

339 This Week in *Science*

Editorial

341 TPA and PDQ

Letters

349 Uranium Enrichment: B. J. HULL ■ Indictment of Soviet Physicist:
G. C. VEZZOLI ■ Is Female Math Anxiety Real?: S. L. SEGAL

News & Comment

351 Congress Considers Upgrading Labs
352 Pork Barrel Unbound?
353 Corporations on Campus
354 Foreign Investors Outstrip U.S.
355 AIDS and Insects
356 Some Refuseniks See No *Glasnost*
357 *Briefing*: SSC Deadline Extended ■ “Greens” Challenge French Gene Research ■
France to Boost Research Spending

Research News

358 Who Owns the Human Genome?
361 A Younger Universe Is Seen in the Stars
363 New Tumor Factor May Disrupt Calcium Levels

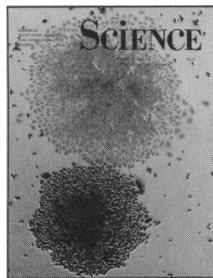
Articles

379 Off-Design Performance of Power Plants: An Integrated Gasification Combined-
Cycle Example: M. R. ERBES, J. N. PHILLIPS, M. S. JOHNSON, J. PAFFENBARGER,
M. GLUCKMAN, R. H. EUSTIS
384 The Shapes of Random Walks: J. RUDNICK AND G. GASPARI

Research Articles

389 The 30-Kilodalton Gene Product of Tobacco Mosaic Virus Potentiates Virus
Movement: C. M. DEOM, M. J. OLIVER, R. N. BEACHY
394 Engineering Enzyme Specificity by “Substrate-Assisted Catalysis”: P. CARTER AND
J. A. WELLS

- **SCIENCE is published weekly on Friday, except the last week in December, and with an extra issue in February by the American Association for the Advancement of Science, 1333 H Street, NW, Washington, DC 20005.** Second-class postage (publication No. 484460) paid at Washington, DC, and at an additional entry. Now combined with **The Scientific Monthly**® Copyright © 1987 by the American Association for the Advancement of Science. The title SCIENCE is a registered trademark of the AAAS. Domestic individual membership and subscription (51 issues): \$65. Domestic institutional subscription (51 issues): \$98. Foreign postage extra: Canada \$32, other (surface mail) \$27, air-surface via Amsterdam \$65. First class, airmail, school-year, and student rates on request. Single copies \$2.50 (\$3 by mail); back issues \$4 (\$4.50 by mail); Biotechnology issue, \$5.50 (\$6 by mail); classroom rates on request; Guide to Biotechnology Products and Instruments \$16 (\$17 by mail). **Change of address:** allow 6 weeks, giving old and new addresses and seven-digit account number. Authorization to photocopy material for internal or personal use under circumstances not falling within the fair use provisions of the Copyright Act is granted by AAAS to libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that the base fee of \$1 per copy plus \$0.10 per page is paid directly to CCC, 21 Congress Street, Salem, Massachusetts 01970. The identification code for *Science* is 0036-8075/83 \$1 + .10. **Postmaster:** Send Form 3579 to *Science*, 1333 H Street, NW, Washington, DC 20005. *Science* is indexed in the *Reader's Guide to Periodical Literature* and in several specialized indexes.
- The American Association for the Advancement of Science was founded in 1848 and incorporated in 1874. Its objects are to further the work of scientists, to facilitate cooperation among them, to foster scientific freedom and responsibility, to improve the effectiveness of science in the promotion of human welfare, and to increase public understanding and appreciation of the importance and promise of the methods of science in human progress.



COVER Fragile X-bearing somatic cell hybrids cultured under positive selection for hypoxanthine guanine phosphoribosyl transferase (HGPRT) followed by in situ histochemical staining for glucose-6-phosphate dehydrogenase (G6PD) activity. The G6PD⁺ (blue) and G6PD⁻ (yellow) colonies indicate segregation of the HGPRT and G6PD genes, suggesting chromosome breakage at the fragile X site. See page 420. [Photo by S. T. Warren, Emory University School of Medicine, Atlanta, GA 30322]

Reports

- 400 Parallel and Serial Processes in Motion Detection: M. DICK, S. ULLMAN, D. SAGI
- 402 Adipsin: A Circulating Serine Protease Homolog Secreted by Adipose Tissue and Sciatic Nerve: K. S. COOK, H. Y. MIN, D. JOHNSON, R. J. CHAPLINSKY, J. S. FLIER, C. R. HUNT, B. M. SPIELGELMAN
- 405 Severely Impaired Adipsin Expression in Genetic and Acquired Obesity: J. S. FLIER, K. S. COOK, P. USHER, B. M. SPIELGELMAN
- 409 Linear Plasmids of the Bacterium *Borrelia burgdorferi* Have Covalently Closed Ends: A. G. BARBOUR AND C. F. GARON
- 411 Neuronal pp60^{c-src} Contains a Six-Amino Acid Insertion Relative to Its Non-Neuronal Counterpart: R. MARTINEZ, B. MATHEY-PREVOT, A. BERNARDS, D. BALTIMORE
- 415 The Molecular Basis of the Sparse Fur Mouse Mutation: G. VERES, R. A. GIBBS, S. E. SCHERER, C. T. CASKEY
- 417 Physiological Evidence for Serial Processing in Somatosensory Cortex: T. P. PONS, P. E. GARRAGHTY, D. P. FRIEDMAN, M. MISHKIN
- 420 The Fragile X Site in Somatic Cell Hybrids: An Approach for Molecular Cloning of Fragile Sites: S. T. WARREN, F. ZHANG, G. R. LICAMELI, J. F. PETERS
- 423 Smooth Muscle-Mediated Connective Tissue Remodeling in Pulmonary Hypertension: R. P. MECHAM, L. A. WHITEHOUSE, D. S. WRENN, W. C. PARKS, G. L. GRIFFIN, R. M. SENIOR, E. C. CROUCH, K. R. STENMARK, N. F. VOELKEL

Book Reviews

- 441 Coevolution and Systematics, D. J. FUTUYMA AND J. KIM ■ Gamma-Ray Astronomy, F. W. STECKER ■ Paleosols, R. D. STIEGLITZ ■ Proteins of Excitable Membranes, C. MILLER ■ Books Received

Products & Materials

- 445 Pascal Subroutine Library ■ Variable-Speed Shaker ■ Database of Hazardous Chemicals ■ Bulk Growth Factors ■ Portable Personal Computer ■ Blue-White Screening Kit ■ Protein-Free Growth Medium ■ Fully Automated Peptide Synthesis System ■ Literature

Board of Directors

Lawrence Bogorad
*Retiring President,
Chairman*

Sheila E. Widnall
President

Walter E. Massey
President-elect

Robert McC. Adams
Floyd E. Bloom
Mary E. Clutter
Mildred S. Dresselhaus
Beatrix A. Hamburg
Donald N. Langenberg
Frank von Hippel
Linda S. Wilson

William T. Golden
Treasurer
Alvin W. Trivelpiece
Executive Officer

Editorial Board

Elizabeth E. Bailey
David Baltimore
William F. Brinkman
Philip E. Converse
Joseph L. Goldstein
James D. Idol, Jr.
Leon Knopoff
Seymour Lipset
Oliver E. Nelson
David V. Ragone
David M. Raup
Vera C. Rubin
Larry L. Smarr
Solomon H. Snyder
Robert M. Solow
James D. Watson

Board of Reviewing Editors

John Abelson
Qais Al-Awqati
James P. Allison
Don L. Anderson
Elizabeth H. Blackburn
Floyd E. Bloom
Charles R. Cantor
James H. Clark
Bruce F. Eldridge
Stanley Falkow
Theodore H. Geballe
Roger I. M. Glass
Stephen P. Goff
Robert B. Goldberg

Corey S. Goodman
Stephen J. Gould
Richard M. Held
Gloria Heppner
Eric F. Johnson
Konrad B. Krauskopf
I. Robert Lehman
Karl L. Magleby
Joseph B. Martin
John C. McGiff
Alton Meister
Mortimer Mishkin
Peter Olson
Gordon H. Orians
Carl O. Pabo
John S. Pearce

Yeshayau Pocker
Jean Paul Revel
James E. Rothman
Thomas C. Schelling
Ronald H. Schwartz
Stephen M. Schwartz
Otto T. Solbrig
Robert T. N. Tjian
Virginia Trimble
Geerat J. Vermeij
Martin G. Weigert
Harold Weintraub
Irving L. Weissman
George M. Whitesides
Owen N. Witte
William B. Wood

Science

237 (4813)

Science **237** (4813), 339-445.

ARTICLE TOOLS

<http://science.sciencemag.org/content/237/4813>

PERMISSIONS

<http://www.sciencemag.org/help/reprints-and-permissions>

Use of this article is subject to the [Terms of Service](#)

Science (print ISSN 0036-8075; online ISSN 1095-9203) is published by the American Association for the Advancement of Science, 1200 New York Avenue NW, Washington, DC 20005. The title *Science* is a registered trademark of AAAS.

Copyright © 1987 The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works.