.

The authors wrote "New Looks at Old Number Theory" with the intent to "entertain and edify." Read the paper and you'll get a lot more than just a new way to visualize enumeration of the rationals.

```
                              1/1
                 1/2                       2/1
          1/3          3/2          2/3          3/1
       1/4   4/3    3/5   5/2    2/5   5/3    3/4   4/1
     1/5 5/4 4/7 7/3 3/8 8/5 5/7 7/2 2/7 7/5 5/8 8/3 3/7 7/4 4/5 5/1
      1/6    ...          5/12          ...              6/1
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Subscribers can read the complete article online
(https://www.maa.org/EbusPPRO/Bookstore/Login/tabid/71/Default.aspx).

This special issue of the *Monthly* is available for individual purchase in the MAA Store.

About the March *Monthly*
Comprised entirely of contributions from distinguished presenters at the 2011 International Mathematics Summer School for Students in Bremen, Germany, the March 2013 special issue—the first in more than 20 years—of *The American Mathematical Monthly* captures the spirit of the summer school in journal form. A full-color and generously illustrated 100 pages, the issue allows readers—be they high schoolers, college students, mathematics educators, or lifelong learners—to engage with and learn from leading international mathematicians. Papers range over such topics as unprovable arithmetic statements, bike tire tracks, the uncountability of the rationals, and how objects roll.

A Car Crash Solved – with a Swiss Army Knife

Marc Frantz (Indiana University) illustrates the use of Eve's theorem to determine how fast a car was going from a snapshot of skid marks at an accident scene, published in the December *Mathematics Magazine*.

Read the full article at http://www.maa.org/pubs/mm-dec11-carcrash.pdf.

SUNY - Stony Brook Master's Programs in Quantitative Finance and Applied Statistics

Stony Brook's Applied Mathematics and Statistics Department offers a 3-semester, modestly priced M.S. training in quantitative finance and in applied statistics.

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A number of Stony Brook Applied Math graduates hold senior investment positions at leading investment banks such as Morgan Stanley and Credit Suisse First Boston, and others have managed large quantitative hedge funds. One successful Applied Math PhD recently endowed the Frey Family Chair in Quantitative Finance. Our quantitative finance faculty have extensive experience in building mathematical trading systems for hedge funds. **Internships** are available to give students first-hand experience with quantitative finance.
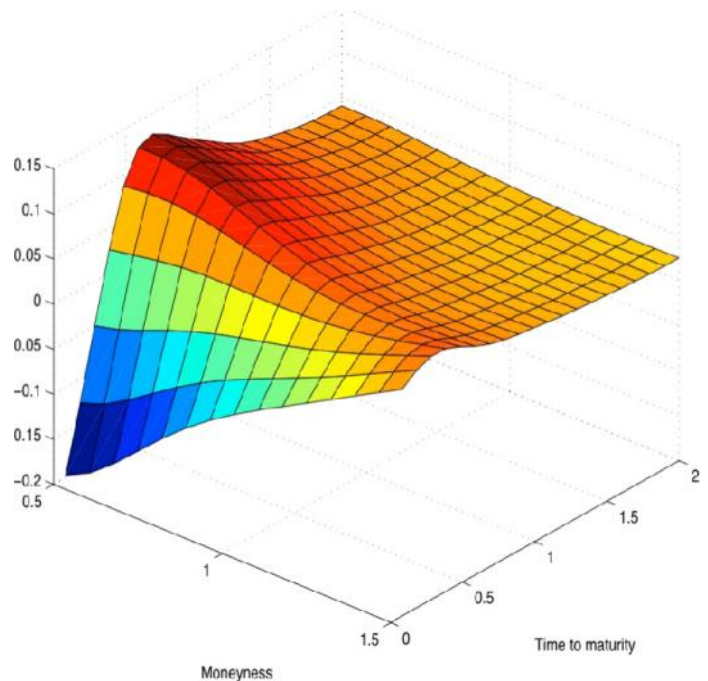
Black-Scholes-based Implied Volatility Surface

Applied Statistics

Demand for statisticians remains strong in investment firms, banks, drug companies, medical centers, government and corporate research labs, and more. All Applied Math statistics faculty have extensive experience consulting for government and business

For more information, see www.ams.stonybrook.edu. Applications for fall, 2013 considered through July, 2013.

The Graduate School of Education is pleased to announce our new

NSF Robert Noyce Mathematics Teacher Preparation Scholarship Program

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We are currently accepting applications for Fall 2013!

For more information:
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*Restrictions and conditions apply.

METROPOLITAN NEW YORK SECTION

OF THE

MATHEMATICAL ASSOCIATION OF AMERICA

ANNUAL SPRING MEETING
SUNDAY, 5 MAY 2013

Farmingdale State College (SUNY)
Farmingdale, NY

INVITED SPEAKERS
Alan Tucker, Stony Brook University (SUNY)
The History of the Undergraduate Program in Mathematics in the United States

Glen Whitney, Executive Director & Founder
Cindy Lawrence, Associate Director & Chief of Operations
Tim Nissen, Chief of Design
The Design Team of the National Museum of Mathematics

David F. Gleich, Purdue University
How does Google Google?
A journey into the wondrous mathematics behind your favorite websites

CONTRIBUTED PAPER AND POSTER SESSIONS
Research, Pedagogical, and Student Presentations

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

Mark Your Calendars!!!

Spring Meeting

Farmingdale State College (SUNY)
Farmingdale, NY

Sunday, 5 May 2013

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