



**487**  
Unraveling membrane  
traffic signals

## NEWS & COMMENT

A Clouded Future for IBM Research **480**

Drug Companies Join Forces in Search for  
AIDS Therapy **482**

NIH Budget: A New Kind of Earmarking **483**

Astronomy: Mirror, Mirror, Which Is the  
Fairest? **483**

At State Schools, Calculus Reform  
Goes Mainstream **484**  
Turning Higher Mathematics Into Kids' Stuff

AAAS's Very Own Red Scare **486**

PCR Enzyme Patent Challenged **486**

## RESEARCH NEWS

Secrets of Secretion Revealed **487**

Ozone Takes a Nose Dive After the  
Eruption of Mt. Pinatubo **490**

How to Drive Nucleic Acids Up a Tree **491**

OGLEing, MACHOs, and the Search for  
Dark Matter **492**

Scientists Chase Gravity's Rainbow **493**

## PERSPECTIVE

IL-12: Initiation Cytokine for  
Cell-Mediated Immunity **496**  
P. Scott

## ARTICLE

Removal of Contaminants from Soils by  
Electric Fields **498**  
R. F. Probst and R. E. Hicks

## RESEARCH ARTICLE

Movement of the Guide Sequence During  
RNA Catalysis by a Group I Ribozyme **504**  
J.-F. Wang, W. D. Downs, T. R. Cech

## REPORTS

The Opposition Effect of the Moon:  
The Contribution of Coherent Backscatter **509**  
B. W. Hapke, R. M. Nelson, W. D. Smythe

## DEPARTMENTS

THIS WEEK IN SCIENCE **469**

EDITORIAL **471**  
Science and Technology in Government

LETTERS **473**  
DNA Fingerprinting Report: B. S. Weir; D. L. Hartl  
and R. C. Lewontin • Extraterrestrial Intelligence:  
F. Drake; J. D. Rummel; D. M. Raup

SCIENCESCOPE **479**

RANDOM SAMPLES **494**

MEETINGS **557**  
Science Innovation '93—New Techniques and

Instruments in Biomedical Research, 6–10 August  
1993, Boston: Preliminary Program • Advance  
Registration Form • Hotel Reservation Form

BOOK REVIEWS **565**  
*Phanerozoic Sea-Level Changes*, reviewed by  
E. Winterer • *Fossil Prokaryotes and Protists*,  
K. H. Nealson • *Vestibular and Brain Stem Control  
of Eye, Head and Body Movements and Sensing and  
Controlling Motion*, R. D. Tomlinson • *Astronomy  
at Yale, 1701–1968*, D. E. Osterbrock • *Structure  
and Evolution of Single and Binary Stars*,  
S. J. Kenyon • Vignettes • Books Received

PRODUCTS & MATERIALS **574**

## AAAS Board of Directors

F. Sherwood Rowland  
*Retiring President,  
Chairman*  
Eloise E. Clark  
*President*  
Francisco J. Ayala  
*President-elect*

Robert A. Frosch  
Florence P. Haseltine  
William A. Lester, Jr.

Alan Schriesheim  
Jean'ne M. Shreeve  
Chang-Lin Tien  
Warren M. Washington  
Nancy S. Wexler

William T. Golden  
*Treasurer*  
Richard S. Nicholson  
*Executive Officer*

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  
C. Thomas Caskey  
Dennis W. Choi

John M. Coffin  
Bruce F. Eldridge  
Paul T. Englund  
Richard G. Fairbanks  
Douglas T. Fearon  
Harry A. Fozzard  
Victor R. Fuchs  
Theodore H. Geballe  
Margaret J. Geller  
John C. Gerhart  
Roger I. M. Glass

Stephen P. Goff  
Corey S. Goodman  
Stephen J. Gould  
Ira Herskowitz  
Eric F. Johnson  
Stephen M. Kosslyn  
Michael LaBarbera  
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  
V. Ramanathan  
Douglas C. Rees  
Erkki Ruoslahti  
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  
Keith Yamamoto

## Board of Reviewing Editors