**Policy for Announcements in the FJ Calendar**

We will consider for advertising in the FJ Calendar any open meeting of a biological topic occurring in any location worldwide. Please send your announcement to the Executive Editor, The FASEB Journal, FASEB, 9650 Rockville Pike, Bethesda, MD 20814, USA. Your announcement should be restricted to: date (include year), title and location of meeting, contact address (with name if appropriate). We will advertise only meetings taking place more than 5 months after the date of receipt of the announcement. Meetings, symposia, and workshops will be included up to 2 years in advance; international congresses will be included up to 3 years in advance.

**FJ Indicates New Entry.**

### JULY 1988

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Title</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-15</td>
<td>14th International Congress of Biochemistry, Prague, Czechoslovakia.</td>
<td>Sponsored by IUB. 14th International Congress of Biochemistry, 166 50 Prague 6, Czechoslovakia.</td>
</tr>
<tr>
<td>10-15</td>
<td>Phospholipases, FASEB Summer Research Conferences, Saxtons River, Vermont, USA.</td>
<td>Dr. Robert W. Krauss, Executive Director, FASEB Summer Conferences, 9650 Rockville Pike, Bethesda, MD 20814, USA.</td>
</tr>
<tr>
<td>10-15</td>
<td>Regulation of Gene Expression in Higher Animals in Response to Hormones and Nutritional Substrates, FASEB Summer Research Conferences, Copper Mountain, Colorado, USA.</td>
<td>Dr. Robert W. Krauss, Executive Director, FASEB Summer Conferences, 9650 Rockville Pike, Bethesda, MD 20814, USA.</td>
</tr>
<tr>
<td>11-15</td>
<td>CRYO 88—25th Annual Meeting of the Society for Cryobiology, Aachen, FRG.</td>
<td>Dr. Christoph Körber, Helmholtz-Inst. für Biomedizinische Technik, Pauwelsstr., D-5100 Aachen, FRG.</td>
</tr>
<tr>
<td>11-15</td>
<td>Separation Techniques, The Catholic University of America, Washington, DC, USA.</td>
<td>Dr. Roland M. Nardone, The Catholic Univ. of America, The Center for Advanced Training in Cell and Molecular Biology, Washington, DC 20064, USA.</td>
</tr>
<tr>
<td>11-15</td>
<td>Yeast Molecular Genetics: Recombinant DNA and Other Experimental Approaches, The Catholic University of America, Washington, DC, USA.</td>
<td>Dr. Roland M. Nardone, The Catholic Univ. of America, The Center for Advanced Training in Cell and Molecular Biology, Washington, DC 20064, USA.</td>
</tr>
<tr>
<td>11-16</td>
<td>Design and Analysis of Scientific Experiments, Massachusetts Institute of Technology, Cambridge, Massachusetts, USA.</td>
<td>Dr. Robert W. Krauss, Executive Director, FASEB Summer Conferences, 9650 Rockville Pike, Bethesda, MD 20814, USA.</td>
</tr>
<tr>
<td>17-21</td>
<td>The International Congress on Natural Products Research, Prospector Hotel, Park City, Utah, USA.</td>
<td>Dr. Yohei Hashimoto, President, Japan Society of Pharmacognosy, Kobe Women's Coll. of Pharmacy 4-19-1, Motomamakita-Machi, Higashinada-Ku, Kobe 658, Japan.</td>
</tr>
<tr>
<td>17-22</td>
<td>Immunopharmacology, FASEB Summer Research Conferences, Saxtons River, Vermont, USA.</td>
<td>Dr. Robert W. Krauss, Executive Director, FASEB Summer Conferences, 9650 Rockville Pike, Bethesda, MD 20814, USA.</td>
</tr>
<tr>
<td>17-22</td>
<td>Molecular Biology and Infectious Diseases, FASEB Summer Research Conferences, Copper Mountain, Colorado, USA.</td>
<td>Dr. Robert W. Krauss, Executive Director, FASEB Summer Conferences, 9650 Rockville Pike, Bethesda, MD 20814, USA.</td>
</tr>
<tr>
<td>17-23</td>
<td>8th International Congress of Endocrinology, Kyoto, Japan.</td>
<td>The Secretary, 8th International Congress of Endocrinology, Travel Planners-Kyoto Congress, Suite 150, GPM Bldg., San Antonio, TX 78216, USA.</td>
</tr>
<tr>
<td>18-20</td>
<td>Biotechnological Aspects of Protein Production by Cultured Cells, Prague, Czechoslovakia.</td>
<td>Satellite Meeting of the IUB. 14th International Congress of Biochemistry, 166 50 Prague 6, Czechoslovakia.</td>
</tr>
<tr>
<td>18-20</td>
<td>21st Century Prospects of Biotechnology in Agriculture and Environment, Slusovice, Czechoslovakia.</td>
<td>Satellite Meeting of the IUB. 14th International Congress of Biochemistry, 166 50 Prague 6, Czechoslovakia.</td>
</tr>
</tbody>
</table>
18-20 10th Symposium on Biology, Biochemistry and Clinical Biochemistry of Lectins, Prague, Czechoslovakia, Satellite Meeting of the IUB. 14th International Congress of Biochemistry, 166 50 Prague 6, Czechoslovakia.

18-20 Cellular Pathology and Pharmacology, Budapest, Hungary. Dr. Jozsef Gaal, CHINOIN Pharmaceutical and Chemical Works Ltd., Research Centre, P.O. Box 110, 1325 Budapest, Hungary.

18-20 Fourth International Symposium on Selenium in Biology and Medicine, University of Tubingen, Tubingen, FRG. Dr. Albrecht Wendel, Physiologisch-Chemisches Inst. der Univ., Hoppe-Seyler-Str. 4, D-7400 Tubingen, FRG.


18-22 Gordon Research Conference on Chemotherapy of Clinical and Experimental Cancer, Colby-Sawyer College, New London, New Hampshire, USA. Thomas R. Tritton, Dept. of Pharmacology, Univ. of Vermont Sch. of Medicine, Burlington, VT 05405, USA.

18-22 Protein and Nucleic Acid Separation Techniques for the Chemist, Catholic University of America, Washington, DC, USA. American Chemical Society, Continuing Education Dept., Short Course Session Code 599, 1155 16th St., NW, Washington, DC 20036, USA.

18-22 Immunocytochemistry, The Catholic University of America, Washington, DC, USA. Dr. Roland M. Nardone, The Catholic Univ. of America, The Center for Advanced Training in Cell and Molecular Biology, Washington, DC 20064, USA.

18-29 The Jackson Laboratory and Johns Hopkins University Short Course in Medical and Experimental Mammalian Genetics, The Jackson Laboratory, Bar Harbor, Maine, USA. Genetics Course, Training and Education Office, The Jackson Lab., 600 Main St., Bar Harbor, Maine 04609, USA.

20-22 Annual General Meeting, Nottingham, UK. Meetings Officer, The Biochemical Society, 7 Warwick Court, London WC1R 5DP, UK.

20-23 International Symposium on Tachykinins, University of Graz, Graz, Austria. Dr. F. Lembeck, Tachykinin Symposium, Dept. of Pharmacology, University of Graz, Universitätsplatz 4, A-8010 Graz, Austria.

23-24 Extracellular Matrix Control of Cell Behavior: First Harden Satellite Meeting, Nottingham, UK. The Meetings Officer, The Biochemical Society, 7 Warwick Court, High Holborn, London WC1R 5DP, UK.

23-27 The Mammalian Myocardium — Biochemical and Physiological Mechanisms Underlying the Heartbeat, Leeds, UK. Dr. C. Orchard, Dept. of Physiology, The Worsley Medical and Dental Bldg., The University, Leeds LS2 9NQ, UK.

24-28 Sixth International Symposium on Calcium-Binding Proteins In Health and Disease, Hotel Nagoya Castle, Nagoya, Japan. Satellite symposium of 8th International Congress of Endocrinology. Secretariat, Sixth International Symposium on Calcium-Binding Proteins in Health and Disease, Dept. of Pharmacology, Nagoya Univ. Sch. of Medicine, Showaku, Nagoya 466, Japan.

24-29 Fourth Congress of the International Society of Developmental and Comparative Immunology, Nottingham, UK. Dr. Michael Ball, Dept. of Human Morphology, Univ. of Nottingham Sch. of Medicine, Nottingham NG1 1NB, UK.

24-29 Structure and Function of Cell Membranes, FASEB Summer Research Conferences, Saxtons River, Vermont, USA. Dr. Robert W. Krauss, Executive Director, FASEB Summer Conferences, 9650 Rockville Pike, Bethesda, MD 20814, USA.

24-29 Trichotheccene, Blue-green Algal, and Marine Toxins: Mechanisms, Detection, and Therapy, FASEB Summer Research Conferences, Copper Mountain, Colorado, USA. Dr. Robert W. Krauss, Executive Director, FASEB Summer Conferences, 9650 Rockville Pike, Bethesda, MD 20814, USA.

24-29 Universities Associated for Research and Education in Pathology Teaching and Research Conference on Molecular Biology and Pathology, Copper Mountain, Colorado, USA. UAREP Teaching and Research Conference Coordinator, 9650 Rockville Pike, Bethesda, MD 20814, USA.


25-29 Immunocytochemistry, The Catholic University of America, Washington, DC, USA. Dr. Roland M. Nardone, The Catholic Univ. of America, The Center for Advanced Training in Cell and Molecular Biology, Washington, DC 20064, USA.


25-29 1st World Congress of World Association of Veterinary Microbiologists, Immunologists and Specialists of Infectious Disease, Lyon, France. Prof. Y. Richard, WAVMI, École National Vétérinaire de Lyon, Route de Sain Bel, Marcy-l’Étoile, 69260 Charbonnieres-les-Bains, France.

25-30 3rd International Human Genetics Summer Course on DNA Diagnosis in Constitutional and Malignant Genetic Diseases, Leuven, Belgium. Dr. J. J. Cassiman, Center for Human Genetics, Campus Gasthuisberg, O&N, Herestraat, B-3000 Leuven, Belgium.
25-30 International Symposium on Mucus and Related Topics, Society for Experimental Biology, University of Manchester, UK. Dr. E. Chantler, Dept. of Obstetrics and Gynaecology, Univ. Hospital of South Manchester, Nell Ln., West Didsbury, Manchester M20 8LR, UK.

27-31 International Symposium on Inflammatory Heart Disease: A Multidisciplinary Approach to Myocarditis and Heart Allograft Rejection, Snowmass, Colorado, USA. Ms. Marge Adey, Center for Continuing Education, Univ. of Nebraska Medical Center, 42nd and Dewey Ave., Omaha, NE 68105, USA.

30 Jul. Health Effects of Fish and Fish Oils, St. John's, Newfoundland, Canada. Dr. R. K. Chandra, Janeway Child Health Centre, St. John's, Newfoundland, Canada A1A 1R8.

31 Jul. Cellular and Molecular Genetics, Cell & Molecular Genetics, FASEB Summer Research Conferences, Saxtons River, Vermont, USA. Dr. Robert W. Krauss, Executive Director, FASEB Summer Conferences, 9650 Rockville Pike, Bethesda, MD 20814, USA.

31 Jul. Folate, Vitamin B-12 and One Carbon Metabolism, FASEB Summer Research Conferences, Copper Mountain, Colorado, USA. Dr. Robert W. Krauss, Executive Director, FASEB Summer Conferences, 9650 Rockville Pike, Bethesda, MD 20814, USA.

31 Jul. 8th International Congress of Histochemistry and Cytochemistry, Omni Shoreham Hotel, Washington, DC, USA. Congress Secretariat, Dr. Constance Oliver, NIH-NIDR Bldg. 10, Rm. 1A23, Bethesda, MD 20892, USA.

31 Jul. Animal, Plant and Microbial Toxins, 9th World Congress of International Society on Toxology, Oklahoma State University, Stillwater, Oklahoma, USA. Dr. C. L. Owby, Dept. of Physiological Sciences, Oklahoma State Univ., Stillwater, OK 74078, USA.

6-12 1988 World Congress on Medical Physics and Biomedical Engineering, San Antonio, Texas, USA. Dr. David T. Kopp, Secretary General, Dept. of Radiology, UTHSCSA, 7703 Floyd Curl Dr., San Antonio, TX 78284, USA.

7-12 Receptors, FASEB Summer Research Conferences, Saxtons River, Vermont, USA. Dr. Robert W. Krauss, Executive Director, FASEB Summer Conferences, 9650 Rockville Pike, Bethesda, MD 20814, USA.

7-12 Endothelium and Cardiovascular Function, FASEB Summer Research Conferences, Copper Mountain, Colorado, USA. Dr. Robert W. Krauss, Executive Director, FASEB Summer Conferences, 9650 Rockville Pike, Bethesda, MD 20814, USA.

7-13 14th International Congress on Yeast Genetics and Molecular Biology, Espoo, Finland. Tarja Koistinen, Research Labs. Alko Ltd., POB 350, SF 00101, Helsinki, Finland.

8-11 XIIth Meeting of the International Society of Oxygen Transport to Tissue, Ottawa, Canada. K. Rakusan, Dept. of Physiology, Sch. of Medicine, Univ. of Ottawa, 451 Smyth Rd., Ottawa, Ontario, Canada K1H 8M5.

8-12 Fifth International Magnesium Symposium, Kyoto International Conference Hall, Kyoto, Japan. Professor Yoshinori Ikokawa, Dept. of Hygiene, Faculty of Medicine, Kyoto Univ., Kyoto 606, Japan.


11-13 NATO Advanced Research Workshop on Cell and Molecular Biology of Artemia Development, Ramada Renaissance du Parc, Montreal, Quebec, Canada. Dr. A. H. Warner, Dept. of Biological Sciences, Univ. of Windsor, Windsor, Ontario, Canada N9B 3P4.

12-13 Cellular Variations in Ca2 Signalling, Toronto, Canada. Ms. Eva Lagan, c/o Dr. A. O. Jorgensen, Dept. of Anatomy, Medical Sciences Bldg., Univ. of Toronto, Toronto, Canada M4S 1A8.

13-17 Second Symposium of The Protein Society, Sheraton East Hotel, San Diego, California, USA. Protein Symposium Secretariat, Ms. Shirley E. Schlessinger, 400 E. Randolph, Suite 1015, Chicago, IL 60601, USA.

14-18 39th American Institute of Biological Sciences Annual Meeting, University of California, Davis, California, USA. Ms. Louise Salmon, AIBS Meetings Dept., 730 11th St., NW, Washington, DC 20001, USA.

14-19 International Conference on Human Lactation, Melbourne University, Melbourne, Australia. Nursing Mothers' Association of Australia, P.O. Box 231, Nunawading, Victoria 3131, Australia.

14-19 Electrophysiological Mechanisms of Propagation and Activation of Cardiac Muscle and Smooth Muscle, FASEB Summer Research Conferences, Saxtons River, Vermont, USA. Dr. Robert W. Krauss, Executive Director, FASEB Summer Conferences, 9650 Rockville Pike, Bethesda, MD 20814, USA.

14-19 Neoplastic Transformation of Liver Cells, FASEB Summer Research Conferences, Copper Mountain, Colorado, USA. Dr. Robert W. Krauss, Executive Director, FASEB Summer Conferences, 9650 Rockville Pike, Bethesda, MD 20814, USA.


15-19 General Principles in Toxicology and Toxicologic Pathology, Parker House Hotel, Boston, Massachusetts, USA. Dept. of Continuing Medical Education, Boston Univ. Sch. of Medicine, 80 E. Concord St., Boston, MA 02118, USA.

16-19 Group Polypeptides International Conference, Ontario, Canada. Dr. T. Fuleki, Horticultural Research Inst. of Ontario, Vineland Station, Ontario, Canada LOR 2E0.


17-20 29th Annual Drosophila Conference, University of Toronto, Toronto, Ontario, Canada. Dr. Ellen Larenc, Dept. of Zoology, Univ. of Toronto, 25 Harbord St., Toronto, Ontario, Canada M5S 1A1.


21-24 Bioavailability 88—Chemical and Biological Aspects of Nutrient Availability, University of East Anglia, Norwich, UK. G. R. Fenwick, AFRC Inst. of Food Research, Norwich Lab., Colney Ln., Norwich, Norfolk NR4 7UA, UK.

21-25 Key Issues in Mental Retardation Research, 8th International Congress of the International Association for the Scientific Study of Mental Deficiency, Dublin, Ireland. Mr. John O'Gorman, Congress Chairperson, 8th World Congress, IASSMD, 12, Pembroke Park, Dublin 4, Ireland; or Dr. Michael Mulcahy, Stewarts Hospital, Palmerstown, Dublin 20, Ireland.

22-24 The Molecular Biology of Receptors, Pumps, and Channels: Pharmacological Targets, The Westin Hotel, Cincinnati, Ohio, USA. Satellite Symposium to ASPET meetings. Ms. Kathy Smidtbush, ASPET Satellite Symposium, Dept. of Pharmacology and Cell Biophysics, Univ. of Cincinnati Coll. of Medicine, 231 Bethesda Ave., Cincinnati, OH 45267, USA.

22-26 The Pharmacology of Thermoregulation, 7th International Symposium, The University of Odense, Odense, Denmark. Dr. Peter Lomax, Dept. of Pharmacology, UCLA Sch. of Medicine, Los Angeles, CA 90024, USA.


23-26 7th International Symposium on Mass Spectrometry in Life Sciences, State University of Ghent, Ghent, Belgium. Dr. A. De Leenheer, Lab. voor Medische Biochemie en voor Klinische Analyse, Harelbekestraat 72, B-9000 Gent, Belgium.

24-28 Cold Spring Harbor Laboratory Meeting on Mouse Molecular Genetics, Cold Spring Harbor, New York, USA. Meetings Coordinator, Cold Spring Harbor Lab., Cold Spring Harbor, NY 11724, USA.

25-28 Annual North American Association for the Study of Obesity Meeting, Banff, Alberta Canada. Henry Koopmans, Univ of Calgary, Health Sciences Center, 3330 Hospital Dr., N.W., Alberta, Canada T2N 4N1.


29 Aug. 102nd Annual International Meeting and Exhibition of Association of Official Analytical Chemists, The Breakers, Palm Beach, Florida, USA. Ms. Margaret Ridgell, AOAC, 1111 N. 19th St., Suite 210, Arlington, VA 22209, USA.


31 Aug. Symposium on Cholecystokinin,—2 Sep. CGK '88, Robinson College, Cambridge, UK. Prof. G. J. Dockray, Physiological Laboratory, Univ. of Liverpool, Brownlow Hill, PO. Box 147, Liverpool L69 3BX, UK.


SEPTEMBER 1988

1-3 8th CIRD Symposium on Pharmacology of Retinoids in the Skin, Cannes, France. Dr. B. Schroot, Centre International de Recherches Dermatologiques, Sophia Antipolis, F-06565 Valbonne, France.

3-5 International Symposium on Human Tumor Markers, Taipei, Taiwan, R.O.C. Secretariat, P.O. Box 68-439, Taipei, Taiwan, R.O.C.

3-7 Advances in Liquid Chromatography: 8th Annual American-Eastern European Colloquium and Symposium on Liquid Chromatography, Szeged, Hungary. Dr. Huba Kaláz, Dept. of Pharmacology, Semmelweis Univ. of Medicine, Budapest VIII. Nagyvázrad tér 4, Hungary 1089.
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<tr>
<th>Date</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>4-8</td>
<td>8th International Congress of Eye Research, Hyatt Regency Hotel, San Francisco, California, USA.</td>
<td>8th ICER Secretariat, Stanford Univ. Medical Center, Rm. S-030, Stanford, CA 94305, USA.</td>
</tr>
<tr>
<td>4-9 SEPTEMBER 1988</td>
<td>XVIII World's Poultry Congress and Exhibition, Nagoya, Japan.</td>
<td>XVIII World's Poultry Congress and Exhibition, c/o International Congress Service, Kashi Bldg., 2-14-9 Nihombashi Chuo-Ku, Tokyo, Japan. 103.</td>
</tr>
<tr>
<td>5-7</td>
<td>Eleventh International Conference on Oral Biology: Chemical Control of Plaque, Hotel Furama Intercontinental, Hong Kong.</td>
<td>International Association for Dental Research, 1111 14th St., NW, Suite 1000, Washington, DC 20005, USA.</td>
</tr>
<tr>
<td>5-10</td>
<td>Workshop on the Molecular Biology and Molecular Genetics of Lepidoptera, Kolymbari, Crete, Greece.</td>
<td>Dr. Marian R. Goldsmith, Dept. of Zoology, Univ. of Rhode Island, Kingston, RI 02881, USA.</td>
</tr>
<tr>
<td>6-9 SEPTEMBER 1988</td>
<td>Protein Targeting, 8th John Innes Symposium, John Innes Institute and University of East Anglia, Norwich, Norfolk, UK.</td>
<td>J. Fox, Symposium Secretary, John Innes Inst., Colney Ln., Norwich NR4 7UH, UK.</td>
</tr>
<tr>
<td>7-9 SEPTEMBER 1988</td>
<td>Prenatal Abuse of Licit and Illicit Drugs, Hyatt Regency Hotel, Bethesda, Maryland, USA.</td>
<td>Conference Dept., The New York Academy of Sciences, 2 E. 63rd St., New York, NY 10021, USA.</td>
</tr>
<tr>
<td>8-9 SEPTEMBER 1988</td>
<td>British Nutrition Society Meeting on The Interaction between Nutrition and Inflammation, University of Southampton, UK.</td>
<td>Dr. R. Grimble, Univ. of Southampton, Sch. of Biochemical and Physiological Sciences, Medical and Biological Sciences Bldg., Bassett Crescent E., Southampton S09 3TU, UK.</td>
</tr>
<tr>
<td>11-14</td>
<td>Glycolipids in Molecular Recognition and Membrane Organization, University of Sheffield, UK.</td>
<td>Dr. M. H. Gordon, Dept. of Food Science and Technology, Univ. of Reading, Whiteknights, P.O. Box 226, Reading RG6 2AP, UK.</td>
</tr>
<tr>
<td>11-17</td>
<td>Thermodynamics Applied to Biological Systems, Santa Margherita Ligure, Italy.</td>
<td>Cosponsored by IUB. Prof. Giovanni Rialdi, Centro Studi Chimico Fisico Macromolecole CNR, Corso Europa 30, 16132 Genova, Italy.</td>
</tr>
<tr>
<td>12-13</td>
<td>2nd International Symposium on Lipid Metabolism in the Normoxic and Ischemic Heart, Maastricht, The Netherlands.</td>
<td>Dr. G. J. van der Vusse, Dept. of Physiology, Univ. of Limburg, P.O. Box 616, 6200 MD Maastricht, The Netherlands.</td>
</tr>
<tr>
<td>13-16</td>
<td>Fourth International Conference of the International Organization of Psychophysiology, Prague, Czechoslovakia.</td>
<td>Prof. Tomas Radil, Czechoslovak Academy of Sciences, Inst. of Physiology, 142 20 Praha 4-KRC Videnaka 1083, Czechoslovakia.</td>
</tr>
<tr>
<td>13-17</td>
<td>Ninth European Immunology Meeting, Rome, Italy.</td>
<td>Organizing Secretariat, MGA Via P. Cossa, 41 00193, Rome, Italy.</td>
</tr>
<tr>
<td>14-16</td>
<td>Seventh Annual Symposium on Geriatrics and Gerontology: Endocrine Function and Aging, Clarion Hotel, St. Louis, Missouri, USA. Symposium Secretary, VA Med. Center, GRECC(IIIG-JB), St. Louis, MO 63125, USA.</td>
<td></td>
</tr>
<tr>
<td>14-18</td>
<td>Meeting of the British Electroencephalography Society, Glasgow, Scotland.</td>
<td>Dr. J. A. Beeley, Oral Biology Group, Glasgow Dental Hospital and Sch., 378 Sauchich St., Glasgow, UK.</td>
</tr>
<tr>
<td>15-17</td>
<td>IX European Meeting of the International Society for Heart Research, Oxford, UK.</td>
<td>Prof. David J. Hearse, Cardiovascular Research, Rayne Inst., St. Thomas' Hospital, London SE1 7EH, UK.</td>
</tr>
<tr>
<td>17-18</td>
<td>Nutrition in the Pathogenesis and Treatment of Organ Failure, Clarion Hotel, New Orleans, Louisiana, USA.</td>
<td>ASCN Postgraduate Course, 9650 Rockville Pike, Bethesda, MD 20814, USA.</td>
</tr>
<tr>
<td>19-22</td>
<td>29th International Conference on the Biochemistry of Lipids, Tokyo, Japan.</td>
<td>Prof. Y. Seiyama, Dept. of Physiological Chemistry and Nutrition, Faculty of Medicine, Univ. of Tokyo, Bunkyo-ku, Tokyo 113, Japan.</td>
</tr>
<tr>
<td>21-23</td>
<td>Galway Meeting, University College, Galway, Ireland. Meetings Officer, The Biochemical Society, 7 Warwick Court, London WC1R 5DP, UK.</td>
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25-30 196th Annual Meeting of the American Chemical Society, Los Angeles, California, USA. ACS Meetings Dept., 1155 16th St. NW, Washington, DC 20036, USA.

26-29 14th EMBO Symposium on Organelle Genomes and the Nucleus, Heidelberg, FRG. Dr. J. Tooze, Executive Secretary, EMBO, Postfach 102240, D-6900 Heidelberg, FRG.

26-29 XIIIIth European Symposium on Hormones and Cell Regulation, Sainte-Odile, France. Prof. R. M. Denton, Dept. of Biochemistry, Univ. of Bristol Sch. of Medicine, University Walk, Bristol BS8 1TD, UK.

26-29 11th International CODATA Conference, Karlsruhe Congress and Exhibition Centre, Karlsruhe, FRG. DEHEMA, Attn. CODATA Conference, P.O. Box 97 01 46, D-6000 Frankfurt/M.97, FRG.


28-30 Toxidological Implications of Altered Gap Junctional Intercellular Communication, East Lansing, Michigan, USA. Dr. Michael Kamrin, Center for Environmental Toxicology, Michigan State Univ, C-231 Holden Hall, E. Lansing, MI 48824, USA.

28-30 The Boundaries Between Promotion and Progression During Carcinogenesis, Sheraton Bechwood, Cleveland, Ohio, USA. Ms. Christine Scullic, Cancer Research Center, Case Western Reserve Univ., 2040 Adelbert Rd., Cleveland, OH 44106, USA.


29 Conference on Antioxidant Nutrition with Emphasis on the Immune Functions, Los Angeles, California, USA. Agricultural and Food Division, American Chemical Society. Dr. Marshall Phillips, U.S. Dept. of Agriculture, National Animal Disease Center, P.O. Box 70, Ames, IA 50010, USA.


OCTOBER 1988

2-5 Fifth American Motility Society Symposium and Symposium on Cell Membrane Receptors, Asilomar, California, USA. Dr. William J. Snape, Jr., Harbor-UCLA Medical Center, 1124 W. Carston St., A-4 Annex, Torrance, CA 90302, USA.

2-7 1988 World Congress and Expo on Vegetable Protein for Human and Animal Use, Westin Stamford Plaza Hotel, Raffles City, Singapore. Meetings Manager, American Oil Chemists Society, P.O. Box 3489, Champaign, IL 61821, USA.

2-7 2nd International Conference on Biochemical Separations, Keszthely, Hungary. MTESZ, Hungarian Biochemical Society, P.O. Box 240, H-1368, Budapest, Hungary.

3-5 Molecular Biology of Hormone Action in Endocrinology and Pharmacology, Milan, Italy. Organizing Secretariat, Fondazione Giovanni Lorenzini, Via Monte Napoleone 23, 20121 Milan, Italy.

3-5 Conference on Listeria Monocytogenes, Rohnert Park, California, USA. Ms. Ann Kulback, Society for Industrial Microbiology, P.O. Box 12534, Airlington, VA 22209, USA.

4-9 FEBS Course on Genome Organization and Evolution, Carcass, Corsica, France. G. Bernardi, Laboratoire de Génétique Moléculaire, Institut Jacques Monod, 2 Place Jussieu, 75005 Paris, France.


9-12 Joint Meeting of the 11th Rochester Trophoblast Conference and The European Placenta Group, Rochester Plaza Hotel, Rochester, New York, USA. Dr. Richard K. Miller, 11th RTC/EPG, The Univ. of Rochester, Box 668, 601 Elmwood Ave., Rochester, NY 14642, USA.
OCTOBER 1988

9-12 22nd Annual Meeting of the Society of Research Administrators, Boston Park Plaza Hotel, Boston, Massachusetts, USA. SRA, 1505 4th St., Suite 203, Santa Monica, CA 90401, USA.

9-13 8th International Symposium on Atherosclerosis, Rome, Italy. Dr. G. Crepaldi, Symposium Chairperson, c/o Organizing Secretariat, Centro Italiano Congressi, Via L. Spallanzani, 11, 00161, Rome, Italy.

9-14 Annual Fall Meeting of The American Physiological Society/American Society for Pharmacology and Experimental Therapeutics, Montreal, Quebec, Canada. FASEB Office of Scientific Meetings, 9650 Rockville Pike, Bethesda, MD 20814, USA.


10-14 Sixth International Neurotoxicology Conference: Drug Abuse and Brain Development, Little Rock, Arkansas, USA. Dr. Joan M. Cranmer, Dept. of Pediatrics 512, Univ. of Arkansas for Medical Sciences, Little Rock, AR 72205, USA.

11-15 39th Annual Meeting of The American Society of Human Genetics, New Orleans, Louisiana, USA. Ms. Peggy Gardiner, Meetings Manager, ASHG Administrative Office, 9650 Rockville Pike, Bethesda, MD 20814, USA.

12-14 International Symposium on Biological and Synthetic Membranes, Lexington, Kentucky, USA. Prof. D. Allan Butterfield, Center of Membrane Sciences, 12 Bradley Hall, Univ. of Kentucky, Lexington, KY 40506, USA.


16-21 XIII International Congress of Allergology and Clinical Immunology, Montreux, Switzerland. Congress Secretariat, XIII ICACI, 611 E. Wells St., Milwaukee, WI 53202, USA.

18-20 Dr. W. Frohlich Award Conference—Under the Volcano: Biomedical Science and the Third World, The Rockefeller University, New York City, USA. Conference Director, The New York Academy of Sciences, 2 E. 63rd St., New York, NY, USA.

23-26 First National Symposium on New Crops: Research, Development, Economics, Adam's Mark Hotel, Indianapolis, Indiana, USA. Continuing Education Business Office, Room 110, Stewart Center, Purdue Univ., West Lafayette, IN 47907, USA.


25-28 International Conference on Gastroenteric Biology, Oxnard, California, USA. Ms. Joyce Fried, Brain Research Inst., Univ. of California, Center for the Health Sciences, Los Angeles, CA 90024, USA.

30 Oct. 6th International Congress of Culture Collections, Rockville, Maryland, USA. Ms. Bobbie Brandon, American Type Culture Collections, 12301 Parklawn Dr., Rockville, MD 20852, USA.


NOVEMBER 1988

3-5 Annual Meeting of the Society for Complex Carbohydrates, San Antonio, Texas, USA. A. D. Elbein, Dept. of Biochemistry, Univ. of Texas Health Science Center, 7703 Floyd Curl Dr., San Antonio, TX 78282, USA.

6-9 International Symposium on Clinical, Biochemical and Molecular Aspects of Fatty Acid Oxidation, Penn Tower Hotel, Philadelphia, Pennsylvania, USA. Dr. Paul M. Coates, Div. of Genetics, The Children's Hospital of Philadelphia, 34th St. and Civic Center Blvd., Philadelphia, PA 19104, USA.

8-10 The 9th International Conference of the Cardiovascular System Dynamics Society, Chateau Halifax Hotel, Halifax, Canada. Dr. Gerald A. Klassen, Rm. 5005 A.C.C., Victoria General Hospital, 1278 Tower Rd., Halifax, Nova Scotia, Canada B3H 2Y9.

11-12 Symposium on Genetics and Evolution, London, UK. Dr. R. N. Jones, Dept. of Agricultural Botany, Univ. College of Wales, Penglais, Aberystwyth, Dyfed SY3 3DD, UK.

11-12 Role of the Ventrolateral Medulla in Autonomic Regulation, London, Ontario, Canada. Dr. J. Ciriello, Dept. of Physiology, Health Sciences Centre, The Univ. of Western Ontario, London, Ontario, Canada N6A SCI; or Dr. C. Polosa, Dept. of Physiology, McGill Univ., McIntyre Medical Sciences Bldg., Montreal, Quebec, Canada H3G 1Y6.

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<tr>
<td>16-18</td>
<td>α-Keto Acid Dehydrogenase Complexes: Organization, Regulation, and Biomedical Aspects, Radisson Plaza Hotel, Austin, Texas, USA. Conference Dept., The New York Academy of Sciences, 2 E. 63rd St., New York, NY 10021, USA.</td>
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<tr>
<td>28-29</td>
<td>SRA/NIH Grants Administration Seminar, San Francisco, California, USA. Society of Research Administrators, 1505 4th St., Suite 203, Santa Monica, CA 90401, USA.</td>
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<tr>
<td>DECEMBER 1988</td>
<td>19-21 London Meeting of The Biochemical Society, Royal Free Hospital of Medicine, London, UK. Meetings Officer, The Biochemical Society, 7 Warwick Court, London, WC1R 5DP, UK.</td>
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<tr>
<td>DECEMBER 1988</td>
<td>5-6 Society for General Microbiology Irish Branch Meeting, Maynooth College, Dublin, Ireland. Dr. C.S. Dow, Dept. of Biological Sciences, Univ. of Warwick, Coventry, CV4 7AL, UK.</td>
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<tr>
<td>DECEMBER 1988</td>
<td>12-19 Frontiers of NMR in Molecular Biology, Park City, Utah, USA. UCLA Symposia, 103 Molecular Biology Inst., Univ. of California, Los Angeles, CA 90024, USA.</td>
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<tr>
<td>DECEMBER 1988</td>
<td>14-20 Role of Glycosylation in Cellular Interactions, Frisco, Colorado, USA. UCLA Symposia, 103 Molecular Biology Inst., Univ. of California, Los Angeles, CA 90024, USA.</td>
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<tr>
<td>DECEMBER 1988</td>
<td>17-22 Protein and Pharmaceutical Engineering, Park City, Utah, USA. UCLA Symposia, 103 Molecular Biology Inst., Univ. of California, Los Angeles, CA 90024, USA.</td>
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<tr>
<td>DECEMBER 1988</td>
<td>21-27 Growth Regulation of Cancer-II, Keystone, Colorado, USA. UCLA Symposia, 103 Molecular Biology Inst., Univ. of California, Los Angeles, CA 90024, USA.</td>
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<tr>
<td>DECEMBER 1988</td>
<td>21-27 Genetic Mechanisms in Carcinogenesis and Tumor Progression, Keystone, Colorado, USA. UCLA Symposia, 103 Molecular Biology Inst., Univ. of California, Los Angeles, CA 90024, USA.</td>
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<tr>
<td>DECEMBER 1988</td>
<td>21-28 Immunogenicity, Steamboat Springs, Colorado, USA. UCLA Symposia, 103 Molecular Biology Inst., Univ. of California, Los Angeles, CA 90024, USA.</td>
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<tr>
<td>JANUARY 1989</td>
<td>23-24 Insulin, IGF's and their Receptors: Molecular, Cellular and Functional Aspects, University of Florida, Gainesville, Florida, USA. Dr. Derek LeRoith, Diabetes Branch, NIDDK, Bldg. 10, Rm. 8S-243, NIH, 9000 Rockville Pike, Bethesda, MD 20892, USA.</td>
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<tr>
<td>JANUARY 1989</td>
<td>28 Jan. Embryo Manipulation and Gene Transfer in Experimental and Domestic Animals, Taos, New Mexico, USA. UCLA Symposia, 103 Molecular Biology Inst., Univ. of California, Los Angeles, CA 90024, USA.</td>
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<tr>
<td>FEBRUARY 1989</td>
<td>3-10 Cellular and Molecular Biology of Normal and Abnormal Erythroid Membranes, Taos, New Mexico, USA. UCLA Symposia, 103 Molecular Biology Inst., Univ. of California, Los Angeles, CA 90024, USA.</td>
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<td>FEBRUARY 1989</td>
<td>4-11 Human Retroviruses, Tamarron, Colorado, USA. UCLA Symposia, 103 Molecular Biology Inst., Univ. of California, Los Angeles, CA 90024, USA.</td>
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<tr>
<td>FEBRUARY 1989</td>
<td>5-9 Royal Australian Chemical Institute Symposium on Advances in Biomedical Polymers, Observation City, Perth, Western Australia. The Secretary, W. A. Polymer Group, Royal Australian Chemical Inst., 125 Hay St., Perth WA 6000, Australia.</td>
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<tr>
<td>FEBRUARY 1989</td>
<td>6-10 1989 Miami Bio/Technology Winter Symposium on Advances in Gene Technology: Molecular Neurobiology and Neuropharmacology, Miami, Florida, USA. The Second Annual Neural Systems Symposium will be held concurrently with the above Symposium on February 7 and 8. Ms. Sandra Black, Administrative Organizer, Miami Bio/Technology Winter Symposium, PO Box 016129, Miami, FL 33101, USA.</td>
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### FEBRUARY 1989

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<tr>
<td>13-17</td>
<td>International Conference on Fats, University of Auckland, Auckland, New Zealand. Dr. L. Eyres, International Conference on Fats, c/o Chemistry Dept., Univ. of Auckland, Private Bag, Auckland, New Zealand.</td>
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<tr>
<td>20-26</td>
<td>Hematopoiesis, Tamarron, Colorado, USA. UCLA Symposia, 103 Molecular Biology Inst., Univ. of California, Los Angeles, CA 90024, USA.</td>
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<tr>
<td>21-26</td>
<td>Defense Molecules, Lake Tahoe, California, USA. UCLA Symposia, 103 Molecular Biology Inst., Univ. of California, Los Angeles, CA 90024, USA.</td>
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### MARCH 1989

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<th>Date</th>
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<tr>
<td>27 Mar.</td>
<td>Biotechnology and Human Genetic Predisposition to Disease, Steamboat Springs, Colorado, USA. UCLA Symposia, 103 Molecular Biology Inst., Univ. of California, Los Angeles, CA 90024, USA.</td>
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<tr>
<td>27 Mar.</td>
<td>Molecular Mechanisms in DNA Replication and Recombination, Keystone, Colorado, USA. UCLA Symposia, 103 Molecular Biology Inst., Univ. of California, Los Angeles, CA 90024, USA.</td>
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<tr>
<td>29 Mar.</td>
<td>International Symposium on Serotonin from Cell Biology to Pharmacology and Therapeutics, Florence, Italy. Secretariat, Dr. N. Brunello, Inst. of Pharmacological Sciences, Univ. of Milan, Via Balzaretti, 9, 20133 Milan, Italy.</td>
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<td>31 Mar.</td>
<td>Nucleic Acid Methylation, Frisco, Colorado, USA. UCLA Symposia, 103 Molecular Biology Inst., Univ. of California, Los Angeles, CA 90024, USA.</td>
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### APRIL 1989

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<tr>
<td>1-7</td>
<td>Plant Gene Transfer, Park City, Utah, USA. UCLA Symposia, 103 Molecular Biology Inst., Univ. of California, Los Angeles, CA 90024, USA.</td>
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<tr>
<td>2-7</td>
<td>VI World Congress on In Vitro Fertilisation and Embryo Transfer, Jerusalem, Israel. Congress Secretariat, VI World Congress, In Vitro Fertilization and Embryo Transfer, P.O. Box 50006, Tel Aviv 61500, Israel.</td>
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<tr>
<td>3-9</td>
<td>Molecular and Cellular Biology of Yeasts and Filamentous Fungi, Steamboat Springs, Colorado, USA. UCLA Symposia, 103 Molecular Biology Inst., Univ. of California, Los Angeles, CA 90024, USA.</td>
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<tr>
<td>3-10</td>
<td>Parasites: Molecular Biology, Drug and Vaccine Design, Keystone, Colorado, USA. UCLA Symposia, 103 Molecular Biology Inst., Univ. of California, Los Angeles, CA 90024, USA.</td>
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<tr>
<td>4-7</td>
<td>Society for General Microbiology Easter Meeting, University of Cambridge, UK. Dr. C. S. Dow, Dept. of Biological Sciences, Univ. of Warwick, Coventry CV4 7AL, UK.</td>
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### MAY 1989

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<th>Date</th>
<th>Event</th>
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<tr>
<td>1-3</td>
<td>First International Symposium on Endothelium Derived Vasoreactive Factors, Philadelphia, Pennsylvania, USA. Dr. Gabor M. Rubanyi, Berlex Labs, Inc., Dept. of Pharmacology, 110 E. Hanover Ave., Cedar Knolls, NJ 07927, USA.</td>
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May 1989

14-18 XIII Congress of the International Society for Heart Research, in conjunction with the ISHR-American Section Meeting: Pharmacologic Mechanisms and Heart Disease, The University of Michigan, Ann Arbor, Michigan, USA. Ms. Glenda Radine, Univ. of Michigan Extension Service, Dept. of Conferences and Institutes, 200 Hill St., Ann Arbor, MI 48104, USA.

24-27 Eightieth Annual Meeting of the American Association for Cancer Research, San Francisco, California, USA. Margaret Foti, Executive Director, AACR, Temple Univ. School of Medicine, West Bldg., Rm. 301, Broad and Tioga Sts., Philadelphia, PA 19104, USA.


28 May -1 Jun XIV International Symposium on Cerebral Blood Flow and Metabolism: Brain '89, Bologna, Italy. GIBI Studio Congressi, Via Marco Besso 40, 00191 Rome, Italy.

June 1989

4-9 V International Conference on AIDS, Convention Center, Montréal, Canada. Secretariat, Kenness Canada Inc., P.O. Box 120, Station B, Montréal, Québec, Canada H3B 3J5.

July 1989

11-14 Guildford Meeting of The Biochemical Society, Guildford, UK. Meetings Officer, The Biochemical Society, 7 Warwick Court, London WC1R 5DP, UK.

16-21 V International Congress of Toxicology, Brighton, UK. Secretariat, IUTOX'89, Congress House, 65 West Dr., Sutton, Surrey SM2 7NB, UK.

23-27 International Symposium on Developmental Neuroscience, Beijing, China. Dr. Ramon Lim, Division of Neurochemistry and Neurobiology, Dept. of Neurology, Univ. of Iowa, Iowa City, IA 52242, USA.

23-28 4th World Conference on Clinical Pharmacology and Therapeutics, Mannheim-Heidelberg, FRG. Contact CPT 89, c/o GKV, Congress and Conventions, P.O. Box 100619, D-6050 Offenbach 1, FRG.

24-28 Fourth International Conference on Bioinorganic Chemistry, Cambridge, Massachusetts, USA. Prof. Kenneth D. Karlin, Chairperson, ICBCIC-4, Dept. of Chemistry, SUNY at Albany, Albany, NY 12222, USA.

29 Jul. Third Symposium of The Protein Society, University of Washington, Seattle, Washington, USA. Protein Symposium Secretariat, Ms. Shirley E. Schlessinger, 400 E. Randolph, Suite 1015, Chicago, IL 60601, USA.

30 Jul. 7th International Congress of Immunology, Berlin, FRG. DER Congress Organization, Auguster Str. 27, D-1000 Berlin 30, FRG.

August 1989


7-11 Conference on the Biochemistry and Genetics of Ribosomes, East Glacier, Montana, USA. Professor Walter E. Hill, Dept. of Chemistry, Univ. of Montana, Missoula, MT 59812, USA.


20-25 Protein Engineering '89, Kobe, Japan. IRL Press Inc., P.O. Box Q, McLean, VA 22101, USA.


September 1989

7-9 10th European Section Meeting, International Society for Heart Research, Rotterdam, The Netherlands. Dr. J. W. de Jong, Cardiochemical Lab./Thoraxcenter, Erasmus Univ. Rotterdam, P.O. Box 1738, 3000 DR Rotterdam, The Netherlands.

10-15 American Chemical Society, Miami Beach, Florida, USA. ACS Meetings Dept., 1155 16th St. NW, Washington, DC 20036, USA.

19-22 Cork Meeting of The Biochemical Society, University College, Cork, Ireland. Meetings Officer, The Biochemical Society, 7 Warwick Court, London WC1R 5DP, UK.

24-29 10th International Conference on Enzyme Engineering, Kashiwajima, Japan. Engineering Foundation, 345 E. 47th St., New York, NY 10017, USA.
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<tr>
<td><strong>SEPTEMBER 1989</strong></td>
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<tr>
<td>25–28</td>
<td>103rd Annual International Meeting and Exposition of Association of Official Analytical Chemists, The Clarion Hotel, St. Louis, Missouri, USA. Ms. Margaret Ridgell, AOAC, 1111 N. 19th St., Suite 210, Arlington, VA 22209, USA.</td>
</tr>
<tr>
<td>18–20</td>
<td>London Meeting of The Biochemical Society, St. Bartholomew’s Hospital Medical School, London, UK. Meetings Officer, The Biochemical Society, 7 Warwick Court, London WC1R 5DP, UK.</td>
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<td><strong>OCTOBER 1989</strong></td>
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<td>1–6</td>
<td>13th World Congress on Fertility and Sterility, Casablanca, Morocco. Congress Secretariat, Société Marocaine de Fertilité-Contraception, P.O. Box 12537, AINDIAB, Casablanca, Morocco.</td>
</tr>
<tr>
<td>4–6</td>
<td>4th International Conference on Immunobiology and Prophylaxis of Human Herpesvirus Infections, Fukuoka, Japan. Dr. Ryoichi Mori, Dept. of Virology, Sch. of Medicine, Kyushu Univ., Fukuoka 812, Japan, or Dr. Bernard Roizman, Dept. of Virology, The Univ. of Chicago, 910 E. 58th St., Chicago, IL 60637, USA.</td>
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<td><strong>NOVEMBER 1989</strong></td>
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<td>8–11</td>
<td>Tenth International Symposium on Drugs Affecting Lipid Metabolism, Westin Galleria Hotel, Houston, Texas, USA. Dr. Louis C. Smith, International Meeting Managers, Inc., 4550 Post Oak Pl., Suite 246, Houston, TX 77027, USA.</td>
</tr>
<tr>
<td>11–15</td>
<td>40th Annual Meeting of The American Society of Human Genetics, Baltimore, Maryland, USA. Ms. Peggy Gardiner, Meetings Manager, ASHG Administrative Office, 9550 Rockville Pike, Bethesda, MD 20814, USA.</td>
</tr>
<tr>
<td>29 May</td>
<td>7th International Conference on -1 Jun. Prostaglandins and Related Compounds, Florence, Italy. Organizing Secretariat, Fondazione Giovanni Lorenzini, Via Monte Napoleone, 23—20121 Milan, Italy.</td>
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<td><strong>DECEMBER 1989</strong></td>
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<td><strong>APRIL 1990</strong></td>
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<tr>
<td>1–6</td>
<td>VIth World Congress on Pain, Adelaide, Australia. International Association for the Study of Pain, 909 N.E. 43rd St., Suite 306, Seattle, WA 98105, USA.</td>
</tr>
<tr>
<td>1–6</td>
<td>74th Annual Meeting of the Federation of American Societies for Experimental Biology, Washington, DC, USA. FASEB Office of Scientific Meetings, 9650 Rockville Pike, Bethesda, MD 20814, USA.</td>
</tr>
<tr>
<td>3–6</td>
<td>Bath Meeting of The Biochemical Society, Bath, UK. Meetings Officer, The Biochemical Society, 7 Warwick Court, London WC1R 5DP, UK.</td>
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<tr>
<td>22–27</td>
<td>American Chemical Society, Boston, Massachusetts, USA. ACS Meetings Dept., 1155 16th St. NW, Washington, DC 20036, USA.</td>
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<td><strong>MAY 1990</strong></td>
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<tr>
<td>23–26</td>
<td>Eighty-First Annual Meeting of the American Association for Cancer Research, Washington, DC, USA. Margaret Foti, Executive Director, AACR, Temple Univ. School of Medicine, West Bldg., Rm. 301, Broad and Tioga Sts., Philadelphia, PA 19140, USA.</td>
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<tr>
<td>14–19</td>
<td>75th Annual Meeting of the Federation of American Societies for Experimental Biology, Atlanta, Georgia, USA. FASEB Office of Scientific Meetings, 9650 Rockville Pike, Bethesda, MD 20814, USA.</td>
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<tr>
<td><strong>OCTOBER 1990</strong></td>
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<tr>
<td>21–26</td>
<td>International Congress on Obesity, Kobe, Japan. Prof. Yutaka Oomura, Dept. of Physiology, Sch. of Medicine, Kyushu Univ., Fukuoka 812, Japan.</td>
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<tr>
<td><strong>DECEMBER 1990</strong></td>
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<td>18–20</td>
<td>Birmingham Meeting of The Biochemical Society, Birmingham, UK. Meetings Officer, The Biochemical Society, 7 Warwick Court, London WC1R 5DP, UK.</td>
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<td><strong>MAY 1991</strong></td>
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<td>10–12</td>
<td>Reading Meeting of The Biochemical Society, Reading, UK. Meetings Officer, The Biochemical Society, 7 Warwick Court, London WC1R 5DP, UK.</td>
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2640 FJ CALENDAR
MAY 1991

15-18 Eighty-Second Annual Meeting of the American Association for Cancer Research, Houston, Texas, USA. Margaret Foti, Executive Director, AACR, Temple Univ. School of Medicine, West Bldg., Rm. 301, Broad and Tioga Sts., Philadelphia, PA 19140, USA.

JULY 1991

16-19 Manchester Meeting of The Biochemical Society, Manchester, UK. Meetings Officer, The Biochemical Society, 7 Warwick Court, London WC1R 5DP, UK.

SEPTEMBER 1991

4-6 Edinburgh Meeting of The Biochemical Society, Heriot Watt, Edinburgh, Scotland. Meetings Officer, The Biochemical Society, 7 Warwick Court, London WC1R 5DP, UK.

APRIL 1992

5-10 76th Annual Meeting of the Federation of American Societies for Experimental Biology, Anaheim, California, USA. FASEB Office of Scientific Meetings, 9650 Rockville Pike, Bethesda, MD 20814, USA.

MARCH 1993

28 Mar.-2 Apr. 77th Annual Meeting of the Federation of American Societies for Experimental Biology, New Orleans, Louisiana, USA. FASEB Office of Scientific Meetings, 9650 Rockville Pike, Bethesda, MD 20814, USA.

AUGUST 1993

22-27 XVth International Congress of Nutrition, Adelaide, Australia. Dr. R. M. Smith, General Secretary, CSIRO Division of Human Nutrition, Kintore Ave., Adelaide, South Australia 5000.

Reviewed by Zola Horovitz, Squibb Institute for Medical Research, Princeton, New Jersey 08543, USA

This volume approaches a subject of major interest to all scientists and business people in the pharmaceutical industry and to many academic researchers. Up to a point, the various chapters do a fine job of describing most aspects of the drug discovery and development process. However, some very crucial aspects of this process such as dose formulation development, assay and analytical development, and the very important aspect of drug metabolism and pharmacokinetics are not reviewed. It might have been better to cover these important areas and leave out the last three chapters on specific examples of the discovery of H2 antagonists, atypical psychotropics, and calcium channel antagonists. These discoveries have previously been described in detail in other books.

I also thought that the organization of the chapters could have been in a more traditional sequence if the chapters on drug discovery at the enzyme level and biochemical approaches had been placed after the design chapters and before the intact tissue and neuropsychopharmacology chapters.

In spite of these criticisms, this volume deserves to be in all major biomedical libraries. The overview by the editors is just that—an excellent overview of the whole process. The two chapters on drug design are also well done and comprehensive, although the authors might have put more emphasis on the limitations of computer design.

The discovery reviews are well prepared. The immunopharmacological review is a very comprehensive treatment of a difficult subject and the neuropharmacology chapter is an excellent review of antianxiety agent discovery, but it slight antidepressants and antipsychotics.

In spite of the omissions discussed above, the development areas that are covered are also well done and complete. The toxicological and clinical evaluation chapters deserve special recommendations for those desiring an overview of these complex and important areas of drug development.

Although this volume can be criticized for its omissions, I believe it does represent one of the most comprehensive reviews available of the total drug discovery and development process. It should be a valuable reference and provide useful knowledge for many biological scientists.


Reviewed by Martin S. Hirsch, Department of Medicine, Massachusetts General Hospital, Boston, Massachusetts 02114, USA

Along with the AIDS epidemic has come an explosion of literature on all aspects of the problem. Recently, efforts have begun to develop review series to summarize recent developments related to infections with the Human Immunodeficiency Virus (HIV). Current Topics in AIDS, Volume I, represents such an effort. Areas that are briefly reviewed include social and health policy perspectives, epidemiology, natural history, pathogenesis, clinical manifestations, diagnosis, and international aspects of the AIDS problem.

In many respects, both HIV infection and AIDS are moving targets, and any review quickly becomes outdated. Although published in 1987, nearly all references are from 1986 or earlier, and some important advances since 1986, e.g., the demonstration of azidothymidine's clinical efficacy and the utility of serum p24 antigen detection, are overlooked entirely.

Nevertheless, this volume represents a useful compendium of information up until 1986 and has many well-written chapters that are still timely in 1988. Particularly impressive are chapters on the natural history of HIV infection by Melbye et al.; HIV and its pathogenesis by McClure and Weiss; and by Margolick and Fauci; gastrointestinal manifestations by Quinn; neurological manifestations by Asher et al.; AIDS in Africa by Francis and Quinn; and the psychosocial impact of AIDS by Green and Miller.

Since the intention of the editors of Current Topics in AIDS is to produce volumes at regular intervals, it should be possible to stay only slightly behind this elusive target. As Brandt points out in chapter 1, "never in the history of man has so much progress been made in so short a time with such a complex illness." This pace will continue, increasing the pressure to reduce the time from submission of a review article to its publication. Volume I of Current Topics in AIDS makes a good debut. Its continued success and timeliness would benefit from processes designed to shorten publication time.


Reviewed by Joanne M. Howard, Department of Anatomy and Cell Biology, University of Miami, Miami, Florida 33101, USA

A useful histology textbook must be clear, current, accurate, and above all guide the student in identifying tissues and organs. Histology and Human Microanatomy is the fifth edition of a textbook introduced in 1960. In the previous editions the emphasis was entirely on the visual aspect of histology, which resulted in a book with a short text and numerous illustrations. It was the goal of the authors to encourage students to understand the complex morphological relationships of organ structure through the use of photographs and diagrams and depend less on written descriptions. This was a worthy concept and the authors employed new and varied techniques to focus attention on the illustrations. The fifth edition closely adheres to the same format, perhaps too closely.

With the emphasis on teaching by illustrations, the expectation for this new edition was to see numerous, high-quality diagrams and photographs. However, nearly all of the illustrations are the same as those appearing in the fourth edition, which was printed nearly 10 years ago. Unfortunately the overall quality is poor. The light micrographs should be the strength of the book but most are blurred or have improper color balance. Puzzling are the number of small, low-magnification photographs that simply offer no information. With the present techniques in electron microscopy it is an embarrassment to include micrographs too densely
stained, out of focus, showing knife scratches and with improper scope alignment.

One positive aspect is a pictorial technique introduced in earlier editions that has survived the test of time, the stereogram. Bright, vivid colors capture the attention whereas the diagram itself offers an interesting 3-dimensional perspective of complex morphological organization. Those of the liver lobules are classic.

The text is brief, following the current trend in many histology textbooks. However, in abbreviating it, several areas of complicated and complex morphology are reduced to a simple listing of the names of the structures. With no clear companion description of the morphology, the reader has no clues as to how to identify the structures. In addition, there are important factual deletions, particularly concerning cell morphology. Totally ignored in this book is the current knowledge of cell shape based on the arrangement of the elements of the cytoskeleton.

In the chapter on the "Cell" the shape is attributed to the formation of facets and outside pressure. This same theme is reinforced in later chapters.

A short textbook with high-quality, informative illustrations would be useful for a quick review or a summary of histology. However, because of the poor quality of illustrations and the inaccurate, unclear text, a student or teacher using *Histology and Human Anatomy* would not find it a helpful guide. Therefore, unfortunately, I do not feel comfortable in recommending this book.


Reviewed by Annette Schafer, Department of Biological Sciences, New York City Technical College of the City University of New York, Brooklyn, New York 11201, USA

This volume contains the Proceedings of the Third International Congress of Human Tumor Markers held in Italy, April, 1986. Included in the 61 research articles are reports of both clinical and experimental cancer studies utilizing a large number of markers.

Carcinogenesis is a complex process involving the steps of initiation, promotion, and progression to the disease state. For researchers, tumor markers have provided useful tools for studies aimed at unraveling these steps in the cancer process and for understanding cell differentiation. For clinicians, the use of markers promises a reliable and effective method of early detection, diagnosis, surveillance of therapy, and for assessing prognosis. Although the presently available markers are not effective for primary diagnosis of cancer, they are gaining much importance in the surveillance and prognosis of patients.

The history of cancer research may be described as a history of disappointments. The initial promise of markers for early detection met with a lack of specificity and reliability of tests. The complexity and multitude of neoplastic diseases make progress in this area difficult and challenging. However, as is evident in this volume, efforts to discover reliable markers continue.

The discovery of AFP and CEA in the 1960's prompted a resurgence of studies of tumor markers. It soon became evident that tumor markers were not necessarily unique but may result from the synthesis by tumor cells of molecules normally produced during development. Studies with such oncodevelopmental markers have led to a better understanding of normal development as well as tumor biology and carcinogenesis. Experiments are reported here involving reinvestigation of these long-known markers utilizing newer methodology.

During the last decade, numerous tumor markers have been described and their applicability to cancer detection and therapy have been demonstrated. Experimental work as well as clinical evaluation for many of these markers is presented in the research articles in these Proceedings. Studies are described of protooncogenes and genomic markers, retroviruses, nucleolar markers, T and Th markers, modified nucleosides, cytoskeletal components, oncodevelopmental markers, lipid-associated sialic acid, hormones and hormone receptors, monoclonal antibodies and new tumor-associated antigens, and many isoenzyme systems. Phenotypic tumor markers such as the oncodevelopmental markers and enzymes are expressions of the already transformed cells.

To investigate the earliest steps in transformation, reliable genomic markers would be valuable. These, however, have been more difficult to characterize. There are relatively few studies of this type in the volume.

A clinically useful tumor marker must be sensitive, specific, and provide easily obtainable evidence for a particular neoplastic pathology. It is evident from the reports presented that all the tumor markers described possess these features in varying degrees. Two main obstacles to the effective use of markers remain. These are the lack of absolute specificity for the tumor cell and the lack of good correlation between the concentration of the marker and the stage of malignancy. In general, the usefulness of markers for detection is questionable but they have been shown to be valuable tools for the follow-up and treatment of patients. Much clinical data to support this are presented in these Proceedings.

This volume, although expensive, provides a good reference source for the clinician/researcher involved in studies of tumor markers relevant to patient care. Most of the reports include adequate background material for understanding the experiments utilizing a particular marker. Where applicable, extensive description of the methodology is given. Improved procedures for the elaboration of nucleoside profiles by high-pressure liquid chromatography-ultraviolet are described. There are also some papers dealing with tumor imaging.

There is a multitude and growing diversity of tumor markers currently being investigated. The proceedings of an international conference such as this provide important documentation of many of these studies and evaluate their usefulness in patient care.


Reviewed by Ed W. Thompson, The Hormel Institute of the University of Minnesota, Austin, Minnesota 55912, USA

Contrary to its title, this book does not attempt to present a comprehensive review of the regulation of circulatory function under conditions of stress. Rather, the author has chosen to focus on the "vascular" rather than on the "cardio" component of the circulation, bringing in cardiac function only when necessary to clarify that of the peripheral vasculature. He has further narrowed the focus of the book by dealing specifically with those stresses that are of particular importance in human circulation. In doing so, Dr. Rowell has provided a timely, useful, and readable book that successfully approaches many basic concepts of human circulatory function from an unusual perspective.

This book contains 13 chapters, which can be grouped into three areas of discussion. After a brief introduction, chapters 2 and 3 cover general principles of vascular control, including the roles of both intrinsic and extrinsic mechanisms. Particular attention is paid to differentiating between vasomotor
(on the arterial side) and venomotor (on the venous side) involvement. The next three chapters apply these principles to the specific control of the splanchnic, renal, skeletal, cutaneous, cerebral, and coronary vascular beds, with emphasis on those features that make each of these circulations unique. Finally, chapters 7–13 coordinate these basic principles and systems into discussions of how they are called into play and interact in response to stress. These discussions focus on upright posture, thermal stress, physical activity, and hypoxemia, although other challenges are considered. The text is extensively referenced, and I was particularly pleased to see that the "classics" were critically discussed in light of more recent observations. The majority of illustrations are schematic or deal with general concepts, although experimental data are occasionally introduced to support specific points. Overall, the text is easy to read, and illustrations and references are appropriately used.

The design and organization of this book both enhance and limit its usefulness. Its focus on properties unique to human circulation significantly increases the relevance of this book to human physiology and medicine, and its presentation of basic concepts and principles before discussing their roles in preserving and enhancing blood flow and distribution broadens its scope in these areas. Because of its limited coverage of cardiac function, the presentation of vascular events is more coherent and easily understood than that of most other books in the field. Unfortunately, these same characteristics also limit its effectiveness and its target audience. Although the organ systems previously noted are well discussed, others receive little or no coverage because they are of minimal importance in responding to the stresses discussed. With the emphasis on events at the organ and tissue levels, coverage of local vascular responses is spotty. Even though the author has tried to correlate cardiac and vascular components of regulation, he is not always successful. Therefore, this book will be of less value to individuals without some background in cardiovascular physiology and it will find limited use as a textbook. Rather, its primary audience will be cardiologists, anesthesiologists, and other physicians who deal with the cardiovascular system, and physiologicalists and researchers in related disciplines. For these individuals, it will serve as an excellent review. It is also likely to find a significant audience among allied health professionals and educators with particular interest in vascular function. Because of its acknowledged bias toward the vascular side of the circulation, I particularly recommend this book to medical students, residents, and graduate students to balance the traditional bias toward the cardiac side presented in many textbooks.

FJ


Some days it doesn't pay to get up. You are riding along happily when suddenly you hit a bump in the road. Where, you ask, did that come from? Could I have foreseen it? Questions of that sort must be going through many minds at the National Institutes of Health, the nation's premier center for biomedical research. For in the short span of a few months NIH has hit a number of "bumps" in the form of controversies over the procurement of its supplies, its handling of charges of scientific misconduct, and the future of its renowned intramural program. It also faces other problems such as the use of fetal tissue in transplantation, the use of experimental animals in research and uncertainty about its funding level for FY 1989.

The procurement issue may have been settled quickly with a key staffing change, but the scientific misconduct controversy is not likely to go away that fast. The issue of misconduct boiled up over questions about the accuracy of a scientific paper and NIH's policy of having the universities investigate ethics charges that arise from government-sponsored research. Recent hearings created a good deal of turmoil and self-examination in the scientific community. They also produced threats of remedial legislation. Big names are involved, not the least of them Rep. John Dingell (D-MI), chairman of the powerful House Energy and Commerce Committee and head of the subcommittee that held one of the hearings.

How is the director of NIH, Dr. James B. Wyngaarden, dealing with all of this travails and what are his reactions to it? Some of the answers are contained in an unusually candid interview Wyngaarden gave to Daniel S. Greenberg, editor of Science & Government Report, a Washington-based newsletter. Mr. Greenberg has given the FASEB Journal permission to reprint the interview, which follows.

**Q&A: With Director Wyngaarden On Political Troubles at NIH**

James B. Wyngaarden, Director of the National Institutes of Health, spoke with SGR Editor Greenberg on May 11. Following is the text, transcribed and edited by SGR.

**Q. NIH suddenly has political problems—the latest being the highly publicized firing of one of your senior administrators, Ted Becker, from the sensitive job of chief of procurement for your laboratories (SGR May 15).**

**Wyngaarden.** About 18 months ago, we had a major confrontation with the Department [of Health and Human Services, NIH's parent agency] over the management of procurement. We negotiated a corrective-action plan. Ted agreed to that, and submitted quarterly reports as to the progress that he was making. He felt that all of the residual deficiencies that had been identified were being addressed.

The Department didn't really agree with that. But Ted then asked on his own initiative for an outside audit from the Logistics Management Institute (LMI), which is a group at the Defense Department that does this sort of audit for other branches of the government. Ted wanted to get somebody completely outside the PHS [Public Health Service, the administrative umbrella of NIH] to look at it, and I think fully expected to get very high marks across the board.

They did give him extraordinarily high marks from the standpoint of procurement services. There was a level of satisfaction within NIH that they rarely find in a government agency. They, however, did fault the agency as a whole for a lack of adequate cost consciousness, and Ted and his unit for not having achieved the kinds of discounts that they thought we would have been entitled to with such a large-scale volume.

They contrasted the NIH with a number of private institutions, most closely with [Johns] Hopkins, which they thought was compositionally and functionally rather like NIH and about the same size. And Hopkins does have better discount rates than we did. But the system is not the same. There's a centralized procurement at Hopkins. Everything is delivered to one place and the costs of disbursement within the institution don't show up as a procurement cost. So, they're not strictly comparable. They also felt that we had not been adhering to procurement regulations, primarily with respect to exceptions to competitive bids, and that we have not adhered to some of the requirements for contracting with small businesses or minority businesses, on occasion.

At any rate, at that point the [HHS] Inspector General received the draft of this LMI report, and reacted pretty vigorously and wrote the [HHS] Secretary proposing that Ted be removed from this position and transferred outside of NIH. Ted is an SES [Senior Executive Service, the elite of the Civil Service] employee and the Secretary has that prerogative of reassignment. He also proposed that Ted be permanently debarred from any role in procurement activities. He cited a figure that was floated up about a year and a half ago of a $25 million inefficiency. With a little inflation, he made it $26 million.
Q. Is that a plausible number?

Wyngaarden. No. I don’t think so. It was, I thought at the time, a reckless estimate, but it has achieved a life of its own. It’s a damaging figure. A much closer estimate by the personnel who conducted this LMI study may be 20 percent of that, maybe a little more. And I think that is a plausible figure. But I would not characterize that as waste in the system. I would characterize that as further economies that could be attained. There’s also a large question in everyone’s mind whether if we drove the system to the point of its last potential dollar of saving, whether we’d have the procurement system that would be responsive. Our business is to do research, and I think the business of administration is to make the research as efficient as possible. But in the procurement regulations there are just two considerations. One is fiscal responsibility and the other is compliance.

We are still going back and forth on some of these issues. But the vigor of the Inspector General’s response and the feeling within the Department that we had a potentially explosive situation that needed quick surgical correction prevailed. And I would have to say that everyone with whom I have dealt and have argued this issue in the Department genuinely believes that he is acting in the best interests of NIH. And I do not fault them for that. We have a different perspective on it. I think we still can make the changes indicated with a less severe corrective program.

Q. The sentence for Becker seems to be especially harsh. Why couldn’t he simply return to the bench, as he apparently wished to?

Wyngaarden. We’ve asked the same question. The people who live in the more political world than we do say that would look like a partial rather than a complete solution. They were very anxious to have this matter settled before the first Congressional inquiry arose. And we have had Congressional inquiries. We had appropriations hearings in the Senate later than usual this year. This broke just before that. After my opening statement, the first question I received from Senator Chiles [D-Fla., Chairman of the NIH Appropriations Subcommittee] had to do with procurement at NIH.

Q. Was the report on NIH procurement circulating in Congress?

Wyngaarden. Yes, it had by that point. He asked me about the $26 million figure. I said I thought it was a hyperbolic statement. I thought the actual figure was perhaps half that, perhaps less.

Q. In your talk to the assembly at NIH [on April 29] you referred to a “$5-million warning shot across the bow.”

Wyngaarden. The House Appropriations Committee was marking up a Supplemental bill. When it finished the process, they were essentially $20 million over a target figure. They elected to take, or it was proposed taking, $5 million of that from our two accounts that deal with procurement.

Q. Did they directly state this was a warning?

Wyngaarden. Informally, yes, from the Chairman by the way of the Committee chief of staff.

Q. Now, your showdown meeting with the three representatives from the Department on April 22.

Wyngaarden. I had asked to meet with the IG [Inspector General of HHS] The Under Secretary [of HHS, Don M. Newman] then called me, and I gave him the NIH side and felt that the treatment of Ted, a loyal intramural scientist who had foregone eight years of his own scientific career as a service to his colleagues and to NIH—I thought the least we could have done would be to thank him profusely for his contributions and allow him to resume his scientific career. But that wasn’t the verdict.

Q. Was this discussed at the meeting with the three from the Department?

Wyngaarden. It was first discussed on the telephone with the Under Secretary. He said, “What should we do?” I said, “I’d like to meet with the Inspector General.” And so that meeting was set up. At the last minute, the Inspector General was unable to come, but he asked Tony McCann, the Assistant Secretary for Management and Budget, to represent him. And the Under Secretary was there. And Ralph Reed, the Deputy Assistant Secretary for Health.

The main discussion was between myself, representing NIH, and Tony McCann, representing the Department and the IG. It was clear as we talked that the Under Secretary accepted the recommendation of the IG [to remove Becker from his administrative post and debar him from returning to research at NIH] in this matter. I made it clear that I could not voluntarily agree to that. And so this essentially became an order for me to proceed.

Q. Did you threaten to resign?

Wyngaarden. No, I did not. I must say, it passed through my mind, but I didn’t think this was the issue.

Q. Was there any suggestion of personal wrongdoing by Becker?

Wyngaarden. No. The intramural community [staff in NIH’s own laboratories], when they heard about this, assumed there had to be more. And I went back before my meeting with the intramural scientists [on April 29]—I went back by telephone both to Ralph Reed and to Tony McCann to find out if there was any more. They assured me that there was no intimation of impropriety that had to do with what is called fiduciary responsibility. They assured me that there was no implication of impropriety. There were rumors that, for this severe an action, Ted must have been embezzling something. There is no truth to that.

It is simply, as someone nicely stated, a clash of two cultures. It was pointed out, for example, that while NIH is an intensely political creation, and we have a fairly brisk political existence, we predominantly see the upside of politics. This is a bit of the downside of politics. When something happens, and gets to a state of this degree of concern, one might even say the facts don’t
matter any more. Perception takes over.

Q. The IG's letter notes Congressional concern about misconduct in research—an obvious reference to the recent Congressional hearings on scientific fraud (SGR April 15, May 1, 15).

Wyngaarden. Yes, there's that. But we have had some other events. We had the hearing on the personnel appraisal system [March 31, before the House Oversight and Investigations Subcommittee, Chaired by Rep. John D. Dingell (D-Mich.), after HHS said NIH had inflated the performance ratings for senior administrators]. Just a week before the Becker incident, we had this very difficult hearing on misconduct and fraud in science. We also had an issue which at that time was surfacing and has since grown larger—on the use of fetal tissue in transplantation. We have the continuing matter of animals in science. [Assistant Secretary] Tony McCann said, "There's blood in the water around NIH, and the sharks are circling." They wanted to get rid of this problem in a decisive manner immediately, given the other events that had occurred.

Q. Looking at some of the events, in particular, the Dingell hearing [April 12, on scientific fraud], it seems that regardless of the merits, that hearing went badly for NIH.

Wyngaarden. I understand it did, very badly. I don't know if I'm glad I was chairing the OECD [Organization for Economic Cooperation and Development] meeting in Paris that week, or not. We've had a difficult spring, and that hearing has not helped.

Q. What do you do for damage control? Dingell's staff is rummaging around in Cambridge this week for additional material. As one of Dingell's staff people said about fraud cases, "They're coming out of the closet now." There are plenty of people with grievances, justified or imagined, who are looking to tell a story. Now they have a place to tell it.

Wyngaarden. I think that's happening. What I perceive from observing this event during six years here, and the hearings and comments surrounding them, is that there are some in the Congress who feel that the rather privileged status of the universities, the scientists, and the whole biomedical research enterprise has led to a certain complacency about some of these problems. They're coming to the conclusion that scientists are no more honest than businessmen, and that universities are no more honorable than corporations. I think that there's a tremendous backlash against the perception that there's a very high price to education, research, and science that makes these events unlikely, except as aberrations.

I still like that point of view, and by and large subscribe to it. But there's no question—we've been badly damaged by these celebrated cases of misconduct and mismanagement. And by the reluctance to admit that there have been problems. Especially in the [John] Darsee case [in which extensive fraud in biomedical research at Harvard and Emory University was disclosed in 1981]. We had this protracted denial, or at least extraordinary effort to come out Mr. Clean on everything, when we had no possibility of coming out that way.

Q. Are you referring to Harvard's own investigation, which exonerated all but Darsee?

Wyngaarden. Yes, and even the manner in which this was approached by some of the principals along the way.

Q. At Harvard?

Wyngaarden. Yes.

Q. So, this fester on seven years later?

Wyngaarden. Yes, it continues to cost us, I think.

Q. Is there any way to mend this situation before it causes further damage?

Wyngaarden. There may be. I would very much dislike to see the proposed solution of an Inspector General-like mechanism set up in the Department with authority for unannounced site visits and primary evaluation of notebooks without there being some sort of cause for this. On the other hand, I think that we have to be a lot more vigorous about this. I've been concerned about a number of cases that have been under review at the NIH over the years, but I'm not part of the investigative process. As the Director, I'm the deciding official. I'm deliberately enjoined from entering the process. I'm supposed to be uninvolved until the end.

Q. There's nothing to prevent you from knocking heads and getting a couple of dozen people together and saying, let's figure out some more effective way of dealing with the fraud issue.

Wyngaarden. Immediately following the [Dingell] hearing, I added two positions to the investigative office. We detailed someone who had substantial investigative experience from one of our audit units, and I think we have now identified the second new person to put into that unit, someone who has epidemiological and biostatistical and sociological experience. So, I think it will be much stronger.

We have to be more vigorous in joining with the universities in the investigation. I still think the primary responsibility is properly placed on the institution. It's a form of activity that none of us has much experience with. With each example, we learn some additional procedural devices. A school that has had its first major case, as the Darsee case was at Harvard, is much better prepared for the second, and so on. That showed up in subsequent events that have occurred at Harvard. The handling was with dispatch and skill. We are advocating that every grantee institution be prepared for that. But the Departmental proposal on how to deal with misconduct in science has just been returned from the Office of Management and Budget for some additional study [SGR May 15].

Q. OMB says that you're too strict, that too much conformity might be imposed on science.

Wyngaarden. There are basically two points. One is that the document dealt with misconduct in science.
They would prefer to see us define what is fraud in science and deal with that. In one sense, it's too broad. The second point is a question of whether NIH or other branches of the Public Health Service should not have more of an investigative unit in a sense that the Food and Drug Administration (FDA) does. They apparently conduct site visits to laboratories engaged in studies that will be submitted to the FDA. I would hope that we can limit that to events that warrant such inquiry, but I do think that we've got to be much more aggressive in looking at those cases.

Q: You've got an odd situation at NIH where two of your staff scientists [Walter Stewart and Ned Feder] are running a sort of guerrilla campaign against fraud. And often, at least in Congressman Dingell's perception, they're way ahead of the established organ for this purpose. Is this situation likely to continue?

Wyngaarden. Stewart and Feder are not part of the official NIH investigative mechanism. They became interested in this line of endeavor, largely through the Darsee case, and there's been a lot of discussion as to whether this is appropriate activity for intramural scientists whose job description, originally at least, was that of doing organic chemical syntheses. We have taken a point of view that many of our people do things other than their primary bench science obligations. Some of these alternative activities can be broadly categorized as making contributions to the integrity of science.

For example, we have many people who serve on editorial boards, some serve as editors of journals, and so on. And that is, in another sense, a kind of quality control of science. So, in the generic sense, what Stewart and Feder are doing is not that different. Our attorneys point out that we have traditionally allowed a lot of latitude. I guess you'd call it academic freedom, although we're not strictly academic.

Q: They say that maintaining the purity of science is just as important as the expansion of scientific knowledge. But there are people who say that they were hired to work in a laboratory.

Wyngaarden. As you can imagine, we have enormous ambivalence about what they're doing.

Q: Will they be permitted to continue with their present work practices?

Wyngaarden. Yes.

Q: Then you perceive their activity as being beneficial to science or it is regarded as something that a liberal scientific community tolerates?

Wyngaarden. I think it's within that broad range of activities that is permissible in the [NIH] intramural program.

Q: Would you like to see NIH privatized under one or another formula that would take it out of the US government (SGR March 15)?

Wyngaarden. No, I would not. Privatization can mean a number of things. When this was first floated, some of our people said, "Great, I hope Otis buys us and gets our elevators running." I don't think any kind of tumultuous change is needed at the NIH. There are basically two areas in which we are having considerable problems. One has to do with the salary scale and fringe benefits—the disparity between what we can offer and what's offered by academia and industry. The disparity is greater than it's ever been and we're losing too many quality people.

The second is that we would seek a good deal more administrative control over our activities. We are subject to all the same controls as other branches of government. Right now, like other branches of government, we are being "downsized." We have lost well over a thousand FTE's [full-time equivalent staff members] over the last several years. We've gained some in AIDS, but we've lost people in the non-AIDS category. And we're very tightly tethered to the Department on key decisions. The paperwork to get policy decisions through can be very, very slow. On the regulations for misconduct in science, I signed off on it more than a year ago. It's just now come back from OMB. It's a ponderous system. As the pace of science increases, we need to be much more responsive than we can be.

Q: Then is a government-owned, contractor-operator format desirable, let's say along the lines of the Department of Energy's (DOE) big labs?

Wyngaarden. At the suggestion of OMB, we've contracted with the National Academy of Sciences for a study. We're hoping they'll look at all the opportunities. It might be that a role as a graduate school of biological science would make us sufficiently different, such that we could enjoy some of the special provisions that have been accorded to the Uniformed Services University [of the Health Sciences, a Pentagon-supported medical school and research facility, near NIH, in Bethesda, Md.]

They have a salary scale that's very different from the rest of the Civil Service or the military. And it enables them to pay their senior personnel up to the limit of the average salaries of the five medical schools in Baltimore and Washington. That means that they can pay twice what we can. We need some kind of special relief of that sort. If becoming a graduate university justifies it, that may be something we should do. It's been proposed for 20 years for other reasons. And there's considerable enthusiasm for that. Whether it should be operated the way Oak Ridge [National Laboratory, the DOE contractor-operated facility in Tennessee] has been for years, or some other arrangement of government-owned, contractor-operated, I don't know.

I'm encouraged by all the attention to the problems of NIH. These problems have now been recognized at the highest levels in the Department and at OMB and in the Congress. And they've even been commented on by the White House. So, we have somebody's attention, and that's the first step.
Dear Dr. Whelan:

A subject which invariably arises for discussion in evaluating resumes for hiring or promotion is the publication record. Obviously this is a critical issue for all candidates. No consensus exists on how this should be done, and perhaps a standardized evaluation is not even desirable. Nevertheless, the opinions I hear represent a truly chaotic situation.

In a recent faculty discussion on evaluating publication records, I was amazed at the diversity of opinions. The only consistent theme was that the systems used for evaluating one's own publication record were hilariously self-serving. The most common fiction is that when (for example) there are four coauthors on a single paper, there are four papers: each coauthor will claim one paper even though only one paper really exists.

I wish to offer my publishing colleagues a computer program written in BASIC by which I evaluate the publication records of others and by which I would not mind being evaluated. The program ignores several imponderables: of the coauthors, who did what, if anything? Is the work any good? Is the institution from which it came any good? Is the journal any good? Is it a full-length paper, abstract, or whatever?

The program does, however, accede to the generally accepted notion that the first author should get more credit than the second, etc. For any single paper, the sum of papers attributed to all the coauthors is exactly 1.00. The gross number of papers bearing the subject's name is counted, and the net number of papers attributable to this person's own effort is summed. I prefer to count all publications bearing the author's name toward the net total attributable.

How does the program work for my list of publications? Ninety-eight bear my name (I would never claim to have 98 publications of my own); the program attributes 80.8 to my effort. In 32 years of work, that doesn't make me a hotshot but it's not bad.

Here's the program:

40 INPUT "Enter the total number of coauthors (including the subject), comma, the position (1, 2, 3, etc.) of the subject in the list, then hit 'return' "; N,
50 F = O; IF N = O THEN 110
60 FOR I = 1 TO N:F = F + 2^((I - 1); NEXT I
70 V = V + 1/(F*2^((P - 1)):A = A + 1
80 PRINT "If this was the last paper, enter '0,0' at the next prompt;"
90 PRINT "otherwise continue with the next publication."
100 GOTO 40
110 PRINT
120 PRINT "TOTAL # of papers bearing this person's name = ";A
130 PRINT "Net actual publications attributable to this person's efforts = ";V

Sincerely yours,

Lewis C. Mokrasch, Ph.D.
Professor
Department of Biochemistry and Molecular Biology
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Glucose and L-Lactate Analyzer

The new YSI automated analyzer provides rapid real-time answers for both glucose and L-lactate levels in fermentation broths and cell cultures. The Model 2000 uses the same YSI enzyme electrodes that many in the biotechnology, pharmaceutical, and food industries have been using for more than 10 years in the YSI Model 27 Industrial Analyzer. The new system measures glucose and L-lactate simultaneously; prints and displays the results in 60 s, automatically calibrates itself; and runs 60 samples/h. The glucose range is 0.00–20.0 g/liter; the L-lactate range is 0.00–2.00 g/liter. Samples require little or no preparation. The user simply presents the sample to the sipping tube, which aspirates enough for analysis. Sixty seconds later both glucose and L-lactate values will be displayed and printed. The RS-232C port allows direct connection to PCs or other computers. An automatic sample changer is available as an option. YSI Incorporated, Yellow Springs, OH 45387, USA. Telephone 513–767–7241. Circle 83 on Reader Service Card.

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Microprocessor-Controlled Benchtop Centrifuges

Jouan announces the new 422 series microprocessor-controlled benchtop centrifuges. Two models are available: the CR422 refrigerated model, which allows temperature control from −8 to 40°C, and the CT422 thermostated model, which is capable of controlling chamber temperature from −8 to 50°C. The combination of microprocessor control and a heating as well as a refrigeration system ensures precise temperature control over the entire range with the CT422. These units combine high RCF (up to 4200 × g) with the M4 horizontal rotor with maximum versatility and capacity. The rotor insert system is capable of handling special cell culture vessels such as the 250-ml conical tissue culture bottle, as well as tubes ranging from 0.5 to 500 ml, with up to 148 5-ml tubes per run. The microprocessor allows the user to program speed or RCF, time, temperature, temperature deviation, acceleration, and braking rates to completely define centrifuge runs. Additional features include a control panel that is angled for improved visibility; automatic opening lid; flat, easy-to-clean screen; clear messages; and safety features including steel guard barrier ring, imbalance detection, and dual lid interlock. Sealed buckets with transparent covers permit safe centrifugation of toxic and pathogenic samples. Jouan, P.O. Box 2716, Winchester, VA 22601, USA. Telephone 800–662–7477 or 703–665–0863. Circle 82 on Reader Service Card.

Chromatography Device

MEMSEP 1000 is a new membrane-based chromatographic device for separating and purifying biological macromolecules. The matrix is a regenerated cellulose membrane produced by a phase inversion process, which results in a regular network of very fine fibers 0.5–1.0 μm in diameter. These fibers allow short diffusional times enabling rapid mass transfer and fast separation. A stack of membranes sealed within the capsule forms a continuous matrix that does not suffer from media migration or channelling from poor packing. The matrix permits high flow rates at low pressures while retaining good resolu-
tion. Both ion-exchange (including PEI, high and low capacity DEAE and CM) and dye-affinity (including Cibacron blue with or without a spacer and Procion red, brown, yellow, and green) ligands are currently available. Other ligands to be made available in the future include pABA for protease removal, a metal chelate ligand, and Protein A. Applications include general protein purification, assay and production of blood products, cell culture and rDNA protein separation, enzyme purification and immobilization, fermenter and DSP assays, and protein hormone and MAb purification. The 1.7-cm³ capsules have luer fittings for use with syringes and can easily be adapted for use with low-pressure gel, HPLC, and FPLC systems. Kits include syringes, tubing, and fittings. Phenomenex, 6100 Palos Verdes Dr. S., Rancho Palos Verdes, CA 90274, USA. Telephone 213-541-0606. Circle 84 on Reader Service Card.

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Scientific Systems introduces the new Model 505 new column oven, which provides stable temperatures for better liquid chromatography. The oven offers temperatures of 100°C above ambient to 99°C with 0.02°C stability. The large oven chamber can accommodate an injector, guard column, and both analytical and preparative columns up to 1 in for precise control of temperature conditions. Most popular manual and pneumatic injection valves can be used with the Model 505, and the oven may be operated by either manual or remote control. Features of SSI's Model 505 include a front panel light to indicate when a column has stabilized and is ready for injection, and a thermal safety switch that automatically cuts the power if the temperature reaches 118°C, offering protection against column damage. The oven is constructed of resistant anodized aluminum for lightness, strength, and temperature uniformity. Scientific Systems, 1120 W. College Ave., State College, PA 16801, USA. Telephone 814-234-7311. Circle 88 on Reader Service Card.

f/4 0.5-Meter Spectrometer

The 500M f/4 0.5-meter spectrometer from SPEX Industries combines the resolving performance of a large spectrometer with the light-gathering power of a smaller instrument. Available with numerous options and accessories for any experiment, the 500M can be totally automated by computer. The 500M offers high resolution for photomultiplier tubes or a flat field for multichannel detectors. An optional motorized grating turret conveniently doubles spectral range or increases resolution, and motorized swingaway mirrors can automatically switch between sources or detectors. The vibrating mirror accessory accommodates applications such as scanning diode laser output in real time. SPEX Industries, 3880 Park Ave., Edison, NJ 08820, USA. Telephone 201-549-7144. Circle 86 on Reader Service Card.

Sample Saver

Now available from Accurate Chemical & Scientific Corp., Sample Saver permits valuable samples, such as nucleic acids and proteins, to be recovered easily and thoroughly after gel electrophoresis, thus preventing the overloading of the sample on the membrane. The apparatus consists of an electrode bath containing a positive and negative electrode, a rotatable vessel between the electrodes, and a stationary holder and reticulate support containing gel slices. During electrophoretic running, the vessel with the dialyzing membrane rotates while the holder and gel slices remain stationary. The sample that is eluted from the gel remains in the buffer solution within the rotatable vessel. As a result, the pores of the membrane do not become overloaded with the eluted molecules. This minimizes increases in the electric resistance, which reduces generated heat. Accurate Chemical & Scientific Corp., 300 Shames Dr., Westbury, NY 11590, USA. Telephone 516-433-4900. Circle 87 on Reader Service Card.
Large-Volume Centrifugal Ultrafilter

This ultrafiltration device, called CentriCell-60, can concentrate dilute biological samples from 60 ml down to 0.5 ml (120 x concentration) in a single step. When used with a standard six-place horizontal rotor for 250-ml bottles, more than 350 ml of sample can be processed in a single centrifuge run. The device incorporates Millipore ultrafiltration membranes and is available in either 10,000- or 30,000-dalton cutoffs. Protein recovery is said to be 95% or better. Applications include concentration of dilute samples containing proteins, enzymes, viruses, yeast, bacteria, or other macromolecules; purification of low-molecular-weight materials from cell lysates, culture media, and fermentation broths; and salt removal or buffer exchange of biological samples. Polysciences, Dept. CUL, 400 Warrington, PA 18976, USA. Telephone 215-343-6980. Circle 89 on Reader Service Card.

New Literature

Centrifugal Partition Chromatograph (CPC), brochure from Sanki Laboratories, 106 Folcroft East Business Park, Sharon Hill, PA 19079, USA.
Hotpack CO₂ incubators, brochure from Hotpack Corp., 10940 Dutton Rd., Philadelphia, PA 19154, USA.
Flyer on Model 705 Nitrogen Specific Gas Chromatographic Detector, Antek Instruments, 6005 N. Freeway, Houston, TX 77076, USA.
Kontes Microscale, catalog from Kontes Scientific Glassware/Instruments, P.O. Box 729, Vineland, NJ 08360, USA.
Fisherbrand Pipets, catalog from Fisher Scientific, 711 Forbes Ave., Pittsburgh, PA 15219, USA.
Art to Science in Tissue Culture, newsletter from HyClone Laboratories, 1725 S. State Hwy. 89-91, Logan, UT 84321, USA.
EJ EMPLOYMENT OPPORTUNITIES

POSITIONS AVAILABLE — Classified advertisement rates: $170.00 for first column inch, $150.00 for each additional inch or portion thereof. A column inch is eight lines, each containing 70 characters, including spaces. Display advertisement rates: $570.00 for ¼ page (3½ inches x 4½ inches); $850.00 for ½ page (vertical 3½ inches x 9½ inches or horizontal 7½ inches x 4½ inches); $1130.00 for full page (7½ inches x 9½ inches); copy received not camera-ready is subject to additional typesetting fee of 5% of rate. Advertisements will be published in next available issue unless otherwise specified. Deadline for receipt of copy is 5th day of month before publication. Payment or purchase order is required with insertion copy. Advertisements are noncommissionable to agents; no cash discounts are allowed. Blind advertisements are not accepted.

POSITIONS DESIRED — Candidates registered with FASEB Placement Service are allowed one advertisement of five lines, each containing 70 characters including spaces. The issue in which advertisement appears will be based on date of receipt of copy. Fee for publication in additional issues: $10.00 per issue.

Primary employers desiring identification and additional details concerning Positions Desired advertisers should write to address below, indicating hyphenated number appearing as last element of advertisement; a one-page application from advertiser(s) will be provided immediately. Advance telephonic determination of current availability of advertisers from earlier-than-current issues is recommended. Employers not currently registered with Placement Service are charged a minimum fee of $30.00 for identification of up to 10 advertisers, plus $3.00 for each above 10, payable in advance to FASEB Placement Service.

Some registered candidates do not prepare Positions Desired advertisements; some advertisements are published at times not coinciding with employer recruitment activities. Primary employers not finding advertisements that appear to match current or projected needs are invited to request a search of all active candidate files. Telephone a description of the desired qualifications; results of search will be discussed telephonically with requesting official, and applications from candidates declared suitable will be forwarded. Employers not currently registered with Placement Service are charged a minimum fee of $30.00 for up to 10 applications, plus $3.00 for each above 10.

In publishing these advertisements FASEB assumes no obligations as to qualifications of prospective employees or responsibility of employers, nor shall FASEB obtain further information concerning positions advertised or those seeking employment. Accuracy and completeness of all listings are the responsibility of the submitting party.

Various U.S. state and national laws against discrimination, including the Federal Civil Rights Act of 1964, prohibit discrimination in employment in the United States because of race, color, religion, national origin, age, sex, or any reason not based on a bona fide occupational qualification. The Federation of American Societies for Experimental Biology endorses these principles and reserves the right to edit all copy and to refuse advertisements not in consonance therewith.

Employment in countries other than the United States may be restricted by government visa and other policies. Moreover, it is suggested that the generally accepted employment practices, the cultural conditions, and the exact provisions of the specific positions being considered be investigated thoroughly. The U.S. Embassies in countries of interest to potential employees should be able to provide up-to-date data concerning internal conditions.

For a description of operation at annual meetings, please refer to the January or February issue or contact the Placement Service.

Address all correspondence to FASEB Placement Service, 9650 Rockville Pike, Bethesda, MD 20814. (301) 530-7020

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POSITIONS AVAILABLE

POSTDOCTORAL POSITION available for work in cardiopulmonary physiological and biochemical research using newborn lambs as models for Sudden Infant Death Syndrome, Hyaline Membrane Disease, Group B Streptococcal pneumonia and other pediatric respiratory disorders. Studies include control of respiration, reflex apnea, carotid body function, hemodynamics, lung fluid balance, lung mechanics, etc. Experience in related areas preferred. Send CV, along with statement describing interests and qualifications and names of three references to Dr. Hakan W. Sundell, Department of Pediatrics, Vanderbilt University School of Medicine, Nashville, TN 37232.

RESEARCH ASSOCIATE for studies of synthesis, packaging and membrane expression of complement receptor/adherence proteins in human neutrophils and myeloid cell lines. Experience with immunoassays, monoclonal antibodies and/or cell fractionation and membrane protein biochemistry techniques desirable. Salary/benefits dependent on qualifications. Send CV and references to Melvin Berger, M.D., Ph.D., Division of Immunology, Department of Pediatrics, Case Western Reserve University, 2109 Adelbert Road, Cleveland, OH 44106. Case Western Reserve University is an EO-AA employer.

CHAIRPERSON, DEPARTMENT OF PHYSIOLOGY AND BIO-PHYSICS. The University of Mississippi Medical Center invites nominations for the position of Professor and Chairperson of the Department of Physiology and Biophysics. Candidates should have extensive teaching experience and be established investigators with a record of scholarly contributions and participation in appropriate professional organizations. Candidates with administrative background are preferred. The Medical Center in Jackson is Mississippi's only academic health center. There are four health professional schools on the campus: Schools of Medicine, Nursing, Health Related Professions and Dentistry; graduate programs in the medical sciences; and the 541-bed University Hospital, teaching hospital for all programs. The Department of Physiology and Biophysics has campuswide teaching responsibilities. The department is particularly noted for its research in cardiovascular, renal and endocrine physiology and for its quantitative approach to physiology, especially in the application of control systems analysis and computer simulation of physiological mechanisms. There are also active research programs in the areas of cellular, respiratory and neurophysiology. Nominations for the position should include the nominee's name, CV and names and telephone numbers of three references and should be addressed to I. K. Ho, Ph.D., Chairman, Search Committee, c/o the Department of Pharmacology and Toxicology, University of Mississippi Medical Center, 2500 N State Street, Jackson, MS 39216-4505. Application deadline is August 1, 1988.
CHAIRMAN
BIOCHEMISTRY/MOLECULAR BIOLOGY

The University of Miami School of Medicine is seeking applications and nominations for the position of Professor and Chairman of the Department of Biochemistry and Molecular Biology. The person filling this position will have the unique opportunity to lead a well-recognized and already established department and to greatly expand the department’s capabilities in the area of molecular biology. Funds for the development of the department are available through a generous award from the Lucille P. Markey Charitable Trust. In addition to funding the new chairman, these funds will be used to support multiple new investigators and as start-up funds for new equipment and for the renovation of laboratories. Additional space will be provided in a new building currently under construction, to be completed by early 1989. The department includes 18 faculty members with full-time primary appointments and a well-established graduate program with 35 trainees.

The applicant must have a Ph.D., M.D., or equivalent degree, be internationally recognized for contributions to molecular biological research, be committed to educational activities and clearly demonstrates leadership and administrative capabilities. The successful candidate is expected to be an outstanding scientist with an ongoing, independent and well-funded research program. This person will be expected to promote the molecular biological research capabilities of the Department, the Medical School and the University, to recruit outstanding scientists to the faculty and to enhance the teaching programs of the department.

Interested applicants should submit a CV including the names of 3 references to Dr. James D. Potter, Search Committee Chairman, University of Miami, P.O. Box 016189, Miami, FL 33101.

An equal opportunity/affirmative action employer.

FACULTY POSITION IN TUMOR IMMUNOLOGY

The Ohio State University College of Medicine invites applications for a tenure-track appointment from individuals with expertise in immune responses to cancer cells. Interests and background must allow for creative thinking and active participation in a multidisciplinary research program of antigen identification, protein engineering and human vaccine development. Special consideration will be given to candidates with expertise in tumor antigen identification and mechanism for modulating in vivo and in vitro responses to active immunization.

The candidate must have a Ph.D. or M.D. with at least 3 years of postdoctoral experience and should have demonstrated strong research accomplishments and ability to obtain grant support. Appointments will be commensurate with background. Salaries are competitive, with excellent benefits. New laboratory facilities and start-up funds are available. Preceptorship and teaching responsibilities are available for graduate and postdoctoral training. Departmental affiliation will be determined by the applicant’s credentials.

Facilities are located on the Ohio State University campus. Reasonable housing, excellent schools and a growing community complement the challenging academic environment. Qualified candidates should send CV to Vernon C. Stevens, Ph.D., Ohio State University Hospital, 1654 Upham Drive, Columbus, OH 43210. The Ohio State University is an equal opportunity employer. Applications from women and minority candidates are especially encouraged. Deadline for applications is September 1, 1988.

Ph.D
RESEARCH SCIENTIST
EXPERIMENTAL PATHOLOGY

As a result of the recent merger of American Home Products Corporation's two pharmaceutical divisions, Wyeth Laboratories and Ayerst Laboratories, we are now one of the largest pharmaceutical companies in the world. WYETH-AYERST RESEARCH has an immediate opening for a highly motivated and innovative scientist to head our Experimental Pathology Section within the Immunopharmacology Division.

The selected candidate will direct the work of several Ph.D. scientists and biologists in an environment where the biochemistry of connective tissue can be studied. Expertise in the area of metalloproteases and biochemistry of bone and cartilage is essential as well as technical knowledge to set up in vitro and in vivo models of cartilage damage. Opportunities exist for active collaboration with pharmacologists, biochemists, and immunologists involved in arthritis research.

The candidate should have a Ph.D. with at least five years of relevant biochemical experience. The ability to collaborate with peers and supervise personnel is a prerequisite for this position.

We offer an excellent salary and benefits package plus opportunities for career advancement along with an ultra-modern research facility. Interested candidates please submit resume and salary requirements to:

Personnel Manager, Dept. JC

WYETH-AYERST RESEARCH
CN 8000
Princeton, NJ 08543-8000
Equal Opportunity Employer M/F/H/V
CHAIRPERSON

Department of Pharmacology

Duke University Medical Center

Duke University is seeking candidates for the position of Professor and Chairperson of the Department of Pharmacology. Responsibilities include providing leadership for research and teaching activities in the School of Medicine. Minimal qualifications include an earned doctorate in a related discipline, a distinguished record of scholarship, administrative experience in an academic environment and a demonstrated ability to work collaboratively in a university and academic medical center and with external constituencies.

This position will be available in fall 1988.

Applications should send a copy of their curriculum vitae with references and other credentials to: Pharmacology Search Committee, DUKE UNIVERSITY MEDICAL CENTER, Box 3701, Durham, NC, 27710.

RESEARCH PROGRAM DEVELOPMENT

The Division of Trauma in the Department of Surgery at the State University of New York at Stony Brook is recruiting for an individual to develop and organize its research program in trauma, burns, shock, sepsis and intensive care. A Ph.D. in physiology, cell biology, biochemistry or bioengineering or intensive care is required. Please send CV to:

David J. Kreis, Jr., M.D., FACS
Chief, Division of Trauma
Health Sciences Center
(HSC) 19, 060
SUNY at Stony Brook
Stony Brook, NY 11794

SUNY at Stony Brook is an equal opportunity/affirmative action employer.

DIRECTOR

SURGICAL PATHOLOGY

The Department of Pathology, Rhode Island Hospital, seeks a Director of Surgical Pathology. The candidate must qualify for an appointment as Associate Professor or Professor of Pathology, Brown University. Minimum requirements include: M.D. degree, Board certification in Anatomic Pathology, extensive background in diagnostic surgical pathology, administrative skills, background in information systems, excellence in teaching and a commitment to scholarly endeavors. Adequate time and support will be available to devote to research pursuits.

Applications must be received by September 15, 1988. Please send CV and names of five references to Tito Cavallo, M.D., Chairman, Search Committee, Department of Pathology, Rhode Island Hospital, 593 Eddy Street, Providence, RI 02902.

EEO/AA employer

RESEARCH POSITION. A research faculty position is immediately available at the Division of Transplantation at the University of Miami School of Medicine. At least 3 years seniority after a Ph.D. degree is a prerequisite with the opportunity to become codirector of a multifaceted transplantation immunobiology research program. Experience in monoclonal antibody and T cell cloning technology, molecular genetics as related to histocompatibility antigens and immunoochemistry are also needed. Salary is commensurate with faculty seniority. Send CV or call Dr. Joshua Miller, University of Miami, School of Medicine, Department of Surgery, P.O. Box 016310, Miami, FL 33101, (305) 547-6171. An affirmative action employer.

RESEARCH ASSOCIATE. Conduct research on blood clot formation, dissolution and development of lytic hybrids. Ph.D. and/or M.D. in biochemistry/cardiology necessary. Experience in blood coagulation and clinical cardiology desired; in clotting assays, platelet aggregation and cardiovascular system helpful. Position is open immediately at $20,000 per year. Send resume and references to Dr. Andrei Z. Budszynski, Temple University School of Medicine, 3400 N Broad Street, Philadelphia, PA 19140. An EO/AA employer.

DIRECTOR, OFFICE OF RESEARCH SAFETY. Northwestern University is seeking a Director for its Office of Research Safety, a centrally administered unit that has responsibilities on both the Chicago and Evanston campuses. Duties encompass radiation safety, chemical, biological and rDNA safety and hazardous waste management. The Director is responsible for program planning and development as well as maintaining regulatory compliance with applicable federal and state regulations and university policies. Candidates should have a Ph.D. or equivalent degree in health physics, environmental health, chemistry or related field and at least 5 years of experience, including administration, in an environmental health program or office. The Director reports to the Vice President for Research and Dean of the Graduate School through the Director of Research Services Administration. The position is available on July 1, 1988. The applicant should submit a resume, including the names of at least three references, to Search Committee, Research Services Administration, Northwestern University, 633 Clark Street, Evanston, IL 60208. Northwestern University is an equal opportunity employer.
RESEARCH ASSISTANT PROFESSOR OF PHARMACOLOGY. Position available for Ph.D. with two years postdoctoral experience to teach autonomic and neuroanatomy to medical and graduate students and to conduct research on neurotransmitter organization in central autonomic control. Experience in immunocytochemistry-retrograde tracing required. Nontenure; salary negotiable. Apply to Dr. Richard A. Gillis, Department of Pharmacology, Georgetown University Medical Center, 3900 Reservoir Road, NW, Washington, DC 20007. Georgetown University is an equal opportunity/affirmative action employer.

ASSISTANT DIRECTOR, MOLECULAR DIAGNOSTICS LABORATORY. The Department of Pathology of the SUNY Health Science Center at Syracuse announces a position in the Division of Clinical Pathology as Assistant Director of Molecular Diagnostics Laboratory at University Hospital. Applicant must be a Ph.D. with experience or training in molecular biology. Doctoral degree must be in basic science from an institution associated with a college of medicine. Two years postdoctoral training employing molecular biology techniques in a health setting preferred. Applications will be accepted through August 1, 1988. Submit a letter describing interest and experience in molecular diagnostics, a CV and the names of three references to Betty A. Forbes, Ph.D., Department of Pathology, SUNY Health Science Center, Syracuse, NY 13210. An equal opportunity/affirmative action employer.

RESEARCH ASSOCIATES: POSTDOCTORAL TRAINING POSITIONS IN PHYSIOLOGY. Two training grant positions (with institutional supplementation) are open to study cardiovascular/renal/membrane physiology, with special emphasis on hypertension and heart disease. Opportunities exist in several laboratories. These positions will be complementary for individuals with a background in biochemistry, biophysics, physiology and pharmacology. Ph.D. is required. Applicants must be citizens or permanent residents of U.S. and eligible for NIH training grant support. Training provided in a fast-growing and well-funded area of research. Salary and benefits are competitive. Send CV to Dr. Allan W. Jones, Chairman, Department of Physiology, MA 415 Medical Sciences Building, University of Missouri, Columbia, MO 65212. The University of Missouri is an equal opportunity employer with special initiatives to recruit women and minorities.

IMMUNOLOGIST with special interest in macrophage function needed for development of research program in the Subdivision of Hepatology at Rhode Island Hospital, Providence, R.I. Candidate must have a Ph.D. in related area of cell biology and qualify for appointment as an Assistant Professor of Medicine at Brown University. Candidate should have experience with immunologic, electrophoretic, cell culture and molecular biologic techniques. Experience with evaluation of macrophage function including monokine production is desirable. The individual is expected to develop an independent research program in an area related to the interaction between liver and tumor cells. Send letter of application and CV to Henry Bodenheimer, M.D., Director, Subdivision of Hepatology, Rhode Island Hospital, 593 Eddy Street, Providence, RI 02902. Letters are to be received no later than August 15, 1988. The Rhode Island Hospital is an equal opportunity/affirmative action employer.

FOOD ECONOMIST. The Pan American Health Organization, Regional Office of the World Health Organization, is seeking for its Washington headquarters a food economist with specialization in the social and economic aspects of food and nutrition planning. The ideal candidate will hold a doctorate degree, have considerable analytical and research experience, some background in international technical cooperation and a good command of both English and Spanish. The position offers an attractive salary and benefits package. Interested individuals should address their applications to PAHO/WHO (8728), 525 23rd Street, NW, Washington, DC 20037.

POSTDOCTORAL FELLOWSHIP available for research training in field of cellular physiology and pathophysiology of renal membrane transport and its regulation. Applicants must hold a doctoral degree and meet residency requirements for stipend awarded by NIH Training Grant. Send CV and names of three references to Thomas P. Dousa, M.D., Ph.D., Nephrology Research Unit, Mayo Clinic and Foundation, Rochester, MN 55905. For preliminary inquiries, call collect (507) 284-3705. An equal opportunity employer.

INSTRUCTOR IN BIOCHEMISTRY (nontenured), Department of Biochemistry, School of Medicine, University of Louisville. Candidates should have a Ph.D. degree in either biochemistry or pharmacology with two years postdoctoral experience. The area of research experience should include the regulation and characterization of enzyme systems involved in drug and carcinogen metabolism. Additional experience in the hepatic drug metabolism and cell culture of rat hepatocytes is required. The position involves supervisory and some teaching responsibilities. Salary $20,000-22,000. Send resume to Chairman, Department of Biochemistry, University of Louisville, School of Medicine, Louisville, KY 40292. Applications will be accepted until August 15, 1988 or until a suitable candidate is identified. The University of Louisville is an equal opportunity employer.

IMMUNOLOGIST. Requirements are a Ph.D. in immunology with three years of postdoctoral immunology experience strongly preferred. The ideal background and experience is in molecular biology and/or immunopharmacology that are especially required to apply. The department is well equipped with basic research equipment and fully-equipped tissue/cell culture facilities are available. Applicants should be candidates with a Ph.D. or M.D. with post-doctoral research experience is required. The appointee will be expected to develop a strong research program in addition to teaching and student advising responsibilities. Qualified applicants of any research discipline in pharmacology/toxicology may apply, but persons whose research interests are in molecular biology and/or immunopharmacology are especially urged to apply. The department is well equipped with basic research equipment and fully-equipped tissue/cell culture facilities are available. Applications including a detailed CV, statement of future research direction and three letters of reference should be sent to Dr. Beth Hoskins, Department of Pharmacology and Toxicology, University of Mississippi Medical Center, 2500 N State Street, Jackson, MS 39216-4505. The University of Mississippi Medical Center is an equal opportunity employer M/F/H/V.

RESEARCH BIOCHEMIST. Position available for outstanding Ph.D. investigator in thyroid hormone effect on mitochondrial oxidative phosphorylation. Columbia University appointment paying over $32,000 plus fringes. Salary depends on experience and previous productivity. Applicant must have publications on mitochondrial bioenergetics and should be U.S. citizen. Send resume, bibliography and reprints to Kenneth Sterling, M.D., VA Medical Center, 130 W Kingsbridge Road, Bronx, NY 10468.

RESEARCH ASSOCIATE. Position available to carry out biochemical research in the field of phospholipid metabolism. Candidates must have extensive experience in protein isolation and characterization and the enzymology of lipid metabolism. Must be familiar with isolation of lipid-protein particles, production and screening of antibodies, Western and dot-blotting, ultracentrifugation, HPLC and TLC. Experience in organic and enzymatic synthesis of complex lipids is also required. Must have demonstrated ability to supervise technicians, graduate students and junior postdoctoral fellows. Ph.D. in biochemistry with subsequent postdoctoral experience necessary. 45 hours per week, Monday through Friday, $22,000 per year salary with excellent benefits. Candidates should send a CV and the names of three references to Dr. Stephen M. Prescott, NEH CVRIT, Building 100, University of Utah, Salt Lake City, UT 84112. An equal opportunity/affirmative action employer.

POSTDOCTORAL FELLOWSHIP. National Institute of Child Health and Human Development, National Institutes of Health. A three-year postdoctoral position is available as of autumn 1988 for a U.S. citizen or permanent resident to join ongoing research on expression and genetic regulation of anti-inflammatory proteins and peptides. Applicants should have experience in molecular biology and biochemistry and an interest in cytokine regulation and inflammation. CV and the names of three referees should be addressed to Anil B. Mukkherjee, M.D., Ph.D., Human Genetics Branch, NICHD, Building 10, Room 8C429, 9000 Rockville Pike, Bethesda, MD 20892 (301) 496-6683. NIH is an equal opportunity employer.
ANALYTICAL BIOCHEMIST. (One-year-term appointment with possibility of renewal.) Participate in an ongoing research program studying the relationship of the metabolism of methionine and other amino acids to mental illness and to atherosclerosis. Responsibility will be to develop separation methods for the radiolabeled metabolites appearing in human body fluids and cultured tissues, after administration of radioactive precursors. Advanced methods for high sensitivity detection by accelerator mass spectrometry are under development in the research group and applicant will also work in this area. Requirements are: experience in developing HPLC methods; ability to perform spectroscopic and isotopic analyses; demonstrated ability to conduct independent research. Prefer experience in HPLC separation of metabolites, interfacing of analytical machines with computers, radiotracer studies, metabolic/kinetic studies in animals or humans. Prefer a Ph.D. in biochemistry, pharmacology or related field. To apply, send CV and names and addresses of references to Lawrence Berkeley Laboratory, Dr. Thornton Sargent, c/o Mr. Ron Lowder, 1 Cyclotron Road, Employment Office M/S 90-1012, Berkeley, CA 94720. Refer to Job A/4504. An equal opportunity employer M/F/EH.

ASSISTANT PROFESSOR/ASSOCIATE PROFESSOR/PROFESSOR, Radiation Biology Program in the Radiation Research Laboratory, Department of Radiology, University of Iowa College of Medicine. Applications for one tenure-track position in Radiation Biology, available July 1, 1988, are invited from individuals with postdoctoral experience in one or more aspects of the radiation sciences. The individual would join a well-established program for graduate training in Radiation Biology and be expected to participate in graduate teaching and special courses for residents training in diagnostic and therapeutic radiology. The successful candidate will be expected to have or to quickly develop a program of peer-reviewed research funding. A wide variety of research interests is acceptable. Professorial rank and salary will be consistent with the applicant's experience. Applications should include a complete CV, a statement of research interests and the names of three scientists willing to write letters of recommendation. Applications should be sent to J. W. Osborne, Radiation Research Laboratory, 14 Medical Laboratories, The University of Iowa, Iowa City, IA 52242. The University of Iowa is an affirmative action/equal opportunity employer.

RESEARCH ASSOCIATE IN MEMBRANE BIOCHEMISTRY. The position of Research Associate is available in the Nephrology Research Unit of the Mayo Clinic, Mayo Medical School, Rochester, Minnesota, beginning in the academic year 1988-89. The research involves studies on the molecular nature of transporters in renal tubular membranes, normal and in pathophysiological states. Applicants, holding a Ph.D. (or equivalent) in biomedical sciences, should have one year or more of postdoctoral experience in membrane biology. Salary is competitive and commensurate with experience. Interested persons should send a CV and bibliography, three sources of reference and recent reprints if available to Dr. Thomas P. Dousa, Nephrology Research Unit, Mayo Clinic, Mayo Medical School, Rochester, MN 55905. For preliminary inquiries, call collect (507) 284-3705. An equal opportunity employer.

POSITIONS DESIRED

Ph.D., 1975; Biochemistry, enzymology/protein chemistry; Protein purification/characterization, enzyme kinetics/mechanisms, oxidoreductases, POQ proteins, protein sequencing, HPLC, FPLC, PAGE, Western blot, isoelectric focusing, UV/VIS spectroscopy, fluorometry, fermentation; Avail. March 1988; Staff position acamemia or industry. 2-2515

Ph.D., 1966; Physiology, neurophysiology, electrophysiology; Electrophysiological analysis neural systems somatic motor system, single neuron recording, dorsal root ganglion cells, physiology axon branch points, teaching; Avail. summer 1988; Teaching/research preferred; Salary negot. 1-2833

Ph.D., 1988 (expected); Pharmacology; Neoplasms, prostatalgins, hypoxic cell radiosensitizers, tissue culture, in vitro/in vivo drug survival and pharmacokinetics, cellular metabolism arachidonic acid and PHG's, HPLC, TLC and spectroscopic methods, classical ANS pharmacology training; Avail. summer 1988; Postdoc. academia/industry. 3-2845

Ph.D., 1982; Biochemistry, pharmacology, cell physiology; Calcium transport studies in platelets, cardiac calcium antagonist receptor, solubilization and purification of proteins, polyacrylamide gel and free flow electrophoreses, enzyme kinetics; Avail. Fall 1988; Research scientist position industry; Salary negot. 2-2832

Ph.D., 1986; Biochemistry, lipoprotein analysis and biosynthesis, biophysics; Tissue culture, subcellular fractionation, protease protection, impermeable labeling, Westerns, fingerprinting, some electron microscopy, lipid-protein interactions; Avail. summer 1988; Postdoc. position academia; Salary negot. 2-2877

Ph.D., 1985; Microbiology, immunology; Oxidative and non-oxidative cytotoxicity of neutrophils, isolation and function of leukocytes, oxy-radical generation and detection, tissue culture, isotope techniques, PAGE, teaching experience; Avail. Oct. 1988; Academic/industrial staff position; Salary negot.; Eastern or middle US. 6-2970

Ph.D., 1989 (expected); Physiology, fetal endocrinology, developmental anatomy; Surgery and experimentation in ovine fetus, ewe and rat, peptide and steroid RIA, teaching physiology/biology; Date negot.; Developmental physiology postdoc. research/teaching; Salary negot. 1-2977

Ph.D., 1983; Biochemistry, protein/peptide chemistry; Experience in HPLC purification and characterization, electrophoresis, Western blotting, amino acid analysis and sequencing, MAb techniques; Date negot.; Research and development industry or academia; Salary negot. 1-2978

Ph.D., 1986; Biochemistry, cell and developmental biology, metabolic basis of genetic diseases; Characterization of extracellular matrix and cell surface molecules, cell and organ culture, electron microscopy, immunohistology; Avail. Sept. 1988; Tenure track academia or industry. 2-2979

Ph.D., 1989 (expected); Biochemistry, computational chemistry; Conformational energy calculations of peptides, C programming language, molecular modeling, computer graphics; Avail. May 1989; Computer simulations, modeling, or drug design position in industry or government desired; Salary negot. 1-2983

Ph.D., 1982; Biochemistry and physiology of smooth muscle contraction; Isolation and purification of contractile and associated proteins, ATPase and filament structure, agonist induced contraction during hypoxia, high energy phosphates, LC, HPLC-FPLC, electrophoresis, kinetics, photodephosph; Avail. June 1998; Staff position industry. 2-2984

Ph.D., 1989 (expected); Biochemistry; Procaroytic genetics, membrane transport, membrane protein chemistry, molecular biology, immunology; Masters in organic chemistry; Avail. spring 1989; Protein engineering postdoc. position academia or industry; Salary negot. 2-2985

Ph.D., 1985; Biochemistry, molecular biology; Receptor hormone interaction, action gene expression, Northern and Southern blotting, construction of recombinant plasmid and cloning, DNAael hypersensitive sites of gene, DNA fingerprinting and sequencing, cell culture, DNA transfection; Avail. Sept. 1988; Position in academia; Salary open. 2-2986

Ph.D., 1984; Biochemistry, enzymology/protein/lipoprotein chemistry, enzyme kinetics; Enzyme purification and characterization, manual sequencing, amino acid composition analyses, pH studies, inhibitors, UV/VIS, CD, fluorescence liposome spectroscopic studies, isotope studies, HPLC, peptide synthesis; Avail. Sept. 1988; Academia or industry. 2-2987

Ph.D., 1979; Membrane protein biochemistry reconstitution and transport studies; Enzymology, compartmental analysis, liposome technology, planar membranes, large scale purification of membranes and components, strong instrumental background; Avail. fall 1988; Research and/or teaching; Salary open. 2-2988

Ph.D., 1981; Genetics; 5 yr. postdoc. NIH, 1 yr. research in industry, experience in recombinant DNA techniques, molecular biology, virology, cDNA and genomic library construction, cloning my oncogene and G-protein genes, sequencing, constructing recombinant vectors, RNA and DNA extractions, hybridization; Staff position industry/research. 2-2989

Ph.D., 1984; Biochemistry, cell biology; Immunology, macropage biology, hematopoiesis, cytokine and receptor research, tissue culture, hybridoma, immunohemistry, in vitro bioassays, FACS sorting; Avail. July 1988; Senior postdoc. or scientist industry, academia; Salary negot. 2-2991
Ph.D., 1968; Biochemistry; Protein purification and characterization, chemical modification and structural studies of proteins, antibody production and immunoassays; Avail. summer 1988; Research position; Salary open. 2-2993

Ph.D., 1985; Biochemistry, molecular biology; DNA repair, alkaline elution, tissue culture, enzyme assays, FPLC, electrophoresis, MAB techniques, 3 yr. postdoc and 4 yr. lab/teaching experience; Avail. Sept. 1988; Research or teaching; Salary open; Prefer south central USA. 2-2995

Ph.D., 1973; Chemistry, radio pharmaceuticals; MRI contrast agents, therapeutic drugs for cancer and heart disease; Avail. immediately; Position academia, government or industry preferred; Salary negot. 2-2996

Ph.D., 1980; Human, medical, and biochemical genetics; Cystic fibrosis, somatic cell genetics, cell biology and physiology, pharmacology, adrenergic and cholinergic receptors, cyclic nucleotide metabolism, drug tolerance and addiction; Avail. fall 1988; Research position industry; Salary negot. 2-2998

Ph.D., 1985; Biochemistry, cellular physiology, cell biology; Mammalian cell culture, karyotype analysis, N-linked glycoprotein biosynthesis, membrane protein purification, transport bioenergetics, protein/DNA gel electrophoresis, HPLC, TLC, column and paper chromatography; Avail. July 1988; Assistant professor. 2-3000

Ph.D., 1988 (expected); Biochemistry; Protein purification, enzyme kinetics, GC, HPLC, UV/Vis, FTIR, electrophoresis, trace metal ICP-AES, industrial experience analytical, clinical, and toxicology management/supervision; Avail. Sept. 1988; Research or management industry; Salary negot. 2-3001

Ph.D., 1987; Renal pharmacology, toxicology, physiology; Primary and continuous cell culture, drug metabolism, receptor analysis, surgical techniques, isolated organ perfusion, nephrotoxic models, renal function tests, organic synthesis, HPLC, GC, peptide analysis, RIA, ELISA, teaching/supervisory experience; Avail. Jan. 1989; Academia or industry. 3-3003

Ph.D., 1986; Protein biochemistry, metal-binding proteins, nutritional science; Experience in column chromatography, HPLC, polyacrylamide gels, ELISA, RIA, S&F and antibody epitope mapping, amino acid analysis, Western blots; Avail. Sept. 1988; Molecular biology postdoc.; Salary negot.; West or east coast. 3-3010

Ph.D., 1988; Immunology, cell biology; Flow cytometry, in vitro bioassays, animal experimentation, gradient fractionation, immunoprecipitation, characterization of antibodies; Avail. Sept. 1988; Postdoc. molecular immunology/biology and flow cytometric studies academia or industry; Salary negot.; NJ area. 6-3011

Ph.D., 1970; Tumor immunology, cell biology; Tissue culture, hybridoma technology, RIA, ELISA, electrophoresis, antibody purification, cell cytotoxicity assays, tumor models, chemo- and immunotherapy of tumors, growth factors, cell growth in serum-free media, bacterial virulence factors; Research and/or teaching preferred; Salary negot. 6-3015

Ph.D., 1982; Immunology, protein chemistry, molecular biology, virology; Characterization of membrane receptor, experience in gene cloning and nucleic acid analysis, in situ hybridization, hybridoma; Avail. July 1988; Position academia or industry (human/veterinary); Salary negot. 6-3017

Ph.D., 1986; Immunology, microbiology, endocrinology, molecular genetics; ELISA, RIA, hybridoma production and screening, protein purification, affinity chromatography, electrophoresis, immunoblotting, animal surgery and immunization; Avail. July 1988; Staff or postdoc. position academia or industry. 6-3019

Ph.D., 1988 (expected); Immunology and molecular biology; Experience in human and animal monocyte and macrophage isolation, activation and differentiation, tumoricidal assays, oxidative burst, centrifugal elutriation, RNA and DNA isolation, Northern blots, liposome technology; Avail. fall 1988; Postdoc. academia or industry; Salary negot. 6-3020

Ph.D., 1989 (expected); Cellular immunology, immunogenetics, cell biology; Cell culture, proliferation and cytotoxicity in vitro bioassays, MAB techniques, protein purification, electrophoresis, ELISA, IF, PFC, CDC, in vivo treatment of MABs, mouse breeding; Avail. summer 1989; Immunology or molecular biology postdoc. position; Salary negot. 6-3021

Ph.D., 1988; Bioengineering, bioremediology; Rheological investigation of non-Newtonian fluids (especially biopolymers) using original technique magnetic rheometry and classical methods, generation, concentration, radiolabeling of aerosols, viscoelastic fluid theory; Avail. 1988; Staff position academia or industry; Salary negot. 6-3023

Ph.D., 1988 (expected); Biomechanics, cardiac mechanics; Mechanical modeling of ventricular stress, animal studies with isolated normal and hypertrophic hearts, strain measures in myocardium; Avail. summer 1988; Postdoc. position academia or industry; Salary negot. 1-3025

Ph.D., 1988; Pulmonary physiology; Airway reactivity measurement using polygraph, transducer, ventilator in vivo, tissue response using in vitro tissue bath, histology, elastase intratracheal injection for emphysema hamster model; Avail. Sept. 1988; Postdoc. using in vivo/in vitro animal models to study cellular/molecular mechanisms lung disease. 1-3026

Ph.D., 1978; Peptide, organic, medicinal chemistry; Experience in solid phase and classical synthesis, synthesizers, conjugation, purification, characterization, drug design, S&F study, bioassays, supervision; Avail. July 1988; Research and development position industry; Salary 50K. 2-3027

Ph.D., 1988; Renal and cardiovascular pharmacology/physiology; Experience in ion transport measurement, small animal surgery, blood pressure monitoring, biochemical assays, radioreceptor and ligand binding assays, atomic absorption, HPLC; Avail. July 1989; Postdoc.; Southeast. 3-3028

Ph.D., 1982; Pharmacology, biochemistry, protein chemistry; Protein isolation and reconstitution techniques, characterization of membrane receptor, photoreactive probes for studying lipid-protein interaction; Date negot.; Staff position academia or industry; Salary negot. 3028

M.D., 1976; Ph.D., 1988 (expected); Pathology, cell biology, biochemistry; Cellular calcium hemostasis, ion-transport studies, phosphatidylinositol pathway, Ca measurement using Fura2, plasma membrane isolation, myocytes and mitochondria, enzyme assay and tissue culture; Avail. July 1988; Postdoc. position academia; Salary negot. 2-3030

Ph.D., 1983; Molecular biology/biochemistry; Gene expression and structure, hormonal and developmental regulation, cDNA and genomic cloning, sequencing, transfections, chimeric genes, protein purification; Date negot.; Salary negot. 2-3031

Ph.D., 1978; Biochemistry, clinical chemistry, nutrition; Experience in variety analytical techniques used in biochemistry, clinical and protein chemistry, supervisory and teaching experience; Avail. immediately; Research and development industry or academia; Salary negot. 2-3032

Ph.D., 1988 (expected); Pharmacokinetics, toxicology, metabolism, immunology; HPLC, tissue culture, cell isolation, GC, in vitro bioassay, nonlinear regression, clinical chemistry; Avail. Sept. 1988; Staff position industry; Salary negot. 3-3033

Ph.D., 1980; Cell biology; Vessel wall pathologist, familiar with in vivo/in vitro models used to study arterio/atherosclerosis, accomplished microsurgeon using rodents as bypass recipients, LM and EM knowledge, some biochemistry including SDS-PAGE; Avail. Sept. 1988; Academia/industry/government. 4-3034

Ph.D., 1977; Physiology; Central respiratory and cardiovascular control, vagal reflexes, neuromuscular synaptic physiology, extra- and intracellular recording, neural control of GI tract, neuropharmacology; Avail. early 1989; Research and/or teaching academia; Salary open. 1-3035

M.D., 1984; Ph.D., 1988 (expected); Physiology; Respiratory and developmental physiology, experience in clinical procedures, animal surgery, histology, LM and SEM, pulmonary function testing in humans and animals; Avail. Sept. 1988; Postdoc. position academia or industry; Salary negot. 1-3036

FJ EMPLOYMENT OPPORTUNITIES 2659
Ph.D., 1989 (expected); Kinesiology/exercise physiology; Muscle function in situ/in vitro, aging and muscle function, innervation of skeletal muscle, motor unit function, experience in histochemistry, histology, surgery, biochemical assays; Avail. summer 1989; Research and/or teaching; Salary negot. 1-3037

Ph.D., 1988 (expected); Cardiopulmonary physiology, comparative physiology, sensory neurophysiology; study role of peripheral chemoreceptors in the control of breathing, electrophysiological recordings of peripheral chemoreceptors; Avail. fall 1988; Postdoc. position academia or industry; Salary negot. 1-3038

Ph.D., 1986; Animal nutrition and physiology, poultry nutrition; Biochemistry of lipid metabolism, protein synthesis and degradation, experience with RIA, HPLC, HPTLC, mini- and microcomputers, large scale animal experiments; Avail. Sept. 1988; Position academia or industry; Salary open. 5-3039

Ph.D., 1988; Biochemistry, cell biology, nutrition; Intracellular organelle isolation, tissue culture, HPLC, free-flow electrophoresis, two phase partition, TEM, SDSS-PAGE, fluorescence polarization, vitamin A and derivatives; Avail. Aug. 1988; Staff or postdoc. position academia or industry; Salary negot. 7-3040

Ph.D., 1988 (expected); Chemistry, biochemistry, sterol metabolism; HPLC and GC/MS techniques in the isolation and characterization of trace metabolites, organic synthesis, in vivo models using stable and radioisotopes; Avail. fall 1988; Postdoc. position academia or industry; Salary negot. 2-3041

Ph.D., 1979; Biochemistry, pharmacology, nutrition, minor chemical engineering; Vitamin K function, anticoagulants, blood coagulation, flavins and flavoproteins, enzymology/purification/mechanism, metabolism, radiotracers, organic synthesis, physical/analytical methods; Research or R&D position academia or industry; Salary negot. 2-3042

Ph.D., 1988 (expected); Biochemistry, cardiovascular biochemistry; Transport across membranes, isolated heart perfusion, HPLC of nucleotides, adenine nucleotide metabolism during ischemia; Avail. Sept. 1988; Postdoc. industry/academia; Salary negot. 2-3043

Ph.D., 1981; Biochemistry, molecular biology, enzymology, protein purification, isolated cell preparations, library construction and screening, sequencing, immunohistology, in situ hybridization, in vitro translation, HPLC, PAGE, metabolic compartmentation; Avail. fall 1988; Staff position academia or industry; Salary negot. 2-3044

Ph.D., 1982; Electrophysiology, muscle metabolism and biochemistry; Whole cell patch clamp analysis of ionic currents in colon smooth muscle and isolated cardiac myocytes, electrogenic Na/Ca exchange, regulation of fatty acid metabolism in heart; Avail. summer 1988; Staff position academia or industry; Salary open. 1-3045

M.S., 1988 (expected); Pharmacology, neuropharmacology, physiology, cell biology, organic, inorganic, analytical, instrumental and physical chemistry, biochemistry; Radioligand binding assays, cardiac muscle studies, effects of hypoxia on cerebrovascular muscle in vitro/in vivo; Avail. fall 1988; Industry position; Salary negot. 3-3046

Ph.D., 1983; Microbiology, immunology; Hybridoma technology, immunoassay development, in vitro immunization, retrovirology, cytotoxicity, research, hormone receptor studies, mammary cancer research; Avail. summer 1988; Staff position academia or industry; Salary negot. 6-3047

Ph.D., 1988; Physiology; Respiratory, developmental, airway, smooth muscle, respiratory control; Avail. Sept. 1988; Postdoc. position in cardiovascular or respiratory physiology studying cellular/molecular mechanisms; Salary negot. 1-3048

Ph.D., 1988 (expected); Molecular biology, physical chemistry, immunology, biochemistry; Nucleic acid protein interaction, RNA structure, feedback regulation, molecular cloning, site-directed mutagenesis, MAB techniques, protein purification, HPLC, in vitro bioassays; Avail. spring 1989; Postdoc. academia or industry. 2-3351

Ph.D., 1983; Biochemistry, cell biology, immunology, molecular biology; Purification and characterization of proteins/enzymes, lipoproteins, and mucins, metabolic studies of lipoproteins, clinical biochemistry, tissue culture, animal surgery; Avail. immediately; Staff position academia or industry; Salary negot. 2-3352

Ph.D., 1970; Lipid biochemistry; Eicosanoids and PAF biochemistry, lipid analysis and bioassays used to study synthesis, release and actions of AA metabolites and PAF, in vitro phospholipase assays, immunoassay development, enzyme coupling to proteins, synthetic chemistry. 2-3353

Ph.D., 1988 (expected); Molecular biology/virology; Tissue culture, virus isolation, purification, cloning into plasmid vectors, transformation, transfection, CAT assays, protein electrophoresis, column chromatography, Western blots, hybridomas, polyclonal antiserum production, ELISA; Avail. winter 1988; Molecular biology postdoc. academia/industry. 2-3355

M.S., 1988; Molecular biology, cell biology, endocrinology; Receptors, organization of a particular eukaryotic gene, screening the library, radioactive labeling, subcloning, transformation, restriction mapping, isolation of DNA, Southern blot, molecular hybridization, DNA sequencing, electrophoresis; Avail. fall 1988; Industry preferred. 2-3356

M.D., 1980; ABIM, 1983; BC in endocrinology/metabolism, 1985; Expertise in clinical research, reproductive physiology and Andrology, RIA, chromatography; Avail. 1989; Clinical practice/clinical academia in general endocrinology preferred; Salary negot. E-205

M.D., 1979; ABIM, 1985; BC in endocrinology/metabolism, 1987; Experience in clinical research, diabetes/metabolism, calcium metabolism, staff endocrinologist; Avail. July 1988; Clinical/academia practice preferred; Salary negot.; Metropolitan NY. E-206

Ph.D., 1970; Neuroendocrinology, reproductive physiology; Research inhibitors, isolation, cell cultures, RIA development, molecular biology, hybridoma; Date negot.; Academia/industry staff position preferred; Salary negot. E-207

M.D., 1982; ABIM, 1985; Intramural NRSA fellowship at NIH, 1985-88; Clinical staff fellowship in endocrinology at NIH, 1988; Research S&F of glucocorticoid receptor; Avail. March 1989; Clinical and/or basic research academia/industry preferred; Salary negot. E-208
"If everyone over 50 had checkups for colorectal cancer, the cure rate could be as high as 75%.

"If more people had colorectal cancer checkups, more people could be cured," says Dr. LaSalle D. Leffall, Jr., M.D., F.A.C.S., Professor and Chairman of the Department of Surgery, Howard University Hospital, Washington, D.C. "It's that simple. You can't cure it if you don't know you have it." But if it's detected early, the cure rate for colorectal cancer is very high. Your doctor can perform the digital and proctoscopic exams, and you take care of the simple stool blood test at home.

The present cure rate is 44%. We believe it could be at least 31% higher. Since men and women are equally affected by this disease, we urge everyone over 50 to get regular checkups at the intervals specified in the box on the right.

Fact is, there will be 130,000 new cases of colorectal cancer this year. You can help us cure 75% of them.
If you are not in the age group affected, please pass this information on to someone you know who is. The warning signs for colorectal cancer are: a change in bowel habits and blood in the stool.
People with a family history of colon or rectal cancer or ulcerative colitis are at higher risk and are urged to be doubly cautious.
Help us raise the cure rate.

Colorectal Cancer Checkup Guidelines for men and women over 50 without symptoms:
• Digital exam every year
• Stool blood test every year
• Procto exam every 3 to 5 years after 2 initial negative tests 1 year apart.

No one faces cancer alone.
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New! HUMAN EVOLUTION by H. James Bix. This survey of the origin and emergence of our own species focuses special attention on fossil hominids and the three great apes. From an evolutionary perspective, the author investigates relevant facts and new concepts in genetics, earth history, primate behavior, hominoid paleontology, language and sociocultural development. '88, $37.50

New! BRAIN AND FEEDING BEHAVIOR by Wanda Wyrwicka. This book reviews the results of research on the neural regulation of food intake. The author examines the brain structures involved in control of feeding, the innate oral and gastric reflexes critical to feeding, and feeding behavior. Discussions of other more specific topics include effects of external stimuli on innate reflexes, intrinsic control mechanisms, food preferences, and feeding disorders. '88, $42.75

New! BOTULISM: The Organism, Its Toxins, The Disease (2nd Ed.) by Louis D.S. Smith and Hiroshi Sugiyama. This new edition focuses on recent work in the areas of botulinal toxins and infant botulism. Emphasis is placed on the four physiological groups of Clostridium botulinum, their worldwide occurrence in both man and animal, and their different temperature optima. July '88, about $34.75

New! LIFE-styles FOR LONG LIFE: Longevity in Bulgaria translated and edited by Gari Lesnoff-Caravaglia and written by Argir Kirkov Hadjianitrov. Emphasizing the importance of lifestyle as one of the main determinants in longevity, this text discusses dietary regimen, work capacity, ancestry, lipid and protein profiles, and the condition of the cardiovascular system of the long-living and centenarians. Aug. '88, about $26.75

New! THE RETARDATION OF AGING AND DISEASE BY DIETARY RESTRICTION by Richard Weindruch and Roy L. Walford. This text examines the historical phases of dietary restriction research; considers the effects of dietary restriction on survivorship, on disease, and on biological parameters; and then discusses how dietary restriction retards the aging process, particularly in terms of human application. Oct. '88, about $69.75

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How To Choose The Right Low Pressure LC System Even If It Isn't Ours

To simplify choosing the right peristaltic pump, detector and fraction collector for your LC System, review these guidelines and send for our free Low Pressure System Selection Worksheet.

1 Identify your separation goals.
- Know the characteristics of your sample. What mass will you load on your column? What flow rate will you need to achieve optimal speed and resolution? At which wavelengths does your sample exhibit maximum absorbance? What size fractions will you collect? Are you interested in collecting peaks?

2 Examine the components' specs.
- After you've identified the key operating parameters, take a look at the pump, detector and fraction collector specifications to be sure they meet your needs. To illustrate, let's look at specifications for components in the Gilson Low Pressure System.

The most important criteria used to select a peristaltic pump are smooth, stable flow and usable flow rate range. The Gilson system uses the new Minipuls 3 Pump. Stepper-motor drive and proven pump head design ensure smooth flow from 1 ul to 50 ml/min. A high flow head allows flow rates from 50 ml to 220 ml/min. Interchangeable pump heads with 1-, 2-, 4-, or 8-channel are available.

Wavelength specificity and ease-of-use are key considerations when choosing a detector. The Gilson 112 UV/VIS fixed-wavelength detector allows selection of wavelengths from 214 nm to 640 nm. A choice of five flow cells accommodates a wide range of flow rates and sample concentrations. A large digital readout and convenient autotzero and event mark functions keep detector operation easy.

Select a fraction collector according to your collection mode, fraction volume, and multiple column collection needs.

Gilson's FC 203 fraction collector allows drop, time, or peak collection modes with up to ten collection windows in each mode. The widest range of racks available—capable of handling as many as 128 fractions—makes the FC 203 suitable for almost any application.

3 Check for compatibility of components with each other and with your future needs.
- At this point, you've identified components to meet basic needs, but also look at the components as a system. Were they designed to work together? Or will you need to buy complicated adapters and special plumbing? Working with a single supplier avoids the service and support problems often associated with a system assembled piece-by-piece.

You should also assess your future needs. An LC system may work fine for your current application. But will you need to charge detection wavelengths or collection volumes later? Is an upgrade to HPLC a possibility? If so, consider modular equipment that adapts to your changing needs easily and inexpensively.

4 Look at each supplier's record of reliability, service and support.
- After identifying suitable components, you narrow your choice by looking at each supplier's track record for reliable equipment and efficient service.

To evaluate the Gilson Low Pressure System, consider our reputation for fraction collectors and detectors. Gilson has a proven track record that began more than 35 years ago. More than 1000 FC 203s—introduced just 16 months ago—continue to display dependable, trouble-free operation.

The Minipuls 2, the reliable predecessor to our new Minipuls 3, has earned spaces on more than 24,000 lab benches worldwide, making it the best-selling peristaltic pump.

5 Use our free Low Pressure LC System Selection Worksheet to gather and compare your options.
- For the final step in choosing your system, compare the information you've gathered. To help, we've put together a selection worksheet to simplify the process.

This free worksheet lists major criteria to use in your comparisons. We've filled in information about the Gilson Low Pressure System and have left space for you to fill in specs from other suppliers.

Why do we encourage this comparison? Because it's the best way to buy a system matched to your needs. Plus, we're confident that in most cases your low pressure system will be a Gilson Low Pressure System.

So, for your free Low Pressure System Selection Worksheet, simply circle the magazine's reader service number or call us toll free at 800-445-7667. We'll see that you get your worksheet fast.

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