

1087 This Week in *Science*

Editorial

1089 Cancer Research: Prevention and Therapy

Letters

1090 Hood Lab Investigation: V. KUMAR; Response: E. E. SERCARZ; J. BRESSLER AND J. LATERRA

ScienceScope

1099 Commercializing a "Star Wars" cast off; foreseeing UC's financial future; etc.

News & Comment

- 1100 Weapons Labs: After the Cold War ■ Researchers Complain of Loss of Academic Freedom ■ Have Talent, Will Contract
- 1103 Now Dingell Probes the Academy!
- 1104 OSTP to Wade Into Gene Patent Quagmire
- 1105 FDA Committee Raises AIDS Vaccine Hurdles
- 1106 In Search of a New Cosmic Blueprint
- 1108 Neuroscience Meets the Big Easy: Patch Clamping au Naturel ■ Brain Grafts for Huntington's Disease Too Much Too Soon? ■ Retinoids May Help You See In More Ways Than One
- 1109 Galileo Hits Its Target
- 1110 Did a Rain of Comets Nurture Life?: Bringing in a Comet For Landing ■ A Cometary Source for Cockeyed Molecules?
- 1111 A Layer by Layer Look at the Skin Blister Diseases
- 1113 *Briefings*: Single-Celled Killer In Monterey Bay ■ Rx for Speedy Drug Approval ■ Tracking the AIDS Drugs ■ A Big Chill Grips Geothermal Energy

Research News

- 1114 Cancer Research in Europe: Europe: As Many Cancers as Cuisines
- 1116 Three Europeans Find Their Own Road to Fame: Life at the Front ■ A Pressure to Think ■ The Virtues of Patience
- 1117 Funding in Europe: How the Big Three Cope ■ Jacques Crozmarie: One Man and His Foundation

Articles

- 1131 Toward the Primary Prevention of Cancer: B. E. HENDERSON, R. K. ROSS, M. C. PIKE
- 1138 Tumor Suppressor Genes: R. A. WEINBERG
- 1146 Growth Factors and Cancer: S. A. AARONSON
- 1153 Chromosome Aberrations and Cancers: E. SOLOMON, J. BORROW, A. D. GODDARD
- 1161 Transgenic Models of Tumor Development: J. M. ADAMS AND S. CORY
- 1167 Viruses in Human Cancers: H. ZUR HAUSEN
- 1173 Recombinant Toxins for Cancer Treatment: I. PASTAN AND D. FITZGERALD

Reports

- 1178 Optical Coherence Tomography: D. HUANG, E. A. SWANSON, C. P. LIN, J. S. SCHUMAN, W. G. STINSON, W. CHANG, M. R. HEE, T. FLOTTE, K. GREGORY, C. A. PULIAFITO, J. G. FUJIMOTO

■ SCIENCE (ISSN 0036-8075) is published weekly on Friday, except the last week in December, by the American Association for the Advancement of Science, 1333 H Street, NW, Washington, DC 20005. Second-class postage (publication No. 48460) paid at Washington, DC, and additional mailing offices. Copyright © 1991 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): \$82 (\$47 allocated to subscription). Domestic institutional subscription (51 issues): \$150. Foreign postage extra: Mexico, Caribbean (surface mail) \$50; Other countries (air assist delivery) \$95. First class, airmail, student and emeritus rates on request. Canadian rates with GST available upon request, GST #1254 88122. Change of address: allow 6 weeks, giving old and new addresses and 11-digit account number. Postmaster: Send change of address to Science, P.O. Box 2033, Marion, OH 43305-2003. Single copy sale: \$6.00 per issue prepaid includes surface postage; Guide to Biotechnology Products and Instruments, \$20. Bulk rates on request. 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, 27 Congress Street, Salem, Massachusetts 01970. The identification code for Science is 0036-8075/93 \$1 + .10. 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 objectives 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, to advance education in science, and to increase public understanding and appreciation of the importance and promise of the methods of science in human progress.



COVER In this special issue, seven articles explore developments in basic and applied research that are increasing our understanding of the pathways leading to cancer. The syringe symbolizes the new approaches to prevention and therapy that are being developed and tested as a result of research advances. See pages 1131 to 1177. In addition, there is a special section highlighting personalities and issues in European cancer research. See pages 1114 to 1119. [Cover illustration by Julie Cherry]

- 1181 Cooperative Solution of Constraint Satisfaction Problems: S. H. CLEARWATER, B. A. HUBERMAN, T. HOGG
- 1183 Radical Reactions of C₆₀: P. J. KRUSIC, E. WASSERMAN, P. N. KEIZER, J. R. MORTON, K. F. PRESTON
- 1186 Systematic Inflation of Buckminsterfullerene C₆₀: Synthesis of Diphenyl Fulleroids C₆₁ to C₆₆: T. SUZUKI, Q. LI, K. C. KHEMANI, F. WUDL, Ö. ALMARSSON
- 1188 Evidence for Multiple Sources of Diamond from Primitive Chondrites: S. S. RUSSELL, J. W. ARDEN, C. T. PILLINGER
- 1191 Reduced Antarctic Ozone Depletions in a Model with Hydrocarbon Injections: R. J. CICERONE, S. ELLIOTT, R. P. TURCO
- 1194 Transgenic Plants with Enhanced Resistance to the Fungal Pathogen *Rhizoctonia solani*: K. BROGLIE, I. CHET, M. HOLLIDAY, R. CRESSMAN, P. BIDDLE, S. KNOWLTON, C. J. MAUVAIS, R. BROGLIE
- 1197 Binding of ARF and β -COP to Golgi Membranes: Possible Regulation by a Trimeric G Protein: J. G. DONALDSON, R. A. KAHN, J. LIPPINCOTT-SCHWARTZ, R. D. KLAUSNER
- 1200 Structurally Homologous Ligand Binding of Integrin Mac-1 and Viral Glycoprotein C Receptors: D. C. ALTIERI, O. R. ETINGIN, D. S. FAIR, T. K. BRUNCK, J. E. GELTOSKY, D. P. HAJJAR, T. S. EDGINGTON
- 1202 Epidermolysis Bullosa Simplex: Evidence in Two Families for Keratin Gene Abnormalities: J. M. BONIFAS, A. L. ROTHMAN, E. H. EPSTEIN, JR.
- 1205 Functional Importance of Sequence in the Stem-Loop of a Transcription Terminator: S.-W. C. CHENG, E. C. LYNCH, K. R. LEASON, D. L. COURT, B. A. SHAPIRO, D. I. FRIEDMAN
- 1208 Hypotensive Activity of Fibroblast Growth Factor: P. CUEVAS, F. CARCELLER, S. ORTEGA, M. ZAZO, I. NIETO, G. GIMÉNEZ-GALLEGO
- 1210 DNA Bending by Fos and Jun: The Flexible Hinge Model: T. K. KERPPOLA AND T. CURRAN
- 1214 Genetic Mosaics in Strangler Fig Trees: Implications for Tropical Conservation: J. D. THOMSON, E. A. HERRE, J. L. HAMRICK, J. L. STONE

Inside AAAS

- 1229 Be It Resolved: Ups and Downs in the Making of AAAS Resolutions ■ In Brief ■ 1992–93 AAAS Fellowships ■ Science and Security

Book Reviews

- 1233 Partners in Science, reviewed by L. OWENS ■ Millikan's School, T. ROTHMAN ■ Field Theories of Condensed Matter Systems, R. JOYNT ■ Some Other Books of Interest ■ Vignettes: E. U. Condon and the Bureau of Standards ■ Books Received

Products & Materials

- 1241 Automated Single Cell Selection and Transfer ■ Five Parameter Water Quality Probe ■ Multiple Peptide Synthesis System ■ Monoclonal Antibody Purification Kit ■ Graphics Software ■ Gel Rocker ■ Automated DNA Sequencer ■ Cell Freezing Medium ■ Literature

Board of Directors

Donald N. Langenberg
*Retiring President,
Chairman*

Leon M. Lederman
President

F. Sherwood Rowland
President-elect

Mary Ellen Avery
Francisco J. Ayala
Eugene H. Cota-Robles
Robert A. Frosch
Joseph G. Gavin, Jr.
Florence P. Hasettine
Jean'ne M. Shreeve
Warren M. Washington

William T. Golden
Treasurer

Richard S. Nicholson
Executive Officer

Editorial Board

Charles J. Amtzen
Elizabeth E. Bailey
David Baltimore
William F. Brinkman
E. Margaret Burbidge
Pierre-Gilles de Gennes
Joseph L. Goldstein
Mary L. Good
Harry B. Gray
John J. Hopfield
F. Clark Howell
Paul A. Marks
Yasutomi Nishizuka
Helen M. Ranney
Robert M. Solow
Edward C. Stone
James D. Watson

Board of Reviewing Editors

John Abelson
Frederick W. Alt
Don L. Anderson
Stephen J. Benkovic
David E. Bloom
Floyd E. Bloom
Henry R. Bourne
James J. Bull
Kathryn Calame
Charles R. Cantor
C. Thomas Caskey
Dennis W. Choi
Ralph J. Cicerone
John M. Coffin
Bruce F. Eldridge
Paul T. Englund
Fredric S. Fay

Douglas T. Fearon
Harry A. Fozzard
Victor R. Fuchs
Theodore H. Geballe
Margaret J. Geller
Roger I. M. Glass
Stephen P. Goff
Corey S. Goodman
Stephen J. Gould
Ira Herskowitz
Eric F. Johnson
Stephen M. Kosslyn
Konrad B. Krauskopf
Charles S. Levings III
Harvey F. Lodish
Richard Losick
Anthony R. Means
Mortimer Mishkin
Roger A. Nicoll
William H. Orme-Johnson III

Stuart L. Pimm
Yeshayau Pocker
Dennis A. Powers
Ralph S. Quatrano
Erkki Ruoslahti
Thomas W. Schoener
Ronald H. Schwartz
Terrence J. Sejnowski
Thomas A. Steitz
Richard F. Thompson
Robert T. N. Tjian
Emil R. Unanue
Geerat J. Vermeij
Bert Vogelstein
Harold Weintraub
Zena Werb
George M. Whitesides
Owen N. Witte
William B. Wood
Keith Yamamoto

Science

254 (5035)

Science **254** (5035), 1087-1241.

ARTICLE TOOLS

<http://science.sciencemag.org/content/254/5035>

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 © 1991 The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works.