



## ***SIAM Unwrapped***

*News & announcements for the SIAM membership community*

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**October 2012**

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Dear SIAM members,

Have you renewed your membership for 2013? If you need to be reminded, view the [2013 renewal brochure](#) for all the reasons why you should be a SIAM member.

If you teach or supervise interns, you can nominate two of your students for free membership. If you are currently unemployed, you may be eligible to receive special rates.

For more information, and to renew or join, please visit:

<http://www.siam.org/membership/individual/>

Regards,

Karthika Muthukumaraswamy

Editor

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::: SIAM HQ UPDATE :::  
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#### **Submit your nomination for the 2013 Class of SIAM Fellows!**

Have you nominated someone for a SIAM Fellowship yet? Nominations for the 2013 Class of Fellows are being accepted through Monday, November 5. The Fellows Program honors individual SIAM members who deserve recognition in the fields of applied math and computational science. Fellows are acknowledged for their outstanding contributions in research, industrial or government work, educational activities, or other activities related to the goals of SIAM. Inducted Fellows will be recognized at the SIAM Annual Meeting to be held in San Diego next July.

Each current (non-student) SIAM member may make up to two nominations per year. To find more information and make a nomination, visit:

<http://www.siam.org/prizes/fellows/>

Questions? Email: [FellowNominations@siam.org](mailto:FellowNominations@siam.org)

#### **Refer a colleague - Win an iPad**

Participate in SIAM's [Member-Get-a-Member](#) (MGAM) program! If you invite a colleague to become a member of SIAM, you will be sharing with them the [many benefits of membership](#) online and at SIAM events, as well as discounts on SIAM conferences and publications. SIAM, in turn, gains strength with each new member as the community extends across disciplines, sectors and countries. SIAM serves the needs of its membership not only by furthering research and education in the field, but also by emphasizing the value of applied math and computational science to the public at large. Participation in the program will give you the opportunity to win great prizes! Upon referring a colleague who joins SIAM, you and your colleague will be entered into a drawing to win either an iPad, an additional year of SIAM membership, or a SIAM conference registration or SIAM book of your choice. Plus, anyone who joins SIAM for 2013 now, will get the rest of 2012 for free. The first 100 members to refer colleagues will also receive a special  $\epsilon$ -SIAM t-shirt.

Please visit the link below for details and to participate:

[www.siam.org/mgam](http://www.siam.org/mgam)

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**::: PUBLIC AWARENESS :::**  
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**Win \$1000 for writing a math modeling problem**

A high school applied-math contest sponsored by The Moody's Foundation and organized by SIAM, Moody's Mega Math (M<sup>3</sup>) Challenge is unique in that it offers students a chance to take math outside the classroom. Participants get a taste of the real-world applications of math as they tackle realistic issues with mathematical modeling. In past years, students have been asked to determine the best regions to build U.S. high-speed rail from an economic and demographic standpoint; develop strategies for Social Security solvency; predict the job creation effects of government stimulus; evaluate the best way to compensate for the census undercount; and develop options for water allocation from a major reservoir. Now in its eighth year, the M<sup>3</sup> team is looking for more new problems to demonstrate the value of mathematics to society. Who could better help embellish our problem bank than the applied math community? If you have an idea for a problem topic, please contact Michelle Montgomery at [Montgomery@siam.org](mailto:Montgomery@siam.org). Ideally, problems should be of current interest, suitable for modeling by high school students in 14 hours with sufficient publicly available data to allow for a variety of approaches. An honorarium of up to \$1000 will be awarded by The Moody's Foundation for problem ideas used as practice or actual Challenge problems. For complete details, please visit:

<http://m3challenge.siam.org/problem/submitProblems.php>

**Nuggets on math and fine art, diabetes, and more**

How can math research help design an artificial pancreas for diabetes patients? How does image processing allow digital copies of paintings to give as composite a picture to viewers as possible? These are the topics tackled in the latest [SIAM nuggets](#), based on papers published recently in SIAM journals. As SIAM members, you are probably aware of much of the innovative research that is published in SIAM publications. But computational science research such as this is of interest not only to those in the field, but also to the community at large. In an attempt to broaden the audience for exciting research published by SIAM, and to educate the general public on the value of applied math and computational science and their real world relevance, SIAM Nuggets boil down complex academic papers to a popular science level.

Check them out! You can view the abovementioned nuggets, as well as several others on topics as varied as crime modeling to financial bubbles here:

<http://connect.siam.org/?cat=13>

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**::: STUDENT NEWS & NOTES :::**  
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**Sky's the limit for SIAM chapter activities and discussion**

Nothing seemed off limits to SIAM student chapters this past year. From the University of North Florida chapter's tour of the state's Air National Guard base to Colorado State University's trip to Google headquarters, Trier Chapter's visit to the AIRBUS factory, and Purdue University's tour of the Caterpillar

and Subaru plants, SIAM chapters have been everywhere. In addition, many organized conferences and minisymposia, and offered helpful workshops and tutorials to students. On a lighter vein, there was the NCAA Bracket Challenge by the University of Arizona chapter, and origami, card tricks, and pie at the University of Texas Pan American's "Pi + Epsilon Day." SIAM, for its part, provided nearly \$40,000 in funding to over 80 chapters to support activities and events through the 2011-2012 academic year.

Read about it all here:

<http://connect.siam.org/?p=2624>

You can now instantly update other chapters about new activities, events, fundraising successes (or failures) in your group, and seek suggestions and feedback via the [SIAM Student Blog](#). Please e-mail [pao@siam.org](mailto:pao@siam.org) to begin contributing to the blog now!

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**::: PUBLISHING NEWS AND NOTES :::**  
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### **Win books and more in SIAM's Fiesta promotion**

From now until the end of November, book buyers will have a chance to win a grand prize of three free SIAM books or runner-up prizes of a SIAM "Swag Bag" filled with an array of SIAM-branded items as part of the Fiesta of Free Stuff.

The contest is open to any individual who buys books directly from SIAM. Simply enter the words "FREE STUFF" into the comments field (if buying online at [www.siam.org/catalog](http://www.siam.org/catalog) ) or add "FREE STUFF" to any faxed order and you'll automatically be entered into the drawing that will be held following the close of the contest on November 30.

Full details are available in the October Inside SIAM section of *SIAM News*, or online at [www.siam.org/books/fiesta.pdf](http://www.siam.org/books/fiesta.pdf). Order a book and get your chance to win today!

### **Stanford's Joseph Keller wins Ig Nobel for SIAP paper**

Have you ever wondered why a jogger's ponytail sways from side to side even as her head moves up and down while going forward? Stanford University mathematician Joseph Keller has. He even has a [SIAM paper](#) about it. And last month, the 2012 Ig Nobel prize for physics was bestowed upon him for this work. He received his award at the [Ig Nobel Prize Ceremony](#), which celebrates "research that makes people laugh, and then think" each year. Explaining the swaying ponytail phenomenon required a considerable amount of mathematical modeling. The research has implications in understanding the structure of materials made of fibers, and potential applications in the computer graphics industry, among others, where animation of hair has been a difficult problem to master. A well-deserved Ig Nobel indeed.

You can read the paper that started it all in the *SIAM Journal on Applied Mathematics*:  
<http://epubs.siam.org/doi/abs/10.1137/090760477>

Read about the other 2012 Ig Nobel winners [here](#).

## New and improved SIAM Books

### ***Control and Optimization with Differential-Algebraic Constraints***

*Edited by Lorenz R. Biegler, Stephen L. Campbell, and Volker Mehrmann*

Differential-algebraic equations are the most natural way to mathematically model many complex systems in science and engineering. Once the model is derived, it is important to optimize the design parameters and control it in the most robust and efficient way to maximize performance. This book presents the latest theory and numerical methods for the optimal control of differential-algebraic equations. The most recent theory written by leading experts, several state-of-the-art numerical methods, and real-world applications are included.

Additional information: <http://www.ec-securehost.com/SIAM/DC23.html>

2012 / xii + 344 pages / Softcover / ISBN 978-1-611972-24-5  
List Price \$99.00 / SIAM Member Price \$69.30 / **Order Code DC23**

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::: **UPDATES ON CONFERENCES & PRIZES** :::  
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### **LS12 on SIAM Presents ... SIAM's archive of featured lectures**

Presentations of selected sessions from the [SIAM Conference on the Life Sciences](#) are now available on SIAM Presents:

<http://www.siam.org/meetings/presents.php>

View and listen to lectures in a wide range of areas including human physiology, DNA unknotting and unlinking, complex systems in health, mathematical epidemiology, and mathematical modeling of cardiovascular control.

In addition to the invited and prize lectures and select minisymposia, two minitutorials, "Multiscale Modeling" and "Numerical Methods for Studying Stochastic Models of Biological Systems" are also available.

The slides and audio recordings of the talks can be found at:

[https://live.blueskybroadcast.com/bsb/client/CL\\_DEFAULT.asp?Client=975312&PCAT=4072&CAT=4854](https://live.blueskybroadcast.com/bsb/client/CL_DEFAULT.asp?Client=975312&PCAT=4072&CAT=4854)

### **AMS travel grants for MCA 2013**

Partial travel support to attend the inaugural [Mathematical Congress of the Americas](#) is available for U.S.-based mathematicians from the American Mathematical Society. Funding is provided by the National Science Foundation. The Congress will be held August 5-9, 2013 in Guanajuato, Mexico. Applications for travel support are being accepted through October 31, 2012. SIAM is a sponsor of MCA 2013.

For more information on the travel grants, please visit:

<http://www.ams.org/programs/travel-grants/mca>

## Conferences accepting registrations and submissions

**[2013 SIAM Annual Meeting \(AN13\)](#), July 8-12, and [SIAM Conference on Control and Its Applications \(CT13\)](#), July 8-10, 2013, San Diego, California, USA**

The 2013 SIAM Annual Meeting will be held jointly with the SIAM Conference on Control and Its Applications. As always, the Annual Meeting will provide an ideal setting to bring together applied mathematicians and computational scientists from all over the world, showcasing some of the finest research through lectures, minisymposia and poster sessions. The Conference on Control and Its Applications will have proceedings for the first time!

### **Submission Deadlines for AN13:**

Minisymposium proposals: January 7, 2013

Abstracts for contributed and minisymposium speakers: January 28, 2013

<http://www.siam.org/meetings/an13/submissions.php>

### **Submission Deadlines for CT13:**

Minisymposium proposals: January 7, 2013

Abstracts for contributed and minisymposium speakers: January 28, 2013:

Full Paper Submission (Optional) for Consideration in Proceedings: January 28, 2013

For full information on how to be considered for the proceeding for CT13 make sure to consult the submission page.

<http://www.siam.org/meetings/ct13/submissions.php>

**[SIAM International Conference on Data Mining \(SDM13\)](#)**, May 2-4, 2013, Austin, Texas, USA

Submission Deadlines:

Paper Submission: October 12, 2012

<http://www.siam.org/meetings/sdm13/submissions.php>

**[SIAM Conference on Applications of Dynamical Systems \(DS13\)](#)**, May 19-23, 2013, Snowbird, Utah, USA

Minisymposium proposals due: October 22, 2012

Abstract submissions for contributed and minisymposium speakers: November 19, 2012

<http://www.siam.org/meetings/ds13/submissions.php>

**[SIAM Conference on Mathematical Aspects of Materials Science \(MS13\)](#)**, June 9-12, 2013, Philadelphia, Pennsylvania, USA

Submission Deadlines:

Minisymposium proposals: November 8, 2012

Poster Submissions and abstracts for minisymposium speakers: January 15, 2013 (*Contributed Lectures are not being solicited for MS13.*)

<http://www.siam.org/meetings/ms13/submissions.php>

**[SIAM Conference on the Mathematical and Computational Issues in the Geosciences \(GS13\)](#)**, June 17-20, 2013, University of Padova, Italy

Submission Deadlines:

Minisymposium proposals: November 19, 2012

Abstracts for contributed and minisymposium speakers: December 20, 2012

<http://www.siam.org/meetings/gs13/submissions.php>

**Open calls for prize nominations**

For the following prizes, nominations are due October 15, 2012:

Germund Dahlquist Prize  
The John von Neumann Lecture - suggestions welcome  
Ralph E. Kleinman Prize  
James H. Wilkinson Prize in Numerical Analysis and Scientific Computing  
W. T. and Idalia Reid Prize  
Jürgen Moser Lecture  
J. D. Crawford Prize  
SIAG/Geosciences Career Prize  
SIAG/Geosciences Junior Scientist Prize

AWM-SIAM Sonia Kovalevsky Lecture Deadline for nominations is November 1, 2012

SIAG/Control and Systems Theory Prize Deadline for nominations is November 15, 2012.

Find the complete list of calls for nominations at:

<http://www.siam.org/prizes/nominations.php>

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If your email does not support the hyperlink features, please copy any of the above URLs and paste them into your Internet browser.

Questions/comments/suggestions? Send them to [karthika@siam.org](mailto:karthika@siam.org).

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SIAM Unwrapped is a free electronic newsletter distributed monthly to SIAM members. It provides links to industry news, membership information, meetings, publications, and other items of interest.

Please note: If you would prefer not to receive this e-newsletter, reply to this email with the word "unsubscribe" in the subject line and you will be removed from the *SIAM Unwrapped* mailing list.