

SIAM Unwrapped - February 2014

News & announcements for the SIAM membership community



Dear SIAM members,

As you know, one of SIAM's many goals is to raise awareness about the significance of applied math and related disciplines to society at large. Read about a couple of awareness initiatives in this issue: bringing the value of math and science to the public at science festivals in the U.S. (and how you can help!) and spotlighting a particular area of mathematics every April through Mathematics Awareness Month.

Find out about SIAM's other ongoing outreach activities on our [public awareness page](#).

Regards,

Karthika Muthukumaraswamy

Editor

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::: SIAM HQ UPDATE :::

SIAM members help our community grow

We are pleased to [announce winners](#) of our Member-Get-a-Member (MGAM) contest and to welcome our new members. The MGAM contest was initiated to enable current members to spread the message to colleagues and friends about the value and benefits of a SIAM membership. This past year, 78 members referred 85 colleagues who joined SIAM as a result. Last month, referring and new members were entered into a drawing to win prizes. View the list of prize winners here:

<http://connect.siam.org/member-get-a-member-campaign-winners-announced/>

A new contest starts now, so you can refer your colleagues for a chance to win next year:

www.siam.org/membership/mgam.php

::: PUBLIC AWARENESS :::

Be rewarded for your STEM activity ideas

SIAM is seeking help and ideas to demonstrate relevant and intriguing applications of math and computational science at local and national STEM festivals in the U.S., directly or in concert with other organizations like the [Museum of Math](#). The next upcoming event for which we are seeking ideas is the [USA Science & Engineering Festival](#) to be held in Washington DC in April.

Do you have a hands-on demonstration or interactive activity that could illustrate an application of math and computational science at a festival booth? Are the materials involved portable and re-usable? In addition to helping us illustrate the value of your discipline, you could win prize money! Reward for activity descriptions selected for use is \$500 (descriptions must be thorough and include cost data). Send your description to Peter Turner (pturner@clarkson.edu) or Michelle Montgomery (montgomery@siam.org).

View videos of invited sessions from AN13

MP4s of full-length presentations of most invited lectures from the [2013 SIAM Annual Meeting](#) are now available on our [YouTube channel](#). View and listen to presentations on some of the most relevant areas of applied math and computational science, spotlighting cutting-edge research and innovative applications, such as, the mathematics behind utility costs, energy-efficient systems, traffic jams and self-driven particles, conservation decision making, social networks as information filters, and more:

<http://www.youtube.com/user/SIAMConnects>

April is about mathematics, magic, and mystery

Magic squares, Möbius bands, card tricks, and illusions are just some of the mysterious phenomena that permeate math, attracting a wide range of people to the subject, and often inspiring serious mathematical thinking and research. “Mathematics, Magic, and Mystery” is the theme for this year’s Mathematics Awareness Month, which is sponsored each year by the Joint Policy Board for Mathematics. The theme for this April was chosen, in part, to celebrate the centennial of the birth of renowned math popularizer Martin Gardner, and mirrors the title of his 1956 book. Gardner’s extensive writings introduced the public to hexaflexagons, polyominoes, the Mandelbrot set, and more, inspiring enthusiasts of all ages to engage deeply with mathematics and pursue it as a career.

The [Mathematics Awareness Month website](#) will feature 30 magical and mysterious topics—a new one will be unveiled each day in April—introduced by a short video including supporting materials at various levels of mathematical sophistication. Mathematics departments at the secondary and college levels will find a month full of interesting activities to use in their programs. View more details [here](#). Read more about math, magic and mystery at the Mathematics Awareness Month website:

<http://www.mathaware.org/index.html>

Latest from SIAM Blogs

The latest posts bring you [cryptic crosswords](#) to crack, a behind-the-scenes look at the [office of SIAM VP at Large](#), and a breakdown of [what it takes](#) to do research. In addition, Tammy Kolda sets straight [what computational science really is](#) and its significant role in the broad realm of science and technology, a debate reignited by a recent *Wired* piece. Tim Chartier masterfully outlines the problems and minutiae to consider when coming up with the [perfect March Madness bracket](#) – it may be nearly impossible, but math and stats can take you a long way.

Interested in being considered to write a post? Send your idea to blogs@siam.org.

::: PUBLISHING NEWS AND NOTES :::

Classics in Applied Mathematics series seeks suggestions

Check out the latest additions to SIAM’s Classics in Applied Mathematics series:

<http://www.siam.org/catalog/cl.php>.

The series republishes out-of-print books, which continue to be of importance and interest to the mathematical community. The objective of the series is to ensure that the information presented in these texts is not lost to today’s students and researchers. If your favorite book is out of print, contact Sara Murphy at Murphy@siam.org to recommend it for the series.

New SIAM books

Semi-Lagrangian Approximation Schemes for linear and Hamilton–Jacobi Equations

Maurizio Falcone and Roberto Ferretti

This largely self-contained book provides a unified framework of semi-Lagrangian strategy for the approximation of hyperbolic PDEs, with a special focus on Hamilton–Jacobi equations. The authors provide a rigorous discussion of the theory of viscosity solutions and the concepts underlying the construction and analysis of difference schemes; they then proceed to high-order semi-Lagrangian schemes and their applications to problems in fluid dynamics, front propagation, optimal control, and image processing. The developments covered in the text and the references come from a wide range of literature.

Additional information: <http://www.ec-securehost.com/SIAM/OT133.html>

2014 / xii + 319 pages / Softcover / 978-1-611973-04-4

List Price \$99.00 / SIAM Member Price \$69.30 / **Order Code OT133**

The Method of Weighted Residuals and Variational Principles

Bruce A. Finlayson

This classic book covers the solution of differential equations in science and engineering in such a way as to provide an introduction for novices before progressing toward increasingly more difficult problems. The book describes variational principles, including how to find and use them to construct error bounds and create stationary principles; illustrates the use of simple methods to find approximate solutions; the use of the finite element method for more complex problems; and provides detailed information on error bounds. Problem sets make this book ideal for self-study or as a course text.

Additional information: <http://www.ec-securehost.com/SIAM/CL73.html>

2014 / xiv +412 pages / Softcover / 978-1-611973-23-5

List Price \$99.00 / SIAM Member Price \$69.30 / **Order Code CL73**

The Radon Transform and Medical Imaging

Peter Kuchment

This book surveys the main mathematical ideas and techniques behind some well-established imaging modalities such as X-ray CT and emission tomography, as well as a variety of newly developing coupled-physics or hybrid techniques, including thermoacoustic tomography. The book emphasizes mathematical techniques and ideas arising across the spectrum of medical imaging modalities and explains important concepts concerning inversion, stability, incomplete data effects, the role of interior information, and other issues critical to all medical imaging methods.

Additional information: <http://www.ec-securehost.com/SIAM/CB85.html>

2014 / xvi + 240 pages / Softcover / 978-1-611973-28-0
List Price \$82.00 / SIAM Member Price \$57.40 / **Order Code CB85**

::: UPDATES ON CONFERENCES & PRIZES :::

Child Care Grants for AN14

SIAM is offering grants of up to \$250 per family for attendees who wish to bring children to the Annual Meeting being held in July. For more information and a link to the application form, please visit <http://www.siam.org/meetings/an14/childcare.php>

PP14 goes mobile

A mobile app for the [2014 Conference on Parallel Processing for Scientific Computing](#) taking place February 18-21 is available for download. Plug www.tripbuilder.com/siam2014events into your mobile browser. The link will automatically detect the type of device and take you to the right place to download the app. Or, view the mobile site in HTML5 by connecting to www.tripbuilder.net/mw/apps/siam2014events

You can then select PP14 from the list of 2014 SIAM events on the app or mobile site to view the schedule, browse speakers, attendees and exhibitors, take a look at maps and building layouts, sync events with your mobile calendar, create your own show by selecting specific sessions, and more!

Student travel funds for SIAM meetings

SIAM will award several hundred travel awards for graduate students wishing to attend a SIAM conference in 2014. The awards (unless otherwise noted in the award letter) come with free registration. Awards will be allocated on a competitive basis, and include \$650 for domestic and \$800 for international travel. Those who may be eligible for travel funds are strongly encouraged to apply! Check out the eligibility criteria on the student travel awards page:

<http://www.siam.org/prizes/sponsored/travel.php>

Instructions on how to apply are on the awards application site: <http://awards.siam.org/>

If the conference you wish to attend is not listed on the travel awards page, please visit the [SIAM conference calendar](#) to navigate to the conference of your choice, and click on "Travel Support" from the navigation menu on the right.

SIAM conference registrations & submissions

[SIAM Conference on Imaging Science \(IS14\)](#), May 12-14, 2014, Hong Kong

[Pre-registration](#) deadline: February 17, 2014

[SIAM Conference on Uncertainty Quantification \(UQ14\)](#), March 31-April 3, 2014, Savannah, GA, USA

[Pre-registration](#) deadline: March 3, 2014

[SIAM International Conference on Data Mining \(SDM14\)](#), April 24-26, 2014, Philadelphia, PA, USA

[Pre-registration](#) deadline: March 27, 2014

[SIAM Conference on Discrete Mathematics \(DM14\)](#), June 16-19, 2014, Minneapolis, Minnesota, USA

[Submission](#) deadline for abstracts for minisymposia and contributed speakers: February 11, 2014

[SIAM Workshop on Combinatorial Scientific Computing \(CSC14\)](#), July 21-23, 2014, Lyon, France

Abstract [submission](#) deadline: February 15, 2014

Student and early-career [travel award application](#) deadline: March 21, 2014

[SIAM Conference on Nonlinear Waves and Coherent Structures \(NW14\)](#), August 11-14, 2014, Cambridge, United Kingdom

[Submission](#) deadline for abstracts for minisymposia and contributed speakers: February 10, 2014

Prize nomination deadlines

[SIAM Student Paper Prize](#): February 15, 2014

[SIAG/FME Junior Scientist Prize](#): March 15, 2014

For the complete list of the call for nominations, please visit:

<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.

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.