
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 in the case of the editor and 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.

Information for *Notices* Authors

The *Notices* welcomes unsolicited articles for consideration for publication, as well as proposals for such articles. The following provides general guidelines for writing *Notices* articles and preparing them for submission.

Notices readership. The *Notices* goes to about 30,000 subscribers worldwide, of whom about 20,000 are in North America. Approximately 8,000 of the 20,000 in North America are graduate students who have com-

pleted at least one year of graduate school. All readers may be assumed to be interested in mathematics research, but they are not all active researchers.

Notices feature articles. Feature articles may address mathematics, mathematical news and developments, mathematics history, issues affecting the profession, mathematics education at any level, the AMS and its activities, and other such topics of interest to *Notices* readers. Each

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—December 2004, p. 1365

AMS Ethical Guidelines—June/July 2004, p. 675

AMS Officers 2004 and 2005 (Council, Executive Committee, Publications Committees, Board of Trustees)—May 2005, p. 564

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 2005, p. 660

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

National Science Board—January 2005, p. 76

New Journals for 2004—June/July 2005, p. 662

NRC Board on Mathematical Sciences and Their Applications—March 2005, p. 361

NRC Mathematical Sciences Education Board—April 2005, p. 465

NSF Mathematical and Physical Sciences Advisory Committee—February 2005, p. 261

Program Officers for Federal Funding Agencies—October 2004, p. 1078 (DoD, DoE); December 2004, p. 1368 (NSF)

article is expected to have a large target audience of readers, perhaps 5,000 of the 30,000 subscribers. Authors must therefore write their articles for nonexperts rather than for experts or would-be experts. In particular, the mathematics articles in the *Notices* is expository. The language of the *Notices* is English.

Most feature articles, including those on mathematics, are expected to be of long-term value and should be written as such. Ideally each article should put its topic in a context, providing some history and other orientation for the reader and, as necessary, relating the subject matter to things that readers are likely to understand. In most cases, articles should progress to dealing with contemporary matters, not giving only historical material. The articles that are received the best by readers tend to relate different areas of mathematics to each other.

By design the *Notices* is partly magazine and partly journal, and authors' expository styles should take this into account. For example, many readers want to understand the mathematics articles without undue effort and without consulting other sources.

Mathematics feature articles in the *Notices* are normally six to nine pages, sometimes a little longer. Shorter articles are more likely to be read fully than are longer articles. The first page is 400 or 500 words, and subsequent pages are about 800 words. From this one should subtract an allowance for figures, photos, and other illustrations, and an appropriate allowance for any displayed equations and any bibliography.

Form of articles. Except with very short articles, authors are encouraged to use section headings and subsection headings to help orient readers. Normally there is no section heading at the beginning of an article. Despite the encouraged use of internal headings, the assigning of numbers to sections and subsections is not permitted in any article.

The bibliography should be kept short. In the case of mathematics articles, bibliographies are normally limited to about ten items and should consist primarily of entries like books

in which one may do further reading. To help readers who might want lists of recent literature, an author might include a small number of recent publications with good bibliographies.

Editing process. Most articles that are destined to be accepted undergo an intensive editing process. The purposes of this process are to ensure that the target audience is as large as practicable, that the content of the article is clear and unambiguous, and that the article is relatively easy to read. Usually it is the members of the editorial board who are involved in this process. Sometimes outside referees are consulted.

Preparation of articles for submission. The preferred form for submitted articles is as electronic files. Authors who cannot send articles electronically may send the articles by fax or by postal mail.

Articles with a significant number of mathematical symbols are best prepared in $\text{T}_{\text{E}}\text{X}$, $\text{L}_{\text{A}}\text{T}_{\text{E}}\text{X}$, or $\mathcal{A}\mathcal{M}\mathcal{S}\text{-T}_{\text{E}}\text{X}$. There are no special style files for the *Notices*, because $\text{T}_{\text{E}}\text{X}$ code gets converted to something else during the production process. Since the *Notices* is set in narrow columns, keeping displayed formulas relatively short helps to minimize adjustments during the production process; avoiding non-standard supplementary files and complex sequences of $\text{T}_{\text{E}}\text{X}$ definitions also helps. For the handling of figures and other illustrations, please consult the editor.

Articles without a significant number of mathematical symbols may be prepared as text files or in Microsoft Word. In the case of files prepared in Microsoft Word, it is advisable to send both the file and a fax of a printout.

Instructions for Authors of "WHAT IS...?" Columns

The purpose of the "WHAT IS...?" column is to provide brief, nontechnical descriptions of mathematical objects in use in current research. The target audience for the columns is first-year graduate students.

Each "WHAT IS...?" column provides an expository description of a single mathematical object being used in contemporary research. Thus "WHAT IS M-Theory?" would be too

broad, but "WHAT IS a Brane?" would be appropriate; ideally, "WHAT IS a Brane?" would give a flavor of what M-theory is.

The writing should be nontechnical and informal. The level should be a little higher than the level of popular articles about mathematical developments one finds in magazines like *Science* that are aimed at a general audience.

There is a strict limit of two *Notices* pages (1,400 words with no picture, or 1,200 words with one picture). A list of "Further Reading" should contain no more than three references.

Inquiries and comments about the "WHAT IS...?" column are welcome and may be sent to notices-what-is@ams.org.

Upcoming Deadlines

June 30, 2005: Nominations for the 2005 Fermat Prize. See http://www.ups-tlse.fr/ACTUALITES/Sciences/Prix_Fermat_2004/Areglement.html.

July 15, 2005: Proposals for Leadership Awards of the NSF ADVANCE program. See "Mathematics Opportunities" in this issue.

July 21, 2005: Proposals for NSF CAREER Program. See "Mathematics Opportunities" in this issue.

July 22, 2005: Proposals for Institutional Transformation Awards of the NSF ADVANCE program. See "Mathematics Opportunities" in this issue.

July 31, 2005: Nominations for the Ramanujan Prize of the Abdus Salam International Centre for Theoretical Physics (ICTP). See "Mathematics Opportunities" in this issue.

July 31, 2005: Nominations for the SASTRA Ramanujan Prize. See <http://www.math.ufl.edu/sastra-prize>.

July 31, 2005: Nominations and applications for the Monroe H. Martin Prize. Contact R. Roy, Director, Institute for Physical Science and Technology, University of Maryland, College Park, MD 20742-2431.

August 1, 2005: Submissions for Competition 2005 of the European Mathematical Society. See <http://www.mat.dtu.dk/people/V.L.Hansen/rpa/secondartcomp.html>.

September 15, 2005: Nominations for Sloan Research Fellowships. See

"Mathematics Opportunities" in this issue.

September 16, 2005: Proposals for NSF program on Enhancing the Mathematical Sciences Workforce in the 21st Century. See <http://www.nsf.gov/pubs/2003/nsf03575/nsf03575.htm>.

October 1, 2005: Nominations for Lucien Godeaux Prize. Contact J. Aghion, c/o Secretariat of the Royal Society of Sciences of Liege, Institute of Mathematics of the University of Liege, 12 Grande Traverse, Sart Tilman Bat. B 37, B-4000 Liege 1, Belgium; email: jaghion@ulg.ac.be.

October 18, 2005: Applications for NSF Department of Mathematical Sciences program "Conferences, Workshops, and Special Meetings in the Mathematical Sciences". See "Mathematics Opportunities" in this issue.

October 19, 2005: Applications for NSF Postdoctoral Research Fellowships (MSPRF). See <http://www.nsf.gov/pubs/ods.getpub.cfm?nsf05510>.

January 1, 2006: Submissions for Competition 2006 of the European Mathematical Society. See <http://www.mat.dtu.dk/people/V.L.Hansen/rpa/secondartcomp.html>.

January 1, 2006: Applications for ICM 2006 Travel Grants. See <http://www.icm2006.org> or email: grants@icm2006.org.

January 27, 2006: Proposals for Partnerships for Adaptation, Implementation, and Dissemination Awards of the NSF ADVANCE program. See "Mathematics Opportunities" in this issue.

New Journals for 2004

Below is a list of mathematical journals appearing for the first time in 2004, as compiled by *Mathematical Reviews*. This list, as well as the listings for new journals for other years, can be found on the Web at <http://www.ams.org/mathweb/mi-newjs.html>.

Advances in Difference Equations, 1687-1839, Hindawi Publishing, \$195/4 issues/yr.

Contributions to Discrete Mathematics, 1715-0868, University of Calgary, Canada, e-journal, free of charge,

<http://cdm.ucalgary.ca>. Issue 1 expected January 2006.

Fixed Point Theory and Applications, 1687-1820, Hindawi Publishing, \$195/4 issues/yr.

International Journal of Geometric Methods in Modern Physics, 0219-8878, World Scientific, \$280/6 issues/yr.

International Mathematics Research Surveys, 1687-1308, Hindawi Publishing, \$195/4 issues/yr.

Journal of Hyperbolic Differential Equations, 0219-8916, World Scientific, \$190/4 issues/yr.

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.

*Added to "Book List" since the list's last appearance.

13: The Story of the World's Most Popular Superstition, by Nathaniel Lachenmeyer. Thunder's Mouth Press, October 2004. ISBN 1-568-58306-0.

1089 and All That. A Journey into Mathematics, by David Acheson. Oxford University Press, July 2002. ISBN 0-19-851623-1. (Reviewed February 2005.)

Action This Day, edited by Michael Smith and Ralph Erskine. Random House of Canada, February 2003. ISBN 0-593-04910-1.

Alfred Tarski: Life and Logic, by Anita Burdman Feferman and Solomon Feferman. Cambridge University Press, October 2004. ISBN 0-521-80240-7.

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

Beyond Reason: Eight Great Problems That Reveal the Limits of Science, by A. K. Dewdney. Wiley, April 2004. ISBN 0-471-01398-6.

* *A Brief History of Infinity*, by Paolo Zellini. Penguin Books (paperback), March 2005. ISBN 0-141-00762-1.

* *The Calculus Gallery: Masterpieces from Newton to Lebesgue*, by William Dunham. Princeton University Press, December 2004. ISBN 0-691-09565-5.

* *Chance: A Guide to Gambling, Love, the Stock Market and Just About Everything Else*, by Amir D. Aczel. Four Walls Eight Windows, October 2004. ISBN 1-568-58316-8.

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.

* *The Colours of Infinity: The Beauty and Power of Fractals*, by Michael Barnsley, Nigel Lesmoir-Gordon, Benoit B. Mandelbrot, Ian Stewart, Gary Flake, Robert Prechter, and Arthur C. Clarke. Clear Press, March 2004. ISBN 1-904-55505-5.

* *Complexities: Women in Mathematics*, edited by Bettye Anne Case and Anne M. Leggett. Princeton University Press, January 2005. ISBN 0-691-11462-5.

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 November 2004.)

* *Converging Realities: Toward a Common Philosophy of Physics and Mathematics*, by Roland Omnes. Princeton University Press, November 2004. ISBN 0-691-11530-3.

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 Incident of the Dog in the Nighttime, by Mark Haddon. Vintage, May 2004. ISBN 1-400-03271-7.

Dark Hero of the Information Age: In Search of Norbert Wiener, by Flo Conway and Jim Siegelman. Basic

Books, December 2004. ISBN 0-738-20368-8.

The Essential Turing, edited by B. Jack Copeland. Oxford University Press, September 2004. ISBN 0-198-25080-0.

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

From Eudoxus to Einstein: A History of Mathematical Astronomy, by C. M. Linton. Cambridge University Press, August 2004. ISBN 0-521-82750-7.

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.

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

* *Geometry and Meaning*, by Dominic Widdows. Center for the Study of Language and Information, November 2004. ISBN 1-575-86448-7.

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. (Reviewed March 2005.)

* *Graphic Discovery: A Trout in the Milk and Other Visual Adventures*, by Howard Wainer. Princeton University Press, October 2004. ISBN 0-691-10301-1.

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

The Heart of Mathematics: An Invitation to Effective Thinking, by Edward B. Burger and Michael Starbird. Key College Publishing (Springer-Verlag), April 2000. ISBN 0-555953-407-9. (Reviewed February 2005.)

Incompleteness: The Proof and Paradox of Kurt Gödel, by Rebecca Goldstein. W. W. Norton & Company, February 2005. ISBN 0-393-05169-2.

The Infinite Book: Where Things Happen That Don't, by John D. Barrow. Jonathan Cape, February 2005. ISBN 0-224-06917-9.

* *John Pell (1611-1685) and His Correspondence with Sir Charles Cavendish: The Mental World of an Early Modern Mathematician*, by Noel Malcolm and Jacqueline Stedall. Oxford University Press, second edition, January 2005. ISBN 0-198-56484-8.

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. Wiley, January 2003. ISBN 0-471-08601-0. (Reviewed January 2005.)

The Knot Book: An Elementary Introduction to the Mathematical Theory of Knots, Colin C. Adams. AMS, September 2004. ISBN 0-8218-3678-1.

* *Knots and Links*, by Peter R. Cromwell. Cambridge University Press, October 2004. ISBN 0-691-10301-1.

The Liar Paradox and the Towers of Hanoi: The Ten Greatest Math Puzzles of All Time, by Marcel Danesi. Wiley, August 2004. ISBN 0-471-64816-7.

* *Luck, Logic, and White Lies: The Mathematics of Games*, by Jorg Bewersdorff. Translated by David Kramer. A K Peters, November 2004. ISBN 1-568-81210-8.

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 and the Mona Lisa: The Art and Science of Leonardo da Vinci, by Bulent Atalay. Smithsonian Books, April 2004. ISBN 1-588-34171-2.

Math Magic: How to Master Everyday Math Problems, by Scott Flansburg. Perennial Currents, revised edition, August 2004. ISBN 0-060-72635-0.

Math through the Ages: A Gentle History for Teachers and Others, by William P. Berlinghoff and Fernando Q. Gouvêa. Oxtan 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 and Arturo Sangalli. Princeton University Press, May 2004. ISBN 0-691-09294-X.

* *Mathematical Illustrations: A Manual of Geometry and PostScript*, by Bill

Casselman. Cambridge University Press, December 2004. ISBN 0-521-54788-1.

* *A Mathematician at the Ballpark: Odds and Probabilities for Baseball Fans*, by Ken Ross. Pi Press, July 2004. ISBN 0-131-47990-3.

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.

Mathematicians under the Nazis, by Sanford L. Segal. Princeton University Press, July 2003. ISBN 0-691-00451-X. (Reviewed April 2005.)

Mathematics: A Very Short Introduction, by Timothy Gowers. Oxford University Press, October 2002. ISBN 0-192-85361-9. (Reviewed February 2005.)

The (Mis)Behavior of Markets: A Fractal View of Risk, Ruin and Reward, by Benoit Mandelbrot and Richard Hudson. Basic Books, August 2004. ISBN 0-465-04355-0.

More Damned Lies and Statistics: How Numbers Confuse Public Issues, by Joel Best. University of California Press, August 2004. ISBN 0-520-23830-3.

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

* *Musings of the Masters: An Anthology of Miscellaneous Reflections*, edited by Raymond G. Ayoub. Mathematical Association of America, 2004. ISBN 0-88385-549-6.

Number Theory from an Analytic Point of View, by Badih Ghusayni. Komati, December 2003. ISBN 9953-0-0282-7.

* *Numbers, The Language of Science*, by Tobias Dantzig. Pi Press, fifth edition, March 2005. ISBN 0-131-85627-8.

The Oxford Murders, by Guillermo Martinez. Abacus, January 2005. ISBN 0-349-11721-7.

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

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.

* *R. L. Moore: Mathematician and Teacher*, by John Parker. Mathematical Association of America, 2004. ISBN 0-88385-550-X.

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 Road to Reality: A Complete Guide to the Laws of the Universe, by Roger Penrose. Knopf, February 2005. ISBN 0-679-45443-8.

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.

* *Sneaking a Look at God's Cards: Unraveling the Mysteries of Quantum Mechanics*, by Giancarlo Ghirardi, translated by Gerald Malsbary. Princeton University Press, revised edition, January 2005. ISBN 0-691-12139-7.

Stalking the Riemann Hypothesis: The Quest to Find the Hidden Law of Prime Numbers, by Dan Rockmore. Pantheon, April 2005. ISBN 0-375-42136-X.

Strange Curves, Counting Rabbits, and Other Mathematical Explorations, by Keith Ball. Princeton University Press, November 2003. ISBN 0-691-11321-1. (Reviewed in December 2004.)

* *A Tour Through Mathematical Logic*, by Robert S. Wolf. Mathematical Association of America, January 2005. ISBN 0-88385-036-2.

Towards a Philosophy of Real Mathematics, by David Corfield. Oxford University Press, April 2003. ISBN 0-521-81722-6.

The Transformation of Mathematics in the Early Mediterranean World: From Problems to Equations, by Reviel Netz. Cambridge University Press, June 2004. ISBN 0-521-82996-8.

The Universal Book of Mathematics: From Abracadabra to Zeno's Paradoxes, by David Darling. Wiley, July 2004. ISBN 0-471-27047-4.

The Works of Archimedes: Translation and Commentary. Volume I: The Two Books on the Sphere and the Cylinder. Translated by Reviel Netz. Cambridge University Press, April

2004. ISBN 0-521-66160-9. (Reviewed May 2005.)

A World without Time: The Forgotten Legacy of Gödel and Einstein, by Pallo Yourgrau. Basic Books, January 2005. ISBN 0-465-09293-4.

You Can Do the Math: Overcome Your Math Phobia and Make Better Financial Decisions, by Ron Lipsman. Praeger Publishers, November 2004. ISBN 0-275-98341-2.