

# 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.tamu.edu` in the case of the editor and `notices@ams.org` in the case of the managing editor. The fax numbers are 979-845-6028 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 completed 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 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* are 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

## Where to Find It

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

**AMS Bylaws**—November 2001, p. 1205

**AMS E-mail Addresses**—November 2001, p. 1195

**AMS Ethical Guidelines**—June 1995, p. 694

**AMS Officers 2000 and 2001 (Council, Executive Committee, Publications Committees, Board of Trustees)**—May 2001, p. 520

**AMS Officers and Committee Members**—October 2001, p. 1032

**Backlog of Mathematics Research Journals**—December 2001, p. 1355

**Conference Board of the Mathematical Sciences**—September 2001, p. 843

**Information for *Notices* Authors**—January 2002, p. 47

**Mathematics Research Institutes Contact Information**—August 2001, p. 731

**National Science Board**—February 2001, p. 216

**New Journals for 2000**—June/July 2001, p. 612

**NRC Board on Mathematical Sciences and Staff**—April 2001, p. 427

**NRC Mathematical Sciences Education Board and Staff**—May 2001, p. 517

**NSF Mathematical and Physical Sciences Advisory Committee**—March 2001, p. 328

**Program Officers for Federal Funding Agencies**—October 2001, p. 1009 (DoD, DoE); November 2001, p. 1198 (NSF)

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  $\mathcal{A}_{\text{M}}\text{S-}\text{T}_{\text{E}}\text{X}$ . 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.

### Upcoming Deadlines

**January 1, 2002:** Applications for Chinese Mathematical Society grants for ICM2002. See [http://www.icm2002.org.cn/F/F\\_Europe.htm](http://www.icm2002.org.cn/F/F_Europe.htm).

**January 7, 2002:** Applications for National Research Council-Ford Foundation Postdoctoral Fellowships for Minorities. See "Mathematics Opportunities" in this issue.

**January 9, 2002:** IBM Goldstine Postdoctoral Fellowship. See "Mathematics Opportunities" in this issue.

**January 10, 2002:** Applications for AAUW Educational Foundation Fellowships and Grants. See <http://www.aauw.org/3000/fdnfelgra/selectprofbd.html>.

**January 15, 2002:** Applications for AMS-AAAS Mass Media Fellowships. See <http://ehr.aaas.org/ehr/> (click the "Projects" link), or contact Katrina Malloy, Program Coordinator, AAAS Mass Media Science and Engineering Fellows Program, 1200 New York Avenue, NW, Washington, DC 20005; telephone 202-326-6760; fax 202-371-9849; or the AMS Washington Office, 1527 Eighteenth Street, NW, Washington, DC 20036; telephone 202-588-1100; fax 202-588-1853; e-mail: [amsdc@ams.org](mailto:amsdc@ams.org).

**January 15, 2002:** Applications for National Research Council Research Associateship Program. See <http://www4.nationalacademies.org/pga/rap.nsf/>, or contact the National Research Council, Associateship Programs (TJ 2114), 2101 Constitution Avenue, NW, Washington, DC 20418; telephone 202-334-2760; fax 202-334-2759; e-mail: [rap@nas.edu](mailto:rap@nas.edu).

<http://www4.nationalacademies.org/pga/rap.nsf/>, or contact the National Research Council, Associateship Programs (TJ 2114), 2101 Constitution Avenue, NW, Washington, DC 20418; telephone 202-334-2760; fax 202-334-2759; e-mail: [rap@nas.edu](mailto:rap@nas.edu).

**January 16, 2002:** Applications for National Defense Science and Engineering Graduate Fellowships. See <http://www.asee.org/ndseg/html/preface.htm>, or contact NDSEG Fellowship Program, c/o American Society for Engineering Education, 1818 N Street, N.W. #600, Washington, DC 20036; telephone 202-331-3516; fax 202-265-8504; e-mail: [ndseg@asee.org](mailto:ndseg@asee.org).

**January 21, 2002:** Applications for AWM Workshop for Women Graduate Students and Postdocs. See <http://www.awm-math.org/>.

**January 31, 2002:** Applications for postdoctoral fellowships at the Institut Mittag-Leffler. See <http://www.ml.kva.se/>.

**January 31, 2002:** Applications for IMU travel grants for ICM2002. See <http://elib.zib.de/IMU/>.

**February 1, 2002:** NSF/AWM Travel Grants for Women. See <http://www.awm-math.org/travelgrants.html>; telephone 301-405-7892; e-mail: [awm@math.umd.edu](mailto:awm@math.umd.edu).

**February 1, May 1, October, 2002:** NSF/AWM Mentoring Travel Grants. See <http://www.awm-math.org/travelgrants.html>; telephone 301-405-7892; e-mail: [awm@math.umd.edu](mailto:awm@math.umd.edu).

**March 1, 2002:** Nominations for Third World Academy of Sciences (TWAS) Awards in Basic Sciences. See [http://www.ictp.trieste.it/~twas/Awards\\_Info.html](http://www.ictp.trieste.it/~twas/Awards_Info.html).

**March 31, 2002:** Nominations for 2002 Prize for Achievement in Information-Based Complexity. See "Mathematics Opportunities" in this issue.

**April 15, 2002:** National Research Council Research Associateship Program. See <http://www4.nationalacademies.org/pga/rap.nsf/>, or contact the National Research Council, Associateship Programs (TJ 2114), 2101 Constitution Avenue, NW, Washington, DC 20418; telephone 202-334-2760; fax 202-334-2759; e-mail: [rap@nas.edu](mailto:rap@nas.edu).

**May 1, 2002:** Nominations for Lobachevskii Medal. See <http://www.ksu.ru/lobmed/>.

**May 15, 2002:** Fall 2002 semester of Math in Moscow and AMS scholarships. See <http://www.mccme.ru/mathinmoscow/>, or contact Math in Moscow, P.O. Box 524, Wynnewood, PA 19096; fax +7095-291-65-01; e-mail: [mim@mccme.ru](mailto:mim@mccme.ru). For information about and application forms for the AMS scholarships, see <http://www.ams.org/careers-edu/mimoscow.html>, or contact Math in Moscow Program, Professional Services Department, American Mathematical Society, 201 Charles Street, Providence RI 02904; e-mail: [prof-serv@ams.org](mailto:prof-serv@ams.org).

**August 15, 2002:** National Research Council Research Associateship Program. See <http://www4.nationalacademies.org/pgarap.nsf/>, or contact the National Research Council, Associateship Programs (TJ 2114), 2101 Constitution Avenue, NW, Washington, DC 20418; telephone 202-334-2760; fax 202-334-2759; e-mail: [rap@nas.edu](mailto:rap@nas.edu).

**October 15, 2002:** Spring 2003 semester of Math in Moscow and AMS scholarships. See <http://www.mccme.ru/mathinmoscow/>, or contact Math in Moscow, P.O. Box 524, Wynnewood, PA 19096; fax +7095-291-65-01; e-mail: [mim@mccme.ru](mailto:mim@mccme.ru). For information about and application forms for the AMS scholarships, see <http://www.ams.org/careers-edu/mimoscow.html>, or contact Math in Moscow Program, Professional Services Department, American Mathematical Society, 201 Charles Street, Providence RI 02904; e-mail: [prof-serv@ams.org](mailto:prof-serv@ams.org).

## Book List

The **Book List** highlights books that have mathematical themes and hold appeal for a wide audience, including mathematicians, students, and a significant portion of 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 the managing editor, e-mail: [notices@ams.org](mailto:notices@ams.org).

*Battle of Wits: The Complete Story of Codebreaking in World War II*, by Stephen Budiansky. Free Press, October 2000. ISBN 0-684-85932-7.

*The Bit and the Pendulum: How the New Physics of Information Is Revolutionizing Science*, by Tom Siegfried. John Wiley & Sons, February 2000. ISBN 0-47132-174-5.

*The Book of Nothing: Vacuums, Voids, and the Latest Ideas about the Origins of the Universe*, by John D. Barrow. Pantheon Books, April 2001. ISBN 0-375-42099-1.

*The Brain: Unraveling the Mystery of How It Works (The Neural Network Process)*, by Thomas L. Saaty. RWS Publications, 2000. ISBN 1-888603-02-X.

*Calculated Bets: Computers, Gambling, and Mathematical Modeling to Win*, by Steven S. Skiena. Cambridge University Press, September 2001. ISBN 0-521-00962-6.

*Chaotic Elections! A Mathematician Looks at Voting*, by Donald G. Saari. AMS, April 2001. ISBN 0-8218-2847-9.

*The Colossal Book of Mathematics: Classic Puzzles, Paradoxes, and Problems*, by Martin Gardner. W.W. Norton & Company, August 2001. ISBN 0-393-02023-1.

*Computers Ltd.: What They Really Can't Do*, by David Harel. Oxford University Press, November 2000. ISBN 0-198-50555-8.

*A Concise History of Mathematics*, by Dirk J. Struik. Dover Publications, 1987. ISBN 0-486-60255-9. (Reviewed June/July 2001.)

*Conned Again, Watson! Cautionary Tales of Logic, Math, and Probability*, by Colin Bruce. Perseus Publishing, January 2001. ISBN 0-7382-0345-9.

*Conquering Statistics: Numbers without the Crunch*, by Jefferson Hane Weaver. Perseus, paperback edition, August 2001. ISBN 0-732-820495-1.

\* *Conversations with a Mathematician: Math, Art, Science, and the Limits of Reason*, by Gregory J. Chaitin.

Springer, November 2001. ISBN 1-85233-549-1.

*Creators of Mathematics: The Irish Connection*, by Ken Houston. University College Dublin Press, September 2000. ISBN 1-900-62149-5.

*Crypto: How the Code Rebels Beat the Government—Saving Privacy in the Digital Age*, by Steven Levy. Viking Press, January 2001. ISBN 0-67085-950-8.

*Damned Lies and Statistics: Untangling Numbers from the Media, Politicians, and Activists*, by Joel Best. University of California Press, May 2001. ISBN 0-520-21978-3.

*The Difference Engine: Charles Babbage and the Quest to Build the First Computer*, by Doron Swade. Viking, September 2001. ISBN 0-670-91020-1.

*The Dream Machine: J. C. R. Licklider and the Revolution That Made Computing Personal*, by M. Mitchell Waldrop. Viking, 2001. ISBN 0-670-89976-3.

*Euclid's Window: The Story of Geometry from Parallel Lines to Hyperspace*, by Leonard Mlodinow. Free Press, April 2001. ISBN 0-684-86523-8.

*Exploring Randomness*, by Gregory J. Chaitin. Springer, December 2000. ISBN 1-852-33-417-7. (Reviewed October 2001.)

*Finite vs. Infinite, Contributions to an Eternal Dilemma*, Cristian S. Calude and Gheorghe Paun, editors. Springer, March 2000. ISBN 1-852-33251-4.

*Flatterland: Like Flatland, Only More So*, by Ian Stewart. Perseus Publishing, May 2001. ISBN 0-7382-0442-0.

\* *Fooled by Randomness: The Hidden Role of Chance in the Markets and Life*, by Nassim Nicholas Taleb. Texere, October 2001. ISBN 1-587-99071-7.

*The Fractal Murders*, by Mark Cohen. E-book published by Southern Cross Review, 2001. World Wide Web: [www.southerncrossreview.org](http://www.southerncrossreview.org).

\* *Fragments of Infinity: A Kaleidoscope of Math and Art*, by Ivars Peterson. Wiley, October 2001. ISBN 0-471-16558-1.

*Gödel: A Life of Logic*, by John L. Casti and Werner DePauli. Perseus,

August 2000. ISBN 0-7382-0274-6. (Reviewed September 2001.)

*The Hilbert Challenge*, by Jeremy J. Gray. Oxford University Press, December 2000. ISBN 0-198-50651-1.

*The Hole in the Universe: How Scientists Peered over the Edge of Emptiness and Found Everything*, by K. C. Cole. Harcourt Brace, January 2001. ISBN 0-151-00398-X.

*How the Other Half Thinks: Adventures in Mathematical Reasoning*, by Sherman Stein. McGraw-Hill, July 2001. ISBN 0-071-37339-X.

*How to Solve It: Modern Heuristics*, by Zbigniew Michalewicz and David B. Fogel. Springer, December 1999. ISBN 3-540-66061-5.

*In Code: A Mathematical Journey*, by Sarah Flannery and David Flannery. Workman Publishing, May 2001. ISBN 0-761-12384-9.

*Logical Dilemmas: The Life and Work of Kurt Gödel*, by John Dawson. A K Peters, December 1997. ISBN 1-56881-025-3. (Reviewed September 2001.)

*The Math Gene: How Mathematical Thinking Evolved and Why Numbers Are Like Gossip*, by Keith Devlin. Basic Books, August 2000. ISBN 0-465-01618-9. (Reviewed February 2001.)

*Mathematics and the Roots of Post-modern Thought*, by Vladimir Tasic. Oxford University Press, 2001. ISBN 0-195-13967-4.

*Mathematics: Frontiers and Perspectives*, V. Arnold, M. Atiyah, P. Lax, and B. Mazur, editors. AMS, December 1999. ISBN 0-8218-2697-2.

*Mathematics Galore: Masterclasses, Workshops, and Team Projects in Mathematics and Its Applications*, by C. J. Budd and C. J. Sangwin. Oxford University Press, June 2001. ISBN 0-198-50769-0 (hardcover), 0-198-50770-4 (paperback).

\* *The Measure of the World*, by Denis Guedj. University of Chicago Press, October 2001. ISBN 0-226-31030-2.

*A New Kind of Science*, by Stephen Wolfram. Wolfram Media, Inc., October 2001. ISBN 1-579-55008-8.

*Newton's Tyranny: The Suppressed Scientific Discoveries of John Flamsteed and Stephen Gray*, by David H. Clark and Stephen P. H. Clark. W. H.

Freeman, October 2000. ISBN 0-716-74215-2.

*Niels Hendrik Abel and His Times: Called Too Soon by Flames Afar*, by Arild Stubhaug, translated by R. Daly. Springer, May 2000. ISBN 3-540-66834-9.

*Number: From Ahmes to Cantor*, by Midhat Gazalé. Princeton University Press, March 2000. ISBN 0-691-00515-X. (Reviewed August 2001.)

*The Parrot's Theorem*, by Denis Guedj. St. Martin's Press, September 2001. ISBN 0-312-28055-6. (Reviewed March 2001.)

*Proofs from THE BOOK*, by M. Aigner and G. M. Ziegler. Revised and expanded second edition, Springer, January 2001. ISBN 3-540-67865-4. (First edition reviewed August 1999.)

*Ptolemy's Geography*, translated by J. Lennart Berggren and Alexander Jones. Princeton University Press, November 2000. ISBN 0-691-01042-0.

*Radical Equations: Math Literacy and Civil Rights*, by Robert P. Moses and Charles E. Cobb Jr. Beacon Press, February 2001. ISBN 0-807-03126-7.

*Sacred Geometry*, by Miranda Lundy. Walker & Company, April 2001. ISBN 0-802-71382-3.

*The Search for Mathematical Roots, 1870-1940: Logics, Set Theories, and the Foundations of Mathematics from Cantor through Russell to Gödel*, by I. Grattan-Guinness. Princeton University Press, February 2001. ISBN 0-691-0587-1.

*The Story of Mathematics*, by Richard Mankiewicz. Princeton University Press, February 2001. ISBN 0-691-08808-X.

\* *Things a Computer Scientist Rarely Talks About*, by Donald Knuth. Center for the Study of Language and Information, July 2001. ISBN 1-57586-327-8.

*Triangle of Thoughts*, by Alain Connes, André Lichnerowicz, and Marcel Paul Schützenberger. AMS, July 2001. ISBN 0-8218-2614-X.

*The Universal Computer: The Road from Leibniz to Turing*, by Martin Davis. W.W. Norton & Company, October 2000. ISBN 0-393-04785-7. (Reviewed May 2001.)

*The Universal History of Computing: From the Abacus to the Quantum*

*Computer*, by Georges Ifrah; translated from the French and with notes by E. F. Harding, assisted by Sophie Wood, Ian Monk, Elizabeth Clegg, and Guido Waldman. John Wiley & Sons, November 2000. ISBN 0-471-39671-0. (Reviewed in this issue.)

*The Universal History of Numbers: From Prehistory to the Invention of the Computer*, by Georges Ifrah; translated from the French by David Bellos, E. F. Harding, Sophie Wood, and Ian Monk. John Wiley & Sons, December 1999. ISBN 0-471-37568-3. (Reviewed in this issue.)

\* *The Universe in a Nutshell*, by Stephen Hawking. Bantam Doubleday Dell, November 2001. ISBN 0-553-80202-X.

*The Unknowable*, by Gregory J. Chaitin. Springer, August 1999. ISBN 9-814-02172-5. (Reviewed October 2001.)

*What Is Mathematics? An Elementary Approach to Ideas and Methods*, by Richard Courant and Herbert Robbins; second edition, revised by Ian Stewart. Oxford University Press, August 1996. ISBN 0-195-10519-2. (Reviewed December 2001.)

*Where Mathematics Comes From: How the Embodied Mind Brings Mathematics into Being*, by George Lakoff and Rafael Núñez. Basic Books, October 2000. ISBN 0-465-03770-4. (Reviewed November 2001.)

*White Light*, by Rudy Rucker. Four Walls Eight Windows, April 2001. ISBN 1-56858-198-X.

*Women Becoming Mathematicians: Creating a Professional Identity in Post-World War II America*, by Margaret A. M. Murray. MIT Press, September 2000. ISBN 0-262-13369-5. (Reviewed August 2001.)

\* *The Zen of Magic Squares, Circles, and Stars: An Exhibition of Surprising Structures across Dimensions*, by Clifford A. Pickover. Princeton University Press, January 2001. ISBN 0-691-07041-5.

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