

# ANNUAL REPORT



**A R I Z O N A**  
**D I S E A S E**  
**C O N T R O L**  
**R E S E A R C H**  
**C O M M I S S I O N**

FY 1989-90

ARIZONA DISEASE CONTROL RESEARCH COMMISSION

**ANNUAL REPORT**  
**FY 1989-90**

**Rose Mofford, Governor**

Ted Williams, Chairman

**COMMISSIONERS**

MEDICAL COMMUNITY

Herbert Abrams, MD

William Crisp, MD

Jon Rubach, MD

SCIENTIFIC RESEARCH COMMUNITY

Emmanuel Akporiaye, PhD

Mary Hendrix, PhD

William O'Callaghan, MD

GENERAL PUBLIC

Jane Aiken

James Matthews

Karen Carter Owens

**STAFF**

Robert Byars, PhD, Executive Director

Toshie Isogai, Business Manager

Elizabeth Duran, Secretary

1740 West Adams Street, Room 408, Phoenix, Arizona 85007

Telephone: (602) 542-1028

*The Arizona Disease Control Research Commission is an Equal Opportunity Affirmative Action Employer.*

*MESSAGE FROM THE CHAIRMAN*

*The Arizona Disease Control Research Commission (ADCRC) was established by the Arizona Legislature in 1984. The ADCRC provides funds for research on the causes, epidemiology, diagnosis, treatment, and prevention of diseases affecting Arizonans. The Commission is unique in the United States in its expenditure of public funds for basic research on a wide range of medical and health concerns. Funds are appropriated annually from penalties or interest on delinquent taxes. By statute, the Commission must prepare and submit a report on or before January 15 of each year to the Governor, the President of the Senate and the Speaker of the House of Representatives.*

*During the fiscal year, the Commission awarded 32 new contracts for 1990-91 for medical and health research in Arizona. Thirty-nine contracts will continue from the previous year. Summaries of the progress of the 74 projects in force during 1989-90 are presented in the third volume of ABSTRACTS, a copy of which may be obtained from the Commission.*

*As Chairman of the Arizona Disease Control Research Commission, I am pleased to report again on the progress of this unique State program. The improvement of the health of Arizona citizens through research by Arizona scientists and clinicians is the primary mission of the ADCRC. I would like to express my appreciation to the Commissioners for the time, energy and guidance they have brought to the award process.*

*Ted Williams  
Chairman*

Nine Commissioners serve to guide the work of the Arizona Disease Control Research Commission. They are appointed by the Governor and confirmed by the Senate. Three members represent the medical community, three represent the scientific research community and three represent the general public. Commissioners are appointed for three-year terms, unless reappointed. The terms of three members expire each year. The Director of the Department of Health of Services serves as Chairman of the Commission and *ex-officio* member. Commissioners serving at the end of fiscal year 1989-90 are presented below.

### Chairman and *Ex-Officio* Member

**Ted Williams**

Director  
Arizona Department of Health Services



Ted Williams was appointed Director of the Arizona Department of Health Services in January, 1987. Mr. Williams has extensive experience in state government. After serving as an Executive Assistant to Governor Raul Castro, Mr. Williams became Deputy Director of the Department of Health Services. Later he was named Deputy Director of the Arizona Department of Transportation. He also served as a consultant to the Arizona Legislature. Prior to his appointment as Director of the Arizona Department of Health Services, Mr. Williams was Executive Vice President of Baptist Hospitals and Health Systems.

**General Public Representatives:****Jane H. Aiken**

Faculty  
College of Law  
Arizona State University



Jane Aiken is Associate Professor of Law at Arizona State University. She was admitted to the Arizona Bar in 1986. Before joining the law faculty at ASU in 1985, Ms. Aiken was an Advocacy Fellow at the Center for Applied Legal studies at Georgetown. She is a member of the Arizona Civil Liberties, and she serves on the Medical Ethics Board of Phoenix Indian Hospital. Ms. Aiken has chaired the Governor's Task Force on AIDS since 1988. She was appointed to the ADCRC by Governor Mofford in June, 1988; her term expires in January, 1991.

**James B. Matthews**

Executive Secretary  
Arizona Corporation Commission



Jim Matthews has been Executive Secretary for the Arizona Corporation Commission since 1985. Prior to this, Mr. Matthews was Deputy Director of the Arizona Health Care Containment System (AHCCCS) and a policy advisor in the Arizona Department of Health Services. From 1979-1983, Mr. Matthews was a special assistant to Governor Bruce Babbitt. He received his Bachelor's degree in Education and Political Science from the University of New Mexico and his Master of Public Affairs degree from Arizona State University. Mr. Matthews' term expires in January, 1992. He was appointed by Governor Mofford in January, 1989.

**Karen Carter Owens**

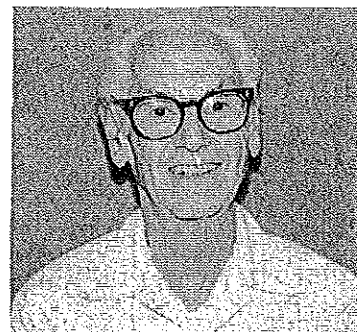
Attorney  
Lewis and Roca  
Phoenix



Karen Owens is a partner with Lewis and Roca in Phoenix. She has been associated with this law firm since 1984. She received a Bachelor's degree from Brown University and her law degree from Vanderbilt University. Ms. Owen's main area of professional interest and expertise is in health care. Her major civic involvements have been in health care as well. She was appointed by Governor Mofford in January of 1990. Her term expires in January, 1993.

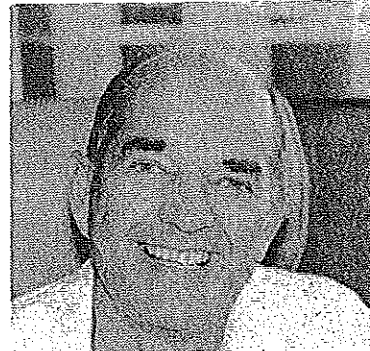
**Medical Community Representatives:**

**Herbert K. Abrams, M.D.**  
Family and Community Medicine  
College of Medicine  
University of Arizona



Herbert Abrams, M.D., was founder and Head (1968-1978) of the Department of Family and Community Medicine at the University of Arizona College of Medicine. From 1978 to 1983, he was Director of the Arizona Center for Occupational Safety and Health, which he also founded. He has been an Arizona resident for over twenty years. Dr. Abrams was first appointed to the Commission by Governor Babbitt. He was reappointed in 1987 and 1990. Dr. Abrams' term of office expires in January, 1993.

**William E. Crisp, M.D.**  
Gynecology and Oncology  
Phoenix



William Crisp, M.D., practices gynecology and oncology in Phoenix. He is also Clinical Associate Professor at the University of Arizona College of Medicine. At Maricopa County Hospital, Dr. Crisp is Chairman of the Department of Obstetrics and Gynecology, Director of Oncology, Director of the Medical Research Committee, and Director of the Cryobiology Laboratory. He is also Chairman of the Department of Obstetrics and Gynecology at Good Samaritan Hospital. Dr. Crisp served as President of both the Arizona Medical Association and the Maricopa Medical Society. He was appointed to the Commission by Governor Mofford in June, 1988; his term expires in January, 1991.

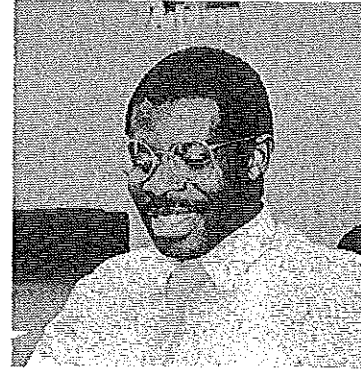
**Jon P. Rubach, M.D.**  
Oncology and Hematology  
Mesa



Jon Rubach, M.D., was appointed to the Commission by Governor Mofford in January of 1989. He has been a private practitioner in medical oncology in Mesa since 1976. He received his medical school training at the State University of New York at Buffalo from 1969-1973, and his internal medicine and oncology training at Affiliated Hospital in Buffalo from 1973-1976. Dr. Rubach served as Secretary of the Maricopa County Medical Society in 1988 and is President-Chief of Staff of Desert Samaritan Hospital in Mesa. He also holds a law degree from the University of Notre Dame and a Bachelor of Science degree in Biology from Siena College. Dr. Rubach's term expires in January, 1992.

**Scientific Research Community Representatives:**

**Emmanuel T. Akporiaye, Ph.D.**  
Department of Biological Sciences  
Northern Arizona University



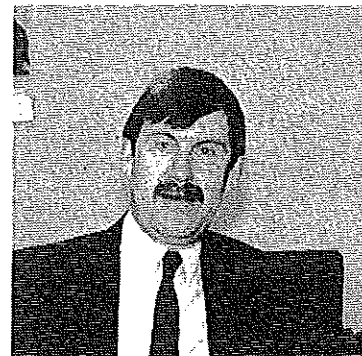
Emmanuel T. Akporiaye, Ph.D., was born in Nigeria and is on the Biology faculty at Northern Arizona University in Flagstaff. Dr. Akporiaye is a microbiologist who specializes in cancer biology and the immune response system. He was one of the earliest recipients of an ADCRC award. Professor Akporiaye received his Master of Science degree in Biology from New Mexico Highland University in 1978 and his Doctorate in Pathogenic Microbiology from the University of New Mexico in 1983. He was appointed to the Commission in January, 1989, by Governor Mofford. Dr. Akporiaye's term expires in January, 1992.

**Mary J. C. Hendrix, Ph.D.**  
Department of Anatomy  
College of Medicine  
Health Sciences Center  
University of Arizona



Mary Hendrix, Ph.D., received her doctorate in anatomy from George Washington University in Washington, D. C. Professor Hendrix is currently Associate Professor of Anatomy at the University of Arizona College of Medicine. Dr. Hendrix also is Adjunct Researcher in the Department of Pathology at the University of California School of Medicine in San Francisco. Dr. Hendrix was first appointed to the Commission in March, 1985, by Governor Babbitt. She was reappointed by Governor Mofford in 1988. Her term of office expires in January, 1991.

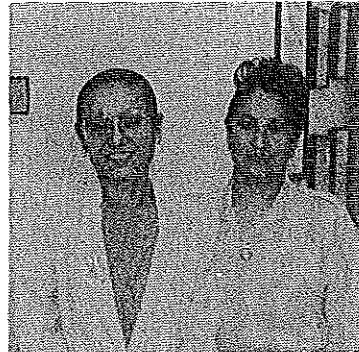
**William G. O'Callaghan, M.D.**  
Cardiologist  
Mayo Clinic Scottsdale



Dr. O'Callaghan is a consultant in cardiovascular disease at Mayo Clinic Scottsdale. Born in Tipperary, Ireland, Dr. O'Callaghan attended the National University of Ireland. He became a Member of the Royal College of Physicians of Ireland in 1979. Dr. O'Callaghan was a Fellow in Cardiology at the Duke University Medical Center from 1983 to 1986. He was a staff Cardiologist at the Veterans Administration Medical Center in Asheville, North Carolina in 1986 and 1987, and later served as Acting Chief of the Cardiology Section. He was awarded a Diploma from the American Board of Internal Medicine in 1988. As a medical researcher on cardiovascular disease, he is the author of numerous publications. Dr. O'Callaghan was appointed to the ADCRC by Governor Mofford. William O'Callaghan, M.D., was appointed in 1990. His term of office expires in January, 1993.

## Commission Staff

The ADCRC staff is composed of an Executive Director, a Business Manager, and a Secretary. The Executive Director, Robert S. Byars, Ph.D., was appointed in July of 1988. Dr. Byars has served about ten years in various administrative capacities in Arizona state government, including: the Governor's Office of Economic Planning and Development, the Arizona Health Care Cost Containment System (AHCCCS) and the Department of Health Services. He was on the faculty of the University of Illinois for seven years and he held a faculty-administrative position at Northern Arizona University for a year and a half. Dr. Byars completed his undergraduate work at the University of Arizona and his graduate work at the University of Illinois in Champaign-Urbana.



## Summary of Commission Activities, FY 1989-90

The Commission had a record number of contracts (74) with medical and health researchers in Arizona at the start of FY1989-90. This represented an increase of 28 percent over the previous year. Appendix 7 contains a complete listing of all contracts for FY1989-90.

Approximately 665 Requests for Proposals (RFPs) for FY1990-91 awards were mailed to potential applicants in August, 1989. The amount available for new contract awards for FY1990-91 was \$807,500. The Commission received 93 proposals by November 3, 1989, in response to the RFP. Appendix 1 presents a summary of the research applications received. Appendix 2 contains a listing of the proposals received, by category and priority area. In mid-November, the proposals were sent to panels of national scientific and medical experts for peer evaluation and review. An average of four reviews were sought for each proposal with a goal of receiving at least three evaluations back for each proposal.

In January, the Commission received 371 proposal evaluations from the out-of-state reviewers. The goal of at least three reviews for each proposal was achieved. The evaluations were distributed to the Commissioners in February, along with the proposals, for their review. The nine Commissioners formed three sub-committees to facilitate the review process.

In May, the Commissioners selected the award-winning proposals from the 93 applications submitted. Thirty-two proposals were funded. A complete list of those selected for new awards may be found in Appendix 3. The average size of a yearly award was \$24,803. The Commissioners encouraged the submission of quality research proposals for new, start-up projects. They added a new research priority area for next year: Aging and Disease.

Almost two-thirds of the applications submitted were from researchers at the University of Arizona. Applicants from the University of Arizona, in turn, received 24 of the new awards. Arizona State University researchers entered 13 proposals and received three awards. The following non-academic organizations received one award each: the local diabetes clinic of the National Institutes of Health, the Arizona Department of Health Services, and Good Samaritan Regional Health Center. Barrow Neurological Institute received two awards.

The 39 continuing awards for FY1990-91 are listed in Appendix 5. During FY1990-91, the ADCRC will be managing a total of 71 contracts.

### Special Survey of ADCRC Principal Investigators

A survey questionnaire of former principal investigators was mailed out in December in order to determine how much funding has come into the State of Arizona as a direct or indirect result of research funded by the ADCRC. There were 80 principal investigators on the list of former awardees of Commission research contracts. Seventy-four researchers (93%) responded to the survey.

Forty (55%) of the principal investigators who responded to the survey reported receiving funds from national sources as a result of the work they undertook with ADCRC support. Cumulative appropriations to the ADCRC between FY1985-86 and FY1988-89 amounted to \$8,710,000. The amount of funds attracted to the State (as of February, 1990) as a result of ADCRC-sponsored research was \$29,673,306. (A list of the outside grants may be found in Appendix 6.) Using these figures, it can be estimated that each dollar spent on ADCRC research during the first five years of the program has, indirectly or directly, helped to generate at least \$3.40 *so far* in new money coming into Arizona. While it cannot be claimed that Commission sponsorship was solely responsible for these funds coming into the State, it is certain that there is a genuine connection. This does not even consider the multiplier effect that is undoubtedly at work, as each added dollar generates additional research funds for the State.

Besides advancing the health and medical welfare of Arizonans, it can be argued, legitimately, that the program is contributing to economic development and job creation in the State. The survey will be repeated annually so as to remain current on these important statistics.

## APPENDICES

- 1 Summary Statistics of Research Proposals Received for FY1990-91 Awards
- 2 List of Research Proposals for FY 1990-91 Awards, by Priority Area
- 3 List of New Awards for FY 1990-91
- 4 Summary Statistics of New Awards for FY 1990-91
- 5 List of Continuing Awards for FY 1990-91
- 6 Survey of ADCRC Principal Investigators
- 7 List of Contractors for FY 1989-90

**APPENDIX 1**

**Summary Statistics of Research Proposals Received for  
FY1990-91 Awards**

**Summary Statistics of Research Proposals Received for  
FY1990-91 Awards**

Number of Proposals Received = 93

<u>Disease Categories</u>	<u>Number Received</u>	<u>Percent of Total</u>
Cardiovascular and other Circulatory Diseases	9	9.7%
Health Effects of Environmental Pollutants	7	7.5%
Health Promotion/Disease Prevention	13	14.0%
Infectious and Immunologic Diseases/Disorders	17	18.3%
Malignant Neoplasms	15	16.1%
Metabolic and Endocrine Disorders	14	15.1%
Neurologic, Mental and Behavioral Disorders	10	10.8%
Respiratory Diseases	8	8.6%

<u>INSTITUTION</u>	<u>Number Received</u>	<u>Percent of Total</u>
University of Arizona	58	62.4%
Arizona State University	13	14.0
National Institutes of Health (AZ)	5	5.4
St. Joseph's Hospital	3	3.2
Barrow Neurological Institute	3	3.2
AZ Department of Health Services	3	3.2
Northern Arizona University	2	2.2
Indian Health Service (AZ)	1	1.1
EnviroMD, Inc.	1	1.1
Good Samaritan Health Center	1	1.1
Maryvale Samaritan Health Center	1	1.1
Pima County Health Department	1	1.1
Tucson VA Medical Center	1	1.1

**APPENDIX 2**

**List of Research Proposals for FY1990-91 Awards  
by Priority Area**

## FY 1990-91 Contract Proposals

## Cardiovascular and Other Circulatory Diseases/Disorders

<u>ID No.</u>	<u>Principal Investigator</u>	<u>Institution</u>	<u>Project Title</u>	<u>Yrs</u>	<u>Budget Amount</u>
0-006	Carter	University of Arizona	Evaluation of Tissue Plasminogen Activator Therapy for the Treatment of Embolic Stroke	1	23,984 - -
0-028	Ewy	University of Arizona	Psychological Effects of Cholesterol Lowering Therapy	3	51,337 73,571 75,855
0-009	Johnson	University of Arizona	Vascular Reflexes in Hemorrhagic Hypotension	3	47,540 47,638 49,412
0-036	Lloyd	University of Arizona	Transcatheter Stenting of the Ductus Arteriosus as an Alternative to Surgical Systemic-Pulmonary Arterial Shunts	1	24,729 - -
0-007	Nolan	University of Arizona	Clinical Pharmacokinetics of Amiodarone in the Elderly, Obese and in Individuals with Hepatic Disease	3	24,898 24,975 24,998
0-004	Saad	National Institutes of Health	Risk Factors for Coronary Heart Disease in Pima Indian Men Aged 45-65 Years	2	52,500 26,250 -
0-063	Seals	University of Arizona	Influence of Aging on Physiological Responses to Heat Stress	3	24,715 24,479 24,549
0-005	Spetzler	Barrow Neurological Institute	Induced Cardiac Arrest and Brain Ischemia	1	88,275 - -
0-049	Thorpe	University of Arizona	Signal Transduction by Guanylate Cyclase	2	25,000 25,000 -

## FY 1990-91 Contract Proposals

## Health Effects of Environmental Pollutants

<u>ID No.</u>	<u>Principal Investigator</u>	<u>Institution</u>	<u>Project Title</u>	<u>Yrs</u>	<u>Budget Amount</u>
0-044	Buseck	Arizona State University	Health Effects and Characterization of Particulate Air Pollutants in Arid, Urban Environments: Phoenix and Tucson	3	128,885 135,716 141,823
0-035	Cartmel	University of Arizona	Assessment of the Long Term Health Effects of Occupational Exposure to Tritium in Arizona	2	24,805 24,616 -
0-020	Park	University of Arizona	Reducing Health Risks Posed by Aflatoxin Contamination	2	24,867 24,875 -
0-071	Pepper	University of Arizona	Health Risks Associated with Bacterial and Viral Pathogens in Groundwater	3	49,273 54,265 28,791
0-038	Pike	EnviroMD, Inc.	Comparative Risks of Asbestos Fibers in Public Schools and Community	2	164,417 93,765 -
0-084	Rykowski	University of Arizona	The Structure of Transposon Insertion Sites	3	25,000 25,000 25,000
0-027	Songer	University of Arizona	Listeria monocytogenes and Pathogenic Vibrio sp. in Shrimp: Prevalence and Rapid Detection	1	22,311 - -

## FY 1990-91 Contract Proposals

## Health Promotion and Disease Prevention

<u>ID No.</u>	<u>Principal Investigator</u>	<u>Institution</u>	<u>Project Title</u>	<u>Yrs</u>	<u>Budget Amount</u>
0-073	Balcazar	Arizona State University	Patterns of Fetal Growth and Maturity and Their Relationship to Prenatal Care Utilization and Maternal Risk Status in Hispanics as Compared to Whites in Maricopa County, Arizona	2	24,892 24,609 -
0-021	Campos-Outcalt	University of Arizona	Cardiovascular Disease Risk Factors in a Rural Arizona Population	1	24,750 -
0-042	Dillenberg	Arizona Department of Health Services	Survey of Oral Health Status and Treatment Needs of Arizona Elderly	3	24,710 24,147 24,900
0-080	Finley	University of Arizona	The Use of Recombinant DNA Technology and Restriction Fragment Length Polymorphism in the Study of Hemophilia A (Factor VIII Deficiency) and Carrier States in Arizona (Phase II)	2	22,202 22,202 -
0-023	Hastings	University of Arizona	Assessment of the Prevalence of Cyclopiazonic Acid Contamination of Food Commodities in Arizona	2	36,912 37,226 -
0-002	Hirano	Arizona Department of Health Services	Evaluation of the Potential Impact of the Five-Minute HIV Latex Agglutination Assay on HIV Counseling and Testing at an STD Clinic	1	17,154 -
0-051	Keller	Arizona State University	The Relationships among Selected Health Belief Variables and Cardiovascular Risk Factor Status	1	22,600 -
0-014	Masis	Tuba City PHS Indian Hospital	Use of a Prevention Worker for FAS Prevention in a Prenatal Population	2	24,974 24,989 -
0-001	Potenza	Good Samaritan Regional Medical Center	Injury Surveillance: State of Arizona	3	24,933 26,129 27,200
0-065	Schwartz	University of Arizona	Woman Abuse in Arizona: Establishing a Data Base for Health Care, Education and Research	2	24,176 24,562 -

0-039	Udall	University of Arizona	Immunoreactive Calcitonin in Mammalian Milk	2	24,972 24,201 -
0-085	Weiss	University of Arizona	Relationship between Illiteracy and Health Care Costs among Patients in the AHCCCS Program: Implications for Health Education	2	57,785 67,574 -
0-045	Yalkowsky	University of Arizona	Early Detection and Treatment of Phlebitis	1	24,388 - -

## FY 1990-91 Contract Proposals

## Infectious and Immunologic Diseases/Disorders

<u>ID No.</u>	<u>Principal Investigator</u>	<u>Institution</u>	<u>Project Title</u>	<u>Yrs</u>	<u>Budget Amount</u>
0-013	Adam	University of Arizona	Giardia Lamblia, an Immunization Strategy Based on a Major Surface Antigen	3	43,854 46,115 36,232
0-088	Ampel	University of Arizona	The Role of Cell-Mediated Immunity in Human Coccidioidomycosis	2	25,000 25,000 -
0-064	Crosby	University of Arizona	Psychoneuroimmunology of Rheumatoid Arthritis	3	25,000 25,000 25,000
0-003	England	Arizona Department of Health Services	Emergency Room HIV Seroprevalence Study	1	24,737 - -
0-089	Friedman	University of Arizona	Studies on the Invasion and Survival of Bordetella Pertussis in Human Monocytes	3	66,207 68,364 70,292
0-024	Hoffman	Arizona State University	Autoimmune Disease and Central Nervous System Involvement - A Hybridoma Model	3	25,000 25,000 25,000
0-055	Jacobs	Arizona State University	Characterization of the Interferon Sensitivity of the Human Immunodeficiency Virus	3	24,994 24,979 25,000
0-060	MacNeill-Yoshino	Pima County Health Department	Assessment of the Prevalance of Tuberculosis Infection in a County Prison Facility	1	24,984 - -
0-057	Maricic	University of Arizona	Longitudinal Assessment of Interstitial Lung Disease in Patients with Rheumatoid Arthritis and the Effects of Methotrexate Therapy	3	92,086 125,613 85,006
0-078	Payne	University of Arizona	Effect of Interferons and Interleukins of Natural Killer Cell-Mediated Damage to the DNA of Virally-Infected Target Cells	3	24,995 24,970 24,998
0-040	Petersen	University of Arizona	HIV Disease and Treatment in Arizona: Data Collection and Analysis	3	25,000 25,000 25,000

0-076	Pizziconi	Arizona State University	Evaluation of a Novel Immunobiosensor for Disease Detection	1	24,673 - -
0-059	Ray	University of Arizona	Molecular Pathogenesis of Epstein-Barr Virus (EBV) in Malignant Lymphomas and Chronic Illness	3	24,750 24,651 24,651
0-069	Ryan	University of Arizona	The Role of Surface Pilin in the Virulence of <u>Bordetella Pertussis</u>	2	24,946 24,946 -
0-056	Schumacher	University of Arizona	Immunotherapy of Africanized Bee Stings: Further Studies	2	25,000 25,000 -
0-048	Yocum	University of Arizona	Characterization of Natural Killer Cells in Patients with Rheumatoid Arthritis	1	25,070 - -
0-068	Zautra	Arizona State University	Life Stress and Neuro-Immune Function in Rheumatoid Arthritis	3	57,554 59,557 59,503

## FY 1990-91 Contract Proposals

## Malignant Neoplasms

<u>ID No.</u>	<u>Principal Investigator</u>	<u>Institution</u>	<u>Project Title</u>	<u>Yrs</u>	<u>Budget Amount</u>
0-043	Ahmann	Tucson VA Medical Center	Hemostatic and Fibrinolytic Defects in Prostate Cancer and Their Relation to a Prostate Specific Protease	1	24,998 - -
0-022	Bernstein	University of Arizona	Bile Acids, Fiber and DNA Damage: Relationship to Colon Cancer	3	25,000 25,000 25,000
0-082	Carmody	University of Arizona	Magnetic Resonance Imaging and Spectroscopy for Diagnosis and Staging of Bone Marrow Involvement by Hematologic Malignancies	2	24,979 24,938 -
0-034	Doss	Maryvale Samaritan Health Center	Incidence and Epidemiology of Adult Cancer in Central and Western Phoenix	3	25,000 24,424 24,804
0-061	Fennerty	University of Arizona	Clinical and Biologic Studies of Neoplastic Colorectal Polyps	3	22,410 22,974 23,769
0-062	Fennerty	University of Arizona	Clinical and Biologic Studies of Preneoplastic Gastric Lesions	3	22,385 23,366 24,237
0-046	Glasser	University of Arizona	Isolation, Characterization, and Long Term Culture of Human Hematopoietic Stem Cells	3	25,000 25,000 25,000
0-033	Klein	University of Arizona	Combination Chemotherapy plus Resistance Reversal Agent in Canine Lymphoma Patients	2	24,945 8,235 -
0-086	Laird	University of Arizona	Mechanism of Benzodiazepine Modulation of Normal and Malignant Cell Growth	2	45,861 38,168 -
0-052	Miesfeld	University of Arizona	Molecular Determinants of Androgen-Independent Prostate Cell Growth	3	25,000 25,000 25,000
0-047	Shimizu	University of Arizona	Aspects of Negative Regulation of EGF Receptor Gene Expression	3	20,988 21,997 24,997

0-050	Smith	Arizona State University	Regulation of <u>c-myc</u> Gene Expression by Interferons	3	25,000 25,000 25,000
0-093	Stachowiak	Barrow Neurological Institute	Proto-oncogene Expression in Neoplasia and in Neuron-like Differentiation	3	75,680 83,248 91,573
0-048	Yohem	University of Arizona	Modulation of Tumor Cell Invasion by Calcium Channel Blockers	2	24,945 24,945 -
0-011	Zoellner	Northern Arizona University	Metal-containing Potential Anti-Cancer Agents Prepared by Metal Vapor Synthesis (MVS) Techniques. Synthesis, Characterization, and Deoxyribonucleic Acid (DNA) Binding Studies	3	22,346 22,880 23,794

## FY 1990-91 Contract Proposals

## Metabolic and Endocrine Disorders

<u>ID No.</u>	<u>Principal Investigator</u>	<u>Institution</u>	<u>Project Title</u>	<u>Yrs</u>	<u>Budget Amount</u>
0-037	Beggs	St. Joseph's Hospital and Medical Center	Arterioles in the Nerves of Diabetics: Role of Arteriolar Denervation in Diabetic Neuropathy	1	24,340 - -
0-026	Brush	National Institutes of Health	Identification of Gene-Product Protein(s) Related to the Pathogenesis of Non-insulin Dependent Diabetes Mellitus	2	54,376 56,552 -
0-010	Dorson	Arizona State University	Optimizing the Augmented Hyperbilirubinemia Detoxification System	1	66,973 - -
0-058	Dorson	Arizona State University	Initial Investigation of a Peritoneal Hybrid Artificial Pancreas	2	24,995 24,991 -
0-030	Habib	University of Arizona	The Mechanism of Increased Free Radical Generation in Diabetes Mellitus	3	23,513 23,658 24,470
0-081	Jeevanandam	St. Joseph's Hospital and Medical Center	Altered Protein Synthesis Efficiency in Acute Major Injury	3	26,950 28,567 30,280
0-041	Knowler	National Institutes of Health	The Association of Diet with the Development of Non-Insulin-dependent Diabetes	1	20,350 - -
0-015	Putnam	University of Arizona	The Hepatic Component of Multiple Organ Failure: Endotoxin Mediated Injury and Reparative Failure	3	24,884 24,853 24,839
0-029	Rance	University of Arizona	Morphological Alterations in the Central Nervous System of Postmenopausal Women	3	23,322 24,179 24,692
0-019	Rao	University of Arizona	Role of Epidermal Growth Factor in Gastrointestinal Secretions	3	24,992 23,625 23,895
0-025	Ravussin	National Institutes of Health	Changes in Metabolic Rate during Weight Reduction. Are the Post-Obese Thrifty?	3	46,045 49,680 21,210

0-090	Siskind	University of Arizona	Evaluation of Bone Densitometry as a Non-invasive Method for Diagnosing Aluminum Related Osteodystrophy	2	24,933 24,639 -
0-017	Sommercorn	National Institutes of Health	Regulation of Protein Tyrosine Phosphatase Activity by Insulin in Skeletal Muscle of Human Subjects with Different Degrees of Insulin Resistance	3	25,000 25,000 25,000
0-012	Stevens	Northern Arizona University	Diabetes: Stress, Behavior, Metabolic Control and Moderators	2	26,789 27,810 -

## FY 1990-91 Contract Proposals

## Neurologic, Mental and Behavioral Diseases and Disorders

<u>ID No.</u>	<u>Principal Investigator</u>	<u>Institution</u>	<u>Project Title</u>	<u>Yrs</u>	<u>Budget Amount</u>
0-077	Barber	University of Arizona	Gastric-Hypothalamic Interactions	3	24,500 24,500 24,500
0-092	Burd	University of Arizona	Effects of Hyperthyroidism and Hypothyroidism on Neural Development	3	22,178 24,124 24,437
0-054	Enoka	University of Arizona	Neurological Impairment of Movement Capabilities in Older Individuals	3	24,527 23,435 24,878
0-087	Feinberg	University of Arizona	Endogenous Fibrinolysis in Cerebrovascular Disease	2	24,996 25,000 -
0-070	Glisky	University of Arizona	Computer Training for Patients with Organic Memory Disorders	3	25,182 25,396 25,773
0-079	Leonard	Barrow Neurological Institute	Early Locomotor Training in Cerebral Palsied and Normal Infants	2	47,288 46,298 -
0-053	McMullen	University of Arizona	Central Nervous System Sequelae Following Neonatal Deafness	3	22,355 20,918 21,860
0-091	Moore	University of Arizona	Central Nervous System Tissue Damage and Cognitive Impairments in Children with Acute Lymphoblastic Leukemia	3	24,988 24,987 24,987
0-008	Spetzler	Barrow Neurological Institute	Familial Cavernous Malformations: Study of the Natural History	2	19,963 21,185 -
0-066	Sweeney	Arizona State University	Electrically Enhanced Peripheral Nerve Regeneration: Evaluation of a New Neural Prosthetic Technique	1	25,000 - -

## FY 1990-91 Contract Proposals

## Respiratory Diseases

<u>ID No.</u>	<u>Principal Investigator</u>	<u>Institution</u>	<u>Project Title</u>	<u>Yrs</u>	<u>Budget Amount</u>
0-018	Birge	Arizona State University	Diagnosis of Human Coronavirus in Respiratory Specimens by Reaction with Monoclonal Antibodies	2	7,590 2,640 -
0-032	Blanchard	University of Arizona	Correlation of Salivary, Unbound and Total Serum Theophylline Levels with Lung Function Response in Young and Elderly Asthmatics	2	48,031 51,075 -
0-031	Bloom	University of Arizona	Cholinergic Mechanisms in Bronchoconstriction	1	24,832 - -
0-074	Doane	Arizona State University	DNA Variation at the Cystic Fibrosis Locus in American Indian and Hispanic Populations of the Southwest	2	25,000 25,000 -
0-075	Fregosi	University of Arizona	Influence of Hypoxia on the Control of Mammalian Expiratory Muscles	3	27,500 28,958 30,261
0-083	Grad	University of Arizona	Interactions among Macrophages, Inflammatory Stimuli and the Developing Fetal Lung	3	24,704 24,545 24,468
0-016	Habib	University of Arizona	Mechanism of Free Radical Induced Increase in Pulmonary Capillary Permeability	3	24,668 24,978 24,910
0-067	Lantz	University of Arizona	Pseudomonas Infection: Effect on Macrophage Function	3	21,606 23,450 24,518

**APPENDIX 3**

**List of New Awards for FY1990-91**

Arizona Disease Control Research Commission

New Awards for FY 1990-91

<u>Principal Investigator</u>	<u>Institution</u>	<u>Project Title</u>	<u>Award Amount</u>
Adam	University of Arizona	Giardia Lamblia, an Immunization Strategy Based on a Major Surface Antigen	25,000
Bloom	University of Arizona	Cholinergic Mechanisms in Bronchoconstriction	24,800
Burd	University of Arizona	Effects of Hyperthyroidism and Hypothyroidism on Neural Development	22,100
Cartmel	University of Arizona	Assessment of the Long Term Health Effects of Occupational Exposure to Tritium in Arizona	24,800
Dillenberg	Arizona Department of Health Services	Survey of Oral Health Status and Treatment Needs of Arizona Elderly	24,700
Fennerty	University of Arizona	Clinical and Biologic Studies of Preneoplastic Gastric Lesions	22,300
Finley	University of Arizona	The Use of Recombinant DNA Technology and Restriction Fragment Length Polymorphism in the Study of Hemophilia A (Factor VIII Deficiency) and Carrier States in Arizona (Phase II)	22,200
Friedman	University of Arizona	Studies on the Invasion and Survival of Bordetella pertussis in Human Monocytes	33,100
Herman	Good Samaritan Regional Medical Center	Injury Surveillance: State of Arizona	24,900
Johnson	University of Arizona	Vascular Reflexes in Hemorrhagic Hypotension	26,100

Keller	Arizona State University	The Relationships among Selected Health Belief Variables and Cardiovascular Risk Factor Status	22,600
Laird	University of Arizona	Mechanism of Benzodiazepine Modulation of Normal and Malignant Cell Growth	25,200
Leonard	Barrow Neurological Institute	Early Locomotor Training in Cerebral Palsied and Normal Infants	26,000
Lloyd	University of Arizona	Transcatheter Stenting of the Ductus Arteriosus as an Alternative to Surgical Systemic-Pulmonary Arterial Shunts	24,700
McMullen	University of Arizona	Central Nervous System Sequelae Following Neonatal Deafness	22,300
Miesfeld	University of Arizona	Molecular Determinants of Androgen-Independent Prostate Cell Growth	25,000
Moore	University of Arizona	Central Nervous System Tissue Damage and Cognitive Impairments in Children with Acute Lymphoblastic Leukemia	24,900
Nolan	University of Arizona	Clinical Pharmacokinetics of Amiodarone in the Elderly, Obese and in Individuals with Hepatic Disease	24,800
Payne	University of Arizona	Effect of Interferons and Interleukins of Natural Killer Cell-Mediated Damage to the DNA of Virally-Infected Target Cells	24,900
Pepper	University of Arizona	Health Risks Associated with Bacterial and Viral Pathogens in Groundwater	27,100
Petersen	University of Arizona	HIV Disease and Treatment in Arizona: Data Collection and Analysis	25,000
Rance	University of Arizona	Morphological Alterations in the Central Nervous System of Postmenopausal Women	23,300

Ray	University of Arizona	Molecular Pathogenesis of Epstein-Barr Virus (EBV) in Malignant Lymphomas and Chronic Illness	24,700
Rykowski	University of Arizona	The Structure of Transposon Insertion Sites	25,000
Shimizu	University of Arizona	Aspects of Negative Regulation of EGF Receptor Gene Expression	20,900
Smith	Arizona State University	Regulation of <u>c-myc</u> Gene Expression by Interferons	25,000
Sommercorn	National Institutes of Health	Regulation of Protein Tyrosine Phosphatase Activity by Insulin in Skeletal Muscle of Human Subjects with Different Degrees of Insulin Resistance	25,000
Spetzler	Barrow Neurological Institute	Familial Cavernous Malformations: Study of the Natural History	19,900
Thorpe	University of Arizona	Signal Transduction by Guanylate Cyclase	25,000
Weiss	University of Arizona	Relationship between Illiteracy and Health Care Costs among Patients in the AHCCCS Program: Implications for Health Education	28,800
Yohem	University of Arizona	Modulation of Tumor Cell Invasion by Calcium Channel Blockers	24,900
Zautra	Arizona State University	Life Stress and Neuro-Immune Function in Rheumatoid Arthritis	28,700

**APPENDIX 4**

**Summary Statistics of New Awards for FY1990-91**

## Summary Statistics of New Awards for FY1990-91

Total Number of New Awards: 32

<u>Disease Categories</u>	<u>No. of Awards</u>	<u>Percent of Awards</u>
Infectious and Immunologic Diseases/Disorders	6	18.8%
Malignant Neoplasms	6	18.8
Health Promotion/Disease Prevention	5	15.6
Neurologic, Mental and Behavioral Disorders	5	15.6
Cardiovascular and other Circulatory Diseases	4	12.5
Health Effects of Environmental Pollutants	3	9.4
Metabolic and Endocrine Disorders	2	6.3
Respiratory Diseases	1	3.1

<u>Institution</u>	<u>No. of Awards</u>	<u>Percent of Awards</u>
University of Arizona	24	75.0%
Arizona State University	3	9.4
Barrow Neurological Institute	2	6.3
National Institutes of Health (AZ)	1	3.1
AZ Department of Health Services	1	3.1
Good Samaritan Health Center	1	3.1

**Note:** One award to a University of Arizona researcher was declined. The contract was awarded to an Arizona State University applicant. The data reflect this change.

**APPENDIX 5**

**List of Continuing Awards for FY1990-91**

Arizona Disease Control Research Commission

Continuation Awards for FY 1990-91

<u>Principal Investigator</u>	<u>Institution</u>	<u>Project Title</u>	<u>Award Amount</u>
Bogardus	National Institutes of Health	A New Method to Measure Physical Activity in Man: Relationship with Age and Diabetes Mellitus	23,500
Brady	Institute for Biogerontology Research	Neuropathology of Memory Associated Regions in Alzheimer's Diseased Brain	21,000
Burt	University of Arizona	Role of Gap Junctions in Vascular Responses	36,800
Civin	Institute for Biogerontology Research	Brain-Immune Interactions in Alzheimer's Disease	24,500
Cluff	Arizona State University	Effects of Hearing Protection on Communication	18,500
Dillenberg	Department of Health Services	A Project to Assess the Actual Fluoride Levels in Arizona Water Supplies and to Determine the Knowledge About and Appropriate Utilization of Dietary Fluoride Supplements by Health Care Providers of Children	30,000
Duffy	University of Arizona	Hyperthermia Induced Polyamine Acetylation	24,500
Egen	University of Arizona	A Technique for Identifying and Quantifying Specific Rattlesnake Venom in Envenomated Patients	24,000
French	University of Arizona	Cellular Neurobiology of Psychosis Producing Drugs of Abuse: A Model for Schizophrenia	21,000
Friedman	University of Arizona	Further Development of Rapid Diagnostic Tools for Identification of Bordetella Pertussis	47,250
Galgiani	University of Arizona	Purification and Application of Antigens from <u>Coccidioides immitis</u> , Phase II	40,000

Gmitro	University of Arizona	In-Vivo Diagnosis and Localization of Disease via NMR and Optical Spectroscopy	25,000
Goldberg	University of Arizona	Cardiac Teratogenicity of Halogenated Aliphatic Hydrocarbons and Chromium in Avian and Mammalian Models	90,000
Grimes	University of Arizona	Biochemical Studies of the LAK Phenomenon	30,000
Harrison	University of Arizona	Validation of Objective Measures of Adherence to Low-Fat Diets	24,500
Hill	Arizona State University	Enhanced Isolation of Cis-Platinum-Resistant Mutants from Human Tumor Lines Following DNA Synthesis Inhibition	25,000
Holbert	Arizona State University	Radon Mitigation Demonstration: Southwest Tucson	22,200
Jeevanandam	St. Joseph's Hospital and Medical Center	Metabolic Responses to Trauma in Obese Subjects and the Nutritional Implications	25,000
Jeevanandam	St. Joseph's Hospital and Medical Center	Evaluation of Biochemical Markers of Catabolism in Trauma	25,000
Joens	University of Arizona	Investigations into the Invasive Properties of <u>Campylobacter jejuni</u>	19,000
Keller	Barrow Neurological Institute	Screening for Normalcy of Arterial Vasculature in Human Necks by Magnetic Resonance Angiography	19,000
Kreulen	University of Arizona	Antihypertensive Diuretic Drugs: Neurovascular Sites and Mechanisms of Action	65,000
Lam	University of Arizona	Antigen-directed Immunotherapy in B-cell Lymphoma	21,000

MacDonald	Southwest Biomedical Research Institute	Role of Arachidonoyl-Diacylglycerol Kinase in Fatty Acid Homeostasis: Effects on Inhibitors on Cellular Functions Related to Cardiovascular Disease	21,000
Martinez	University of Arizona	The Role of Orally and Parenterally Administered Growth Factors in Lung Development	20,950
McCuskey	University of Arizona	Role of Kupffer Cells in Liver Pathophysiology	24,500
Morkin	University of Arizona	Actions of Thyroid Hormone on the Heart: A New Basis for Treatment of Congestive Heart Failure	70,000
Perednia	University of Arizona	Computerized Skin Scanning for Early Detection, Evaluation, and Treatment of Skin Disease	25,000
Pettit	Arizona State University	Discovery and Development of New Anticancer Drugs	175,000
Prior	Northern Arizona University	Neural Modulation of Central and Peripheral Targets	20,000
Salmon	University of Arizona	Arizona Cancer Center Research Program	750,000
Santosham	Johns Hopkins University	BPIG Prophylaxis of Pneumococcal and Other Infections	90,000
Schram	University of Arizona	A New Approach to Diagnosis of HIV Infection and Staging of AIDS Based on Analysis of Urinary Nucleosides by GC-MS	30,000
Seftor	University of Arizona	Modulation of Cell Surface Dramatically Effects Tumor Cell Invasions: Analysis of Specific Composition and Structural Changes	24,600
Sommerfeld	Arizona State University	Urban Lakes: Potential Sinks for Biohazardous Substances	24,500

Witte, C.	University of Arizona	Boosting Extrasplenic Splenomimetic Function to Avert Fatal Post-Splenectomy Sepsis	24,500
Witte, M.	University of Arizona	Effect of Alcohol on the Hepatic Microvasculature in Vivo and in Vitro	24,500
Wright	University of Arizona	Pathways of Drug Excretion	35,000
Yocum	University of Arizona	Characterization of Epidermal Growth Factor Regulation in Rheumatoid Arthritis	21,000

**APPENDIX 6**

**Survey of ADCRC Principal Investigators**

Arizona Disease Control Research Commission

NATIONAL GRANT SURVEY RESULTS

As of March 22, 1990

Principal Investigator	Institution	1986-87		1987-88		1988-89		1989-90		TOTAL
		Amount	Source	Amount	Source	Amount	Source	Amount	Source	
Akporiaye	Northern Arizona University			\$398,000	NIH					\$398,000
Barber	University of Arizona							\$597,576	NIH	\$597,576
Bloom	University of Arizona							\$44,786	CFF	\$44,786
Bogardus	National Institutes of Health					\$90,000	ADA			\$90,000
Brannon	University of Arizona					\$374,722	NIH			\$374,722
Braun	University of Arizona							\$237,000	NSF	\$237,000
Burke	Arizona State University					\$40,639	WHO			\$40,639
Burt	University of Arizona	\$385,000	NIH			\$150,000	NIH			\$535,000
Carter	Barrow Neurological Institute					\$25,000	RP			\$25,000
Cusanovich	University of Arizona			\$200,000	CNR	\$186,000	NSF			\$386,000
Duffy	University of Arizona					\$658,928	NIH			\$658,928
Egen	University of Arizona					\$78,675	TAI			\$78,675
Galgiani	University of Arizona					\$69,000	VA			\$69,000
Hill	U of AVASU					\$360,000	NIH			\$360,000
Howard	University of Arizona					\$567,227	NIH			\$567,227

NATIONAL GRANT SURVEY RESULTS - As of March 22, 1990

Principal Investigator	Institution	1986-87		1987-88		1988-89		1989-90		TOTAL
		Amount	Source	Amount	Source	Amount	Source	Amount	Source	
Jacobs	Arizona State University			\$450,000	NIH					\$450,000
Jeevanandam	St. Joseph's Hosp. and Medical Ctr							\$14,000	RL	\$14,000
Korc	University of Arizona			\$750,000	NIH	\$650,000	NIH			\$1,400,000
Markle	Northern Arizona University					\$96,890	NIH			\$96,890
McCuskey	University of Arizona					\$3,738,503	NIH			\$3,738,503
Meister	University of Arizona			\$64,000	ALMF	\$44,000	MOD			\$108,000
Meltzer	University of Arizona							\$500,000	NIH	\$500,000
Montgomery	University of Arizona					\$246,000	DVA			\$246,000
Morkin	University of Arizona					\$2,744,795	NIH	\$60,000	VA	\$3,114,795
Mufson	Institute for Biogerontology Rsch					\$586,741	NIH			\$586,741
Nagle	University of Arizona					\$83,762	AHAF			\$83,762
Pettit	Arizona State University	\$156,580	NIH	\$205,909	NIH	\$210,332	USAMRIID	\$118,821	NIH	\$1,929,548
		\$226,472	NIH	\$167,558	NIH	\$212,717	NIH			
				\$119,854	NIH	\$390,074	NIH			
						\$121,231	NIH			
Rogers	Institute for Biogerontology Rsch					\$470,000	NIH			\$470,000
Salmon	University of Arizona	\$2,376,017	NIH	\$90,000	ACS	\$228,451	NIH	\$363,992	NIH	\$8,057,885
		\$279,068	OC	\$621,903	NIH	\$315,004	NIH	\$87,000	LSA	
		\$600,630	NIH	\$5,000	ACS/NIH	\$16,000	WWCCF	\$7,287	ACS/NIH	
						\$240,274	NIH	\$7,000	ACS/NIH	
						\$82,304	TL	\$9,000	ACS/NIH	

Principal Investigator	Institution	1986-87		1987-88		1988-89		1989-90		TOTAL
		Amount	Source	Amount	Source	Amount	Source	Amount	Source	
Salmon (continued)						\$153,354	SD	\$4,000	ACS/NIH	
						\$54,545	OC	\$180,000	ACS	
						\$10,000	CPC	\$50,000	EPF	
						\$1,024,892	NIH	\$48,700	SPR	
						\$724,545	NIH	\$96,640	BWC	
						\$297,279	NIH	\$65,000	CPC	
								\$20,000	ASTRO	
Sampliner	VA Medical Center	\$195,000	NIH							\$195,000
Smith	Arizona State University			\$482,900	NIH	\$81,923	ACS	\$288,700	NIH	\$853,523
Smothers	University of Arizona							\$90,000	NIH	\$90,000
Spetzler	Barrow Neurological Institute	\$605,794	NIH			\$107,388	MP	\$20,000	CS	\$801,682
Sterling	University of Arizona	\$150,000	EPA	\$167,000	EPA	\$68,500	OGP			\$317,000
Towe	Arizona State University					\$127,000	NSF			\$127,000
Udall	University of Arizona					\$3,738	RL			\$3,738
Van Wyck	University of Arizona	\$135,000	VA							\$781,450
		\$646,450	AI							
Volz	University of Arizona					\$89,000	DMC			\$89,000
Witte, M.	University of Arizona			\$125,405	WHO	\$430,831	NIH			\$566,236
						\$10,000	AMA			
Yamamura	University of Arizona							\$390,000	NIH	\$390,000
<b>TOTAL</b>	<b>40</b>	<b>\$5,756,011</b>		<b>\$3,847,529</b>		<b>\$16,570,264</b>		<b>\$3,499,502</b>		<b>\$29,673,306</b>

Note: This chart only contains the PI's responding to the survey who received out-of-state funds.

**Appendix 7**

**List of Contractors for FY1989-90**

Arizona Disease Control Research Commission

Contractors for FY 1989-90

<u>Principal Investigator</u>	<u>Institution</u>	<u>Project Title</u>	<u>Award Amount</u>
Barber	University of Arizona	Neurochemical Substances Which Generate or Block Brainstem Unitary Responses Concerned with Food Intake	24,500
Beggs	St. Joseph's Hospital and Medical Center	Diabetic Complications: Fate of Diabetic-Induced Tissue Changes Following Pancreas Transplant	24,300
Blanchard	University of Arizona	Procedures for Monitoring Free Theophylline Blood Levels: Evaluation of Binding Variability in Patients on Regular Theophylline Therapy	33,000
Bloom	University of Arizona	Cholinergic Mechanisms in Bronchoconstriction	24,500
Bogardus	National Institutes of Health	A New Method to Measure Physical Activity in Man: Relationship with Age and Diabetes Mellitus	23,000
Bogardus	National Institutes of Health	Glucose 1, 6-bisphosphate Content and Glycogen Synthase Activity in Human Skeletal Muscle and Their Relationship to Carbohydrate Metabolism in Normal and Non-Insulin Dependent Diabetic Subjects	25,000
Brady	Institute for Biogerontology Research	Neuropathology of Memory Associated Regions in Alzheimer's Diseased Brain	21,000
Brannon	University of Arizona	Aging and Digestive Function of the Pancreas	25,000
Braun	University of Arizona	Kidney Stones: A Basic Model to Elucidate the Development of Kidney Stones in Humans	24,500
Burke	Arizona State University	Genetic Manipulation of Mosquitocidal Bacteria	22,500

Burt	University of Arizona	Role of Gap Junctions in Vascular Responses	36,800
Buseck	Arizona State University	Health Effects and Characterization of Particulate Air Pollutants in Arid, Urban Envrionments: Phoenix and Tucson	100,000
Civin	Institute for Biogerontology Research	Brain-Immune Interactions in Alzheimer's Disease	24,500
Cluff	Arizona State University	Effects of Hearing Protection on Communication	18,500
Dillenberg	Department of Health Services	A Project to Assess the Actual Fluoride Levels in Arizona Water Supplies and to Determine the Knowledge About and Appropriate Utilization of Dietary Fluoride Supplements by Health Care Providers of Children	45,000
Dillenberg	Department of Health Services	Arizona State Pathfinder Survey	20,000
Dorson	Arizona State University	Augmented Hemoperfusion for the Treatment of Hyperbilirubinemia	65,000
Duffy	University of Arizona	Hyperthermia Induced Polyamine Acetylation	24,500
Egen	University of Arizona	A Technique for Identifying and Quantifying Specific Rattlesnake Venom in Envenomated Patients	24,500
Fajardo	University of Arizona	Prospective Comparison of Mammography Guided Fine Needle Aspiration Cytology of Suspicious Breast Lesions with Surgical Biopsy Pathology	12,100
Feinberg	University of Arizona	Molecular Markers of Hemostatis in Cerebrovascular Disease	24,500

Finley	University of Arizona	The Use of Recombinant DNA Technology and Restriction Fragment Length Polymorphism in the Study of Hemophilia A (Factor VIII Deficiency) and Carrier States in Arizona	24,900
French	University of Arizona	Cellular Neurobiology of Psychosis Producing Drugs of Abuse: A Model for Schizophrenia	21,000
Friedman	University of Arizona	Further Development of Rapid Diagnostic Tools for Identification of Bordetella Pertussis	47,250
Frink	University of Arizona	Prospective Comparison of Intrapleural Bupivacaine and Intravenous Narcotics for Hepatobiliary Interventional Radiologic Procedures	2,200
Galgiani	University of Arizona	Purification and Application of Antigens from <u>Coccidioides immitis</u> , Phase II	40,000
Glisky	University of Arizona	Training Patients with Organic Memory Disorders for a Computer Data-Entry Job	24,950
Gmitro	University of Arizona	In-Vivo Diagnosis and Localization of Disease via NMR and Optical Spectroscopy	25,000
Goldberg	University of Arizona	Cardiac Teratogenicity of Halogenated Aliphatic Hydrocarbons and Chromium in Avian and Mammalian Models	90,000
Griffin	Arizona State University	Marital Support as a Mediating Factor in the Effectiveness of the Treatment of Parkinson's Disease	24,800
Grimes	University of Arizona	Biochemical Studies of the LAK Phenomenon	30,000
Gruener	University of Arizona	Ion Channel Behavior of Cystic Fibrosis Epithelial Cells	50,000
Guilbeau	Arizona State University	Evaluation of Pericardial Substitutes	25,000

Harrison	University of Arizona	Validation of Objective Measures of Adherence to Low-Fat Diets	24,500
Hill	Arizona State University	Enhanced Isolation of Cis-Platinum-Resistant Mutants from Human Tumor Lines Following DNA Synthesis Inhibition	25,000
Holbert	Arizona State University	Radon Mitigation Demonstration: Southwest Tucson	22,200
Jacobs	Arizona State University	Mechanism of Induction of Virus-associated Diabetes Mellitus	24,500
Jeevanandam	St. Joseph's Hospital and Medical Center	Metabolic Responses to Trauma in Obese Subjects and the Nutritional Implications	25,000
Jeevanandam	St. Joseph's Hospital and Medical Center	Evaluation of Biochemical Markers of Catabolism in Trauma	25,000
Jeevanandam	St. Joseph's Hospital and Medical Center	Metabolic Responses to Multiple Trauma in Elderly and the Nutritional Implication	37,000
Joens	University of Arizona	Investigations into the Invasive Properties of <u>Campylobacter jejuni</u>	19,000
Keller	Barrow Neurological Institute	Screening for Normalcy of Arterial Vasculature in Human Necks by Magnetic Resonance Angiography	19,000
Komm	University of Arizona	Control of Neoplastic Growth by Modulation of Growth Factor Receptor Expression and Activation	24,500
Kreulen	University of Arizona	Antihypertensive Diuretic Drugs: Neurovascular Sites and Mechanisms of Action	60,000
Laird	University of Arizona	Mechanism of Benzodiazepine Modulation of Normal and Malignant Cell Growth	24,500

Lam	University of Arizona	Antigen-directed Immunotherapy in B-cell Lymphoma	21,000
MacDonald	Southwest Biomedical Research Institute	Role of Arachidonoyl-Diacylglycerol Kinase in Fatty Acid Homeostasis: Effects on Inhibitors on Cellular Functions Related to Cardiovascular Disease	21,000
Martinez	University of Arizona	The Role of Orally and Parenterally Administered Growth Factors in Lung Development	20,950
McCuskey	University of Arizona	Role of Kupffer Cells in Liver Pathophysiology	24,500
Meltzer	University of Arizona	Molecular Analysis of B-Cell Neoplasia	25,000
Montgomery	University of Arizona	Regulation of Lymphocyte Proliferation by Prolactin-Like Proteins	24,500
Morkin	University of Arizona	Actions of Thyroid Hormone on the Heart: A New Basis for Treatment of Congestive Heart Failure	70,000
Mufson	Institute for Biogerontology Research	Somatostatinergic System in Aged and Alzheimer's Disease Brain	24,500
Perednia	University of Arizona	Computerized Skin Scanning for Early Detection, Evaluation, and Treatment of Skin Disease	25,000
Petersen	University of Arizona	Comprehensive Data Collection and Statistical Analysis of HIV Infected Patients in Arizona	24,500
Pettit	Arizona State University	Discovery and Development of New Anticancer Drugs	175,000
Prior	Northern Arizona University	Neural Modulation of Central and Peripheral Targets	20,000

Ryan	University of Arizona	Molecular Methods for Detection and Characterization of Shigella Species	24,000
Salmon	University of Arizona	Arizona Cancer Center Research Program	750,000
Santosham	Johns Hopkins University	BPIG Prophylaxis of Pneumococcal and Other Infections	70,000
Schram	University of Arizona	A New Approach to Diagnosis of HIV Infection and Staging of AIDS Based on Analysis of Urinary Nucleosides by GC-MS	30,000
Seftor	University of Arizona	Modulation of Cell Surface Dramatically Effects Tumor Cell Invasions: Analysis of Specific Composition and Structural Changes	24,800
Smothers	University of Arizona	The Effect of Aluminum Contaminated Water Supply in Man: An Experimental Approach	24,500
Sommerfeld	Arizona State University	Urban Lakes: Potential Sinks for Biohazardous Substances	24,500
Spetzler	Barrow Neurological Institute	Familial Cavernous Malformations: Study of the Natural History	20,000
St. John	University of Arizona	ALS and Factors That Block Death of Motoneurons	24,500
Udall	University of Arizona	Development of a New Method to Assess Lactose Malabsorption	20,000
Unger	University of Arizona	Liposomal MR Contrast Agents	25,000
Valenzuela	University of Arizona	Prehospital Triage of Children with Non-Traumatic Illness--A Comparison of Three Groups	24,000

Witte, C.	University of Arizona	Boosting Extrasplenic Splenomimetic Function to Avert Fatal Post-Splenectomy Sepsis	24,500
Witte, M.	University of Arizona	Effect of Alcohol on the Hepatic Microvasculature in Vivo and in Vitro	24,500
Wright	University of Arizona	Pathways of Drug Excretion	35,000
Yamamura	University of Arizona	Evaluation of Novel Opioid Drugs Using Cultured Neuroblastoma Cells	24,500
Yocum	University of Arizona	Characterization of Epidermal Growth Factor Regulation in Rheumatoid Arthritis	21,000