ADVANCES IN INSTRUMENTATION
Beckman Sets the P/ACE for Automated Electrophoretic Separations...

The P/ACE™ System 2000 from Beckman is designed for today and tomorrow. A modular system, P/ACE leads the evolution of capillary electrophoresis.

A removable detector allows multiple future detection options. Interchangeable cartridges let you change capillaries in minutes. Temperature control provides unmatched reproducibility. And sealed vials minimize sample evaporation. All unique to P/ACE. Unique too—the surprisingly affordable price.

Keep P/ACE with the latest in electrophoretic separation techniques! And achieve rapid success separating proteins, peptides, synthetic oligonucleotides, DNA fragments, and more. Call 800/742-2345, or write to Beckman Instruments, Inc., Spinco Division, Customer Service Department, 1050 Page Mill Rd., Palo Alto, CA 94304. Offices in major cities worldwide.

BECKMAN

Circle No. 203 on Readers' Service Card
Due to its modular design, the Leitz ARISTOPLAN® photomicroscope can be extended step-by-step to cover all techniques of light microscopy. Brightfield, darkfield, fluorescence, phase or interference contrast can all be carried out with one objective, and the ARISTOPLAN has a rapid switching facility for quick change from one technique to another. Ergonomically designed and upgradable for any research budget.
Fortunately, you don't have to understand this equation to reduce the incubation periods of your solid-phase assays up to 50%. The Sonata™ Opus 1 Acoustic Diffusion Accelerator does it for you. By employing the process known as "acoustic microstreaming," the Sonata™ speeds diffusion of immunoreagents toward the solid-phase of your 96-well microplates or strips.

The results will delight you. Increase the throughput of your laboratory, or watch your signals soar when you use acoustic microstreaming during your standard incubation periods (and with no attendant gain in background noise, the results are truly remarkable).

The data to the right are from an experiment using the Sonata™ Opus 1 with an ELISA diagnostic test kit. To learn more about how this instrument can improve the results of your assays, contact us.

Benchmark Technologies, Inc.: the exclusive dealer for the Sonata™ Opus 1 Acoustic Diffusion Accelerator and other leading instrument technologies. Please call or write us today for further information.

Q: How to reduce incubation?
A: $\Theta_0^L = [g(r) + e_r(r)] \sin 2\theta$

<table>
<thead>
<tr>
<th>Serum Preparation</th>
<th>Mean OD No AM</th>
<th>Mean OD W/AM</th>
<th>Standard Deviation No AM</th>
<th>Standard Deviation W/AM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neg Control</td>
<td>0.045</td>
<td>0.028</td>
<td>0.019</td>
<td>0.011</td>
</tr>
<tr>
<td>Low Pos Control</td>
<td>0.252</td>
<td>0.295</td>
<td>0.027</td>
<td>0.013</td>
</tr>
<tr>
<td>Low Pos Dil 1:5</td>
<td>0.055</td>
<td>0.193</td>
<td>0.003</td>
<td>0.004</td>
</tr>
<tr>
<td>High Pos Control</td>
<td>0.501</td>
<td>1.276</td>
<td>0.008</td>
<td>0.000</td>
</tr>
<tr>
<td>High Pos Dil 1:5</td>
<td>0.172</td>
<td>0.549</td>
<td>0.004</td>
<td>0.005</td>
</tr>
</tbody>
</table>

AM: Acoustic Microstreaming Mean OD at 60 minutes; n=5

Sonata is a Trademark of Chromogen, Inc. Patent Pending
(c) Benchmark Technologies, Inc. 1989

For information circle reader service number 228
For a demonstration circle reader service number 229
ANNOUNCING THE DAWN OF A NEW ERA IN LABORATORY ANIMAL IDENTIFICATION

Simplicity itself: a programmable stand-alone system that doesn’t require a computer hookup and uses your animal identification number.

Background

Some two years ago BioMedic Data Systems revolutionized laboratory animal identification by introducing an implantable micro-identification device with an encoded number. An interrogation system activates the implantable chip which then transmits its number. In effect: a truly foolproof system akin to adding a unique electronic “universal product code” to each animal.

What are the Benefits?

This simple system obsoletes the traditional ear punching or tagging, toe clipping, and tail tattooing. As such, the age-old labor intensive techniques—in terms of the initial identification, the subsequent reading, and the inevitable re-dos—are replaced by a simple, easy, humane and remarkably efficient system. (A dramatic example: 200 animals can be identified in about 45 minutes.)

In addition: the imprecision of the conventional methods is replaced by positive animal identification. Animal misidentification or infection can indeed by catastrophic should they delay, impede, or destroy a crucial investigation. This simple foolproof system now converts ear punching or tagging, toe clipping, and tail tattooing into unacceptable risks ... and who needs that when a positive animal identification system is now available!

What about Tissue Response?

As a result of a 105-week subchronic evaluation in rats and mice, there have been:
- no significant effects on normal body weights.
- no palpable masses observed.
- no visible tissue reaction.

The tissue response to the implanted microchips is considered to be completely non-adverse.
Announcing the Dawn of a New Era in Laboratory Animal Identification

You are now looking at the complete ELAMS™ (Electronic Laboratory Animal Monitoring System): the injection handle with 10 implantable microchips, the scanning wand that interrogates the chips, and the Programmable ID Data Acquisition System. Simplicity itself: Implant this chip, interrogate it, and key in your number. This stand-alone system does not require coupling to a computer. Nor does this system ask you to abandon your animal identification numbers; when an animal is identified, your animal code is always subsequently displayed.

Further: Since this system is not tied in to a computer, it can be used anywhere, even in hostile environments. However, should you choose, it can easily be coupled to a computer or a printer. For your additional protection, a back-up record can always be created in seconds. And this system works with any animal species.

Microchip is subcutaneously injected into the animal.

What about GLP Compliance?

ELAMS™ meets and exceeds the GLP guidelines providing a positive animal identification method that is cost effective and accurate.

To Learn More about the ELAMS™

We invite you to learn more about this new user-friendly (i.e., to both animals and people), state-of-the-art system. Just call our toll free number or drop us a line at...

BioMedic Data Systems
a BioMedic company

Bio Med Data Systems, Inc.
255 West Spring Valley Avenue
Maywood, New Jersey 07607
Phone: 201/587-8300, Fax: 201/843-8816
Toll free number: 1-800-526-BMDS

European Distributor: UNO by
P.O. Box 15, 6900 AA Zevenaar, Holland
Marconistraat 31, 6942 PX Zevenaar
Phone: 08360-24451, Fax: 08360-23785

Japanese Distributor:
Yuasa Shoji Co., Ltd.
13-10 Nihombashi-Asakusa
Chuo-Ku, Tokyo 103, Japan
Phone: 03-665-6742, Fax: 03-665-6994

Circle No. 273 on Readers' Service Card

Who is Using Bio Med Data Systems' Implantable Micro Identification (IMI™)?

More than 45 organizations now have the Bio Med Data System's Implantable Micro Identification including Sandoz Research Institute, Schering Plough, C.I.T., General Motors, N.S.I. Technical Services, Stanford University, University of Miami, M.I.T. (Note that the Sandoz Research Institute has submitted the results of the first year of a two-year study for publication.)
Span the separation spectrum ultraspeed in one centrifuge—the new...
This new SUPRAspeed® centrifuge is in a class by itself. It sets new standards in versatility, economy, ease of operation and safety:

VERSATILITY: A SPECTRUM OF APPLICATIONS
Instead of using both a superspeed and an ultraspeed centrifuge for multi-step separations, now you can run a spectrum of isolations in one instrument—the RC-28S. A top force of 100,000 x g makes the SORVALL® RC-28S the most efficient instrument for antibody, DNA/RNA, enzyme, protein, lipoprotein, membrane separations, virus isolations, and much more. That's versatility.

ECONOMY: A SPECTRUM OF ROTORS
You can use all SORVALL® superspeed rotors from your existing inventory in the RC-28S. Or, select from a wide range of economical new SORVALL® fixed angle and swinging bucket SUPRAspeed® rotors. Free up your ultraspeed centrifuge for the longer, higher g-force work it was designed for by running your low-end ultra separations in the RC-28S. Ultraspeed separations at SUPRAspeed prices. That's economy.

EASE OF OPERATION: A SPECTRUM OF CONVENIENCES
Everything on the RC-28S has been designed for user convenience—from the new automatic rotor recognition system that sets optimum run conditions; to the 2x40 LCD display with multiple programming, RCF, and diagnostic messages. No more rotor codes to remember and enter, no more concern about proper seating of the rotor...the RC-28S takes care of it all. That's convenience.

SAFETY: A SPECTRUM OF PROTECTION BENEFITS
Because the sophisticated rotor recognition system of the RC-28S prevents any overspeed condition, your personnel and your capital investments are provided an extra measure of safety. Also, because the RC-28S can automatically enter optimum temperature, speed and acceleration/deceleration conditions, protection for your precious samples is assured. That's safety.

To design these microscopes takes a supercomputer powerful enough to send man to the stars.

It is an analytical mind of formidable proportion. Computing optical formulae of daunting complexity. Rigorously testing its calculations on intricate, self-generated models. Then meticulously honing the chosen formula for absolutely optimum performance.

And it accomplishes all this at speeds that defy belief. Procedures once monitored on a calendar are now clocked.

The ends justify these means—optics of exceptional clarity and brilliance. On such microscopes as the AHS, IMT2 and BH2, these optics couple with innovative design and precision machining to give you the one thing a microscope must provide: Superior vision.

The microscopes of Olympus—they'll change the way you look at things.

For a demo or tech information, call toll-free: 1-800-446-5967.

Olympus Corporation, Precision Instrument Division, 4 Nevada Drive, Lake Success, New York 11042-1179.
In Canada: W. Carsen Co., Ltd., Ontario.
Computerize your ELISA Testing!

If you use a microplate reader, the ELISA+™ software package from MEDDATA™ can convert your IBM PC* or Macintosh* into a powerful system for data acquisition and analysis for ELISA testing. The sophisticated yet easy-to-use ELISA+ software package adds function and flexibility to most microplate readers. Context-sensitive help texts give you easy access to the full power of the program.

Data Management and Analysis

With ELISA+, your computer can acquire and store microplate absorbance values for subsequent analysis. Multiple standard curves, dilution curves, and formulas allow exceptional flexibility in data reduction. Built-in functions for statistical analysis and validation of quality control samples make assay follow-up easy. Fixed and floating cut-off limits and gray zone ranges can be used for a quick overview of results. Full transformation capabilities of absorbance values and different options for report formatting provide superior flexibility.

Operational Control

The ELISA+ gives you full control of the microplate reader, and its filter changes, through the software. Both kinetic and end-point assays can be run, and multiple plates may be read in sequence, automatically. ELISA+ runs on both IBM PCs and Macintosh computers and works with more than 25 microplate readers from different manufacturers: SLT Labinstruments GmbH; Flow Laboratories, Inc.; Labsystems Oy; Anthos Labtec Instruments GmbH; Molecular Devices Corporation; Dynatech Laboratories, Inc.; Bio-Tek Instruments, Inc.; Bio-Rad Instruments, Inc.; Behringwerke AG; and A/S Nunc-Intermed.

Data Exchange

Plate and sample identifications, either entered using a bar-code reader or downloaded from other computers, may be integrated with the results in the report. Results can also be transferred to other software packages (eg. Lotus 1-2-3* and other programs), or a remote computer.

For more detailed information, or the name of your local distributor, contact:

MEDDATA, INC.
215 East 95 Street, Suite 31G
New York, NY 10128-3838
(212) 860-7320  FAX (212) 860-7401

MEDDATA and ELISA+ are trademarks of MEDDATA, INC. ELISA+ © 1986-1989 by MEDDATA, Inc. *IBM is a registered trademark of International Business Machines, Inc.

Macintosh is a registered trademark of Apple Computer, Inc. *Lotus 1-2-3 is a registered trademark of Lotus development Corporation.

OEM, dealer, and distributor inquiries are welcome. Customized versions of ELISA+ are available. Macintosh version to be available September, 1989.

Circle No. 239 on Readers' Service Card
THE CRYOSTAT THAT SET THE STANDARD, NOW SETS THE PACE FOR INNOVATION

The Frigocut 2800 series from Reichert-Jung offers a new generation of cryostats redesigned for a variety of requirements. We took a proven performer and combined our years of experience in the field of cryomicrotomy to develop a line of cryostats with new innovations. From the standard 2800N to the sophisticated 2800E, with electronic temperature and drive control, the Frigocut 2800 series is unsurpassed in performance, convenience and reliability. It’s one more way Reichert-Jung supports a full range of cryopreparation technology.
THE CARE TO MEET, TO KNOW, TO UNDERSTAND

Ares-Serono Symposia is an independent foundation, created in 1971, to promote scientific research in all disciplines which contribute towards improving human health. This aim is pursued by means of congresses, courses, seminars and specialized studies.

Some of the international meetings scheduled for 1990 are:

- **Cytokines: Basic Principles and Clinical Applications**
  Florence / March 26-28
  Scientific Organization: A.K. Abbas (USA) and S. Romagnani (I)

- **Hormonal Communicating Events in the Testis**
  Rome / April 9-10
  Scientific Organization: M.L. Dulau (USA) and A. Isidori (I)

- **Reproduction, Growth and Development, V Pan-American Congress of Andrology**
  Acapulco / April 23-25
  Scientific Organization: A. Negro-Vilar (USA) and G. Perez-Palacios (MEX)

- **Computers in Endocrinology**
  Milan / May 7-10
  Scientific Organization: V. Guardabasso (I), G. Forti (I) and D. Rodbard (USA)

- **Major Advances in Human Female Reproduction**
  Rome / May 10-12
  Scientific Organization: E.Y. Adashi (USA) and S. Mancuso (I)

- **The New Biology of Steroid Hormones**
  Budapest / September 3-4
  Scientific Organization: F. Naftolin (USA)

- **Endocrinology Under 35**
  Siena / October 8-10
  Scientific Organization: M. Maggi (I)

- **Plasminogen Activators: from Cloning to Therapy**
  Florence / October 29-31
  Scientific Organization: T. Astrup (DK) and G.G. Neri Serenri (I)

- **IV Conference on Differentiation Therapy**
  Yamanashi-ken, Japan / November 4-9
  Scientific Organization: G.B. Rossi (I), F. Takaku (I) and S. Waxman (USA)

No form of advertising or promotional activity by any pharmaceutical company is allowed at Ares-Serono Symposia Congresses.
Biologically Active Peptides
in research and industrial quantities...
... by BACHEM, of course – where know-how creates excellence.

CALCITONINS
human, eel, salmon
CALCITONIN GENE-RELATED PEPTIDE

LH-RH
20 analogs

HIRUDIN-fragments
sulfated and nonsulfated

RENIN SUBSTRATES/
INHIBITORS

ω-CONOTOXIN

CRF, GRF
rat, ovine, human
and analogs

SUBSTANCE P
fragments, analogs
and antagonists

ENDOTHELIN

For information about prices and delivery call or write your nearest BACHEM representative. Ask for the updated catalogue with over 6000 life-sciences products.

THE BACHEM GROUP – FOR BETTER SERVICE, WORLDWIDE

BACHEM Feinchemikalien AG
serving you worldwide except areas mentioned
Hauptstrasse 144
CH-4416 Bubendorf
Phone: 061/931 23 33
Fax: 061/931 25 49
Telex: 966 081

BACHEM Bioscience Inc
subsidiary of BACHEM Switzerland
serving the American continents
3700 Market Street
Philadelphia, PA 19104
Phone: 215/387 0011
Fax: 215/387 1170
Telex: 910 250 2352

BACHEM Biochemica GmbH
subsidiary of BACHEM Switzerland
serving FRG, GDR and CCCP
Lessingstrasse 26
D-6900 Heidelberg
Phone: 0 62 21/16 30 91
Fax: 0 62 21/21442
Telex: 461 352

Circle No. 69 on Readers' Service Card
Labeled compounds from Merck Sharp & Dohme/Isotopes.

MSD Isotopes – research products that work, bringing results to researchers in biology, chemistry, physics, medicine and related fields.

Did you know that we now offer thousands of compounds labeled with deuterium, carbon-13, nitrogen-15 and other stable isotopes too? And did you know that even if you require a compound which is not available from us immediately ‘off-the-shelf’, we have the world’s best facilities to custom synthesize it for you?

Just call or write to us for more information on what we have in stock and can make for you.

For technical information call 1-800-361-0460.

WEST COAST
P.O. Box 2951
Terminal Annex
Los Angeles, CA 90051
Los Angeles Area: (213) 723-9521
Outside State of CA: (800) 423-4977
State of CA: (800) 372-6454

EAST COAST & CENTRAL
4545 Oleatha Avenue
St. Louis, MO 63116
Outside state of MO: (800) 325-9034
State of Missouri: (314) 353-7000

CANADA
P.O. Box 899
Pointe Claire/Dorval, Quebec
Canada H9R 4P7
Telephone: (514) 697-2823

Circle No. 210 on Readers’ Service Card
Zeta Potential Distributions

**JUST A MINUTE!**

And you're in control of colloid particle behavior:

**Coulter® DELSA 440**

**Sixty-second analysis provides the key to control**

Zeta potential is the key to understanding and controlling colloid particle behavior, a critical factor in quality and process control. Simply inject 0.8 ml sample into sample cell, insert cell into optical bench, set run parameters, and request 'Run.' Clear, concise results are ready in just 60 seconds. Only the laser-based DELSA 440 does electrophoretic light scattering analysis using simultaneous multi-angle detection to measure Doppler shifts. It confirms true mobility spectra and plots high resolution zeta potential distributions for:

- Accurate determination of isoelectric points;
- Reliable prediction of aggregation phenomena;
- Easy monitoring of surface binding reactions of particles or biological cells.

The DELSA 440 also reports mean particle size of colloidal suspensions to facilitate flocculation studies.

**With sensitivity to your applications**

The DELSA 440 measures electrophoretic mobility distributions of particles ranging in size from 10nm to 30μm, and determines zeta potential, critical in many industrial applications such as:

- Predicting colloidal suspension stability in the manufacture of pharmaceuticals and pulp or paper.
- Changing the properties of clay or other suspensions used in the manufacture of ceramics and superconductors.
- Achieving pigment dispersion and controlling shelf life.

in the manufacture of paints and other surface coating systems.

**With service and support for your peace of mind**

When it comes to service and support, like all Coulter instruments, the DELSA 440 is backed by the world's most recognized service and support team. No matter what your service need or application question - you can depend on Coulter. For complete information about the DELSA 440 and how it can help you control colloid particle behavior, call our toll-free number today and request extension 2818.

In the U.S., call (800) 526-6932
Outside the U.S., contact your Coulter representative, or call 1-305-885-0131.

© Copyright, June, 1988. All rights reserved.

Circle No. 231 on Readers' Service Card

**Recognizing Your Needs Are More Than Instrumental**
Diatome Diamond Knives. The ultimate in precision and reliability.
For Electron Microscopy, four perfect edges.
Each knife is hand crafted in Switzerland from gem-quality diamonds.
Diatome, your guarantee for accuracy and durability.
For Light Microscopy, the perfect edge.
An unbeatable combination of quality and value.
For a perfect cut every time, look for the name that is leading the way, Diatome.
Charybdotoxin
purified from scorpion (Leiurus quinquestriatus hebraeus) toxin for blocking high conductance Ca$^{2+}$ activated potassium channels
Address orders to:
Receptor Research Chemicals Inc.
Dept C1
P.O. Box 9937
Baltimore, MD 21224
Call 1-800-999-1229 ext. 739
Fax orders
1-301-252-2058
7 days/week, 24 hrs day
Produced by Latoxan
05150 Rosans, France

Technique
A Journal of Methods in Cell and Molecular Biology

Editor: Peter Little, Imperial College of Science and Technology, London; US Editor: Stephen Hughes, National Cancer Institute, Frederick Cancer Research Facility, Frederick, MD.

More than just a description of methods, every article in Technique tells you how the method was conceived and developed, how you can implement it, and how to avoid typical sources of failure and error. Exceptionally detailed, step-by-step protocols are highlighted for easy identification and utility at the lab bench.

Technique brings you: methods and techniques that will enhance your results; timely notification of refinements to existing methods; unbiased review of new supplies and test kits; quality control – methods are reproducible and relevant to the work you do.

Technique covers the broad range of methods used in cell and molecular biology, including: molecular cloning; expression of cloned sequences; characterization of nucleic acids and proteins; mutagenesis and protein engineering; protein-nucleic acid interactions.

Published bimonthly. 1-year subscription: $125 individual/USA; $150 individual/all other countries; $210 institutions/USA; $235 institutions/all other countries.

To order, send remittance to: Saunders Scientific Publications, W.B. Saunders Company, The Curtis Center, Independence Square West, Philadelphia, PA 19106-9884

Prices subject to change. Student rates available upon request. Checks or money orders should be made payable to W.B. Saunders Company.
Before you purchase your next "superspeed" floor model centrifuge, check out the new high speed systems from IEC:

- Up to 15% more force than comparable superspeed rotors.
- Capacity to 3 liters; RCF to nearly 50,000xg.
- Digital or advanced programmable models.
- Rapid or gentle acceleration/braking.
- Complete selection of high performance rotors, adapters, tubes and bottles; accepts many accessories from previous models.
- Safe, simple to use and reliable.

It's a turn for the best in high speed centrifugation. Contact your IEC representative for complete information.

INTERNATIONAL EQUIPMENT COMPANY
300 Second Ave., Needham Hts., MA 02194 U.S.A.
Tel: (617)449-0800, Telex: 174299, INTLEQUIP
Fax: (617)444-6743

DAMON/IEC (UK) LTD.,
Unit 7, Lawrence Way, Brewers Hill Road, Dunstable, Bedfordshire.
LU6 1OB, England, Tel: (0582)604669 Telex: 825942 IEC UK G
FAX: 44-582-609-257

Circle No. 245 on Readers' Service Card
THERMOmax™ and SOFTmax.®
The system approach
to thermoregulated assays.

Accurate, rapid temperature regulation with precise well-to-well thermal and optical uniformity. Linear and non-linear, positive and negative kinetics. Only the THERMOmax Microplate Reader with SOFTmax 2.00 software addresses the unique requirements of your most challenging microassays.

Enzyme Studies. Analyze up to 96 samples simultaneously—especially useful with unstable samples. Data quality is equivalent to that of spectrophotometers.

Kinetic Turbidimetric Assays. For endotoxin determination, clotting and clot lysis reactions, only THERMOmax prevents undesirable disruption of clots. SOFTmax determines log onset time versus log EU/ml.

Superoxide Studies with Living Cells. THERMOmax eliminates cross talk from scattered light. Readings are accurate even with highly turbid samples. And only THERMOmax and SOFTmax combine a narrow bandpass 550 nm filter, computation of maximum rates and dual wavelength kinetics.

Microbiology. For turbidimetric measurement of growth or kinetic measurement of pH changes, THERMOmax with SOFTmax allows you to calculate the maximum rate and the time to the maximum rate.

THERMOmax and SOFTmax.
The complete system for thermoregulated analysis. Contact Molecular Devices today.

Molecular Devices
Molecular Devices Corporation
Menlo Oaks Corporate Center
4700 Bohannon Drive
Menlo Park, CA 94025
(800) 635-5577
(415) 322-4700
(415) 322-2069 (Fax)
6716637 MOLEUW (Telex)

SOFTmax is a registered trademark, and THERMOmax is a trademark of Molecular Devices Corporation.

Circle No. 188 on Readers' Service Card
Bio-Rad capillary electrophoresis
Our customers are using the HPE™ 100 capillary electrophoresis system for a growing list of applications, often with startling results like those shown here.

Capillary electrophoresis is rapidly establishing itself as complementary to other separation techniques such as preparative and analytical HPLC, gel electrophoresis and TLC. Bio-Rad leads the way in the development of this exciting technology. Proven applications for the HPE 100 system include:

- Peptide mapping
- Protein studies
- Nucleic acid analysis
- Detection of product degradation — fragmentation and deamidation
- Free zone, isoelectric focusing, and size separations

The HPE 100 system:

**easy, economical, and effective**

Bio-Rad makes your introduction to capillary electrophoresis simple. We’ve enclosed the capillary in a quick change cartridge. Our patented coated capillaries give you superior separations and allow you to perform isoelectric focusing. High detection sensitivity is provided by a microfocusing system. You can output data on a strip chart recorder, integrator, or PC-driven data collector.

Find out how you can take advantage of the speed and power of the HPE 100 system. Contact us for a complete set of applications bulletins. Toll-free 1-800-424-6723 Ext. HPE.

*Data on file

---

Bio-Rad’s high performance electrophoresis team: We’re committed to giving you the best separations possible.
Compare the Better Micro-pipette

Better Performance
Swiss precision tolerances — accuracy and CV guaranteed to better than ±1%.

Better Quality
Individually tested and inspected — supplied with verified calibration certificate.

Better Design
Comfortable to operate, easy to read precision setting — internal detipping mechanism maintains narrow profile.

Better Selection
Variable and fixed volume, air and positive displacement, single and multi-channel — in a wide range of sizes.

Better Value
Wheaton high quality, Swiss precision micropipettes provide better performance, better features at a better price than the better known competition.

Call Wheaton today
1-800-225-1437 and compare the better micropipette.
Vibratome.® If your research demands fresh tissue sectioning with no freezing or embedding, turn to the Vibratome, the superior tissue sectioning system, Series 1000 or Series 2000. Vibratome Series 2000 gives you specimen bath refrigeration, automatic sectioning repetition, and motorized digital control of section thickness and specimen height.

For detailed information circle No. 40 on Readers' Service Card.

Micromanipulator. Precision control is in your hands with the TPI de Fonbrune Micromanipulators, free-standing and stage-mounted. Experience smooth, positive movement, virtually zero drift and no backlash, with easy to use single joystick control for either right or left-handed operator.

For detailed information circle No. 41 on Readers' Service Card.

Microforge. Perfect companion to the Micromanipulator, the TPI de Fonbrune Microforge, with 6 movement and 2 temperature controls, permits fabrication of both simple and complex microtools. Accomplish fusion/melting, distant/contact stretching, micro-glass blowing, fracturing, using glass, metals, alloys, organic crystals, polymers or other fusible materials.

For detailed information circle No. 42 on Readers' Service Card.

Service. As the only U.S. manufacturer of de Fonbrune Micromanipulators and Forges, and the maker of Vibratome, TPI provides you assured delivery, on-demand technical service and complete repair and replacement should you need it. When your research demands thin slices, finds you in tight spots, or needing tiny tools, call TPI.

See us at Neuroscience Booth 922.
There Are No Substitutes

We are Electron Microscopy Sciences, Fort Washington

You know us for our product quality, our reasonable prices, and our prompt service. There are no substitutes for these advantages. Now for the first time ever, Electron Microscopy Sciences is offering a complete line of chemicals, supplies and accessories for your EM, LM, SEM, Biological and Materials Science needs. Call or write for our catalog today.

See us at Booth #225 at NeuroScience.

Electron Microscopy Sciences

321 Morris Road, Box 251
Fort Washington, PA 19034
Toll-free: 1-800-523-5874
In PA: (215) 646-1566
Fax: (215) 646-8931
Telex: 510-661-3280

Circle No. 50 on Readers' Service Card
HPLC SENSITIVITY

The Coulochem® Electrochemical Detector from ESA is the recognized standard for sensitivity and selectivity. Find out how you can improve your detection capabilities and measure trace levels—call us today:
(617) 275-0100

Coulochem is a registered trademark of ESA, Inc.

Circle No. 212 on Readers' Service Card

HELLMA

Your one stop for Cells and D₂ Lamps.

A full line of quality cells:
• Stock and custom
• Dye laser
• Plane Optics
• UV light sources for all major instruments:
  • D₂ and Hg.
  • CUV-Ō-STIR
  • Mini-magnet cuvette stirrer
  • Variable speed
  • Multiple cell capability.

Box 544, Borough Hall Station, Jamaica, NY 11424
(718) 544-9534 or (718) 544-9166.

Circle No. 189 on Readers' Service Card
The American Society for Mass Spectrometry is accepting nominations for its new Award on Distinguished Contribution to Mass Spectrometry.

To recognize an individual for focused achievement in or contribution to fundamental or applied mass spectrometry.

The award will be presented at the

38th ASMS Conference on Mass Spectrometry and Allied Topics
June 3 - 8, 1990 • Tuscon, Arizona

Nominations must be received by November 1, 1989.

For additional information on nominations or to receive the ASMS Conference Announcement and Call for Papers, contact:
ASMS, Post Office Box 1508, East Lansing, MI 48826-1508, (517) 337-2548
Nobody knows your cell cultures better than you do. And nobody knows alternatives to fetal bovine serum better than GIBCO does. Bring your knowledge together with ours.

Call our technical support specialists. They will help you evaluate your cell culture system requirements, answer your questions, and assist you in selecting the FBS alternative that's right for you from our wide range of products. For clear, comprehensive information on how to choose and use alternative media, sera, and supplements, request GIBCO's free Fetal Bovine Serum Alternatives Guide when you call.
There is no substitute for superior product quality and comprehensive technical support. Promega...

...the complete resource

The Promega 1989/90 Catalogue and Protocols and Applications Guide are now available.

Promega
800-356-9526

Promega Corporation 2800 Woods Hollow Road Madison, WI 53711-5399  608-274-4330
Circle No. 238 on Readers' Service Card
A bakery that supplies Italian bread to grocery stores is interested in determining the type of display most effective in generating bread sales. The bakery is interested in the effect of the height (high, medium, or low) and the width (regular or wide) of the shelves on which the bread is displayed. Twelve grocery stores, similar in size and sales volume, are used in the study. Two stores are assigned at random to each of the six possible combinations of height and width.

**Type III Sums of Squares**

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-test</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>772,000</td>
<td>772,000</td>
<td>772.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Width</td>
<td>12,000</td>
<td>12,000</td>
<td>12.000</td>
<td>1.161</td>
</tr>
<tr>
<td>Height x Width</td>
<td>12,000</td>
<td>12,000</td>
<td>1.161</td>
<td>.3226</td>
</tr>
<tr>
<td>Model Error</td>
<td>62,000</td>
<td>62,000</td>
<td>10.333</td>
<td>.2451</td>
</tr>
</tbody>
</table>

**Height is definitely a factor!**

Note that the sales mean is highest for medium height shelves. This is probably because people don’t like to stoop down or reach up.

SuperANOVA is a revolutionary implementation of general linear modeling. Now you can easily build complex models without learning a command language.

SuperANOVA is from Abacus Concepts, the developers of the award-winning StatView line of statistical software for the Macintosh.
INTERNATIONAL JOURNAL OF NEUROSCIENCE

Volume 36 No. 1-2

Managing Editor: A. L. New
Associate Editors: J. Charney, Y. Chesselet, R. Kosaka, J. Mugnaini

THE LATEST IN NEUROSCIENCE PUBLICATIONS

Gordon & Breach Science Publishers
Harwood Academic Publishers

STRESS

Neurochemical and Humoral Mechanisms

Edited by
Glen R. Van Loon, University of Kentucky, USA
Richard Kvetnansky, Slovak Academy of Sciences, Czechoslovakia
Richard McCarty, University of Virginia, USA
Julius Axelrod, National Institute of Mental Health, USA

This is a two-volume set of papers presented at the Fourth Symposium on Catecholamines and Other Neurotransmitters in Stress. This wide-ranging volume offers researchers a key to enhancing their understanding of the neurotransmitter and humoral mechanisms of stress.


INTERNATIONAL JOURNAL OF NEUROSCIENCE

Editor in Chief
Sidney Weinstein, Neurocommunication Research Laboratories, USA

The International Journal of Neuroscience publishes papers, reviews, letters to the editor, comments and notes concerned with problems of nervous tissue, the nervous system, and behavior.

RECENT PAPERS

CONJUGATE LATERAL EYE MOVEMENTS: A SECOND LOOK
S. CHARTON, P. BAKAN and M. MORETTI
NEUROTROPHIC EFFECT OF ANGIOTENSIN II, VASOPRESSIN AND OXYTOCIN ON THE VENTRAL SPINAL CORD OF RAT EMBRYO
K. IKEDA, M. KINOSHITA, Y. IWASAKI, T. SHIOJIMA and K. TAKAMIYA

ISSN: 0020-7454
1989 Volume: 44-49

ORDER FORM

Please send me a FREE sample copy of the journal:

☐ Neurogenetics
☐ Comments on Developmental Neurobiology
☐ Neuroscience

Please enter my subscription to the journal:

☐ Neurogenetics
☐ Comments on Developmental Neurobiology
☐ Neuroscience
☐ I would like to purchase the title STRESS.

Payment Method:

☐ Check ☐ Money Order ☐ Master Card ☐ Visa ☐ American Express

Account No./Expiration Date:

Signature:

Name:

Affiliation:

Address:

City/State/Country/Zip or Postal Code:

Please return to: STBS P.O. Box 786 Cooper Station, New York, NY 10276, USA or STBS P.O. Box 197, London, WC2E 9PX, England

For immediate service: USA - Phone (212) 206-8900, Fax (212) 645-2459
England - Phone (01) 836-5125, Fax (01) 379-0800

The dollar price applies in North America only; customers in all other countries will be invoiced at the current conversion rates. Subscription prices and publication frequency subject to change without notice.

The dollar price applies in North America only; customers in all other countries will be invoiced at the current conversion rates. Subscription prices and publication frequency subject to change without notice.

Circle No. 263 on Readers' Service Card
The graphs above were sent to us by our customers. They were created using Sigma-Plot, the leading PC software for the production of publication-quality charts and graphs for scientists. Sigma-Plot graphics have been published in literally hundreds of scientific journals, including Science and Nature. And it's no wonder, because Sigma-Plot is designed to create graphs the way you want to your specifications. It includes essential scientific features:

- Automatic error bars
- Multiple plots per page
- Polynomial curve fitting
- Log, semi-log, linear scales

**Jandel Scientific**

65 Koch Road • Corte Madera, California 94925
Toll Free 800-874-1888 • Inside CA 415-924-8640
* FAX: 415-924-2850 • Telex: 4931977

In Europe: RJA Handels GmbH
Grosser Mühlenweg 14a, 4044, Kassel 2, FRG
Phone: 2101/666286 FAX: 2101/64321
Circle No. 250 on Readers' Service Card

Nikon's Microphot-FXA... the first research microscope to display real intelligence...

- **Simplifies** complex microscopy and photo protocols with user defined software management.
- **Resolves** images called "the best in microscopy today" with a choice of over 130 CF lenses including new 1.4 N.A. 60x and 100x oil plan apochromats.
- ** Produces** the brightest low light image in the shortest exposure time.
- **Concentrates** essential controls in a single "ergo-control center" so your eyes never leave the specimen.
- **Switches** effortlessly between transmitted or reflected light techniques including: brightfield, darkfield, DIC, pol, fluorescence, rectified, phase contrast, interferometry, Hoffman modulation contrast and VRM illuminator.
- **Displays** key camera and microscope data on a clear, bright LCD screen.
- **Imprints** exposure time, film speed, frame number, bracket exposure adjust, lux intensity, auto-scale, photo magnification or user defined ID file name/number on the film.
- **Calculates** total magnification and prints it on the film.
- **Detects** the DX code from the film cassette and automatically sets the film speed.
- **Automates** control of brightness, motorized nose-piece, focus, stage movement, photo light path selection and condenser aperture.
- **Documents** hard copy of all functions via desk-top printer.
- **Stores** data and automated functions for up to 3 attached cameras independently for a total of 18 separate data print files.
- **Communicates** with a host computer for remote control and quantitative applications.
- **Responds** to computer commands via RS 232 protocols.

You've just begun to touch on the total system advantages of the Nikon Microphot-FXA. Discover more. Contact Nikon Inc., Instrument Group, 623 Stewart Avenue, Garden City, NY 11530. 516-222-0200.
Announcing MathCAD 2.5: The Dawn of a New Age.

What the historians will call it, only time will tell.
Perhaps the Century of Speed, or the Era of Ease. But whatever the name, this is the age of MathCAD 2.5, the only math package that looks and works the way you think.

MathCAD is far and away the best-selling math package in the world. Because it lets you perform engineering and scientific calculations in a way that’s faster, more natural and less error-prone than the way you’re doing them now—whether you’re using a scratchpad, calculator, spreadsheet or program that you wrote yourself.

And now we’ve made the best even better. MathCAD 2.5 is a dramatically improved version that includes three-dimensional plotting, enhanced numerical analysis, and the ability to import HPGL files from most popular CAD programs, including AutoCAD. And now you can print on PostScript compatible printers.

And like before, MathCAD’s live document interface lets you enter equations anywhere on the screen, add text to support your work, and graph the results. Then print your analysis in presentation-quality documents.

It has over 120 commonly used functions built right in, for handling equations and formulas, as well as exponentials, differentials, cubic splines, FFTs and matrices.

No matter what kind of math you do, MathCAD 2.5 has a solution for you. In fact, it’s used by over 60,000 engineers and scientists, including electrical, industrial, and mechanical engineers, physicists, biologists, and economists.

But don’t take our word for it; just ask the experts.
PC Magazine recently described MathCAD as “everything you have ever dreamed of in a mathematical toolbox.”

And for Macintosh users, we present MathCAD 2.0, rewritten to take full advantage of the Macintosh interface. Entering operators and Greek letters into equations is pure simplicity!

Look for MathCAD 2.5 at your local software dealer, or give us a call. For more information, a free demo disk, or upgrade information, dial 1-800-MATHCAD (in MA, 617-577-1017).

Available for IBM® compatibles and Macintosh computers.

TM and @ signify manufacturer’s trademark or manufacturer’s registered trademark respectively.

MathCAD
MathSoft, Inc. One Kendall Square, Cambridge, MA 02139

Circle No. 230 on Readers' Service Card
WE'RE PROUD OF OUR PACKAGING.
IT MAY NOT LOOK LIKE MUCH TO YOU BUT... A USED BOX TO YOU MEANS 20,000 FEWER TO A LANDFILL.

At New England Biolabs, Inc., we are concerned about the environment and want to promote sound ecological practices. We urge you, too, to take a small but important step. For 14 years we have asked customers to "recycle" our styrofoam boxes. By reusing a box as many as 10 times, we keep more than 20,000 styrofoam boxes, per year, out of landfills and incinerators. (Stacked solid, that's the volume of a livable house!)

And to make return easier, all NEB boxes are delivered with a return postage paid sticker. Just tape the box closed and leave for the U.S. mail — ice packs and all. The cost of recovering our box through the mail is actually greater than the cost of a new box, but the savings are environmental. So, thanks for sending the boxes back.

NEW ENGLAND BIOlabs
New England Biolabs, Inc.
32 Tozer Road, Beverly, MA 01915-5510 USA
800-NEB-LABS
(508)927-5054 FAX (508)927-5595

THE SPECIALISTS IN RESTRICTION ENDONUCLEASES
Circle No. 184 on Readers' Service Card
A powerful, comprehensive, elegant, and super-fast statistical package for IBM (PC, AT, PS/2) and compatible computers. The CSS optimized user interface with fast hierarchical menus incorporates elements of artificial intelligence; even complex analyses require only a few keystrokes (batch processing is also supported). CSS features comprehensive, state of the art implementations of: Basic statistics, Multiway frequency tables, Nonparametric statistics, Exploratory data analysis with analytic graphs, Multiple regression methods, Time series analysis with modeling and forecasting (incl. full ARIMA), General ANOVA/ANCOVA/MANOVA, Contrast analysis, Discriminant function analysis, Factor analysis, Principal components, Multidimensional scaling, Item analysis/Reliability, Log-linear analysis, Cluster analysis, Non-linear estimation, Logit/Probit analysis, Canonical analysis, Survival and Failure Time analysis (Censored data), Quality Control analysis, and much more. All statistical procedures are integrated with fast data base management and instant, presentation quality graphics (over 100 types); full support for all mono and color graphics boards (incl. VGA) and over 100 plotters and printers (incl. the HP and Postscript standards). All CSS screen output is displayed via customized Scrollsheets™ (i.e., dynamic, user controlled, multi-layered tables with cells expandable into pop-up windows); all numbers in a Scrollsheet™ can be instantly converted into a variety of presentation quality graphs; contents of different Scrollsheets™ can be instantly aggregated, combined, compared, plotted, printed, or saved. The flexibility of the CSS input/output is practically unlimited: CSS offers an intelligent interface (read/write) to all common file formats (Lotus, Symphony, dBase, dBase++, DP, SYLK, ... ) and special utilities to easily access data from incompatible programs; graphics can be saved in files compatible with desktop publishing programs (Adobe, Ventura). CSS data files can be as large as your operating system (DOS) allows: OS/2 version coming soon. CSS precision exceeds the standards of all common precision benchmarks. Technical note: The CSS user interface and all I/O were written in Assembler and bypass DOS; graphics and data management were written in Assembler and C; the computational algorithms were written in Assembler and optimized Fortran. $495 (plus $5 sh/h); 14-day money back guarantee.
AIDS 1988: AAAS Symposia Papers
Edited by Ruth Kulstad
Foreword by C. Everett Koop

This volume contains many of the groundbreaking papers on AIDS presented at the 1988 AAAS Annual Meeting.

The wide variety of the papers presented here reflects the current thinking about AIDS research today—that control over the AIDS epidemic must be achieved through a collaborative, multi-disciplinary effort that includes not only the medical and biological sciences, but the social and behavioral sciences as well.

This fully indexed volume is organized into five major sections: The first explores the epidemiology and natural history of AIDS and the HIV infection both in the United States and internationally. It also looks at the difficulty of predicting the course of the virus—statistical issues; patterns of HIV-1 incubation, infectiousness, and transmission; and approaches to demographic impact modeling.

Section two discusses the social consequences of AIDS as they relate to gender, intravenous drug users, and public policy, and it examines the dilemmas that AIDS presents to the medical community.

The third section focuses on the AIDS prevention strategies currently employed around the world.

Section four considers the economic, political, ethical and legal issues surrounding the epidemic.

The final section presents several recent medical and biological studies on AIDS and HIV.

AIDS 1988 is a timely, authoritative source of information on the growing body of AIDS research being conducted around the world. It is essential for medical, biological, social, and behavioral scientists, and for everyone who is professionally or personally concerned about the AIDS epidemic.

1988; 478 pp.; softcover index; 12 appendices
#88-19S – $29.95 (members $23.95)

AIDS: Papers from Science, 1982-1985
Edited by Ruth Kulstad

This collection includes frequently cited research papers and news reports on AIDS that were published in Science between August 1982 and September 1985.

Many of the papers relate directly to AIDS research, while others touch on relevant aspects of the immune system. The news stories help to explain the ongoing research, while focusing on some of the sociological questions raised by the disease. The book is arranged chronologically, enabling the reader to trace the history of the AIDS epidemic through September 1985—a history that is of great sociological interest.

This fully indexed collection is valuable not only for the experimental data and conclusions, but also as an excellent bibliographic reference of AIDS work in major journals worldwide.

1986; 654 pp.; softcover
detailed indexes and illustrations
#85-23S – $19.95 (members $15.95)

Order from:
AAAS Books, Dept. SM
PO Box 753
Waldorf, MD 20604

Individuals must prepay or use VISA/MasterCard. AAAS will pay postage on prepaid or credit card orders; for institutional purchase orders add $3.50 postage and handling. Please specify publication number(s) and allow 2-3 weeks for delivery. For shipments to California, add applicable sales tax.

American Association for the Advancement of Science
INTRODUCES ANOTHER TABLE OF BASIC ELEMENTS FOR YOUR LAB.

There's no symbol for information in the Periodic Table. Yet nothing could be more crucial to your research than complete, accurate technical and business information.

That's why many chemists consider DIALOG® an essential element in the modern lab.

As the world's largest online knowledgebank, DIALOG gives you access to a whole world of critical information. Right in your own lab.

For starters, you can tap into the crucial scientific data. DIALOG has detailed information on everything from compound identification to chemical safety data, property data, substance and substructure.

Then you can expand your focus by accessing important, related data that will enable you to look at your work in a broader context.

For example, you can investigate patents, competitive projects, new product markets, and worldwide industry trends. In fact, you can investigate any topic, anytime.

And you won't have to sacrifice depth for the sake of breadth. DIALOG is updated continuously, so the data is always comprehensive and current. And many citations can be conveniently retrieved in full text.

Call today for more information and a free Periodic Table Reference Card. Once you've examined them, you'll see how DIALOG can become a basic element of all your research.

Call us toll free at 800-3-DIALOG, (800-334-2564). Or request information by Fax at 415-858-7069.
**One More Reason The ACAS 570 is... The Cytometer for All Reasons**

<table>
<thead>
<tr>
<th>Reason #1</th>
<th>Interactive Laser Cytometry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reason #2</td>
<td>Quantitative Fluorescence Measurements</td>
</tr>
<tr>
<td>Reason #3</td>
<td>Sensitive Fluorescence Measurements</td>
</tr>
<tr>
<td>Reason #4</td>
<td>Comprehensive, Interactive Software</td>
</tr>
<tr>
<td>Reason #5</td>
<td>Versatile Integrated Instrumentation</td>
</tr>
<tr>
<td>Reason #6</td>
<td>Quantitative Confocal Microscopy</td>
</tr>
</tbody>
</table>

You command the power of the laser for new research capabilities such as sorting rare cells for cloning, fluorescence photobleaching, and cellular microsurgery. From single to dual label fluorescence measurements, you get real numbers for fluorescence quantitation ranging from cell-cell communication and molecular diffusion, to intracellular Ca\(^{2+}\) and pH. Advanced photometric detection and a focused laser spot give you reliable data from live cells with minimal photobleaching, and without the need for signal averaging.

Powerful software teams laser cytometry with advanced computer technology — giving you integrated data acquisition, analysis, and management functions that are easy to learn, and easy to use. You also get a powerful assortment of application based programs specifically designed for the cell biologist. From fluorescence imaging and cell cloning, to measuring transient Ca\(^{2+}\) and pH, the ACAS 570 provides the broadest range of cell and molecular biology applications available in a single instrument. And now... the ACAS 570 gives you the exceptional resolution and contrast of confocal imaging.

These are a few of the many reasons why the ACAS is The Cytometer for All Reasons. To discover yours call us at 800/247-8084 or in Michigan, 517/349-7200.

**MERIDIAN Instruments, Inc.**

**Bringing Analytical Power to the Cell in Culture**

2310 Science Parkway • Okemos, Michigan 48864
517/349-7200 • 800/247-8084 • FAX 517/349-5967

Conventional and confocal fluorescence images of an anti-tubulin stained astrocyte generated on the ACAS 570 Interactive Laser Cytometer.
Fourth Annual AAAS Arms Control Colloquium
Science and Security
Technology Advances and the Arms Control Agenda

November 16–17, 1989
Capital Hilton Hotel • Washington, DC

Major addresses, plenary sessions, and specialized seminars cover such topics as:

- Recent Developments and New Directions in U.S.–Soviet Relations
- Conventional and Theatre Nuclear Forces and European Security
- Modernizing the U.S. Strategic Triad
- The Future of SDI
- Proliferation of Ballistic Missiles and Other High-Tech Weapons
- Proliferation and Control of Chemical Weapons

Confirmed speakers include:

Congressman Les Aspin, House Committee on Armed Services
Alexei Arbatov, Institute of World Economy and International Relations, USSR
Alexander Konovalov, USSR Institute of USA/Canada Studies
Randall Forsberg, Institute for Defense and Disarmament Studies
Sheila Buckley, Multilateral Negotiations, Department of Defense
Matthew Meselson, Federation of American Scientists
Horst Telchik, Federal Republic of Germany

Registrants receive a Colloquium Proceedings and Conference Reader. Financial assistance is also available for a limited number of educators.

For more information, write:
AAAS Arms Control Colloquium
American Association for the Advancement of Science
1333 H Street, NW
Washington, DC 20005
(202) 326-6490
This volume provides a thorough introduction to the issues concerning the unique relationships among science, technology, and society (STS). It offers 85 articles, editorials, and letters published over the past 40 years in Science, the weekly journal of the AAAS.

The material provides a broad overview of the emerging relationships of science, technology, and society in the period after World War II. Contributors include Bertrand Russell, C.P. Snow, Pope John Paul II, and many scholars well known in the scientific literature. The collection reflects a variety of perspectives on science, technology, and society. Provocative essays capture the concerns of leaders in the scientific community who sought to articulate the pressing problems of their times.

The book is a valuable resource for those with a professional interest in STS studies. It is also designed for use as a supplemental text for college or high school courses examining the social context of STS. And it is of interest to lay readers who want to gain an insight into the purposes and values that shape the directions of science.

Topics include: Scientific responsibility; science and freedom; science and ethics; the human side of science; scientists and citizens; science and the modern world; fraud and misconduct in science; professional rights and duties in the health sciences; science and risk; and science and national security.

1989; 262 pp.; softcover; index #88-12S - $19.95 (members $15.95)

Renewing a Scientific Society
The American Association for the Advancement of Science from World War II to 1970

Dael Wolfe

Dael Wolfe was executive officer of AAAS during the post-war period that saw an unprecedented growth in American science. In this clear and engaging narrative, he describes the Association's role in that growth as well as its internal changes as it sought to serve its four key constituencies: scientists working in all fields of science and technology, students seeking careers in those fields, a public that increasingly needed to understand new technological advances, and opinion leaders whose decisions could influence scientific and technological activities.

Dr. Wolfe also describes the AAAS's work on a wide range of national issues, including development of the National Science Foundation; Cold War concerns about the loyalty and freedom of scientists; questions about the ownership and control of research; efforts to develop an effective science curriculum for all Americans; and issues regarding air conservation, the use of arid lands, the effects of herbicides in Vietnam, and much more.

This book is essential for historians of science, members of scholarly organizations, and everyone who wants to understand the inner workings of a major scientific society.

346 pp.; softcover; index #89-14S - $24.95 (members $19.95)
Information at the highest level...

Is well within your reach.

*Current Contents on Diskette™/Life Sciences*, the most comprehensive life sciences journal information system around, is now available at a **new lower price**.

This weekly electronic information system gives you access to the tables of contents from over 1200 journals in your field. Along with the power to scan them as fast as you like.

Using your own custom profiles, you’ll search each week’s data with maximum efficiency and accuracy. Plus you can print out search results, export records in several formats, even generate orders for article reprints — automatically.

**Four weeks free**

If, after four weeks, you’re not completely satisfied, simply write cancel on your invoice. Keep the four diskettes and retrieval software, free.

**To order, call toll-free: 800-336-4474, operator 301**
or write to one of the addresses below.

**Reach for the highest level...and pay a lower price.**

Available for IBM, compatibles, Macintosh and NEC, in two levels of coverage – J-1200 or J-600.
Ryan is the worldwide leader in self-contained temperature monitors with units available for a variety of users and applications including scientific researchers, aquatic sciences, forestry, fisheries, just to name a few. To see how time-temperature monitoring can help you save time and money, find out more about Ryan monitors:

- Inexpensive solutions to your data collection problems
- Can monitor up to 12 different locations simultaneously
- Allows for data collection anywhere, even underwater
- Software works with your IBM® PC or compatible

To find out more about the right Ryan instrument for you and for a demonstration, contact your distributor or call 800-999-7926 ext. 500 (U.S. only) or (206) 885-7926. Or write to Ryan Instruments, P.O. Box 599, Redmond, WA 98073-0599.

© 1989 Ryan Instruments, all rights reserved. IBM is a registered trademark of International Business Machines Corporation.

Custom made GeneAmp®
PCR Primers
A minimum of 10 nM (100 amplifications), custom made and gel purified, $400.00 per primer.

HIV, HTLV-I, CMV, HSV, EBV and β Thalassemia primer sets, delivered to your lab in 24 hours or less by Federal Express.

10 amplifications $100.00
50 amplifications $360.00
100 amplifications $600.00

Research Genetics
1-800-533-4363
In the United Kingdom 0-800-89-1393
In Canada 1-800-833-8348
FAX 205-536-9016

PROFILE™... a research tool to support your chemical discovery and development programs.

PROFILE™... a new screening service from NovaScreen®, the leader in receptor technology.

PROFILE™... a method to rapidly determine the receptor binding selectivity of your important compounds.

For descriptive literature on PROFILE™, please call 1-800-543-4141.

NovaScreen®, a Division of

Research Genetics
Circle No. 243 on Readers’ Service Card

Free with your first order
PCR Technology
Edited by Henry Erlich, PhD.
Published by Stocton Press

Circle No. 173 on Readers’ Service Card

Circle No. 180 on Readers’ Service Card

Custom made GeneAmp®
PCR Primers
A minimum of 10 nM (100 amplifications), custom made and gel purified, $400.00 per primer.

HIV, HTLV-I, CMV, HSV, EBV and β Thalassemia primer sets, delivered to your lab in 24 hours or less by Federal Express.

10 amplifications $100.00
50 amplifications $360.00
100 amplifications $600.00

Research Genetics
1-800-533-4363
In the United Kingdom 0-800-89-1393
In Canada 1-800-833-8348
FAX 205-536-9016

PROFILE™... a research tool to support your chemical discovery and development programs.

PROFILE™... a new screening service from NovaScreen®, the leader in receptor technology.

PROFILE™... a method to rapidly determine the receptor binding selectivity of your important compounds.

For descriptive literature on PROFILE™, please call 1-800-543-4141.

NovaScreen®, a Division of

Research Genetics
Circle No. 243 on Readers’ Service Card

Free with your first order
PCR Technology
Edited by Henry Erlich, PhD.
Published by Stocton Press

Circle No. 173 on Readers’ Service Card

Circle No. 180 on Readers’ Service Card
**BIOSOFT**

**IS PROUD TO ANNOUNCE**

**The Presentation Graphics Package that REALLY Meets Your Needs**

**For IBM PC/XT/AT/PS2 and compatibles (512K RAM min)**

**True WYSIWYG**

Based on research into more than 1000 published scientific and medical figures.

Exceptionally user-friendly, with context sensitive help and three user-selectable levels of versatility. - FAST operation...fly with Fig.P. - Make and save templates for figure formats you use frequently. - Batch mode operation including autoassembly of templates and datafiles. - Up to 10,000 datapoints per fig...entered in numerous ways including spreadsheet files and direct from many laboratory's instruments. - Statistician mode...automatically calculates means and errors or range. - Missing data handling. - Many curve fitting methods including line plot, scatter plot, smooth natural spline plot, smooth blended plot combining spline and regression, smooth linear or polynomial least squares regression curve fit (with statistics reported off-plot) in any of linear/polynomial, logarithmic, exponential or power-fitting mode and with unweighted or partially weighted or fully weighted data; or the unique Fig.P free-form curve/linear plot which is totally under your control. - Numerous line-styles, touching symbols or not. - Numerous symbols, or none, or different ones on the same line. - Scatter plots 1D or 2D with optional 'clean-scattering' of superimposed points. - Bar graphs with adjustable width, displacement and infill. - Arcigrams (infilling between lines) and data pair connectors. - Text-only charts with text, symbols, arrows, lines, boxes etc anywhere you need them. - Error bars (SEM, SD, or SD,) can be defined for each point as symmetric, up or down. Adjustable terminal cross line. - Labelling in any style or position in any direction with boxes, lines, arrows, text and symbols (including Greek) all of flexible size, type, shape or color. You are not limited by plotter pen thickness or external fonts. True superscripts and subscripts can be used. - Color is fully available on screen (EGA/VGA) and can be printed on printers, plotters or slides. Separate colors can be assigned to each figure element. - Axes can be of any length in any position and can have end segments. Axis breaks can be used and there is a completely flexible tick mark facility. - Multiple y axes or multiple figures per page are available and include insets, superspositions etc. - Output is to HP Plotters, HP Laserjets, PCL compatible laser printers, IBM and Epson dot matrix printers, HPGL compatible film recorders, SCODI format Matrix film recorders, CGM format (ANSI standard), EPS format (PostScript including color). - Supports all usual graphics cards including CGA, HGA, EGA, EGA-mono, MCGA, VGA. - Exports figures as disk files for incorporation in wordprocessor documents etc. - Diagnostic report after each figure.

We could go on and on...instead, we invite you to send or call NOW for a FREE demo disk

**Do you already have a presentation graphics package?**

Here is an offer we think you will find attractive.

We realise that your current package for which you paid a great deal of money may be less than ideal. We are confident that Fig.P will fulfill your needs so when you purchase Fig.P, send the title page of your current manual (we'll return it), and we will send you Fig.P for just US$199; UK£125. (Offer limited to one copy of Fig.P per person and to persons providing proof of previous purchase of presentation graphics package costing US$300; UK£200 or more. Offer expires Dec 31, 1989.)

**Demonstration disk**

**FREE**

**BIOSOFT**

PO Box 580 Milltown, NJ 08850. Tel. 201 613 9013 Fax 201 613 8860

In Europe: 22 Hills Road, Cambridge CB2 1JP, UK. Tel. (0) 223 68622 Telex 9312130806

**Circle No. 3 on Readers' Service Card**
The NanoScope® II Scanning Tunneling Microscope,
Now with an Atomic Force Microscope Option

RED BLOOD CELLS: This 80μ scan of RBCs was made with the NanoScope FM to demonstrate an important new capability for the NanoScope II: scanning cells directly, and without coating.

LAYERS IN A MICA PIT: This scan of a strong insulator shows fine structural detail that could not be seen if the sample was coated with a conductor, as needed for SEM or STM imaging.

Digital Instruments: The Leader in Scanning Probe Microscopy
6780 Cortona Drive, Santa Barbara, CA 93117 FAX: (805) 968-6627 TEL: (805) 968-8116

Environmental Control From Percival
Have control of the environment with a biological, insect rearing, dew, or plant growth chamber from Percival. Whether you need a table model or a giant walk-in, Percival has the knowledge, experience, and quality product line to meet your specific needs. Or, Percival will prepare a recommendation to fit your requirements. Write today for more information and the complete Percival catalog or call collect 515/432-6501.

Since 1886
Percival Manufacturing Company
P.O. Box 249 • 1805 East Fourth Street
Boone, Iowa 50036
The name to remember for versatile Biological Incubators, Insect Rearing Chambers, Dew Chambers and Plant Growth Chambers.

Circle No. 266 on Readers' Service Card

Circle No. 1 on Readers' Service Card
1,000 watts of reliable pulsed RF power for your advanced NMR system.

As your horizons in NMR spectroscopy expand, so do your needs for clean rf power and the noise-suppression capability of a gating/blanking circuit.

Our new Model 1000LP embodies the qualities you should expect of your rf power amplifier: Conservatively-rated pulse output of 1,000 watts with Class A linearity over a 100 dB dynamic range. An ample 8-msec pulse width at 10% duty cycle. Newly expanded bandwidth of 2-200 MHz, instantly available without need for tuning or bandswitching. Total immunity to load mismatch at any frequency or power level. Even from shorted or open output terminals. A continuously variable gain control to permit adjustment of output level as desired.

And an unexpected bonus: A continuous-wave mode, delivering over 200 watts for your long-pulse applications. If you're upgrading your system or just moving into kilowatt-level spectroscopy, a few minutes with this remarkable instrument will show you the ease of shutting it down to reduce noise 30 dB in less than 4 µsec. The friendly grouping of lighted pushbuttons for power, standby, operate, and pulse. Finally, the peace of mind from knowing that the Model 1000LP will not let you down when you're most dependent on it.

Call us to discuss your present setup and your plans for improvement. Or write for our NMR Application Note and the informative booklet "Your guide to broadband power amplifiers."

100 School House Road, Souderton, PA 18964-9990 USA
TEL 215-723-8181 • TWX 510-661-6094 • FAX 215-723-5688

---

1990
McKnight Neuroscience Scholars Awards

In 1976, The McKnight Foundation initiated a program to stimulate research in neuroscience in order to promote a clearer understanding of diseases affecting memory. Over the years, this mandate has been interpreted broadly to permit support of work in many relevant areas of neuroscience. Today, The McKnight Endowment Fund for Neuroscience supports a total of up to eighteen investigators annually through the Scholars Awards. Up to six investigators may be selected each year for awards of three years' duration. The Endowment Fund is now soliciting applications in preparation for the awarding of McKnight Scholars Awards in 1990.

McKnight Scholars will be selected from applicants who hold the M.D. and/or Ph.D. degree and have completed formal postdoctoral training. Candidates should have demonstrated meritorious research in areas pertinent to the interests of The McKnight Endowment Fund and should be in the early stages of an independent research career. The candidate's record and statements from his or her sponsoring institution should provide evidence of commitment to a career in neuroscience.

Each McKnight Scholar selected in 1990 will be supported with an award, payable to the sponsoring institution, of $40,000 annually in 1990, 1991, and 1992. Funds may be used in any way that will facilitate development of the Scholar's research program. They may not be used for indirect costs.

Applications will be evaluated by a Review Committee, which will recommend to the Board of Directors of The McKnight Endowment Fund for Neuroscience candidates for appointment. The awards will be effective July 1, 1990. Eight copies of the application and all supporting materials and letters must be postmarked no later than January 2, 1990. Award announcements will be made on or before April 1, 1990.

Potential applicants should write or call The McKnight Endowment Fund for Neuroscience office to request application materials. The McKnight Endowment Fund for Neuroscience, 410 Peavy Building, Minneapolis, Minnesota 55402, (612) 335-4220.

---

Astronomy & Astrophysics

Edited by
Morton S. Roberts

Selected from articles published in Science between 1982–1984, these 24 papers are divided into four parts: Solar System, Structure and Content of the Galaxy, Galaxies and Cosmology, and Instrumentation. The volume reveals a broad, coherent, and contemporary picture of our astronomical universe. Includes two Nobel Prize lectures. Fully indexed and illustrated. 1985; 384 pages.

85-04H Hardcover $29.95
85-04S Softcover $17.95

(AAAS members deduct 20%)

Send prepaid order to:
AAAS Books
Dept. SM, P.O. Box 753
Waldorf, MD 20604

American Association for the Advancement of Science
Accept No Limitations

With the new Tri-Carb® 2500TR liquid scintillation analyzer, accurate and precise results never came easier. Start with proven Time Resolved LSC, a Tri-Carb exclusive. Backgrounds are cut in half, sensitivity is increased by a factor of two, reducing cocktail consumption and slashing disposal costs. Fast, precise quench monitoring, automatic chemiluminescence, and color correction eliminate repeat measurements, regardless of cocktail type and vial.

Add to this Packard's unique SpectraBase™ sample data processor with live spectrum display and postrun DPM calculation. You never have to recount samples even if you used the wrong counting conditions.

Go beyond ordinary calibration. With Enhanced Instrument Performance Assessment, another Tri-Carb exclusive, the 2500TR automatically calibrates itself, monitors counting performance, and even corrects for degrading performance due to component aging. Accurate results are assured today and for years to come.

Use the powerful IBM® PS/2 30-286 or Compaq 386s computer off-line with your personal software, and not miss a count. Or, automatically process multiuser count data completely unattended. The flexibility is unequalled! And, with the 2500TR's new and unique "Smart" windows, protocol setup is always a snap.

With Tri-Carb LSC from Packard you'll no longer limit your experimental design or compromise your counting results.

So why wait? Ask for the 2500TR by name. Packard Tri-Carb
## Biological Resources

<table>
<thead>
<tr>
<th>Resource</th>
<th>Contact</th>
<th>Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avian Myeloblastosis Virus Reverse Transcriptase</td>
<td>Dr. G.E. Houts</td>
<td>$0.05/Unit</td>
<td>(Plus Shipping Outside Contiguous United States)</td>
</tr>
<tr>
<td>Goat Antiserum Against Avian, Bovine, Feline, Murine, and Primate Intact Viruses and Viral Proteins, Antibodies to Immunoglobulins for a number of species. Preimmune Sera available for some Virus Antiseras.</td>
<td>Ms. Elizabeth Donley</td>
<td>$75.00/5 (Plus Shipping and Handling)</td>
<td></td>
</tr>
<tr>
<td>Cell Culture Identification Service. Using Isozyme Analysis, Immunofluorescence and Karyotypic Analysis (Chromosome Banding).</td>
<td>Dr. Ward Peterson</td>
<td>$375/Analysis</td>
<td></td>
</tr>
<tr>
<td>Monoclonal Antibodies are available with specificities for synthetic peptides representing the amino acid sequences of the left end, right end and active site of the oncogene products of avian and mammalian retroviruses. Blocking peptides are also available, as are a limited number of cell lines producing the monoclonal antibodies.</td>
<td>Ms. Elizabeth Donley</td>
<td>$25.00/mg. Asbestos Fluid — 45.00/ml. Cell Culture — 100.00/culture. (Plus Shipping and Handling)</td>
<td></td>
</tr>
</tbody>
</table>

## Chemical Resources

<table>
<thead>
<tr>
<th>Resource</th>
<th>Contact</th>
<th>Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytical resources for the collection, separation, and elucidation of the components of cigarette smoke and cigarette smoke condensates: A contractor with experience in the development of analytical methods for the determination of constituents of cigarette smoke and of specialty instrumentation for inhalation toxicology is available to assist qualified investigators with particular interest in studies on human and animal model exposure to environmental and sidestream smoke. A large inventory of reference experimental cigarettes, Standard Low Yield Reference Cigarettes, and an extensive chemical data base on smoke and smoke condensate components is available.</td>
<td>David G. Longfellow</td>
<td>Inquire</td>
<td></td>
</tr>
<tr>
<td>Chemical Carcinogen Reference Standard Repository: Reference quantities of over 750 compounds are available. The newest additions are dilute aqueous standards of PAH deoxyguanosine-3'-monophosphates for Randerath 32P post labelling assays. Other classes of available compounds are fecapentaenes, food mutagens, polynuclear aromatic hydrocarbons (PAH), PAH metabolites, radiolabeled PAH metabolites, nitrogen heterocycles, nitroamines/nitrosamines, aromatic amines, aromatic amine metabolites, azolaza (azoxy) aromatics, inorganics, nitroaromatics, pesticides, pharmaceuticals, natural products, dyes, dioxins and chlorinated aliphatics. Data sheets provided with the compounds include chemical and physical properties, analytical data, hazards, storage, and handling information. Catalog available upon request.</td>
<td>Manager, NCI Chemical Carcinogen Repository</td>
<td>Subject to chemical class code and quantity (see catalog) plus handling and shipping charges.</td>
<td></td>
</tr>
</tbody>
</table>
### Epidemiology Resources

The Tumor Virus Epidemiology Repository (TVER) contains sera and other biological samples from more than 13,000 patients and controls obtained in 12 different countries. The TVER was established primarily to support collaborative research on the role of Epstein-Barr virus (EBV) in Burkitt’s lymphoma, nasopharyngeal carcinoma, and related diseases. The TVER is able to adjust its collection to facilitate the development of new collaborative studies. In addition, some samples are available for reagents and independent research. The most extensive collections are serum samples from patients with Burkitt’s lymphoma (sera from more than 1,000 patients).

**Contact:** Dr. Paul H. Levine  
Environmental Epidemiology Branch, DCE, NCI, NIH  
Executive Plaza North, Room 434  
Bethesda, MD 20892  
(301) 496-8115  
**Cost:** Free to Collaborating Investigators; Others: $10/cell line.

The National Institute of Allergy and Infectious Diseases and the National Cancer Institute have developed a repository of biological specimens from homosexual men. The specimens were collected through contracts with five major U.S. universities for studies of the natural history of acquired immune deficiency syndrome (AIDS).

**Contact:** Chief, Epidemiology Branch; AIDS Program  
National Institute of Allergy and Infectious Diseases  
CDC Bldg., Room 240  
National Institutes of Health  
Bethesda, MD 20892  
or to Dr. G. Iris Obrams  
Extramural Programs Branch, EBP, Division of Cancer Epidemiology, NCI  
Executive Plaza North, Room 535  
Bethesda, MD 20892

The Epidemiology and Biostatistics Program of the National Cancer Institute has developed the Observed versus Expected (O/E) software system which calculates: (1) the number of observed events (e.g. cancer cases or deaths) in a study group at risk; (2) the number of expected events in a study group based on the rate of occurrence in some standard or referent population; (3) the ratio of observed to expected events; and (4) the significance of this ratio. The system is user friendly and capable of executing a series of calculations by different variables such as age, time group, date of exposure, age at date of exposure, duration of exposure, year relative to entry and cause of event. The O/E System provides tables by race, sex and user defined variables, allows user defined latency intervals and accepts standard or user prepared rates. O/E is written in COBOL and is exportable to most mainframes.

**Contact:** Ruth Wolfson  
Epidemiology and Biostatistics Program  
Division of Cancer Epidemiology, NCI  
Executive Plaza North, Room 531  
Bethesda, MD 20892  
(301) 496-1606  
**Cost:** Free to investigators interested in epidemiologic research.

### Environmental Cancer

NCI’s Chemical Carcinogenesis Research Information System (CCRIS) is available online through the National Library of Medicine’s Toxicology Data Network (TOXNET) system. Through an interagency agreement between NCI and NLM, the CCRIS database has been built and will be maintained and updated as one of TOXNET’s sponsored databases in the broad areas of chemistry, toxicology, and hazardous waste information. The CCRIS database contains evaluated data and information on carcinogens, mutagens, tumor promoters, cocarcinogens, metabolites of carcinogens and carcinogen inhibitors derived from published review articles, ongoing current awareness survey of primary literature, NCI/INTP’s short- and long-term bioassay studies, the IARC Monographs on the Evaluation of Carcinogenic Risk of Chemicals to Man, and special studies and reports.

**Contact:** Dr. Thomas P. Cameron  
Office of the Director  
Division of Cancer Epidemiology  
National Cancer Institute  
Executive Plaza North, Room 712  
Bethesda, MD 20892  
(301) 496-1625  
**Cost:** Free to investigators interested in environmental cancer.

Human fibroblast cultures from individuals at high risk of cancer, members of cancer-prone families, and normal family members are available. Collection is historical with unknown viability. Catalogue unavailable. Information requests should include potential use of cultures.

**Contact:** Chief, Family Studies Section.  
EEB, DCE, NCI, NIH  
Executive Plaza North, Room 439  
Bethesda, MD 20892  
(301) 496-4375  
**Cost:** Free to collaborating investigators.

**Note:** The Special Assistant for Environmental Cancer, Office of the Director, announces the availability of a limited number of copies of the following publications, which have been prepared under contract to NCI:


**Contact:** Ms. I.C. Blackwood  
Office of the Director  
Division of Cancer Epidemiology  
National Cancer Institute  
Executive Plaza North, Room 712  
Bethesda, MD 20892  
(301) 496-1625  
**Cost:** Free to investigators interested in environmental cancer.
Bachem brings the price of high-quality peptides down to earth.

At Bachem, we believe our customers shouldn't have to pay high prices in order to get high-quality products. That's why in the new Bachem catalog you'll find peptides of the absolute highest quality at the absolute lowest prices.


So call now for your free copy of the new Bachem 1989-1990 Catalog of Fine Chemicals. Discover page after page of high-quality peptides at prices that aren't sky-high.
WILL AMERICANS BE SCIENTIFICALLY LITERATE BEFORE COMET HALLEY RETURNS IN 2061?

Project 2061—a long-term effort launched by the AAAS—is designed to help make the answer "Yes—long before!"

The first phase of this massive nationwide effort to reform U.S. science education has produced six reports that recommend in detail what all citizens should know about science, mathematics, and technology.

They consist of an integrated report, *Science for All Americans* (AAAS order no. 89-01S), by the National Council on Science and Technology Education, and reports by five independent panels: Biological and Health Sciences (#89-02S), Mathematics (#89-03S), Physical and Information Sciences and Engineering (#89-04S), Social and Behavioral Sciences (#89-05S), and Technology (#89-06S).

Send orders giving titles and AAAS order numbers—and a check, money order, or purchase order (made out to AAAS)—to AAAS Books, Dept. 2061, P.O. Box 753, Waldorf, MD 20604.

Prices: *Science for All Americans*: $14.50 (AAAS members, $11.50), 10–49 copies $9.25 each, 50 or more $8 each; each panel report: $7.50 (AAAS members, $6), 10–49 copies $3.50 each, 50 or more $3 each; all six reports (order no. 89-12X): $35 (AAAS members, $28), 10–49 sets $18, 50 or more $15.50. (For shipments to California, add 6% sales tax.)
Have it all — science and all that jazz — when the world's largest and most comprehensive science conference meets in the city of legendary jazz, cajun cuisine, and Mississippi river boats.

Come to New Orleans for the AAAS Annual Meeting, and learn about the latest developments in science and technology. You can take your pick from more than 250 symposia, technical sessions, and workshops on virtually every field of scientific inquiry; attend intensive seminars on protein folding or parasitism; gain new skills in short courses on chaos or computer simulation; present your own research in one of a series of poster sessions; hear major public lectures by eminent scholars; meet colleagues from every corner of the scientific community; and enjoy the food, the music, and the charm of this unique southern city.

Reserve your place now! For additional information and a registration form, see any of the following issues of Science: 1 September, 10 November, 24 November, or 15 December; or write AAAS Marketing, 1333 H Street, NW, Washington, DC 20005.
At Synthecell,
We Foresaw the Need...
and Responded

Introducing
S-OLIGOS
Anti-Sense DNA
for Experimentation in Living Cells

S-OLIGOS ARE SULFUR DERIVATIZED OLGONUCLEOTIDES.
CHARACTERISTICS -
• MORE CELL PERMEABLE
• RESISTANT TO NUCLEASES
RESULT -
• REPLICAION, TRANSCRIPTION
  AND TRANSLATION
  SIGNIFICANTLY BLOCKED

FOR A BIBLIOGRAPHY ON S-OLIGOS, OR INFORMATION ON
OUR OTHER OLGONUCLEOTIDE PRODUCTS, PLEASE CALL
1-800-336-7455
301-869-7455 FAX 301-977-5079

2096 Gaither Road, Rockville, MD 20850 USA
Circle No. 72 on Readers’ Service Card

---

<table>
<thead>
<tr>
<th>NEUROCHEMICALS FOR THE NEUROSCIENTIST</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECEPTOR LIGANDS</td>
</tr>
<tr>
<td>ION CHANNEL MODULATORS</td>
</tr>
<tr>
<td>NEUROTRANSMITTERS</td>
</tr>
<tr>
<td>DRUG METABOLITES</td>
</tr>
<tr>
<td>EXCITATORY AMINO ACIDS</td>
</tr>
<tr>
<td>ENZYME INHIBITORS</td>
</tr>
<tr>
<td>NEUROTOXINS</td>
</tr>
<tr>
<td>DRUG REFERENCE STANDARDS</td>
</tr>
</tbody>
</table>

TRY US FIRST!

RESEARCH BIOCHEMICALS INCORPORATED
9 Erie Drive, Natick, MA 01760 USA
Tel: (508) 651-8151 Fax: (508) 655-1359
Tlx: 510 601 5087 RES BIO UQ

Circle No. 251 on Readers’ Service Card

---

Data Acquisition
Solutions

Laboratory and engineering tools
for use with Macintosh and IBM-
compatible computers

WavEdit™
Waveform editing software for reviewing, over-
viewing and editing data
recorded with acquisition programs and equipment
running on Macintosh® computers. Identify regions of
interest and then cut, copy, and paste those areas to
other files for display and analysis.
Full-function evaluation disk available for $5.

PolyMac™
A stand-alone data acquisition platform using parallel
processes for acquisition, I/O control, and communi-
cation. Gapsens data acquisition at up to 25 kHz! Links
to Macintosh II, Iix, IIcx or SE/30 as well as to IBM-AT com-
patible computers. Four signal-conditioning modules
provide 8 single-ended or differential channels.

MacLab™
No other system is easier to use! The Macintosh peripheral
unit features four input channels and a 40 kHz
sampling rate. Bundled “Chart” and “Scope” software
lets your Mac emulate a four-channel chart recorder
or digital oscilloscope. New MacLab/4 includes built-in
SCSI port, increased memory and faster CPU. New
MacLab/8 also has eight independent input amplifiers
and a maximum sampling rate of 100 kHz.

ALSO FROM WPI: 650 Mbyte optical drive, 45 Mbyte
removable hard disk, 30 Mbyte and 60 Mbyte
external hard drives, 30 Mbyte tape backup, 19-inch
color monitors, SE accelerator.

Write or call today for more information.

World Precision
Instruments, Inc.
375 Quinnipiac Avenue • New Haven, CT 06513
Telephone: 203-469-8281
FAX: 203-468-6207

Circle No. 275 on Readers’ Service Card
Temperature Microprobes

Accurate to 0.1 °C
Flexible probes, .009" dia.
Needle probes, .013" dia. (29ga)
Response as fast as .005 seconds

These quality sensors with guaranteed accuracy can be used with any type "T" thermocouple readout. We also make larger probes for clinical and laboratory use and, if you have an unusual application, we can quote on custom sensors in any quantity. Call or write for free brochure on our probes and digital thermometers.

physitemp

154 HURON AVENUE, CLIFTON NJ 07013, USA Tel:201-779-5577

Circle No. 19 on Readers' Service Card

Oocyte Injection

NEW nonrotating plunger eliminates tip wobble - allows more precise deposition.

The Drummond Digital Microdispenser can repeatedly inject volumes of .02μl or more utilizing pulled capillary tips. Drives oil interface with minimal or no overshoot and can be used for direct or remote injection. Supplied with 100 8" glass capillaries sufficient for preparing 200 tips. Catalog #3-00-510-X — $170.00.

DRUMMOND
SCIENTIFIC COMPANY

500 Parkway, Box 700, Broomall, PA 19008
1-800/523-7480, In PA 1-215/353-0200
FAX: 1-215/353-6204

Brain Structure, Learning, and Memory

Edited by Joel L. Davis and Robert W. Newburgh, Office of Naval Research, and Edward J. Wegman, George Mason University

This new book, based on a AAAS Annual Meeting symposium, explores the connections between cellular and computational approaches to understanding the neural basis of learning and memory. Incorporating such diverse ideas as invertebrate and computer-based models, cerebellar involvement in motor engrams, learning, and the sensory sciences; nonstationary point processes; and models closely tied to vertebrate neural nets, the contributors not only shed new light on important brain functions but also provide an example of how neuroscience research should be structured.

$35.00; AAAS members $28.00 (include membership number from Science). 301 pp., 1988. AAAS Selected Symposium 105.

Order from: Westview Press, Dept. AAAS, 5500 Central Avenue, Boulder, CO 80301. (Add $2.50 postage and handling for the first copy; 75 cents for each additional copy; allow 4–6 weeks for delivery.)

Published by Westview Press for AAAS

Circle No. 26 on Readers' Service Card
STN International is an online information network, designed, developed, and run by people who need and use scientific and technical data. On STN, you can save valuable research time by accessing more than 70 databases through your personal computer and modem.

To receive a FREE set of STN posters and more information about STN International, write or call:

STN International, Marketing, Dept. 30589, P.O. Box 02228, Columbus, OH 43202, Phone 800-848-6538.

STN International is operated in North America by Chemical Abstracts Service, a division of the American Chemical Society; in Europe, by FIZ Karlsruhe; and in Japan, by JICST, the Japan Information Center of Science and Technology.


Micro-g® LAB TABLES

Higher performance...more options, more features

The new TMC Micro-g Series 63-500 lab tables with advanced Gimbal Piston® isolators achieve highest attenuation of both vertical and horizontal vibration. Features include new leveling feet, new 2" thick, high-stiffness, highly damped stainless steel top with rounded seamless edges and corners.

Options offer added utility and convenience: armrests, shelving, choice of top surfaces, casters, equipment support bars, Faraday cages. Sizes from 25" x 36" to 36" x 60". Write or call for new product bulletin No. MG30-86 and price list today.

Circle No. 223 on Readers' Service Card

COOLED CCD IMAGING FOR MICROSCOPY

Photometrics, the world leader in low-light, cooled CCD imaging, is pleased to introduce CCD systems to meet the specialized needs of the microscopist. These high performance systems offer:

- High linearity of response
- High dynamic range
- 12- or 14-bit data
- Resolution of up to 2K x 2K pixels
- No lag or geometrical distortion
- Prices starting at $13,500

These systems are ideal for ratio imaging (ura-2, BCCF, etc.), low-light-level fluorescence microscopy, bright field/low contrast microscopy, and bioluminescence. Call Photometrics for details.

Photo of infrarot/falurium concentration in a guinea pig cerebellar Purkinje cell taken using Photometrics Series 200 CCD system. Courtesy of Dr. D.W. Tank, Molecular Biophysical Research Department, AT&T Bell Laboratories.

Circle No. 234 on Readers' Service Card