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# 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, book reviews and other communications, and "Forum" pieces. 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.

## Upcoming Deadlines

**October 16, 2000:** Applications for NSF Mathematical Sciences Postdoctoral Research Fellowships. See <http://www.fastlane.nsf.gov/>, or telephone 703-306-1870, or e-mail: `msprf@nsf.gov`.

**November 1, 2000:** Proposals for the ONR Young Investigator Program. See <http://www.onr.navy.mil/sci%5Ftech/special/yip/>.

**November 1, 2000:** Applications for Fulbright Scholar Program international education and academic administrator seminars. Contact the Council for International Exchange of Scholars (CIES), 3007 Tilden Street, NW, Suite 5L, Washington, DC 20008-3009; telephone: 202-686-7877; World Wide Web: <http://www.iie.org/cies/compo.htm>.

**November 7, 2000:** NSF Graduate Research Fellowships. See <http://www.orau.org/nsf/nsffe1.htm> or contact: NSF Graduate Research Fellowship Program, Oak Ridge Associated Universities, P. O. Box 3010, Oak Ridge, TN 37831-3010; tele-

phone: 865-241-4300; fax: 865-241-4513; e-mail: `nsfgrfp@orau.gov`.

**November 13, 2000:** Applications for Distinguished International Postdoctoral Research Fellowships. See "Mathematics Opportunities" in this issue.

**December 1, 2000:** Applications for AMS Centennial Fellowships. See "Mathematics Opportunities" in this issue.

**December 15, 2000:** Submissions of manuscripts for consideration for the Ferran Sunyer i Balaguer Prize. See <http://www.crm.es/info/ffsb.htm>.

**January 8, 2001:** Applications for NRC travel/host grants. See <http://www.nationalacademies.org/oia/>, or telephone 202-334-2644, fax 202-334-2614, or e-mail: `ocee@nas.edu`.

## Where To Find It

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

**AMS e-Mail Addresses**—November 2000, p. 1288

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

**AMS Officers 1999 and 2000 (Council, Executive Committee, Publications Committees, Board of Trustees)**—May 2000, p. 591

**AMS Officers and Committee Members**—October 2000, p. 1127

**AMS Bylaws and Prizes**—November 1999, p. 1252

**Conference Board of the Mathematical Sciences**—September 2000, p. 913

**Information for Notices Authors**—June/July 2000, p. 686

**Mathematics Research Institutes Contact Information**—August 2000, p. 786

**National Science Board**—January 2000, p. 71

**New Journals for 1999**—June/July 2000, p. 688

**NRC Board on the Mathematical Sciences and Staff**—April 2000, p. 494

**NRC Mathematical Sciences Education Board and Staff**—April 2000, p. 494

**NSF Mathematical and Physical Sciences Advisory Committee**—March 2000, p. 381

**Program Officers for Federal Funding Agencies (DoD, DoE, NSF)**—October 2000, p. 1100; November 2000, p. 1291

**January 16, 2001:** Proposals for NSF institute competition. See <http://www.nsf.gov/cgi-bin/getpub?nsf0086/>; or contact Division of Mathematical Sciences, Room 1025, National Science Foundation, 4201 Wilson Boulevard, Arlington, VA 22230; telephone: 703-306-1870.

**January 23, 2001:** Applications for AWM Workshop at the SIAM meeting in San Diego, California. See <http://www.awm-math.org/>, telephone 301-405-7892, e-mail: awm@math.umd.edu.

**January 26, 2001:** Full proposals for NSF IGERT program. See <http://www.nsf.gov/cgi-bin/getpub?nsf0078/>; or contact NSF 00-78 - IGERT Program, National Science Foundation, 4201 Wilson Boulevard, Arlington, VA 22230; telephone: 703-306-1870.

**February 1, May 1, October 1, 2001:** Applications for NSF/AWM Travel Grants for Women. See <http://www.awm-math.org/travelgrants.html>, telephone 301-405-7892, e-mail: awm@math.umd.edu.

**October 1, 2001:** Nominations for the Emanuel and Carol Parzen Prize. Submit nominations to J. H. Matis, Department of Statistics, Texas A&M University, College Station, TX 77873-3143.

### NSF Division of Mathematical Sciences

Listed below are names, e-mail addresses (when available), and telephone numbers for the program directors for the coming academic year in the Division of Mathematical Sciences of the National Science Foundation.

#### *Algebra, Number Theory, and Combinatorics*

Joseph Brennan  
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#### *Infrastructure*

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William Smith  
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wbsmith@nsf.gov

John Stufken  
703-292-4881

#### *Geometric Analysis, Topology, and Foundations*

Maria Helena Noronha  
703-292-4868

Benjamin Mann  
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bmann@nsf.gov

Christopher Stark  
703-292-4869  
cstark@nsf.gov

The administrative staff includes:

#### **Division Director**

Philippe Tondeur  
703-292-8870  
ptondeur@nsf.gov

#### **Executive Officer**

Bernard McDonald  
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#### **Administrative Officer**

Tyzcer Henson  
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thenson@nsf.gov

The postal address is: Division of Mathematical Sciences, National Science Foundation, Room 1025, 4201 Wilson Boulevard, Arlington, VA 22230; telephone 703-292-8870; fax 703-292-9032. The address for the Division's World Wide Web server is <http://www.nsf.gov/mps/dms/>.

### NSF Mathematics Education Staff

The Directorate for Education and Human Resources (EHR) of the National Science Foundation (NSF) sponsors a range of programs that support educational projects in mathematics, science, and engineering. Listed below are the names, telephone numbers, and e-mail addresses of those EHR program officers whose field is in the mathematical sciences or mathematics education. These individuals can provide information about the programs they oversee, as well as information about other EHR programs of interest to mathematicians. The postal address is: Directorate for Education and Human Resources, National Science Foundation, 4201 Wilson Boulevard, Arlington, VA 22230. The World Wide Web address is <http://www.nsf.gov/ehr/>.

#### **Division of Elementary, Secondary, and Informal Education**

##### *Teacher Enhancement Program*

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Anna Suarez  
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*Instructional Materials Development Program*

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**Division of Research, Evaluation, and Dissemination**

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**Division of Educational Systemic Reform**

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**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.

*The Advent of the Algorithm: The Idea That Rules the World*, by David Berlinski. Harcourt, March 2000. ISBN 0-151-00338-6.

*The Arithmetic of Life*, by George Shaffner. Ballantine Books, August 1999. ISBN 0-345-42631-2.

*The Bride of Science*, by Benjamin Woolley. MacMillan, August 1999. ISBN 0-333-72436-4.

*Chance Rules: An Informal Guide to Probability, Risk, and Statistics*, by Brian S. Everitt. Springer, August 1999. ISBN 0-387-98768-1.

*Complexity and Information*, by J. F. Traub and Arthur G. Werschulz. Cambridge University Press, December 1998. ISBN 0-52148-005-1 (hardcover), 0-521-48506-1 (paperback).

*The Eightfold Way: The Beauty of Klein's Quartic Curve*, edited by Silvio Levy. Cambridge University Press, March 1999. ISBN 0-521-66066-1.

*Excursions into Mathematics: Millennium Edition*, by Anatole Beck, Michael N. Cleicher, and Donald W. Crowe. A K Peters, 2000. ISBN 1-56881-115-2.

*The Fermat Diary*, by C. J. Mozzochi. AMS, 2000. ISBN 0-8218-2670-0.

*Five More Golden Rules: Knots, Codes, Chaos and Other Great Theories of 20th Century Mathematics*, by John L. Casti. John Wiley & Sons, February 2000. ISBN 0-471-32233-4.

*Fragile Dominion: Complexity and the Commons*, by Simon Levin. Perseus

Books, June 1999. ISBN 0-738-20111-1. (Reviewed May 2000.)

*The Game's Afoot! Game Theory in Myth and Paradox*, by Alexander Mehlmann. AMS, 2000. ISBN 0-8218-2121-0.

*A History of Algorithms: From the Pebble to the Microchip*, edited by Jean-Luc Chabert. Springer, September 1999. ISBN 3-540-63369-3.

*A History of the Circle: Mathematical Reasoning and the Physical Universe*, by Ernest Zebrowski Jr. Rutgers University Press, August 1999. ISBN 0-813-52677-9.

*Imaginary Numbers: An Anthology of Marvelous Mathematical Stories, Diversions, Poems, and Musings*, edited by William Frucht. John Wiley & Sons, October 1999. ISBN 0-471-33244-5. (Reviewed August 2000.)

*Infosense: Turning Data and Information into Knowledge*, by Keith Devlin. W. H. Freeman, June 1999. ISBN 0-716-73484-2.

*John von Neumann: The Scientific Genius Who Pioneered the Modern Computer, Game Theory, Nuclear Deterrence, and Much More*, by Norman Macrae. AMS, October 1999. ISBN 0-8218-2064-8.

*The Kingdom of Infinite Number: A Field Guide*, by Bryan Bunch. W. H. Freeman, January 2000. ISBN 0-716-73388-9.

*Mathematical Sorcery: Revealing the Secrets of Numbers*, by Calvin C. Clawson. Plenum Press, May 1999. ISBN 0-306-46003-3.

*Mathematics Success and Failure among African American Youth: The Roles of Sociohistorical Context, Community Forces, School Influence, and Individual Agency*, by Danny B. Martin. Lawrence Erlbaum Associates, December 1999. ISBN 0-805-83042-1.

*Mathematics Unlimited: 2001 and Beyond*, Björn Engquist and Wilfried Schmid, editors. Springer, September 2000. ISBN 3-540-66913-2.

\* *The Math Gene: How Mathematical Thinking Evolved and Why Numbers Are Like Gossip*, by Keith Devlin. Basic Books, August 2000. ISBN: 0465016189.

\* *My Numbers, My Friends: Popular Lectures on Number Theory*, by Paulo Ribenboim. Springer, February 2000. ISBN 0-387-98911-0.

\* *The Mystery of the Aleph: Mathematics, the Kabbalah, and the Human Mind*, by Amir D. Aczel. Four Walls Eight Windows, September 2000. ISBN 1-568-58105-X.

*The Nature of Mathematical Modeling*, by Neil Gershenfeld. Cambridge University Press, February 1999. ISBN 0-521-57095-6.

*Noeuds: Genèse d'une théorie mathématique (Knots: Genesis of a Mathematical Theory)*, by Alexei Sossinsky (in French). Seuil, 1999. ISBN 2-020-32089-4. (Reviewed June/July 2000.)

*The Nothing That Is: A Natural History of Zero*, by Robert Kaplan. Oxford University Press, October 1999. ISBN 0-195-12842-7.

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

*Philosophy of Mathematics: An Introduction to a World of Proofs and Pictures*, by James Robert Brown. Routledge, August 1999. ISBN 0-415-12274-0. (Reviewed in this issue.)

*Proofs and Confirmations: The Story of the Alternating Sign Matrix Conjecture*, by David M. Bressoud. MAA Spectrum Series, published jointly with Cambridge University Press, August 1999. ISBN 0-521-66646-5.

*Riemann, Topology, and Physics*, by Michael Monastyrsky. Translated by Roger Cooke, James King, and Victoria King. Birkhäuser, second edition, May 1999. ISBN 3-764-33789-3.

*Slicing Pizzas, Racing Turtles, and Further Adventures in Applied Mathematics*, by Robert B. Banks. Princeton University Press, September 1999. ISBN 0-691-05947-0.

*Small Worlds: The Dynamics of Networks between Order and Randomness*, by Duncan J. Watts. Princeton University Press, November 1999. ISBN 0-691-00541-9. (Reviewed September 2000.)

*Squaring the Circle: The War between Hobbes and Wallis*, by Douglas M. Jesseph. University of Chicago Press, December 1999. ISBN 0-226-39899-4 (hardcover), 0-226-39900-1 (paperback).

*Statistics on the Table: The History of Statistical Concepts and Methods*, by Stephen M. Stigler. Harvard University Press, November 1999. ISBN 0-674-83601-4.

*Stephen Smale: The Mathematician Who Broke the Dimension Barrier*, by Steve Batterson. AMS, February 2000. ISBN 0-8218-2045-1.

\* *The Symbolic Universe: Geometry and Physics 1890-1930*, edited by Jeremy Gray. Oxford University Press, September 1999. ISBN 0-198-50088-2.

\* *Two Millennia of Mathematics: From Archimedes to Gauss*, by George M. Phillips. Springer, July 2000. ISBN 0-387-95022-2.

*Uncle Petros and Goldbach's Conjecture* by Apostolos Doxiadis. Bloomsbury USA, February 2000. ISBN 1-582-34067-6. (Reviewed in this issue.)

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

*The Unknowable*, by Gregory Chaitin. Springer, August 1999. ISBN 9-814-02172-5.

*What Are the Odds? Chance in Everyday Life*, by Michael Orkin. W. H. Freeman, December 1999. ISBN 0-716-73560-1.

*What Is Random? Discovering Chance and Order in Mathematics and the World*, by Edward J. Beltrami. Springer, August 1999. ISBN 0-387-98737-1.

*The Wild Numbers*, by Philibert Schogt. Four Walls Eight Windows, April 2000. ISBN 1-568-58166-1. (Reviewed in this issue.)

\* *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.

*Zero: The Biography of a Dangerous Idea*, by Charles Seife. Viking Press, February 2000. ISBN 0-670-88457-X. (Reviewed October 2000.)

## Cultural Events

*Fermat's Last Tango*, a musical performed by York Theatre Company. Theatre at St. Peter's, Citicorp Center, 619 Lexington Avenue, New York, NY 10022. Box Office: 212-935-5820. Runs November 21 to December 31, 2000.

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

*Proof*, a play performed by Manhattan Theatre Club. Walter Kerr Theatre, 219 West 48th Street, New York, NY. World Wide Web: <http://www.ProofonBroadway.com/>. Opens October 24, 2000. (Reviewed October 2000.)

## About the Cover

*Majority Vote* dynamics repeatedly replace the entries in an array of 0's and 1's with the majority type within a prescribed neighborhood of each cell. The cover graphic is based on one realization of this basic *cellular automaton*, on a  $1200 \times 800$  array with wrap at the boundaries, and with polling over the "range 8" box neighborhood of  $17^2$  cells centered at each site.

The initial configuration was a random half-and-half mix of the two types. As the polling range increases, interfaces between 0's and 1's in Majority Vote approximate a fundamental nonlinear partial differential equation called *motion by mean curvature*. In this instance, the 1's took over the entire array after 1,684 updates. To accentuate the dynamic process of self-organization and surface-tension clustering, sites have been colored using a periodic 200-color palette according to the last time of a transition from 0 to 1. Call a realization *good* if the toroidal array is eventually all 1's. As array and neighborhood sizes increase suitably, one expects the chance of a good outcome to be bounded strictly between 0 and  $1/2$ , and asymptotic to a quantity from critical percolation theory predicted by the celebrated Conformal Invariance Conjecture of R. P. Langlands. For other colorful examples of self-organizing cellular automata, visit the Primordial Soup Kitchen: <http://psoup.math.wisc.edu/kitchen.html>.

—David Griffeth  
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