



Pi Mu Epsilon News

Spring 2013
Volume 3, Issue 1

Important Dates:

- Friday, June 7 - Abstract submission deadline for student talks at the PME National Summer Meeting
- July 31 - August 3, 2013 - annual PME Conference - Hartford, CT

Pi Mu Epsilon, Inc (PME), is the National Mathematics Honor Society.

Founded on May 25, 1914 at Syracuse University, PME currently has over 300 chapters at colleges and universities throughout the United States.

The purpose of the Society is to promote scholarly activity in mathematics among the students in academic institutions.

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Letter from the President

Dear Members, Advisors, and Friends of PME,

I'm very excited to announce that Dr. Gilbert Strang of MIT will give the J. Sutherland Frame Lecture at MathFest this summer. If his name is familiar it may be because you have used one of his many excellent textbooks. Professor Strang was a Rhodes scholar and a Sloan Fellow, and is a Fellow of the American Academy of Arts and Sciences. He has served the profession as the President of the Society for Industrial and Applied Mathematics and as Chair of the Joint Policy Board on Mathematics. He is the winner of numerous prestigious mathematics prizes. Known as an informal and engaging speaker, his talk, titled "Matrices I Admire," promises to be interesting, inspiring, and fun!

Our planning for the PME centennial celebration continues. We will soon have a special centennial key pin available on the website. Our centennial year will kick off at the JMM 2014 in Baltimore with a display of PME memorabilia. We will also have a centennial keepsake gift for attendees. Our big celebration will take place at MathFest 2014 in Portland, OR. There will be several special events and an enhanced banquet celebration. Start planning now to attend these meetings so you don't miss any of these historic events!

Our latest contest is for a centennial design for the back of the PME t-shirts. Details for this contest can be found in this newsletter and on the website. Our button design contest was a huge success. It proved what we knew was true: PME members are talented in many ways.

We have just made our Chapter Grant application process extremely easy. Now there is no excuse not to take advantage of this FREE money. We love to send money to our chapters for their events. To apply you simply need to fill in an online form. For more information and a link to the form see the Chapter grants page on the website.

Would you like to help guarantee that PME will be around for another 100 years? We would be delighted if you would consider a donation of any size to the PME Centennial fund. Donors will receive a lovely certificate recognizing their contribution to the future of the Society.

I look forward to seeing you in Connecticut,

Eve

Eve Torrence
Pi Mu Epsilon President
etorrenc@rmc.edu



Welcome to New Chapters!

- Pennsylvania Alpha Alpha (Gettysburg College)
- Michigan Mu (Ferris State University)
- Pennsylvania Alpha Beta (Penn State Erie, the Behrend College)
- Texas Upsilon (University of Incarnate Word)
- Massachusetts Iota (Westfield State University)

Saying Farewell to a Dear Friend of PME

J. Douglas Faires, 71, of Pulaski, PA, died Friday, December 21, 2012, following an extended illness.

Doug graduated from Youngstown State University in 1963 and, after earning his Ph.D. from the University of South Carolina in 1969, returned to YSU as a faculty member until his retirement in 2006 - the same year he was instrumental in establishing the Center for Undergraduate Research at YSU.

For nearly two decades, Doug was a member of the Council of the Pi Mu Epsilon National Mathematics Honorary Society, including a term as president. In addition, he was awarded the MacDuffee Award by Pi Mu Epsilon for lifetime service in 2005.

Doug leaves behind his wife Barbara (currently Secretary of the MAA and retired professor) and his daughter Erika.



Gil Strang Announced as 2013 Frame Lecturer

Gilbert Strang was an undergraduate at MIT and a Rhodes Scholar at Balliol College, Oxford. His Ph.D. was from UCLA and since then he has taught at MIT. He is a Fellow of the American Academy of Arts and Sciences and the National Academy of Sciences. Professor Strang has published eight textbooks including Introduction to Linear Algebra and Computational Science and Engineering. A new book is coming on Differential Equations and Linear Algebra.

Gil was the President of SIAM during 1999 and 2000, and Chair of the Joint Policy Board for Mathematics. He received the von Neumann Medal for computational mechanics, and the Henrici Prize for applied analysis. The first Su Buchin Prize and the Haimo Prize from the MAA were awarded for his contributions to teaching around the world. His video lectures on linear algebra and computational science and calculus are online at ocw.mit.edu.

For title and abstract information, see page 3.



Gil Strang of MIT to give 2013 Frame Lecture

Title: **Matrices I Admire**

Abstract: I will start with my absolute favorite among all matrices. It has 2's down the main diagonal and -1's on the diagonals just above and just below.

It is a Toeplitz matrix (constant diagonals), a second difference matrix (because of -1, 2, -1), and a highpass filter. The matrix is tridiagonal and positive definite and you see it all over pure mathematics too. Its determinant is $n+1$, and most important are its eigenvectors which are pure sines.

Recently I came back to this well-loved matrix, realizing that I didn't know its symmetric square root, its exponential or its cosine. Those are all badly needed for the heat equation and wave equation. They are not tridiagonal but still amazing. I will speak about another matrix too (the graph Laplacian) as well as the combination of differential equations and linear algebra.



Centennial Fund

Dear Friends of Pi Mu Epsilon,

As you are aware, PME's mission consists of recognizing mathematics achievement and supporting undergraduate mathematics scholarship. In my role as treasurer, I see firsthand how society money is spent to further this mission. There is of course the society journal, which publishes primarily articles authored by undergraduates. Society grants, e.g., Good Lectureships (\$500), Matching Conference Grants (\$300), and Matching Prize Grants (\$100), allow the national organization to support scholarly activities at its local chapters. In addition, students who attend MathFest and speak in Pi Mu Epsilon Student Sessions receive generous travel support, in fact up to \$865 per student at MathFest 2012. Finally, Pi Mu Epsilon provides financial support to activities sponsored by other organizations, including the Mathematical Association of America Joint Meeting Student Poster Session, the American Mathematics Competitions, and the American Regional Mathematics League. It is immensely satisfying to me at the end of each fiscal year to review how much money our organization spends to fulfill its mission.

While collected membership fees generate the majority of society income, gifts from donors play an important role as well. Generous contributions made by Professors J. Sutherland Frame, Richard Andree, Richard Good, and J. Douglas Faires, make possible the J. Sutherland Frame Lecture, the Andree Award for outstanding student-authored journal papers, the Richard Good Lectureship Program, and the triennial advisor award, respectively.

In commemoration of the 100th anniversary of PME, which takes place in 2014, the Pi Mu Epsilon Society National Council has established the Centennial Endowment Fund, whose proceeds will be used to increase the amount of monetary support provided by the national society to its local chapters and their members. We invite all friends of Pi Mu Epsilon to donate to this fund at any level. Individuals and/or chapters contributing \$100 or more will be designated as "Centennial Sponsors" and recognized in coming journal issues, in the MathFest MAA/PME Student Program, and at the 2013 Pi Mu Epsilon Banquet. In addition, every Centennial Sponsor, be it an individual, a chapter, etc., will receive a personalized Centennial Certificate featuring handwritten calligraphy.

Finally, all contributions to the Centennial Fund are also tax-deductible under Section 170 of the Internal Revenue Code. (Donors will receive acknowledgement letters documenting their contributions.) Please consider joining the National Council in contributing to this fund, which will help Pi Mu Epsilon increase its financial support of undergraduate mathematics scholarship. Should you have any questions regarding the donation process, please do not hesitate to contact me.

Sincerely,

Paul Fishback (fishbacp@mail.gvsu.edu)
National Secretary-Treasurer for the Pi Mu Epsilon National Honorary Mathematics Society



Pi Mu Epsilon

E-Mail:
webmaster@pme-
math.org

We're on the Web!

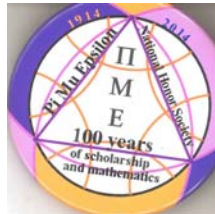
[http://www.pme-
math.org/](http://www.pme-math.org/)

Like us on Facebook!

Upcoming Centennial Events!

Pi Mu Epsilon will celebrate its Centennial at the Annual PME Conference (held in conjunction with MathFest) in Portland, OR August 7 -9, 2014!

Look for the buttons and new logo celebrating our Centennial!



There will also be Centennial t-shirts (see the display at the 2013 Summer Meeting) and then have your Chapter vote for your favorite design! Special Centennial t-shirts will be available at the 2014 Summer Meeting!

There is a special Centennial key-pin which will be available later this spring. See http://www.pme-math.org/membership/merchandise_order_form.html to order yours!

Think about contributing to our Centennial Fund (for more information, see page 3 of this Newsletter). Stay tuned for more announcements and plan on joining us in Portland in 2014 to celebrate!

Design the PME Centennial T-Shirt

In expectation of its centennial celebration in 2014, PME is holding a contest to design a centennial t-shirt. These t-shirts will be given to PME speakers and delegates at the 2014 MathFest in Portland, OR. They will also be available for purchase on the PME website.

PME Council will accept one entry per Chapter. If your Chapter has several designs you may want to hold your own contest to select your Chapter's entry.

The PME Council will select several finalists whose designs will be unveiled at the PME student reception at MathFest in Hartford, CT this summer. The PME Chapters that submit the top designs chosen by Council will each receive \$50.

The Details:

1. The new design will be used for the back of the T-shirt. The shield design will be used on the front. PME colors are violet, gold, and lavender. Please use these colors along with black in your design. Do not use more than 4 colors including black.



2. We recommend that you compose your design in a digital design program such as Photoshop or Illustrator. The image should fill most of a 8.5" by 11" page. Use 300 dpi resolution.

3. T-shirt designs must be submitted electronically. Any of the following formats are acceptable: .eps, .tif, .jpg, .ai, .psd, .pdf, .zip, .sit, .pub, .doc, and .ppt.

4. Submissions should be sent to Eve Torrence at etorrenc@rmc.edu by June 1, 2013. Include the name of your Chapter and Chapter advisor with your submission.