

# T C O M

## research notes

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### EXPOTECH

TCOM has been selected as one of the academic exhibitors in EXPOTECH '88 which will be held at Infomart, Dallas, TX on Friday, May 13, 1988 from 9:30 A.M. to 6 P.M. This event is planned to demonstrate the diversity, vitality, and potential of advancements of knowledge based industries and university research located in the Metroplex. It is hoped that the exhibition will further strengthen local, national and international recognition of the Metroplex as a leading technology center. All faculty are cordially invited to attend.

### FACULTY RESEARCH GRANTS

The deadline for submitting Faculty Research Grants is 5 P.M., JUNE 1, 1988. Applications are still available from the Research Office. Please note the requirement to submit the original plus 9 copies.

### PERCENTILING OF NIH PRIORITY SCORES

Beginning with the May/June meetings of the various NIH Institute Boards or Councils, each summary statement for research grant applications reviewed by the Division of Research Grants Study Sections during the previous February/March will display, in addition to the usual priority score, a percentile rank. The percentile rank of the priority scores will become the primary basis for ranking applications being considered for funding by all NIH institutes.

The basic assumption of percentiling is that overall, the distribution of the quality of approved applications is equivalent among all study sections. Percentiling corrects for score differences among study sections since it assumes they result from different review standards. The overall effect of percentiling is to enhance the comparability of approved applications from each study section, although funding rates will be determined by the availability of funds in the assigned institute and its program priorities. Under



the NIH peer review system, the responsibility for funding decisions lies with the Institute Directors and staffs consulting with their advisory councils and boards. Although priority scores and percentile ratings are important aids, funding decisions include other critically important factors such as the application's relevance to institute and program goals. In order to meet these goals, funding decisions can and do deviate from either priority score or percentile order.

The percentile represents the relative position or rank of each priority score (along a 100.0 percentile band) among the scores assigned by the particular study section. The percentile is the same as the cumulative percent distribution of the scores for each study section and indicates the percent of applications with scores equal to or better than particular applications. For example, a percentile rank of 25.0 indicates that 25 percent of the applications approved by that study section received equal or better (lower) scores. Tie scores are each given the same (best) percentile rank. It is important to note that this is a reversal of the usual percentile interpretation in order to correspond to the NIH rating system in which lower scores indicate better applications.

The rank of each application indicates its position among the approved applications of the current plus the previous two rounds for its study section. This minimizes the round-to-round quality variation in addition to providing the stability of larger numbers. Excluded from this system are R13 (conference grants), R15 (Academic Research Enhancement Awards), T (training grants), F (fellowship) and K (Research Career Development Awards).

Each reviewer's scores are entered in a computer work file by the grants technical assistant of the initial review group. The system computes the priority score, which is then recorded in the IMPAC data system and in the summary statement file. After reconciliation, percentiles are computed overnight and are also added to these files. The following institutes have been receiving the percentile rank in addition to the priority score printed on summary statements: NIA, NIAMS, NCI, NIDR, NIDDK, NIEHS, NIGMS, NICHD, NHLBI, and NINCDS. Starting with the May, 1988 Councils, all Institutes will receive the percentile rank in addition to the priority score. Beginning FY 1989, percentile value will be the primary index for ranking applications in making funding decisions.

Questions concerning percentiling procedures should be directed to the Office of the Director, DRG (301) 496-7211 or 7461.



## MIT CELL CULTURE CENTER

The MIT Cell Culture Center is a national resource available for researchers to obtain large quantities of animal cells, cell products, and viruses. The primary goal of this large scale production center is to allow scientists to conduct research that they cannot accomplish with the facilities available in their own laboratories. The Center, headed by Dr. Phillip A. Sharp, provides cells in suspension and monolayer cultures, typically in amounts ranging from 10 to 200 liters of suspension culture cells and 50 to 200 roller bottles of cells. Previous projects have included: 100 roller bottles of BALB 3T3 cells, 200 liters of Hela S-3 cells, and 800 liters of human lymphoblastoid cell line. An application form, obtained from the Center, must contain a description of the relevant research project. Following the approval of the application by the Operating Committee of the Center, the investigator sends a stock of the cells or virus to the Center, and the stock is then grown to the requested amount. Researchers are charged only for the consumable material used on the project plus a small portion of the labor costs. Application forms and inquiries should be directed to:

Donald J. Giard, Director  
MIT Cell Culture Center, E17-321  
Massachusetts Institute of Technology  
Cambridge, MA 02139  
(617) 253-6430

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## PUBLICATIONS

Jackson, F.L., E.L. Orr, A.S. Morrill, and R.J. Wordinger. "Uterine histaminebiochemical processes underlying content in mast-cell deficient (W/W<sup>V</sup>) mice during experimentally induced deciduoma formation." An. Reprod. Sci. 14: 75-82 (1987).

Cammarata, P.R., L. Oakford, D. Cantu-Crouch, and R.J. Wordinger. "Attachment of blastocysts to lens capsule: a model system for trophoblast-epithelial cell interaction on a basement membrane." Cell Tissue Res. 250: 633-640 (1987).

Cini, J.K., P.F. Cook and R.W. Gracy. "Molecular basis for the isozymes of bovine glucose-6-phosphate isomerase." Arch. Biochem. Biophys. 263(1): (1988).

Putthoff, S.L., G.L. Sisler, G.H. Wimbish and D.P. Singleton. "Newspath", Spring, 1988.



Downey, H.F., and G.J. Crystal. "Perfusion with non-oxygenated tyrode solution causes maximal coronary vasodilation in canine hearts." Clinical Experimental Pharmacology & Physiology, 14: 851-857 (1987).

Yonekura, S., N. Watanabe, and H.F. Downey. "Transmural variation in autoregulation of right ventricular blood flow." Circulation Research, 62: 776-781 (1988).

Wordinger, R.J., G. Miller, and D. Nicodemus. A Manual of Immunoperoxidase Techniques. 2nd Edition, American Society of Clinical Pathologist Press, Chicago, IL (1988).

Downey, H.F., G.F. Merrill, S. Yonekura, N. Watanabe, and C.E. Jones. "Adenosine deaminase attenuates norepinephrine-induced coronary functional hyperemia." Am. J. Physiol. 254 (Heart Circulatory Physiology 23): H417-H424 (1988).

#### PRESENTATIONS

H. Fred Downey, Ph.D., (Department of Physiology) "Collateral blood flow in the canine heart" to the Graduate Program in Physiology and Neurobiology at Rutgers University.

Fred Jackson, Ph.D. and Robert J. Wordinger, Ph.D. (Department of Anatomy) "Effect of basement membrane components on the rate of hatching and attachment of mouse blastocysts" at the annual meeting of the American Society for Cell Biology.

Elaine L. Jacobson, Ph.D. (Department of Medicine/Biochemistry) gave an invited presentation titled "Poly(ADP-ribosylation): a protective cellular response to stress" at the International Symposium on Cellular and Molecular Correlates of Central Nervous System Trauma at North Texas State University.

#### ADVANCED TECHNOLOGY PROGRAM AWARDS

Three faculty of TCOM received awards from the Coordinating Board under the research initiatives established in the last session of the legislature. They are:

ROBERT W. GRACY, PH.D., Department of Biochemistry, "Molecular basis of impaired wound healing in aging" \$90,000

JOHN D. LANE, PH.D. and MICHAEL EMMETT-OGLESBY, PH.D., Department of Pharmacology, "Neurobiology of tolerance and reinforcement of drugs of abuse - novel techniques" \$102,000



EUGENE QUIST, PH.D., Department of Pharmacology,  
"Calcium flux regulation in heart" \$86,666

#### OB/GYN GRANT AWARD

CAROL QUIST, D.O., first year OB/GYN resident at TCOM/FWOMC, has received a \$1,000 grant from the American College of Osteopathic Obstetricians and Gynecologists. The topic of her study is "Control of blood flow in human placenta by autocoids." Co-investigators on the research project are Robert Adams, D.O. and Eugene Quist, Ph.D.

#### UPCOMING MEETINGS

May 19-22, 1988	45th Annual Meeting of the American Geriatrics Society and the 9th Annual Meeting of the American Federation for Aging Research in Anaheim, CA.
May 23-28, 1988	52nd Annual Scientific Meeting of the American Rheumatism Association and the Arthritis Health Professions Association in Houston, TX.
June 8-10, 1988	70th Annual Meeting of the Endocrine Society in New Orleans, LA.
June 12-16, 1988	11th International Convocation on Immunology in Buffalo, NY.

#### FUNDING OPPORTUNITIES

##### AMERICAN HEART ASSOCIATION NATIONAL CENTER

##### MEDICAL STUDENT RESEARCH FELLOWSHIP

This is an institutional award to encourage medical students to engage in full time research training for one or more years prior to graduation. This fellowship program is an award for a 3 year period for accredited medical schools. Each medical school receiving this award will be granted a minimum of 1 and a maximum of 6 Medical Student Research Fellowships per year. AS THIS IS AN INSTITUTIONAL AWARD, ONLY 1 APPLICATION PER MEDICAL SCHOOL WILL BE CONSIDERED.

Students shall not receive academic credit for this



research period. However, the results of this endeavor may be used in partial fulfillment of the requirements for a DO/MS or DO/PhD degree program. The stipend for a Medical Student Research Fellow is \$12,000 per 12 month period and \$1,800 per year for the institution for trainee-related expenses (project support, health insurance, travel to a scientific meeting). No funds for tuition will be provided. Applications available from the Research Office. Deadline: JUNE 1, 1988.

#### CLINICIAN SCIENTIST AWARD

This program is to encourage promising clinically trained physicians to undertake careers in investigative science. Awardees will be supported during an initial 3 year period of rigorous, full-time research training under a preceptor, and during a subsequent period in which they will be expected to initiate an independent investigative program in a clinical department in the sponsoring institution. Applicant must hold a D.O. degree. Application is available from the Research Office. Deadline: JUNE 1, 1988

#### GRANT - IN - AID

Awards to support research activities broadly related to cardiovascular function and disease, stroke, or to related fundamental problems. Support is available for all basic disciplines as well as for epidemiological and clinical investigation which bear on cardiovascular problems. Limited funds are available for support of research in the basic sciences irrespective of apparent direct application to the field of cardiovascular disease.

APPLICATIONS MUST BE REQUESTED ON AN INDIVIDUAL BASIS FROM THE AMERICAN HEART ASSOCIATION, DALLAS, TX. (214) 373-6300. Deadline: JULY 1, 1988.

#### DEPARTMENT OF DEFENSE RESEARCH PROGRAMS

The Army, Navy and Airforce support investigator-initiated research proposals. Investigators are encouraged to contact the appropriate staff person at each agency before submitting a proposal.

#### AIR FORCE

Department of the Air force, Air Force Office of Scientific Research, Life Sciences Directorate. Areas of research interest include:



Neuroscience Program:

supports research on basic neuronal mechanisms underlying learning and memory, arousal, attention, vigilance, and related aspects of behavior. Work on theoretical models of neural networks is also supported. WILLIAM O. BERRY, PH.D. (202) 767-5021.

Cognition Program: supports basic research on cognitive aspects of perception, memory, learning, representation of knowledge, problem-solving, reasoning and judgment. This program also includes awards to support collaboration with scientists at the Air Force Human Resources Laboratory developing new measures of individual cognitive abilities. The Laboratory's research facilities include automated computer testing stations and access to large numbers of experimental subjects. ALFRED R. FREGLY, PH.D. (202) 767-5021.

Bioenvironmental Hazards Program: supports basic research on mechanisms of toxicity, biological disposition of chemicals, markers of exposure, and pharmacokinetics modeling of toxicity and dose extrapolation among species. Research on the behavior, fate, and impact of chemicals released into the environment and ways to clean up contamination is also supported. LORRIS G. COCKERHAM, PH.D. (202) 767-5021.

ARMY

US Army Medical Research and Development Command.

Contact: (301) 663-7216.  
Areas of research interest include:

Military Disease Hazards: consists of basic studies related to the development of drugs and vaccines for infectious diseases and medical defense against potential biological warfare agents. AIDS research is supported under this initiative.

Combat Casualty Care: studies to reduce morbidity and mortality from the consequences of battlefield trauma are sought. Areas of interest: development of safe blood substitutes; studies to reduce morbidity due to shock and trauma; development of skin substitutes for burn and wound treatment.

ARMY

US Army Research Office, Biosciences Research Area.  
Contact: Dr. Shirley R. Tove, (919) 549-0641. Areas of research interest include:

Basic Research in Biotechnology: Research on the structure-activity of macromolecules; protein-nucleic acid, protein-protein, and intraprotein interactions; gene expression and regulation; enzyme and membrane receptor site characteristics; and compartmentalized and membrane-interfaced



subcellular chemical processing is supported.

Defenses Against Chemical and Biological Agents:

basic research on modes of action of potential agents on physiological targets, including neurotransmitter interaction and biologically based concepts for chemical detection.

NAVY

Department of the Navy,  
Office of Naval Research,  
Life Sciences Program  
Directorate.

Biological Sciences Division:

Systems Biology: supports research on cellular mechanisms in response to environments of special concern to the Navy and Marine Corps. The program currently has four components:

bioelectromagnetics: emphasizing interactive mechanisms in the molecular level when biological entities are exposed to electromagnetic fields.

immunology and medical materials program:

emphasizes research on interactive mechanisms relating the central nervous system with the objective of understanding how adverse stimuli influence immune function.

integrative biology program: encourages research proposals which take novel approaches toward understanding the integrative functions of

brain regulatory centers.  
DR. JEANNINE A. MAJDE, (202) 696-4055.

Neural (Biological Intelligence) Sciences:

support is provided for neuroanatomical, and neurophysiological work investigating how neural networks utilize modulated patterns of excitation and inhibition to compute functions such as the encoding and storage of environmental events and the construction of abstract representations. A second thrust addresses neural plasticity. Research emphasizes ranges from investigation of the brain circuitries involved in learning and memory to analysis of the enzymatic and other biochemical processes underlying synaptic modification. A third area inquires into the nature of neural mechanisms of control. Interest is on empirical research in neuroanatomy, neuropsychology, and psychophysiology aimed at investigation of the control structures and circuitries underlying attention. DR. H. HAWKINS, (202) 696-4323.

NAVY:

Department of the Navy,  
Naval Medical Research and Development Command and Naval Medical Command,  
National Capital Region,  
Bethesda, MD 20814-5044.

Combat Casualty Care

Program: areas of interest include: 1) treatment of



sepsis and trauma; 2) development of blood substitutes; 3) preservation of blood; 4) treatment of cold weather induced complications; and 5) medical logistics.