Relying On Distillation Could Leave Your Research Dead In The Water.

In one research facility, house distillation lines suffered from lime build-up. Phosphates were used to clean the system and got into the water used to make polyacrylamide gels, preventing the gels from running. The problem was alleviated when the lab switched to a Milli-Q Plus system.

Despite extensive efforts, protein kinetic measurements using liquid chromatography were hampered by persistent trace metal impurities. The contamination was linked to the lab's distillation process. Switching to a Milli-Q Plus system eliminated the problem.

Researchers worried about the water being used in their S' end-labelling protocols. Any contamination in the buffer, when diluting the DNA, or from freeze-dried Gamma-32P ATP could kill active enzymes in the T4 polynucleotide. A Milli-Q Plus system increased the viability of these enzymes.

Researchers found their mammalian cells stopped growing in defined medium, but not in serum-supplemented medium. After thorough review, the problem was linked to their double-distilled water. Milli-Q Plus water had been used for the serum-supplemented medium.

Waterborne endotoxins and pyrogens were contaminating reagents manufactured by an in-house supplier. The contaminated reagents, in turn, delayed the work of four research groups who relied on the supplier for reagents and pre-cast gels. A pyrogen-free Milli-Q Plus system got things back on schedule.

It's getting so you can't trust distilled water. Parts per thousand contamination levels used to be adequate, but with today's ultra-sensitive equipment, low part per billion levels are almost mandatory.

The Milli-Q® Plus system eliminates ions, pyrogens, and organics that even 5x distilled water can't. And it's easier to use.

The new, redesigned all-in-one cartridge pack takes ten seconds to change. Just pop out the pack and pop in a new one. The system even tells you when to do it.

Because there are no bowls, the system has virtually no hold-up volume, resulting in faster flush-ups, reduced extractables and bacterial growth.

The configuration of the system makes it the smallest on the market, so you can save bench space.

It comes with "on-demand" flow and automatic recirculation, which eliminates storage and degradation problems.

There's also an easy-to-read alphanumeric display, Teflon® valves to prevent leaching, and a Millipak® 0.22 µm pharmaceutical grade final filter.

For more information, call 800-225-1380 (in MA: 617-275-9200), and find out why over 9,000 researchers see their Milli-Q water system as a real lifesaver.

© 1991 Millipore Corporation. Teflon is a registered trademark of E.I. DuPont de Nemours and Co., Inc.

Circle No. 155 on Readers' Service Card
If You Don't Believe It's The Fastest Sample Prep Device, Take It For A Spin.

Put your sample in the Ultrafree®-MC 0.4 mL Filter Unit. The filter unit fits inside a standard 1.5 mL microcentrifuge tube. Put the tube into (what else?) a microcentrifuge. Spin. That's it. A membrane sealed in the filter unit base (choose from 12 microporous and ultrafiltration membranes) helps remove cells or viruses and purify or recover proteins, enzymes and DNA. You can filter and store samples all in one device. All in one step. For a free sample call 1-800-2-FILTER or 617-275-9200.
<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>947</td>
<td>This Week in Science</td>
<td></td>
</tr>
<tr>
<td>949</td>
<td>Editorial</td>
<td>Toxic Chemicals and Toxic Laws</td>
</tr>
<tr>
<td>955</td>
<td>ScienceScope</td>
<td>Dragging the Academy into EMF studies; duking it out over fetal tissue research; etc.</td>
</tr>
<tr>
<td>956</td>
<td>News &amp; Comment</td>
<td>Is Homosexuality Biological? ■ The Brain as Sexual Organ ■ Is “Gender Gap” Narrowing?</td>
</tr>
<tr>
<td>961</td>
<td></td>
<td>Britain’s Crop Circles: Reaping by Whirlwind?</td>
</tr>
<tr>
<td>963</td>
<td></td>
<td>Budget Boost for Energy Science Trimming Research Flagship’s Sails</td>
</tr>
<tr>
<td>966</td>
<td>Research News</td>
<td>Heeding the Call of the Wild ■ No Easy Lessons in Nature</td>
</tr>
<tr>
<td>969</td>
<td></td>
<td>Cognitive Sciences Explored in Chicago: Computer Vision Moving Closer to Reality ■ Computer Learning Gets Mixed Grades</td>
</tr>
<tr>
<td>970</td>
<td></td>
<td>Atoms Do the Two-Step on Crystal Dance Floors</td>
</tr>
<tr>
<td>971</td>
<td></td>
<td>Taking Stock of Saddam’s Fiery Legacy in Kuwait ■ Rainy Forecast for Gulf Area?</td>
</tr>
<tr>
<td>973</td>
<td>Perspective</td>
<td>Was Wright Right? J. F. Crow</td>
</tr>
<tr>
<td>974</td>
<td>Articles</td>
<td>Developments in Automatic Text Retrieval: G. Salton</td>
</tr>
<tr>
<td>986</td>
<td></td>
<td>Mid-Ocean Ridges: Discontinuities, Segments and Giant Cracks: K. C. Macdonald, D. S. Scheirer, S. M. Carbotte</td>
</tr>
<tr>
<td>995</td>
<td>Research Articles</td>
<td>An Explanation for Neptune’s Ring Arcs: C. C. Porco</td>
</tr>
</tbody>
</table>

**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. 484460) 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 ($1 issues): $35; bulk rates: $25. Domestic institutional subscription ($1 issues): $150. Foreign postage extra: Canada, 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 881222. 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 43005-2033. Single copy sales: $5.00 per issue prepaid includes surface postage; Guide to Biotechnology Products and Instruments, $10. Bulk rate 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 0036-8075/83 $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 This image of the enormous hydrogen coma surrounding Comet Halley was obtained by the Pioneer Venus Orbiter over a 5-day period in early February 1986. The image was constructed from over 9000 data points that were obtained as the spin axis of the rotating spacecraft was held fixed and the comet drifted across the instrument field of view. The false-color image, embellished by white constant-brightness contours, shows the Lyman-α brightness distribution at 1216 angstroms. The spacecraft is now headed toward a fiery death in the upper atmosphere of Venus in the fall of 1992. See page 1008. [Image processing by A. I. F. Stewart and M. R. Combi]

Reports


1010 Allerød—Younger Dryas Lake Temperatures from Midge Fossils in Atlantic Canada: R. Walker, R. J. Mott, J. P. Smol

1012 Global Test Matching for Information Retrieval: G. Salton and C. Buckley

1015 Wright’s Shifting Balance Theory: An Experimental Study: M. J. WADE and C. J. Goodnight


1022 Differential Phosphorylation of the Transcription Factor Oct1 During the Cell Cycle: S. B. Roberts, N. Segil, N. Heintz


1028 Identification of a Site in Glutamate Receptor Subunits That Controls Calcium Permeability: R. I. Hume, R. Dingledine, S. F. Heinemann


1034 A Difference in Hypothalamic Structure Between Heterosexual and Homosexual Men: S. LeVay

Technical Comments

1037 Forensic DNA Tests and Hardy-Weinberg Equilibrium: J. E. Cohen, M. Lynch, C. E. Taylor; P. Green and E. S. Lander; B. Devlin, N. Risch, K. Roeder

Inside AAAS

1042 Expanding Views: The AAAS Minority Scholars Workshop on Ethics in Science

Statement Adopted by the Workshop Participants

Inner Vision

In Memory of Roger Revelle

Gold Rush Revisited

Book Reviews

1044 Exploring the Sun, reviewed by J. Meadows

The Study of Change, J. B. Henderson

Crustacean Sexual Biology, A. H. Hines and L. D. Smith

Books Received

Board of Directors

Donald N. Langenberg

Retiring President, Chairman

Leon M. Lederman

President

F. Shanwood Rowland

President-elect

Mary Ellen Avery

Francisco J. Ayala

Eugene H. Code-Robles

Robert A. Frosch

Joseph G. Gavin, Jr.

Florence P. Haseltine

Jeanne M. Sheeve

Warren M. Washington

William T. Golden

Treasurer

Richard S. Nicholson

Executive Officer

Editorial Board

Charles J. Arndt

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

Yutokura Nishizuka

Helen M. Ranney

Robert M. Solow

Edward C. Stone

James D. Watson

Douglas T. Fearon

Harry A. Fozzard

Victor R. Fuchs

Theodore H. Gabbai

Margaret J. Geller

Roger I. M. Glass

Stephen P. Gold

Corey S. Goodman

Stephen J. Gould

Ira Herskowitz

Eric F. Johnson

Stephen M. Koshly

Konrad B. Krauskopf

Charles S. Levine’s

Harvey F. Lodish

Richard Losick

Anthony R. Means

Mortimer Mishkin

Roger A. Nicoll

William H. Orme-Johnson III

Stuart L. Pimm

Yeshaya Pocker

Denisa A. Powers

Sarah L. Quatrano

Erkki Ruoslahti

Thomas W. Schonborn

Ronald H. Schwartz

Teresa J. Sejnowski

Brian Steltz

Robert T. N. Tjian

L. R. Emur

Geerat J. Vermeij

Bert Vogelstein

Hans Wegner

Zena Werb

George M. Whitesides

Owen N. Witte

William B. Wood

Keith Yamamoto

30 AUGUST 1991

TABLE OF CONTENTS 945
Purify mRNA Directly from Cells in One Hour – Even from A Single Cell!

With our new QuickPrep™ mRNA Purification Kit, you can purify mRNA directly from cells or tissues in just one hour – even if you only have one cell.

- Prepare high-quality mRNA for direct use in PCR, cDNA synthesis, “Northern” blots, and in vitro translation.
- Purify mRNA from just one cell – or up to 0.5 g of tissue.
- Save valuable time; our procedure is fast – and also reliable.
- Bypass the need for intermediate purification of total RNA.

- Preserve the integrity of your mRNA – by denaturing ribonucleases right at the start in our highly chaotropic Extraction Buffer.

To find out more about this Pure Performance™ product from the pioneers in purification technology, call your local Pharmacia LKB representative. Refer to product number 27-9254-01.

† PCR (polymerase chain reaction) is covered by U.S. Patents issued to Cetus Corporation. A license for the use of PCR for research and testing purposes may be obtained by purchase of Perkin-Elmer Cetus GeneAmp® PCR Reagent Kits. Nothing in this advertisement should be construed as an authorization or implicit license to practice PCR under any patents held by Cetus Corporation.

Pharmacia
Advancing The New Biology

Circle No. 174 on Readers’ Service Card
INTRODUCING THE DNA THERMAL CYCLER 480.

More efficient amplification in less time and with less reagents. The new DNA Thermal Cycler 480 System, with our GeneAmp® Reagents and optimized two-temperature PCR protocol, gives you enhanced performance every day, on every sample. All backed by the Perkin-Elmer Cetus PCR Performance Guarantee. A commitment that brings you the expertise and resources of the industry leader.

The DNA Thermal Cycler 480. Continuing the DNA Thermal Cycler's standards of quality and excellence. For technical information and to order either system in the U.S., contact your local Perkin-Elmer sales representative or call 1-800-762-4001. For literature in the U.S., call 1-800-762-4000. Outside the U.S., contact your local Perkin-Elmer sales representative.
Toxic Chemicals and Toxic Laws

Recently there was consternation when it was discovered that a program intended to help minorities and the underprivileged in Detroit might have to be canceled. The reason was that some of the land on which new buildings were built was thought to contain toxic chemicals and therefore fell under the provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (or Superfund). This collision of two valuable programs illustrates how a program originally heralded to carry out a worthwhile goal can become flawed.

Since 1980, when the Superfund Act was passed by an overwhelming majority in Congress, only 34 of 1245 identified priority sites have been cleaned up while approximately 40% of the money has been spent in trial litigation and administrative oversight. The law was empowered by provisions for “retroactivity,” “joint and several liability,” and “strict liability.” These legalities have meant that any identifiable dumper, whether or not the dumper acted legally or contributed only 1% of the material dumped at the site, can be liable for 100% of the cost of cleanup. The result has been that anyone so identified will immediately go to court rather than pay exorbitant and unfair charges. The Environmental Protection Agency further compounded the problem by setting a standard demanding that, in many cases, a toxic waste dump should have its soil sufficiently clean so that a well producing potable water could be dug in the middle of it, regardless of whether the land was to be under a factory or out in the desert, where it posed no threat to a surrounding population. To its credit, Superfund has allowed EPA to act expeditiously in emergency removals.

Critics, many of them within the EPA, point out that if the chemical danger level had been scientifically determined, approximately 90% of the truly important sites could have been cleaned up by now and the money wisely spent. However, the program was designed so that Congress initially did not have to raise much money or raise taxes and instead could argue that the program would not cost the taxpayer anything because it “soaked the corporations.” That, of course, is a euphemism for saying that consumers paying higher fees for the corporation’s products or workers losing jobs because the industry is no longer competitive are not the costs. The ultimate irony is that corporations identified as dumpers can often sue municipalities that also used the dump, so that ultimately the taxpayer will pay anyway. Meanwhile, in 1986, despite the horrendous record and the lack of progress, Congress reenacted the law without changing it but actually appropriated additional sums up to $11 billion.

What needs to be done? First, priority decisions should be taken out of the hands of nonscientists and lawyers and placed in those of scientists who are knowledgeable about toxic agents, who can identify effective targets objectively and who can establish workable priorities for removal of toxic waste.

Second, a significant fraction of the money should be dedicated to research and to new programs that are more cost-effective. There is, for example, an industrial toxicities project, known as the 33-50 program, that is designed to reduce toxic waste to a level 33% below 1988 levels by the end of 1992 and to 50% below these levels in 1995. The purpose is to get chemical manufacturers thinking about reducing pollutants and the cost of cleanup when they plan to manufacture a chemical. Today there is no incentive to use environmentally friendly processes if someone else will pay the cleanup cost. Having manufacturers and also consumers pay up front for cleanup costs should encourage prevention. We cannot ignore toxic dumps produced in the past but, by proceeding with a sane and less wasteful program, we should have money left over for future cleanup prevention.

There is a great debate about political correctness in the country at the moment. Most so-called politically correct programs start out like Superfund, with a highly laudable goal. Some advocates try to silence criticism by implying that any critic is against the goal. When the program founders, those who are against the idea use procedural shortcomings to denounce a worthwhile objective. In the present case, Congress has appropriated $11 billion to help clean up the environment. Let us agree that that money should be used for the intended purpose, and then decide the most effective way in which to do it. It is time we prevent not only sickness from toxic waste, but also the nausea to taxpayers of a wasteful and inept program.—DANIEL E. KOHSLAND, Jr.
"I hear your new product is ready."

"Yep. Mmm, the lasagne looks tasty."

"Patents checked?"

"Wouldn't have tested otherwise."

"And regulatory compliance?"

"It checks out..."

"...which is more than I can say about that meatloaf."

"Hey, where're you getting so much help?"

---

**The answer is in Dialog.**

*Information*—complete, precise, up-to-the minute. It's your most powerful research tool. Find exactly what you need to know fast in Dialog, the world's first and largest electronic library. We offer over 400 diverse, detailed databases readily accessible online via computer and modem, many even on compact disc. You probably won't have to look anywhere else. See your Information Specialist about Dialog. Or call for a free kit on Dialog information for your industry.

**1-800-3-DIALOG**

Dialog Tools for Chemistry: Research and industry news, plus chemical substructures and properties, patent, trademark, safety, regulatory, environmental, and competitive data. Full text and/or abstracts from newspapers, newsletters, journals, conference proceedings, citations, handbooks, encyclopedias. Some sources updated as often as daily, even continuously.

**DIALOG INFORMATION SERVICES, INC.**

A KNIGHT-RIDDER COMPANY

© 1991 Dialog Information Services, Inc., 3460 Hillview Avenue, Palo Alto, California 94304. All rights reserved. DIALOG is a servicemark of Dialog Information Services, Inc., Registered U.S. Patent and Trademark Office.

Circle No. 113 on Readers' Service Card
Pedestals and Glass Ceilings

In her editorial "Heroines and role models" (19 July, p. 249), Maxine Singer seems to be missing the point. Heroines are created to make us say: "Isn't she wonderful? I couldn't possibly be like that!" In other words, their function is to keep women out. By contrast, role models are supposed to make women and minorities think, "I could be like that," and so encourage us to try to come in. Of course, that doesn't do much for us either, because usually the problem is not that we don't try to enter, it's that we are kept out.

White males, who grow up surrounded by role models of every shape and size, may be able to afford heroes. I am not sure those of us who see very few people like us in places where we would like to be, can.

RUTH HUBBARD
Biological Laboratories, Harvard University, Cambridge, MA 02138

Maxine Singer is too pessimistic about the dearth of heroines and female role models. They abound, but not in the traditional places. Just take a look at my wife, Millie Hughes-Fulford, who has just come back from space in the Columbia shuttle. During her 7-year arduous training for SpaceLab Life Sciences—1 she kept her laboratory going, churned out papers, and gave pep talks at schools and the like.

Oh yes, she continued in her magnificent role as a mother and a wife, too.

Heroine? Role model? You bet. None better!

GEORGE A. FULFORD
218 Reed Circle, Mill Valley, CA 94941

Understanding Evolution

The briefing about University of California, Berkeley, law professor Phillip E. Johnson's book Darwin on Trial (News & Comment, 26 July, p. 379) is a good illustration of the failure of the scientific community to follow its own advice about the perennial evolution controversy. Instead of simply addressing the skeptical arguments advanced in the book, the article relies on ad hominem remarks. It is pointed out that Johnson's religious views predispose him against naked materialism (although in his book he states that he finds nothing a priori incredible in God's using Darwinistic evolution to produce life), and a science educator is trotted out to opine that Johnson misunderstands the scientific process. Johnson is also found guilty by association because Creationists like his book.

Well, now. It is also true that fascist governments have embraced Darwinism, that most scientists are not trained logicians, and that many commentators on evolution are predisposed in favor of naked materialism. But all of this is name calling and quite beside the point. In his book Johnson appears to be an interested, open-minded, and very intelligent layman who sees large conclusions drawn from little evidence, notices anomalies in current evolutionary explanations, and will draw his own conclusions, thank you, about the validity of Darwin's theory. A man like that deserves to be argued with, not condescended to.

The theory of evolution by natural selection is not a difficult concept to grasp, and Charles Darwin addressed The Origin of Species itself to a general audience. But neither is it self-evident to many people that natural selection can fully account for the world they observe. Thus when questions about the theory arise in public forums, the scientific community would do much better in the long run to patiently list supporting facts and frankly admit where positive evidence is lacking, rather than paternalistically maintaining that an understanding of the theory of evolution is reserved for the priesthood of professional scientists.

MICHAEL J. BEHE
Department of Chemistry, Lehigh University, Mountaintop Campus III, 111 Research Drive, Building A, Bethlehem, PA 18015

Immortal Sequence

Examination of nucleic acid and protein sequences compiled in computer databases has led to many significant findings of homology between sequences and shared sequence motifs among divergent organisms. We wish to report the discovery of a sequence motif of potentially great importance which is shared by proteins from a number of organisms. This motif consists of the amino acid sequence Ghu-Lys-Val-Ile-Ser; or, in the one-letter amino acid code, "ELVIS."

We examined the Protein Identification Resource, National Biomedical Research Foundation (NBRF) protein database (release no. 26.0) using the FASTP algorithm.
In the scientific world, "R & D" stands for Research and Development. It's an important part of your professional life. But when it comes to your personal life, "R & D" could stand for Responsibilities and Dreams. And in this day and age, it takes a lot of both to see a family through.

That's why the American Association for the Advancement of Science makes the AAAS Term Life Insurance Plan available to you. It's an easy and affordable way to protect your family's future. The Plan provides benefits that can be used to help with basic living expenses and can enable your family to follow through with the plans you made together. You can request up to $240,000 of coverage for yourself. And generous protection is available for your family too.

Don't experiment with your family's financial security! Contact the Administrator of the AAAS Term Life Insurance Plan today. We'll send a brochure and application right away.

Administrator
AAAS Group Insurance Program
1255 23rd Street, N.W., Suite 300
Washington, D.C. 20037
Toll-Free: 1 800 424-9883
Wash., D.C.: (202) 457-6820

THE ROBERT A. WELCH FOUNDATION
CONFERENCE ON CHEMICAL RESEARCH XXXV
CHEMISTRY AT THE FRONTIERS OF MEDICINE

OCTOBER 28-29, 1991
THE WESTIN OAKS HOTEL, HOUSTON, TEXAS

PROGRAM
Monday, October 28, 1991

SESSION I
E. J. COREY, Presiding Scientific Advisory Board Member

E. L. WEHNER, Welcoming of Guests
E. J. COREY, Introductory Remarks
ARACHIDONIC ACID METABOLISM: FROM CHEMISTRY TO HEALTH CARE
BENGTT SAMUELSSON
NEW OPPORTUNITIES AT THE INTERFACE OF CHEMISTRY AND BIOLOGY
PETER G. SCHULTZ

SESSION II
WILLIAM N. LIPSCOMB, Presiding Chairman

INTUITIVE AND COMPUTER-ASSISTED APPROACHES TO THE DESIGN
OF CONFORMATIONALLY RESTRAINED PEPTIDES AND THEIR IMIMICS
PAUL A. BARTLETT
INHIBITOR COMPLEXES OF HIV PROTEASE-TARGET FOR DRUG DESIGN
ALEXANDER WLODAWER
IMMUNOPHILIN-LIGAND COMPLEXES AS PROBES OF THE BLACK BOX
OF SIGNAL TRANSDUCTION
STUART L. SCHREIBER

Tuesday, October 29, 1991

SESSION III
PETER G. SCHULTZ, Presiding Chairman

THE PHOSPHORYLATION AND DEPHOSPHORYLATION OF PROTEINS:
A KEY PROCESS IN BIOLOGICAL SIGNALING
EDWIN G. KREBS
MAN-DESIGNED BLEOMYCINS BASED ON THE ANTICANCER MECHANISM
OF NATURAL BLEOMYCINS
MASAJI OHNO
DESIGN, SYNTHESIS AND EVALUATION OF FUNCTIONAL ANALOGS OF CC-1065
AND DUOCARMYCIN A
DALE L. BOGER

SESSION IV
PAUL A. BARTLETT, Presiding Chairman

PRINCIPLES OF ENZYME REGULATION DERIVED FROM STUDIES ON GLUTAMINE
SYNTHETASE
EARL R. STADTMAN
STUDIES ON CARBOHYDRATE METABOLISM: A MULTIDISCIPLINARY APPROACH
BRUCE GANEM
MOLECULAR PROBES FOR STEROID RECEPTORS
JOHN A. KATZENELLENBOGEN

ADVANCE REGISTRATION FORM
(There is no registration fee)

I will attend the conference.

(Please print or type)
Dr. Mr.
Mrs. Ms. ___________________________ ___________________________ ___________________________
(LAST) (FIRST) (MIDDLE)
Position ___________________________
Organization ___________________________
Department ___________________________
Address ___________________________

Advance registration will be acknowledged and accepted in order of their receipt, to within the
capacity of the available space.
Make your hotel reservations directly with The Westin Oaks Hotel, Telephone No. 1-800-228-3000
or 713-960-8000 x6990, prior to October II, 1991.

Please return by October II to: Kimberly Nelson
The Robert A. Welch Foundation
4605 Post Oak Place, Suite 200, Houston, Texas 77027
With BioCoat, *In Vitro* cell cultures look like this...

...instead of like this

BioCoat, the unique, ECM-coated cultureware from Collaborative, can significantly broaden the scope of your *In Vitro* cell studies. With BioCoat:

- Cells attach and grow more efficiently
- Cells polarize readily into apical and basolateral regions
- Cells differentiate and exhibit true physiologic function

A variety of extracellular matrix proteins (Matrigel™, Laminin, Fibronectin and Collagens), pre-coated on tissue culture plates, membrane inserts and coverslips, offer the researcher a convenient, reliable, ready-to-use means of accurately simulating *In Vivo* cell environments. Correlation and reproducibility of results are enhanced by the consistency and uniformity of the coatings, which are applied by a specially-developed, proprietary process.

Collaborative's BioCoat can add new dimensions to your work in:

- Cell Differentiation
- Cell-Matrix Interaction
- *In Vitro* Toxicology
- *In Vitro* Carcinogenesis
- Primary Cell Culture
- Neural Cell Culture
- Tumor Invasion
- Polarization Studies
- Gene Expression

Exclusively from Collaborative Research Incorporated.
Your Source of Innovative Cell Culture Products.

Write or call today for complete information on Collaborative Research BioCoat Cultureware.

Biomedical Products Division
ANOVA?
ANOVA?
MANOVA?
MANCOVA?

SuperANOVA for the Macintosh!

If you analyze data using general linear models, shouldn’t you be using the best? SuperANOVA™ is a revolutionary approach to data analysis, combining powerful GLM techniques (ANOVA, ANCOVA, MANOVA, MANCOVA repeated measures, regression, and more), full presentation graphing features, and a remarkably user-friendly interface.

Need a second opinion? Critics are unanimous in their praise for SuperANOVA. Macworld magazine says “if you work with statistics professionally, buy this program.” MacUser magazine writes “the interface is as elegant and intuitive as I have ever seen in a program of this complexity,” and awarded SuperANOVA the Editors’ Choice Award for Best New Data Analysis Product.

Need a third opinion? Chances are many of your colleagues are already using SuperANOVA. Ask them to show you what it can do. Or ask us. Call us at 1-800-666-STAT, ext. 301 to learn more about SuperANOVA.

© 1991 Abacus Concepts, Inc. SuperANOVA is a trademark of Abacus Concepts, Inc. All other brands are trademarks or registered trademarks of their respective holders.

Circle No. 189 on Readers’ Service Card

DNA by Operon.
Right Price. Right Now.

Now the world’s leading supplier of synthetic DNA is also the price leader. Operon’s custom DNA is now $3.60 per base with a $20.00 set-up fee per sequence, and free domestic delivery. Same outstanding customer service. Same high product quality. New low price. Call for your free researcher kit.

1-800-688-2248

Operon Technologies, Inc.
1000 Atlantic Ave., Suite 108. Alameda CA 94501
Tel. (415) 865-6644. Fax. (415) 865-5253—NIH/BPA 263-00033233

World’s leading supplier of synthetic DNA.

Circle No. 193 on Readers’ Service Card

Travels with AAAS
For the Inquisitive Traveler

NEW in 1991!

• Ancient Anasazi & Southwest, Aug. 31 – Sept. 9. Explore Chaco Canyon, Santa Fe, Mesa Verde, Hopi & Navajo lands. $2,290
• Thailand & Hong Kong, Nov. 8 – 24. Bangkok & Chiang Mai cultural treasures, Surin elephant roundup, Khao Yai & Phi Phi Island. $3,490 (plus air)
• Amazon & Brazil: Wildlife, Sept. 11 – 26. From golden lion tamarins to the rainforest of Amazonia, Manaus, Brasilia, the Pantanal, Emas, and Rio. $3,490 (plus air)
• Tahiti with S/V Wind Song, Sept. 27 – Oct. 7. Paradise! Papeete, Raiatea, Bora Bora, and Moorea. $2,195 (plus air)
• Voyage to the Sea of Cortez, Dec. 21 – 28. For your Christmas holiday! $2,000+ (plus air)

And Coming in 1992:


Call Today for Travel in 1991/92!
(800) 252-4910

For Members & Friends of AAAS by

Betchart Expeditions, Inc. • 21601 Stevens Creek Blvd. • Cupertino, CA 95014 • (800) 252-4910