American
Association for the
Advancement of
Science

# SCIENCE

ISSN 0036-8075 4 DECEMBER 1987 VOLUME 238 NUMBER 4832

1333 This Week in Science

Editorial 1335	5 The Omnipotence Scandal
Perspective 1337	Oncogenes and Transcriptional Control: H. E. VARMUS
Letters 1340	O Cost of Geological Congress: C. L. Drake ■ What Drives the Aurora?: R. L. McPherron; R. A. Kerr ■ Molecular Spectra: G. Herzberg ■ Mars Mission: L. Friedman; G. H. Reynolds ■ Gametophytes, Not Endosperms: R. Schmid ■ Computer Technology: S. M. Gendel
News & Comment 1342	2 Postmortem on Three Mile Island
1345	5 Apples, Frogs, and Animal Rights
1346	6 A Spy Satellite for the Press?
1348	B British Government Rekindles Debate on Embryo Research
1349	Description: Buy Japanese Supercomputer ■ Gallo to Stay at NIH—For Now at Least
Research News 1350	Do Animals Read Minds, Tell Lies?
135	The Giant Arcs Are Gravitational Mirages
1352	2 Role of Alzheimer's Protein Is Tangled
Articles 136	Laboratory Antarctica: Research Contributions to Global Problems: G. Weller, C. R. Bentley, D. H. Elliot, L. J. Lanzerotti, P. J. Webber
1368	3 Gas-Phase Polymerization: Ultraslow Chemistry: H. Reiss
1374	The Molecular Control of Blood Cell Development: L. SACHS
Research Articles 1380	Evidence for Divergent Plate-Boundary Characteristics and Crustal Spreading on Venus: J. W. HEAD, III, AND L. S. CRUMPLER
1386	6 Human Proto-Oncogene c-jun Encodes a DNA Binding Protein with Structural and Functional Properties of Transcription Factor AP-1: D. BOHMANN, T. J. BOS, A. ADMON, T. NISHIMURA, P. K. VOGT, R. TIJAN
Reports 1393	3 Rotation and Solvation of Ammonium Ion: C. L. Perrin and R. K. Gipe
1395	Assemblage of Ortho Cleavage Route for Simultaneous Degradation of Chloro- and Methylaromatics: F. Rojo, D. H. Pieper, KH. Engesser, HJ. KNACKMUSS, K. N. TIMMIS
1398	B Fluvial Perturbance in the Western Amazon Basin: Regulation by Long-Term Sub-Andean Tectonics: M. E. RÄSÄNEN, J. S. SALO, R. J. KALLIOIA
140.	Generation of a Hybrid Sequence-Specific Single-Stranded Deoxyrubonuclease: D. R. Corey, P. G. Schultz

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): \$85. Domestic institutional subscription (51 issues): \$98. Foreign postage extra: Canada \$32, other (surface mail) \$27, air-surface via Arnsterdam \$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

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 Statue of Paul Revere. See page 1429 for details of the AAAS Annual Meeting, 11 to 15 February 1988, Boston, MA. [Photo © 1981 Larry Lee]

- 1403 A Complete Mapping of the Proteins in the Small Ribosomal Subunit of Escherichia coli: M. S. Capel, D. M. Engelman, B. R. Freeborn, M. Kjeldgaard, J. A. Langer, V. Ramakrishnan, D. G. Schindler et al.
- 1406 Decreased TRH Receptor mRNA Activity Precedes Homologous Downregulation: Assay in Oocytes: Y. Oron, R. E. Straub, P. Traktman, M. C. Gershengorn
- 1408 Epidermal Growth Factor-Dependent Transformation by a Human EGF Receptor Proto-Oncogene: T. J. Velu, L. Beguinot, W. C. Vass, M. C. Willingham, G. T. Merlino, I. Pastan, D. R. Lowy
- 1411 The Gene for Familial Polyposis Coli Maps to the Long Arm of Chromosome 5: M. Leppert, M. Dobbs, P. Scambler, P. O'Connell, Y. Nakamura, D. Stauffer, S. Woodward, R. Burt, J. Hughes, E. Gardner et al.
- 1413 Bacteriophage M13 Procoat Protein Inserts into the Plasma Membrane as a Loop Structure: A. KUHN
- 1415 A Rapid Cold-Hardening Process in Insects: R. E. Lee, Jr., C.-P. Chen, D. L. Denlinger
- 1417 Similarity of Cruzin, an Inhibitor of *Trypanosoma cruzi* Neuraminidase, to High-Density Lipoprotein: R. P. PRIOLI, J. M. ORDOVAS, I. ROSENBERG, E. J. SCHAEFER, M. E. A. PEREIRA
- 1419 Effect of Membrane Potential Changes on the Calcium Transient in Single Rat Cardiac Muscle Cells: M. B. CANNELL, J. R. BERLIN, W. J. LEDERER

# **Technical Comments**

1423 Virus-Induced Increases in Plasma Corticosterone: A. J. Dunn, M. L. Powell, J. M. Gaskin; J. E. Blalock

#### AAAS News

1426 Salaries of Scientists up Modestly: E. L. BABCO ■ Grants for Foreign Graduate
Students to Attend AAAS Annual Meeting ■ Communications Workshops ■ 1987
Board Election Results ■ New Exhibit Features Chemical Painting ■ Request for
AAAS Travelers in Australia

## <u>AAAS Me</u>etings

1429 AAAS Annual Meeting: Preconvention Program ■ Seminars ■ Call for Seminar Papers ■ SB&F Science Film Festival ■ Meeting Information ■ Advance Registration and Housing Forms

### **Book Reviews**

1446 Making Weapons, Talking Peace, reviewed by C. KAYSEN ■ Nuclear Blackmail and Nuclear Balance, W. H. DONNELLY ■ Space Resources, T. B. McCord ■ Monitoring Neurotransmitter Release during Behavior and Neurochemical Analysis of the Conscious Brain, R. W. Keller, Jr., and M. J. Zigmond ■ Books Received

## Products & Materials

1453 BASIC Compiler-Debugger-Interpreter ■ Custom Peptides ■ Electroporation System ■ 5.25-Inch External Drive ■ Cryofixation Device ■ Microscope Workstation ■ Software Reads Device Data ■ Silver-Staining Kit ■ 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

John Abelson
Qais Al-Awqati
James P. Allison
Don L. Anderson
Elizabeth H. Blackburn
Floyd E. Bloom
Charles R. Cantor
Ralph J. Cicerone
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. Pearse 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 Weintraul Ivring L. Weissman George M. Whitesides Owen N. Witte



Science 238 (4832), 1333-1453.

ARTICLE TOOLS http://science.sciencemag.org/content/238/4832

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

Use of this article is subject to the Terms of Service