

# Reference and Book List

The *Reference* section of the Notices is intended to provide the reader with frequently sought information in an easily accessible manner. New information is printed as it becomes available and is referenced after the first printing. As soon as information is updated or otherwise changed, it will be noted in this section.

## Contacting the Notices

The preferred method for contacting the Notices is electronic mail. The editor is the person to whom to send articles and letters for consideration. Articles include feature articles, memorial articles, communications, opinion pieces, and book reviews. The editor is also the person to whom to send news of unusual interest about other people's mathematics research.

The managing editor is the person to whom to send items for "Mathematics People", "Mathematics Opportunities", "For Your Information", "Reference and Book List", and "Mathematics Calendar". Requests for permissions, as well as all other inquiries, go to the managing editor.

The electronic-mail addresses are [notices@math.ou.edu](mailto:notices@math.ou.edu) in the case of the editor and [notices@ams.org](mailto:notices@ams.org) in the case of the managing editor. The fax numbers are 405-325-7484 for the editor and 401-331-3842 for the managing editor. Postal addresses may be found in the masthead.

## Upcoming Deadlines

**October 12, 2004:** Applications for NSF International Research Fellow Awards. See "Mathematics Opportunities" in this issue.

**October 13, 2004:** Full proposals for NSF Distinguished International

Postdoctoral Research Fellowships. See the program announcement at <http://www.nsf.gov/pubs/2001/nsf01154/nsf01154.txt>.

**October 15, 2004:** Applications for support from the Pacific Institute for the Mathematical Sciences (PIMS) for conferences, workshops, seminars and related activities in the mathematical sciences. See <http://www.pims.math.ca/opportunities/proposals.html>.

**October 15, 2004:** Proposals for workshops and summer schools at Banff International Research Station for Mathematical Innovation and Discovery (BIRS). See <http://www.pims.math.ca/birs/>.

**October 15, 2004:** Proposals for NSA Grant and Sabbatical Programs. See the website <http://www.nsa.gov/msp/index.cfm> or telephone 301-688-0400.

**October 15, 2004:** Applications for NSF Postdoctoral Research Fellowships. See <http://www.nsf.gov/pubs/2001/nsf01126/nsf01126.htm>.

**October 29, 2004:** Entries for AWM essay contest. See <http://www.awm-math.org/biographies/contest.html> or contact Victoria Howle, the contest organizer, by email at [vehowle@sandia.gov](mailto:vehowle@sandia.gov) or by mail at Sandia National Labs, MS 9159, P.O. Box 969, Livermore, CA 94551.

## Where to Find It

A brief index to information that appears in this and previous issues of the Notices.

**AMS Bylaws**—November 2003, p. 1283

**AMS E-mail Addresses**—November 2003, p. 1266

**AMS Ethical Guidelines**—June/July 2004, p. 673

**AMS Officers 2002 and 2003 (Council, Executive Committee, Publications Committees, Board of Trustees)**—May 2004, p. 566

**AMS Officers and Committee Members**—October 2004, p. 1082

**Conference Board of the Mathematical Sciences**—September 2004, p. 921

**Information for Notices Authors**—June/July 2004, p. 668

**Mathematics Research Institutes Contact Information**—August 2004, p. 810

**National Science Board**—January 2004, p. 54

**New Journals for 2003**—June/July 2004, p. 670

**NRC Board on Mathematical Sciences and Their Applications**—March 2004, p. 350

**NRC Mathematical Sciences Education Board**—April 2004, p. 446

**NSF Mathematical and Physical Sciences Advisory Committee**—February 2004, p. 242

**Program Officers for Federal Funding Agencies**—October 2004, p. 1083 (DoD, DoE); December 2003, p. 1429 (NSF)

**October 30, 2004:** Nominations for Clay Research Fellowships. See the CMI website at [http://www.claymath.org/fas/research\\_fellows/](http://www.claymath.org/fas/research_fellows/); telephone 617-995-2600; email: [nominations@claymath.org](mailto:nominations@claymath.org).

**December 1, 2004:** Applications for AMS Centennial Research Fellowships. See <http://www.ams.org/employment/centflyer.html> or write to the Membership and Programs Department, American Mathematical Society, 201 Charles Street, Providence, RI 02904-2294; telephone: 401-455-4107; email: [prof-serv@ams.org](mailto:prof-serv@ams.org).

**December 1, 2004:** Nominations for the Ferran Sunyer i Balaguer Prize. See <http://www.crm.es/FerranSunyerBalaguer/ffsb.htm>.

**December 10, 2004:** Applications for East Asia and Pacific Summer Institutes. See “Mathematics Opportunities” in this issue.

**December 20, 2004:** NSA grants in quantum computing algorithms. See “Mathematics Opportunities” in this issue.

**January 1, 2005:** Entries for *Cryptologia* undergraduate paper competitions. See <http://www.dean.usma.edu/math/pubs/cryptologia/>.

**January 10, 2005:** Applications for AAUW Selected Professions Fellowships. See “Mathematics Opportunities” in this issue.

**February 1, 2005:** Applications for AWM Travel Grants and AWM Mentoring Travel Grants. See the AWM website <http://www.awm-math.org/travelgrants.html>, telephone: 301-405-7892, email: [awm@math.umd.edu](mailto:awm@math.umd.edu).

**May 1, 2005:** Applications for AWM Travel Grants. See the AWM website <http://www.awm-math.org/travelgrants.html>, telephone: 301-405-7892, email: [awm@math.umd.edu](mailto:awm@math.umd.edu).

**June 30, 2005:** Nominations for the 2005 Fermat Prize. See [http://www.ups-tlse.fr/ACTUALITES/Sciences/Prix\\_Fermat\\_2004/Areglement.html](http://www.ups-tlse.fr/ACTUALITES/Sciences/Prix_Fermat_2004/Areglement.html).

**January 1, 2006:** Applications for ICM 2006 Travel Grants. See “Mathematics Opportunities” in this issue.

## Book List

*The Book List highlights books that have mathematical themes and are aimed at a broad audience potentially including mathematicians, students, and the general public. When a book has been reviewed in the Notices, a reference is given to the review. Generally the list will contain only books published within the last two years, though exceptions may be made in cases where current events (e.g., the death of a prominent mathematician, coverage of a certain piece of mathematics in the news) warrant drawing readers' attention to older books. Suggestions for books to include on the list may be sent to [notices-booklist@ams.org](mailto:notices-booklist@ams.org).*

\*Added to “Book List” since the list's last appearance.

*Abel's Proof: An Essay on the Sources and Meaning of Mathematical Unsolvability*, by Peter Pesic. MIT Press, May 2003. ISBN 0-262-16216-4. (Reviewed March 2004.)

*Across the Board: The Mathematics of Chessboard Problems*, by John J. Watkins. Princeton University Press, April 2004. ISBN 0-691-11503-6.

*Adam Spencer's Book of Numbers*, by Adam Spencer. Four Walls Eight Windows, January 2004. ISBN 1-568-58289-7.

*Alan Turing: Life and Legacy of a Great Thinker*, edited by Christof Teuscher. Springer, 2004. ISBN 3-540-20200-7.

*Alpha & Omega: The Search for the Beginning and End of the Universe*, by Charles Seife. Viking, July 2003. ISBN 0-670-03179-8.

*Automated Reasoning and the Discovery of Missing and Elegant Proofs*, by Larry Wos and Gail Pieper. Rinton Press, December 2003. ISBN 1-58949-023-1.

*Beyond Coincidence*, by Martin Plimner and Brian King. Icon Books, March 2004. ISBN 1-840-46534-4.

*Beyond the Limit: The Dream of Sofya Kovalevskaya*, by Joan Spicci. Forge, August 2002. ISBN 0-765-30233-0. (Reviewed January 2004.)

*The Book of My Life*, by Girolamo Cardano. New York Review of Books Classics Series/Granta. ISBN 1-590-17016-4.

*Calculated Risks: How to Know When Numbers Deceive You*, by Gerd Gigerenzer. Simon & Schuster, March 2003. ISBN 0-743-25423-6.

*The Changing Shape of Geometry: Celebrating a Century of Geometry and Geometry Teaching*, edited by Chris Pritchard. Cambridge University Press, January 2003. ISBN 0-521-53162-4.

*Cogwheels of the Mind: The Story of Venn Diagrams*, by A. W. F. Edwards. Johns Hopkins University Press, April 2004. ISBN 0-801-87434-3.

*Constantin Carathéodory: Mathematics and Politics in Turbulent Times*, by M. Georgiadou. Springer, September 2004. ISBN 3-540-44258-8.

*The Constants of Nature: From Alpha to Omega—The Numbers That Encode the Deepest Secrets of the Universe*, by John D. Barrow. Jonathan Cape, September 2002. Pantheon Books, January 2003. ISBN 0-375-42221-8. (Reviewed in this issue.)

*Count Down: Six Kids Vie for Glory at the World's Toughest Math Competition*, by Steve Olson. Houghton Mifflin, April 2004. ISBN 0-618-25141-3. (Reviewed August 2004.)

*The Curious Life of Robert Hooke, the Man Who Measured London*, by Lisa Jardine. HarperCollins, February 2004. ISBN 0-060-53897-X.

*Einstein's Clocks, Poincaré's Maps: Empires of Time*, by Peter Galison. W.W. Norton, August 2003. ISBN 0-393-02001-0.

*Everything and More: A Compact History of Infinity*, by David Foster Wallace. W. W. Norton, October 2003. ISBN 0-393-00338-8. (Reviewed June/July 2004.)

*The Fabric of the Cosmos*, by Brian Greene. Knopf, February 2004. ISBN 0-375-41288-3.

*Fields Medalists' Lectures*, edited by Sir Michael Atiyah and Daniel Iagolnitzer. World Scientific, 2nd edition, December 2003. ISBN 9-812-38259-3.

*Four Colors Suffice: How the Map Problem Was Solved*, by Robin Wilson. Princeton University Press, March 2003. ISBN 0-691-11533-8. (Reviewed February 2004.)

*From Newton to Hawking: A History of Cambridge University's Lucasian Professors of Mathematics*, edited by Kevin C. Knox and Richard Noakes.

Cambridge University Press, November 2003. ISBN 0-521-66310-5.

*Galois' Theory of Algebraic Equations*, by Jean-Pierre Tignol. World Scientific, ISBN 981-02-4541-6

*Gamma: Exploring Euler's Constant*, by Julian Havil. Princeton University Press, May 2003. ISBN 0-691-09983-9. (Reviewed August 2004.)

*Geometry: Our Cultural Heritage*, by Audun Holme. Springer, April 2002. ISBN 3-540-41949-7. (Reviewed May 2004.)

*Gödel's Proof*, by Ernest Nagel and James R. Newman. New York University Press, revised edition, February 2002. ISBN 0-8147-5816-9. (Reviewed March 2004.)

*The Golden Ratio: The Story of Phi, the World's Most Astonishing Number*, by Mario Livio. Broadway Books, October 2002. ISBN 0-767-90815-5.

*A Handbook of Mathematical Discovery*, by Charles Wells. Infinity Publishing, 2003. ISBN 0-7414-1685-9. (Reviewed September 2004.)

*How Economics Became a Mathematical Science*, by E. Roy Weintraub. Duke University Press, June 2002. ISBN 0-822-32856-9.

*Infinity: The Quest to Think the Unthinkable*, by Brian Clegg. Carroll & Graf, December 2003. ISBN 0-786-71285-6.

*Information: The New Language of Science*, by Hans Christian von Baeyer. Weidenfeld & Nicolson, October 2003. ISBN 0-297-60725-1 (hardcover), 0-753-81782-9 (paperback).

*Isaac Newton*, by James Gleick. Pantheon Books, May 2003. ISBN 0-375-42233-1. (Reviewed December 2003.)

\* *Just Six Numbers: The Deep Forces That Shape the Universe*, by Martin Rees. Basic Books, May 2001. ISBN 0-465-03673-2. (Reviewed in this issue.)

*Karl Pearson: The Scientific Life in a Statistical Age*, by Theodore M. Porter. Princeton University Press, February 2004. ISBN 0-691-11445-5.

*Kepler's Conjecture: How Some of the Greatest Minds in History Helped Solve One of the Oldest Math Problems in the World*, by George G. Szpiro. John Wiley & Sons, January 2003. ISBN 0-471-08601-0.

*Linked: The New Science of Networks*, by Albert-László Barabási. Perseus Publishing, May 2002. ISBN

0-738-20667-9. (Reviewed February 2004.)

*Masters of Theory: Cambridge and the Rise of Mathematical Physics*, by Andrew Warwick. University of Chicago Press, July 2003. ISBN 0-226-87375-7.

*Math through the Ages: A Gentle History for Teachers and Others*, by William P. Berlinghoff and Fernando Q. Gouvêa. Oxtown House, 2002. ISBN 1-881929-21-3. (Reviewed October 2004.)

*The Mathematical Century: The 30 Greatest Problems of the Last 100 Years*, by Piergiorgio Odifreddi, translated by Arturo Sangalli. Princeton University Press, May 2004. ISBN 0-691-09294-X.

*Mathematical Constants*, by Steven R. Finch. Cambridge University Press, August 2003. ISBN 0-521-81805-2.

*Mathematical Journeys*, by Peter D. Schurer. Wiley-Interscience, February 2004. ISBN 0-471-22066-3.

*Mathematicians as Enquirers: Learning about Learning Mathematics*, edited by Leone Burton. Kluwer, April 2004. Hardbound, ISBN 1-4020-7853-6; paperback, ISBN 1-4020-7859-5; eBook, ISBN 1-4020-7908-7.

*A Mathematician's Survival Guide: Graduate School and Early Career Development*, by Steven G. Krantz. AMS, August 2003. ISBN 0-8218-3455-X. (Reviewed April 2004.)

*Mathematics and Culture I*, edited by Michele Emmer. Springer, January 2004. ISBN 3-540-01770-4.

*Mathematics and War*, edited by Bernhelm Booss-Bavnbek and Jens Høyrup. Birkhäuser, December 2003. ISBN 3-764-31634-9.

*Mathematics, Art, Technology, and Cinema*, edited by Michele Emmer and Mirella Manaresi. Springer, 2003. ISBN 3-540-00601-X.

*Mathematics for the Imagination*, by Peter M. Higgins. Oxford University Press, November 2002. ISBN 0-198-60460-2.

*Mathematics in Nature: Modeling Patterns in the Natural World*, by John Adam. Princeton University Press, November 2003. ISBN 0-691-11429-3.

*The Mathematics of Juggling*, by Burkard Polster. Springer, November

2002. ISBN 0-387-95513-5. (Reviewed January 2004.)

*Memoirs of a Proof Theorist: Gödel and Other Logicians*, by Gaisi Takeuti, translated by Mariko Yasugi and Nicholas Passell. World Scientific, February 2003. ISBN 981-238-279-8.

*Meta Math! The Quest for Omega*, by Gregory J. Chaitin. April 2004. Available at <http://www.cs.umaine.edu/~chaitin/omega.html>.

*More Mathematical Astronomy Morsels*, by Jean Meeus. Willmann-Bell Inc., 2002. ISBN 0-943396-743.

*The Music of the Primes: Searching to Solve the Greatest Mystery in Mathematics*, by Marcus Du Sautoy. HarperCollins, April 2003. ISBN 0-066-21070-4.

*Newton's Apple: Isaac Newton and the English Scientific Renaissance*, by Peter Aughton. Weidenfeld & Nicolson, October 2003. ISBN 0-297-84321-4.

*The Number  $\pi$* , by Pierre Eymard and Jean-Pierre Lafon. AMS, 2004. ISBN 0-8218-3246-8.

*On the Nature of Human Romantic Interaction*, by Karl Iagnemma. Dial Press, April 2003. ISBN 0-385-33593-8.

*Phase Change: The Computer Revolution in Science and Mathematics*, by Douglas S. Robertson. Oxford University Press, March 2003. ISBN 0-195-15748-6.

*Portraits of the Earth: A Mathematician Looks at Maps*, by Timothy G. Freeman. AMS, September 2002. ISBN 0-8218-3255-7.

*Predicting Presidential Elections and Other Things*, by Ray C. Fair. Stanford University Press, August 2002. ISBN 0-804-74509-9.

*Prime Obsession: Bernhard Riemann and the Greatest Unsolved Problem*, by John Derbyshire. Joseph Henry Press, March 2003. ISBN 0-309-08549-7.

*Probability Theory: The Logic of Science*, by E. T. Jaynes, edited by G. Larry Bretthorst. Cambridge University Press, April 2003. ISBN 0-521-59271-2.

*Proofs from The Book*, by Martin Aigner and Günter M. Ziegler. Springer-Verlag, third edition, December 2003. ISBN 3-540-40460-0.

*The Reader of Gentlemen's Mail: Herbert O. Yardley and the Birth of American Codebreaking*, by David Kahn. Yale University Press, March 2004. ISBN 0-300-09846-4.

*The Riemann Hypothesis: The Greatest Unsolved Problem in Mathematics*, by Karl Sabbagh. Farrar Straus & Giroux, April 2003. ISBN 0-374-25007-3.

*The Saga of Mathematics: A Brief History*, by Marty Lewinter and William Widulski. Prentice Hall, January 2002. ISBN 0-130-34079-0.

*Science in the Looking Glass*, by E. Brian Davies. Oxford University Press, August 2003. ISBN 0-19-852543-5.

*Shooting the Sun*, by Max Byrd. Bantam, December 2003. ISBN 0-553-80208-9.

*Signs of the Inka Khipu: Binary Coding in the Andean Knotted-String Records*, by Gary Urton. University of Texas Press, August 2003. ISBN 0-292-78540-2.

*Six Degrees: The Science of a Connected Age*, by Duncan J. Watts. W. W. Norton, February 2003. ISBN 0-393-04142-5. (Reviewed February 2004.)

*Strange Curves, Counting Rabbits, and Other Mathematical Explorations*, by Keith Ball. Princeton University Press, November 2003. ISBN 0-691-11321-1.

*Sync: The Emerging Science of Spontaneous Order*, by Steven Strogatz. Hyperion, February 2003. ISBN 0-786-86844-9. (Reviewed March 2004.)

*Turing (A Novel about Computation)*, by Christos H. Papadimitriou. MIT Press, November 2003. ISBN 0-262-16218-0.

*What Is Thought?*, by Eric B. Baum. MIT Press, January 2004. ISBN 0-262-02548-5.

*What the Numbers Say: A Field Guide to Mastering Our Numerical World*, by Derrick Niederman and David Boyum. Broadway Books, April 2003. ISBN 0-767-90998-4.

*When Least Is Best: How Mathematicians Discovered Many Clever Ways to Make Things As Small (or As Large) As Possible*, by Paul J. Nahin. Princeton University Press, November 2003. ISBN 0-691-07078-4.

# AMS SHORT COURSE

## The Radon Transform and Applications to Inverse Problems

Atlanta, Georgia, January 3-4, 2005

### Organizers:

- Gestur Olafsson, *Louisiana State University*
- Todd Quinto, *Tufts University*

### Speakers:

- Liliana Borcea, *Rice University*
- Adel Faridani, *Oregon State University*
- Peter Kuchment, *Texas A&M University*
- Alfred Louis, *Universitaet des Saarlandes*
- Peter Massopust, *Tuboscope Pipeline Services*
- Todd Quinto, *Tufts University*

Tomography is important in pure and applied mathematics, as well as in several branches of applied sciences, in particular diagnostic radiology, nondestructive evaluation, and other forms of image reconstruction. The Short Course will cover the basic mathematics behind tomography and will describe important applications. The talks will be aimed at a general audience, beginning with elementary facts about the Radon transform and then introducing important current research areas, including impedance imaging, local tomography, wavelet methods, regularization and approximate inverse, and emission tomography. Several special sessions at the AMS Joint Meetings will continue the themes introduced in the Short Course.

**Registration** for this course will be available starting in September. Fees are: member of the AMS—\$85, nonmember—\$108, student, unemployed, emeritus—\$37. Registration instructions will be posted on

<http://www.ams.org/meetings/shcourse/html>

