

Research Notes



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Funding Mechanisms of NIH

The National Institutes of Health has certain funding mechanisms to support research investigators. Some of the mechanisms available that may be of interest to the research community at TCOM are given here.

Research Project Grants - (Traditional R01) The investigator-initiated research grants make up the largest single category of support provided by NIH. These grants are awarded to eligible institutions (domestic or foreign) on behalf of a principal investigator to facilitate pursuit of a scientific objective in the area of the investigator's interest and competence. Institutional sponsorship assures the NIH that the institution will provide facilities necessary to accomplish the research and will be accountable for the grant funds.

Program Project Grants - (P01) These grants are awarded to a qualified institution on behalf of a principal investigator for the support of a broadly based, often multidisciplinary, long-term research program with a particular major objective or theme. A program project involves the organized efforts of groups of investigators who conduct research projects related to the overall program objective. The grant can provide support for the projects and for certain shared resources necessary for the total research effort. Each project supported under a program project grant is expected to contribute to the over-all program objective.

First Independent Research Support and Transition (FIRST) Award - (R29) The objective of the FIRST award is to provide, at a domestic institution, a sufficient period of research support for newly independent investigators to initiate

their own research ideas. These grants are intended to support the first independent investigative efforts of an individual; to provide a reasonable opportunity to demonstrate creativity, productivity, and further promise; and to help in the transition to traditional types of NIH research project grants. The investigator must request five years of support with a budget limitation of \$350,000 and devote at least 50% time to the project. To be eligible, the investigator must be independent of a mentor and at the beginning stages of a research career, cannot be in a training status, and may not have previously served as a PI on a R01 grant.

Center Grants - (P50) Center grants, awarded to institutions on behalf of a program director and a group of collaborating investigators, provide support for multidisciplinary long-term programs of research and development. Included in this category are specialized centers, general clinical research centers, core grants, comprehensive centers, and biotechnology centers. The distinction between program project and center grants is that center grants are more likely to have a clinical orientation and are usually developed in response to announcements of specific needs and requirements of an Institute.

Texas Institute for Research and Education Activities

The Texas Institute for Research and Education recently received a grant from the Administration on Aging, to be directed by Stan Ingman, Ph.D., Director of the Institute, that will promote academic involvement in eldercare. The grant will support faculty members from several area colleges, including TCOM and UNT, to develop local community projects for Area Agencies on Aging (AAA). Many of the nine projects will focus on minority communities. For example, Janice Knebl, D.O., TCOM Department of Medicine, a project co-director (for the clinical aspects of the project) will mentor a TCOM freshman student in a health screening assessment project within the STOP 6 community in Fort Worth.

All faculty/student teams will gather on April 10 at UNT for an interdisciplinary orientation conference involving AAA personnel. Anne B. Jones, from Region VI, Administration on Aging, will discuss the

National Eldercare Agenda and Project CARE. Each local project team will share its project plans. Kyriakos Markides, Ph.D., Department of Preventive Medicine and Community Health, The University of Texas Medical Branch, Galveston, will be the luncheon speaker and will speak on minority issues in aging.

Dr. Markides will be at TCOM on April 9, 1992, at 3:00 - 5:00 pm, ME 1-868, as part of the Institute's Visiting Scholars Program. His visit is co-sponsored by the Texas Consortium of Geriatric Education Centers. Interested faculty from both campuses are invited to meet with him to discuss issues in research among the minority aged. Community representatives from service and research programs related to minority aging will be invited to this meeting.

For further information, please call Elizabeth Tucker, TCOM, 817-735-2403 or Ann Reban at UNT, 817-565-4430.

RECENT TCOM AWARDS

Dan Dimitrijevic, Ph.D.,

(Department of Biochemistry and Molecular Biology), "Evaluation of Lens Solutions Using Human Corneal Epithelial Models", CIBA Vision Corporation, 02/01/92 - 01/31/93, \$16,676.

Michael W. Emmett-Oglesby, Ph.D.,

(Department of Pharmacology), "Ondansetron and Cocaine", Glaxo Group Research Limited, 03/01/92 - 02/28/93, \$83,688.

Robert W. Gracy, Ph.D., (Department of Biochemistry and Molecular Biology), "Evaluation of Eight Potential New Drugs for the Treatment of Psoriasis", Greenwich Pharmaceuticals, 02/21/92 - 01/31/93, \$10,570.

Myron K. Jacobson, Ph.D.,

(Department of Anatomy and Cell Biology), "Alteration of NAD Metabolism by Chemical Carcinogens", National Institutes of Health - National Cancer Institute, 03/01/92 - 02/28/93, \$191,868.

Harbans Lal, Ph.D., (Department of Pharmacology), "Characterization of Ethanol Withdrawal", Alcohol, Drug Abuse and Mental Health Administration - National Institute on Alcohol Abuse and Alcoholism, 03/01/92 - 08/31/92, \$6,023.

Total Funding Awarded \$308,825

EXTERNAL GRANT PROPOSALS SUBMITTED

Barbara A. Barron, Ph.D.,

(Department of Physiology), "Enkephalin, Myocardial Hormone", National Institutes of Health - National Heart, Lung, and Blood Institute, 12/01/92 - 11/30/97, \$504,709.

Dan Dimitrijevic, Ph.D.,

(Department of Biochemistry and Molecular Biology), "Evaluation of Lens Solutions Using Human Corneal Epithelial Models", CIBA Vision Corporation, 02/01/92 - 01/31/93, \$16,676.

Michael W. Emmett-Oglesby, Ph.D.,

(Department of Pharmacology), "Characterization of Benzodiazepine Dependence", Alcohol, Drug Abuse and Mental Health Administration - National Institute on Drug Abuse, 12/01/92 - 11/30/96, \$671,101.

Andras G. Lacko, Ph.D., (Department of Biochemistry and Molecular Biology), "Second International Symposium on Reverse Cholesterol Transport and Coronary Heart Disease", National Institutes of Health, 11/14/92 - 11/15/92, \$12,250.

Harbans Lal, Ph.D., (Department of Pharmacology), "Characterization of Ethanol Withdrawal", Alcohol, Drug Abuse, and Mental Health Administration - National Institute on Alcohol Abuse and Alcoholism, 01/15/92 - 12/31/92, \$17,156.

Harbans Lal, Ph.D., (Department of Pharmacology), "Neurobehavioral and Immunological Markers of Aging", National Institutes of Health - National Institute on Aging, 04/01/93 - 03/31/98, \$1,298,282.

Robert R. Luedtke, Ph.D., (Department of Pharmacology), "Regulation of Dopamine Receptor Subtypes", National Institutes of Health, 12/01/92 - 10/30/95, \$377,931.

Robert T. Mallet, Ph.D., (Department of Physiology), "NIH Small Instrumentation Grants Program - Sorvall Ultra-80 Ultracentrifuge", 09/01/92 - 08/31/93, \$33,000.

Total Funding Requested \$2,931,105

RECENT PUBLICATIONS

Frank J. Papa, D.O., Ph.D.,

(Department of Medical Education), recently had a journal paper published: Papa, F. J., Jon I. Young, G. Knezek, and R. J. Bourdage. 1992. A Differential Diagnostic Skills Assessment and Tutorial Tool. *Computers Educ.* 18: 45-50.

Marcos Martinez, and Rafael Alvarez-Gonzalez, Ph.D., (Department of

Microbiology and Immunology), Martinez, M. S., R. Price, J. Moss, R. Alvarez-Gonzalez. 1991. Mono(ADP-Ribosyl)ation of Poly(ADP-Ribose) polymerase by Cholera Toxin. *Biochemical and Biophysical Research Communications.* 181: 1412-1418.

Eugene Quist, Ph.D., (Department of Pharmacology), Quist, E. Regulation of GDP and GTP Binding in Cardiac Sarcolemma by Muscarinic Receptor Agonists. *Molecular Pharmacology.* 41: 168-176.

Eugene Quist, Ph.D., (Department of Pharmacology), Quist, E., P. Powell, and R. Vasan. 1991. Guanylnucleotide Specificity for Muscarinic Receptor Inhibitory Coupling to Cardiac Adenylate Cyclase. *Molecular Pharmacology.* 41: 177-184.

John D. Lane, Ph.D., (Department of Pharmacology), Lane, J. D., 1992.

Neurochemical Changes Associated with the Action of Acute Administration of Diazepam in Reversing the Behavioral Paradigm Conditioned Emotional Response (cer). *Neurochemical Research.* 17: 497-507.

H. Fred Downey, Ph.D., Derald P.

Grice, Graduate Student, and Carl E. Jones, Ph.D., (Department of Physiology), Downey, F. H., D. P. Grice, and C. E. Jones. 1991. Systemic Hypoxia Activates a Coronary Vasoconstrictor Reflex Response that is Blocked by Prazosin. *Journal of Cardiovascular Pharmacology.* 18: 657-664.

Robert T. Mallet, Ph.D., (Department of Physiology), Bunker, R., R. T. Mallet, and Y. H. Kang. 1991. Guinea-pig Cardiac Free, Bound and Interstitial Adenylates: Energy-Linked and Energy-Independent Adenosine Release. In, *Role of Adenosine and Adenine Nucleotides in the Biological System.* Shoichi Imai & Mikio Nakazawa, eds. Elsevier Science Publishers. pp. 337-353.

Cleatus J. Wallis, Ph.D., (Department of Pharmacology), Wallis, C. J., E. F. Wenegieme, and J. A. Babitch. 1992. Characterization of Calcium Binding to Brain Spectrin. *The Journal of Biological Chemistry.* 266.

NSF Extends Length of Grants

The National Science Foundation has decided to extend research grants to three years. This change may improve the chances of scientists who traditionally have been successful in winning NSF funds. However, for those scientists not already funded by NSF, the longer cycle could make it more difficult for them to obtain their first grant.

How to Direct Your Research Grant to NIH

Applicants are encouraged to send a cover letter with your grant proposal to the Division of Research Grants suggesting the Study Section that should review your grant proposal and the Institute that should fund your proposal. The Study Section is one of the Initial Review Groups that will evaluate the scientific merit of the applicant's proposal. It is helpful to know the membership of the Study Section targeted to receive your grant proposal since these biomedical researchers will read, review and score your grant proposal.

The *NIH Advisory Committees* book, October, 1991 Edition, is available in the Research Office and contains detailed information about the NIH peer review system, including biomedical researchers appointed to the study sections. Please feel free to consult this book before you prepare your grant proposal.

1993-94 American Heart Association Grants

The American Heart Association, National Center, has announced funding for heart research programs. Application forms are available from the Research Office.

Grant-in-Aid, 1993-94 to support research activities broadly related to cardiovascular function and disease, stroke, or to related basic science, clinical, and public health problems. **Application Receipt Deadline, July 1, 1992.**

Established Investigator, 1993-94, stipend support for promising scientists who have recently acquired independent status to ensure their continued success as investigators. These are five-year awards with five to nine years of postdoctoral experience at time of application. A minimum of 75% of time devoted to research, a maximum of \$45,000 stipend plus fringe benefits, required U.S. citizenship or permanent visa must be considered before application. **Application Receipt Deadline, June 1, 1992.**

Clinician Scientist Award, 1993-94, support for promising clinically trained physicians to undertake careers in investigative science. These are five-year awards for rigorous full-time research training of clinically trained MDs, DOs, or equivalent medical degrees. Ordinarily at application, not less than two years of clinical training and less than four years beyond qualifying for subspecialty board certification. Significant research experience not necessary but a strong commitment to a career of investigative medicine is necessary. This grant requires a minimum of 80% of time devoted to research. A stipend of up to \$44,000 is permitted plus fringe benefits. More details are available from the Research Office. **Application Receipt Deadline, June 1, 1992.**

Minority Scientist Development Award, 1993-94, to support promising scientists who are members of ethnic groups underrepresented in the field of cardiovascular research to develop independent research programs. Junior faculty and clinical faculty seeking basic research training may apply. **Application Receipt Deadline, June 1, 1992.**

International Research Fellowship, 1993-94, to support a postdoctoral research

training program in U.S. and foreign research centers for individuals who are building cardiovascular research careers but who are not yet independent. Things to consider are: U.S. citizens or permanent residents to be trained in foreign institutions; foreign citizens to be trained in U.S. institutions (foreign citizens already in the U.S. are not eligible); one-year award with an option to extend for a second year; evidence of potential for research career; \$25,000 stipend plus fringe benefits and travel allowance; doctoral degree required at time of activation; arrangements with sponsoring institution completed at time of application. **Application Receipt Deadline, June 1, 1992.**

NIH Revised PHS 398 Application Available

The newly revised Public Health Service grant application Form PHS 398 will be available in March. Applicants are to use the new form starting with: the May 2, 1992, receipt date for AIDS applications; the May 10, 1992, receipt date for NRSA Institutional Training Grant applications; the June 1, 1992, receipt date for research grant and Research Career Development Award applications. The revised PHS 398 form, dated 9/91 and approved through 6/30/94, replaces the current version that was revised 10/88 and approved through 3/31/91.

The revised form contains several significant changes and additions. Some of these are:

- a modest increase in page limitations for the research plan (from 20 to 25 pages) and for the introduction to revised applications (3 pages);
- an introductory section in the application kit on the peer review process, including contact telephone numbers for the awarding components of the Public Health Service;
- the requirement to list all of the personnel, not just key personnel, on the abstract page;
- a detailed discussion of the various assurances and certification requirements;
- an explanation of the necessary documentation regarding gender and minority status in study populations.

NIH Makes First Shannon Awards

A group of 310 scientists who fell short of obtaining regular NIH funding will now be able to remain productive thanks to the NIH new two-year \$100,000 Shannon awards. The coordinator of the program, Sue Ohata, says the recipients fall into three categories: young researchers who missed out on NIH's awards for first-time grantees; experienced scientists who want to move into a new research area and lack the track records of those already in the field; and investigators who need something to tide them over until their next full-fledged grant. (the Scientist, Vol. 5, No. 19, September 30, 1991).

TCOM Committees Related to Research Applications

Research applications requiring approvals or review for matters dealing with animals, human subjects, radiation safety, intellectual property, and recombinant DNA should consult with the following committee persons:

Animal Care and Use Committee

(ACUC)Edward L. Orr, Ph.D. x2045

Institutional Review Board (IRB, Human Subjects) Peter B. Raven, Ph.D. x2561

Radiation Safety (Radioactive Material & Waste) James L. Sims, Jr., Ph.D. x2697

Intellectual Property (Patents & Copyrights) Tom Yorio, Ph.D. x2056

Recombinant DNA

Myron K. Jacobson, Ph.D. x-2045

TCOM Researcher Reviews for NIH

H. Fred Downey, Ph.D., (Department of Physiology), was selected to review proposals February 19-21, 1992 for the Ad Hoc Cardiovascular Study Section A, National Institutes of Health - National Heart, Lung, and Blood Institute at Bethesda, Maryland.

• POSTER AND PAPER PRESENTATIONS •

A. Dan Dimitrijevič, Ph.D.,
Stephen R. Grant, Ph.D., X.-Q. Kang,
Graduate Student, Gopal Kulkarni,
Ph.D., Sushanta Mallick, Ph.D., G. S. J.
Rao, Ph.D., Tamara Reese, M.S., Q. Sun,
Ph.D., K. Ümit Yüksel, Ph.D.,

(Department of Biochemistry and Molecular Biology), attended the American Society for Biochemistry and Molecular Biology/Biophysical Society Meeting in Houston, February 9-14, 1992 and presented the following posters: "Relationship of the Catalytic Site and Primary Degradation Site of Triosephosphate Isomerase" by A. Q. Sun, K. Ümit Yüksel, K. D. Schnackerz, and R. W. Gracy; "Dihydropyrimidine Dehydrogenase: Isolation and Structural Analysis of the Native Enzyme and Its Primary Proteolytic Fragments" by B. Podschun, K. Jahnke, K. D. Schnackerz and R. W. Gracy; "Human Corneal Tissue Equivalent" by S. D. Dimitrijevič, T. Reese, L. X. Oakford, and R. W. Gracy; "Kinetic Characterization of the T-State of *Ascaris suum* Phosphofructokinase" by G. S. Jagannatha Rao, Paul F. Cook and Ben G. Harris; "Cloning and Complete Nucleotide Sequence of NAD⁺-Dependent Malic Enzyme from *Ascaris suum*" by Gopal Kulkarni, Paul F. Cook and Ben G. Harris; "Expression, Purification and Characterization of Recombinant Human Interleukin-8" by Stephen R. Grant and X.-Q. Kang and "Expression and Purification of Human Granulocyte Colony Stimulating Factor Using a Eucaryotic Vector Expression System" by Stephen R. Grant and Sushanta Mallick.

Robert W. Gracy, Ph.D.,
(Department of Biochemistry and Molecular Biology), attended the Biomolecules in Organic Solvents International Symposium in Taxco, Mexico, February 2-5, 1992, and presented a paper entitled "How Do Enzymes Wear Out? Molecular Wear and Tear in Low Water Systems." He also attended a research conference at Merck Sharp & Dohme in Philadelphia, Pennsylvania and presented a seminar entitled "Protein Based Pharmaceuticals: Use of Tissue Equivalent Systems to Evaluate Efficacy, Stability, Modifications, and Safety" and

also participated in round table discussions on "Tissue Equivalents and Wound Healing" and "Protein Modification."

Andras G. Lacko, Ph.D., and
Bhalchandra J. Kudchodkar, Ph.D.,
(Department of Biochemistry and Molecular Biology), attended the Third International Symposium on Plasma High Density Lipoproteins and Atherosclerosis in San Antonio, Texas, March 4-6, 1992, and presented the following posters entitled: "Factors Influencing Plasma High Density Cholesterol (HDL-C) Levels" and "Plasma Lecithin Cholesterol Acyltransferase (LCAT) and Cholesteryl Ester Transfer Protein (CTEP) as Determinants of Changes in High Density Cholesterol (HDL-C) Levels" by Bhalchandra J. Kudchodkar, Stephen Weis, Michael B. Clearfield and Andras G. Lacko.

Rafael Alvarez-Gonzalez, Ph.D., and
members of his research group,
William Karsten, Ph.D., and Raheel
Qamar, Graduate Student, (Department of Microbiology and Immunology), attended the American Society for Biochemistry and Molecular Biology/Biophysical Society Meeting in Houston where they gave the following posters and papers: "Cholera Toxin-Catalyzed ADP-ribosylation of Poly(ADP-ribose) Polymerase" by M. Martinez, R. S. Price, J. Moss, and R. Alvarez-Gonzalez; "Chemical Stability of Protein-(ADP-ribose) Conjugates and Identification of the Peptide Acceptor Sites Involved in the Auto-poly(ADP-ribosylation) Reaction of PARP" by M. Pedraza-Reyes, T. A. Watkins, and R. Alvarez-Gonzalez; "Inhibition of Poly(ADP-ribose) polymerase by Arginine-Specific Mono(ADP-ribosylation)" by R. Alvarez-Gonzalez, M. G. Martinez-Cadena, S. J. Stanley, and J. Moss; "Malic Enzyme: Tritium Isotope Effects with Alternative Dinucleotide Substrates and Divalent Metal Ions" by W. E. Karsten, B. G. Harris, and P. F. Cook; "Examination of the Kinetic Mechanism of the cAMP Dependent Protein Kinase in the Direction of MgADP Phosphorylation as a Function of pH" by R. Qamar and P. F. Cook.

New Publications in the Research Office

The State of Texas Office of State-Federal Relations recently sponsored a Grant Writing Seminar that included representatives from federal and state health agencies. A book was published entitled *Grant Writing Seminar* that was designed to assist grantseekers in Texas to locate necessary information and resources, to offer suggestions on effective grant writing, and to expand your grant network. This guidebook contains information about useful publications such as the Federal Grants and Contracts Weekly and the Foundation Directory, along with addresses, telephone numbers and subscription fees. Also included is a list of Federal Regional Office Contacts for the State of Texas. These individuals are an important point of contact for many grants approved in Texas. There is also a section on useful tips from leading grant experts to help you improve your grant seeking techniques. This guidebook has 1006 pages and is available for perusal by interested persons in the Research Office.

Women in NIH Extramural Grant Programs - Fiscal Years 1981 - 1990 through a series of graphs, tables, and brief analyses of the data, explores the success of women as part of the biomedical community supported by the NIH. This publication was prepared by the Statistics, Analysis, and Evaluation Section, Information Systems Branch, Division of Research Grants, National Institutes of Health. It has over 107 pages plus appendices. A copy is available in the Research Office for reference.

The Welch Foundation 1991 Annual Report and 1991 Annual Report Supplemental Information contains valuable information about activities of the Foundation such as: Research Grants Initiated in 1991 that includes name of principal investigator, institution, and title of research; current departmental grants; statements of financial position, cash flow, and revenues and expenses; abstracts of current investigations. Researchers interested in determining who and what is funded by Welch will find these publications informative. Copies are available for consultation in the Research Office.

Grants and Awards, Funding Mechanisms, 1991 published by NIH and ADAMHA contains a wealth of information on the application process, the peer review process, funding mechanisms, an overview of the funding institutes and sources of information including the NIH Grant Line-Computer Online System.