

APPENDIX C

Grants for Basic Research

ANTHROPOLOGICAL SCIENCES

- AMERICAN UNIVERSITY, Washington, D.C.; Harvey C. Moore; *Acculturation and Culture Change*; 2 years; \$12,800
- UNIVERSITY OF ARIZONA, Tucson, Ariz.; Frederick S. Hulse; *Biological Characteristics of Migrants*; 2 years; \$18,200
- Marvin A. Stokes, Geochronology Laboratories; *Late Prehistory of Northern Arizona*; 1 year; \$9,500
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Walter Goldschmidt, Los Angeles; *Cultural Concomitants of Ecological Change*; 2 years; \$30,800
- Robert F. Helzer; *Culture History of the Western Great Basin*; 1 year; \$4,500
- John T. Hitchcock, Los Angeles; *Study of Nepalese Tribe*; 18 months; \$22,800
- Rene F. Millon; *Urbanization of Teotihuacan*; 2 years; \$9,800
- D. L. Olmsted, Davis; *Prehistory of Northern California*; 2 years; \$13,000
- John H. Rowe; *Interpretations of Peruvian Archaeology*; 1 year; \$9,900
- CARLETON COLLEGE, Northfield, Minn.; Frank C. Miller; *Acculturation Among the Chipewea*; 1 year; \$4,200
- CATHOLIC UNIVERSITY OF AMERICA, Washington, D.C.; Svend Frederiksen; *Collection of Eskimo Teats*; 1 year; \$12,800
- CHICAGO NATURAL HISTORY MUSEUM, Chicago, Ill.; Paul S. Martin; *Archaeology of the Upper Little Colorado*; 1 year; \$8,500
- UNIVERSITY OF CHICAGO, Chicago, Ill.; Alan H. Jacobs; *Culture Change in the Masai*; 1 year; \$7,700
- Arthur J. Jellnek; *Prehistoric Change in New Mexico*; 1 year; \$5,600
- Norman A. McQuown; *Change and Continuity in Chiapas*; 2 years; \$25,000
- Manning Nash; *Social Change in a Plural Society*; 1 year; \$17,800
- COLUMBIA UNIVERSITY, New York, N.Y.; Ralph S. Solecki; *Prehistoric Man in Shanidar Valley, Northern Iraq*; 1 year; \$23,500
- William Duncan Strong; *Analysis of Excavation in Peru*; 1 year; \$2,800
- CORNELL UNIVERSITY, Ithaca, N.Y.; Charles F. Hockett; *Field Study of the Fijian Language*; 2 years; \$22,300
- Allan R. Holmberg; *Prehistoric Human Ecology in Peru*; 1 year; \$20,000
- DARTMOUTH COLLEGE, Hanover, N.H.; Gordon M. Day; *Study of the Abenaki Dialects*; 1 year; \$10,000
- HARTFORD SEMINARY FOUNDATION, Hartford, Conn.; Henry A. Gleason, Jr.; *Statistical Methods in Linguistic Reconstruction*; 1 year; \$6,400
- HARVARD UNIVERSITY, Cambridge, Mass.; Hallan L. Movius, Jr.; *Upper Palaeolithic Cultures in the Dordogne*; 2 years; \$35,000
- Evon Z. Vogt; *Study of Linguistic Usages*; 1 year; \$6,000
- HUMAN RELATIONS AREA FILES, New Haven, Conn.; George P. Murdock; *Atlas of Eurasian Cultures*; 1 year; \$28,800
- IDAHO STATE COLLEGE, Pocatello, Idaho; Earl H. Swanson; *Archaeological Investigations in Idaho*; 1 year; \$13,000
- UNIVERSITY OF ILLINOIS, Urbana, Ill.; Frederic K. Lehman; *Ethnographic Research in Chin Hills*; 1 year; \$9,800
- INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; Thomas A. Sebeok; *Computer Research in Psycholinguistics*; 1 year; \$15,800
- LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE, London, England; Raymond Firth; *Comparative Study of Extra-Familial Kinship*; 1 year; \$22,300
- LOS ANGELES STATE COLLEGE FOUNDATION, Los Angeles, Calif.; Robert H. Ewald and Louis C. Faron; *Ethnographic Survey in Eastern Panama*; 1 year; \$6,000
- LOUISIANA STATE UNIVERSITY, Baton Rouge, La.; William G. Haag; *Archaeological Research in the Caribbeans*; 1 year; \$13,000
- UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; James B. Griffin; *Prehistoric Occupations of the Great Lakes Area*; 1 year; \$27,000
- UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Eldon Johnson; *Archaeology of Glacial Lake Agassiz Basin*; 1 year; \$13,200
- UNIVERSITY OF NEW MEXICO, Albuquerque, N. Mex.; Frank C. Hibben; *Recovery of Prehispanic Paintings*; 1 year; \$12,800
- NORTHWESTERN UNIVERSITY, Evanston, Ill.; W. Creighton Gabel; *Ecological Adaptations in the Later Stone Age*; 2 years; \$21,900
- UNIVERSITY OF OREGON, Eugene, Oreg.; Luther S. Cressman; *Mandan Culture History*; 1 year; \$2,500
- Luther S. Cressman; *Research on Northwest Prehistory*; 2 years; \$21,700
- UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Alfred Kidder, II; *Archaeology of Tikal*; 1 year; \$23,000
- Froelich Rainey; *Research on Archaeological Techniques*; 1 year; \$27,900
- Ruben E. Reina; *Community Study in Peten*; 15 months; \$20,000
- SAN FERNANDO VALLEY STATE COLLEGE, Northridge, Calif.; Raoul Naroll; *Index of Social Development*; 1 year; \$3,000
- SMITHSONIAN INSTITUTION, Washington, D.C.; Clifford Evans; *Obsidian Dating*; 2 years; \$21,900
- Gordon D. Gibson; *Economic System of the Herero*; 1 year; \$10,000
- TEXAS TECHNOLOGICAL COLLEGE, Lubbock, Tex.; Francis E. Green; *Prehistoric Studies of Lubbock Reservoir*; 1 year; \$8,000

UNIVERSITY OF TEXAS, Austin, Tex.; T. N. Campbell; *Archaeological Salvage Project*; 1 year; \$8,200

TULANE UNIVERSITY OF LOUISIANA, New Orleans, La.; Henry Orenstein; *Indian Village Study*; 2 years; \$4,200

Robert Wauchope and E. Wyllys Andrews; *Development of Pre-Columbian Culture*; 3 years; \$40,700

UNIVERSITY OF WASHINGTON, Seattle, Wash.; Simon Ottenberg; *Anthropological Study of Urban Nigeria*; 6 months; \$2,800

YALE UNIVERSITY, New Haven, Conn.; Isidore Dyen; *Lexicostatistical Classification of the Malayopolynesian Languages*; 1 year; \$3,450

ASTRONOMY

AMHERST COLLEGE, Amherst, Mass.; Albert P. Linnell and Robert H. Koch; *Eclipsing Binaries*; 1 year; \$7,500

ASSOCIATION OF UNIVERSITIES FOR RESEARCH IN ASTRONOMY, INC. (AURA), Tucson, Ariz.; Aden B. Melnel, Kitt Peak National Observatory; *Preliminary Conceptual Design and Experimental Studies for Large Orbital Telescopes*; 1 year; \$252,300

BRIGHAM YOUNG UNIVERSITY, Provo, Utah; D. H. McNamara; *A Spectrographic Study of Beta Canis Majoris Stars*; 2 years; \$13,500

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; George H. Herbig, Lick Observatory, Mount Hamilton; *Design and Construction of High-Dispersion Nebular Spectrograph*; 18 months; \$30,300

Gerald E. Kron; *Photometric Investigations in the Southern Hemisphere at the Mount Stromlo Observatory, Canberra, Australia*; 1 year; \$1,800

Jerzy Neyman; *Statistical Studies of Double and Multiple Galaxies*; 1 year; \$12,100

Merle F. Walker; *Operation of the Lallemand-Type Image Converter*; 2 years; \$34,600

George Wallerstien, *Abundances of the Elements in High Velocity G Dwarf Stars*; 2 years; \$5,000

A. E. Whitford; *Application of a Pressure-Scanning Fabry-Perot Interferometer to High Resolution Stellar Spectroscopy*; 18 months; \$17,500

A. E. Whitford, Lick Observatory; *24-Inch Photometric Telescope*; 2 years; \$20,000

CARNEGIE INSTITUTION OF WASHINGTON, Washington, D.C.; Merle A. Tuve; *Development of Image Tubes for Telescopes*; 2 years; \$130,000

Merle A. Tuve; *Radio Astronomy H-Line Installation in South America*; 1 year; \$41,000

UNIVERSITY OF CHICAGO, Chicago, Ill.; Geoffrey Burbidge and E. Margaret Burbidge, Yerkes Observatory; *Spectroscopic and Photometric Studies of the Structure and Dynamics of External Galaxies*; 2 years; \$48,900

G. Van Blesbroeck; *Astrometric Investigations*; 1 year; \$8,200

Gerard P. Kuiper; *Development of Two Interferometer Telescopes*; 1 year; \$6,000

Richard H. Miller; *Equipment for Selected Photometric Observations*; 1 year; \$8,800

William W. Morgan, Yerkes Observatory; *Studies in Stellar Classification*; 4 years; \$35,700

WILLIAM C. ERICKSON, San Diego, Calif.; *A Design Study on Very Large Arrays for Radio Astronomy*; 3 months; \$1,000

UNIVERSITY OF FLORIDA, Gainesville, Fla.; Alex G. Smith; *Measurement and Analysis of Planetary Emissions at Radio Frequencies*; 2 years; \$26,500

GEORGETOWN UNIVERSITY, Washington, D.C.; Vera C. Rubin; *Photometric Reduction of Standardized Photographs of Galaxies*; 2 years; \$7,200

HARVARD UNIVERSITY, Cambridge, Mass.; David Layzer; *Theoretical Energy Levels and Transition Probabilities*; 1 year; \$17,600

William Liller; *Evolutionary Effects on the Continuous Spectra of Stars*; 1 year; \$2,700

Martha H. Liller; *Intensity Distribution in Galaxies in the Virgo Cluster*; 1 year; \$4,300

A. Edward Lilley; *Hydrogen-Line Radio Astronomy*; 6 months; \$126,600

HIGH ALTITUDE OBSERVATORY OF THE UNIVERSITY OF COLORADO, Boulder, Colo.; Walter Orr Roberts; *Equipment for New Graduate Program in Astro-Geophysics*; 1 year; \$9,060

UNIVERSITY OF ILLINOIS, Urbana, Ill.; Ivan R. King; *Dynamics of Star Clusters*; 1 year; \$4,000

A. J. Meadows; *The Rotational Velocities of Early Type Stars in Galactic Clusters*; 1 year; \$2,770

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; James Cuffey; *Light Curves, Color Curves, Periods and Changes in Periods of Short Period Variable Stars in the Globular Cluster Messier 53*; 1 year; \$5,800

John B. Irwin; *Analysis of Photoelectric Observations of Cepheids*; 1 year; \$6,900

INSTITUTE FOR ADVANCED STUDY, Princeton, N.J.; Bengt Stromgren; *Investigations of Age, Space Velocity, and Chemical Composition for 3000 A and F Stars Brighter Than 7^m on the Basis of Photoelectric Narrow-Band Photometry*; 2 years; \$19,800

UNIVERSITY OF KANSAS, Lawrence, Kans.; Henry G. Horak; *Computations in Radiative Transfer and Theoretical Photometry*; 1 year; \$9,600

Louisiana State University, Pierre R. Demarque; *The Influence of Chemical Composition on Stellar Evolution*; 2 years; \$17,300

LOWELL OBSERVATORY, Flagstaff, Ariz.; Henry L. Glaser; *Proper Motion Survey of the Northern Hemisphere with the 13-inch Photographic Telescope*; 3 years; \$41,600

John S. Hall; *Transfer of the Perkins Reflector to Flagstaff, Ariz.*; 1 year; \$231,300

MARIA MITCHELL OBSERVATORY, Nantucket, Mass.; Dorrit Hoffleit; *Research on Variable Stars, Especially in Sagittarius*; 3 years; \$10,800

UNIVERSITY OF MASSACHUSETTS, Amherst, Mass.; Robert Howard; *The Reduction of Observation of Magnetic Fields and Motions on the Surface of the Sun*; 2 years; \$8,860

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Jerome B. Wiesner; *Detection of the Galactic Deuterium Line*; 19 months; \$60,000

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; Orren C. Mohler; *Associations Between Terrestrial Magnetic Storms and Solar Activity*; 1 year; \$8,000

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; John R. Winckler and Edward P. Ney; *High Altitude Balloon Monitoring for Cosmic Rays and Solar Terrestrial Phenomena*; 4 months; \$54,700

MOUNT HOLYOKE COLLEGE, South Hadley, Mass.; Kenneth M. Yoss; *Relative Frequencies of G and K Giants With Weak and Strong CN Adsorption*; 1 year; \$850

NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL, Washington, D.C.; G. M. Clemence; *Support of Astrometric Research in the Southern Hemisphere*; 2 years; \$25,000

OFFICE OF NAVAL RESEARCH, Washington, D.C.; Edward P. Ney and John R. Winckler; *Solar Eclipse Measurements*; 1 month; \$15,000

OHIO STATE UNIVERSITY RESEARCH FOUNDATION, Columbus, Ohio; Philip C. Keenan; *Luminosities of Mira Variables and Related Variable Stars*; 2 years; \$6,300

John D. Kraus; *Completion and Instrumentation of the 360-foot Standing-Parabola, Tiltable-Flat-Sheet-Reflector Radio Telescope*; 1 year; \$71,900

W. E. Mitchell; *Photometric Atlas of the Solar Spectrum*; 1 year; \$10,300

OHIO WESLEYAN UNIVERSITY, Delaware, Ohio; Arne Slettebak; *Installation of 16/24-Inch Schmidt Telescope at Perkins Observatory*; 2 years; \$41,700

L. C. PELTIER, Delphos, Ohio; *Relocation of Observatory*; 1 year; \$1,500

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; William Biltzstein and Frank B. Wood; *Astronomical Research in the Infrared*; 1 year; \$7,700

PRINCETON UNIVERSITY, Princeton, N.J.; Martin Schwarzschild; *High Altitude Astronomy*; 2 years; \$500,000

RENSSELAER POLYTECHNIC INSTITUTE, Troy, N.Y.; J. Mayo Greenberg; *The Scattering of Light by Small Particles*; 1 year; \$24,000

Alan S. Meltzer; *Investigation of Astronomical Data Pertaining to Extinction and Polarization by Nonspherical Particles*; 1 year; \$4,900

RIPON COLLEGE, Ripon, Wis.; Dino Zel; *Possible Turbulence in Sun Spots*; 1 year; \$5,500

STANFORD UNIVERSITY, Stanford, Calif.; Ronald N. Bracewell; *Solar Radio Emission*; 1 year; \$11,160

UNIVERSITY OF TEXAS, Austin, Tex.; Frank N. Edmonds, Jr.; *An Analysis of Solar Astronomy*; 18 months; \$6,200

A. W. Straiton; *A Radio Telescope for Millimeter Wavelengths*; 1 year; \$20,900

VASSAR COLLEGE, Poughkeepsie, N.Y.; Henry Albers; *An Infrared Survey of a Region in the Scutum Cloud*; 2 months; \$2,200

WESLEYAN UNIVERSITY, Middletown, Conn.; Heinrich K. Elchhorn; *Determination of the Inner Systematic Errors of the Northern Hyderabad Zone of the Astrographic Catalogue and Redetermination of Its Plate Constants*; 1 year; \$6,700

Thornton Page; *Nebular Spectroscopy in the Southern Hemisphere*; 1 year; \$13,700

UNIVERSITY OF WISCONSIN, Madison, Wis.; Julian E. Mack; *Spectrum Line Shapes in the Solar Corona*; 2 years; \$10,900

YALE UNIVERSITY, New Haven, Conn.; Harlan J. Smith; *Planetary Nonthermal Radio Emission*; 2 years; \$33,500

ATMOSPHERIC SCIENCES

ADELPHI COLLEGE, Garden City, N.Y.; Sherman C. Lowell; *Atmospheric Applications of Theoretical Fluid Mechanics*; 8 years; \$46,400

AMERICAN METEOROLOGICAL SOCIETY, Boston, Mass.; Kenneth C. Spengler; *Cumulative and Current Bibliography on Weather Modification and Cloud Physics*; 3 years; \$40,800

UNIVERSITY OF ARIZONA, Tucson, Ariz.; Myron L. Corrin; *The Surface Properties of Heterogeneous Condensation Nuclei*; 3 years; \$114,900

Walter H. Evans and Robert L. Walker; *A Physical Model for the Lightning Discharge*; 3 years; \$100,300

ATMOSPHERIC RESEARCH GROUP, Altadena, Calif.; Paul B. MacGready, Jr., Theodore B. Smith, and Clement J. Todd; *Flagstaff Cumulus Cloud Studies*; 3 years; \$195,700

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Jacob Bjerknes; Los Angeles; *Sea Surface Temperature and Atmospheric Circulation*; 3 years; \$86,000

Jorgen Holmboe, Gordon MacDonald, Walter Munk, and Clarence Palmer; *Theoretical and Experimental Atmospheric Sciences*; 8 years; \$600,000

Walter H. Munk and Frank E. Snodgrass, Scripps Institution of Oceanography, La Jolla; *Oceanic and Atmospheric Tides*; 3 years; \$129,000

UNIVERSITY OF CHICAGO, Chicago, Ill.; Horace R. Byers and Roscoe R. Braham; *Physical Effects of Silver Iodide Seeding in the Great Plains*; 3 years; \$230,400

Dave Fultz; *Meteorological Experimental Hydrodynamics*; 3 years; \$215,000

George W. Platzman; *Numerical-Dynamical Studies of the Atmospheric General Circulation*; 3 years; \$79,000

COLORADO STATE UNIVERSITY RESEARCH FOUNDATION, Fort Collins, Colo.; Richard A. Schleusener; *Hail Suppression Evaluation*; 1 year; \$7,900

Richard A. Schleusener; *Study of the Characteristics and Formation of Hail Over the Western Great Plains*; 2 years; \$59,300

COLUMBIA UNIVERSITY, New York, N.Y.; William L. Donn; *Atmospheric Micro-Oscillations*; 3 years; \$75,100

Richard L. Pfeffer; *Atmospheric Dynamics*; 3 years; \$133,400

CORNELL UNIVERSITY, Ithaca, N.Y.; Ralph Bolgiano, Jr.; *Refractive Index Irregularities in Stably Stratified Atmosphere*; 8 years; \$32,700

Henry G. Booker; *Propagation of Radio Waves in and Above the F. Region*; 3 years; \$61,800

C. W. Gartlein; *Origin and Morphology of the Aurora*; 3 years; \$104,300

HARVARD UNIVERSITY, Cambridge, Mass.; Richard M. Goody; *Atmospheric Physics (Studies of Various Atmospheric Phenomena)*; 3 years; \$172,200

UNIVERSITY OF HAWAII, Honolulu, Hawaii; Walter R. Steiger; *Cosmic Ray Neutron Monitor*; 1 year; \$6,000

HIGH ALTITUDE OBSERVATORY OF THE UNIVERSITY OF COLORADO, Boulder, Colo.; Walter Orr Roberts; *Interdisciplinary Studies in Solar-Upper Atmosphere Relationships*; 3 years; \$125,000

UNIVERSITY OF ILLINOIS, Urbana, Ill.; Glenn Stout; *Evaluation of Electric Charges Induced in the Atmosphere*; 8 months; \$12,000

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Lewis D. Kaplan; *Infrared Fluorine in the Earth's Atmosphere*; 3 years; \$139,600

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; Wendell Hewson and Gerald C. Gill; *Atmospheric Diffusion in Transitional States*; 3 years; \$150,000

NATIONAL ACADEMY OF SCIENCES, Washington, D.C.; G. D. Meld; *Support of IGO Secretariat*; 1 year; \$40,000

NATIONAL BUREAU OF STANDARDS, Washington, D.C.; F. W. Brown; *Airglow Photometer IGO—1969*; 1 year; \$525

F. W. Brown; *World Data Center for Airglow and Ionosphere*; 1 year; \$65,000

H. F. McMurdie; *Silver Iodide Studies*; 2 years; \$40,000

NEW MEXICO INSTITUTE OF MINING AND TECHNOLOGY, Socorro, N. Mex.; Marvin H. Wilkening; *Radon and Its Decay Products in the Lower Atmosphere*; 3 years; \$56,100

NEW YORK UNIVERSITY, New York, N.Y.; Gerhard Neumann; *Measurements of the Reynolds Stress and Wind Stress-Wind Relationships Over the Sea Surface*; 2 years; \$50,500

OFFICE OF NAVAL RESEARCH, Washington, D.C.; B. Vonnegut, Arthur D. Little, Inc.; *Cloud Electrification Studies*; 1 year; \$50,000

B. Vonnegut and C. B. Moore; *Cloud Electrification Studies*; 1 year; \$50,000

OREGON STATE COLLEGE, Corvallis, Oreg.; F. W. Decker; *Observation of Hailfalls and Related Atmospheric Phenomena in Southern Oregon*; 2 years; \$30,400

PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.; H. D. Rix; *Study of Photo-detachment Cross Sections for Negative Halogen Ions*; 2 years; \$59,800

TEXAS AGRICULTURAL AND MECHANICAL RESEARCH FOUNDATION, College Station, Tex.; Donald W. Hood; *Sea-Air Interface Carbon Dioxide Exchange Phenomena*; 2 years; \$43,000

Vance Moyer; *Radar Investigation of Subtropical Precipitation*; 3 years; \$90,200

UNIVERSITY OF TEXAS, Austin, Tex.; Charles W. Tolbert; *Microwave Radiating and Reflecting Properties of Precipitation*; 3 years; \$115,000

TUFTS UNIVERSITY, Medford, Mass.; Irving Schell; *Ocean Ice-Sea Temperature-Weather Interrelations*; 3 years; \$50,700

U.S. DEPARTMENT OF AGRICULTURE—FOREST SERVICE, Ogden, Utah; D. M. Fuquay; *Investigation of Cloud Modification Techniques to the Problem of Lightning-Caused Forest Fire*; 30 months; \$63,900

U.S. WEATHER BUREAU, Washington, D.C.; F. W. Reichelderfer; *Specialized Upper Air Observations for the Santa Barbara Cloud Seeding Project*; 1 year; \$4,200

Helmut Landsberg; *World Data Center A for Meteorology and Nuclear Radiation*; 1 year; \$37,000

F. W. Reichelderfer; *Specialized Upper Air Observations at Santa Monica, Calif.*; 1 year; \$4,200

UNIVERSITY OF VERMONT AND STATE AGRICULTURAL COLLEGE, Burlington, Vt.; Richard J. Howard; *Molecular Association in Super-Saturated Vapors*; 3 years; \$52,700

UNIVERSITY OF WASHINGTON, Seattle, Wash.; Robert G. Fleagle; *Wind, Temperature and Humidity Profiles at Sea*; 2 years; \$40,500

CHEMISTRY

AGNES SCOTT COLLEGE, Decatur, Ga.; W. Joe Frierson; *Paper Chromatographic Separation, Spectrophotometric Determination and New Reagents for Determination of Traces of Metallic Ions*; 3 years; \$3,400

ALBION COLLEGE, Albion, Mich.; Paul L. Cook; *Hydrogenations With Nickel-Aluminum Alloy in Aqueous Alkaline Solution*; 3 years; \$10,500

ALFRED UNIVERSITY, Alfred, N.Y.; Clifford E. Myers; *Vaporization Properties of Phosphides*; 2 years; \$13,300

George J. Young; *Adsorption and Wetting Phenomena in Hydrophobic Systems*; 2 years; \$9,700

ARIZONA STATE UNIVERSITY, Tempe, Ariz.; Roland K. Robins; *Physical and Chemical Properties and Molecular Structure of Certain Purines and Purine Antagonists*; 3 years; \$55,500

UNIVERSITY OF ARIZONA, Tucson, Ariz.; Henry Frelser; *Application of Gas-Liquid Chromatography to Inorganic Separation Processes*; 3 years; \$25,300

UNIVERSITY OF ARKANSAS, Fayetteville, Ark.; Samuel Siegel; *Stereochemistry of the Catalytic Hydrogenation of Aromatic and Hydroaromatic Compounds*; 3 years; \$29,500

Kurt H. Stern; *Interactions in Solution*; 2 years; \$11,400

BOSTON UNIVERSITY, Boston, Mass.; Norman N. Lichtin; *Chemical Kinetics, Activities and Ionization and Dissociation Equilibria of Electrolytes in Nonaqueous Media*; 3 years; \$43,500

Ronald M. Milburn; *Redox Reactions of Ligands*; 2 years; \$28,600

BOWDOIN COLLEGE, Brunswick, Maine; John E. Frey; *Solvent Properties of Compounds of Group IIIB Elements*; 2 years; \$16,600

BROWN UNIVERSITY, Providence, R.I.; Robert H. Cole; *Dielectric Properties of Inert Gases*; 18 months; \$13,300

Robert L. Kay; *Measurement of Transference Numbers in Solvents of Low Dielectric Constant*; 2 years; \$11,000

UNIVERSITY OF BUFFALO, Buffalo, N.Y.; Walter Dannhuser; *Electrical Conductivity in Polymeric Systems*; 1 year; \$5,600

Henry M. Woodburn; *Reaction of Trifluoroacetonitrile With Hydrogen-Containing Functional Groups*; 2 years; \$12,000

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; G. Wilse Robinson; *Low Temperature Chemistry*; 3 years; \$45,800

Ernest H. Swift; *Mechanisms of the Reactions Between Thioacetamide and Various Metals*; 3 years; \$29,600

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Lawrence J. Andrews and Raymond M. Keefer; *Solvent Effects on Polar Reactions of Organic Substances With Halogens*; 3 years; \$38,500

Kenneth Conrow; *Chemistry of Substituted Alkyl Tropilidene*; 2 years; \$9,000

Donald J. Cram; Los Angeles; *Chemistry of Organometallic Compounds*; 3 years; \$36,500

W. F. Glaueque; *Thermodynamic and Magnetic Properties at Low Temperatures*; 1 year; \$116,500

Eugene R. Hardwick; Los Angeles; *Scintillation Study of Radiation Damage in Crystalline Solids*; 3 years; \$18,700

James F. Horning; *Energy Transfer in Molecular Solids*; 2 years; \$20,400

- Frederick R. Jensen; *Basic Organic Chemistry*; 3 years; \$54,100
- Harry W. Johnson, Jr., Riverside; *Rearrangement of N-Bromosuccinimide to Beta-Bromopropionyl Isocyanate*; 2 years; \$10,000
- James D. McCullough; *Structural and Equilibrium Studies of Group VIB Compounds*; 2 years; \$29,900
- Donald S. Noyce; *Organic Reaction Mechanisms*; 3 years; \$54,800
- Robert L. Pecsok, Los Angeles; *Complexes of Chromium (II)*; 2 years; \$16,200
- Andrew Streltweiser, Jr.; *Theoretical Organic Chemistry*; 3 years; \$54,100
- CALVIN COLLEGE, Grand Rapids, Mich.; Roger J. Faber; *Electron Spin Resonance Study of Organic Free Radicals in Solution*; 3 years; \$11,500
- CARLETON COLLEGE, Northfield, Minn.; Helen F. Greef; *Characterization of Phenyl-Substituted Hydroxydiphenyl-Triazines*; 2 years; \$6,200
- CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pa.; Robert B. Carlin; 2, 6-Di-substituted Phenylhydrazones in the Fischer Indole Synthesis; 42 months; \$59,300
- Robert R. Holmes; *Pentacoordinated Molecules*; 2 years; \$12,000
- Robert J. Kurland; *Chemical Studies in Nuclear Magnetic Resonance and Electron Paramagnetic Resonance*; 3 years; \$25,700
- Robert G. Parr and Frank O. Ellison; *Theoretical Studies of the Electronic Structure of Molecules*; 3 years; \$59,700
- Frederick D. Rossini; *Thermochemistry*; 2 years; \$22,800
- Phillip L. Southwick; *Stereochemistry of Conjugate Addition*; 2 years; \$18,800
- CASE INSTITUTE OF TECHNOLOGY, Cleveland, Ohio; Melvin J. Astle; *Catalysis of Organic Reactions With Ion Exchange Resins*; 2 years; \$17,000
- Peter Kovacic; *Reaction of Metal Halides With Organic Compounds*; 2 years; \$23,600
- P. E. Pierce; *Brownian Motion Theory for Interacting Particles*; 2 years; \$17,500
- Donald R. Whitman; *Analysis of Nuclear Magnetic Resonance Spectra*; 2 years; \$20,900
- CATHOLIC UNIVERSITY OF AMERICA, Washington, D.C.; B. deB. Darwent; *The Lifetime and Reactions of Vibrationally Excited Species*; 3 years; \$36,800
- CENTRAL STATE COLLEGE, Wilberforce, Ohio; E. O. Woolfolk; *Reagents for Identification and Chromatographic Separation of Colorless Organic Compounds*; 3 years; \$10,500
- UNIVERSITY OF CHICAGO, Chicago, Ill.; Robert A. Clement; *Solvation Effects in Organic Reactions*; 30 months; \$24,800
- UNIVERSITY OF CINCINNATI, Cincinnati, Ohio; Frank R. Meeks; *Critical Phenomena in Binary Liquid Systems*; 2 years; \$11,700
- Milton Orchin; *Mechanism of Selenium-Catalyzed Dehydrogenations*; 2 years; \$1,100
- CLARK UNIVERSITY, Worcester, Mass.; Arthur E. Martell; *Metal Chlorate-Catalyzed Hydrolysis of Salicyl Phosphate and Related Compounds*; 3 years; \$22,900
- Edward N. Trachtenberg; *Mechanism of Nucleophilic Displacement in Betahaloketones, Mannich Bases and Related Compounds*; 2 years; \$12,400
- COLORADO SCHOOL OF MINES, Golden, Colo.; J. L. Hall; *Acetonitrile as a Solvent for Inorganic Reactions*; 3 years; \$19,800
- COLORADO STATE UNIVERSITY RESEARCH FOUNDATION, Fort Collins, Colo.; John B. Rogan; *Variables Influencing the Participation of an Olefinic Bond During Solvolysis*; 14 months; \$8,800
- UNIVERSITY OF COLORADO, Boulder, Colo.; John R. Lacher and Joseph D. Park; *Vapor Phase Calorimetry*; 5 years; \$55,800
- Henry J. Richter; *Chemistry of Pyracene*; 2 years; \$11,000
- COLUMBIA UNIVERSITY, New York, N.Y.; Benjamin P. Dalley; *High Resolution Microwave Spectroscopy*; 3 years; \$53,000
- Benjamin P. Dally; *Quadrupole and Nuclear Magnetic Resonance Studies of Electronic Distributions in Organic Molecules*; 3 years; \$87,600
- Cheves Walling; *Free Radical Reactions*; 3 years; \$51,700
- UNIVERSITY OF CONNECTICUT, Storrs, Conn.; Roy J. Gritter; *Free Radical Chemistry of the Organic Ligands in Coordination Compounds*; 3 years; \$18,300
- William L. Masterton and Emil J. Slowinski; *Effect of Pressurizing Gases on Surface Tensions of Liquids*; 1 year; \$9,000
- Carl W. Moeller; *Photochemical Reactions of Transition Metal Coordination Compounds*; 3 years; \$20,000
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UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N.C.; H. E. Lehman; *Nucleo-cytoplasmic Relationships in Embryonic Determination and Morphogenesis*; 5 years; \$59,800

NORTHWESTERN UNIVERSITY, Evanston, Ill.; R. C. King; *Genetic Control of Oogenesis in *Drosophila Melanogaster**; 8 years; \$43,600

OGLETHORPE UNIVERSITY, Atlanta, Ga.; Arthur L. Cohen; *Morphogenesis of the *Mycomycetes**; 1 year; \$15,800

OREGON STATE COLLEGE, Eugene, Oreg.; Leo E. Jones; *Cytological Observations on Somatic Cells of Angiosperms in Microculture*; 3 years; \$15,700

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Paul B. Green; *The Physical Basis of Cell Wall Growth*; 5 years; \$57,600

James W. Lash; *An Analysis of In Vitro Chondrogenesis*; 1 year; \$900

Donald G. Lee; *Vascularization of the Intervertebral Disc*; 1 year; \$1,800

Roy G. Williams; *Studies of Bone and Cartilage in Rabbits*; 3 years; \$22,400

UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa.; Ian M. Sussex and Joan Eiger Gottlieb; *Morphogenesis in the Shoot of Vascular Plants*; 3 years; \$41,800

PRINCETON UNIVERSITY, Princeton, N.J.; John T. Bonner; *Differentiation in the Cellular Slime Molds*; 5 years; \$50,800

Lionel I. Rebhun; *Fertilization and Cleavage in Marine Invertebrate Eggs*; 5 years; \$28,100

RESEARCH FOUNDATION, Oklahoma State University, Stillwater, Okla.; E. A. Grula; *Inhibition of Cell Division in *Erwinia**; 3 years; \$25,700

ROCKEFELLER INSTITUTE, New York, N.Y.; Man-Chiang Niu; *Induction of Specific Protein Synthesis*; 2 years; \$33,200

Paul Weiss; *Physical Influences in the Self Regulation of Development*; 1 year; \$6,000

RUTGERS, THE STATE UNIVERSITY, New Brunswick, N.J.; Charlotte J. Avers; *Cellular Differentiation in the Root Epidermis*; 3 years; \$35,300

STANFORD UNIVERSITY, Stanford, Calif.; Clifford Grobstein; *Cell and Tissue Interactions in Development*; 5 years; \$182,800

STATE COLLEGE OF WASHINGTON, Pullman, Wash.; E. S. E. Hafez; *Tubo-Ovarian Mechanisms of Ova Reception in Mammals*; 3 years; \$32,800

STATE UNIVERSITY OF IOWA, Iowa City, Iowa; H. W. Beams; *Fine Structure of Cells*; 5 years; \$43,600

UNIVERSITY OF TEXAS, Austin, Tex.; Walter V. Brown; *Fine Structure of Grass Chloroplasts*; 18 months; \$15,900

UNION COLLEGE AND UNIVERSITY, Schenectady, N.Y.; Raymond Rappaport, Jr.; *Comparative Cytosurgical Studies of Cytokinesis*; 3 years; \$3,000

UNIVERSITY OF VERMONT, Burlington, Vt.; Richard W. Glade; *Roles of Epidermis and Dermis in Amphibian Limb Regeneration*; 3 years; \$13,400

VILLANOVA UNIVERSITY, Villanova, Pa.; Roman Maksymowycz; *Cell Division and Tissue Differentiation During Leaf Development*; 2 years; \$10,100

WASHINGTON UNIVERSITY, St. Louis, Mo.; Robert M. Burton; *Metabolism of the Developing Central Nervous System*; 3 years; \$49,500

WAYNE STATE UNIVERSITY, Detroit, Mich.; Werner G. Heim; *Changes in the Serum Proteins During the Ontogeny of Mammals*; 1 year; \$5,700

WESLEYAN UNIVERSITY, Middletown, Conn.; John B. Morrill, Jr.; *Development of Specific Proteins in the Molluscan Embryo*; 3 years; \$28,000

UNIVERSITY OF WISCONSIN, Madison, Wis.; Robert L. Metzenberg; *Nucleic Acid and Protein Metabolism During Differentiation in Lethal Mutants of *Drosophila**; 2 years; \$12,800

YALE UNIVERSITY, New Haven, Conn.; Ian K. Ross; *Life Cycles, Cytology and Development of Selected Species of *Myxomycetes**; 3 years; \$9,800

J. S. Nicholas; *Experimental Analysis of Rat Development*; 3 years; \$41,000

YESHIVA UNIVERSITY, New York, N.Y.; Meyer Atlas; *Uptake of Tritiated Nucleosides by the Mouse Embryo*; 2 years; \$11,400

EARTH SCIENCES

UNIVERSITY OF ALASKA, College, Alaska; Troy L. Pewe; *Glaciological Investigations in Interior Alaska*; 2 years; \$21,900

AMERICAN MUSEUM OF NATURAL HISTORY, New York, N.Y.; Norman D. Newell; *Permian-Triassic Hiatus in Marine Rocks of South-eastern Europe*; 1 year; \$1,500

AMHERST COLLEGE, Amherst, Mass.; Bruce B. Benson; *Isotopic Analysis of Dissolved Gases in Ocean Waters*; 2 years; \$51,000

Bruce B. Benson; *Oxygen Isotope Determinations of Ancient Surface and Bottom Temperatures of the Oceans*; 2 years; \$55,600

ARIZONA STATE UNIVERSITY, Tempe, Ariz.; Clyde A. Crowley; *Nininger Meteorite Collection*; 1 year; \$240,000

UNIVERSITY OF ARIZONA, Tucson, Ariz.; Duwayne M. Anderson; *Forces of Interaction Between Finely Divided Silicate Particles*; 2 years; \$21,000

Jane Gray; *Palynology of the Tertiary Formations of the Northwestern United States*; 2 years; \$24,000

BROWN UNIVERSITY, Providence, R.I.; Bruno J. Gilletti, F. Donald Eckelmann and Alonzo W. Quinn; *Petrologic and Geochemical Problems Relating to Mountain Building*; 3 years; \$100,000

UNIVERSITY OF BUFFALO, Buffalo, N.Y.; Edward J. Buehler; *Eptauna From the Hamilton Group of Western New York*; 1 year; \$7,400

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Daniel I. Axelrod; Los Angeles; *The Tertiary Floras of Nevada*; 3 years; \$20,000

Daniel I. Axelrod and William S. Ting, Los Angeles; *Late Cenozoic Pollen Floras of California*; 2 years; \$18,200

M. N. Bramlette, H. C. Urey and Gustaf Arrhenius; *Purchase of Electron Microprobe*; 1 year; \$76,500

Perry Byerly; *Creep on the San Andreas Fault*; 3 years; \$31,750

- Frank W. Dickson, Los Angeles; *Geochemical and Field Studies of Borate Genesis*; 2 years; \$12,700
- Frank W. Dickson; *Ore Forming Processes*; 2 years; \$4,450
- J. Freeman Gilbert and Leon Knopoff, Los Angeles; *Seismic Theory and Interpretation*; 3 years; \$119,800
- William S. Fyfe; *Some Aspects of the Properties of Solids and Solutions at High Pressures and Temperatures*; 2 years; \$49,900
- J. J. Jurinak and D. H. Volman, Davis; *Thermodynamics of Water Adsorption by Kaolinite in the Monolayer Region*; 2 years; \$9,200
- J. Knauss, Scripps Institution of Oceanography, La Jolla; *Direct Current Measurements*; 1 year; \$71,400
- George C. Kennedy and Leason Adams, Los Angeles; *Rapidly-Running Transitions at Very High Pressure*; 18 months; \$33,400
- George C. Kennedy, Los Angeles; *The Evaluation of Thermoluminescence as a Geological and Archeological Tool*; 2 years; \$53,200
- John E. Tyler, Visibility Laboratory, Scripps Institution of Oceanography, La Jolla; *Hydro Optics Research*; 2 years; \$104,300
- Harold C. Urey, Scripps Institution of Oceanography, La Jolla; *Isotope Research on Paleotemperatures*; 2 years; \$23,000
- John Verhoogen; *Iron-Titanium Oxide Minerals*; 3 years; \$32,700
- Lionel E. Weiss; *Structural Geometry of the Repeatedly Deformed Rocks of the Southern Sierra Nevada*; 2 years; \$9,000
- CARTER COUNTY MUSEUM, Ekalaka, Mont.; Marshall E. Lambert; *Fossil Vertebrates of Southeastern Montana*; 5 years; \$10,000
- UNIVERSITY OF CHILE, Santiago, Chile; CInua Lomnitz; *Andean Structure*; 2 years; \$50,000
- UNIVERSITY COLLEGE OF RHODESIA AND NYASALAND, Salisbury, Southern Rhodesia; Dennis I. Gough; *Paleomagnetic Studies in Southern Rhodesia*; 3 years; \$22,900
- COLORADO SCHOOL OF MINES, Golden, Colo.; Robert M. Hutchinson; *A Petrotectonic and Radiometric Study of the North Part of Pikes Peak, Batholith, Colorado*; 2 years; \$15,600
- COLORADO STATE UNIVERSITY RESEARCH FOUNDATION, Fort Collins, Colo.; D. B. Simons; *Model-Prototype Relationships for Flow and Sediment Transport in Alluvial Channels*; 1 year; \$5,100
- COLUMBIA UNIVERSITY, New York, N.Y.; Wallace S. Broecker; Lamont Geological Observatory; *Methods of Age Determination Based on Inequilibrium in the Uranium Decay Series*; 3 years; \$50,000
- Maurice Ewing, Lamont Geological Observatory; *Sediment Drilling in Water Covered Areas*; 1 year; \$50,000
- Maurice Ewing, Lamont Geological Observatory; *Support of the Research Vessel VEMA*; 1 year; \$184,000
- David B. Ericson, Robert J. Mezles and Alan W. H. Be, Lamont Geological Observatory, Pallsades; *Oxygen Isotope Determinations of Ancient Surfaces and Bottom Temperatures of the Oceans*; 2 years; \$57,400
- Marshall Kay; *Comparison of Paleozoic Structure and Faunas in Northwest Europe With Those in Nevada*; 8 months; \$3,000
- DARTMOUTH COLLEGE, Hanover, N.H.; Richard E. Stolber; *Minor Elements in Sulfide Minerals*; 2 years; \$11,800
- DUKE UNIVERSITY, Durham, N.C.; S. Duncan Heron, Jr.; *Nature of Clay Minerals of the Atlantic Coastal Plain*; 2 years; \$31,300
- EARLHAM COLLEGE, Richmond, Ind.; Ansel M. Gooding; *Pleistocene Geology of Eastern Indiana*; 3 years; \$17,800
- FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; Lyman D. Toulimin; *Paleocene and Eocene Guide Fossils of the Coastal Plain of the Southeastern United States*; 27 months; \$20,400
- FRANKLIN AND MARSHALL COLLEGE, Lancaster, Pa.; Marvin E. Kauffman; *Jurassic Rocks in Western Montana*; 2 years; \$7,130
- UNIVERSITY OF GEORGIA, Athens, Ga.; Charles A. Salotti; *Field Investigations of Copper-Zinc Skarn Deposit at Cotopaxi, Colorado*; 2½ months; \$2,500
- John S. Schlee; *The Petrology of Basal Pennsylvanian Rocks of the Southern Appalachians*; 2 years; \$14,100
- UNIVERSITY OF HAWAII, Honolulu, Hawaii; Gordon A. Macdonald; *Geochemistry of Hawaiian Lavas*; 1 year; \$15,700
- IDAHO STATE COLLEGE, Pocatello, Idaho; Lawrence P. Richards; *Vertebrate Paleontology of the Tertiary Lake Beds of the Lemhi Valley Region, Idaho*; 1 year; \$4,800
- UNIVERSITY OF ILLINOIS, Urbana, Ill.; F. J. Steveson; *Paleobiochemical Research*; 2 years; \$19,250
- INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; John B. Droste; *Effect of Diagenesis Upon Clay Minerals in the Saline Environment*; 1 year; \$6,500
- IOWA STATE UNIVERSITY, Ames, Iowa; Don Kirkham; *Use of Deuterium in Soil-Plant Research*; 2 years; \$23,500
- JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; Hans P. Eugster; *Low-Grade Metamorphic Reactions*; 2 years; \$23,000
- R. B. Montgomery; *Analysis of Serial Oceanographic Observations*; 3 years; \$43,600
- UNIVERSITY OF KANSAS, Lawrence, Kans.; William K. Hamblin; *Origin and Significance of Reverse Drag Fault Fleazure Displacement*; 18 months; \$17,000
- James A. Peoples, Jr.; *Geophysical Investigations of the Midcontinent Gravity High*; 1 year; \$12,600
- KING'S COLLEGE, Newcastle-upon-Tyne, England; Stanley Keith Runcorn; *Paleomagnetism*; 2 years; \$6,700
- LEHIGH UNIVERSITY, Bethlehem, Pa.; J. Donald Ryan; *Cloverly-Inyan Kara Paleosurface*; 2 years; \$17,500
- Bradford Willard; *Study of the Harvey Bassler Collection*; 2 years; \$6,600
- LOS ANGELES COUNTY MUSEUM, Los Angeles, Calif.; Theodore Downs; *The Vertebrate Fauna of the Late Cenozoic of the Imperial Valley Region of California*; 1 year; \$7,400
- LOS ANGELES STATE COLLEGE FOUNDATION, Los Angeles, Calif.; Perry L. Ehlig; *Geology of the Pelona Schist*; 2 years; \$6,100
- ROYAL R. MARSHALL, Pasadena, Calif.; *Leads in Basalts and Eclogites*; 1 year; \$7,950
- MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Arthur J. Boucot; *Silurian and Lower Devonian Shelly Faunas*; 8 years; \$25,900
- Harold W. Fairbairn; *Purchase of an X-Ray Fluorescence Spectograph and Associated Equipment*; 3 months; \$20,000
- UNIVERSITY OF MASSACHUSETTS, Amherst, Mass.; George E. McGill; *Tectonic Development of the Imbricate Fault Zone of the*

- Sawtooth and Lewis and Clark Ranges*; 3 years; \$10,620
 UNIVERSITY OF MIAMI, Coral Gables, Fla.; Cesare Emiliani; *The Marine Laboratory, Miami*; *Paleotemperature Research*; 3 years; \$50,000
 F. F. Koczy; *Feasibility Study for a Catamaran for Oceanographic Research*; 1 year; \$18,600
 F. F. Koczy, The Marine Laboratory, Miami; *Geochemistry of Radioactive Elements in the Marine Environment*; 1 year; \$13,000
 F. F. Koczy; *Support of the Research Vessel GERDA*; 1 year; \$28,000
 Gene A. Rusnak and Gote Ostlund; *Radio-carbon Dating Laboratory*; 2 years; \$63,700
 UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; John M. DeNoyer; *Geophysical Investigations in the Huerfano Basin*; 2 years; \$15,600
 UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Paul W. Gast; *Isotopes of Lead and Strontium*; 2 years; \$29,000
 Frederick M. Swain; *Carbon Cycles of the Jurassic Period*; 2 years; \$10,500
 UNIVERSITY OF MISSOURI, Columbia, Mo.; Don L. Frizzell; *Taxonomic Study of Fossil and Recent Fish Otoliths*; 2 years; \$10,700
 MONTANA STATE UNIVERSITY, Missoula, Mont.; Robert W. Fields; *Stratigraphy and Paleontology of the Intermontane Basins of Western Montana*; 3 years; \$11,225
 John Hower; *Comparison of Recent and Ancient Glauconites*; 1 year; \$3,000
 NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL, Washington, D.C.; John N. Adkins; *Experimental Drilling in Deep Water*; 1 year; \$172,550
 John N. Adkins; *Study of the Problem of Drilling a Hole to the Mohorovicic Discontinuity*; 1 year; \$80,500
 UNIVERSITY OF NEW HAMPSHIRE, Durham, N.H.; Cecil J. Schmeer; *Thermal Basis for Polytypism*; 2 years; \$20,000
 NEW YORK UNIVERSITY, New York, N.Y.; Brooks F. Ellis; *Lithofacies and Ostracod Studies in Long Island Sound*; 1 year; \$5,000
 UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N.C.; Virgil I. Mann; *Gravity Survey in North Carolina*; 2 years; \$12,700
 OBERLIN COLLEGE, Oberlin, Ohio; Kathryn H. Chlshy; *Pollen Studies and Pleistocene Chronology of San Augustin Plains*; 2 years; \$3,360
 OFFICE OF NAVAL RESEARCH, Washington, D.C.; Capt. J. C. Myers, USN; *Committee on Oceanography of the National Academy of Sciences*; 1 year; \$20,000
 OHIO STATE UNIVERSITY RESEARCH FOUNDATION, Columbus, Ohio; R. P. Goldthwait; *Structure in the Stagnant Ice of Burroughs Glacier, Glacier Bay, Alaska*; 15 months; \$6,000
 Leslie C. Coleman; *Ionic Substitution in Monoclinic Pyroxenes*; 2 years; \$16,400
 Richard P. Goldthwait; *Slope Form in Relation to Micro-Climate*; 2 years; \$3,500
 UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE, Norman, Okla.; Charles G. Dodd; *Clay-Mineral Geochemical Research Program Related to the Occurrence of Borates*; 1 year; \$10,400
 H. E. Hunter; *Petrology of the Basic Intrusive Rocks of the Wichita Mountains*; 1 year; \$12,000
- OREGON STATE COLLEGE, Corvallis, Oreg.; Wayne V. Burt; *Operation of an Oceanographic Research Vessel*; 1 year; \$50,000
 W. H. Taubeneck; *Structure and Petrogenesis of Part of the Willowa Mountains*; 4 years; \$350
 UNIVERSITY OF OREGON, Eugene, Oreg.; J. Arnold Shotwell; Museum of Natural History; *Late Eocene Mammals of the Clarno Fauna of Oregon*; 2 years; \$13,500
 PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.; Benjamin F. Howell, Jr.; *Seismic Measurements of Crustal Thickness in the Central Appalachian Region*; 2 years; \$15,900
 M. L. Keith; *Composition of Calcareous Fossils and Limestones*; 2 years; \$18,500
 E. F. Osborn and Arnulf Muan; *The Role of Oxygen Pressure in the Crystallization and Differentiation of Basaltic Magma*; 3 years; \$50,000
 Joseph V. Smith and M. E. Bell; *Mineralogy of the Amphiboles*; 1 year; \$9,200
 O. F. Tuttle and C. W. Burnham; *Vapor Phase Composition in Granitic Magmas*; 2 years; \$70,000
 POMONA COLLEGE, Claremont, Calif.; Gerhard F. M. Oertel; *Mechanical Anisotropy of Solids During Deformation*; 1 year; \$11,500
 PRINCETON UNIVERSITY, Princeton, N.J.; William E. Bonini; *Seismic Crustal Measurements*; 2 months; \$9,500
 Alfred G. Fischer; *Paleogeographic and Tectonic Developments of Part of the Northern Calcareous Alps in Early Mesozoic Time*; 3 years; \$22,900
 John C. Maxwell; *Nature and Origin of the Rocky Mountain Crusted Structural Features*; 3 years; \$27,800
 PURDUE RESEARCH FOUNDATION, Lafayette, Ind.; Philip F. Low; *The Relation Between Ion Diffusion in Clay Systems and the Properties of Clay-Adsorbed Water*; 3 years; \$18,000
 RENSSELAER POLYTECHNIC INSTITUTE, Troy, N.Y.; Samuel Katz; *Elastic Constants at High Pressure and Temperature*; 1 year; \$8,600
 SAINT LOUIS UNIVERSITY, St. Louis, Mo.; Otto W. Nuttli; *Motion of the Earth's Surface Produced by the S. Wave of Earthquakes*; 1 year; \$8,400
 SMITHSONIAN INSTITUTION, Washington, D.C.; E. P. Henderson; *Acquisition of Beyer Tektite Collection*; 6 months; \$8,000
 SOUTHERN METHODIST UNIVERSITY, Dallas, Tex.; Eugene Herrin, Dallas Seismological Observatory; *Study of Regional Variations in Seismic Travel Time Data*; 2 years; \$28,700
 UNIVERSITY OF SOUTH DAKOTA, Vermillion, S. Dak.; Hugh D. Carlson; *The Petrology of the Tertiary Igneous Rocks of the Black Hills of South Dakota*; 2 years; \$23,000
 UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.; K. O. Emery; *Partial Support of Operation R/V Velero IV*; 2 years; \$80,000
 Paul Saltman and K. O. Emery; *Amino Acids in Basin Sediments Off Southern California*; 1 year; \$23,300
 SYRACUSE UNIVERSITY RESEARCH INSTITUTE, Syracuse, N.Y.; Dirk de Waard; *Metamorphic-Tectonic Analysis of Precambrian Structures in the Southwestern Adirondack Mountains*; 3 years; \$32,500
 TEXAS AGRICULTURAL AND MECHANICAL RE-

SEARCH FOUNDATION, College Station, Tex.; Richard G. Bader; *Bathymetry and Sediments of the Bay of Campeche*; 2 years; \$17,000

Donald W. Hood; *C¹⁴/C¹³ Ratio of Organic and Inorganic Carbon Fraction of Waters of the Caribbean and Gulf of Mexico*; 1 year; \$20,000

Donald W. Hood; *The Calcium Carbonate Solubility Equilibrium in Sea Water*; 2 years; \$38,500

Hugh J. McLellan; *Aid for Operating a Research Vessel for Basic Studies in Physical Oceanography and Marine Geophysics*; 1 year; \$30,350

UNIVERSITY OF TEXAS, Austin, Tex.; Virgil E. Barnes; *Research on Composition and Origin of Tektites*; 2 years; \$36,000

Ronald K. Deford; *Study of the Petrography, Biostratigraphy*; 2 years; \$30,000

Ernest L. Lundell, Jr.; *A Paleocological and Chronological Study of the Fossil Vertebrates Faunas from the Pleistocene River Terrace Deposits of Central Texas*; 2 years; \$8,300

Keith Young; *Curating the Adkins Paleontological Collections*; 4 years; \$32,000

U.S. COAST AND GEODETIC SURVEY, Washington, D.C.; J. H. Nelson; *World Data Center for Geomagnetism, Gravity, and Seismology*; 1 year; \$35,000

Harris B. Stewart, Jr.; *Oceanographic Studies*; 1 year; \$43,500.

UNIVERSITY OF UTAH, Salt Lake City, Utah; Kenneth L. Cook; *Geophysical Studies of the Belt of Great Trenches in Utah*; 18 months; \$25,000

Armand J. Eardley; *Study of the Quaternary Sediments of the Great Salt Lake Desert*; 2 years; \$27,100

VIRGINIA POLYTECHNIC INSTITUTE, Blacksburg, Va.; Bruce W. Nelson; *Clay Mineral Diagenesis*; 3 years; \$37,000

Charles I. Rich; *Virginia Agriculture Experiment Station; Aluminum Fixation in Interlayers of Expanded Clay Minerals*; 3 years; \$20,200

WASHINGTON UNIVERSITY, St. Louis, Mo.; H. N. Andrews, Jr.; *Paleozoic Plants*; 3 years; \$800

UNIVERSITY OF WASHINGTON, Seattle, Wash.; Arthur W. Fairhall; *Specific C¹⁴ Activity of Sequoia Wood*; 1 year; \$11,000

Richard H. Fleming; *Preliminary Mass Spectrometric Investigations*; 1 year; \$4,800

Richard H. Fleming; *Recent Sediments in Northeast Pacific*; 2 years; \$19,900

J. Hoover Macklin; *Tertiary Deformational History of the Great Basin-Colorado Plateau Transition Zone in Southwestern Utah*; 3 years; \$26,100

Francis A. Richards; *Chemical and Related Oceanographic Studies of Oxygen-Deficient Marine Environment*; 2 years; \$27,800

UNIVERSITY OF WISCONSIN, Madison, Wis.; John C. Rose; *Development of a Portable Apparatus for Determination of Absolute Gravity to One Milligal or Better*; 1 year; \$26,300

George P. Woollard; *Gravity Data in the United States*; 1 year; \$2,450

George P. Woollard, and R. P. Meyer; *Continuation of Seismic Refraction Crustal Studies in Selected Areas of Geologic Structure and/or Pronounced Gravity Anomalies*; 1 year; \$54,700

WOODS HOLE OCEANOGRAPHIC INSTITUTION, Woods Hole, Mass.; Vaughan T. Bowen;

Chemical and Geochemical Studies in the Sea; 2 years; \$300,000

J. B. Hersey; *Analysis of Geological Survey Data*; 1 year; \$15,700

YALE UNIVERSITY, New Haven, Conn.; Carl O. Dunbar, Peabody Museum of Natural History; *Curating Peabody Museum's Systematic Collection of Fusuline Foraminifera*; 1 year; \$6,200

Mead LeRoy Jensen; *Mass Spectroscopy as an Aid in Determining the Origin of Mineral Deposits*; 2 years; \$30,000

Karl K. Turekian; *Geochemistry of the Deep-Sea Sediments*; 2 years; \$40,000

ECONOMIC SCIENCES

UNIVERSITY OF CHICAGO, Chicago, Ill.; Norton S. Ginsburg; *Study of Asian Urbanization*; 1 year; \$15,000

HARVARD UNIVERSITY, Cambridge, Mass.; Burton H. Klein; *Economics of Research and Development*; 1 year; \$14,400

Thomas C. Schelling; *Experimental Study of Bargaining*; 18 months; \$26,500

IOWA STATE UNIVERSITY, Ames, Iowa; George Ladd and Wayne Fuller; *Distributed Lags in Econometric Analysis*; 2 years; \$17,500

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; Daniel B. Suits; *Research in Quantitative Economics*; 3 years; \$56,500

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Jacob Schmookler; *The Economics of Invention*; 2 years; \$2,850

NATIONAL BUREAU OF ECONOMIC RESEARCH, INC., New York, N.Y.; Geoffrey H. Moore; *Computer Studies of Business Cycles*; 3 years; \$96,000

PORTLAND STATE COLLEGE, Portland, Oreg.; Clarke H. Brooke, Jr.; *Geography of Famine in Tanganyika*; 1 year; \$13,000

PRINCETON UNIVERSITY, Princeton, N.J.; Fritz Machlup; *Economic Aspects of Inventions*; 2 years; \$28,136

Oskar Morgenstern; *Mathematical Methods for Time Series Analysis*; 3 years; \$50,000

PURDUE RESEARCH FOUNDATION, Lafayette, Ind.; Vernon W. Rutnan; *Interrelationships Among Technological Change, Research Expenditures and Resource Requirements*; 2 years; \$18,000

UNIVERSITY OF ROCHESTER, Rochester, N.Y.; Alexander Eckstein; *Study of Economic Fluctuations*; 2 years; \$18,400

Lionel W. McKenzie; *Theory of the Competitive Economy*; 3 years; \$32,500

Richard N. Rosett; *Investigation of Household Economic Behavior*; \$1,400

Edward Zabel; *Efficient Accumulation of Capital*; 1 year; \$2,900

SACRAMENTO STATE COLLEGE, Sacramento, Calif.; David E. Sopher; *Tribal Relocation in the Chittagong Hills*; \$14,100

UNIVERSITY OF WASHINGTON, Seattle, Wash.; Richard L. Morrill; *Simulation of Central Place Patterns*; 2 years; \$15,800

UNIVERSITY OF WISCONSIN, Madison, Wis.; Guy Orcutt; *Economic Model Formulation and Analysis*; 3 years; \$104,000

ENGINEERING SCIENCES

UNIVERSITY OF ALASKA, College, Alaska; Donald J. Cook; *The Magnetic Susceptibilities of Principal Minerals of the Light Metal Group*; 3 years; \$39,800

UNIVERSITY OF ARIZONA, Tucson, Ariz.; Gene M. Nordby; *Dielectric Constants of Concrete and its Constituents*; 2 years; \$20,600

Donald C. Stinson; *Frequency Multiplying in Microwave Ferrites*; 3 years; \$38,900
ARIZONA STATE UNIVERSITY, Tempe, Ariz.; Truet B. Thompson; *Time Series Approximation Synthesis of Delay-Type Devices*; 1 year; \$11,500

UNIVERSITY OF ARKANSAS, Fayetteville, Ark.; Donald A. Gilbrech; *An Experimental and Theoretical Investigation of Laminar-Turbulent Transitions in Pulsating Flow Through Flexible-Elastic Tubes*; 2 years; \$21,600

BROWN UNIVERSITY, Providence, R.I.; Joseph Kestin and John Ross; *Experimental and Theoretical Investigations into the Thermodynamic Functions of Substances*; 3 years; \$101,200

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; Cornelius J. Pings; *Structure of Liquids*; 18 months; \$13,600

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Cyril P. Atkinson and E. M. Rosenberg; *Vibrations of Nonlinear Systems Having Two Degrees of Freedom*; 3 years; \$56,500

G. M. Corcos; *Turbulent Pressure Field in Fully Developed Pipe Flow*; 1 year; \$18,800

J. T. Gier and R. V. Dunkle, Los Angeles; *Basic Studies on Solar Energy*; 2 years; \$51,000

J. T. Gier and D. K. Edwards, Los Angeles; *Gaseous Radiation Studies*; 2 years; \$27,800

Eldon L. Knuth, Los Angeles; *Free-Molecule Transfer Processes at High Speeds*; 3 years; \$75,800

Hugh D. McNiven; *Vibrations of Finite, Elastic Rods*; 2 years; \$15,800

Joseph A. Pask; *Rheology of Non-Ideal Dispersed Systems*; 3 years; \$37,400

Donald Pederson, Charles A. Desoer and Ernest S. Kuh; *Active Circuits*; 2 years; \$38,800

R. A. Seban; *The Effect of Local Air Injection on the Heat Transfer from a Flat Plate*; 1 year; \$12,400

L. M. Tichvinsky; *Stability of and Turbulence in Lubrication Films*; 1 year; \$9,600

C. J. Vogt; *Physical Properties of Liquid Hydrocarbons at Elevated Pressure and Temperature*; 1 year; \$5,900

C. R. Wilke, Andreas Acrivos, E. E. Petersen and J. M. Prausnitz; *Mass Transfer Mechanisms*; 3 years; \$125,200

CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pa.; J. F. Osterle; *Fundamental Studies of Viscous Flow*; 2 years; \$31,400

James P. Romualdi; *Tensile Fracture Arrest in Reinforced Concrete*; 2 years; \$21,100

J. J. Stewart; *Dynamic Energy Characteristics of Soils*; 2 years; \$19,100

Herbert L. Toor; *Diffusion in Multicomponent Liquids and Diffusional Separation of Liquids*; 3 years; \$48,700

Everard M. Williams; *Transient Low Voltage Discharges in Liquid Dielectrics*; 2 years; \$16,800

CASE INSTITUTE OF TECHNOLOGY, Cleveland, Ohio; William M. Baldwin, Jr.; *Yield Strength of Metals as a Function of Grain Size*; 3 years; \$27,600

Kenneth J. Bell; *Transient Boiling Heat Transfer*; 1 year; \$18,200

J. R. Moszynski; *An Investigation of Secondary Flow Phenomena in Oscillation*

Type Viscometers and Measurements of the Viscosity of Gases and Liquids by the Method of Small Oscillations; 3 years; \$57,600

CATHOLIC UNIVERSITY OF AMERICA, Washington, D.C.; Eugene P. Klier; *Deformation as a Function of Temperature and Strain Rate*; 3 years; \$51,500

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COLORADO SCHOOL OF MINES, Golden, Colo.; John S. Rinehart; *The Role of Stress Waves in Fracturing of Rock*; 3 years; \$32,400

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George L. Smith; *Fundamental Study of a Submerged and Nonsubmerged Three Dimensional Jet Impinging Upon a Normal Plane*; 2 years; \$28,300

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Harold G. Elrod, Jr. and Victor Paschiks; *Problems in the Development of a Combined Geometric and Network Analog Computer for Solutions of the Diffusion Equation*; 2 years; \$29,900

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- INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; David G. Frey; *Cladocera Re-*

- mains in Lacustrine Sediments*; 3 years; \$22,700
- IOWA STATE UNIVERSITY OF SCIENCE AND TECHNOLOGY, Ames, Iowa.; Kenneth D. Carlander; *Biology of Caddis and Mayflies*; 3 years; \$22,500
- LAKELAND FOUNDATION, Chicago, Ill.; Clifford E. Ahlgren, Quetico-Superior Wilderness Research Center; *Effects of Fire in Coniferous Forests*; 2 years; \$9,800
- LA SIERRA COLLEGE, Arlington, Calif.; Earl W. Lathrop; *Ecology of the Grasslands of the Tenaja Range*; 1 year; \$2,700
- MARQUETTE UNIVERSITY, Milwaukee, Wis.; Reznert M. Darnell; *Quantitative Aspects of Secondary Production in Estuarine Fish Populations*; 2 years; \$12,000
- UNIVERSITY OF MIAMI, Coral Gables, Fla.; John E. Randall, The Marine Laboratory, Miami; *Ecology of Coral Reef Fishes*; 1 year; \$14,600
- Ruth L. Wormelle, The Marine Laboratory, Miami; *Distribution of Pteropods in the Florida Current*; 1 year; \$4,000
- Peter J. Wangersky, The Marine Laboratory; *Prediction of Population Growth Patterns*; 2 years; \$5,600
- MICHIGAN STATE UNIVERSITY, East Lansing, Mich.; E. W. Roelofs and P. O. Fromm; *Influence of Photoperiodicity and Thyroid Activity on Fish Growth*; 2 years; \$7,300
- UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; Francis C. Evans; *Structure and Composition of Insect Communities*; 3 years; \$35,200
- Nelson G. Hairston; *Interspecific Relationships in Populations of Paramecium*; 4 years; \$42,800
- UNIVERSITY OF MICHIGAN RESEARCH INSTITUTE, Ann Arbor, Mich.; William S. Benninghoff and Claude W. Hibbard; *Pollen Analysis of Late Cenozoic Sediments*; 2 years; \$6,300
- UNIVERSITY OF MINNESOTA, St. Paul, Minn.; William H. Marshall; *Electronic Methods for Tracing Animal Movements*; 1 year; \$1,500
- Thomas F. Waters; *Trophic Structure of Fresh Water Stream Communities*; 3 years; \$23,200
- MONTANA STATE UNIVERSITY, Missoula, Mont.; Richard D. Taber and Robert S. Hoffman; *Ecology of Alpine Communities*; 1 year; \$2,700
- John J. Craighead; *Ecology of Ursus Horribilis*; 5 years; \$19,400
- NATIONAL PARK SERVICE, U.S. Department of the Interior, Carlsbad, N. Mex.; James K. Baker; *Biology of Petrochelidon Fulva*; 3 years; \$8,700
- UNIVERSITY OF NEBRASKA, Lincoln, Nebr.; Robert W. Goss; *Mycorrhizae of Pinus Ponderosa in Grassland Soils*; 1 year; \$9,900
- NEW MEXICO HIGHLANDS UNIVERSITY, Las Vegas, N. Mex.; Lora M. Shields; *Algal Species in Semidesert Soils*; 1 year; \$15,600
- NEW MEXICO STATE UNIVERSITY, State College, N. Mex.; Ralph J. Raitt; *Annual Cycle of Lophortyx Gambelii*; 2 years; \$8,200
- UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N.C.; William E. Fahy; *Meristic Structures in Fishes*; 3 years; \$30,100
- Gerald S. Posner; *Dynamics of an Estuarine Plankton Population*; 3 years; \$26,500
- NORTH DAKOTA STATE COLLEGE, Fargo, N. Dak.; Gregory B. Mulkern; *Food Habits and Preferences of Acridoid Orthoptera*; 3 years; \$18,900
- UNIVERSITY OF NORTH DAKOTA, Grand Forks, N. Dak.; Paul B. Kannowski; *Formicid Distribution and Populations in Relation to Environmental Factors*; 3 years; \$8,800
- UNIVERSITY OF NOTRE DAME, Notre Dame, Ind.; Robert P. McIntosh; *Quantitative Ecological Study of the Vegetation of the Catskills*; 4 years; \$15,400
- OHIO WESLEYAN UNIVERSITY, Delaware, Ohio; J. Gordon Ogden; *Pollen-Stratigraphic Studies on the Vegetational and Climatic History of Ohio*; 3 years; \$12,900
- UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE, Norman, Okla.; William T. Penfound; *Plant Succession in a Tall Grass Prairie*; 2 years; \$5,900
- OREGON STATE COLLEGE, Corvallis, Oreg.; W. K. Ferrell; *Photosynthetic and Respiratory Behavior of Douglas-fir Ecotypes*; 4 years; \$35,600
- Julius A. Rudinsky; *Population Dynamics of the Douglas-fir Beetle*; 2 years; \$7,000
- Charles E. Warren; *Dynamics of Stippled Stream Communities*; 3 years; \$24,500
- Ernest Wright and W. B. Bollen; *Soil Microbiology of North and South Aspects of Coast Range Forest Slopes*; 1 year; \$7,200
- UNIVERSITY OF OREGON, Eugene, Oreg.; Peter W. Frank; *A Population Study of Internal Limpets*; 3 years; \$18,900
- J. Arnold Shotwell, Museum of Natural History; *Environmental Change as a Factor in Mammalian Evolution*; 2 years; \$19,000
- UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Robert H. MacArthur; *Comparison of Bird Species, Diversity and Habitat*; 3 years; \$18,300
- UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa.; Richard C. Dugdale; *Phosphorus and Nitrogen Metabolism of Alaska Lakes*; 2 years; \$27,000
- PRINCIPIA COLLEGE, Elash, Ill.; Paul D. Kilburn; *Species-Area Relationships in Vegetation Types*; 3 years; \$14,300
- PURDUE RESEARCH FOUNDATION, Lafayette, Ind.; Durward L. Allen; *Dynamics and Ecology of Castor Canadensis*; 3 years; \$17,800
- RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK, Albany, N.Y.; John G. New, State University Teachers College, Oneonta; *Life History of Percina Peltata Peltata (Stauffer)*; 3 years; \$900
- UNIVERSITY OF RHODE ISLAND, Kingston, R.I.; Nelson Marshall; *Research on Life History of Aequipecten Irradians*; 3 years; \$13,700
- RICKS COLLEGE, Rexburg, Idaho; L. C. Pearson; *Annual Energy Budgets of Arid Plant Communities*; 2 years; \$6,000
- RUTGERS, THE STATE UNIVERSITY, New Brunswick, N.J.; Paul G. Pearson; *The Effects of Social Organization and Stress on Rodent Population*; 3 years; \$23,300
- ST. OLAF COLLEGE, Northfield, Minn.; Howard D. Orr; *Orientation of Small Mammals to Specific Areas*; 2 years; \$7,000
- UNIVERSITY OF ST. THOMAS, Houston, Tex.; J. P. Kennedy; *Reproductive Success in Scoloporus*; 2 years; \$12,500
- SAN JOSE STATE COLLEGE, San Jose, Calif.; L. Richard Mewaldt; *Migratory Restlessness in Birds*; 3 years; \$12,400
- UNIVERSITY OF SASKATCHEWAN, Saskatoon, Canada; Donald S. Rawson; *Dissolved Solids and Lake-Stream Productivity*; 2 years; \$10,100

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.; Orville J. Bandy; *Paleoecology of the Tecolote Tunnel Section of the Santa Ynez Mountains*; 2 years; \$10,100

John S. Garth and Jay M. Savage; *Ecological Survey of Mid-water Marine Populations*; 1 year; \$24,500

J. L. Mohr; *Faunas of the Central Arctic Basin and the Arctic Continental Shelf*; 2 years; \$26,300

STANFORD UNIVERSITY, Stanford, Calif.; Walter C. Brown; *Herpetofauna of Philippine Tropical Forests*; 2 years; \$14,700

TENNESSEE POLYTECHNIC INSTITUTE, Cookeville, Tenn.; Thomas C. Barr, Jr.; *Speciation of Certain Carabidae in the Southern Appalachians*; 1 year; \$5,600

UNIVERSITY OF TENNESSEE, Knoxville, Tenn.; J. Orvin Mundt; *Distribution of Group D Streptococci*; 2 years; \$5,500

TEXAS TECHNOLOGICAL COLLEGE, Lubbock, Tex.; Vernon W. Proctor; *Autecology of Chara*; 3 years; \$17,400

UNIVERSITY OF TEXAS, Austin, Tex.; Bassett Maguire, Jr.; *Ecology and Genetics of Cave Dwelling Crustacea*; 3 years; \$12,500

W. N. McFarland, Institute of Marine Science, Port Aransas; *Temperature Effects on Metabolism of Marine Ecosystems*; 2 years; \$28,400

Calvin McMillan; *Comparative Studies of Grasses*; 1 year; \$42,000

Howard T. Odum, Institute of Marine Science, Port Aransas; *Ecological Microcosms*; 3 years; \$60,500

THIEL COLLEGE, Greenville, Pa.; John B. Stahl; *Biostratonomy of Profundal Dipteran Larvae*; 3 years; \$8,000

TULANE UNIVERSITY OF LOUISIANA, New Orleans, La.; Franklin Sogandares-Bernal; *Life History and Ecology of Certain Opisthorchioid Trematodes*; 3 years; \$19,600

Gerald E. Gunning; *Occupancy of Home Ranges by Centrachids*; 2 years; \$4,300

Alfred E. Smalley; *Trophic Efficiencies of Marsh Herbivores*; 2 years; \$6,800

UNIVERSITY OF UTAH, Salt Lake City, Utah; Albert W. Grundmann; *Host-Parasite Interrelationships in Different Habitats*; 2 years; \$17,500

VANDEBILT UNIVERSITY, Nashville, Tenn.; Elsie Quarterman; *Autecology of Leaquereilla*; 4 years; \$19,900

UNIVERSITY OF WASHINGTON, Seattle, Wash.; Richard H. Fleming; *Foraminifera From Northeast Pacific Cores*; 2 years; \$17,300

Dora P. Henry; *Systematics and Ecology of Eastern Pacific Barnacles*; 3 years; \$37,100

Arthur R. Kruckeberg; *Plant Life of Serpentine Soils*; 5 years; \$19,000

UNIVERSITY OF WISCONSIN, Madison, Wis.; Grant Cottam; *Structure and Dynamics of the Maple Forest Community*; 3 years; \$21,000

Arthur D. Hasler; *Migration Orientation of *Pluvialis Dominica**; 2 years; \$12,600

John T. Medler; *Population Study of *Formica Ctenerea* Mayr*; 2 years; \$8,700

WOODS HOLE OCEANOGRAPHIC INSTITUTION, Woods Hole, Mass.; Richard H. Backus; *Composition of Ocean Deep Scattering Layers*; 3 years; \$80,600

Herbert Curl, Jr.; *Ecological Physiology of Marine Plankton Organisms*; 2 years; \$42,500

John W. Kanwisher; *Energy Requirements of Benthic Marine Communities*; 3 years; \$45,600

Bostwick H. Ketchum; *Microbiological Nutriflcation in the Oceans*; 3 years; \$41,500

Bostwick H. Ketchum; *Nitrogen Cycle in the Sea*; 3 years; \$41,600

John H. Ryther; *Environmental Physiology of Marine Plankton Algae*; 3 years; \$53,300

Mary Sears; *Environmental Factors in Zooplankton Distribution*; 1 year; \$13,600

YALE UNIVERSITY, New Haven, Conn.; James M. Blaut; *An Ecological Study of Swidden Agriculture*; 1 year; \$10,000

Edward S. Deevey, Osborn Zoological Laboratory; *Paleolimnology*; 2 years \$20,000

S. Dillon Ripley, Peabody Museum of Natural History; *Comparative Analytical Study of Megapode Developmental Adaptations*; 2 years; \$6,800

Talbot H. Watermann; *Diurnal Migrations by Aphotic Zone Zooplankton*; 2 years; \$12,500

GENETIC BIOLOGY

UNIVERSITY OF ARIZONA, Tucson, Ariz.; William B. Heed; *Evolutionary Studies in the Genus *Drosophila**; 1 year; \$9,200

BEREA COLLEGE, Berea, Ky.; Frank Seto; *Period of Action of Recessive Lethals in *Drosophila Melanogaster**; 2 years; \$5,000

BRANDEIS UNIVERSITY, Waltham, Mass.; Albert Kelner; *Spontaneous Mutation in Bacteria*; 3 years; \$30,000

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; N. H. Horowitz; *Genetic Studies on Enzyme Synthesis*; 3 years; \$76,300

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; David P. Bloch; *Histone Synthesis and Role of Histones in Cell Division and Development*; 2 years; \$29,300

Spencer W. Brown; *Nature and Evolution of *Lecano-Diaspidid* Genetic Systems*; 3 years; \$50,200

Bernard O. Phinney; Los Angeles; *Genetical Studies With Dwarf Mutants of Zea Mays*; 3 years; \$61,500

Charles M. Rick, Davis; *Cyto-Genetics of Tomato Species Hybrids*; 4 years; \$51,400

Richard W. Slegel, Los Angeles; *Analyses of Hereditary Endosymbiosis and Mating Type Determination in Paramecium*; 3 years; \$27,200

Richard Snow; Davis; *Chromosomal Rearrangement in Two Species of *Clarkia**; 2 years; \$7,800

David A. Rodgers and Gerald E. McClearn; *Ethyl Alcohol Preference of Mice*; 1 year; \$10,000

G. Ledyard Stebbins, Davis; *Developmental Genetics of Single Gene Differences in Barley*; 2 years; \$41,000

UNIVERSITY OF CHICAGO, Chicago, Ill.; Edward D. Garber; *Chromosomal and Genetic Homology in the Genus *Collinsia**; 3 years; \$30,800

Hewson Swift; *Cytochemical Studies on Nucleic Acids*; 3 years; \$73,600

CHILDREN'S CANCER RESEARCH FOUNDATION, Boston, Mass.; George Yerganian; *Genetics and Cytology of the Chinese Hamster*; 2 years; \$50,000

CITY OF HOPE MEDICAL CENTER, Duarte, Calif.; William D. Kaplan; *Sterility Component of X-Ray and Chemically Induced Dominant Lethals in D. Melanogaster*; 1 year; \$9,100

COLUMBIA UNIVERSITY, New York, N.Y.; Francis J. Ryan; *Mutation as a Macromolecular Process*; 3 years; \$48,300

J. Herbert Taylor; *Genetic and Cytological Studies on the Genus Sciara*; 1 year; \$12,800

CORNELL UNIVERSITY, Ithaca, N.Y.; L. F. Randolph; New York State College of Agriculture; *Cytogenetic Studies of Horticultural and Crop Plants*; 3 years; \$22,000

Bruce Wallace; *Studies on the Micro-growth of Neurospora Hyphae*; 1 year; \$3,300

DARTMOUTH COLLEGE, Hanover, N.H.; Raymond W. Barratt; *Collection and Maintenance of Genetic Stocks*; 3 years; \$32,300

DUKE UNIVERSITY, Durham, N.C.; Lewis E. Anderson; *Diminutive Chromosomes in Bryophytes*; 2 years; \$15,500

ELMIRA COLLEGE, Elmira, N.Y.; Ruth Z. Korman; *Genetic Studies on Staphylococci*; 3 years; \$21,300

EMORY UNIVERSITY, Atlanta, Ga.; William H. Murdy; *Relationship Between Characters of Growth, Morphology and Cytology in Maize*; 2 years; \$7,000

Charles Ray, Jr.; *Cytogenetic Studies of Tetrahymena Pyriformis*; 2 years; \$15,000

UNIVERSITY OF FLORIDA, Gainesville, Fla.; J. R. Edwardson and M. K. Corbett; *The Nature of Cytoplasmic Male-Sterility in Higher Plants*; 2 years; \$24,500

FREDERIC BURK FOUNDATION FOR EDUCATION OF SAN FRANCISCO STATE COLLEGE, San Francisco, Calif.; Sarane T. Bowen; *Genetic and Environmental Variation in Artemia Salina*; 2 years; \$6,000

UNIVERSITY OF GEORGIA, Athens, Ga.; H. Branch Howe, Jr.; *Genetic Studies on Mating Type in Neurospora Crassa*; 2 years; \$14,000

HARNELL COLLEGE, Salinas, Calif.; James F. Wilson; *Investigation of Certain Problems in the Biology of Neurospora*; 3 years; \$21,800

HARVARD UNIVERSITY, Cambridge, Mass.; R. P. Levine; *Genetics of Chlamydomonas Reinhardtii*; 2 years; \$10,700

Stephan R. Taub; *Genetics of Mating Type Inheritance in Paramecium Aurelia*; 2 years; \$13,800

UNIVERSITY OF HAWAII, Honolulu, Hawaii; H. Kamento; *Cytotaxonomy, Origin and Evolution of Orchid Species*; 2 years; \$18,000

UNIVERSITY OF ILLINOIS, Urbana, Ill.; Jerry Hirsch; *Experimental Behavior Genetics*; 2 years; \$23,300

E. B. Patterson; *Studies of Genetic and Chromosomal Tester Stocks of Maize*; 3 years; \$43,900

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; Stanley Zimmering; *Modification of Abnormal Gametic Ratios*; 2 years; \$16,300

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; Herman M. Kalcker; *Biochemical Genetics With Special Reference to Galactose Metabolism*; 3 years; \$32,300

C. A. Thomas, S. R. Siakind, and P. E. Hartman; *Mode of Replication of a Phage*; 3 years; \$59,900

C. A. Thomas; *Infectivity of Chemically*

Degraded and Reconstituted Bacteriophage; 3 years; \$28,900

Theodore R. F. Wright; *Basement Membranes of an Embryonic Lethal in Drosophila*; 2 years; \$13,400

KANSAS STATE UNIVERSITY, Manhattan, Kans.; Abraham Eisenstark; *Genetic Control of Protein Specificity in Phage T3*; 2 years; \$28,600

KENTUCKY RESEARCH FOUNDATION, Lexington, Ky.; Herbert Parkes Riley; *Chromosome Studies in Haworthia and Other South African Plants*; 2 years; \$6,600

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; Roger D. Milkman; *Analysis of a Polygenic System in Drosophila Melanogaster*; 2 years; \$15,000

Robert R. Miller; *Speciation in Pociiliid Fishes*; 2 years; \$26,400

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Ralph E. Comstock; *Linkage in Finite Cross-Fertilizing Populations*; 3 years; \$77,200

Joseph G. Gall; *Some Structural and Chemical Features of Animal Cell Nuclei*; 5 years; \$49,300

James C. Underhill; *Variation in Meristic Characters in Fishes*; 2 years; \$7,100

UNIVERSITY OF MISSOURI, Columbia, Mo.; E. H. Coe, Jr.; *Unorthodox Inheritance in Maize*; 3 years; \$18,700

E. R. Sears; *Cytogenetic Studies With Polyploid Species of Wheat*; 3 years; \$46,300

NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING, Raleigh, N.C.; B. J. Zobel; *Quantitative Genetic Studies in Loblolly Pine and Sweetgum*; 5 years; \$65,800

OHIO STATE UNIVERSITY RESEARCH FOUNDATION, Columbus, Ohio; William B. McIntosh; *Comparative Genetics of the Dearmouse and the Laboratory Mouse*; 2 years; \$15,000

Henry L. Plaine; *The Nature of the Induction of Uncontrolled Growths by Specific Genes*; 1 year; \$9,300

OHIO WESLEYAN UNIVERSITY, Delaware, Ohio; Robert W. Long; *Polyploidy and Subspeciation in the Helianthus Nuttallii Complex (Compositae)*; 2 years; \$3,700

UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE, Norman, Okla.; Gerald Braver; *Intrachromosomal Effect of Crossing Over in Drosophila Melanogaster*; 2 years; \$13,700

OREGON STATE COLLEGE, Corvallis, Oreg.; J. D. Mohler; *Phenogenetic Analysis of Gene Action in Polygenic Systems*; 2 years; \$11,300

Robert M. Storm; *Studies on Biological Characteristics and Taxogenetic Features of Rana Aurora and Rana Pretiosa*; 1 year; \$8,000

UNIVERSITY OF OREGON, Eugene, Oreg.; E. Novitski; *Genetics of Drosophila*; 3 years; \$104,900

Franklin W. Stahl; *Growth, Mutation and Recombination in Bacteriophage*; 3 years; \$85,200

UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa.; Ellis Englesberg; *Genetics and Physiology of the Diauxic Phenomenon*; 4 years; \$62,300

PRINCETON UNIVERSITY, Princeton, N.J.; Bruce M. Eberhart; *Enzyme Activity in Neurospora Crassa*; 2 years; \$13,500

PURDUE RESEARCH FOUNDATION, Lafayette, Ind.; Oliver E. Nelson; *Genetic Fine Structure of the W₁/w₂ Region in Maize*; 2 years; \$21,200

RESEARCH FOUNDATION, Oklahoma State University, Stillwater, Okla.; Margaret Hoover Brooks; *Gene Action in Cytoplasmic Male Sterility in Sorghum*; 2 years; \$14,100

ROCKEFELLER INSTITUTE, New York, N.Y.; Rollin D. Hotchkiss; *Deoxyribonucleates Having Genetic Transforming Activity*; 8 years; \$49,500

SAINTE LOUIS UNIVERSITY, Saint Louis, Mo.; Irwin H. Herskowitz; *Genetic Studies of the Interaction Between Metabolism and Mutagenesis*; 1 year; \$3,000

SANTA BARBARA BOTANIC GARDENS, Santa Barbara, Calif.; Marta S. Walters; *A New Organella in Microsporocytes of Bromus*; 8 years; \$12,800

SOUTHWESTERN LOUISIANA INSTITUTE, Lafayette, La.; William L. Flannery; *Mutational Origin of Halophilic Bacteria*; 1 year; \$2,500

UNIVERSITY OF UTAH, Salt Lake City, Utah; Robert K. Vickery, Jr.; *Cytogenetic Studies of the Patterns of Evolution in *Mimulus**; 2 years; \$26,800

UNIVERSITY OF WASHINGTON, Seattle, Wash.; Howard C. Douglas; *Electron Microscopy of Microorganisms*; 2 years; \$27,900

Herschel L. Roman; *Transformation in Yeast*; 1 year; \$4,400

UNIVERSITY OF WISCONSIN, Madison, Wis.; Sewall Wright; *Evolution and Genetics of Populations*; 3 years; \$30,600

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA, Philadelphia, Pa.; Max Levitan; *Population Dynamics of Linked Chromosomal Variants*; 2 years; \$15,900

YALE UNIVERSITY, New Haven, Conn.; John Buettner-Janusch; *Chromosomal Evolution in the Order Primates*; 2 years; \$42,400

Norman H. Giles; *Genetic Control of Adenine Biosynthesis*; 3 years; \$45,900

Harry P. Rappaport; *Relationship Between the Transforming Principle and Some Enzymes of *Bacillus Subtilis**; 2 years; \$21,800

Charles L. Remington; *Evolution in Natural Populations of Lepidoptera*; 3 years; \$3,400

Charles L. Remington; *Evolution in Natural Populations of Lepidoptera*; 2 years; \$35,000

HISTORY AND PHILOSOPHY OF SCIENCE

AUGUSTANA COLLEGE, Rock Island, Ill.; Fritiof M. Fryxell; *The Hayden Survey*; 1 year; \$9,000

Fritiof M. Fryxell; *The Hayden Survey*; 1 year; \$5,000

UNIVERSITY OF CALIFORNIA, Berkeley Calif.; Ernest W. Adams; *Foundations of Measurement*; 1 year; \$4,000

IOWA STATE UNIVERSITY OF SCIENCE AND TECHNOLOGY, Ames, Iowa.; John C. Greene; *American Science in the Age of Jefferson*; 2 years; \$7,400

LEHIGH UNIVERSITY, Bethlehem, Pa.; Nicholas Rescher; *Arabic Contributions to Logic*; 2 years; \$4,500

MACMURRAY COLLEGE, Jacksonville, Ill.; Walter B. Hendrickson; *Academies of Science in the Middle West*; 2 years; \$2,500

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Paul K. Feyerabend, Minnesota Center for Philosophy of Science; *The Logic of Measurement*; 1 year; \$8,050

SYRACUSE UNIVERSITY RESEARCH INSTITUTE, Syracuse, N.Y.; Antonio Pace; *Study of *Beccaria**; 1 year; \$3,000

UNIVERSITY OF TEXAS, Austin, Tex.; Richard M. Martin; *Applications of Symbolic Logic*; 1 year; \$5,900

UNIVERSITY OF WISCONSIN, Madison, Wis.; Erwin N. Hiebert; *Studies in Nineteenth Century Chemistry*; 15 months; \$15,200

Robert C. Stauffer; *Darwin and the Development of Ecology*; 15 months; \$16,400

YALE UNIVERSITY, New Haven, Conn.; Oystein Ore; *Early History of Probability*; 1 year; \$4,800

MATHEMATICAL SCIENCES

AMERICAN MATHEMATICAL SOCIETY, Providence, R.I.; John H. Curtiss; *Finite Groups*; 4 weeks; \$53,500

AMHERST COLLEGE, Amherst, Mass.; Alfred B. Willcox; *Structure of Banach Algebras*; 1 year; \$4,800

BRANDIS UNIVERSITY, Waltham, Mass.; William L. Hoyt; *Algebraic Geometry*; 2 years; \$22,300

R. A. Kunze; *Harmonic Analysis in Lie Groups*; 2 years; \$23,000

BROWN UNIVERSITY, Providence, R.I.; R. E. Meyer; *Wave Fronts in Nonlinear Radiation*; 2 years; \$14,200

R. S. Rivlin; *Nonlinear Continuum Physics*; 2 years; \$65,900

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Edwin P. Beckenbach and John W. Green, Los Angeles; *Convex Subadditive and Subharmonic Functions*; 1 year; \$18,200

Robert J. Blattner; *Representations of Topological Groups*; 1 year; \$3,100

Hans J. Bremermann; *Several Complex Variables*; 2 years; \$24,000

Shing-Shen Chern and Edwin H. Spanier; *Algebraic Topology and Differential Geometry*; 2 years; \$70,800

R. J. DeVogelaere; *Boundary Value Problems*; 6 months; \$4,500

Richard C. Gilbert, Charles J. A. Halberg, Jr., and Vernon A. Kramer, Riverside; *Perturbation of Operators*; 1 year; \$6,800

Alfred Horn, Los Angeles; *Eigenvalues of Sums of Hermitian Matrices*; 1 year; \$3,500

Richard Montague, Los Angeles; *Metamathematics*; 15 months; \$13,750

Maxwell A. Rosenlicht; *Algebraic Geometry*; 1 year; \$5,000

Maxwell Rosenlicht, Los Angeles; *Groups of Algebraic Transformations*; 1 year; \$3,200

Edwin H. Spanier; *Properties of Manifolds*; 2 years; \$43,300

Ernst G. Straus, Los Angeles; *Integer Valued Analytic Functions*; 2 years; \$13,700

Charles J. Titus, Los Angeles; *Extensions by Interior Mappings*; 1 year; \$3,000

Frantisek Wolf; *Operator Theory*; 2 years; \$55,800

CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pa.; Morris H. DeGroot; *Optimum Sequential Sampling Plans*; 2 years; \$10,500

Henry S. Leonard, Jr.; *Primitive Linear Groups*; 2 years; \$10,200

CASE INSTITUTE OF TECHNOLOGY, Cleveland, Ohio.; D. P. Eckman; *Control Systems Computer*; 1 year; \$60,000

Charles Saltzer; *Finite Difference Operators*; 2 years; \$12,800

CATHOLIC UNIVERSITY OF AMERICA, Washington, D.C.; Eugene Lukacs; *Probability and Mathematical Statistics*; 3 years; \$43,600

UNIVERSITY OF CHICAGO, Chicago, Ill.; A. Adrian Albert; *Research in Algebra*; 3 years; \$73,300

William H. Kruskal; *Statistical Inference*; 2 years; \$42,400

Richard K. Lashof and Eldon Dyer; *Algebraic Topology and Convex Surfaces*; 2 years; \$44,900

O. F. G. Schilling; *Investigations in Valuation Theory*; 2 years; \$5,600

Antoni Zygmund and Albert P. Calderon; *Partial Differential Equations*; 1 year; \$5,000

COLORADO SCHOOL OF MINES, Golden, Colo.; Raymond A. Jordan; *Expansion of Computing Center (LGP-30)*; 1 year; \$5,100

COLORADO STATE UNIVERSITY RESEARCH FOUNDATION, Fort Collins, Colo.; Elmer E. Remmenga; *Establishment of Computing Center (IBM 650)*; 3 years; \$30,000

COLUMBIA UNIVERSITY, New York, N.Y.; Walter C. Strodt; *Ordinary Differential Equations*; 1 year; \$12,200

CORNELL UNIVERSITY, Ithaca, N.Y.; W. H. J. Fuchs; *Complex Function Theory and Analysis*; 1 year; \$26,500

Simon Kochen and A. Nerode; *Mathematical Logic*; 2 years; \$37,300

Lionel Weiss; *Nonparametric Statistical Methods*; 2 years; \$30,000

DARTMOUTH COLLEGE, Hanover, N.H.; John G. Kemeny; *Stochastic Processes*; 2 years; \$19,800

DUKE UNIVERSITY, Durham, N.C.; Leonard Carlitz; *Algebra and Number Theory*; 2 years; \$26,500

John H. Roberts; *Topology*; 2 years; \$22,700

FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; Nickolas Heereman; *Power Series Rings*; 15 months; \$8,800

Paul J. McCarthy; *Irreducibility of Polynomials*; 15 months; \$8,700

GEORGE WASHINGTON UNIVERSITY, Washington, D.C.; Robert S. Ledley; *Installation of Electronic Computer*; 1 year; \$30,000

UNIVERSITY OF GEORGIA, Athens, Ga.; Thomas R. Brahana; *Local Homology and Homotopy Theories*; 3 years; \$26,300

M. K. Fort, Jr.; *Point Set Topology*; 2 years; \$21,000

R. P. Hunter; *Continuous Associative Multiplications*; 2 years; \$5,400

HARVEY MUDD COLLEGE, Claremont, Calif.; Courtney S. Coleman; *Ordinary Differential Equations*; 2 years; \$4,100

UNIVERSITY OF HAWAII, Honolulu, Hawaii; Robert W. Hiatt; *Establishment of a Computing Center (IBM 650)*; 1 year; \$50,000

UNIVERSITY OF ILLINOIS, Urbana, Ill.; M. M. Day; *Functional Analysis*; 2 years; \$26,200

Alex Heller; *Algebraic Topology*; 2 years; \$10,400

Michie Suzuki; *The Structure of Finite Groups*; 2 years; \$30,800

A. H. Taub; *Numerical Analysis and Applied Mathematics*; 1 year; \$66,400

R. A. Wijsman, Colin Blyth, D. L. Burkholder and D. M. Roberts; *Sequential Decision Procedures*; 2 years; \$35,000

Herbert S. Wilf; *The Stability Theory of Numerical Integration*; 1 year; \$2,300

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; Ernst Snapper; *Irrational Geometry*; 2 years; \$22,100

Louis Auslander; *Subgroups of Lie Groups*; 2 years; \$21,500

William S. Gustin; *Area Theory*; 2 years; \$18,000

P. R. Masani; *Stochastic Problems of Communication Theory*; 2 years; \$16,200

Andrew H. Wallace; *Real Analytic Varieties*; 2 years; \$13,700

George Whaples; *Algebraic Number Theory and Homological Algebra*; 1 year; \$7,300

KENTON COLLEGE, Gambler, Ohio; Otto M. Nikodym; *Operators in Hilbert Space*; 2 years; \$13,900

LOUISIANA STATE UNIVERSITY, Baton Rouge, La.; Eugene V. Schenkman; *Group Theory*; 2 years; \$18,400

LOUISIANA STATE UNIVERSITY AND AGRICULTURAL AND MECHANICAL COLLEGE, Baton Rouge, La.; Pasquale Porcelli; *Bounded Analytic Functions*; 2 years; \$12,700

UNIVERSITY OF MARYLAND, College Park, Md.; John W. Brace; *Functional Analysis*; 1 year; \$6,400

R. E. Fullerton; *Problems in Functional Analysis*; 3 years; \$58,600

James A. Hummel and Michael Zedek; *Geometric Function Theory*; 2 years; \$26,700

Carol R. Karp; *Infinitary Formal Calculi*; 2 years; \$4,400

UNIVERSITY OF MIAMI, Coral Gables, Fla.; Paul M. Swingle; *Nonsimple Connected Sets and Algebras*; 3 years; \$20,700

MICHIGAN STATE UNIVERSITY, East Lansing, Mich.; Leo Katz; *Discrete Methods in Mathematical Statistics*; 2 years; \$29,800

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; Arthur W. Burks; *Theory of Automata*; 2 years; \$50,000

Nathaniel Coburn; *Hydromagnetic Flows*; 2 years; \$19,500

Cecil C. Craig; *Computing and Data Processing*; 3 years; \$150,000

Donald A. Darling; *Functional Analysis and Stochastic Processes*; 1 year; \$9,800

Nicholas D. Kazarinoff; *Scalar Scattering by Convex Bodies*; 1 year; \$11,000

Beaugard Stubblefield; *Product Spaces and Manifolds*; 1 year; \$8,000

Jack E. McLaughlin; *Von Neumann and Frink Coordinations*; 1 year; \$11,700

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Eugenio Calabi, Hidehiko Yamabe and L. W. Green; *Structure of Manifolds*; 2 years; \$26,200

Bernard R. Gelbaum; *Banach Algebras*; 1 year; \$12,300

UNIVERSITY OF MISSOURI, Columbia, Mo.; Curtis L. Wilson, Rolla; *Establishment of Computing Center (LGP30)*; 3 years; \$30,000

UNIVERSITY OF NEBRASKA, Lincoln, Nebr.; M. A. Basoco; *Establishment of a Computing Center (Burroughs 205)*; 1 year; \$96,000

UNIVERSITY OF NEW HAMPSHIRE, Durham, N.H.; Robert H. Owens; *Establishment of Computing Center (Recomp)*; 3 years; \$50,000

NEW MEXICO COLLEGE OF AGRICULTURE AND MECHANIC ARTS, University Park, N. Mex.; George W. Gardner; *Computing Time for Basic Research*; 1 year; \$18,000

NEW YORK UNIVERSITY, New York, N.Y.; Wilhelm Magnus; *Combinatorial Group Theory*; 2 years; \$64,600

UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N.C.; F. Burton Jones; *Classification of Plane Continua*; 2 years; \$22,200

NORTHWESTERN UNIVERSITY, Evanston, Ill.; R. P. Boas; *Fourier Series*; 1 year; \$13,800

Bruno Harris; *Cohomology Algebras*; 15 months; \$8,700

H. C. Wang, T. Matsusaka, A. Rosenberg, D. Zelinsky, and W. M. Boothby; *Studies in Algebra and Algebraic Geometry*; 2 years; \$104,700

UNIVERSITY OF NOTRE DAME, Notre Dame, Ind.; Wladimir Seldel; *Boundary Behavior of Functions*; 2 years; \$40,200

UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE, Norman, Okla.; Charles A. Nicol; *The Ramanujan Function*; 1 year; \$3,500

OREGON STATE COLLEGE, Corvallis, Oreg.; Fritz Oberhettinger; *Infinite Series*; 2 years; \$24,500

PACIFIC UNION COLLEGE, Angwin, Calif.; Ivan R. Neilsen; *Expansion of Computing Center (Bendix G-15D)*; 1 year; \$20,000

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; David K. Harrison; *The Structure of Group Rings*; 2 years; \$6,000

POLYTECHNIC INSTITUTE OF BROOKLYN, Brooklyn, N.Y.; Warren L. McCabe; *Installation of IBM 650 Computer*; 3 years; \$80,000

PRINCETON UNIVERSITY, Princeton, N.J.; Alonzo Church and Ralph H. Fox; *Knot Theory and Metamathematics*; 2 years; \$85,900

Donald C. Spencer; *Differentiable Manifolds and Sheaves*; 1 year; \$4,500

Donald C. Spencer; *Differentiable Manifolds and Sheaves*; 1 year; \$4,200

PURDUE RESEARCH FOUNDATION, Lafayette, Ind.; Lamberto Cesari; *Asymptotic Behavior and Stability of Differential Systems*; 2 years; \$27,200

Arthur H. Copeland; *Groups of Mapping Classes*; 2 years; \$12,900

J. DeGroot; *Linearization of Mappings*; 2 months; \$2,800

Johannes H. B. Kemperman; *Small Product-Sets in a Group*; 2 years; \$12,800

RESEARCH FOUNDATION, Oklahoma State University, Stillwater, Okla.; Olan H. Hamilton; *Piced Points for Plane Continua*; 2 years; \$12,200

UNIVERSITY OF ROCHESTER, Rochester, N.Y.; R. A. Raimi; *Invariant Measures on Certain Czech Compactifications*; 1 year; \$4,200

ROSB POLYTECHNIC INSTITUTE, Terre Haute, Ind.; Rheodore P. Palmer; *Establishment of Computing Center (Bendix G-15D)*; 1 year; \$15,000

SAN DIEGO STATE COLLEGE FOUNDATION, San Diego, Calif.; Charles B. Bell, Jr.; *Distribution-Free Statistics*; 2 years; \$24,200

UNIVERSITY OF SOUTH CAROLINA, Columbia, S.C.; Rufus G. Fellers; *Computer Facility*; 3 years; \$13,000

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.; Herbert Busemann; *Area and Differentiability*; 1 year; \$8,000

James Dugundji; *Cohomology Operations*; 2 years; \$30,000

Albert L. Whiteman; *Theory of Cytotony*; 2 years; \$15,900

STANFORD UNIVERSITY, Stanford, Calif.; Stefan Bergman; *Several Complex Variables*; 2 years; \$46,200

Samuel Karlin; *Probability Theory and Functional Analysis*; 2 years; \$58,100

Charles Stein; *Statistical Theory and Probabilistic Models*; 2 years; \$60,000

Gabor Szegő; *Toeplitz Forms and Orthogonal Polynomials*; 3 years; \$51,000

TEACHERS COLLEGE, COLUMBIA UNIVERSITY, New York, N.Y.; Rosedith Sitgreaves; *Classification Procedures*; 3 years; \$22,900

UNIVERSITY OF TENNESSEE, Knoxville, Tenn.; William H. Fletcher; *Establishment of Computing Center (IBM 650)*; 1 year; \$50,000

TULANE UNIVERSITY OF LOUISIANA, New Orleans, La.; Alfred H. Clifford, Paul F. Conrad, Paul S. Mostert, and Alexander Doniphan Wallace; *Augmented Algebraic Systems*; 2 years; \$67,600

VANDEBILT UNIVERSITY, Nashville, Tenn.; John H. Stambaugh; *Computing Center*; 3 years; \$95,000

WASHINGTON UNIVERSITY, St. Louis, Mo.; Allen Devinatz; *Spectral Problems in Harmonic Analysis*; 2 years; \$24,100

James A. Jenkins; *Univalent Functions*; 2 years; \$29,600

UNIVERSITY OF WASHINGTON, Seattle, Wash.; Ross A. Beaumont and Richard S. Pierce; *Structure of Modules, Rings, and Groups*; 2 years; \$41,000

Frank H. Brownell; *Differential Operators and Stochastic Processes*; 2 years; \$55,000

Douglas G. Chapman; *Statistical Models for Exploited Populations*; 21 months; \$27,600

J. M. Fell; *Representatives of Topological Groups and Algebras*; 2 years; \$12,300

Ernest A. Michael; *Abstract Spaces*; 2 years; \$41,900

WAYNE STATE UNIVERSITY, Detroit, Mich.; Samuel Kaplan; *The Second Dual of the Space of Continuous Functions*; 1 year; \$3,800

Owen G. Owens; *Elliptic Differential Equations*; 1 year; \$5,300

WESLEYAN UNIVERSITY, Middletown, Conn.; Thornton L. Page; *Establishment of Computing Center (IGP-30)*; 2 years; \$20,000

WESTERN RESERVE UNIVERSITY, Cleveland, Ohio; Walter Leighton; *Differential Equations and the Calculus of Variations*; 2 years; \$30,800

UNIVERSITY OF WISCONSIN, Madison, Wis.; R. H. Bing; *Topology of Three-Space*; 2 years; \$50,600

Edward R. Fadell; *Fiber Spaces*; 2 years; \$9,500

Edmund H. Feller; *Rings and Modules*; 1 year; \$1,800

Jacob Korevaar; *Fourier Analysis*; 3 years; \$86,400

YALE UNIVERSITY, New Haven, Conn.; G. S. Hedlund and Shizuo Kakutani; *Analysis in the Large*; 15 months; \$85,700

Nathan Jacobson; *Theory of Rings*; 1 year; \$2,350

METABOLIC BIOLOGY

ALBANY MEDICAL COLLEGE, UNION UNIVERSITY, Albany, N.Y.; Richard A. Peabody, and Charles Hurwitz; *Mechanism of Action of Streptomycin*; 3 years; \$21,800

ALBERT EINSTEIN MEDICAL CENTER, Philadelphia, Pa.; Herman Friedman; *Role of Nucleoproteins and Subcellular Particles in Antibody Formation*; 2 years; \$14,600

Herman Friedman; *Nucleoproteins and Subcellular Particles in Antibody Formation*; 1 year; \$17,400

AMERICAN UNIVERSITY OF BEIRUT, Beirut, Lebanon; John H. Schneider; *DNA Synthesis in Normal and Regenerating Livers*; 2 years; \$9,000

BAYLOR UNIVERSITY, Waco, Tex.; Robert P. Williams, Houston; *Pigment and Porphyrin Produced by Bacillus Anthracis*; 2 years; \$10,100

BIO-RESEARCH INSTITUTE, INC.; Cambridge, Mass.; Peter Bernfeld; *Behavior of Enzymes at High Dilutions*; 2 years; \$18,000

BOSTON UNIVERSITY, Boston, Mass.; Charles Ternier; *Metabolites of Isolated Tissues, Cells and Subcellular Functions*; 1 year; \$30,000

BRANDEIS UNIVERSITY, Waltham, Mass.; Morris Soodak; *Enzymatic Mechanisms Involved in Biosynthesis of Thyroglobulin, A Glycoprotein*; 3 years; \$44,200

BRIGHAM YOUNG UNIVERSITY, Provo, Utah; Jay V. Beck; *Studies on Metabolism of Thiobacillus Ferroxidans and Other Autotrophic Bacteria*; 2 years; \$16,800

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Arthur L. Black, Davis; *Rate of Flow of Carbon Through the Tricarboxylic Acid Cycle*; 2 years; \$18,000

Roger David Cole, Davis; *Studies on Protein Synthesis During Pregnancy*; 2 years; \$15,200

S. S. Elberg; *Intramonocytic Metabolism of Brucella Melitensis in Cell Culture*; 2 years; \$26,800

David M. Greenberg; *Enzyme and Isotope Studies on One Carbon Metabolism and Methyl Group Biosynthesis*; 3 years; \$46,700

Max Kleiber, Davis; *Synthesis of Milk Components by Intact Cows*; 2 years; \$50,000

George G. Laties, Los Angeles; *Nature and Control of Cellular Development*; 3 years; \$32,800

Allen G. Marr, Davis; *Biochemical Cytology of Bacteria*; 3 years; \$35,000

R. Y. Stanier; *Physiology and Biochemistry of Bacteria*; 5 years; \$113,000

T. E. Weter and C. R. Stocking, Davis; *Ultrastructure of Chloroplasts During Changes in Cell Metabolism and Isolation*; 3 years; \$11,800

UNIVERSITY OF CHICAGO, Chicago, Ill.; Herbert S. Anker; *Mechanism of Antibody Synthesis*; 3 years; \$28,500

Wayne J. McIlrath; *Physiological Functions of Boron in Plants*; 2 years; \$15,000

UNIVERSITY OF CINCINNATI, Cincinnati, Ohio; Emily J. Bell; *Streptolysin O and Its Effects Upon Cellular Metabolism*; 1 year; \$7,500

CITY OF HOPE MEDICAL CENTER, Duarte, Calif.; Riojun Kinoshita and Jesse E. Slisken; *Metabolic Sequences in the Mitotic Cycle*; 2 years; \$23,800

UNIVERSITY OF COLORADO, Boulder, Colo.; Richard Thompson; *Microbiological Equipment*; 1 year; \$8,600

COLUMBIA UNIVERSITY, New York, N.Y.; R. F. Dawson; *Biosynthesis and Metabolism of Nicotinic Acid and Related Compounds in Nicotiana*; 3 years; \$30,600

Phillip Geglerson; *Induced Enzyme Formation in Mammalian Systems*; 2 years; \$32,000

CONNECTICUT AGRICULTURAL EXPERIMENT STATION, New Haven, Conn.; H. B. Vickery; *Organic Acids in Leaves*; 2 years; \$20,000

UNIVERSITY OF CONNECTICUT, Storrs, Conn.; Ralph P. Collins; *Identification and Metab-*

olism of the Production of Volatile Substances Produced by Selected Fungi; 2 years; \$8,300

CORNELL UNIVERSITY, Ithaca, N.Y.; Lemuel D. Wright; *Specialized Laboratory Equipment Required in Research*; 1 year; \$19,700

ELGIN STATE HOSPITAL, Elgin, Ill.; Lawrence I. Hochsteln; *Bacterial Oxidation of N-Acetylglucosamine*; 2 years; \$18,000

FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; Hans Gaffrom; *Instrumentation for Photobiological Research*; 1 year; \$26,100

UNIVERSITY OF GEORGIA, Athens, Ga.; Milton J. Cormier; *Mechanisms of Bioluminescent Reactions*; 2 years; \$31,100

Robert C. Eagon; *Biosynthesis of Bacterial Polysaccharides*; 2 years; \$12,000

William J. Payne; *Equipment for Research in Bacteriology*; 1 year; \$14,000

Alfred W. Scott; *Equipment to Support the Research Programs in Biochemistry*; 1 year; \$20,000

HARVARD UNIVERSITY, Cambridge, Mass.; Martin Lubin; *Amino-Acid Transport Systems*; 2 years; \$34,000

Frederick Neldhardt; *Regulation of Ribonucleic Acid Synthesis in Bacteria*; 3 years; \$37,000

William H. Pearlman, Boston; *Steroid Hormones: Studies Utilizing Radioisotopes*; 1 year; \$11,100

Albert E. Renold; *Control of Amino Acid and Protein Metabolism in Adipose Tissue*; 2 years; \$22,000

T. Hastings Wilson; *Cellular Uptake of Large Molecules by Intestinal Epithelium*; 4 years; \$35,000

HASKINS LABORATORIES, New York, N.Y.; S. H. Hutner; *Heterotrophic Growth of Euglena*; 2 years; \$14,400

Haverford College, Haverford, Pa.; Melvin Santer; *Environmental-Induced Changes in Ribonucleic Acid of Bacteria*; 3 years; \$21,200

HOME FOR THE JEWISH AGED, Philadelphia, Pa.; Henry Altschuler; *Laboratory Equipment for Current Research Projects*; 1 year; \$21,000

UNIVERSITY OF ILLINOIS, Urbana, Ill.; Ralph D. DeMoss; *Origin of Glucose in Cell Walls of Leuconostoc Meseenteroides*; 2 years; \$17,500

David Gottlieb; *Physiology of Fungi*; 3 years; \$46,200

R. H. Hageman; *Physiological Basis of Hybrid Vigor in Corn*; 2 years; \$25,800

S. P. Mistry; *Biotin in Intermediary Metabolism*; 3 years; \$45,000

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; W. J. van Wagtenonk; *Nucleic Acid Turnover in Paramecium Aurelia*; 3 years; \$25,800

INSTITUT DE BIOLOGIE PHYSICO-CHIMIQUE, Paris, France; Marianne Grunberg-Manago; *Enzymatic Synthesis and Properties of Ribopolynucleotides and Natural Rna*; 1 year; \$19,000

INSTITUT PASTEUR, Paris, France; Jaques Monod; *Specific Factors in Enzyme and Protein Biosynthesis*; 1 year; \$5,000

IOWA STATE UNIVERSITY OF SCIENCE AND TECHNOLOGY, Ames, Iowa; Frederick G. Smith; *Respiratory Properties of Subcellular Particles of Fungi and Fungicide Action*; 1 year; \$4,000

KAISER FOUNDATION RESEARCH INSTITUTE, Oakland, Calif.; Mary Belle Allen; *Com-*

- Comparative Biochemistry of Photosynthetic Pigments*; 3 years; \$30,000
 UNIVERSITY OF KANSAS MEDICAL CENTER, Kansas City, Kans.; Harold J. Nicholas; *Metabolism of Cholesterol in the Central Nervous System*; 2 years; \$20,200
 KANSAS STATE UNIVERSITY, Manhattan, Kans.; Philip Nordin; *Metabolism of Starch Granules*; 3 years; \$14,300
 UNIVERSITY OF KANSAS, Lawrence, Kans.; David Paretsky; *The Biochemistry of Rickettsiae*; 2 years; \$26,200
 LOS ANGELES STATE COLLEGE FOUNDATION, Los Angeles, Calif.; Joseph A. Sacher; *Auoin-Membrane Permeability Relations*; 3 years; \$10,700
 UNIVERSITY OF LOUISVILLE, Louisville, Ky.; Peter K. Knoefel; *Conjugation and Excretion in the Animal Body*; 1 year; \$8,000
 John W. Brown; *Amino Acid Incorporation Into Protoplasts of *Sarcina Lutes**; 3 years; \$20,000
 UNIVERSITY OF MASSACHUSETTS, Amherst, Mass.; D. S. Van Fleet; *Histochemical and Cytochemical Studies of Phloem*; 3 years; \$11,600
 MICHAEL REESE HOSPITAL AND MEDICAL CENTER, Chicago, Ill.; Clarence Cohn; *Influence of Rate of Ingestion of Diet on Intermediary Metabolism*; 3 years; \$30,000
 MICHIGAN STATE UNIVERSITY, East Lansing, Mich.; Robert P. Scheffer; *Physiology of Parasitism*; 2 years; \$17,300
 UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; I. A. Bernstein; *Biosynthesis of Deoxyribose*; 2 years; \$24,000
 G. R. Greenberg; *Enzyme Formation in Phage-Infected Bacteria*; 4 years; \$84,000
 James E. Hogg; *Controlling Factors in Lipid Glyconeogenesis*; 2 years; \$16,700
 UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Albert W. Frenkel; *Nitrogen Metabolism of Photosynthetic Bacteria*; 2 years; \$18,000
 UNIVERSITY OF NEBRASKA, Lincoln, Nebr.; Francis A. Haskins; *Metabolism of Coumarin and Related Compounds in Sweetclover*; 3 years; \$30,000
 John H. Pazur; *Enzymatic Synthesis of Carbohydrates*; 2 years; \$12,600
 George A. Young; *Utilization of Amino Acid Amides by Normal and Virus Infected Tissue Culture Cells*; 1 year; \$6,000
 NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING, Raleigh, N.C.; Arthur Kelman; *Cellulolytic Enzyme Systems of Phytopathogenic Microorganisms*; 2 years; \$18,700
 S. B. Tove; *Interrelationships in the Metabolism of Short Chain Fatty Acids*; 3 years; \$21,600
 OHIO STATE UNIVERSITY RESEARCH FOUNDATION, Columbus, Ohio; Robert W. Bernlohr; *Antibiotic Production During Sporogenesis*; 2 years; \$13,000
 UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE, Norman, Okla.; J. R. Sokatch; *Oxidation of the Branched Chain Amino Acids by Microorganisms*; 3 years; \$24,000
 OREGON STATE COLLEGE, Corvallis, Oreg.; Vernon H. Cheldelin; *Metabolic Patterns in Microorganisms*; 1 year; \$10,700
 W. David Loomis; *Biosynthesis of Terpenes*; 2 years; \$28,300
 UNIVERSITY OF OREGON, Eugene, Oreg.; Bradley T. Scheer; *Humoral Control of Metabolism in Crustaceans*; 2 years; \$36,000
 Jacob Straus; *Biosynthesis of Anthocyanin in Corn Endosperm Tissue Cultures*; 3 years; \$20,800
 R. G. Wolfe, Jr.; *Enzyme Protein Structure Studies*; 2 years; \$17,400
 UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Walter D. Bonner, Jr.; *Mechanisms of Cellular Oxidations in Plant Tissues*; 2 years; \$18,400
 James H. Jones; *Possible Biosynthesis of Vitamins A and D by Fish*; 3 years; \$83,000
 PHILADELPHIA GENERAL HOSPITAL RESEARCH FUND, Philadelphia, Pa.; Gerald Litwack; *Formation of Lysozyme Substrate in Cell Walls*; 1 year; \$5,400
 PIONEERING RESEARCH DIVISION, U.S. Army Quartermaster Research and Engineering Center Laboratories; Natick, Mass.; Elwyn T. Reese; *Inducers of Cellulase and of Other Polysaccharases*; FY-60-61-62; \$20,000
 UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa.; Jean A. Gross; *Development and Reproduction of the Chloroplast*; 2 years; \$9,500
 PURDUE RESEARCH FOUNDATION, Lafayette, Ind.; Joseph Kuc and Oliver E. Nelson; *Synthesis of Lignin in Plants*; 2 years; \$19,900
 Mark L. Tomes; *Biosynthesis of Carotenoids in the Tomato*; 2 years; \$18,400
 RESEARCH FOUNDATION FOR MENTAL HYGIENE, Albany, N.Y.; William Sacks, Orangeburg; *Cerebral Tricarboxylic Acid Cycle Enzyme Activities*; 3 years; \$40,000
 RESEARCH FOUNDATION, Oklahoma State University, Stillwater, Okla.; L. M. Henderson; *Equipment for Biological Research*; 1 year; \$18,700
 RICE INSTITUTE, Houston, Tex.; James W. Campbell; *Biochemistry of Animal Parasites*; 3 years; \$21,000
 RUTGERS, THE STATE UNIVERSITY, New Brunswick, N.J.; J. Oliver Lampen; *Action of Polyene Antifungal Agents on Metabolic Activities in Yeast*; 3 years; \$60,000
 SAINT LOUIS UNIVERSITY SCHOOL OF MEDICINE, St. Louis, Mo.; Elijah Adams; *Enzymatic Degradation of Pharmacologically Active Compounds*; 2 years; \$36,600
 SETON HALL COLLEGE OF MEDICINE AND DENTISTRY, Medical Center, Jersey City, N.J.; Katherine Lewis, Department of Biochemistry; *Lysine Biosynthesis in Fungi*; 2 years; \$17,700
 UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.; S. C. Rittenberg; *Bacterial Metabolism and Physiology*; 4 years; \$80,000
 SOUTHWESTERN LOUISIANA INSTITUTE, Lafayette, La.; T. E. Wilson; *Priority of Enzyme Synthesis in Microorganisms*; 2 years; \$18,000
 STANFORD UNIVERSITY, Stanford, Calif.; C. E. Clifton; *Oxidative Assimilation by Microorganisms*; 4 years; \$38,000
 STATE UNIVERSITY OF IOWA, Iowa City, Iowa; R. E. Kallio; *High Molecular Weight Esters and Waxes in Bacterial Metabolism*; 4 years; \$37,000
 TEMPLE UNIVERSITY, Philadelphia, Pa.; John M. Ward; *Biochemical Aspects of Morphogenesis of the Slime Mold*; 2 years; \$20,000
 UNIVERSITY OF TENNESSEE, Knoxville, Tenn.; D. Frank Holtman; *Amino Acids and TCA Cycle Enzyme Inhibitors*; 2 years; \$12,900
 UNIVERSITY OF TEXAS, Austin, Tex.; James L. Larimer; *Gas Secretion and Carbonic Anhydrase*; 2 years; \$14,000

UTAH STATE UNIVERSITY, Logan, Utah; George W. Welkie; *Ribonuclease Activity in Plant Tissue*; 1 year; \$12,500

VANDERBILT UNIVERSITY, Nashville, Tenn.; Sidney P. Colowick; *Control of Carbohydrate Metabolism*; 2 years; \$91,000

VETERANS ADMINISTRATION, Washington, D.C.; Ruth G. Wittler; *Metabolic Factors Required to Promote Reversion of Mycoplasma Mycoides to Bacterial Form*; 4 months; \$5,300

VIRGINIA POLYTECHNIC INSTITUTE, Blacksburg, Va.; C. J. Ackerman; *Cytidine Coenzymes in the Biosynthesis of Choline*; 2 years; \$14,200

WASHINGTON UNIVERSITY, St. Louis, Mo.; Howard Gest; *Comparative Biochemistry and Physiology of Autotrophic and Heterotrophic Microorganisms*; 3 years; \$40,000

UNIVERSITY OF WASHINGTON, Seattle, Wash.; Erling J. Ordal; *Trace Inorganic Elements in the Metabolism of Bacteria*; 3 years; \$75,000

WEIZMANN INSTITUTE OF SCIENCE, Rehovoth, Israel; Theodore Winnick; *Mechanisms of Biosynthesis of Polypeptides*; 3 years; \$26,000

WESTERN RESERVE UNIVERSITY, Cleveland, Ohio; S. J. Cooperstein; *Purification and Characterization of the Cytochromes of Mammalian Tissues*; 8 years; \$31,100

Warwick Sakami; *Methyl Group Metabolism in Animals*; 3 years; \$42,500

UNIVERSITY OF WISCONSIN, Madison, Wis.; Paul J. Allen; *Relation of Metabolic Processes to the Development of Parasitic Fungi*; 2 years; \$20,000

Robert M. Bock, and Harlyn O. Halvorson; *Protein Biosynthesis at the Template Level*; 3 years; \$70,000

Dexter S. Goldman; *Fatty Acid Metabolism of the Tubercle Bacillus*; 8 years; \$30,000

W. H. McShan; *Characteristics of Particulates Isolated From Anterior Pituitary Tissue*; 2 years; \$31,000

P. W. Wilson and R. H. Burris; *Biological Fixation of Nitrogen*; 3 years; \$35,000

WORCESTER FOUNDATION FOR EXPERIMENTAL BIOLOGY, INC., Shrewsbury, Mass.; Oscar Hechter; *Mode of Action of Insulin Upon Permeability Processes in Muscle Fibers*; 2 years; \$30,000

David Stone; *The Influence of Nucleic Acid Preparations on Animal Cells in Culture*; 1 year; \$15,000

YALE UNIVERSITY, New Haven, Conn.; John A. DeMoss; *Genetic and Physiological Control of Cellular Structures*; 3 years; \$30,500

Arthur W. Galston; *Mechanism of Action of Hormones and Visible Radiations in the Control of Plant Cell Growth*; 4 years; \$73,500

William S. Hillman; *Control of Growth and Flowering in the Lamnaceae*; 3 years; \$44,700

YESHIVA UNIVERSITY, New York, N.Y.; Elsa Proehl Paulsen; *C₁₉ and C₂₁ Steroid Synthesis in the Adrenal Gland*; 3 years; \$31,800

Harold J. Strecker; *Interconversion of Glutamic Acid and Proline*; 3 years; \$21,000

MOLECULAR BIOLOGY

UNIVERSITY OF ARIZONA, Tucson, Ariz.; Albert Siegal; *The Relationship Between Ribonucleic Acid and Protein*; 5 years; \$95,000

Ralph W. G. Wyckoff; *Morphology and*

Composition of Macromolecules; 3 years; \$90,000

BARTOL RESEARCH FOUNDATION OF THE FRANKLIN INSTITUTE, Swarthmore, Pa.; William C. Denison; *Some Luminescences of Chlorophyll in Vivo and in Vitro*; 1 year; \$12,900

UNIVERSITY OF BIRMINGHAM, Birmingham, England; H. Mueller and S. V. Perry; *Protein Synthesis in Muscle*; 2 years; \$12,000

BRANDEIS UNIVERSITY, Waltham, Mass.; Nathan O. Kaplan and Saul G. Cohen; *Relation Between Structure and Function in Metalloenzymes*; 1 year; \$50,000

Harold P. Klein; *Hydrocarbons and Related Compounds of Saccharomyces Cerevisiae*; 2 years; \$16,000

Richard S. Morgan; *Structure of the Mitochondrial Particle and Related Ribonucleic Acids*; 2 years; \$13,000

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; Robert B. Corey and Linus Pauling; *Structure of Proteins*; 3 years; \$300,000

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; James Cason; *Nonantibiotic Metabolic Products of Molds*; 2 years; \$16,000

William G. Clark, Los Angeles; *Mammalian Histidine Decarboxylase*; 2 years; \$24,000

Heinz L. Fraenkel-Conrat; *Chemical Nature of Biologically Active Ribonucleic Acid*; 3 years; \$100,000

Howard K. Schachman; *Macromolecules of Biological Interest*; 5 years; \$170,000

UNIVERSITY OF CHICAGO, Chicago, Ill.; H. Burr Steinbach; *Intracellular Ion Distribution and Function*; 3 years; \$41,800

Birgit Vennesland; *Chloroplast Reactions*; 5 years; \$95,000

CHILDREN'S HOSPITAL OF BUFFALO, Buffalo, N.Y.; R. J. Martinez; *Hexokinases of Bacteria*; 2 years; \$7,000

UNIVERSITY OF CINCINNATI, Cincinnati, Ohio; Richard A. Day; *Secondary and Tertiary Structure of Proteins*; 2 years; \$9,000

COLLEGE OF CHARLESTON, Charleston, S.C.; Joseph R. Merkel; *Metal-Regulated, Photocatalytic Reactions of Flavin Systems*; 2 years; \$9,000

COLUMBIA UNIVERSITY, New York, N.Y.; Sam M. Belser, and Frederic Agate; *Properties of Steroid Hormone-Protein Conjugates*; 3 years; \$45,000

Reinhold Benesch; *Modification of Proteins*; 4 years; \$73,000

Irving Goodman; *Determinants of Biological Action*; 2 years; \$22,000

Alvin I. Krasna; *The Role of the Enzyme Hydrogenase in Hydrogen Photosynthesis*; 2 years; \$16,000

Barbara W. Low; *X-Ray Crystal Structure Studies of Insulin*; 3 years; \$50,000

Stanley L. Miller; *Mechanisms for the Synthesis of Organic Compounds on the Primitive Earth*; 2 years; \$19,000

David Nachmansohn; *Molecular Forces in Nerve Impulse Conduction*; 5 years; \$120,000

Stephen Zamenhof; *Studies on the Biochemistry of Polysulphophosphates*; 1 year; \$11,000

CORNELL UNIVERSITY, Ithaca, N.Y.; George P. Hess; *Structural and Functional Interrelationships in Enzymes*; 1 year; \$19,000

Robert W. Holley; *Fractionation and Characterization of Ribonucleic Acid*; 3 years; \$32,000

- J. R. Vallentyne; *Ecological and Biogeochemical Studies of Amino Acids and Polypeptides*; 3 years; \$48,000
- DARTMOUTH COLLEGE, Hanover, N.H.; Shinya Inoue; *Analysis of Fine Structure of Living Cells*; 3 years; \$280,000
- Manuel F. Morales; *Configuration of Dissolved Proteins and Protein Models*; 5 years; \$41,900
- Arthur J. Samuels; *Immuno-Enzymology of Muscle Proteins*; 2 years; \$11,000
- Lucille Smith; *Oxidative Phosphorylation in Heart and Bacterial Particles*; 1 year; \$5,000
- EARLHAM COLLEGE, Richmond, Ind.; William K. Stephenson; *Alcohol Penetration into Living Cells*; 2 years; \$13,300
- EMORY UNIVERSITY, Atlanta, Ga.; John M. Reiner; *Mechanism of Infection and Multiplication of Bacterial Viruses*; 2 years; \$14,000
- HAHNEMANN MEDICAL COLLEGE, Philadelphia, Pa.; Peter Oesper; *Competitive Inhibitors for 1, 3-Diphosphoglyceric Acid*; 2 years; \$14,000
- HARVARD UNIVERSITY, Cambridge, Mass.; Konrad Bloch; *The Mechanism of Synthesis of Steroids in Biological Systems*; 3 years; \$50,000
- Oleg Jardetsky; *Nuclear Magnetic Resonance Studies of Biologically Important Molecules*; 2 years; \$73,000
- John H. Law; *Biochemistry of the Glycolipids*; 2 years; \$11,600
- A. K. Solomon; *Permeability of Cellular Membranes*; 3 years; \$81,000
- George Wald; *Research on Biochemistry of Vision*; 4 years; \$32,000
- James D. Watson; *Structure and Function of Bacterial Microsomes*; 3 years; \$100,000
- HEALTH RESEARCH, Inc., Buffalo, N.Y.; David Harker; *Crystal Structure of Ribonuclease*; 1 year; \$25,000
- UNIVERSITY OF ILLINOIS, Urbana, Ill.; S. Spiegelman; *The Mechanism of Enzyme Synthesis*; 5 years; \$90,000
- INSTITUTE FOR CANCER RESEARCH, Philadelphia, Pa.; Thomas F. Anderson; *Invasion of Host Cells by Bacterial Viruses*; 2 years; \$23,000
- Thomas F. Anderson; *Specific Synthesis in Bacteria and Bacteriophages*; 3 years; \$159,000
- IOWA STATE UNIVERSITY OF SCIENCE AND TECHNOLOGY, Ames, Iowa; S. Aronoff; *Inter-cellular Movements of Organic Compounds*; 2 years; \$22,000
- David A. Metzler; *Mechanism of the Catalytic Action of Riboflavin*; 3 years; \$22,100
- JOHANN - WOLFGANG - GOETHE - UNIVERSITÄT, Frankfurt/Main, West Germany; Erich Heinz; *Chemical and Physico-Chemical Basis of Active Transport*; 2 years; \$28,000
- JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; Michael Beer; *Electron Microscope Studies of Macromolecules and Cells*; 1 year; \$50,000
- Thomas C. Bruce; *Synthesis of a Series of Gem Mercaptoethylamines*; 4 years; \$66,500
- KANSAS WESLEYAN UNIVERSITY, Salina, Kans.; Orville L. Voth; *Interactions of Tocopherol with Proteins and Amino Acids*; 2 years; \$7,000
- KENTUCKY RESEARCH FOUNDATION, Lexington, Ky.; Richard S. Schweet; *Incorporation of Amino Acids into Ribonucleic Acid*; 18 months; \$29,100
- KYOTO UNIVERSITY, Maizuru, Japan; Hiroshi Fujita; *Differential Equation for the Ultracentrifuge*; 1 year; \$1,800
- UNIVERSITY OF MAINE, Orono, Maine, George R. Pettit; *Alkaloid and Terpenene Components of the Labiatae*; 2 years; \$8,000
- MANHATTAN COLLEGE, New York, N.Y.; Brother William Batt; *Lipase Purification and Kinetics*; 2 years; \$20,000
- MARINE BIOLOGICAL LABORATORY, Woods Hole, Mass.; Morris Rockstein; *Biochemical Basis for Light Orientation of the Starfish of the Woods Hole Area*; 5 years; \$32,900
- UNIVERSITY OF MARYLAND, College Park, Md.; R. G. Grenell, The Psychiatric Institute; *The Structure of Brain Lipide-Protein Complexes*; 1 year; \$7,000
- Harris J. Linder; *Histochemistry of Cocoon and Egg Shell Formation*; 2 years; \$10,000
- MASSACHUSETTS GENERAL HOSPITAL, Boston, Mass.; Jerome Gross; *Intermolecular Organization and Interactions of Normal and Abnormal Collagen*; 1 year; \$20,000
- MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Vernon M. Ingram; *Chemical Structure of the Human Hemoglobins*; 3 years; \$56,000
- Boris Magasanik; *Regulation of the Metabolic Processes at the Molecular Level*; 2 years; \$133,000
- Alexander Rich; *Molecular Structural Studies on the Nucleic Acids and Related Compounds*; 3 years; \$73,000
- UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; M. J. Coon; *Biological Hydrocarbon Oxidation*; 3 years; \$52,000
- UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Rufus Lumry; *Kinetics Studies of Enzyme Mechanisms*; 2 years; \$25,000
- Fred Smith; *Detailed Structure of Polysaccharides*; 4 years; \$35,000
- UNIVERSITY OF MISSOURI, Columbia, Mo.; Owen J. Koeppel; *Mechanism of Action of Glyceraldehyde-3-Phosphate Dehydrogenases*; 3 years; \$22,000
- MOUNT HOLYOKE COLLEGE, South Hadley, Mass.; Jytte Muus; *Chemical and Enzymatic Studies on Human Salivary Amylase*; 3 years; \$33,600
- Curtis G. Smith; *Inhibition of Riboflavin Synthesis in *Ermothecium Ashbyi**; 2 years; \$18,800
- NATIONAL INSTITUTE OF ARTHRITIS AND METABOLIC DISEASES, Bethesda, Md.; Hugo Bauer; *Analysis and Identification of Products of Histidine Metabolism*; 2 years; \$8,000
- NEW YORK UNIVERSITY, New York, N.Y.; John S. Cook; *Erythrocyte Volumes and Ionic Fluxes in Solutions of the Alkali Salts of Monovalent Anions*; 21 months; \$12,600
- C. T. O. Fong; *Chemical Aspects of Hormone-Receptor Interaction*; 1 year; \$13,000
- Robert C. Warner; *Physical Properties of Enzymatically Synthesized Polynucleotides and of Ribonucleic Acid*; 3 years; \$51,000
- Robert Warner Chambers; *Synthesis of Nucleotides*; 3 years; \$36,000
- UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N.C.; Claude Plantadosi; *Chemistry and Metabolism of Plasmalogens*; 2 years; \$14,000
- UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Britton Chance; *Experimental Studies*

on *Energy Transfer and Conservation*; 5 years; \$700,000

Mildred Cohn; *Mechanisms of Phosphorylation and Phosphate Transfer Reactions*; 2 years; \$28,000

R. E. Forster; *Diffusion of Gases and Their Simultaneous Chemical Reaction With Hemoglobin*; 2 years; \$20,000

George F. Springer and William Pepper; *Nature of Blood Group Active Substances*; 4 years; \$40,000

Elizabeth Thorogood; *Leguma Hemoproteins*; 1 year; \$11,000

PRINCETON UNIVERSITY, Princeton, N.J.; Frank Johnson; *Biochemistry of Luminescent Systems*; 3 years; \$42,000

W. J. Kauzmann and J. R. Fresco; *Physical-Chemical Investigations of Biological Macromolecules*; 1 year; \$70,000

RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK, Albany, N.Y.; Martynas Yeas and Walter S. Vincent; *Information Transfer Via Ribonucleic Acid*; 3 years; \$42,000

RETINA FOUNDATION, Boston, Mass.; Tovar Laurent; *Interaction Between Concentrated Solutions of Hyaluronic Acid and Other Macromolecules*; 2 years; \$24,000

ROCKEFELLER INSTITUTE, New York, N.Y.; Edward J. Murphy; *Electrical Conduction in Hydrogen-Bonded Substances*; 1 year; \$10,000

Edward L. Tatum and Curtis A. Williams, Jr.; *Effects of Gene Mutation of Proteins of Neurospora Crassa*; 3 years; \$65,200

RUTGERS, THE STATE UNIVERSITY, New Brunswick, N.J.; G. S. Panson and C. E. Weill; *Liquid Thermal Diffusion of Natural Products*; 2 years; \$9,800

David Pramer; *Concentration and Characterization of Nemin*; 2 years; \$18,000

SAINTE MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, London, England; R. R. Porter; *Structural Basis of the Immunological Activity of Antibodies and Protein Antigens*; 5 years; \$100,000

STATE UNIVERSITY OF IOWA, Iowa City, Iowa; George Kalnitsky and John P. Hummel; *Character of the Catalytic Site of Ribonuclease*; 3 years; \$52,100

TEMPLE UNIVERSITY, Philadelphia, Pa.; Peter S. Olmsted; *Mechanism of in Vitro Polynucleotide Synthesis*; 2 years; \$20,000

TEXAS A & M RESEARCH FOUNDATION, College Station, Tex.; H. K. Zimmerman and Hans Weidman; *Fundamental Chemistry of Aminosugars*; 1 year; \$7,700

UNIVERSITY OF TEXAS, Austin, Tex.; Lester Packer; *Function of Subcellular Membranes*; 2 years; \$24,000

Austen F. Riggs; *Biochemistry of Hemoglobin and of Nitrogen Fixation*; 3 years; \$30,000

TRINITY COLLEGE, Hartford, Conn.; W. Scott Worrall; *Hypothesis on Intimate Mechanism of Proteolytic Enzymes*; 3 years; \$12,300

TUSKEGEE INSTITUTE, Tuskegee Institute, Ala.; Horace D. Graham; *Determination and Reactions of Food Gums*; 1 year; \$5,000

VANDERBILT UNIVERSITY, Nashville, Tenn.; Leon W. Cunningham; *Chemical and Enzymatic Studies of Glycopeptides*; 3 years; \$21,000

VIRGINIA INSTITUTE FOR SCIENTIFIC RESEARCH, Richmond, Va.; Anton N. J. Heyn; *Fiber and Ultrastructure Research*; 2 years; \$51,000

UNIVERSITY OF VIRGINIA, Charlottesville, Va.; Robert B. Martin; *Equilibrium and*

Kinetic Studies of Systems of Biological Interest; 2 years; \$15,000

WAKE FOREST COLLEGE, Winston-Salem, N.C.; Frank H. Hulcher; *Cytochrome f in Photosynthesis*; 2 years; \$18,000

WASHINGTON STATE UNIVERSITY, Pullman, Wash.; Leonard B. Kirschner; *Osmotic Regulation and the Function of Regulatory Organs*; 3 years; \$31,900

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Barry Commoner; *Molecular Basis of the Biological Properties of Tobacco Mosaic Virus*; 3 years; \$170,000

Robert K. Crane; *Utilization of Hexoses by Animal Cells*; 2 years; \$31,300

Tung-Yue Wang; *Globulin Fraction of Cell Nuclei*; 2 years; \$17,000

WAYNE STATE UNIVERSITY, Detroit, Mich.; Maurice H. Bernstein; *Functional Modifications of Sperm Structure*; 2 years; \$30,000

WESTERN RESERVE UNIVERSITY, Cleveland, Ohio; John Spizizen; *Fractionation of Deoxyribonucleic Acid*; 1 year; \$1,500

UNIVERSITY OF WISCONSIN, Madison, Wis.; Philip P. Cohen and G. W. Brown, Jr.; *Comparative Biochemistry of Urea Biosynthesis*; 2 years; \$27,000

Robert W. Fulton and Robert J. Shepherd; *Techniques for Purification of Unstable Plant Viruses*; 3 years; \$23,000

Stephen A. Kuby and Henry A. Lardy; *Enzyme Kinetics and Mechanisms*; 1 year; \$70,000

YALE UNIVERSITY, New Haven, Conn.; Henry A. Harbury; *Interactive Effects in Heme and Flavin Systems*; 3 years; \$39,200

Patricia F. Knight; *Cathepsin Specificity and Antibody Formation*; 2 years; \$15,000

Frederic M. Richards; *Relation of Structure to Function in Ribonuclease*; 4 years; \$67,200

Julian M. Sturtevant; *Physico-Chemical Studies of Proteins and Related Reactions*; 3 years; \$45,000

YESHIVA UNIVERSITY, New York, N.Y.; Sasha England; *The Structural Nature of Malic Dehydrogenase*; 2 years; \$17,000

Nathar W. Penn; *Nature and Role of the Mitochondrial Acceptor Fraction in Protein Metabolism*; 2 years; \$14,000

PHYSICS

ADDELPHI COLLEGE, Garden City, N.Y.; Henry Brysk; *An Asymptotic Formulation in the Theory of Scattering*; 2 years; \$9,100

UNIVERSITY OF ALABAMA, University, Ala.; Charles E. Mandeville; *Structure of Nuclei*; 2 years; \$38,000

AMERICAN UNIVERSITY OF BEIRUT, Beirut, Lebanon; Frans Bruin; *Paramagnetic Resonance of Free Radicals*; 3 years; \$9,400

AMHERST COLLEGE, Amherst, Mass.; Robert H. Romer; *Nuclear Spin Resonance in Helium Solutions*; 3 years; \$21,500

BOSTON UNIVERSITY, Boston, Mass.; Edward Booth; *Nuclear Resonance Scattering of Bremsstrahlung*; 1 year; \$17,500

BOWDOIN COLLEGE, Brunswick, Maine; Myron A. Jeppesen; *Photoelectric Emission from Small Particles in Pulsed Light*; 2 years; \$26,800

- Walter D. Jones; *Semiempirical calculation of Molecular Parameters*; 2 years; \$7,000
- BRANDIS UNIVERSITY, Waltham, Mass.; Max Chretien; *Bubble Chamber Research on Elementary Particles*; 2 years; \$25,100
- BRIGHAM YOUNG UNIVERSITY, Provo, Utah; Harvey Fletcher; *Musical Acoustics*; 2 years; \$48,400
- John H. Gardner; *Gyromagnetic Ratio of the Free Electron*; 1 year; \$9,100
- John H. Gardner; *Electron Paramagnetic Resonance at Very High Pressures*; 3 years; \$51,700
- BROWN UNIVERSITY, Providence, R.I.; Phillip J. Bray; *Nuclear Magnetic Resonance Studies of Molecular and Ionic Crystals*; 3 years; \$26,800
- CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; Jesse W. M. Dumond and Harry A. Kirkpatrick; *Precision Comparison of the X-ray Wavelength Scales*; 1 year; \$16,700
- John R. Pellam; *Properties of Matter at Low Temperatures*; 2 years; \$214,100
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Paul H. Barrett, Santa Barbara; *Large Air Shower Detector*; 1 year; \$6,200
- Robert R. Hewitt; *Nuclear Electric Quadrupole Interactions With Metallic Environments*; 3 years; \$29,900
- M. Tinkham; *Solids at Millimeter Submillimeter Wavelength*; 3 years; \$54,900
- CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pa.; S. A. Friedberg; *Investigations in Low Temperature Physics*; 2 years; \$21,500
- Robert T. Schumacher; *Magnetic Resonance and Electronic Properties of Solids*; 2 years; \$32,100
- CATHOLIC UNIVERSITY OF AMERICA, Washington, D.C.; James G. Brennan; *Interaction of Mu Mesons With Nuclei*; 2 years; \$12,000
- Karl F. Herzfeld; *Spectrographic Study of Relaxation Processes*; 2 years; \$45,000
- UNIVERSITY OF CHICAGO, Chicago, Ill.; Clayton F. Giese; *Molecular Beam Experiments*; 2 years; \$37,300
- A. W. Lawson and Morrel H. Cohen; *Solid State Investigations*; 3 years; \$124,300
- Robert S. Mulliken and C. C. J. Roothaan; *Quantum Mechanical Studies on Molecular Structure*; 3 years; \$206,800
- R. W. Thompson; *Double Cloud Chamber for High Energy Particles*; 3 years; \$219,600
- CITY COLLEGE, New York, N.Y.; Harry Lustig; *Theoretical Analysis of Nuclear Reaction Data*; 1 year; \$8,400
- COLBY COLLEGE, Waterville, Maine; Dennison Bancroft; *Precision Measurement of the Velocity of Sound in Gases*; 2 years; \$11,500
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- Wesley E. Brittin; *Research in Theoretical Physics*; 2 years; \$42,200
- UNIVERSITY OF CONNECTICUT, Storrs, Conn.; Arnold Russek; *Theory of High-Energy Atomic Collisions*; 2 years; \$20,500
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- Jay Orear; *Scattering of Muons by Nuclei*; 2 years; \$99,400
- L. G. Parratt; *X-ray Spectroscopy*; 2 years; \$34,500
- DARTMOUTH COLLEGE, Hanover, N.H.; William T. Doyle; *Color Centers in Ionic Crystals*; 2 years; \$43,700
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- Joseph E. Lannutti; *High Energy Nuclear Physics*; 2 years; \$51,000
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- FORDHAM UNIVERSITY, New York, N.Y.; Joseph F. Mulligan, Alfons Weber, Joseph Shapiro, and Frederick L. Canavan; *Theoretical Analyses in Physics Research Using a Computer*; 3 years; \$51,900
- FRANKLIN INSTITUTE, Philadelphia, Pa.; Franz R. Metzger; *Resonance Fluorescence Studies Using the Centrifuge Method*; 3 years; \$117,900
- GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta, Ga.; James R. Stevenson; *Photoexcitation Phenomena in Insulators*; 2 years; \$12,400
- UNIVERSITY OF GEORGIA, Athens, Ga.; Malcolm F. Steuer, and Lewis C. Thompson; *Nuclear Structure*; 1 year; \$85,800
- GOUCHER COLLEGE, Baltimore, Md.; John I. Lodge; *Interactions of Elementary Particles*; 2 years; \$8,800
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- HAVERFORD COLLEGE, Haverford, Pa.; Fay Ajzenberg-Selove; *Neutron Spectra and Energy Levels of Light Nuclei*; 3 years; \$47,200
- HOWARD UNIVERSITY, Washington, D.C.; Erwin M. Horl; *Structure Studies of Solidification Permanent Gases*; 2 years; \$43,900
- ILLINOIS INSTITUTE OF TECHNOLOGY, Chicago, Ill.; Thomas Erber; *Bremsstrahlung and Pair Production at High Energies*; 2 years; \$15,400
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- INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; E. J. Konopinski; *The Theory and Interpretation of Elementary Particle Interactions*; 2 years; \$105,100
- INSTITUTE FOR ADVANCED STUDY, Princeton, N.J.; Robert Oppenheimer; *Theoretical Physics*; 3 years; \$180,000
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- LOUISIANA STATE UNIVERSITY AND AGRICULTURAL AND MECHANICAL COLLEGE, Baton

- Rouge, La.; J. S. Levinger; *Theoretical Nuclear Physics*; 3 years; \$50,400
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- MARQUETTE UNIVERSITY, Milwaukee, Wis.; Arthur G. Barkow; *Elementary Particle Reactions in Photographic Emulsions*; 2 years; \$15,600
- Paul J. Cressman; *Lifetimes of Excited States*; 2 years; \$23,000
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- Joseph Weber; *Theoretical and Experimental Research in General Relativity*; 2 years; \$68,400
- MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Bruno Rossi; *Cosmic Ray Air Shower Research*; 30 months; \$176,100
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- John C. Slater; *Research in Neutron Physics*; 2 years; \$199,400
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- MIAMI UNIVERSITY, Oxford, Ohio; David F. Griffing; *Auger Effect in Mesonic Atoms*; 2 years; \$23,900
- MICHIGAN STATE UNIVERSITY OF AGRICULTURE AND APPLIED SCIENCE, East Lansing, Mich.; Clarence D. Hause and Thomas H. Edwards; *Near Infrared Molecular Spectroscopy*; 2 years; \$35,300
- Sherwood K. Haynes; *Low Energy Beta-Ray Spectroscopy*; 2 years; \$17,000
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- NEW MEXICO COLLEGE OF AGRICULTURE AND MECHANIC ARTS, University Park, N. Mex.; Robert E. McDaniel; *Investigation of the Heavy Nuclei Component of Cosmic Radiation and of Allied Nuclear Reactions*; 2 years; \$9,400
- NEW YORK UNIVERSITY, New York, N.Y.; Lyle B. Borst; *Neutron Resonance Scattering*; 3 years; \$96,000
- OFFICE OF NAVAL RESEARCH, Washington, D.C.; William Wright; *Fund Transfer for High Energy Cosmic Ray Project*; 1 year; \$215,000
- OHIO STATE UNIVERSITY RESEARCH FOUNDATION, Columbus, Ohio; Harold H. Nielsen; *Infrared Spectra of Polyatomic Molecules*; 3 years; \$52,500
- UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE, Norman, Okla.; Sybrand Broersma; *Viscous Force Constants of Objects*; 2 years; \$27,400
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- Walter I. Goldberg; *Nuclear Magnetic Resonance Studies*; 2 years; \$29,700
- D. H. Rank; *Precision Infrared Spectroscopy*; 3 years; \$69,100
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- Bernard L. Cohen; *Nuclear Structure and Nuclear Reactions*; 2 years; \$121,500
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- PORTLAND STATE COLLEGE, Portland, Oreg.; Laird C. Brodie; *Impurity Effects on Oscillatory Properties*; 2 years; \$14,300
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- Hubert M. James; *Phase Transition in Molecular Crystals*; 3 years; \$44,400
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- John E. Winhold; *Fast Neutron-Induced Nuclear Reactions*; 2 years; \$24,700
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- H. C. Torrey and H. Y. Carr; *Nuclear Magnetic Resonance*; 2 years; \$23,700
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- SEATTLE PACIFIC COLLEGE INSTITUTE FOR RESEARCH, Seattle, Wash.; Donald Karlee; *Primary Cosmic Rays and Scattering of Heavy Ions by Nuclei*; 2 years; \$25,700
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tering as a Random Flight Process; 2 years; \$20,600

Ronald D. Edge; *Cosmic Ray Neutrons Near the Earth's Surface*; 1 year; \$18,500
SOUTH DAKOTA STATE COLLEGE, Brookings, S. Dak.; George H. Duffey; *Application of Quantum Mechanics to Chemical Bonding*; 2 years; \$16,000

SOUTHERN METHODIST UNIVERSITY, Dallas, Tex.; Clifton B. Clark; *Specific Heats of Metals*; 2 years; \$12,500

STANFORD UNIVERSITY, Stanford, Calif.; William M. Fairbank; *Quantum Effects in Liquid and Solid Helium*; 2 years; \$96,700

Walter E. Meyerhof; *Nuclear Structure Research with 3 Mev Particles*; 2 years; \$6,700

George E. Pake; *Antiferromagnetic Lambda Points in Paramagnetic Organic Compounds*; 2 years; \$29,500

STEVENS INSTITUTE OF TECHNOLOGY, Hoboken, N.J.; Hans Meissner; *Studies of Superconductivity*; 2 years; \$38,100

SWARTHMORE COLLEGE, Swarthmore, Pa.; Irving E. Dayton; *Excitation Functions for Molecular Spectra*; 2 years; \$18,400

SYRACUSE UNIVERSITY RESEARCH INSTITUTE, Syracuse, N.Y.; Peter G. Bergmann and Arthur Komar; *Observables in General Relativity*; 3 years; \$64,200

Nahmin Horwitz; *Properties of K-Mesons*; 1 year; \$17,600

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TEXAS TECHNOLOGICAL COLLEGE, Lubbock, Tex.; Henry C. Thomas; *Inner Bremsstrahlung in Electron Capture*; 2 years; \$11,600

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TUFTS UNIVERSITY, Medford, Mass.; Kathryn A. McCarthy; *Thermal Conductivity of Alkali Halide Crystals*; 2 years; \$87,300

TULANE UNIVERSITY OF LOUISIANA, New Orleans, La.; John R. Shewell; *Quantum Mechanics in a Noncommuting Phase Space*; 1 year; \$4,400

UNIVERSITY OF UTAH, Salt Lake City, Utah; J. W. Keuffel; *Cosmic Ray Mesons*; 3 years; \$77,100

UTICA COLLEGE OF SYRACUSE UNIVERSITY, Utica, N.Y.; Peter Fong; *Theory of Nuclear Fission*; 2 years; \$7,900

VANDERBILT UNIVERSITY, Nashville, Tenn.; Joseph H. Hamilton; *Nuclear Spectroscopy*; 2 years; \$22,100

Charles E. Roos; *Photostigma Measurements Using High Magnetic Fields*; 1 year; \$28,400

WASHINGTON UNIVERSITY, St. Louis, Mo.; Thomas A. Pond; *Weak Interactions*; 2 years; \$51,900

UNIVERSITY OF WASHINGTON, Seattle, Wash.; Jere J. Lord; *Emulsion Study of High Energy Nuclear Interactions*; 2 years; \$24,000

Edwin A. Vehling; *Nuclear and Electronic Magnetic Relaxation in Crystals*; 2 years; \$18,600

WAYNE STATE UNIVERSITY, Detroit, Mich.; Leonard O. Roellig; *Nucleation of Bubbles in a Superheated Liquid Exposed to Ionizing Radiations*; 2 years; \$35,800

WESLEYAN UNIVERSITY, Middletown, Conn.; Forrest I. Boley; *Atmospheric Cerenkov Radiation*; 2 years; \$39,600

Edwin F. Taylor; *Investigation of Electric Field Gradients in Alkali Halide Crystals*; 2 years; \$16,400

WEST VIRGINIA UNIVERSITY, Morgantown, W. Va.; Harvey N. Rexroad, Jack D. Graybeal and Gerald C. Michael; *Microwave Spectroscopy and Electronic Magnetic Resonance*; 2 years; \$34,900

WESTERN RESERVE UNIVERSITY, Cleveland, Ohio; Gerald Tauber; *Rotation and Gravitation in Statistical Systems*; 2 years; \$24,500

WHITMAN COLLEGE, Walla Walla, Wash.; Robert B. Bennett; *Vaporization of Cesium in Argon Atmosphere*; 2 years; \$15,300

UNIVERSITY OF WICHITA, Wichita, Kans.; John B. Breazeale; *Effects of Adsorbed Gas on Photoelectric Work Function*; 2 years; \$16,800

WILLIAMS COLLEGE, Williamstown, Mass.; Fielding Brown; *Ferroelectric and Semiconducting Properties of Barium Titanate*; 2 years; \$19,900

UNIVERSITY OF WISCONSIN, Madison, Wis.; Harold W. Lewis; *Problems in Theoretical Physics*; 2 years; \$29,000

Julian E. Mack; *Structure of Atomic Spectra*; 2 years; \$42,500

R. Rollefson; *Summer Research Institute of Theoretical Physics*; 2 months; \$27,600

UNIVERSITY OF WYOMING, Laramie, Wyo.; Burton H. Muller; *Nuclear Relaxation Times in Paraffin Hydrocarbons*; 3 years; \$15,900

YALE UNIVERSITY, New Haven, Conn.; Henry A. Fairbank; *Experimental Research in Low Temperature Physics*; 3 years; \$63,900

C. T. Lane; *Rotational States in Superfluid Helium*; 3 years; \$54,800

PSYCHOBIOLOGY

AMERICAN MUSEUM OF NATURAL HISTORY, New York, N.Y.; Evelyn Shaw; *Development of Schooling Behavior*; 2 years; \$28,300

AMHERST COLLEGE, Amherst, Mass.; John W. Davenport; *Reinforcement Variables in Simple Learning Situations*; 3 years; \$14,100

UNIVERSITY OF ARIZONA, Tucson, Ariz.; Robert W. Lansing; *Attention Changes in Man*; 2 years; \$18,600

Joe T. Marshall; *Research in Speciation*; 3 years; \$31,400

UNIVERSITY OF ARKANSAS, Fayetteville, Ark.; D. H. Kausler, and E. P. Trapp; *Interaction of Variables in Intentional and Incidental Learning*; 2 years; \$17,300

BRANDEIS UNIVERSITY, Waltham, Mass.; Richard Held; *Visual-Motor Coordination in Mammals*; 2 years; \$24,000

BROWN UNIVERSITY, Providence, R.I.; Frances L. Clayton; *Factors Influencing Strength of Secondary Reinforcers*; 2 years; \$11,100

J. W. Kling; *Factors Influencing Response Strength*; 2 years; \$14,400

Lewis P. Lipsitt; *Studies of Discrimination Learning*; 2 years; \$11,800

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Norman H. Anderson, Los Angeles; *Probabilistic Discrimination Learning*; 3 years; \$37,700

Nicholas E. Collias, Los Angeles; *Anal-*

ysis of Nest Building in Weaverbirds; 29 months; \$19,600

W. E. Jeffrey, Los Angeles; *Research on Discrimination Learning*; 2 years; \$20,500

Jacques W. Kaswan, Los Angeles; *Factors in Visual Perception*; 3 years; \$30,700

David Krech and Marion C. Diamond; *Histological Correlates of Behavioral and Biochemical Measures*; 2 years; \$20,700

Peter R. Marler; *Instinctive Behavior in Vertebrates*; 2 years; \$50,800

Donald Riley, Los Angeles; *Studies of Transposition Behavior*; 3 years; \$27,000

CARLETON COLLEGE, Northfield, Minn.; Peter M. Guthrie; *Symbolic Puzzle-Bow Learning*; 1 year; \$2,400

CENTRAL INSTITUTE FOR THE DEAF, Saint Louis, Mo.; Carl E. Sherrick, Jr.; *Study of Vibratory Stimuli*; 1 year; \$4,000

UNIVERSITY OF CHICAGO, Chicago, Ill.; Robert A. Butler; *Effects of Brain Damage on Responsiveness to Visual and Auditory Incentives*; 2 years; \$21,500

CLEVELAND HEARING AND SPEECH CENTER, Cleveland, Ohio; Earl D. Schubert; *Interaural Temporal Disparity*; 1 year; \$10,700

CORNELL UNIVERSITY, Ithaca, N.Y.; J. E. Hochberg; *Dimensions of Form Perception*; 3 years; \$14,700

Peter P. Kellogg, and William C. Dilger; *Ethological Investigation of Bird Sounds*; 3 years; \$50,000

Edward C. Raney; *Behavior of Cypripidae*; 2 years; \$11,000

DARTMOUTH COLLEGE, Hanover, N.H.; William M. Smith; *Temporal Characteristics of Visual Contour Processes*; 3 years; \$22,400

DUKE UNIVERSITY, Durham, N.C.; C. Alan Boneau; *Empirical Study of the t Test*; 1 year; \$10,000

FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; H. D. Baker, and J. C. Smith; *Behavioral Measurement of Visual Functions*; 1 year; \$7,700

UNIVERSITY OF FLORIDA, Gainesville, Fla.; Thomas J. Walker, Jr.; *Acoustical Behavior of Orthoptera*; 2 years; \$15,500

GEORGE WASHINGTON UNIVERSITY, Washington, D.C.; Richard D. Walk; *Study of Visual Depth Perception*; 2 years; \$15,400

UNIVERSITY OF GEORGIA, Athens, Ga.; Bernard S. Martof; *Behavior and Ecology of Amphibians*; 3 years; \$29,700

GRINNELL COLLEGE, Grinnell, Iowa; Irving Y. Fishman; *Chemoreception in Small Mammals*; 3 years; \$22,800

HARVARD UNIVERSITY, Cambridge, Mass.; Richard L. Solomon; *Experiments on Aversive Autonomic Conditioning*; 5 years; \$55,500

S. Smith Stevens; *The Construction of Sensory Scales*; 5 years; \$172,500

Edward O. Wilson; *Behavior of Dolichoderinae*; 3 years; \$12,500

UNIVERSITY OF HAWAII, Honolulu, Hawaii; A. Leonard Diamond; *Simultaneous Brightness Contrast and the Brightness Response*; 3 years; \$31,900

Maurice M. Tatsuoka; *Properties of Stochastic Learning Models*; 2 years; \$9,100

HOLLIS COLLEGE, Hollins College, Va.; Robert C. Bolles; *Stimulus Properties of Drives*; 3 years; \$20,000

UNIVERSITY OF ILLINOIS, Urbana, Ill.; O. Hobart Mowrer; *Psychology of Learning and Thinking*; 4 years; \$14,500

Garth J. Thomas; *Behavioral Alterations*

Following Lesions in the Rhinencephalon; 5 years; \$82,500

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; Lloyd R. Peterson; *Short-Term Retention and Learning*; 2 years; \$9,400

INSTITUTE OF LIVING, Hartford, Conn.; John S. Stamm; *Effects of Cortical Stimulation on Learning and Retention*; 3 years; \$81,500

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; James Deese; *The Relationship Between Verbal Context and Free Recall*; 2 years; \$11,800

Wendell R. Garner; *Support of Animal Research Activities*; 1 year; \$7,000

UNIVERSITY OF KANSAS, Lawrence, Kans.; Richard F. Johnston; *Comparative Behavior of American Ground Doves*; 21 months; \$1,800

Charles D. Michener; *Origin and Evolution of the Female Castes of Bees*; 3 years; \$48,000

MARQUETTE UNIVERSITY, Milwaukee, Wis.; John I. Johnson; *Effects of Muscular Tension on Human Learning*; 1 year; \$5,700

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Kenneth N. Stevens; *Research on Speech Perception*; 2 years; \$50,500

UNIVERSITY OF MASSACHUSETTS, Amherst, Mass.; Warren H. Teicher; *Behavioral and Psychophysiological Effects of Cold Environments*; 18 months; \$17,300

UNIVERSITY OF MIAMI, Coral Gables, Fla.; Warren J. Wisby; *Anatomy and Physiology of the Visual Apparatus of Pelagic Fishes*; 13 months; \$7,300

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; Mathew Alpern; *Studies of Contrast Phenomena*; 5 years; \$28,400

J. David Birch; *Role of Extinction in Reversal Learning*; 2 years; \$24,100

James Olds; *Brain Changes and Learning*; 3 years; \$62,400

Robert A. McCleary; *Studies of Interocular Transfer*; 3 years; \$50,700

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; David L. LaBerge; *Studies in Stimulus Generalization*; 1 year; \$9,000

Harold W. Stevenson; *Probability Learning*; 3 years; \$20,500

MONTANA STATE UNIVERSITY, Missoula, Mont.; Clyde E. Noble; *Analysis of Trial-and-Error Learning*; 2 years; \$9,600

UNIVERSITY OF MONTREAL, Montreal, Canada; J. P. Cordeau; *Electrophysiological and Anatomical Correlates of Recent Memory*; 2 years; \$15,000

NEW YORK STATE PSYCHIATRIC INSTITUTE, New York, N.Y.; Carney Landis; *Studies of Flicker-Fusion Determinants*; 3 years; \$47,900

NORTHWESTERN UNIVERSITY, Evanston, Ill.; Stephen E. Glickman; *Studies of Animal Behavior*; 1 year; \$5,800

UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE, Norman Okla.; Irene Hulicka; *Drive and Incentive as Determinants of Performance*; 1 year; \$130

UNIVERSITY OF OREGON, Eugene, Oreg.; Robert F. Fagot; *Psychophysical Measurement*; 14 months; \$9,600

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Philip Teitelbaum; *Effect of Hypothalamic Lesions on Behavior*; 8 years; \$53,100

UNIVERSITY OF PORTLAND, Portland, Oreg.; Nissim Levy; *Effects of Omission of Reward*; 2 years; \$21,600

- PRINCETON UNIVERSITY, Princeton, N.J.; Byron A. Campbell; *Studies on Aversive and Reinforcing Properties of Stimuli*; 3 years; \$36,500
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- UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.; William W. Grings; *Conditioning and Perception*; 2 years; \$9,900
- STATE UNIVERSITY OF IOWA, Iowa City, Iowa; Arnold M. Small, Jr.; *Perception of Periodicity in the Auditory System*; 3 years; \$46,200
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- TEXAS CHRISTIAN UNIVERSITY, Fort Worth, Tex.; Malcolm D. Arnoult and Winton H. Manning; *Auditory Pattern Perception*; 1 year; \$3,900
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- Edward A. Bilodeau; *Research on Long-Term Human Memory*; 3 years; \$45,000
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- Arthur D. Hasler; *Environmental Influences on Fish Behavior*; 3 years; \$47,800
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- BEREA COLLEGE, Berea, Ky.; Frank B. Galley; *Early Stages of Chlorophyll and Chloroplast Development*; 3 years; \$19,100
- BRYN MAWR COLLEGE, Bryn Mawr, Pa.; L. Joe Berry; *Effects of Bacterial Endotoxins on Adrenal Response to Acth*; 3 years; \$41,300
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- Vincent Santilli; *Leaf Riconuclease in Tobacco Mosaic Virus Infection*; 3 years; \$24,600
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- Leonard Machlis; *Production and Determination of the Chemical Structure of Strenin*; 2 years; \$39,800
- John H. Phillips, Jr.; *Internal Nutrient Transport in Echinodermata*; 2 years; \$20,500
- Wilbur B. Quay; *Neural and Biochemical Regulation of Pineal Metabolism*; 1 year; \$8,600
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- CAPE HAZE MARINE LABORATORY, INC.; Placida, Fla.; Eugenie Clark; *Physiology and Morphology of Abdominal Pores and Associated Structures*; 2 years; \$9,500
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- CHILDREN'S HOSPITAL RESEARCH FOUNDATION, Cincinnati, Ohio; Clark D. West; *Equipment for Studies in Antibody Production*; 1 year; \$1,650
- UNIVERSITY OF CINCINNATI, Cincinnati, Ohio; Karl M. Knigge; *Neural Control of Corticotropin and Thyrotropin Secretion*; 2 years; \$12,700
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Salisbury, *Metabolic Approach to the Study of Flower Formation*; 2 years; \$22,800
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 A. van Tienhoven; *Mechanism of Inhibition of Pituitary Activity by Captivity*; 2 years; \$15,000
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 William T. Jackson; *Chemical Control of Root Hair Elongation*; 3 years; \$34,000
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 Wilbur D. Shenk; *End-Plate Regeneration in Skeletal Muscle*; 2 years; \$7,000
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 Friedrich P. J. Diecke; *Olfactory Sense in Vertebrates*; 4 years; \$47,400

Ruth McClintock; *Potentiometric Study of Renal Transport of Cations*; 3 years; \$24,400
 Eugene M. Renkin; *Regulatory Mechanisms in Blood Circulation*; 3 years; \$17,400
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 G. E. Peterson; *Natural Functions of Antibiotics*; 3 years; \$28,100
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 Clyde Maxwell; *Molecular Specificity of the Hemoglobins*; 1 year; \$4,050
 Arnold V. Wolf, Chicago; *Theory and Experimentation Concerning Sea Water Drinking*; 3 years; \$63,600
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 KAISER FOUNDATION RESEARCH INSTITUTE, Oakland, Calif.; Ellsworth C. Dougherty; *Cultivation of Micrometazoa*; 3 years; \$42,200
 LEHIGH UNIVERSITY, Bethlehem, Pa.; Richard G. Malsberger; *Viral Diseases of Fresh Water Fish*; 3 years; \$30,600
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 UNIVERSITY OF MAINE, Orono, Maine; George F. Dow; *Spectograph and Accessory Equipment for Basic Research in Biology*; 1 year; \$55,000
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UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; J. J. Jezeski; *Physiological Studies on Psychrophilic Bacteria*; 3 years; \$26,600

Richard L. Varco; *Delayed Bacterial Hypersensitivity and the Romograft Rejection Pattern*; 2 years; \$20,000

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NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING, Raleigh, N.C.; Gerald H. Elkan; *Influence of the Rhizosphere in Nodulation and Nitrogen Fixation*; 2 years; \$18,800

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OHIO STATE UNIVERSITY RESEARCH FOUNDATION, Columbus, Ohio; Melvin S. Rheins; *Auto-Antibodies in Experimental Tuberculous Disease*; 3 years; \$25,200

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J. Lowell Young; *Organic Nitrogen Constituents of Soil Organic Materials*; 3 years; \$27,000

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PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.; Hubert Frings; *Structure and Function of Sound-Receiving Organs of Insects*; 3 years; \$23,300

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; T. Richard Houpt; *Utilization of Blood Urea in Lagomorphs*; 3 years; \$14,900

UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa.; Charles L. Ralph; *Neuroendocrinology of Arthropods*; 3 years; \$25,300

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Richard C. Sanborn; *Regulation of Growth of Arthropod Tissues*; 4 years; \$47,100

RESEARCH FOUNDATION, OKLAHOMA STATE UNIVERSITY, Stillwater, Okla.; W. Stanley Newcomer; *Actions and Metabolism of Various Thyroxine Analogues in the Chicken*; 2 years; \$20,500

RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK, Albany, N.Y.; Svend Helberg and Albert L. Leaf; *Forest Tree Nutrition and Forest Fertilization*; 3 years; \$25,100

UNIVERSITY OF RHODE ISLAND, Kingston, R.I.; Elizabeth B. Chase; *Mechanism of Insulin Resistance in Strain of Mice*; 3 years; \$33,300

UNIVERSITY OF ROCHESTER, Rochester, N.Y.; E. F. Adolph; *Ontogeny of Physiological Regulations in Animals*; 3 years; \$43,000

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E. S. Nasset; *Purification and Properties of Enterocinin*; 3 years; \$60,300

ROCKEFELLER INSTITUTE, New York, N.Y.; George E. Palade; *Anatomical Pathway of Various Substances Across the Wall of Glomerular Capillaries*; 1 year; \$4,700

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O. H. Robertson; *Hyperadrenocorticism in Pacific Salmon and Relation to Postspawning Death*; 3 years; \$32,700

STATE COLLEGE OF WASHINGTON, Pullman, Wash.; Donald S. Farnier; *Regulation of the Annual Cycle of Fat Deposition*; 4 years; \$46,600

Noe Higinbotham and Robert J. Foster; *Electropotentials of Higher Plant Cells and the Relations of Potential to Salt Accumulation*; 3 years; \$21,700

STATE UNIVERSITY OF IOWA, Iowa City, Iowa; George G. Zabka; *Influence of Photoperiodism Upon CO₂ Fixation*; 3 years; \$9,300

TEXAS AGRICULTURAL AND MECHANICAL COLLEGE, College Station, Tex.; Samuel P. Johnson; *Role of Light and Temperature in the Growth and Development of Plants*; 2 years; \$2,300

UNIVERSITY OF TEXAS, Austin, Tex.; J. Allen Scott and Etta Mae MacDonald, Helminth Research Laboratory, Galveston; *Nature of Racial or Species Immunity*; 1 year; \$10,800

TULANE UNIVERSITY OF LOUISIANA, New Orleans, La.; D. Eugene Copeland; *Histophysiology of Swimbladder Function in Teleosts*; 3 years; \$48,700

UNIVERSITY OF UTAH, Salt Lake City, Utah; Carlos E. Eyzaguirre; *Efferent Control of Stretch Receptors*; 4 years; \$40,500

WASHINGTON STATE UNIVERSITY, Pullman, Wash.; Orlin Biddulph; *Nutritional Interrelationships of the Various Parts of Plants*; 3 years; \$58,900

H. L. Bastlick; *Filterable Agent Present in Methycolanthrene, Avian Sarcomas*; 3 years; \$42,600

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WILKES COLLEGE, Wilkes-Barre, Pa.; Charles B. Reif; *Protoplasmic Similarities Between Green and Colorless Forms of Euglena*; 1 year; \$6,400

UNIVERSITY OF WISCONSIN, Madison, Wis.; J. E. Mitchell; *Physiology of Growth and Development of Soil Inhabiting Fungi*; 8 years; \$28,100

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Frederick Mosteller; *Quantitative Methods in the Social Sciences*; 3 years; \$40,600

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; George Psathas and Sheldon Stryker; *Coalitions in the Triad*; 2 years; \$14,000

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James S. Coleman; *Simulation of Social Processes*; 3 years; \$62,000

Clinton DeSoto; *Conceptual Learning of Relationships*; 2 years; \$9,600

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Noam Chomsky; *Structure and Use of Language*; 8 years; \$104,000

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UNIVERSITY OF OREGON, Eugene, Oreg.; Walter T. Martin; *Theory of Status Adjustment*; 1 year; \$19,300

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UNIVERSITY OF SOUTHERN CALIFORNIA; Los Angeles, Calif.; Georges Sabagh; *Growth of Urban Subareas*; 2 years; \$19,500

STANFORD UNIVERSITY, Stanford, Calif.; Joseph Berger; *Role-Specialization in Small Groups*; 2 years; \$23,800

Leon Festinger; *Behavioral Implications of Dissonance Theory*; 3 years; \$65,100

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G. D. Meid; *Activities of the Committee on Polar Research*; 1 year; \$69,303

Aurora and Airglow

ARCTIC INSTITUTE OF NORTH AMERICA, INC., Washington, D.C.; Norman J. Oliver; *Continuation of Aurora and Airglow Research in Antarctica*; 2 years; \$198,480

Norman J. Oliver; *Correlation and Data Reduction of IGY and IGC Auroral Data From Antarctica*; 1 year; \$12,773

Norman J. Oliver; *Study of Energetic Solar Particles Associated With Disturbances and Their Effects Upon the Terrestrial Ionosphere*; 1 year; \$18,173

L. G. HANSCOMB AIR FORCE BASE, Bedford, Mass.; Norman J. Oliver; *Continuation of Patrol Spectrograph Data Reduction*; 1 year; \$45,600

Biology and Medicine

AMERICAN MUSEUM OF NATURAL HISTORY, New York, N.Y.; Robert Cushman Murphy; *Study of Pelagic Birds, Including Research Into the Behavior, Life History, Tolerances, Disturbances, and Systematic Relationships*; 1 year; \$4,721

ARCTIC INSTITUTE OF NORTH AMERICA, Washington, D.C.; William J. L. Sladen, Johns Hopkins University; *Support for Medical Microbiological Work in USARP, 1959-60*; 1 year; \$9,000

BERNICE P. BISHOP MUSEUM, Honolulu, Hawaii; J. Linsley Gressitt; *Studies of Airborne Organisms in the Antarctic Area; 1959-60*; 1 year; \$20,827

J. Linsley Gressitt; *Studies of Airborne Organisms in the Antarctic Area; 1960-61*; 1 year; \$32,039

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Karl C. Hamner, Los Angeles; *Studies of Endogenous Rhythms at the South Pole*; 1 year; \$23,923

COLLEGE OF WILLIAM AND MARY, Williamsburg, Va.; William J. Hargis, Jr.; *A Study of the Ecto- and Endo-Parasites of Antarctic Fishes*; 1 year; \$11,880

DUKE UNIVERSITY, Durham, N.C.; Knut Schmidt-Nielsen; *Continuation of Salt and Water Metabolism of Adelle Penguins*; 2 years; \$10,692

GEORGE WASHINGTON UNIVERSITY, Washington, D.C.; William M. Smith; *Antarctic Scientific Personnel Project*; 1 year; \$10,980

William M. Smith; *Observations of Individual and Group Behavior 1959-60 Antarctic Victoria Land Traverse*; 1 year; \$7,900

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; W. J. L. Sladen and Carl Eklund; *U.S. Antarctic Research Bird-Banding Program*; 2 years; \$21,850

KAISER FOUNDATION RESEARCH INSTITUTE, Richmond, Calif.; Ellsworth C. Dougherty; *Antarctic Microfauna*; 1 year; \$10,106

Ellsworth C. Dougherty; *Studies of Soil and Freshwater Microfauna and Microflora of the "Dry Valley" Region, Victoria Land, Antarctica*; 1 year; \$13,102

UNIVERSITY OF KANSAS, Lawrence, Kans.; Rufus H. Thompson and Kenneth B. Armitage; *A Biological Investigation of Fresh Water Lakes in Antarctica*; 1 year; \$18,288

STANFORD UNIVERSITY, Stanford, Calif.; Donald E. Wohlschlag; *Ecological and Physiological Studies of McMurdo Sound Marine Animals*; 18 months; \$69,715

Donald E. Wohlschlag; *Support of the Antarctic Research Laboratory NAF, McMurdo, for the continuing 1960 Biological and Medical Sciences Program*; 1 year; \$87,950

Donald E. Wohlschlag; *The Support of the Biological Laboratory at NAF McMurdo for the Continuing 1961 Biological and Medical Sciences Program*; 18 months; \$50,405

UNIVERSITY OF TEXAS, Austin, Tex.; Carl H. Oppenheimer; *The Significance of Bacteria and Organic Carbon Concentrations to the Organic Cycle of Antarctic Waters*; 18 months; \$17,729

O. B. Williams; *Study of the Airborne Bacteria and Fungi of the Antarctic*; 1 year; \$17,450

Orville Wyss; *Continuation of the Study of Bacteria, Fungi, and Other Biota, in Air, Soil, and Melt Pools in Antarctica*; 2 years; \$43,032

VIRGINIA FISHERIES LABORATORY, Gloucester Point, Va.; William J. Hargis; *Continuation of Study of Certain Parasites of Antarctic Vertebrates and Invertebrates*; 2 years; \$40,204

UNIVERSITY OF WISCONSIN, Madison, Wis.; Richard Lee Penney; *Analysis of Data Collected on the Behavior of the Adelle Penguin*; 2 years; \$4,236

Richard Lee Penney; *Study of the Behavior of the Adelle Penguin*; 1 year; \$7,800

Cosmic Rays

FRANKLIN INSTITUTE, Philadelphia, Pa.; Martin A. Pomerantz; Bartol Research Foundation; *Investigations of Time Variations of the Primary Cosmic Radiation Near the Geomagnetic Pole*; 2 years; \$49,860

Martin A. Pomerantz; Bartol Research Foundation; *Investigations of Time Variations of the Primary Cosmic Radiation at a Geomagnetic Pole*; 1 year; \$14,800

Geodesy and Cartography

AMERICAN GEOGRAPHICAL SOCIETY, New York, N.Y.; William Briseemelster; *Preparation of a New Map of Antarctica*; 1 year; \$17,780

Geology

UNIVERSITY OF KANSAS, Lawrence, Kans.; Edward J. Zeller; *Determination of Age of Low Temperature Conditions in Antarctica by Thermoluminescence of Rocks: 1959-60*; 1 year; \$15,850

Edward J. Zeller; *Determination of Age of Low Temperature Conditions in Antarctica by Thermoluminescence of Rocks: 1960-61*; 18 months; \$31,955

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; J. C. Craddock; *Bedrock Geology and Geomorphology of Some Nunataks in the Transantarctic Trough*; 1 year; \$1,208

OHIO STATE RESEARCH FOUNDATION, Columbus, Ohio; Samuel B. Treves; *Geological Investigation of Antarctic Horst Area*; 18 months; \$69,479

TUFTS UNIVERSITY, Medford, Mass.; Robert L. Nichols; *Geomorphological Field Project in the Wright, Victoria and Gran Mountain Dry Valleys*; 1 year; \$31,996

U.S. DEPARTMENT OF THE INTERIOR, Washington, D.C.; E. W. Pehrson; *Investigation of Methods and Conditions of Mineral Exploration in Isolated Areas Such as Antarctica*; 1 year; \$12,900

UNIVERSITY OF WISCONSIN, Madison, Wis.; Robert F. Black; *Study of Patterned Ground in the Antarctic*; 18 months; \$41,689

Robert H. Dott, Jr.; *Stratigraphic and Tectonic Relationships of Western Antarctica and Lower Palmer Peninsula to the Andean Mobile Belt*; 1 year; \$16,523

Geomagnetism

U.S. COAST AND GEODETIC SURVEY, Washington, D.C.; *Conduct of the 1961 Geomagnetic Program*; 2 years; \$77,014

Magnetic Field Surveys in Antarctica; 2 years; \$27,820

H. Arnold Karo; *1960 Antarctic Magnetic Observatories*; 1 year; \$13,000

Glaciology

ARCTIC INSTITUTE OF NORTH AMERICA, New York, N.Y.; Walter A. Wood; *Conduct of Station and Traverse Glaciology of the Continuing U.S. Antarctic Research Program*; 2 years; \$1,973

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; James H. Zumberg; *Ross Ice Shelf Studies: 1959-60*; 1 year; \$30,350

James H. Zumberg; *Ross Ice Shelf Studies: 1960-61*; 1 year; \$51,785

MOUNT UNION COLLEGE, Alliance, Ohio; John R. Reid, Jr.; *Ice Fabrics of a Firn Fold Near Camp Michigan, Antarctica*; 1 year; \$2,125

OHIO STATE UNIVERSITY RESEARCH FOUNDATION, Columbus, Ohio; Richard P. Goldthwait; *Glaciology of Antarctic Firn*; 2½ years; \$53,972

R. P. Goldthwait; *Reduction and Analysis of Glaciology Data From Antarctica 1959-60*; 1 year; \$45,815

SNOW, ICE AND PERMAFROST RESEARCH ESTABLISHMENT, Wilmette, Ill.; *Preparation for Future Drilling and for Remeasurement of the Drill Hole at Byrd Station, Antarctica*; 1 year; \$19,000

UNIVERSITY OF WISCONSIN, Madison, Wis.; G. P. Woollard; *Reconnaissance Trail and Airborne Measurements in Glaciology and Related Studies in Antarctica—1960*; \$51,025

G. P. Woollard, E. C. Thiel and C. R. Bentley; *Support for Antarctic Traverse Program*; 2 years; \$488,342

Gravity

UNIVERSITY OF WISCONSIN, Madison, Wis.; G. P. Woollard; *Gravimetric Connections Between Key Points in Antarctica for: (A) Changes in Elevation of the Ice Surface*

With Time; (B) Changes in Land-Sea Relations; (C) Studies of Crustal Structure, Subice Geology and Ice Thickness; 2 years; \$20,450

Ionospheric Physics

NATIONAL BUREAU OF STANDARDS, Washington, D.C.; F. W. Brown, Boulder, Colo.; *Continuation of a Vertical-Incidence Antarctic Ionospheric Program*; 2 years; \$169,509

STANFORD UNIVERSITY, Stanford, Calif.; R. A. Helliwell; *Continuation and Extension of VLF Phenomena in the Antarctic*; 2 years; \$70,274

R. A. Helliwell; *Geomagnetic Latitude Control of VLF and ELF Phenomena*; 1 year; \$59,740

R. A. Helliwell; *Study of Very Low Frequency Observations at South Pole and Byrd Stations*; 1 year; \$30,450

Meteorology

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Charles D. Keeling, Scripps Institution of Oceanography, La Jolla; *Abundance of Carbon Dioxide in the Atmosphere in Antarctica*; 2 years; \$38,652

U.S. WEATHER BUREAU, Washington, D.C.; F. W. Reichelderfer; *Antarctic Meteorological Research Program—1961*; 30 months; \$442,176

F. W. Reichelderfer; *Atmospheric-Oceanic-Glaciologic Interaction in an Antarctic Interdisciplinary Research Program*; 1 year; \$99,156

F. W. Reichelderfer; *International Antarctic Analysis Center, U.S. Participation*; 1 year; \$15,763

Oceanography

TEXAS A & M RESEARCH FOUNDATION, College Station, Tex.; Luis Capurro; *Study of the Waters of the South Atlantic and Antarctic*; 1 year; \$21,660

U.S. NAVY HYDROGRAPHIC OFFICE, Washington, D.C.; Wm. H. Littlewood; *Ship-Based Oceanographic Studies in Antarctic and Subantarctic Regions*; 18 months; \$116,850

Shore-Based Seasonal Oceanographic Studies at McMurdo Sound; 2 years; \$59,950

Polar Research Center

UNIVERSITY OF WISCONSIN, Madison, Wis.; G. P. Woollard; *Establishment of a Polar and Geophysical Research Center at the University of Wisconsin*; 1 year; \$125,490

Related Scientific Support

ARCTIC INSTITUTE OF NORTH AMERICA, New York, N.Y.; Robert C. Faylor; *Related Scientific Support of the U.S. Antarctic Research Program*; 1 year; \$163,927

L. G. HANSCOMB AIR FORCE BASE, Bedford, Mass.; A. P. Cray; *For Travel and Per Diem*; 1 year; \$1,500

U.S. WEATHER BUREAU, Washington, D.C.; F. W. Reichelderfer; *Antarctic Field Operations*; 2 years; \$69,977

Station Seismology

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; Hugo Benioff; *Operation, Upkeep, Replacement of South American Earth Strain Stations at Nana, Peru, and Santiago, Chile*; 1 year; \$9,758
Frank Press; *Exchange Scientist With USSR Antarctic Expedition*; 1 year; \$25,475

Frank Press; *Operation of Wilkes Seismograph Station and Interpretation of Records for the Year 1961*; 1 year; \$6,600
COLUMBIA UNIVERSITY, New York, N.Y.; Jack Oliver; *Conduct of Station Seismology Program—1961*; 1 year; \$1,044

U.S. COAST AND GEODETIC SURVEY, Washington, D.C.; H. A. Karo; *Antarctic Seismological Observatories—1961*; 2 years; \$10,000

INTERNATIONAL GEOPHYSICAL YEAR

Aurora and Airglow

UNIVERSITY OF ALASKA:
Operational Costs of Auroral Observations ----- \$3,500

NATIONAL BUREAU OF STANDARDS:
Airglow Data Reduction in the International Geophysical Year... 8,500

Cosmic Rays

THE FRANKLIN INSTITUTE OF THE STATE OF PENNSYLVANIA:
Data Reduction and Shipboard Neutron Monitor Station for the International Geophysical Year Cosmic Ray Program ----- 8,000

NEW YORK UNIVERSITY:
Studies of the Primary Cosmic Ray Spectrum ----- 870
Measurements of Neutrons of Solar Origin at High Altitudes ----- 822

Glaciology

ARCTIC INSTITUTE OF NORTH AMERICA:
Antarctic Glaciology Personnel and Data Reduction ----- 13,603

Data Reduction on McCall Glacier and Brooks Range ----- 3,500
Study of Antarctic Glacial Geology ----- 2,055

THE OHIO STATE UNIVERSITY:
Antarctic Data Reduction and Publication ----- 12,660

Gravity Measurements

ARCTIC INSTITUTE OF NORTH AMERICA:
Antarctic Gravity Personnel ----- 14,209

Ionospheric Physics

UNIVERSITY OF ALASKA:
Ionospheric Absorption, Cosmic Noise Method ----- 700
Operation of an Atmospheric Whistler Station in Alaska ----- 1,326

NATIONAL BUREAU OF STANDARDS:
Operation of South American Ionospheric Sounding Stations ----- 573
Ionospheric Quality Control and Training ----- 269

Ionospheric Data Processing and Publication in the International Geophysical Year Ionospheric Physics Program ----- 2,000

Longitude and Latitude

U.S. COAST AND GEODETIC SURVEY:
Longitude and Latitude Program in Hawaii ----- 4,100

Oceanography

COLUMBIA UNIVERSITY:
Operations of Island Observatories ----- 15,840

Operational Cost for Radiochemistry Analysis ----- 381

TEXAS A & M RESEARCH FOUNDATION:
Radiochemistry Analysis of Sea Water in the International Geophysical Year Oceanography Program in the Atlantic and the Gulf of Mexico ----- 4,583

Rocketry

OFFICE OF NAVAL RESEARCH:
Provision of a Factory Trained Representative at Aerobee Firings ----- 5,292

Seismology

COLUMBIA UNIVERSITY:
Seismic Measurements in the Atlantic ----- 1,902

Operational Costs for Long Period Wave Studies ----- 699

Solar Activity

NATIONAL BUREAU OF STANDARDS:
Data Reductions and Publication in the International Geophysical Year Solar Activity Program --- 5,000

World Days

NATIONAL BUREAU OF STANDARDS:
Operation of AGEWARN and U.S. Regional Warning Centers in the International Geophysical World Days Program ----- 13,800

General Related Scientific Support

36 Travel Grants (see international travel for listing) 12th General Assembly International Union of Geodesy and Geophysics ----- 23,145

ARCTIC INSTITUTE OF NORTH AMERICA:
Antarctic Scientific Field Supervision Costs ----- 670

NATIONAL ACADEMY OF SCIENCES—
NATIONAL RESEARCH COUNCIL
ICSU Support for International Geophysical Year Symposia --- 5,378

Support of the International Geophysical Year Bulletin ----- 29,532

Support of the International Geophysical Year Documentary Film ----- 65,726

Support of International Geophysical Year Education ----- 19,455

Support of International Geophysical Year Documentation --- 13,281

Support of the International Geophysical Year Annuals ----- 54,347

Publication of International Geophysical Year Annuals and Data Interchange-----	5, 000
United States National Committee—International Geophysical Year Symposium-----	10, 000
World Data Centers	
UNIVERSITY OF ALASKA : Archives in Aurora-----	120, 760
AMERICAN GEOGRAPHICAL SOCIETY : Archives in Glaciology-----	58, 585
THE HIGH ALTITUDE OBSERVATORY OF THE UNIVERSITY OF COLORADO : Archives in Solar Activity-----	17, 000
UNIVERSITY OF MINNESOTA : Archives in Cosmic Rays-----	27, 868
NATIONAL ACADEMY OF SCIENCES— NATIONAL RESEARCH COUNCIL : Operation of the Data Coordination Office for the World Data Center-----	1, 080
Rocket and Satellite World Data Center A-----	48, 000
NATIONAL BUREAU OF STANDARDS : Archives in Airglow and Ionosphere-----	10, 000
AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS : Archives in Oceanography-----	83, 222
U.S. WEATHER BUREAU : Archives in Meteorology-----	40, 000
Heat and Water	
COLUMBIA UNIVERSITY : Correlation of Bottom Topography With Oceanic Parameters in the Interdisciplinary Research Program of the International Geophysical Year-----	10, 200
Correlation of Volcanic Ash Layers in Deep-Sea Cores From the Eastern Pacific in the Interdisciplinary Research Program of the IGY-----	7, 800
Analysis of Oceanographic and Biologic Data Obtained During the IGY in the Interdisciplinary Program-----	6, 000
OHIO STATE UNIVERSITY : Analysis of Geological Data From Spitzbergen-----	6, 664
UNIVERSITY OF WASHINGTON : Analysis of Heat Budget Data of Station Alpha in the International Geophysical Year Interdisciplinary Research Program-----	21, 927
U.S. WEATHER BUREAU : Interrrelations of Meteorological and Solar-Cosmical Phenomena in the Arctic Hemisphere-----	25, 000
Upper Atmosphere	
UNIVERSITY OF MINNESOTA : Charged Particle Orbits in the Earth's Magnetic Field-----	8, 748
NATIONAL BUREAU OF STANDARDS : Theoretical Studies of High Atmospheric Data in the International Geophysical Year Interdisciplinary Research Program-----	15, 000
Worldwide Mapping of Ionospheric Data by Numerical Methods in the International Geophysical Year Interdisciplinary Research Program-----	10, 000

Special Research

CARNEGIE INSTITUTE OF TECHNOLOGY : Special Research Surveys by Distinguished Scientists From Abroad-----	80, 000
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Earth Satellite—Scientific Experiments

LINFIELD RESEARCH INSTITUTE : Absolute Signal Strength and Frequency Measurements in the International Geophysical Year Earth Satellite Program-----	2, 100
NATIONAL BUREAU OF STANDARDS : Electron Density Profiles-----	210
RESEARCH INSTITUTE FOR ADVANCED STUDY : Development of Instrumentation for the Determination of the Flux of Heavy Primary Cosmic Ray Nuclei in the IGY Earth Satellite Program-----	14, 500

SPECIALIZED FACILITIES

AMERICAN MUSEUM OF NATURAL HISTORY, New York, N.Y.; L. R. Aronson; <i>Construction of a Laboratory Addition for Animal Behavior Research</i> ; 2 years; \$80,000	
Mont A. Cazier, Southwestern Research Station, Portal, Ariz.; <i>Construction of Housing Units</i> ; 2 years; \$17,750	
BERMUDA BIOLOGICAL STATION FOR RESEARCH, INC., Saint George's West, Bermuda; W. H. Sutcliffe, Jr.; <i>Improvements and Additions to Research Facilities of the Bermuda Biological Station</i> ; 2 years; \$111,000	
BROWN UNIVERSITY, Providence, R.I.; R. S. Rivlin; <i>Establishment of a Computing Center</i> ; 2 years; \$350,000	
UNIVERSITY OF BUFFALO, Buffalo, N.Y.; Raymond E. Ewell; <i>Purchase of Ancillary Research Reactor Equipment</i> ; 1 year; \$139,295	
CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; G. D. McCann; <i>Digital Computing Facility</i> ; \$66,500	
UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Frank A. Beach; <i>Establishment of a Field Station for Research in Animal Behavior</i> ; 3 years; \$367,700	
D. R. Parker, Riverside; <i>Desert Research Station</i> ; 1 year; \$15,000	
Stanislavs Vasilevskis, Lick Observatory, Mount Hamilton; <i>Equipment for Surveying and Automatic Measurement of Astrographic Plates</i> ; 3 years; \$174,350	
F. P. Zachelle, Davis; <i>Construction of a Controlled Environment Chamber of New Design</i> ; 2 years; \$17,400	
CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pa.; Alan J. Perlis; <i>Construction of a Computer</i> ; 3 years; \$250,000	
UNIVERSITY OF CHICAGO, Chicago, Ill.; H. B. Steinbach; <i>Modernization of Whitman Laboratory of Zoology</i> ; 3 years; \$60,000	
CITY OF HOPE MEDICAL CENTER, Duarte, Calif.; W. D. Kaplan; <i>Construction of Laboratory Facilities for Genetics Research</i> ; 1 year; \$11,250	
UNIVERSITY OF COLORADO, Boulder, Colo.; John W. Marr; <i>Improvement of Road to Mountain Field Stations</i> ; 1 year; \$11,850	
COLUMBIA UNIVERSITY, New York, N.Y.; Charles F. Bonilla; <i>Support of Nuclear Reactor Facility</i> ; 3 years; \$247,700	
COMMUNICATION RESEARCH INSTITUTE, Virgin Islands; John C. Lilly; <i>Construction of</i>	

a Communications Research Laboratory; 2 years; \$107,000

CORNELL UNIVERSITY, Ithaca, N.Y.; Henry Dietrich; *Cabinets for the Insect Collections of the Department of Entomology; 1 year; \$25,000*

UNIVERSITY OF ILLINOIS, Urbana, Ill.; William J. Fry; *Equipment for Ultrasound Research Facility; 1 year; \$69,000*

Ross J. Martin; *Assistance To Increase Reactor Research Capabilities; 1 year; \$51,097*

UNIVERSITY OF KANSAS, Lawrence, Kans.; E. R. Hall; *Construction of a Research Wing for the Museum of Natural History; 3 years; \$317,500*

Ronald L. McGregor; *Construction of an Experimental Greenhouse for Plant Taxonomy; 1 year; \$33,500*

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; T. J. Thompson; *Equipment for MIT Reactor Project; 1 year; \$235,340*

MISSOURI BOTANICAL GARDEN, Saint Louis, Mo.; F. W. Went; *Construction of a Botanical Research and Herbarium Building; 2 years; \$250,000*

UNIVERSITY OF MISSOURI, Columbia, Mo.; Elmer Ellis; *Support of a Research Reactor; 3 years; \$625,000*

MONTANA STATE COLLEGE, Bozeman, Mont.; J. H. Pepper; *Controlled Environmental Chamber for Entomological Research; 1 year; \$6,000*

MONTANA STATE UNIVERSITY, Missoula, Mont.; O. L. Stein; *Controlled Environmental Facilities; 1 year; \$5,700*

MOUNT DESERT ISLAND BIOLOGICAL LABORATORY, Salisbury Cove, Maine; Alvin W. Rleck; *Replacements, Improvements and Support of Facilities for Biological Research; 3 years; \$30,350*

NAPLES ZOOLOGICAL STATION, Naples, Italy; Peter Dohrn; *Support of Basic Research Facilities at the Naples Zoological Station; 1 year; \$12,000*

Peter Dohrn; *Support of Basic Research Facilities at the Naples Zoological Station; 4 years; \$48,000*

NEW YORK BOTANICAL GARDEN, New York, N.Y.; William C. Steere; *Partial Support for Construction of a New Library Wing; 3 years; \$300,000*

PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.; Forrest J. Remick; *Equipment for Expanding Basic Research in the Natural Engineering Sciences; 1 year; \$168,126*

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; William E. Stephens; *Acquisition of a 10 MEV Tandem Van De Graaff Accelerator; 2 years; \$1,041,000*

UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa.; L. A. Cohen; *Construction of a Laboratory for the Study of Body Orientation and Motor Coordination; 2 years; \$35,000*

William B. Kehl; *New Computing Facility (IBM 7070); 2 years; \$210,000*

PRINCETON UNIVERSITY, Princeton, N.J.; A. K. Parpart; *Installation of a Sea Water System for Biological Research; \$11,500*

ROCKY MOUNTAIN BIOLOGY LABORATORY, Crested Butte, Colo.; Robert K. Enders; *Construction of Research Facilities at the Rocky Mountain Biological Laboratory; 1 year; \$9,000*

RUTGERS, THE STATE UNIVERSITY, New Brunswick, N.J.; J. O. Lampen; *Additions to Pilot Plant Facilities; 1 year; \$46,000*

STANFORD UNIVERSITY, Stanford, Calif.; John G. Herriot; *Purchase of a Computer System; 1 year; \$295,000*

UNIVERSITY OF TEXAS, Austin, Tex.; Howard T. Odum, Institute of Marine Science, Port Aransas; *Construction of a Boat Basin for Marine Research; 1 year; \$51,000*

UNIVERSITY OF VIRGINIA, Charlottesville, Va.; Lawrence R. Quarles; *A Hot Cell for the University of Virginia Reactor Facility; 1 year; \$41,400*

UNIVERSITY OF WASHINGTON, Seattle, Wash.; David B. Dekker; *Establishment of Computing Center; 1 year; \$500,000*

Robert L. Fernald; *Expansion and Modernization of Research Facilities of the Friday Harbor Marine Laboratories; 2 years; \$350,000*

UNIVERSITY OF WISCONSIN, Madison, Wis.; R. A. Alberty; *Construction of Laboratories for Research on Macromolecules; 3 years; \$97,500*

A. D. Hasler; *Construction of a Hydrobiology Laboratory; 3 years; \$480,000*

WOODS HOLE OCEANOGRAPHIC INSTITUTION, Woods Hole, Mass.; Paul M. Fye; *Design and Construction of an Oceanographic Research Vessel; 2 years; \$3,000,000*

WORCESTER FOUNDATION FOR EXPERIMENTAL BIOLOGY, Shrewsbury, Mass.; Ralph I. Dorfman; *Construction of Solvent Distillation Facility; 1 year; \$65,000*

YALE UNIVERSITY, New Haven, Conn.; Willard D. Hartman; *Storage and Systematic Arrangement of Research Collections; 3 years; \$25,000*

DEVELOPMENT OF GRADUATE RESEARCH LABORATORIES

UNIVERSITY OF AKRON, Akron, Ohio; Maurice Morton; *Conversion of Library Space into a Laboratory for Physico-Chemical Research in Polymer Chemistry; 1 year; \$14,400*

UNIVERSITY OF ARIZONA, Tucson, Ariz.; Albert Slegel; *Construction of a Greenhouse and Headhouse for Plant Virus Research; 1 year; \$7,000*

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; A. D. Maynes; *Construction of a Wet Chemical Analytical Laboratory; 1 year; \$11,000*

E. H. Swift; *Construction of Facilities for Conducting Hazardous Research Experiments; 1 year; \$33,600*

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; P. R. Stout and W. C. Snyder; *Renovation of Research Laboratories for Soils and Plant Nutrition and Plant Pathology; 2 years; \$150,000*

CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pa.; R. B. Sutton; *Extension of Cyclotron Room; 1 year; \$20,000*

E. M. Williams; *Renovation of the Electrical Distribution System for Research Laboratories of the Department of Electrical Engineering; 1 year; \$10,000*

CORNELL UNIVERSITY, Ithaca, N.Y.; F. A. Long; *Modifying Two Rooms for Graduate Research in Organic and Physical Chemistry; 1 year; \$5,100*

John F. McManus; *Atmospheric Controlled Room; 1 year; \$3,000*

Robert L. Sproull; *Renovation of Graduate Research Laboratories in the Physics Building; 1 year; \$7,800*

EMORY UNIVERSITY, Atlanta, Ga.; A. E. Wilhelmi; *Improvement of Hood and Ven-*

- tilating Systems of Biochemistry Laboratories*; 1 year; \$21,000
- FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; Seymour L. Hess; *Modernization of Graduate Research Laboratories in Meteorology*; 1 year; \$3,000
- UNIVERSITY OF FLORIDA, Gainesville, Fla.; G. R. Noggle; *Controlled Environment Chamber for Plant Research*; 1 year; \$5,000
- GEORGETOWN UNIVERSITY, Washington, D.C.; W. C. Hess; *Renovation of Microbiology and Pharmacology Research Laboratories*; 1 year; \$15,750
- HOWARD UNIVERSITY, Washington, D.C.; Lloyd N. Ferguson; *Construction and Equipping Six Graduate Research Laboratories in the Attic of the Chemistry Building*; 1 year; \$13,800
- UNIVERSITY OF ILLINOIS, Urbana, Ill.; G. M. Almy; *Construction of Research Buildings at the Betatron Laboratory*; 1 year; \$27,300
- H. E. Carter; *Remodelling Program for Physical Chemistry*; 1 year; \$50,000
- N. M. Newmark; *Modernization and Expansion of Graduate Research Laboratories in Civil Engineering*; 1 year; \$17,800
- R. J. Winzler and S. M. Reynolds; *Remodeling Biochemistry and Anatomy Research Laboratories*; 1 year; \$17,300
- INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; Harry G. Day; *Renovation of Graduate Research Laboratories*; 1 year; \$16,000
- Allan C. G. Mitchell; *Converting Space in New Physics Wing Into Research Laboratories*; 1 year; \$6,800
- John B. Patton; *Modernization of Graduate Research Laboratories*; 30 months; \$49,600
- Sid Robinson; *Modernization of Animal Facilities*; 1 year; \$34,300
- IOWA STATE UNIVERSITY OF SCIENCE AND TECHNOLOGY, Ames, Iowa.; Percy H. Carr and Daniel J. Zaffarano; *Filling in Two Open Courts With Research Rooms*; 1 year; \$40,000
- KANSAS STATE UNIVERSITY OF AGRICULTURE AND APPLIED SCIENCES, Manhattan, Kans.; Ralph G. Nevins; *Construction of Graduate Research Laboratories*; 1 year; \$5,700
- Milton E. Raville; *Construction of a Graduate Research Laboratory*; 1 year; \$4,800
- KENTUCKY RESEARCH FOUNDATION, Lexington, Ky.; F. L. Yost; *Renovation of Physics Research Laboratories*; 1 year; \$3,200
- LOUISIANA STATE UNIVERSITY AND AGRICULTURAL AND MECHANICAL COLLEGE, Baton Rouge, La.; H. B. Williams; *Renovating and Air Conditioning a Graduate Research Microanalytical Laboratory and Research Instrument Room*; 1 year; \$22,500
- UNIVERSITY OF MARYLAND, College Park, Md.; George A. Snow; *Provision of a Darkroom for Use in High Energy Physics*; 1 year; \$8,000
- UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; L. C. Anderson; *Modernizing Eight Graduate Research Laboratories*; 1 year; \$20,000
- D. E. S. Brown; *Renovation of Zoology Research Laboratories*; 1 year; \$38,000
- Stuart W. Churchill, Donald R. Mason and Brymer Williams; *Renovation of Graduate Research Laboratories*; 1 year; \$11,100
- Wendell E. Hewson; *Construction of an Addition to the Meteorological Laboratories*; 1 year; \$19,250
- K. L. Jones; *Renovation of Plant Phys-*
- tology Research Laboratories*; 1 year; \$15,000
- M. J. Sinnott; *Renovation of Graduate Research Laboratories*; 1 year; \$1,500
- James T. Wilson; *Renovation and Construction of Graduate Research Laboratories in the Department of Geology*; 1 year; \$7,235
- UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Bryce L. Crawford; *Modernization of the Physical Chemical Instrumental Research Laboratories*; 1 year; \$50,000
- E. R. Eckert; *Equipping a High Temperature Laboratory*; 1 year; \$7,500
- Paul W. Gast; *Expansion of Research Laboratory Facilities in Geochemistry*; 1 year; \$2,850
- J. W. Hall; *Conversion of a Greenhouse to a Paleobotanical Research Laboratory*; 1 year; \$4,800
- W. G. Shepherd; *Additions to the Graduate Research Laboratories*; 1 year; \$21,500
- N. T. Spratt, Jr.; *Modernization of Graduate Laboratories for Zoological Research*; 1 year; \$5,000
- F. M. Swain; *Remodeling Organic Geochemistry Laboratory*; 1 year; \$8,000
- Tibor Z. Zoltai; *Modernization of X-Ray Laboratory in the Department of Geology and Mineralogy*; 1 year; \$6,050
- UNIVERSITY OF MISSOURI, Columbia, Mo.; Warren R. Fleming; *Renovation and Reconstruction of Zoological Research Laboratories*; 2 years; \$20,000
- UNIVERSITY OF NEBRASKA, Lincoln, Nebr.; C. E. Georgi and R. E. Hill; *Conversion of a Greenhouse to Laboratories and Construction of a Cold Room*; 1 year; \$6,500
- NEW MEXICO STATE UNIVERSITY OF AGRICULTURE, ENGINEERING AND SCIENCE; George W. Gardiner; *Improvement of Research Space in the Research Center Building*; 1 year; \$12,500
- UNIVERSITY OF NEW MEXICO, Albuquerque, N. Mex.; J. L. Riebsomer; *Additional Research Facilities for Organic and Physical Chemistry*; 1 year; \$11,100
- Eugene W. Rypka; *Refurbishment of Laboratories for Microbiological Research*; 1 year; \$1,500
- UNIVERSITY OF NOTRE DAME, Notre Dame, Ind.; G. F. D'Allejo; *Conversion of Four Undergraduate Laboratories to Modern Graduate Research Laboratories*; 1 year; \$12,100
- E. A. Peretti; *Modernization of Graduate Research Laboratories*; 1 year; \$14,400
- OHIO STATE UNIVERSITY RESEARCH FOUNDATION, Columbus, Ohio; A. B. Garrett; *Remodeling a Portion of McPherson Laboratory*; 1 year; \$55,000
- UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE, Norman, Okla.; Robert H. Perry; *Modernization of Graduate Research Facilities*; 1 year; \$6,700
- UNIVERSITY OF OREGON, Eugene, Oreg.; Harry Alpert; *Renovation and Improvement of Laboratories for Research in Biological and Physical Sciences*; 1 year; \$70,175
- PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.; M. R. Fenske; *Modernization of Graduate Research Laboratories*; 1 year; \$9,500
- E. H. Ludwig; *Modernization and Furnishing of Virology and Tissue Culture Laboratories*; 1 year; \$12,500
- R. L. Pike; *Furnishings for a Nutrition Research Laboratory*; 1 year; \$2,000
- UNIVERSITY OF PENNSYLVANIA, Philadelphia,

Pa.; Norman Brown; *Construction of a Laboratory for Electron Microscopy*; 1 year; \$6,600

Julius Halpern; *Conversion of Storage Space for Research*; 1 year; \$12,000

Noah S. Prywes; *Renovation and Construction of a Graduate Research Laboratory in the Moore School of Electrical Engineering*; 1 year; \$9,900

UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa.; Lorne A. Page; *Renovation of the Low-Energy Nuclear and Electron Physics Laboratory*; 1 year; \$13,700

G. A. Jeffrey; *Renovation of Crystallography Laboratory*; 1 year; \$11,000

PURDUE RESEARCH FOUNDATION, Lafayette, Ind.; Henry Koffler; *Construction of Research Greenhouse*; 1 year; \$41,400

E. T. McBee; *Furnishing and Finishing of Two Large Research Laboratories*; 1 year; \$43,900

RENSSELAER POLYTECHNIC INSTITUTE, Troy, N.Y.; W. R. Beam; *Construction of Electron Physics Laboratories*; 1 year; \$19,200

James B. Cloke; *Modernizing Sixteen Graduate Research Laboratories*; 1 year; \$13,100

N. D. Greene; *Modernization of a Laboratory for Graduate Research in Corrosion and Related Phenomena*; 1 year; \$5,200

RESEARCH FOUNDATION, OKLAHOMA STATE UNIVERSITY, Stillwater, Okla.; Clark A. Dunn; *The Renovation and Modernization of the Chemical Engineering Graduate Research Laboratory*; 1 year; \$3,300

RICE INSTITUTE, Houston, Tex.; LeVan Griffls; *Renovation and Construction of Graduate Research Laboratory in Engineering*; 1 year; \$17,200

R. B. Turner; *Modernizing Three Graduate Research Laboratories*; 1 year; \$14,900

ROCKEFELLER INSTITUTE, New York, N.Y.; Frank Brink, Jr.; *Furnishing of Graduate Student Research Laboratories*; 2 years; \$32,250

UNIVERSITY OF ROCHESTER, Rochester, N.Y.; John W. Graham, Jr.; *Modernization of Graduate Research Laboratories in the College of Engineering*; 1 year; \$59,300

RUTGERS, THE STATE UNIVERSITY, New Brunswick, N.J.; J. B. Allison; *Furnishings for Biological Research Laboratories*; 2 years; \$109,400

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.; M. C. Kloetzel; *Renovation of Bacteriology Research Laboratories*; 1 year; \$48,700

STANFORD UNIVERSITY, Stanford, Calif.; David M. Mason; *Transport Processes Research Laboratory*; 1 year; \$8,000

Byrne Perry; *Small-Scale Fluid Mechanics Laboratory for Doctoral Research*; 1 year; \$2,300

O. Cutler Shepard; *Construction of a Laboratory for a Radioactive Tracer Facility*; 1 year; \$3,200

STATE UNIVERSITY OF SOUTH DAKOTA, Vermillion, S. Dak.; F. E. Kelsey; *Furnishings for Biochemistry and Pharmacology Research Laboratories*; 1 year; \$5,000

STEVENS INSTITUTE OF TECHNOLOGY, Hoboken, N.J.; Luigi Z. Pollara; *Modernizing a Laboratory for Graduate Research in Organic Chemistry*; 1 year; \$7,500

SYRACUSE UNIVERSITY RESEARCH INSTITUTE, Syracuse, N.Y.; W. R. Fredrickson; *Conversion of Unused Space Into a Physics Research Laboratory*; 1 year; \$13,500

Henry E. Wirth; *Renovation of Two Graduate Research Laboratories*; 1 year; \$11,300

TEXAS A & M RESEARCH FOUNDATION, College Station, Tex.; S. R. Wright; *Development of a Graduate Research Laboratory*; 1 year; \$16,300

TUFTS UNIVERSITY, Medford, Mass.; M. Kent Wilson; *Modification of an Old Laboratory To Provide a Modern Graduate Research Laboratory for Physical-Inorganic Chemistry Research and a Machine Shop for Research*; 1 year; \$12,500

TULANE UNIVERSITY OF LOUISIANA, New Orleans, La.; Eugene Copeland; *Remodeling and Furnishing Biology Research Laboratories*; 1 year; \$9,900

VANDERBILT UNIVERSITY, Nashville, Tenn.; Leonard B. Beach; *Improvement of New Research Space in Physics*; 1 year; \$7,000

Louis J. Birchner; *Installation of New Hoods and Laboratory Benches in Six Laboratories for Organic, Inorganic and Analytical Research*; 1 year; \$7,700

R. B. Channell and E. Quarterman; *Laboratory Renovation and Construction of a Greenhouse for Biological Research*; 1 year; \$11,600

R. R. Purdy; *Furnishings for Research Laboratories of Departments of Anatomy, Biology, Biochemistry, Microbiology, and Physiology*; 2 years; \$110,000

VIRGINIA POLYTECHNIC INSTITUTE, Blacksburg, Va.; R. W. Engel; *Construction of Research Laboratories for Biochemistry, Nutrition and Microbiology*; 2 years; \$52,700

WASHINGTON STATE UNIVERSITY, Pullman, Wash.; J. L. Culbertson; *Modernizing of Five Graduate Research Laboratories for Organic Chemistry*; 1 year; \$9,100

J. I. Stokes and A. Hecht; *Renovation and Furnishing for Two Graduate Research Laboratories*; 1 year; \$6,700

WASHINGTON UNIVERSITY, St. Louis, Mo.; H. N. Andrews, Jr.; *Renovation and Furnishing of a Plant Histology Laboratory*; 1 year; \$1,950

UNIVERSITY OF WASHINGTON, Seattle, Wash.; E. E. Day and A. S. Kobayshi; *Modernization of the Brittle Coating Research Laboratory*; 1 year; \$1,700

WAYNE STATE UNIVERSITY, Detroit, Mich.; George Coleman; *Fixed Equipment for the Life Sciences Research Center*; 1 year; \$50,000

WESTERN RESERVE UNIVERSITY, Cleveland, Ohio; R. L. Frantz and N. Alldridge; *Renovation of Primate Behavior Laboratory and Construction of Botanical Research Laboratory*; 1 year; \$11,250

Oliver Grummitt; *Modernization of Graduate Level Research Laboratories*; 1 year; \$3,100

UNIVERSITY OF WISCONSIN, Madison, Wis.; L. A. Fraser; *Renovation of Zoological Research Laboratories*; 1 year; \$9,800

Marion L. Jackson; *Reconstruction of Two Rooms as Laboratories and Renovation of One Laboratory Room*; 1 year; \$7,450

Stephen C. Kleene; *Modernization of Facilities for Graduate Mathematics Research*; 1 year; \$50,000

Julian E. Mack; *Construction of a Spectroscopic Laboratory*; 1 year; \$6,700

Carl Olson; *Renovation of Veterinary Pathology Research Laboratory*; 1 year; \$6,000

P. C. Rosenthal; *Modernization of Graduate Research Laboratories*; 1 year; \$13,400
J. F. Stauffer; *Renovation of Botanic Research Greenhouses*; 1 year; \$9,700

GENERAL

BROWN UNIVERSITY, Providence, R.I.; Frederick G. Sherman; *Purchase of Equipment for Basic Research in Biology*; 1 year; \$21,200

UNIVERSITY OF BUFFALO, Buffalo, N.Y.; Sidney Shulman; *Short-Term Research by Medical Students*; 8 years; \$12,600

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; C. E. ZoBell and G. O. Arrhenius, Scripps Institution of Oceanography, La Jolla; *An Electron Microscope for Research in Cell Biology*; 2 years; \$61,400

UNIVERSITY OF CHICAGO, Chicago, Ill.; L. T. Coggshall; *Short-Term Research by Medical Students*; 3 years; \$25,920

COLLEGE OF MEDICAL EVANGELISTS, Loma Linda, Calif.; John Eric Peterson; *Short-Term Research by Medical Students*; 3 years; \$8,640

COMISION NACIONAL DE ENERGIA ATOMICA, Buenos Aires, Argentina; Jorge A. Sabato; (1) *Fabrication of Perfect Single Crystals of Alpha Uranium*, and (2) *Relationship Between Physical and Mechanical Properties and Substructures in Uranium Metal*; 6 months; \$11,700

CORNELL UNIVERSITY, Ithaca, N.Y.; Lawrence W. Hanlon; *Short-Term Research by Medical Students*; 3 years; \$21,600

Benjamin M. Siegel; *Research Training in Electron Microscopy*; 5 years; \$40,100

DUKE UNIVERSITY, Durham, N.C.; C. G. Bookhout, Duke University Marine Laboratory; *Summer Research and Training at the Duke University Marine Laboratory*; 3 years; \$26,600

EMORY UNIVERSITY, Atlanta, Ga.; Arthur P. Richardson; *Short-Term Research by Medical Students*; 3 years; \$17,280

FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; Leland Shanor; *Support of an Electron Microscope Facility for Research*; 2 years; \$42,200

UNIVERSITY OF GEORGIA, Athens, Ga.; Lawrence R. Pomeroy, The Marine Institute, Sapelo Island; *Equipment for Marine Biological Research at the University of Georgia Marine Institute*; 1 year; \$20,400

HARVARD UNIVERSITY, Cambridge, Mass.; Henry C. Meadow, Medical School, Boston; *Short-Term Research by Medical Students*; 3 years; \$32,400

UNIVERSITY OF ILLINOIS, Urbana, Ill.; H. O. Halvorson; *Equipment for Basic Bacteriological Research*; 2 years; \$100,000

Milan Novak, Graduate College, Chicago; *Short-Term Research by Medical Students*; 3 years; \$17,280

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; Richard C. Starr; *Culture Collection of Algae*; 5 years; \$34,600

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; Thomas B. Turner; *Short-Term Research by Medical Students*; 3 years; \$21,600

LOUISIANA STATE UNIVERSITY AND AGRICULTURAL AND MECHANICAL COLLEGE, Baton Rouge, La.; W. W. Frye, New Orleans; *Short-Term Research by Medical Students*; 3 years; \$12,960

MARINE BIOLOGICAL LABORATORY, Woods

Hole, Mass.; Philip B. Armstrong; *Research Training in Marine Biology*; 5 years; \$177,800

MAYO ASSOCIATION, Rochester, Minn.; Joseph B. Berkson; *Estimation Problems Bearing on Biological Problems*; 2 years; \$16,000

MEDICAL COLLEGE OF SOUTH CAROLINA, Charleston, S.C.; John T. Cuttino; *Short-Term Research by Medical Students*; 3 years; \$8,640

UNIVERSITY OF MIAMI, Coral Gables, Fla.; Lauren C. Gilman; *Maintaining Type Cultures of the Various Syngens of Paramecium Caudatum*; 3 years; \$13,800

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; William N. Hubbard, Jr.; *Short-Term Research by Medical Students*; 3 years; \$4,320

A. H. Stockard, University of Michigan Biological Station; *Research at the University of Michigan Biological Station*; 3 years; \$31,000

UNIVERSITY OF MISSOURI, Columbia, Mo.; J. C. Thaemert; *Electron Microscope for Interdisciplinary Research Use*; 1 year; \$45,300

NATIONAL ACADEMY OF SCIENCES, Washington, D.C.; Harold J. Coolidge; *Pacific Science Board*; 3 years; \$75,600

NORTHWESTERN UNIVERSITY, Evanston, Ill.; Ray L. Watterson; *Research Equipment*; 1 year; \$23,000

UNIVERSITY OF OKLAHOMA, Norman Okla.; Mark R. Everett, Oklahoma City; *Short-Term Research by Medical Students*; 3 years; \$8,640

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Thomas F. Anderson; *Support of a Program of Electron Microscopy*; 5 years; \$38,200

Julian B. Marsh; *Short-Term Research by Medical Students*; 3 years; \$21,600

RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK, Albany, N.Y.; Davis G. Johnson, Syracuse; *Short-Term Research by Medical Students*; 3 years; \$17,280

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.; J. W. Bartholomew; *An Electron Microscope for Biological Research*; 1 year; \$45,400

STATE UNIVERSITY OF IOWA, Iowa City, Iowa; Norman B. Nelson; *Short-Term Research by Medical Students*; 3 years; \$8,640

UNIVERSITY OF TENNESSEE, Knoxville, Tenn.; Roland H. Aiden, Memphis; *Short-Term Research by Medical Students*; 3 years; \$15,120

UNIVERSITY OF WASHINGTON, Seattle, Wash.; Robert L. Fernald, Friday Harbor Laboratories; *Research in Oceanography at the Friday Harbor Laboratories*; 1 year; \$4,000

WEST VIRGINIA UNIVERSITY, Morgantown, W. Va.; Edward J. Van Liere; *Short-Term Research by Medical Students*; 3 years; \$8,640

UNIVERSITY OF WISCONSIN, Madison, Wis.; H. Ris; *Summer Course in the Principles and Techniques of Tissue Culture*; 2 years; \$18,000

YALE UNIVERSITY, New Haven, Conn.; Vernon W. Lippard; *Short-Term Research by Medical Students*; 3 years; \$32,400

Daniel J. Merriman, Bingham Oceanographic Laboratory; *Research Equipment for the Bingham Oceanographic Laboratory*; 1 year; \$14,500