TRITON TECHNOLOGY, INC.

SONOMICROMETER
(model 120)
MEASURE:
- Cardiac Function
- Vessel Dimensions
- Organ Dimensions

PULSED DOPPLER FLOWMETER
(model 100)
USE WITH:
- Implanted Probes
- Transcutaneous Probes for Peripheral Vascular Diagnosis
- Doppler Velocity Catheters

Advanced, Dependable, Affordable.

For More Information, Please Contact:
W. Scott Kemper
Triton Technology, Inc.
P.O. Box 99185
San Diego
California 92109
Telephone: 1-800-872-1251 or (619) 272-1251
Telex: 757822 (TRITON SD UD)
Contents

Myoglobin facilitated oxygen diffusion maintains mechanical function of mammalian cardiac muscle
ELIZABETH A BRAUNLIN, GORDON M WAHLER, CLAUDE R SWAYZE, RUSSELL V LUCAS, IRWIN J FOX page 621

Effects of beta blocking agents on the density of beta adrenoceptors and adenylate cyclase response in human myocardium: intrinsic sympathomimetic activity favours receptor upregulation SVEIN GOLF, VIDAR HANSSON page 637

Protective effects of slow channel calcium antagonists on noradrenaline induced myocardial necrosis GORDON L TODD, DAVID A STERNS, ROBERT D FLAMBECK, COREY S JOEKEL, ROBERT S ELIOT page 645

Antiarrhythmic and haemodynamic effects of tiapamil, a new calcium antagonist, during coronary artery occlusion and reperfusion in dogs BORIS M SHARGORODSKY, SHIMON BRAUN, BERNARD BELHASSEN, SHLOMO LANIADO page 652

Changes in creatine phosphate, inorganic phosphate, and the purine pattern in dog hearts with time of coronary artery occlusion and effect thereon of mioflazine, a nucleoside transport inhibitor HERMAN VAN BELLE, JOZEF WYNANTS, RAYMOND XHONNEUX, WILLEM FLAMENG page 658

Mural thrombus in experimental viral myocarditis in mice: relation between thrombosis and congestive heart failure NOBUYOSHI TOMIOKA, CHHARIKISHI MOTO, AKIRA MATSUMORI, CHUCHI KAWAI page 665

Effects of aging and long term dietary intervention on protein turnover and growth of ventricular muscle in the rat heart DAVID F GODSPINK, SHEENA E M LEWIS, BRIAN J MERRY page 672

A geochemical basis for endomyocardial fibrosis M S VALJATHAN, C C KARTHA, V K PANDAY, H S DANG, C M SANTA page 679

Effects of acute atrial fibrillation on the vasodilator reserve of the canine atrium CARL W WHITE, MYRL D HOLIDA, OSCAR H L BING page 683

Measurement of relaxation in isolated rat ventricular myocardium during hypoxia and reoxygenation YASUYUKI NAKAMURA, ALLEN W WIEGNER, OSCAR H L BING page 690

Time constant of isovolumic pressure fall in the intact canine left ventricle RAIMO KETTUNEN, JOUNI TIMISJÄRVI, PAULINA RÄMÖ, EERO KOUVALAINEN, JUHANI HEIKKILÄ, LEO HIRVONEN page 698
This publication is available in microform.

University Microfilms International reproduces this publication in microform: microfiche and 16mm or 35mm film. For information about this publication or any of the more than 13,000 titles we offer, complete and mail the coupon to: University Microfilms International, 300 N. Zeeb Road, Ann Arbor, MI 48106. Call us toll-free for an immediate response: 800-521-3044. Or call collect in Michigan, Alaska and Hawaii: 313-761-4700.

Please send information about these titles:

Name ____________________________
Company/Institution ____________________________
Address ____________________________
City ____________________________ State ______ Zip ______
Phone ____________________________

University Microfilms International

Computer Engineering for Cardiology

• DESIGN • TESTING • CONSULTING

Specializing in the development of software and hardware systems for the laboratory environment in both clinical and physiological research, especially in the field of cardiology.

• Systems analysis and evaluation
• Analog to digital conversion and acquisition of physiological signals
• Signal transformations (e.g., digital filtering and measurement)
• Specialized database design
• Statistical analysis
• Real time processing environments
• Mathematical modeling of biological phenomena
• Report formatting and generation.
• Graphics

If you wish to learn more about how CEMED support can effect greater efficiency for you, we invite you to call or write to us today.

(505) 842-0477

CEMED INC.

Computer Engineering for Medicine
1008 Gold Ave. SW, Albuquerque, NM 87102

CHAIR

DEPARTMENT OF HEART AND HYPERTENSION RESEARCH

A Search Committee of the Cleveland Clinic Foundation seeks a Chairman for the Department of Heart and Hypertension Research within the Research Institute of the Cleveland Clinic Foundation. This department consists of established investigators working in areas of hypertension, cardiac function and structure, coronary physiology, cardiovascular biochemistry, and pharmacology. The department is well positioned to interact with several basic research and clinical programs within the Foundation including the Departments of Cardiology, Thoracic and Cardiovascular Surgery, Cardiothoracic Anesthesiology, Nephrology and Hypertension, Endocrinology, and Peripheral Vascular Disease. It is expected that the Chairman will maintain a vigorous research program, administer this department and play an active role in its future development.

Applicants must possess an M.D., Ph.D., or equivalent degree and be a distinguished scientist of national and international reputation with a solid background and demonstrated administrative and leadership skills.

The position is available immediately with a negotiable starting date. Salary is competitive and will be commensurate with qualifications and experience. The number of additional staff positions is negotiable as well.

The Research Institute of the Cleveland Clinic Foundation is a basic biomedical research group. Eight departments comprise in excess of 150 scientists and pre- and post-doctoral trainees.

Applicants should send their curriculum vitae to Dr. Shattuck W. Hartwell, Jr., Chairman, Search Committee for Heart and Hypertension Research, Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, OH 44106.

The Cleveland Clinic Foundation is an Equal Opportunity Employer.

THE CLEVELAND CLINIC FOUNDATION

9500 Euclid Avenue, Cleveland, Ohio 44106
# CONTENTS

## Letters to the Editor

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baski, S. N. and Hughes, M. J.</td>
<td>Deficiency in Dietary Vitamin D, Not Calcium, Alters Noradrenergic Responsiveness in Rat Atria in vitro</td>
<td>653</td>
</tr>
<tr>
<td>Upshor, M. E. and Weiss, H. R.</td>
<td>Heterogeneous Distribution of Beta Adrenoceptors in the Dog Left Ventricle</td>
<td>657</td>
</tr>
</tbody>
</table>

## Review Article

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jacobson, S. L. and Piper, H. M.</td>
<td>Cell Cultures of Adult Cardiomyocytes as Models of the Myocardium</td>
<td>661</td>
</tr>
</tbody>
</table>

## Award Articles

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vanhoutte, P. M.</td>
<td>Could the Absence of Malfunction of Vascular Endothelium Precipitate the Occurrence of Vasospasm? (DIAMANT AWARD FOR OUTSTANDING RESEARCH)</td>
<td>679</td>
</tr>
</tbody>
</table>

## Original Articles

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Koizumi, M., Ichiyama, M. and Ban, T.</td>
<td>Frequency-dependent Effects of Phenytoin on the Maximum Upstroke Velocity of Action Potentials in Guinea-pig Papillary Muscles</td>
<td>711</td>
</tr>
<tr>
<td>Snow, T. R.</td>
<td>A Study of the Effects of Substrates on Intracellular pH in Toad Ventricular Strips</td>
<td>723</td>
</tr>
<tr>
<td>Kolbeck, R. C. and Speir, W. A., Jr.</td>
<td>The Influence of Lanthanum on the Subcellular Distribution of Calcium in the Perfused Dog Heart</td>
<td>733</td>
</tr>
<tr>
<td>Nemecz, Gy., Bor, P., Leprán, I., Koltai, M. and Székeres, L.</td>
<td>Membrane Phospholipid and Fatty Acid Changes in the Mitochondrial and Sarcolemmal Fractions of the Heart in Adjuvant Arthritic Rats</td>
<td>739</td>
</tr>
<tr>
<td>Mattiazzì, A., Garay, A. and Cingolani, H. E.</td>
<td>Critical Evaluation of Isometric Indexes of Relaxation in Rat and Cat Papillary Muscles and Toad Ventricular Strips</td>
<td>749</td>
</tr>
</tbody>
</table>

## Rapid Communication

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lammerant, J., Huynh-Thu, T. and Kolanowski, J.</td>
<td>In vivo Effect of the D(-)-Isomer or Natural form of 3-hydroxybutyrate on Initial Release of Lactate Dehydrogenase from the Acutely Ischaemic Myocardium</td>
<td>759</td>
</tr>
</tbody>
</table>

## Book Reviews

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>765</td>
</tr>
</tbody>
</table>

## ISHR Calendar

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>767</td>
</tr>
</tbody>
</table>

## Announcement

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>768</td>
</tr>
</tbody>
</table>

© 1986 Academic Press Inc. (London) Limited. The appearance of the code at the bottom of the first page of a paper in this journal indicates the copyright owner's consent that copies of the paper may be made for personal or internal use, or for the personal or internal use of specific clients in the U.S.A. This consent is given on the condition, within the U.S.A., that the copier pay the stated per-copy fee through the Copyright Clearance Center, Inc., Operations Staff, 27 Congress Street, Salem, MA 01970, for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, for resale or for copying or distributing copies outside the U.S.A.
In the words of guest editor Michael J. Dunn, “These papers, which represent the best of the scientific program of the Council for High Blood Pressure Research...are of the highest scientific quality and demonstrate the originality and insight necessary to better understand this prevalent disease.” Twenty-nine of the 61 papers presented at the 39th Annual Fall Conference, held in Cleveland in September 1985, were accepted for publication in this supplement. Dedicated to the memory of Robert C. Tarazi, MD, the book contains his 1985 Corcoran Lecture, as well as the 1985 CIBA Award for Hypertension Research and the Second Annual Marion Hypertension Research Clinical Fellowship Award. Supplement to Hypertension, June 1986. Monograph No. 122, soft cover, 192 pp. ISBN 0-87493-135-5.

Order No. 73-108-A $7.20

To order use this coupon

☐ Check enclosed (Make payable to the American Heart Association)

Send me ______ copies of Proceedings of the Council for High Blood Pressure Research, 1985 (73-108-A) at $7.20 each. (Includes postage and handling.)

All orders must be prepaid.

NAME

STREET

CITY

STATE ZIP CODE

MAIL TO: American Heart Association

National Center

7320 Greenville Avenue

Dallas, Texas 75231

CARDIOMAX + IBM-PC FOR HUMANS AND RATS

'CARDOMAX' plus IBM-PC Computer measures, prints on printer and stores on the disc for future recall: *Cardiac Output *Stroke Volume *Heart Rate *Systolic, Diastolic, Mean Blood Pressures *Blood and Injectate Temperatures *Graphic pictures of Dilution Curve, *Blood Pressure and ECG waveforms *Calculates and prints Dilution Curve's Appearance, Elevation, Mean Concentration and Mean Dilution Times.

*Helps to calculate EJECTION FRACTION* Also can function as an automatic vital parameters data logger *Can be equipped with an automatic thermodilution injector *Cardiac Output measuring range from milliliters to hundreds of liters *Can be used in human as well as in animal research applications. Supplied with all necessary software. COLUMBUS INSTRUMENTS

P.O. BOX 44049
COLUMBUS, OHIO 43204-0049, USA
PHONE (614) 488-6176 TELEX 246514
Copies of articles from this publication are now available from the UMI Article Clearinghouse.

For more information about the Clearinghouse, please fill out and mail back the coupon below.

Yes! I would like to know more about UMI Article Clearinghouse.
I am interested in electronic ordering through the following system(s):
☐ DIALOG/Dialorder ☐ ITT Dialcom
☐ OnTyme ☐ OCLC ILL Subsystem
☐ Other (please specify) _____________________

☐ I am interested in sending my order by mail.
☐ Please send me your current catalog and user instructions for the system(s) I checked above.

Name________________________________________
Title________________________________________
Institution/Company____________________________
Department____________________________________
Address_______________________________________
City________________________State________Zip____
Phone (____________________)

Mail to:
University Microfilms International
300 North Zeeb Road, Box 91
Ann Arbor, MI 48106