

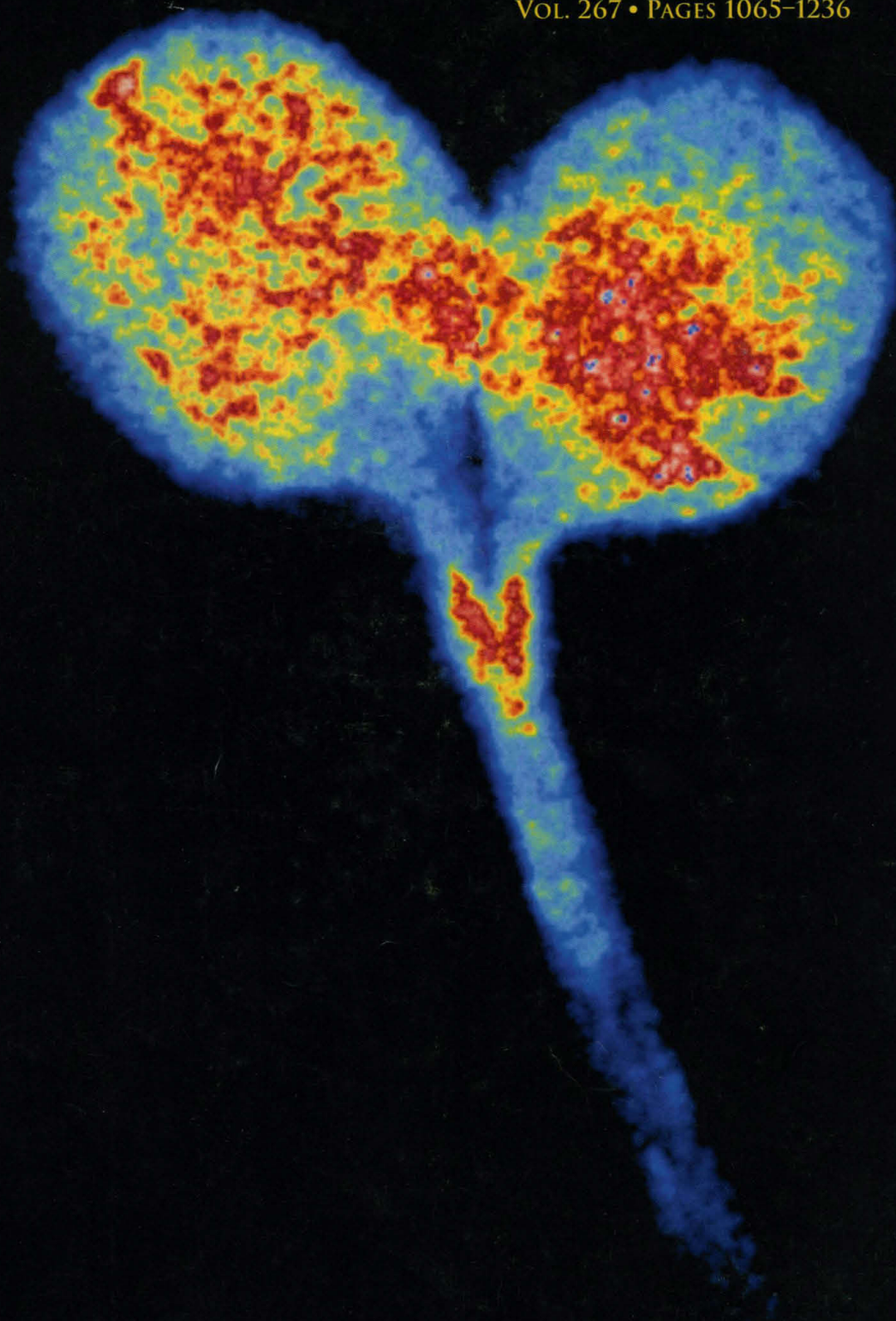


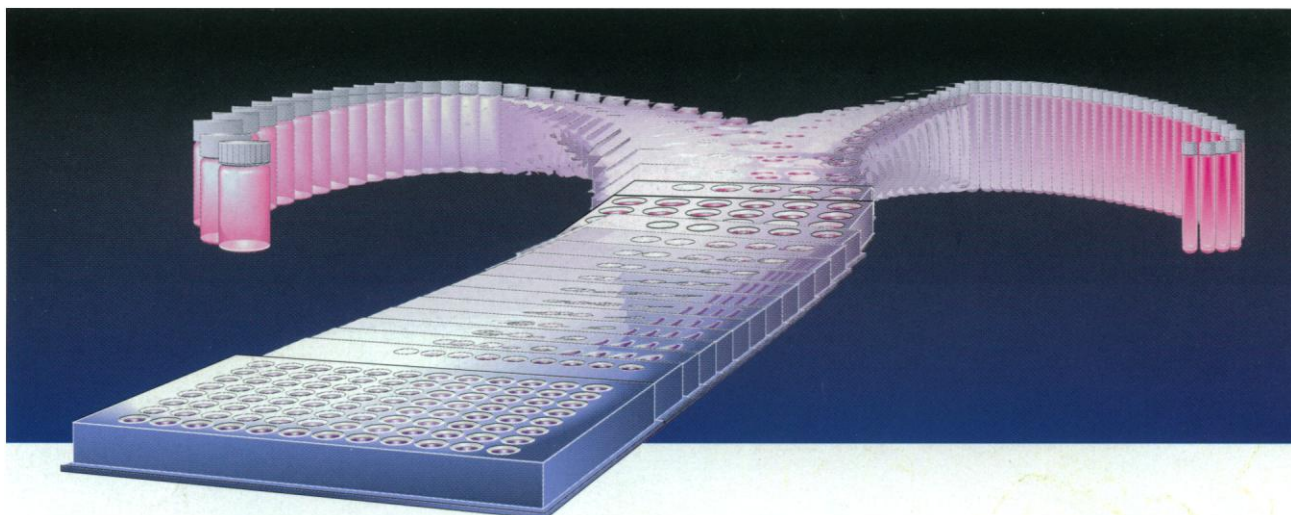
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24 FEBRUARY 1995  
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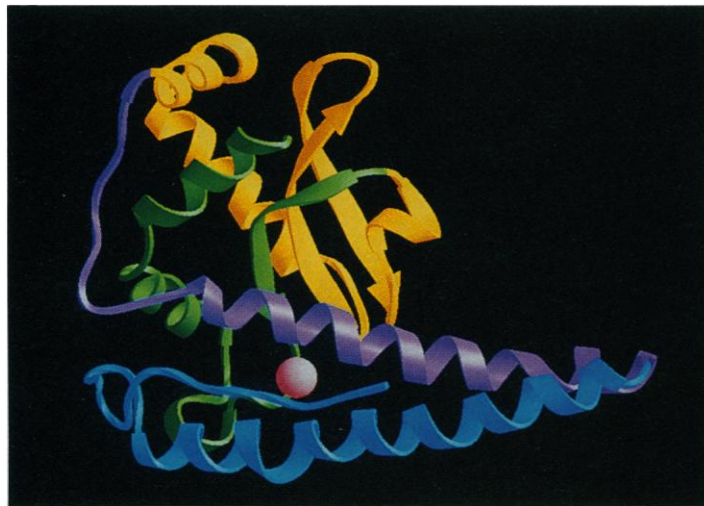
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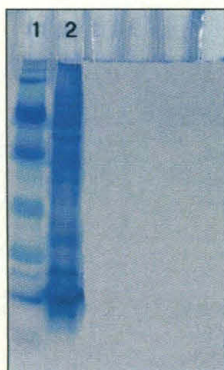
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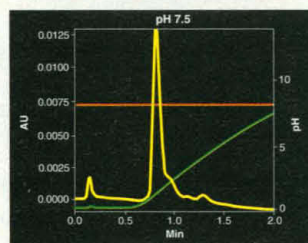
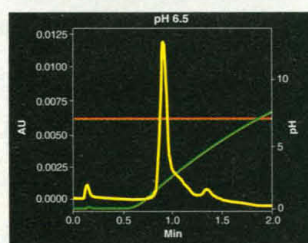
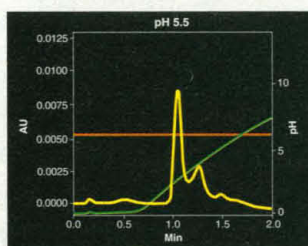
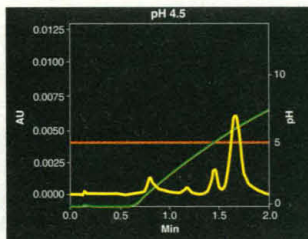
attempts with conventional chromatography columns and instruments and still don't have a clean molecule to work with.

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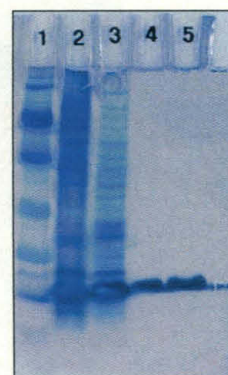
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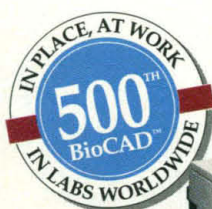
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Lane 1: MW markers.  
Lane 2: Crude.  
Lane 3: Pooled fractions after initial cation exchange step.  
Lanes 4 & 5: Purified cytokine after second purification step with POROS 20 PH hydrophobic interaction column.



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**1153**

Rough stuff



**1178**

Molecular basis  
for SCID

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## COVER

The firefly luciferase gene can serve as an effective reporter for gene expression in vivo. In this *Arabidopsis* seedling, the luciferase gene was fused to the promoter region of the *CAB2* gene, whose expression is regulated by light and the circadian clock. Expression is

greatest (red) in the cotyledons and absent (blue) in the root. See page 1161 and a related Report (page 1163) and News story (page 1091). [Luminescence image: S. Kay and A. Millar]



# Near-Atomic Resolution Imaging of Ferroelectric Liquid Crystal Molecules on Graphite by STM

D. M. Walba, F. Stevens, D. C. Parks, N. A. Clark, M. D. Wand

# Optical Properties of the South Pole Ice at Depths Between 0.8 and 1 Kilometer

P. Askebjør, S. W. Barwick, L. Bergström, A. Bouchta, S. Carius, A. Coulthard, K. Engel, B. Erlandsson, A. Goobar, L. Gray, A. Hallgren, F. Halzen, P. O. Hulth, J. Jacobsen, S. Johansson, V. Kandhadai, I. Liubarsky, D. Lowder, T. Miller, P. C. Mock, R. Morse, R. Porrata, P. B. Price, A. Richards, H. Rubinstein, E. Schneider, Q. Sun, S. Tilav, C. Walck, G. Yodh

# Viscous Dissipation in Three-Dimensional Convection with Temperature-Dependent Viscosity

S. Balachandar, D. A. Yuen, D. M. Reuteler, G. S. Lauer

# Visual Appearance of Matte Surfaces

S. K. Nayar and M. Oren

# Requirement of Carbon Dioxide for in Vitro Assembly of the Urease Nickel Metallocenter

I.-S. Park and R. P. Hausinger

# A Functionally Diverse Enzyme Superfamily That Abstracts the $\alpha$ Protons of Carboxylic Acids

P. C. Babbitt, G. T. Mrachko, M. S. Hasson, G. W. Huisman, R. Kolter, D. Ringe, G. A. Petsko, G. L. Kenyon, J. A. Gerlt

# Circadian Clock Mutants in *Arabidopsis* Identified by Luciferase Imaging

A. J. Millar, I. A. Carré, C. A. Strayer, N.-H. Chua, S. A. Kay

# The Regulation of Circadian Period by Phototransduction Pathways in *Arabidopsis*

A. J. Millar, M. Straume, J. Chory, N.-H. Chua, S. A. Kay

# A Role for Exonuclease I from *S. pombe* in Mutation Avoidance and Mismatch Correction

P. Szankasi and G. R. Smith

# PER Protein Interactions and Temperature Compensation of a Circadian Clock in *Drosophila*

Z. J. Huang, K. D. Curtin, M. Rosbash

# Binding Strength Between Cell Adhesion Proteoglycans Measured by Atomic Force Microscopy

U. Dammer, O. Popescu, P. Wagner, D. Anselmetti, H.-J. Güntherodt, G. N. Misevic

# A Regulatory Role for ARF6 in Receptor-Mediated Endocytosis

C. D'Souza-Schorey, G. Li, M. I. Colombo, P. D. Stahl

# DNA-Dependent Kinase (p350) as a Candidate Gene for the Murine SCID Defect

C. U. Kirchgessner, C. K. Patil, J. W. Evans, C. A. Cuomo, L. M. Fried, T. Carter, M. A. Oettinger, J. M. Brown

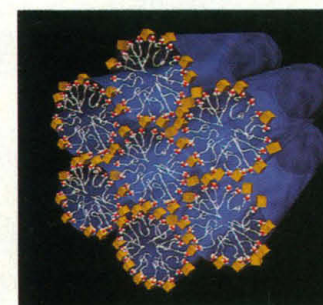
# Absence of p350 Subunit of DNA-Activated Protein Kinase from a Radiosensitive Human Cell Line

S. P. Lees-Miller, R. Godbout, D. W. Chan, M. Weinfeld, R. S. Day III, G. M. Barron, J. Allalunis-Turner

## TECHNICAL COMMENTS

# Alternatives to $^{35}\text{S}$ as a Label for the Differential Display of Eukaryotic Messenger RNA

S. M. Trentmann, E. van der Knaap, H. Kende, P. Liang and A. B. Pardee



# 1138 Surfactants and silicates

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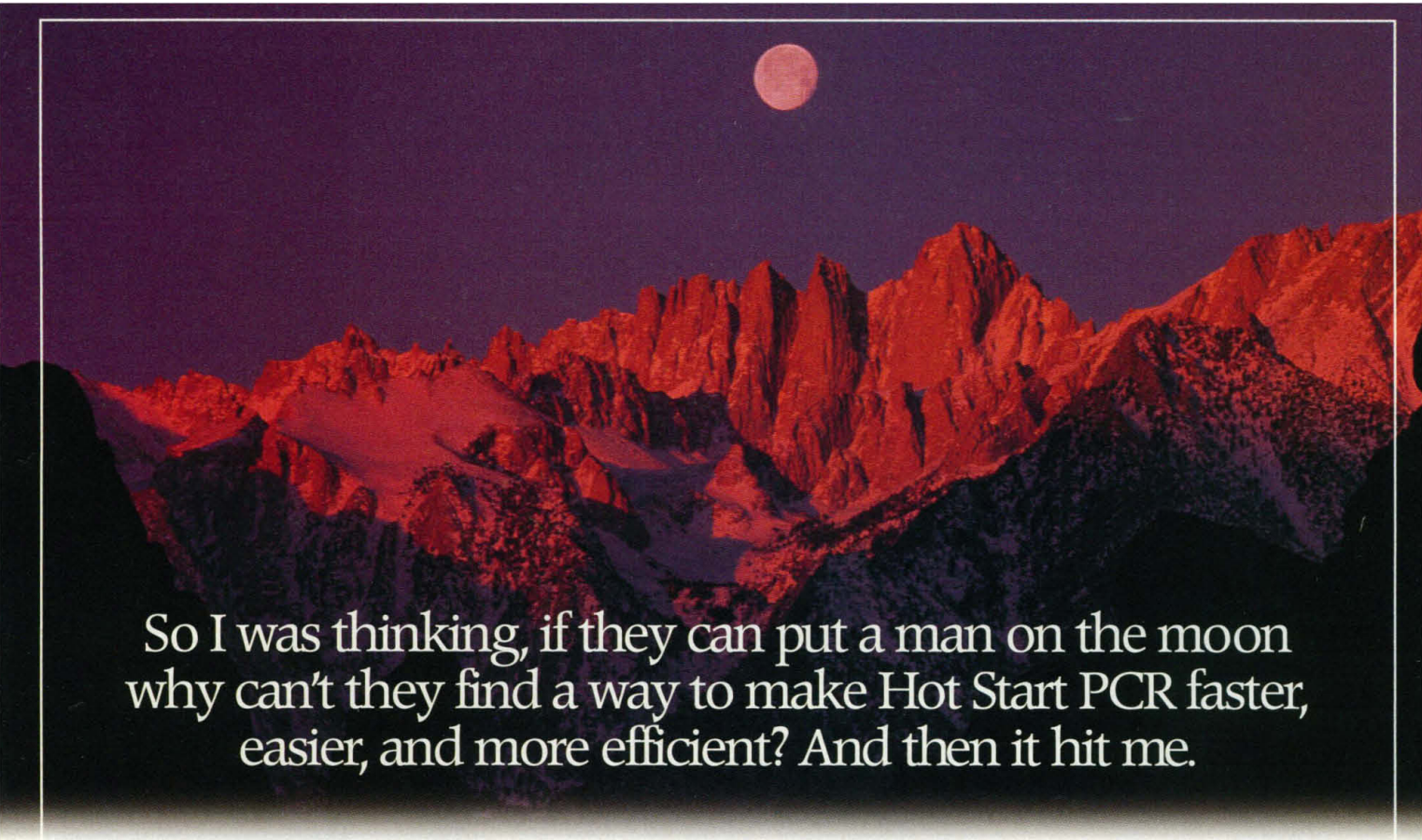
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## Mesophase shifts

In the biomimetic approach for synthesizing materials with nanoscale structures, assemblies of organic molecules serve as templates for assembling an inorganic structure. Firouzi *et al.* (p. 1138) present an alternative approach for assembling nanocomposite materials, using inorganic ions (silicate anions) that interact strongly with surfactants to form a variety of mesoscale phases representing silicate analogs of liquid crystals. Variation of temperature and composition can be used to control the phase behavior, and the silicate units can then be irreversibly polymerized to form mesoscale materials.

## Icy clarity

The AMANDA project is a proposed astrophysical muon and neutrino detector of cubic-kilometer proportions that will use photomultiplier tubes (PMTs) embedded in antarctic ice to detect Cherenkov radiation from energetic particles. In a pilot test, Askebjerg *et al.* (p. 1147) deployed PMTs at depths of up to 1 kilometer in south polar ice, and found that although the ice is extremely transparent, trapped air bubbles scatter light rays with a mean free path of 25 centimeters. The ice is predicted to be bubble-free at about 1150 meters, at which depth a feasible detector might be located.

## Roughly flat

Because most objects perceived by humans or captured in images are seen in reflected rather than emitted light, the way a surface scatters incident light is fundamental to its appearance. Nayar and Oren (p. 1153) pre-

sent a reflectance model for textured surfaces that generalizes the classical Lambert law and takes careful account of surface characteristics, masking effects, and shadowing. The model describes the ways in which surface roughness and detector resolution interact to yield a perceived appearance. For very rough surfaces the model predicts silhouette images devoid of depth—an effect that may be responsible for the flat-disk appearance of the full moon.

## Function follows form

Genome sequencing generates the primary structure of a protein—the sequence of covalently linked amino acids—allowing comparison with other proteins of known sequence and function. But the function of a protein also depends strongly on its three-dimensional conformation, and tertiary structures are not nearly so readily obtained or compared. Babbitt *et al.* (p. 1159) present the analysis of a family of structurally similar enzymes, all catalyzing reactions that begin with the proton abstraction from weak carbon acids. The function of one gene product, a previously unassigned open reading frame, was inferred by combining a chemical un-

derstanding of the type of reaction catalyzed with information from the gene structure of the particular *Escherichia coli* operon.

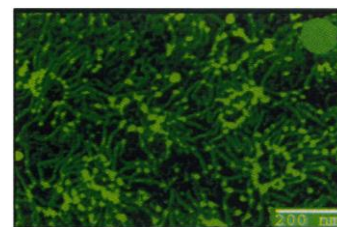
## Hot rhythms

The *per<sup>L</sup>* mutation in the *period* (*per*) gene of fruit flies not only lengthens the circadian rhythm but renders it temperature-sensitive. The mutation site lies in a dimerization domain of the PER protein, and Huang *et al.* (p. 1169) show that single amino acid substitutions at the site render the dimerization interaction strength temperature-dependent. The dimerization domain also interacts with another region of PER, and the authors argue that the *per<sup>L</sup>* mutation upsets a balance between the temperature sensitivities of the inter- and intra-molecular PER interactions, thereby disrupting the normal mechanism of temperature compensation in the flies' circadian rhythm.

## Sticky cells

Adhesion between cells is what gives organisms their bodily integrity. Dammer *et al.* (p. 1173) used atomic force microscopy to measure directly the binding strength between the adhesion

proteoglycans (APs) that hold a marine sponge together; the force required to pull the molecules apart jumps in increments of about 40 piconewtons, corresponding to the separation of a pair of AP arms. The total binding strength between two APs is enough to support the weight



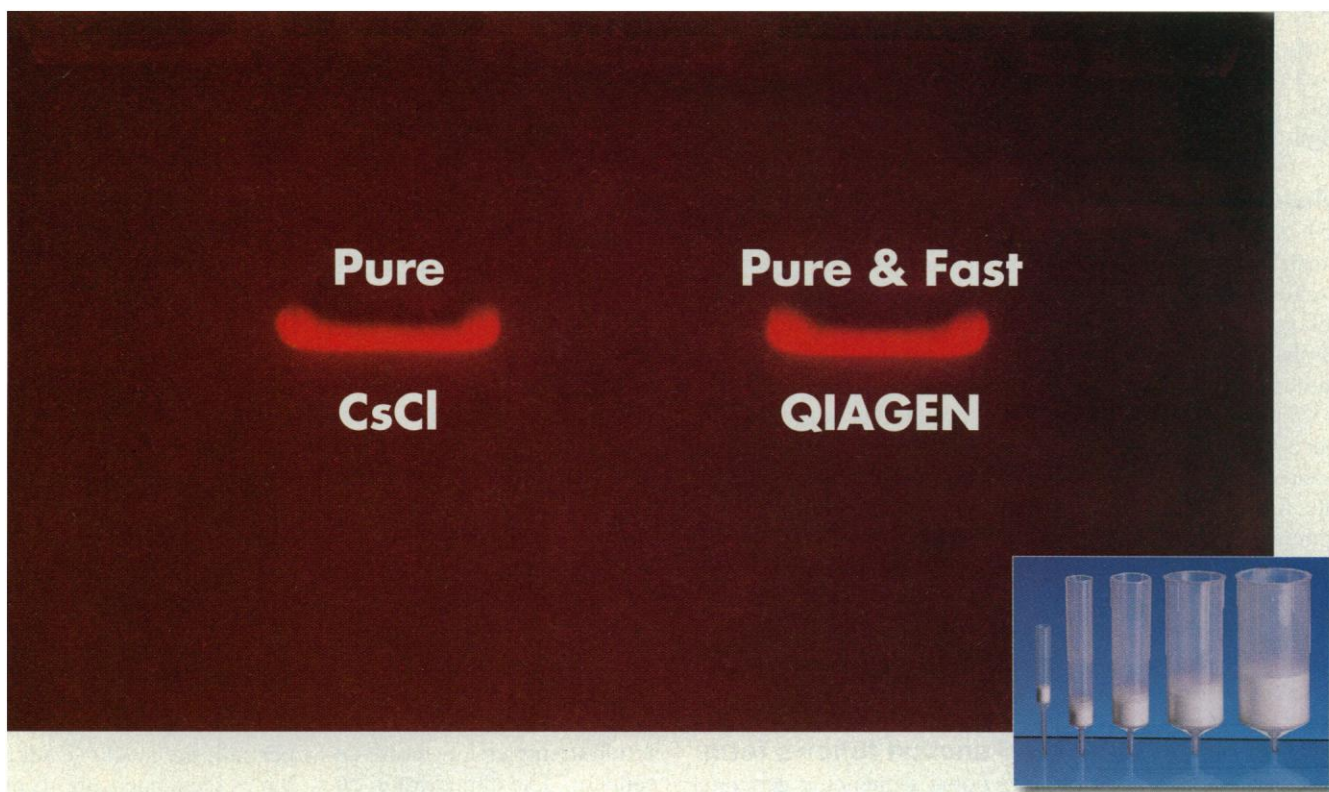
of 1600 cells. With 1000 APs per cell, the available adhesive forces seem adequate to maintain the sponge's form.

## Tying the ends together

Cell survival depends on an ability to repair double-strand breaks (dsb) in DNA, such as those caused by x-rays. Cell lines lacking the Ku protein component of DNA-activated protein kinase (DNA-PK) are known to be defective both in dsb repair and in V(D)J recombination, the process by which antigen receptor gene segments are assembled. Two reports this week examine the consequences for these processes of the loss of another component of DNA-PK, the p350 subunit. Lees-Miller *et al.* (p. 1183) have found that a radiation-sensitive human cell line defective in dsb repair is missing the p350 subunit, yet contains the Ku protein. Kirchgessner *et al.* (p. 1178) use colocalization experiments to propose that p350 is the gene responsible for the severe combined immunodeficient (SCID) phenotype in mice, and to bolster the evidence that the human homolog to murine SCID is on chromosome 8q11.

## ... and only man is vile

By excavation of bird bones from archaeological sites, Steadman (p. 1123) has documented the decline and disappearance of numerous species of birds on Pacific islands throughout Melanesia, Polynesia, and Micronesia. The beginning of the most dramatic losses coincides with the arrival of prehistoric humans on the islands, at times ranging from 30,000 to 1500 years ago, and comparison with the fossil record suggests that the extinction rate over the past several thousand years is considerably higher than it was before human occupation. These observations indicate that loss of biodiversity is not exclusively a problem of the modern industrial world, but has occurred in the past whenever humans have moved into new territories.

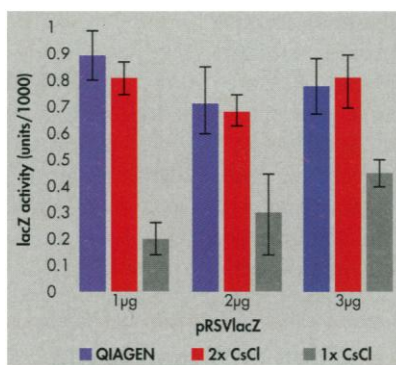


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Comparison of transfection efficiencies. NIH 3T3 cells were transfected with 1, 2 or 3 µg pRSVlacZ DNA, using calcium phosphate mediated transfection. Plasmid DNA was purified either with QIAGEN Plasmid Mega Kit (blue bar), 2 x CsCl ultracentrifugation (red bar) or 1 x CsCl ultracentrifugation (grey bar).

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Data kindly provided by F. Ehler, Institute for Molecular Biology and Tumor Research, Marburg, Germany.

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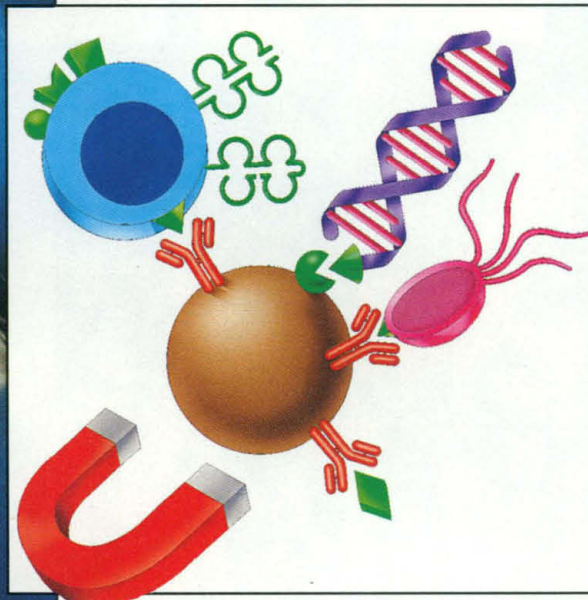


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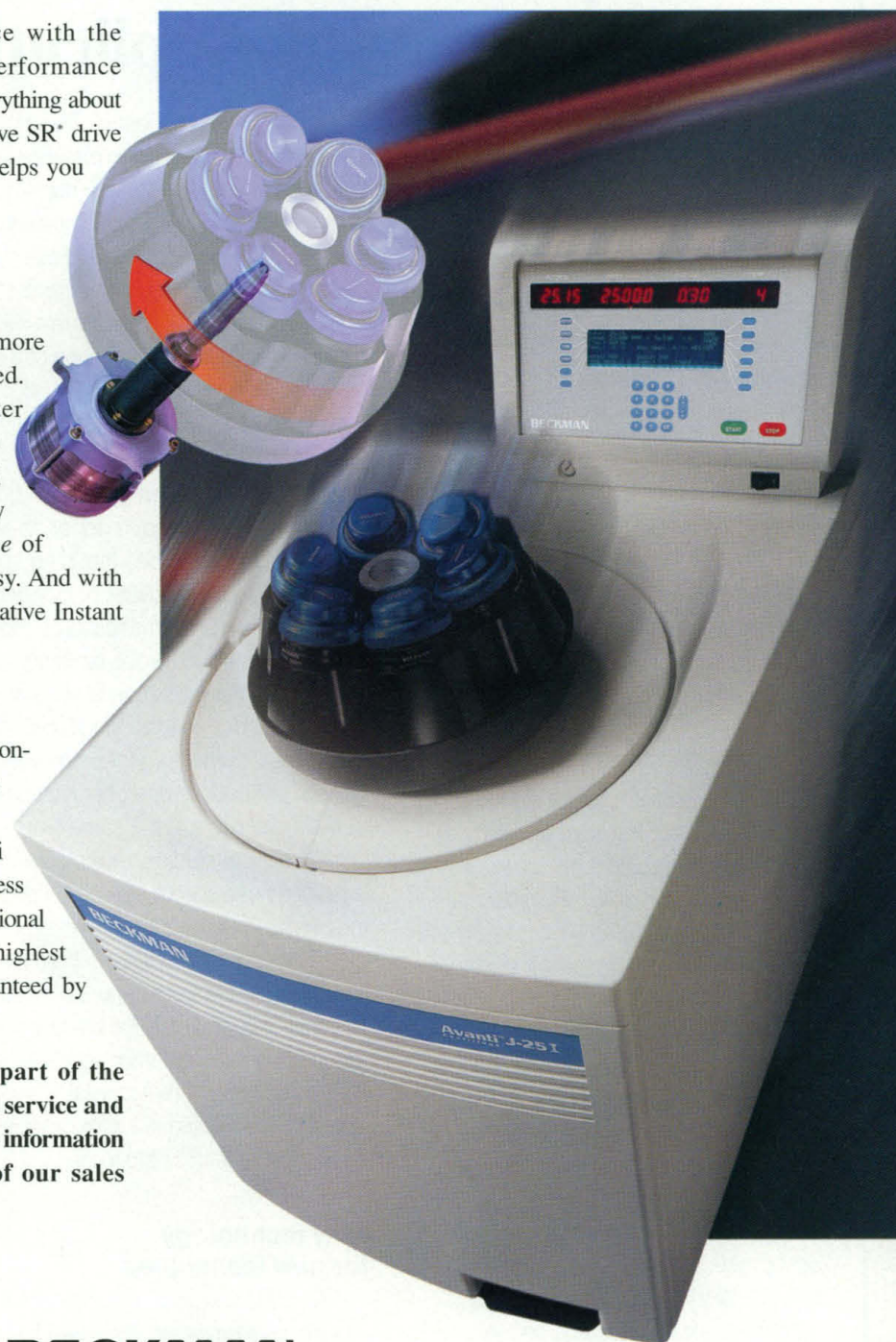
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# Multiprobe Fluorescence Technique Finds Increasing Application in Research

Fluorescence *in situ* Hybridization (FISH), first introduced in the late 1970's, has played an important role in identifying chromosomes, detecting chromosomal abnormalities, and determining the number, size and location of specific DNA sequences in mammalian cells. Today, thanks to advances in probe technology and fluorescence microscopes, FISH is becoming increasingly important as a research tool and may eventually become a standard clinical diagnostic technique in areas such as cytogenetics, prenatal diagnosis and tumor biology.

As biomedical researchers continue to discover more and more human diseases with their causes rooted in genetic abnormalities, Fluorescence *in situ* Hybridization (FISH) has become an increasingly important tool for the analysis of genetic cellular characteristics. This highly sensitive technique is fast, easy to interpret, and yields statistically relevant data. It can be used to identify both normal and abnormal chromosomes and to determine the presence and location of specific genomic sequences with unprecedented detail and clarity.

In FISH, the hybridization reaction biochemically targets gene sequences so their location and size can be determined using fluorescence microscopy. DNA from a chromosome-specific probe is labeled by chemically modifying it to insert a reporter molecule that can be

observed via fluorescence. The labeled DNA is then hybridized to metaphase chromosomes or interphase nuclei for which chromosome-specific staining is desired. The technique is sufficiently sensitive to detect and characterize both numerical and structural aberrations, making it valuable for detection of a number of genetic disorders.

## Multicolor probes permit simultaneous analyses

The FISH technique depends on the availability of probes that bind specifically to regions of genetic or cytogenetic interest. It is a powerful research tool because multicolor probe labeling permits simultaneous use of several different probes inside a single cell, allowing the researcher to analyze multiple genetic sequences and check for several genetic disorders at the same time.

In clinical studies, multicolor FISH analyses have shown striking differences in chromosome frequency in interphase cells from solid tumors, both from the same tumor and from tumors of different patients. Several of these studies are focused on relating tumor aggressiveness to specific chromosomal sequences to improve tumor prognosis beyond what is possible today.

## New technology for new techniques

As FISH and other direct probe techniques have emerged, the need for more sophisticated fluorescence microscope systems has increased dramatically. Since individual sites on a chromosome are so minute, high numerical aperture, high transmission objectives are needed

to image them. And simultaneous use of 2, 3 or 4 fluorescent probes necessitates multiple filters to image multiple sites.

In response to these needs, Nikon has introduced the new Quadfluor Epi-Fluorescence Illumination System, along with a series of higher numerical aperture objectives with higher transmission characteristics.

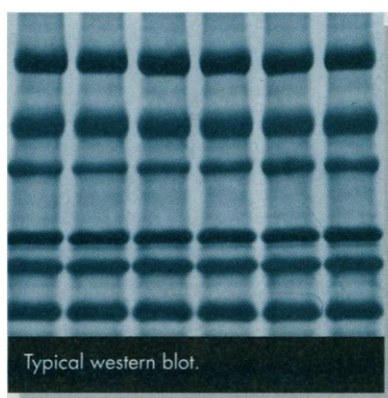
The new CF Plan Fluor objectives feature new optical cements and high transmission coatings to permit broader wavelength ranges (UV — Deep Red) and brighter images that are color aberration free with extremely high contrast and low background autofluorescence. The Quadfluor Illuminator offers expanded filter cube capacity and enhanced filter designs with even better signal to noise ratio performance. It accepts up to four filter cubes at once to separate different signals, or a multiband filter cube to image several fluorochromes simultaneously. The filters can be rapidly switched via an extremely smooth yet very precise linear slider, allowing excellent image registration and making the Quadfluor Illuminator ideal for today's multi-probe techniques.

For more information on Nikon's new Quadfluor Epi-Fluorescence Illumination System, call Nikon at (516) 547-8567, fax us at (516) 547-0306 or contact us on the Internet at [nikonbio@aol.com](mailto:nikonbio@aol.com).

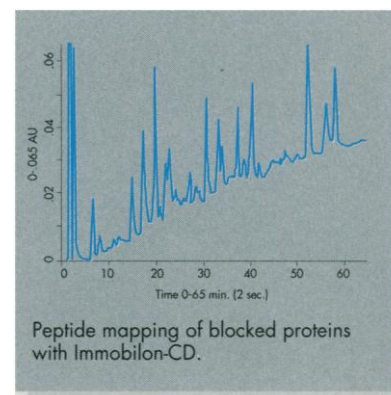
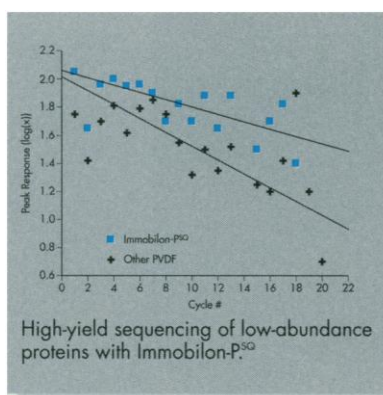
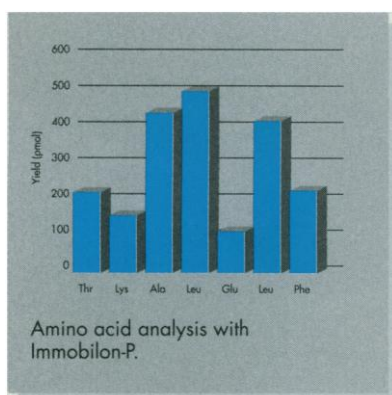
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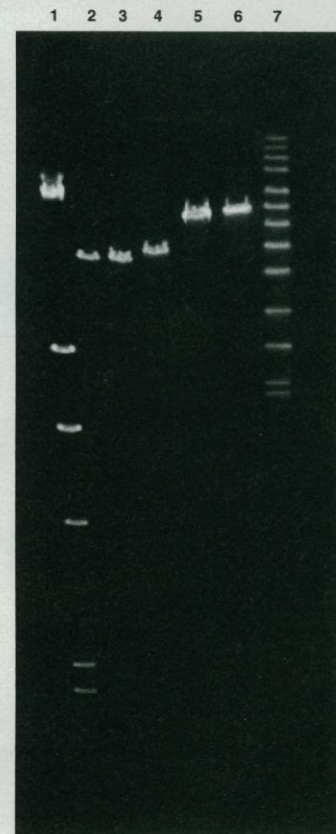
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# ADVICE TO THE STATISTICALLY WEARY.

Just call 1-800-4-JANDEL to order SigmaStat today!  
-SigmaStat Advisor

Dear SigmaStat Advisor,  
Help! I'm a scientist, NOT a statistician. I need a foolproof way to pick the best statistical tests for my research data.  
Signed,

Looking for Answers  
P.S. I'm running on Windows.

Dear Looking,  
Look no further! The Jandel SigmaStat Advisor can help. Simply type your research goals into new SigmaStat for Windows and the "Advisor" feature automatically suggests the best statistical test for your data. SigmaStat also checks your assumptions and evaluates the validity of your results. It can even suggest the ideal sample size. New SigmaStat for Windows, puts your own expert statistician right on your desktop!  
-SigmaStat Advisor

Dear SigmaStat Advisor,  
Help! I tripped and dropped a test tube! What do I do now that my data is unbalanced?  
Signed,  
Statistically Unbalanced

Dear S.U.,  
You need Jandel SigmaStat! Other statistical packages either use erroneous substitution methods or make you throw out valuable data points. SigmaStat for Windows uses a sophisticated general linear model to give you the most accurate results possible from your "messy" data.  
-SigmaStat Advisor

Dear SigmaStat Advisor,  
How do I get a copy of new SigmaStat for Windows? (I heard from a trusted colleague that SigmaStat is the fastest, easiest way to do statistical analysis on my research data.)  
Signed,  
Searching for SigmaStat

Dear SigmaStat Advisor,

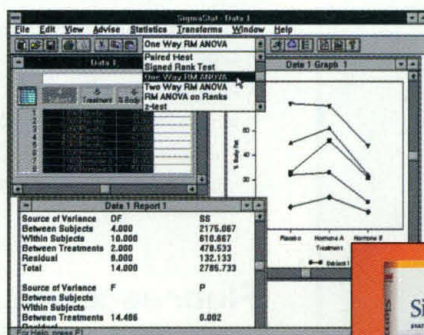
**Try New Jandel SigmaStat™ for Windows!** New SigmaStat for Windows comes complete with your own expert statistician right in the box! The SigmaStat Advisor appears with a click of your mouse to make your statistical worries go away. What's the ideal sample size? Which statistical test is best? Are your assumptions and results valid? SigmaStat has the answers.

**The SigmaStat Advisor Automatically Picks the Best Test for You.** SigmaStat automatically points you to the appropriate tests. You simply type in your goals, and SigmaStat's Advisor automatically suggests the best statistical test for your data!

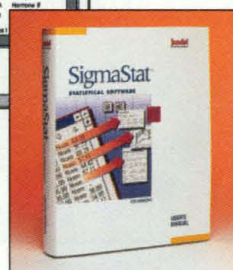
**SigmaStat Gives You Better Results from "Messy Data."** Other statistical software packages throw out valuable data. Not SigmaStat for Windows. SigmaStat uses a sophisticated general linear model to fill data gaps, so you get more complete results and better conclusions.

**SigmaStat Checks Your Assumptions.** SigmaStat automatically checks that your data fit the assumptions underlying the statistical methods you're using. If there's a problem, SigmaStat will automatically suggest a more appropriate test!

**SigmaStat Lets You Print Detailed Reports and Stunning Graphs.** SigmaStat automatically creates a detailed report of your test results—complete with its own analysis! Plus you can automatically print publication-quality graphs of your SigmaStat results or cut and paste to your favorite Windows application.



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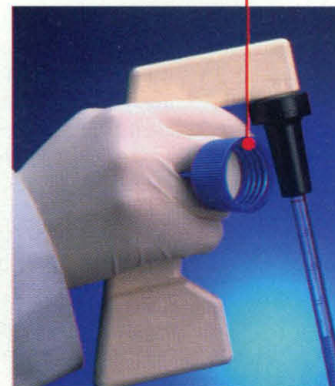


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Extra headspace for **easy** supplementation of at least 20% over normal fill volumes.

## No-Slip Grip

Flat sides make these bottles **easy** to hold, even when handling wet bottles while wearing gloves.

## Virtually Unbreakable

It's **easy** to be safe with E-Z HOLD Bottles made from tough, yet lightweight, polyethylene terephthalate (PET) plastic. And, PET plastic is the most recycled plastic in the world. ♻️



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\* Patent No. 5,246,127



# A New Era in Science and Technology

20th Annual AAAS Colloquium on Science and Technology Policy  
April 12-14, 1995 The Capital Hilton Hotel

The AAAS Science & Technology Policy Colloquium provides a forum in which federal and industrial policymakers and members of the scientific, engineering, and academic communities can participate in an open discussion of issues relating to science and technology policy.

The Colloquium occurs after the release of the President's budget but before final congressional action, thus allowing for

the timely exchange of information about the budget and the consequences of various policy issues involving science and technology.

**Who should attend:** Scientists, administrators, industrial R&D managers, policymakers, academicians, association officials, federal grant recipients, students, and others with an interest in science and technology policy.

## PROGRAM OVERVIEW

### Wednesday, April 12

(registration opens at 12 noon;  
program starts at 2 p.m.)

**Keynote:** John H. Gibbons, *Assistant to the President for Science and Technology, and Director, OSTP.*

#### The New World of R&D Funding (Plenary Symposium)

- ▶ R&D and the New Congressional Leadership (Rep. Robert S. Walker\*, *Chairman, House Science Committee*)
- ▶ The Administration's New Budgeting Process (Alice M. Rivlin\*, *Director, Office of Management and Budget*)
- ▶ Overview of Federal Budget Proposals for R&D in FY 1996 (Stephen D. Nelson and Kathleen Gramp, AAAS)

**The William D. Carey Lecture**  
(public invited)  
Speaker to be announced

### Thursday, April 13

**Beyond Competitiveness: A New Look at Science, Technology, and Economic Performance**

#### (Plenary Symposium)

- ▶ Aggregate Economic Data and Individual Insecurity: If Business Is Doing So Well, Why Are Workers So Nervous?
- ▶ Technology, Jobs, and Wages in the New World Economy
- ▶ What's the Real Effect of Technology on Jobs and Earnings?
- ▶ Science, Technology, and Trade Performance
- ▶ Mobilizing Science and Technology for National Wealth Creation

**Luncheon Address:** Vint Cerf\*, *Senior Vice President, MCI*

#### Concurrent Symposia

- ▶ The Galvin Report and the Future of the DOE National Laboratories (J. David Roessner, organizer)
- ▶ *Science – The Endless Frontier* Plus Five: Decisive Impacts of the Early Cold War Years on the Formulation of U.S. Science Policy (William Blanpied, organizer)
- ▶ Human Resources and Career Opportunities in Science and

Technology: Will There Be Enough Jobs? (Alan E. Fechter, organizer).

**Major R&D Agency Budgets for FY 1995**  
(Concurrent small group sessions)  
DOD • DOE • NIH • NASA •  
NSF • DOC (NIST, NOAA)

### Friday, April 14

**Breakfast Address:** Mark O. Hatfield\*,  
*Chairman, Senate Appropriations Committee*

#### Concurrent Symposia

- ▶ Megascience and International Collaboration (Alan Schriesheim, moderator)
- ▶ Reinventing the Federal Science Agencies: Goals and Structures (J. Paul Gilman, organizer)
- ▶ What DOD Needs in R&D (moderator to be announced)

**Luncheon Address**  
Speaker to be announced

\*Invited speaker

Budget discussions will be supplemented by *AAAS Report XX: Research and Development, FY 1996*, a comprehensive analysis of the proposals for FY 1996 budget, prepared by AAAS and a group of its affiliated scientific, engineering, and higher education associations. Registrants will receive this report at the Colloquium; the *1995 AAAS Science and Technology Policy Yearbook* (containing most of the colloquium addresses, plus other significant items) in early Fall; and *Congressional Action on R&D in the FY 1996 Budget* later in the Fall.

**Register now** by completing and returning the enclosed form. For further information, contact: Directorate for Science and Policy Programs, AAAS, 1333 H Street, NW, Washington, DC 20005. Fax: (202) 289-4950. E-mail: [snelson@aaas.org](mailto:snelson@aaas.org). Phone: (202) 326-6600 (for information). To register phone (202) 326-7075.



# AAAS Colloquium on Science & Technology Policy

April 12-14, 1995

The Capital Hilton Hotel, Washington, DC

## ADVANCE REGISTRATION FORM

Please print or type:

Name \_\_\_\_\_  
Institution/Company \_\_\_\_\_  
Street address \_\_\_\_\_  
City/State/Zip \_\_\_\_\_  
Phone \_\_\_\_\_

- ☐ Check here if you will be staying at the Capital Hilton.  
☐ Check here if you need special services due to a disability.  
Please describe: \_\_\_\_\_

To register by mail, send this registration form with payment to:  
Registration, AAAS S&T Policy Colloquium, P.O. Box 630285,  
Baltimore, MD 21263.

To register by fax, fax this registration form to 202-289-4950.

To register by phone, call 202-326-7075 (automated service).

Deadline for advance registration is March 29, 1995<sup>1</sup>

[1] After March 29, register in person at the Capital Hilton beginning at 12:00 pm, April 12. On-site registration fees are \$15 higher than advance registration fees. [2] Nonprofit rates apply only to employees of government, academic, and nonprofit organizations. Students rates apply only to full-time undergraduate and graduate students and retirees. [3] Refund requests for registration fees and meal tickets must be submitted in writing (to the address or FAX number above) by April 5, 1995, and will be processed after the Colloquium; no refunds will be made for cancellations received after 5 April. Publications: All registrants receive AAAS Report XX: Research & Development, FY 1996; the 1995 AAAS Science and Technology Policy Yearbook, after the meeting; and Congressional Action on R&D in the FY 1996 Budget in the Fall.

### Registration Fees

	Non-member	AAAS Member
Regular	\$240	\$216
Nonprofit <sup>2</sup>	\$180	\$162
Student <sup>2</sup>	\$ 60	\$ 54

AAAS Membership # \_\_\_\_\_

### Meal Tickets

Lunch (Thurs. 13 Apr.)	\$ 35
Breakfast (Fri. 14 Apr.)	\$ 18
Lunch (Fri. 14 Apr.)	\$ 35

TOTAL AMOUNT DUE \$ \_\_\_\_\_

### Payment<sup>3</sup>

- ☐ Check enclosed ☐ VISA ☐ MasterCard ☐ Am. Express  
☐ Original institutional purchase order attached (by mail only)

Card # \_\_\_\_\_

Expiration date \_\_\_\_\_

Signature \_\_\_\_\_

## The Capital Hilton Hotel Reservation Form

AAAS S&T Policy Colloquium April 12-14, 1995

(After March 22, 1995, guest rooms and rate availability may be restricted.)

Name \_\_\_\_\_  
Institution/Company \_\_\_\_\_  
Street address \_\_\_\_\_  
City/State/Zip \_\_\_\_\_  
Phone \_\_\_\_\_

Other occupants of room: Name \_\_\_\_\_  
Hilton Honors # \_\_\_\_\_

Special housing needs: ☐ Wheelchair-accessible room

☐ Nonsmoking room ☐ Other: \_\_\_\_\_

Room: ☐ Single (1 person, 1 bed) \$135\* ☐ Double (2 persons, 1 bed) \$170\* ☐ Additional person, \$25\* For Capital Hilton Towers, add \$25 \*Add 13% DC sales tax and \$1.50 occupancy tax.

Arrival Date/Time: \_\_\_\_\_

Departure Date/Time: \_\_\_\_\_

Please list definite arrival and departure dates and times.

Check-in time is 3:00 pm; check-out time is 12 noon.

Enclose check, made out to Capital Hilton Hotel, for the first night's room deposit or provide major credit card information:

Credit card type \_\_\_\_\_ Card# \_\_\_\_\_ Exp. date \_\_\_\_\_

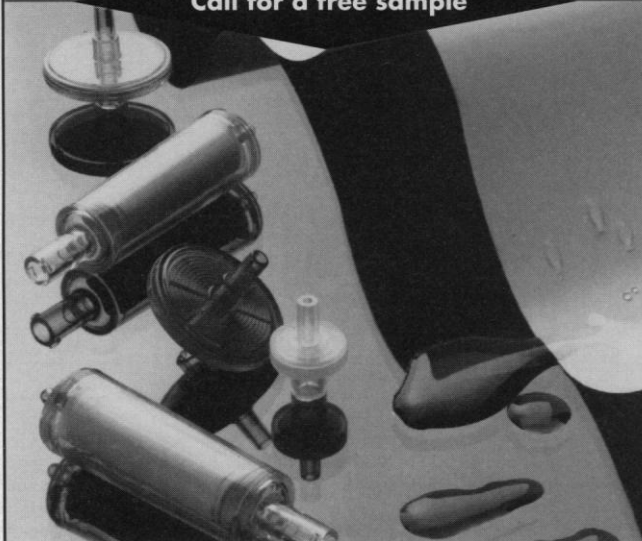
Cardholder's signature \_\_\_\_\_

Mail bottom half (hotel reservation form) to: Reservations, Capital Hilton Hotel, 16th & K Streets, NW, Washington, DC 20036 (or call 202-393-1000 or 1-800-HILTONS; request AAAS rates; Fax 202-639-5784.



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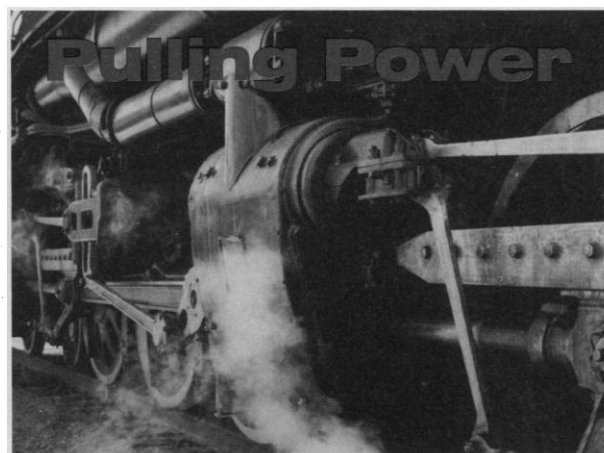
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Celebrate  
150 years  
of Scientific  
Advancement

In 1998, the American Association for the Advancement of Science (AAAS) will celebrate the 150th anniversary of its founding. A commemorative postage stamp would be a fitting tribute to the Association's historic efforts to promote the progress of science and engineering in the service of humankind.

**BUT YOUR HELP IS ESSENTIAL.**

We need letters expressing support for a AAAS commemorative stamp as well as ideas for the stamp's theme and design.

Please write promptly to:

The AAAS Commemorative Postage Stamp Committee  
Office of Communications, Room 801  
1333 H Street, NW, Washington, DC 20005  
or call: 202-326-6440



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