# APPENDIX C

## Grants for Basic Research

### ANTHROPOLOGICAL SCIENCES

AMERICAN MUSEUM OF NATURAL HISTORY, New York, N.Y.; Harry L. Shapiro, Department of Anthropology; *Archaeological Reconnaissance on Okinawa;* 1 year; $2,800

UNIVERSITY OF ARIZONA, Tucson, Ariz.

Frederick S. Hulse, Department of Anthropology; *Biological Characteristics of Migrants;* 1 year; $4,000

Edward H. Spicer, Department of Anthropology; *Processes of Cultural Assimilation;* 2 years; $15,200

BROWN UNIVERSITY, Providence, R.I.; J. L. Giddings, Department of Anthropology; *Beach-Ridge Dating;* 2 years; $37,300

UNIVERSITY OF BUFFALO, Buffalo, N.Y.

George L. Trager, Department of Anthropology; *Paralanguage in the Native Speech of Taos Pueblo;* 1 year; $8,100

Marian E. White, Department of Anthropology; *Iroquois Migration Route;* 1 year; $4,300

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

George M. Foster, Department of Anthropology; *Comparative Study of Socio-Cultural Change;* 4 years; $39,000

Robert F. Heizer, Department of Anthropology, Berkeley; *Culture History of the Western Great Basin;* 1 year; $5,500

UNIVERSITY OF CHICAGO, Chicago, Ill.

Robert J. Braidwood, The Oriental Institute; *Paleo-Ecological Study of the Appearance of Food Production;* 3 years; $47,700

COLUMBIA UNIVERSITY, New York, N.Y.

Uriel Weinreich, Department of Linguistics; *Linguistic and Cultural Differentiation of Coterritorial Societies;* 2 years; $7,800

GEORGE WASHINGTON UNIVERSITY, Washington, D.C.

Demitri B. Shimkin, The Graduate Council; *Siberian Linguistic Analysis;* 1 year; $1,100

HARVARD UNIVERSITY, Cambridge, Mass.

Gordon R. Willey, Peabody Museum; *Archaeological Excavation of a Maya Site;* 2 years; $32,700

UNIVERSITY OF IDAHO, Moscow, Idaho

A. W. Bowers, Department of Anthropology; *Archaeological Study of Twin Falls;* 1 year; $2,000

UNIVERSITY OF ILLINOIS, Urbana, Ill.

Oscar Lewis, Department of Anthropology; *Process of Urbanization in Mexico;* 1 year; $15,700

INSTITUTE OF ANDEAN RESEARCH, New York, N.Y.

Gordon F. Ekholm; *Interrelationships of New World Cultures;* 2 years; $40,700

LAWRENCE COLLEGE, Appleton, Wis.

Harold K. Schneider, Department of Anthropology; *The Role of Livestock in Nyaturu Society;* 1 year; $13,400

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; *Archaeological Study of Glacial Lake Agassiz Basin;* 1 year; $9,800

NATIONAL BUREAU OF ECONOMIC RESEARCH, INC.; New York, N.Y.

Solomon Fabricant, Director of Research; *International Economic Transactions;* 2 years; $51,000

UNIVERSITY OF ROCHESTER, Rochester, N.Y.

Richard N. Rosett, Department of Economics; *Investigations of Household Economic Behavior;* 1 year; $9,400

SMITHSONIAN INSTITUTION, Washington, D.C.

Ralph S. Solecki, Department of Anthropology; *Prehistoric Man in Shanidar Valley;* 1 year; $23,500

William C. Sturtevant, Bureau of American Ethnology; *Seminole Culture;* 1 year; $3,000

STANFORD UNIVERSITY, Stanford, Calif.

B. A. Gerow, Department of Anthropology; *Obsidian-Hydration Dating Method;* 1 year; $8,800

TULANE UNIVERSITY, New Orleans, La.

William F. Friedman, Middle American Research Institute; *Hieroglyphic Writings of the Ancient Maya;* 2 years; $4,000

UNIVERSITY OF WASHINGTON, Seattle, Wash.

B. Ottenberg, Department of Anthropology; *Anthropological Study of Urban Nigeria;* 13 months; $15,000

### ASTRONOMY

ASSOCIATION OF UNIVERSITIES FOR RESEARCH IN ASTRONOMY, INC., Tucson, Ariz.; Aden B. Meinel, Kitt Peak National Observatory; *Preliminary Conceptual Design and Experimental Studies for Large Aperature Orbital Telescopes;* 1 year; $160,000

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena 4, Calif.

F. Zwicky, Department of Astrophysics; *A Cooperative Supernova Search;* 1 year; $7,400

F. Zwicky, Department of Astronomy; *Radial Velocities of a Special Class of Blue Stars;* 1 year; $3,900

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

Merle F. Walker, Department of Astronomy, Lick Observatory, Berkeley; *Application of the Lallemand-type Image Converter;* 1 year; $8,600

O. Struve, Department of Astronomy; *Computation of Orbits in the Restricted Three Body Problem;* 2 years; $20,000

CASE INSTITUTE OF TECHNOLOGY, Cleveland, Ohio

Victor M. Blanco, Department of Astronomy; *Infrared Studies of Faint Red Stars;* 2 years; $16,900

J. J. Nassau, Department of Astronomy; *New Ultraviolet Transmitting Objective Prism;* 1 year; $10,500

UNIVERSITY OF CHICAGO, Chicago, Ill.

G. van Biesbroeck, Department of Astronomy, *Astrometric Investigations;* 1 year; $6,200

W. A. Hiltner, Yerkes Observatory, Williams Bay, Wis.; *Image Converters for Astronomical Photography;* 1 year; $15,000

W. A. Hiltner, Yerkes Observatory; *Program for Research on Galactic Clusters;* 2 years; $12,800

G. P. Kuiper, Yerkes Observatory; *Physical and Statistical Studies of Asteroids;* 1 year; $29,500

K. H. Prendergast, Yerkes Observatory, Williams Bay, Wis.; *Problems of Theoretical Astrophysics;* 2 years; $11,700

UNIVERSITY OF CINCINNATI, Cincinnati, Ohio; Paul Herget, Cincinnati Observatory; *The Calculation of Minor Planet Orbits;* 1 year; $10,000

COLUMBIA UNIVERSITY, New York 27, N.Y.; J. Schilt, Department of Astronomy; *Studies Related to the Establishment of a Large Astrographic Telescope in the Southern Hemisphere;* 1 year; $25,300

DARTMOUTH COLLEGE, Hanover, N.H.; G. Z. Dimitroff, Department of Mathematics and Astronomy; *Solar Activity Related to Ionospheric Phenomena;* 1 year; $1,500

UNIVERSITY OF FLORIDA, Gainesville, Fla.; T. D. Carr and A. G. Smith; Department of Physics; *Radio Observations of Jupiter and Saturn from Chile;* 2 years; $41,000

FORDHAM UNIVERSITY, New York, N.Y.; W. J. Miller, Astronomical Laboratory; *Photometric and Measuring Equipment for the Variable Star Program;* 2 years; $5,000

GEORGETOWN UNIVERSITY, Washington 7, D.C.; C. C. Kiess and W. P. Meggers, Department of Astronomy; *Investigations of the Sun's Spectrum;* 2 years; $28,800

HARVARD UNIVERSITY, Cambridge, Mass.

Thomas Gold, Harvard College Observatory; *Twenty-one Centimeter Radio Astronomy;* 2 years; $97,000

David Layzer, Department of Astronomy; *Theoretical Energy Levels and Transition Probabilities;* 1 year, $12,300

Donald H. Menzel, Department of Astronomy; *Henry Draper Spectral Types for the Southern Polar Cap;* 1½ years; $6,900

G. de Vaucouleurs, Harvard College Observatory; *Photometric Studies of Bright Galaxies;* 2 years; $15,000

HIGH ALTITUDE OBSERVATORY OF THE UNIVERSTIY OF COLORADO, Boulder, Colo.; Dr. Walter Orr Roberts, Director; *High Resolutions Spectrograph;* 2 years; $80,000

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; Frank K. Edmondson, Director, Goethe Link Observatory; *Observations of Asteroids;* 3 years; $22,500

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; John D. Strong, Laboratory of Astrophysics and Physical Astronomy; *High Altitude Astronomy;* 6 months; $30,000

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; Lawrence H. Aller, Department of Astronomy; *The Abundance of Certain Elements in the Solar Atmosphere;* 2 years; $13,600

O. C. Mohler, McMath-Hulbert Observatory; *Hydrogen in the Solar Spectrum;* 2 years; $19,600

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; William J. Luyton, Department of Astronomy; *General Proper Motion Survey;* 3 years; $25,800

OHIO STATE UNIVERSITY, Columbus, Ohio; John D. Kraus, Department of Electrical Engineering; *Completion of 360-foot Standing Parabola Radio Telescope;* 2 years; $166,000

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; William Blitzstein and Frank Bradshaw Wood, Department of Astronomy; *Astronomical Research in the Infrared;* 2 years; $13,600

UNIVERSITY OF PITTSBURGH, Pittsburgh Pa.; N. E. Wagman, Allegheny Observatory; *Determination of the Parallaxes of Dwarf Stars;* 4 years; $6,000

PRINCETON UNIVERSITY, Princeton, N.J.; Martin Schwarzschild, Department of Astronomy; *High Altitude Astronomy;* 3 years; $165,000

RENSSELAER POLYTECHNIC INSTITUTE, Troy, N.Y.; Robert Fleischer, Department of Physics; *Radio Astronomy;* 18 months; $20,000

UNIVERSITY OF TEXAS, Austin, Tex.

Frank N. Edmonds, Jr., Department of Mathematics and Astronomy; *An Analysis of Solar Granulation;* 1 year; $3,000

Gerald P. Kuiper, McDonald Observatory; *Design of Infrared Microwave Telescope;* 1 year; $40,000

UNIVERSITY OF TOLEDO, Toledo, Ohio; Robert A. Chipman, Department of Astronomy; *Search for Spectrum Lines in Radio Astronomy;* 2 years; $22,800

VANDERBILT UNIVERSITY, Nashville, Tenn.; John H. DeWitt, Department of Astronomy; *The Application of Television Techniques to Astronomy;* 1 year; $27,900

UNIVERSITY OF WISCONSIN, Madison, Wis.

C. M. Huffer, Department of Astronomy; *Three-Color Studies of Eclipsing Binaries;* 1 year; $5,600

Julian E. Mack, Department of Physics; *Interferometric Study of Coronal Emission;* 1 year; $3,000

YALE UNIVERSITY, New Haven, Conn.

Dirk Brouwer, Department of Astronomy; *Modernization of a Long Screw Measuring Engine and Its Application to Astrometric Research;* 3 years; $27,500

Harlan J. Smith, Department of Astronomy; *Investigation of Planetary Radio Emission;* 16 months; $21,000

## ATMOSPHERIC SCIENCES

UNIVERSITY OF ARIZONA, Tucson, Ariz.; A. Richard Kassander, Jr., Louis J. Battan, and James E. McDonald, Institute of Atmospheric Physics; *Physics of Clouds and of Cloud Modification;* 3 years; $161,800

ATMOSPHERIC RESEARCH GROUP, Pasadena, Calif.; Paul B. MacCready, Jr., *Field Studies in Cloud Physics;* 1 year; $57,100

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

J. Neyman, Department of Statistics; *Randomized Cloud Seeding;* 2 years; $64,900

Norris W. Rakestraw, Scripps Institution of Oceanography, La Jolla; *Carbon Dioxide in the Atmosphere;* 3 years; $34,000

Zdenek Sekera, Department of Meterology, Los Angeles; *Planetary Earth Albedo;* 2 years; $58,700

UNIVERSITY OF CHICAGO, Chicago, Ill.

Horace R. Byers, Department of Meteorology; *Research in Cloud Physics;* 3 years; $383,700

Horace R. Byers and Roscoe R. Braham, Department of Meteorology; *Physical Effects of Silver Iodide Seeding in the Great Plains;* 3 years; $114,300

Chester W. Newton, Department of Meteorology; *Aerological Analysis of Extratropical Current Systems;* 2 years; $20,000

Sverre Petterssen, Department of Meteorology; *Heat and Water Vapor Exchange Processes;* 30 months; $37,500

CHIEF OF NAVAL RESEARCH, Washington, D.C.; Bernard Vonnegut, Arthur D. Little, Inc., Cambridge, Mass.; *Cloud Electrification Studies;* 1 year; $50,000

UNIVERSITY OF ILLINOIS, Urbana, Ill.; R. G. Semonin, Department of Meteorology; *Atmospheric Particulates in Precipitation Physics;* 2 years; $43,000

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.

Henry G. Houghton, Department of Meteorology; *Study of Means for the Augmentation of the National Effort in Atmospheric Research;* 6 months; $50,000

H. C. Willett, Department of Meteorology; *Effect of Variable Solar Activity on Atmospheric Circulation;* 2 years; $26,000

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; George D. Frier, Department of Physics; *Electrical Properties of the Atmosphere;* 2 years; $63,100

NEBRASKA STATE TEACHERS COLLEGE, Chadron, Nebr.; Lyle V. Andrews, Division of Science and Mathematics; *Physical Study of a Hail Suppression Program;* 18 months; $11,000

NEW MEXICO INSTITUTE OF MINING AND TECHNOLOGY, Socorro, N. Mex.

Marx Brook, Department of Physics; *Thunderstorm Electrification;* 3 years; $194,600

W. D. Crozier, Department of Atmospheric Physics; *Study of Atmospheric Space Charge;* 3 years; $45,000

NEW YORK UNIVERSITY, New York 3, N.Y.; Max A. Woodbury, Department of Mathematics; *A Study of Statistical Evaluation of Weather Modification;* 2 years; $58,800

OKLAHOMA STATE UNIVERSITY OF AGRICULTURE AND APPLIED SCIENCE, Stillwater, Okla.; Herbert L. Jones, School of Electrical Engineering; *Investigation of the Electrical Field Intensity Near a Severe Storm;* 3 years; $23,100

OREGON STATE COLLEGE, Corvallis, Oreg.; Fred W. Decker, Department of Physics; *Precipitation Radar Study;* 2 years; $5,000

PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.

Alfred K. Blackadar, Department of Meteorology; *Graphical Integration of Circulation Models;* 2 years; $13,300

Charles L. Hosler, Department of Meteorology; *The Role of Orographic Barriers of Less Than 3000 Feet in the Generation and Propagation of Showers;* 3 years; $98,600

TEXAS A. & M. RESEARCH FOUNDATION, College Station, Tex.

Yoshikazu Sasaki, Department of Oceanography and Meteorology; *A Study of Meso-Scale Disturbances in the Atmosphere by Numerical Methods;* 2 years; $35,000

Walter J. Saucier, Department of Oceanography and Meteorology; *Stratospheric Patterns;* 2 years; $74,100

TUFTS UNIVERSITY, Medford, Mass.; Irving I. Schell, Department of Geology; *Nature of Climatic Change;* 2 years; $17,000

WOODS HOLE OCEANOGRAPHIC INSTITUTION, Woods Hole, Mass.

Joanne S. Malkus; *Atmospheric Convection, and Its Role in Tropical Meteorology;* 3 years; $156,100

Henry M. Stommel; *Collaborative Study of Deep Ocean Current Systems;* 2 years; $290,000

A. H. Woodcock; *Sea-Salt Nuclei—Their Origin, Physical-Chemical Nature and Role in Atmospheric Processes;* 3 years; $83,100

## CHEMISTRY

UNIVERSITY OF AKRON, Akron, Ohio; Maurice Morton, Institute of Rubber Research; *Anionic Addition Polymerization;* 3 years; $56,000

UNIVERSITY OF ARIZONA, Tucson, Ariz.; Douglas S. Chapin, Department of Chemistry; *Preferential Adsorption of Orthohydrogen and of Paradeuterium;* 3 years; $36,500

AUGSBURGH COLLEGE AND THEOLOGICAL SEMINARY, Minneapolis, Minn.; John R. Holum, Department of Chemistry; *Oxidation of Alcohols by the Chronium (VI) Oxide-Pryidine Complex;* 2 years; $5,100

BOSTON UNIVERSITY, Boston, Mass.; Lowell V. Coulter, Department of Chemistry; *Low Temperature Heat Capacities and Entropies of the Beta Quinol Clathrates of Nitrogen, Carbon Monoxide and Hydrogen Chloride;* 2 years; $21,100

BRANDEIS UNIVERSITY, Waltham, Mass.; Myron Rosenblum, Department of Chemistry; *Thermal Decomposition of Oxadiazinones—A New Pryolysis Reaction;* 2 years; $16,700

BRIGHAM YOUNG UNIVERSITY, Provo, Utah

J. Rex Goates, Department of Chemistry; *Thermodynamic Properties of Solutions of Nonelectrolytes;* 3 years; $21,200

H. Tracy Hall, Department of Chemistry; *High Pressure-High Temperature Studies;* 3 years; $85,000

BROWN UNIVERSITY, Providence, R.I.; Harold R. Nace, Department of Chemistry; *Ring Contractions of Cyclic Ketones;* 3 years; $24,000

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.

Norman Davidson, Department of Chemistry; *Production and Properties of Free Radicals in Rigid Media;* 2 years; $18,000

George S. Hammond, Department of Chemistry; *Diffusion Kinetics in Thermal Decomposition;* 3 years; $33,700

John H. Richards, Department of Chemistry; *Organic Chemistry of Sandwich Compounds;* 30 months; $11,100

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

William G. Dauben, Department of Chemistry; *Determination of Structures of Natural Products;* 2 years; $37,500

William C. Drinkard, Jr., Department of Chemistry; *Reactivity of Organic Ligands in Complex Inorganic Compounds;* 2 years; $8,000

Harold S. Johnston, Department of Chemistry; *Fast Gas-Phase Reactions;* 3 years; $54,300

Daniel Kivelson, Department of Chemistry; *Electron Paramagnetic Resonance Studies of Free Radicals;* 3 years; $27,400

James D. McCullough, Department of Chemistry, Los Angeles; *Structural and Equilibrium Studies on Group VIb Compounds;* 2 years; $21,400

Glen H. Miller, Department of Chemistry, Santa Barbara College, Santa Barbara, Calif.; *Mechanisms of Photolysis of Some Fluorinated Compounds;* 2 years; $14,000

Donald S. Noyce, Department of Chemistry; *Behaviour of Cyclic Systems; New Types of Transannular Interaction;* 2 years; $27,700

Chester T. O'Konski, Department of Chemistry; *Molecular Polarization and Interaction;* 2 years; $37,800

James N. Pitts, Jr., Department of Chemistry, Riverside; *Structure and Photochemical Reactivity of Ketones;* 2 years; $12,800

Hosmer W. Stone, Department of Chemistry, Los Angeles; *Orthosemidine Oxidation Products as Redox Indicators;* 2 years; $12,300

Saul Winstein, Department of Chemistry, Los Angeles; *Nature and Behavior of Ion Pairs in Solvolysis;* 3 years; $44,300

CARLETON COLLEGE, Northfield, Minn.; Richard W. Ramette, Department of Chemistry; *Thermodynamic Studies of Solubility in Deuterium Oxide;* 3 years; $10,000

CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pa.

Allan K. Colter, Department of Chemistry; *Charge-Transfer Complexes in Solvolytio Reactions;* 2 years; $11,000

Robert R. Holmes, Department of Chemistry; *Pentacoordinated Molecules;* 1 year; $5,500

CASE INSTITUTE OF TECHNOLOGY, Cleveland, Ohio; Samuel H. Maron, Department of Chemistry; *Thermodynamics of Non-Electrolyte Solutions;* 1 year; $20,000

UNIVERSITY OF CINCINNATI, Cincinnati, Ohio; Raymond E. Dessy, Department of Chemistry; *Conductivities of Some Group II Organometals;* 3 years; $12,500

CLARKSON COLLEGE OF TECHNOLOGY, Potsdam, N.Y.; Charles A. Howe, Department of Chemistry; *Orientation in the Electrophilic Substitution of Polysubstituted Aromatic Nuclei;* 2 years; $12,600

COLUMBIA UNIVERSITY, New York, N.Y.

Ronald Breslow, Department of Chemistry; *Unsaturated Small-Ring Compounds;* 3 years; $37,600

Victor K. LaMer, Department of Chemistry; *Properties of Mixed Monolayers With Special Reference to Molecular Architecture;* 2 years; $19,000

COLGATE UNIVERSITY, Hamilton, N.Y.; Elmer R. Trumbull, Jr., Department of Chemistry; *Rearrangement of Epoxides and Related Compounds;* 3 years; $8,700

UNIVERSITY OF CONNECTICUT, Storrs, Conn.

Roy J. Gritter, Department of Chemistry; *Free Radical Chemistry of Epoxides in Solution;* 2 years; $9,500

Lewis Katz, Chemistry Department; *Polymorphism;* 3 years; $18,200

CORNELL COLLEGE, Mount Vernon, Iowa; Philip R. Marshall, Department of Chemistry; *Kinetics of Gas-Solid Reactions;* 3 years; $9,000

CORNELL UNIVERSITY, Ithaca, N.Y.

Andreas C. Albrecht, Department of Chemistry; *Theoretical and Experimental Study of Vibronic States;* 3 years; $31,500

Alfred T. Blomquist, Department of Chemistry; *Four-Membered Ring Compounds; Substituted Cyclobutadienes;* 3 years; $28,500

Peter Debye, Department of Chemistry; *Polymers in Strong Electrical Fields and Porous Media Flow;* 1 year; $25,800

James L. Hoard, Department of Chemistry; *Structural Analysis of Rhombohedral Boron and of Multidentate Chelate Complexes of Iron Group Elements;* 2 years; $33,300

Jerrold Meinwald, Department of Chemistry; *Highly Strained Bicyclic Systems;* 3 years; $42,200

William T. Miller, Jr., Department of Chemistry; *Reactions of Fluoroolefins With Nucleophiles; Chemistry of Fluorocarbanions;* 3 years; $46,800

UNIVERSITY OF DELAWARE, Newark, Del.; Harold Kwart, Department of Chemistry; *Effects of Replacement of Oxygen by Sulfur in Organic Compounds;* 3 years; $21,700

DENISON UNIVERSITY, *Granville, Ohio;* Dwight R. Spessard, Department of Chemistry; *Reactivity of Haloalkylphosphonic Acids and Esters;* 2 years; $6,900

DUKE UNIVERSITY, Durham, N.C.; Charles K. Bradsher, Department of Chemistry; *Benzoquinolizinium Salts;* 3 years; $26,900

DUQUESNE UNIVERSITY, Pittsburgh, Pa.

Bernard T. Gillis, Department of Chemistry; *Chemistry of Azo Dienophiles;* 2 years; $12,000

Kurt C. Schreiber, Department of Chemistry; *Conjugation in the Naphthalene System;* 3 years; $14,200

EMORY UNIVERSITY, Atlanta, Ga.; H. Lawrence Clever, Department of Chemistry; *Solubility of Gases in Solutions of Electrolytes;* 3 years; $18,000

FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; Ernest Grunwald, Department of Chemistry; *Ion Solvation and Ion Association; Studies of PI Complexes;* 3 years; $32,400

UNIVERSITY OF FLORIDA, Gainesville, Fla.; E. E. Muschlitz, Jr.; Department of Chemistry; *Collisions of Metastable Atoms in Gases;* 2 years; $8,900

FORDHAM UNIVERSITY, New York, N.Y.; I. Moyer Hunsberger, Department of Chemistry; *Hydrogen Bonding and Double Bond Character in Heterocyclic and Aromatic Systems;* 3 years; $23,300

GEORGETOWN UNIVERSITY, Washington, D.C.; William W. Zorbach and James W. Pratt, Department of Chemistry; *Structure of Digitoxigenin Monodigitoxoside;* 2 years; $18,800

GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta, Ga.

Donald G. Davis, Jr.; Department of Chemistry; *Chronopotentiometry With Solid Electrodes;* 2 years; $8,000

John R. Dyer, Department of Chemistry; *Stereochemistry of Streptomycin;* 3 years; $15,000

GOSHEN COLLEGE, Goshen, Ind.; Henry D. Weaver, Jr., Department of Chemistry; *Low Temperature Kinetic Study of Ferric Thiocyanate and Other Fast Reactions;* 3 years; $11,600

HAMILTON COLLEGE, Clinton, N. Y.; Donald J. Denney and James W. Ring, Departments of Chemistry and Physics; *Dielectric Relaxation in Polar Liquids and Their Solutions;* 2 years; $10,600

HARVARD UNIVERSITY, Cambridge, Mass.

Paul D. Bartlett, Department of Chemistry; *Mechanisms of Organic Reactions;* 3 years; $64,500

Louis F. Fieser, Department of Chemistry; *Steroids and Quinones;* 3 years; $39,000

David H. Geske, Department of Chemistry; *Electrochemistry of Some Organoboron Ions;* 18 months; $6,700

William Klemperer, Department of Chemistry; *High Temperature Molecular Spectroscopy;* 3 years; $40,000

August H. Maki, Department of Chemistry; *Electron Paramagnetic Resonance Research;* 1 year; $14,700

HOWARD UNIVERSITY, Washington, D.C.; Moddie D. Taylor, Department of Chemistry; *Rare Earth Hydrides and Benzoates;* 3 years; $23,000

UNIVERSITY OF IDAHO, Moscow, Idaho; James H. Cooley, Department of Chemistry; *Preparation and Properties of Aliphatic Hydroxamic Esters;* 1 year; $2,500

ILLINOIS INSTITUTE OF TECHNOLOGY, Chicago, Ill.

Myron L. Bender, Department of Chemistry; *Mechanisms of the Hydrolytic Reactions of Carboxylic Acid Derivatives;* 3 years; $33,000

Paul E. Fanta, Chemistry Department; *Preparation and Properties of Ethylenimine Derivatives;* 3 years; $20,700

Peter G. Lykos, Department of Chemistry; *Quantum Chemistry of Aromatic Molecules;* 3 years; $20,000

UNIVERSITY OF ILLINOIS, Urbana, Ill.

Douglas E. Applequist, Department of Chemistry; *Sigma-Pi Interference Strain;* 3 years; $29,900

Nelson J. Leonard, Department of Chemistry; *Transannular Interactions in Medium-Ring Compound;* 2 years; $22,500

Carl S. Marvel, Department of Chemistry; *Synthesis of High Polymers and Relations Between Structure and Properties;* 3 years; $59,300

Theron S. Piper, Department of Chemistry; *Crystal Field Theory Applied to the Transition Elements;* 3 years; $15,500

Harold R. Snyder, Department of Chemistry; *Synthesis and Reactions of Heterocyclic Compounds;* 3 years; $51,000

Frederick T. Wall, Department of Chemistry; *Calculation of Reaction Probabilities for Simple Chemical Reactions;* 3 years; $22,800

Frederick T. Wall, Department of Chemistry; *Configurations of Macromolecules and Polymeric Electrolytes;* 2 years; $38,200

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; Riley Schaeffer, Department of Chemistry, Indiana University; *Boranes and Related Compounds;* 2 years; $17,100

IOWA STATE COLLEGE, Ames, Iowa; Orville L. Chapman, Department of Chemistry; *Photochemistry of Metal-Organic Complexes;* 2 years; $14,000

IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS, Ames, Iowa; Charles H. DePuy, Department of Chemistry; *Chemistry of Cyclopentene*-3,5-Dione; 2 years; $13,800

IOWA STATE COLLEGE, Ames, Iowa; Glen A. Russell, Department of Chemistry; *Electrophilic Substitution on Saturated Carbon Atoms;* 3 years; $16,800

IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS, Ames, Iowa; Ernest Wenkert, Department of Chemistry; *Structure and Syntheses of Diterpenoid Natural Products;* 3 years; $23,800

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.

J. D. H. Donnay, Department of Chemistry; *Crystal Structure of a Synthetic Mica;* 2 years; $15,800

G. Wilse Robinson, Department of Chemistry; *Low Temperature Chemistry;* 3 years; $48,000

UNIVERSITY OF KANSAS, Lawrence, Kans.

Richard J. Bearman, Department of Chemistry, *Thermo-Osmosis of Gases Through Membranes;* 3 years; $20,000

A. W. Burgstahler, Department of Chemistry; *Stereochemistry and Synthetic Applications of Hexahydrogallic Acid;* 18 months; $7,200

William E. McEwen, Department of Chemistry; *Timing of Covalency Changes in Competitive Rearrangement Reactions;* 3 years; $24,100

KENTUCKY RESEARCH FOUNDATION, University Station, Lexington, Ky.; Lyle R. Dawson, Department of Chemistry; *Properties of Some Less Common Non-Aqueous Solvents;* 2 years; $11,600

LAFAYETTE COLLEGE, Easton, Pa.; Thomas G. Miller, Department of Chemistry; *Rearrangements of 4,4-Disubstituted-2,5 Cyclohexadienes;* 2 years; $4,500

LINCOLN UNIVERSITY, Jefferson City, Mo.; Willis E. Byrd, Department of Chemistry; *Amine-Sulfur Dioxide Complexes;* 3 years; $8,600

LOUISIANA POLYTECHNIC INSTITUTE, Ruston, La.; Charles Nelson Robinson, Department of Chemistry; *Total Synthesis of Heliotrine;* 2 years; $8,800

LOUISIANA STATE UNIVERSITY, Baton Rouge, La.; Sean P. McGlynn, Department of Chemistry; *Singlet-Triplet Intercombinations in Molecules;* 3 years; $26,000

LUTHER COLLEGE, Decorah, Iowa; Adrian Docken, Department of Chemistry; *Synthesis of Cyclopentanopentalene Derivatives:* 1 year; $3,200

UNIVERSITY OF MARYLAND, College Park, Md.

William G. Maisch and Homer W. Schamp, Jr., Department of Chemistry; *Effect of Pressure on Optical Absorption;* 2 years: $22,900

Charles E. White, Department of Chemistry; *Spectral Characteristics of Fluorescent Metal Chelates;* 2 years; $11,000

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.

George H. Büchi, Department of Chemistry; *Photochemical Reactions;* 3 years; $48,600

F. Albert Cotton, Department of Chemistry; *Spectral and Magnetic Studies of Complex ions;* 2 years; $24,000

Richard C. Lord, Department of Chemistry; *Rotational and Vibrational Spectra of Polyatomic Molecules;* 3 years; $32,800

Dietmar Seyferth, Department of Chemistry; *Inorganic Chemistry on Comparative Organometallic Chemistry;* 3 years; $24,400

John S. Waugh, Department of Chemistry; *Nuclear Resonance Spectra of Molecules;* 2 years; $16,100

UNIVERSITY OF MASSACHUSETTS, Amherst, Mass.; John L. Ragle, Department of Chemistry; *Electronic Structure in Relation to*

*Substituent Groups in Organic Complexes;* 2 years; $9,500

MELLON INSTITUTE OF INDUSTRIAL RESEARCH, Pittsburgh, Pa.; P. J. Flory, Executive Director of Research; *Properties of Polymers and Their Solutions;* 2 years; $57,500

MELLON INSTITUTE, Pittsburgh, Pa.; Foil A. Miller, Department of Research in Chemical Physics; *Infrared Studies at Long Wavelengths;* 2 years; $33,700

MICHIGAN STATE UNIVERSITY, East Lansing, Mich.

Carl H. Brubaker and James L. Dye, Department of Chemistry; *Theromodynamic and Conductance Behavior of High-charge Type Electrolytes in Aqueous Solution;* 2 years; $27,000

James L. Hall, Department of Chemistry; *Acetonitrile as a Solvent for Inorganic Reactions;* 3 years; $17,900

Max T. Rogers, Department of Chemistry; *Conformational Isomerism by Electric Dipole Moment Measurements and Nuclear Magnetic Resonance Spectroscopy;* 2 years; $23,900

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; Robert E. Ireland, Department of Chemistry; *Approach to the Total Synthesis of Atisine;* 2 years; $13,600

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.

I. M. Kolthoff, Department of Chemistry; *Polarography at the Rotated Dropping Electrode;* 2 years; $20,000

I. M. Kolthoff and E. J. Meehan, Department of Chemistry; *Reactions Induced by Free Radicals in Solution;* 3 years; $63,700

William E. Parham, Department of Chemistry; *Chemistry of Divalent Carbon;* 2 years; $13,300

UNIVERSITY OF MISSOURI, Columbia, Mo.; Lloyd B. Thomas, Department of Chemistry, *Chemical and Physical Absorption of Filament Surfaces;* 3 years; $26,800

MONTANA STATE COLLEGE, Bozeman, Mont.; Charles N. Caughlan, Department of Chemistry; *Organic Compounds of Titanium;* 2 years; $15,000

NEW MEXICO HIGHLANDS UNIVERSITY, Las Vegas, N. Mex.; Randolph C. Wilhoit, Department of Chemistry; *Alkoxides of the Group III Metals;* 2 years; $10,400

NEW YORK UNIVERSITY, New York, N.Y.

S. Carlton Dickerman, Department of Chemistry; *Aryl Radical Affinities of Olefins;* 2 years; $10,400

Alvin I. Kosak, Department of Chemistry; *Orientation of Substituents in Monosubstituted Thiophenes;* 3 years; $24,400

Kurt M. Mislow, Department of Chemistry; *Sterochemistry of Arsenic and Antimony;* 3 years; $27,400

NORTHEAST LOUISIANA STATE COLLEGE, Monroe, La.; Raymond Annino, Department of Chemistry; *Polarographic Investigation of Mucochloric and Dichloromaleic Acids;* 1 year; $4,000

NORTHWESTERN UNIVERSITY, Evanston, Ill.

Frederick G. Bordwell, Department of Chemistry; *Effect of Activating Groups on the Course and Rates of Elimination Reactions;* 3 years; $31,400

Donald D. DeFord and Richard C. Bowers, Department of Chemistry; *Voltammetry with Membrane Electrodes;* 3 years; $23,100

Arthur A. Frost, Department of Chemistry; *Quantum Mechanical Electronic Energy Calculations of Simple Molecules;* 3 years; $32,800

Robert L. Letsinger, Department of Chemistry; *Synthesis and Study of Enzyme-like Catalysts;* 3 years; $37,300

R. K. Summerbell, Department of Chemistry; *Synthesis and Stereochemistry of Some Heterocyclic Compounds;* 2 years; $18,400

UNIVERSITY OF NOTRE DAME, Notre Dame, Ind.

Ernest L. Eliel, Department of Chemistry; *Properties and Reactivity of Simple Cyclohexane Derivatives;* 31 months; $21,500

Louis Pierce, Department of Chemistry; *Molecular Microwave Spectroscopy;* 3 years; $44,600

OHIO STATE UNIVERSITY, Columbus, Ohio.

Daryle H. Busch, Department of Chemistry; *Thermodynamics and Electron Transfer Processes Related to Optically Active Complex Inorganic Compounds;* 2 years, $16,400

Earl W. Malmberg, Department of Chemistry; *Oxidation of Hydrocarbons and Related Temperature Reactions;* 2 years; $18,600

William N. White, Department of Chemistry; *Mechanism of Certain Aromatic Rearrangements;* 3 years; $20,000

Quentin Van Winkle, Department of Chemistry; *Electronic Properties of Chlorophyll Films; Mechanism by Which Chlorophyll Converts Light Energy Into Chemical Potential Energy;* 1 year; $11,200

OHIO UNIVERSITY, Athens, Ohio

Jesse H. Day, Department of Chemistry; *Effects of Temperature on the Ultra-Violet and Visible Spectra or Thermochromic Compounds;* 2 years; $8,700

William D. Huntsman, Department of Chemistry; *Thermal Cyclization of Diolefins and Related Compounds;* 2 years; $14,000

UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE, Norman, Okla.

Harold E. Affsprung, Department of Chemistry, University of Oklahoma; *Use of Onium Type Cations as Analytical Reagents;* 2 years; $10,800

Sherril D. Christian, Department of Chemistry, The University of Oklahoma; *Composition and Molecular Orientation of the Liquid-Air Interfacial Region for Organic Binary Mixtures;* 2 years; $11,000

OREGON STATE COLLEGE, Corvallis, Oreg.

Elliott N. Marvell, Department of Chemistry; *Influence of Geometric Isomerism on the Claisen and Cope Rearrangements;* 3 years; $21,000

Allen B. Scott, Department of Chemistry; *Impurities in Ionic Solids;* 2 years; $16,400

UNIVERSITY OF OREGON, Eugene, Oreg.

Wendell M. Graven, Department of Chemistry; *Photolytic Studies of the Higher Dialkyl Organic Peroxides;* 3 years; $21,400

Richard M. Noyes, Department of Chemistry; *Mechanisms of Fast Ion and Ion-Fair Reactions;* 2 years; $23,900

D. F. Swinehart, Department of Chemistry; *Activity Coefficients of Electrolytes With Doubly Charged Anions;* 2 years; $7,000

PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.

Lionel Goodman, Department of Chemistry; *Steric Effects on the Electronic Energy Levels of Substituted Benzenes;* 2 years; $13,500

H. B. Palmer, Department of Fuel Technology and P. S. Skell, Department of Chemistry; *Reactions of Radicals Generated by*

*the Sodium Flame Method;* 3 years; $39,100

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Charles C. Price, Department of Chemistry; *Influence of Structure on Reactivity;* 3 years; $25,000

UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa.

Edward McC. Arnett, Department of Chemistry; *Acid-Base Equilibria Involving Organic Compounds;* 2 years; $6,900

Edward M. Arnett, Department of Chemistry; *Deuterium Analysis Utilizing Gas Chromatography;* 1 year; $8,000

William B. Kehl, Computation and Data Processing Center and G. A. Jeffrey, Department of Chemistry; *Computer Programming for Crystal Structure Analysis;* 2 years; $27,400

Jerome L. Rosenberg, Department of Chemistry; *Chemistry of Electronically Excited States of Conjugated Molecules;* 3 years; $14,700

POMONA COLLEGE, Claremont, Calif.; C. Freeman Allen, Department of Chemistry; *Synthesis of $C_{27}$- Phthienoic Acid;* 1 year; $6,000

UNIVERSITY OF PUERTO RICO, Rio Piedras, P.R.; Owen H. Wheeler, Department of Chemistry; *Effect of Alkyl Groups on the Reactivity and Formation of Carbon Rings;* 2 years; $7,700

PURDUE RESEARCH FOUNDATION, Lafayette, Ind.

Herbert C. Brown, Department of Chemistry; *Qualitative Studies of Chemical Reactivity;* 3 years; $47,800

A. F. Clifford, Department of Chemistry; *Chemistry of the Hypofluorites;* 2 years; $15,700

Nathan Kornblum, Department of Chemistry; *New and Selective Method of Oxidation;* 2 years; $29,100

RENSSELAER POLYTECHNIC INSTITUTE, Troy, N.Y.

Harry F. Herbrandson, Department of Chemistry; *Carbanion Oxidations by Ketones;* 2 years; $11,200

Robert L. Strond, Department of Chemistry; *Mercury-Photosensitized Decomposition and Oxidation of Diborane;* 2 years; $13,200

RESEARCH FOUNDATION, Oklahoma State University, Stillwater, Okla.; George Gorin, Department of Chemistry, Oklahoma State University; *Complexes of Thiol Compounds;* 2 years; $11,200

RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK, Albany, N.Y.

J. J. Hermans, Department of Chemistry, College of Forestry, Syracuse; *Chemical Substitution in Glucosides and Their Derivatives;* 2 years; $17,500

Conrad Schuerch, Department of Chemistry, College of Forestry, Syracuse; *Stereoisomerism of Vinyl Polymers;* 2 years; $11,800

Michael Szwarc, Department of Chemistry, College of Forestry, Syracuse; *Chemistry of Living Polymers;* 2 years; $39,000

RESEARCH INSTITUTE OF TEMPLE UNIVERSITY, Philadelphia, Pa.; Dr. Aristid V. Grosse, President; *High Temperatures Inorganic Chemistry;* 2 years; $54,300

RICE INSTITUTE, Houston, Tex.; Thomas E. Brackett, Department of Chemistry; *Specific Heat of Small Particles of Sodium Chloride from 1° k to 20° k;* 1 year; $4,100

UNIVERSITY OF ROCHESTER, Rochester, N.Y.

William H. Sanders, Jr., Department of Chemistry, *Mechanisms of Elimination Reations;* 3 years; $35,900

Winston D. Walters, Department of Chemistry; *Kinetics and Mechanisms of the Thermal Reactions of Cyclic Compounds;* 4 years; $28,000

ROCKEFELLER INSTITUTE, New York, N.Y.; Armin C. Braun; *Chemical Nature and Mode of Action of a Specific Inducer of the Male Sex Organ in Certain Plant Species;* 2 years; $30,000

SACRAMENTO STATE COLLEGE, Sacramento, Calif.; C. Robert Hurley, Department of Chemistry; *Ionization Constant of Perruthenic Acid; Lower Oxidation States of Ruthenium;* 3 years; $7,500

SAINT MARY OF THE PLAINS COLLEGE, Dodge City, Kans.; Louis W. Clark, Department of Chemistry; *Kinetics of Decomposition of Unstable Organic Acids in Non-Aqueous Solvents;* 2 years; $7,100

UNIVERSITY OF SAN FRANCISCO, San Francisco, Calif.; G. E. McCasland, Department of Chemistry; *Stereochemistry of the Cyclitols;* 2 years; $15,000

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.

Ronald F. Brown, Department of Chemistry; *Effects of Gem-Substituents on the Rates and Equilibria of Ring Closure Reactions;* 2 years; $18,700

Jerry Donohue, Department of Chemistry; *Crystal and Molecular Structures of Inorganic Compounds of Unknown Chemical Structure;* 3 years; $57,200

STANFORD UNIVERSITY, Stanford, Calif.

Eugene R. Hardwick, Department of Chemistry; *Scintillation Study on Radiation Damage in Crystalline Solids;* 3 years; $18,000

Harry S. Mosher, Department of Chemistry; *Rate Studies on the Addition, Reduction and Enolization Reactions of the Grignard Reagent;* 2 years; $18,300

Carl R. Noller, Department of Chemistry; *Synthesis and Resolution of Dendroasymmetric Compounds;* 3 years; $12,000

D. A. Skoog, Department of Chemistry and Chemical Engineering; *Reactions of Iodine with Thiocyanate Ion;* 3 years; $18,000

STATE COLLEGE OF WASHINGTON, Pullman, Wash.; Grant Gill Smith, Department of Chemistry; *Rearrangement of Alpha-Diketones and Hydrolysis of Lactones and Amides;* 3 years; $17,400

STATE UNIVERSITY OF IOWA, Iowa City, Iowa

Norman C. Baenziger, Department of Chemistry; *Application of Machine Calculations to Chemical Problems;* 1 year; $29,700

Norman C. Baenziger, Department of Chemistry; *Structures of Intermetallic Compounds;* 2 years; $15,800

Robert E. Buckles, Department of Chemistry; *Addition Reactions of Halogens in the Presence of Polyhalide Salts;* 3 years; $25,900

SYRACUSE UNIVERSITY RESEARCH INSTITUTE, Syracuse, N.Y.; Harry Brumberger, Department of Chemistry; *Critical Phenomena in Binary Liquid Mixtures;* 3 years; $21,500

UNIVERSITY OF TENNESSEE, Knoxville, Tenn.; William H. Fletcher, Department of Chemistry; *Vibrational Spectra and Molec-*

*ular Structure of Diazoalkanes and Ketenes;* 2 years; $12,000

TEXAS LUTHERAN COLLEGE, Seguin, Tex.; Oscar E. Weigang, Jr., Department of Chemistry; *Solvent Effects on the Near U.V. and Visible Spectra of Hydrocarbons;* 2 years; $6,600

UNIVERSITY OF TEXAS, Austin, Tex.

Philip S. Bailey, Department of Chemistry; *Abnormal Ozonolyses and Rearrangements of Peroxidic Ozonolysis Products;* 2 years; $18,500

Royston M. Roberts, Department of Chemistry; *Reactions of Alkylbenzenes in the Presence of Lewis Acids;* 2 years; $16,800

UNIVERSITY OF UTAH, Salt Lake City, Utah

Randall E. Hamm, Department of Chemistry; *Square-Wave Polarography;* 2 years; $10,800

W. J. Horton, Department of Chemistry; *Ether Cleavage and Enol Lactone Rearrangement;* 2 years; $18,500

James M. Sugihara, Department of Chemistry; *Synthesis of 3-Ketoses;* 2 years; $10,700

VANDERBILT UNIVERSITY, Nashville, Tenn.; Donald E. Pearson, Department of Chemistry; *Electrophilic Reactions;* 3 years; $15,500

UNIVERSITY OF VERMONT, Burlington, Vt.; Clinton D. Cook, Department of Chemistry; *Free Radical Halogenations of the N-Bromosuccinimide Type;* 3 years; $19,300

UNIVERSITY OF VIRGINIA, Charlottesville, Va.

Loren G. Hepler, Department of Chemistry; *Theromochemical Investigations of Inorganic Substances;* 3 years; $19,400

Oscar R. Rodig, Department of Chemistry; *Mechanism of Biosynthesis of Antibiotics;* 3 years; $9,600

WASHINGTON UNIVERSITY, St. Louis, Mo.

C. David Gutsche, Department of Chemistry; *Synthesis of Polycyclic Compounds;* 3 years; $26,200

Lindsay Helmholz, Department of Chemistry; *Structure of Inorganic Complex Ions;* 2 years; $13,300

UNIVERSITY OF WASHINGTON, Seattle, Wash.

Arthur G. Anderson, Jr., Department of Chemistry; *Nonclassical Aromatic Compounds;* 3 years; $27,200

Norman W. Gregory, Department of Chemistry; *Vaporization Reactions;* 3 years; $24,800

WAYNE STATE UNIVERSITY, Detroit, Mich.

Carl Djerassi, Department of Chemistry; *Systematization and Correlation of Optical Rotatory Dispersion Data;* 2 years; $50,000

Stanley Kirschner Department of Chemistry; *Rotatory Dispersion of Asymmetric Complex Inorganic Compounds;* 2 years; $20,500

A. Edward Remick, Department of Chemistry; *Mechanism of Oxidation-Reduction Reactions;* 2 years; $11,800

WELLESLEY COLLEGE, Wellesley, Mass.; Margaret K. Selkel, Department of Chemistry; *Flavanoid Plant Pigments;* 3 years; $10,800

WESLEYAN UNIVERSITY, Middletown, Conn.; William A. Hoffman, Jr., Department of Chemistry; *Oximes of Alloxan and Cyanuric Acid Derivatives as Chelating Agents;* 2 years; $6,200

WHEATON COLLEGE, Wheaton, Ill.; Stanley M. Parmerter, Department of Chemistry; *Preparation and Reaction of Hydrazones;* 2 years; $5,300

UNIVERSITY OF WISCONSIN, Madison, Wis.

Harlan L. Goering, Department of Chemistry; *Radical Addition, Rearrangement and Solvolytic Reactions;* 3 years; $29,500

John L. Margrave, Department of Chemistry; *Gas-Solid Interactions at High Temperatures;* 3 years; $44,500

Charles F. Curtiss, Department of Chemistry; *Theoretical Extensions of the Kinetic Theory of Gases;* 2 years; $23,300

Louis J. Gosting, Department of Chemistry; *Diffusion Studies on Electrolytes and Proteins;* 3 years; $32,500

Edwin M. Larsen, Department of Chemistry; *Reduced States of the Transition Elements;* 2 years; $12,400

Daniel L. Leussing, Jr., Department of Chemistry; *Reactions of Sulfhydryl Compounds with Metal Ions;* 2 years; $12,200

WORCESTER POLYTECHNIC INSTITUTE, Worcester, Mass.; David Todd, Department of Chemistry; *N-Substituted Hydrazones;* 2 years; $12,700

UNIVERSITY OF WYOMING, Laramie, Wyo.; Sara Jane Rhoads, Department of Chemistry; *Effect of Ring Size on the Direction and Rate of Alkylation of 2-Carboakoxycyclanones;* 3 years; $18,900

YALE UNIVERSITY, New Haven, Conn.

Harold Conroy, Department of Chemistry; *Structure and Theoretical Biogenesis of Alkaloids;* 3 years; $38,800

Lars Onsager, Department of Chemistry; *Theory of Cooperative Phenomena;* 3 years; $45,200

Andrew Patterson, Jr., Department of Chemistry; *High-Field Conductance of Solutions of Alkali Metals in Amine-Type Solvents;* 3 years; $30,000

## DEVELOPMENTAL BIOLOGY

ALBION COLLEGE, Albion, Mich.; Pearl Liu Chen, Department of Biology; *Cytology of Streptomyces;* 2 years; $5,700

BRANDEIS UNIVERSITY, Waltham, Mass.

Lionel Jaffe, Department of Biology; *Orientation of Cell Growth by Polarized Radiant Energy;* 4 years; $33,300

Lawrence Levine and Maurice Sussman, Departments of Biochemistry and Biology; *An Immunochemical Study of Slime Mold Developments;* 3 years; $27,600

Edgar Zwilling, Department of Biology; *Clone Cultures From Early Chick Embryo Cells;* 4 years; $19,200

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

Max Alfert, Department of Zoology, *Cytochemical Studies of Cell Nuclei;* 2 years; $29,500

S. F. Cook, Department of Physiology; *Ultrastructure of the Organic Matrix of Bone;* 2 years; $6,000

Herbert B. Currier, Department of Botany, Davis; *Relation of Callose Formation to Plasmodesmal Function in Plant Cells;* 1 year; $6,600

Ernest M. Gifford, Jr., Department of Botany, Davis; *Studies of Shoot Apices;* 3 years; $10,100

William A. Jensen, Department of Botany, and Leroy G. Kavaljian, Department of Life Sciences, Sacramento State College, Sacramento; *Cell Differentiation During Early*

*Development of Higher Plants;* 3 years; $45,000

Anton Lang and Roy M. Sachs, Departments of Botany and Floriculture, Los Angeles; *The Role of Gibberellin in Plant Morphogenesis;* 1 year; $14,600

Lucille S. Hurley, Department of Home Economics, Davis; *The Role of Pantothenic Acid in Development;* 2 years; $6,200

A. M. Schechtman, Department of Zoology, Los Angeles; *Macromolecular Background of Embryonic Development;* 3 years; $36,200

CARLETON COLLEGE, Northfield, Minn.; Thurlo B. Thomas, Department of Biology; *Cell Changes in the Lacrimal Gland During Development;* 2 years; $10,700

UNIVERSITY OF CONNECTICUT, Storrs, Conn.; Walter Landauer, Department of Animal Genetics; *Vitamin and Amino Acid Content of Chicken Embryos Homozygous for Lethal Mutations;* 5 years; $30,000

UNIVERSITY OF CHICAGO, Chicago, Ill.; Jane H. Overton, Division of Natural Sciences; *Growth Patterns;* 2 years; $8,500

UNIVERSITY OF CONNECTICUT, Storrs, Conn.; Edgar Zwilling, Department of Animal Genetics; *Clone Cultures From Early Chick Embryo Cells;* 5 years; $20,200

COLUMBIA UNIVERSITY, New York, N.Y.

L. C. Dunn and Dorothea Bennett, Department of Zoology; *Developmental Effects of Genetic Factors at the T Locus in the House Mouse;* 2 years; $20,100

Victor Paschkis, Department of Mechanical Engineering; *Thermal Fundamentals of Quenching;* 3 years; $54,100

CONNECTICUT COLLEGE, New London, Conn.; Betty F. Thomson, Department of Botany; *Role of Light in Histogenesis and Differentiation in Angiosperms;* 2 years; $15,100

CORNELL COLLEGE, Mount Vernon, Iowa; Francis A. Pray, Department of Biology; *Development of Certain Selected Rotifers;* 2 years; $7,300

CORNELL UNIVERSITY, Ithaca, N.Y.

John M. Anderson, Department of Zoology; *Comparative Studies of the Digestive Tract in Various Starfishes;* 3 years; $12,800

Bettison E. Shapiro, Department of Anatomy, Medical College, N.Y.; *Analysis of Factors Involved in the Initiation of Amphibian Gastrulation;* 2 years; $4,800

F. C. Steward, Department of Botany, New York State College of Agriculture, Ithaca; *Cytological Study of Rapidly Proliferating Plant Tissue Cultures;* 1 year; $5,500

DUKE UNIVERSITY, Durham, N.C.; Kenneth L. Duke, Department of Anatomy; *Comparative Histological Study of Mammalian Ovaries;* 3 years; $8,100

EMORY UNIVERSITY, Emory University, Ga.; Geoffrey H. Bourne, Department of Anatomy; *Enzyme Activity in the Cells of Young and Old Animals;* 2 years; $27,600

FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; Charles B. Metz, Oceanographic Institute; *Physiology of Fertilization in Marine Invertebrates;* 3 years; $47,900

FORDHAM UNIVERSITY, New York, N.Y.; Charles A. Berger, Department of Biology; *Cytological Aspects of Development;* 3 years; $9,000

HARVARD UNIVERSITY, Cambridge 38, Mass.

Cornelius F. Strittmatter, Department of Biological Chemistry; *Development of Metabolic Patterns in the Chick Embryo;* 2 years; $10,000

Ralph H. Wetmore, Biological Laboratories; *Comparative Genesis of Form in Ferns and Mosses;* 1 year; $13,300

Ralph H. Wetmore, Biological Laboratories; *Comparative Morphogenesis of Developing Prothallia and Embryos of Ferns and Mosses;* 1 year; $16,500

UNIVERSITY OF ILLINOIS, Urbana, Ill.; S. Meryl Rose, Department of Zoology; *Specific Inhibition During Development;* 2 years, $28,600

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.

Martin Dworkin, Department of Microbiology, Indiana University; *Nutritional Requirements of Some Fruiting Myxobacteria;* 1 year; $3,800

Charles W. Hagen, Jr., Department of Botany, Indiana University; *Chemical Differentiation in Flower Parts;* 3 years; $23,700

LUBBOCK CHRISTIAN COLLEGE, Lubbock, Tex.; Norman Hughes, Department of Biology; *Nuclear-Cytoplasmic Relationships in Amphibian Development;* 2 years; $4,600

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Eugene Bell, Department of Biology; *Development of the Vertebrate Limb;* 3 years; $33,800

MIAMI UNIVERSITY, Oxford, Ohio; Charles Heimsch, Department of Botany; *Developmental Root Anatomy;* 1 year; $6,400

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.

Ernst C. Abbe, Department of Botany; *Factors Influencing Organogenesis in Maize;* 3 years; $30,200

William J. L. Felts, Department of Anatomy; *Study of the Skeleton of Cetaceae;* 2 years; $13,000

Norman S. Kerr, Department of Zoology; *Morphogenesis in the True Slime Mold, Didymium Nigripes;* 2 years; $18,100

Nelson T. Spratt, Department of Zoology; *Mechanisms of Morphogenetic Movements and Cellular Interactions in Somite Formation and Differentiation;* 3 years; $26,800

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.

Robert L. Hunter, Department of Anatomy; *Esterases in Biological Materials;* 2 years; $11,200

P. B. Kaufman, Department of Botany; *Mechanism of Stem Elongation in Grasses;* 2 years; $15,900

Norman E. Kemp, Department of Zoology; *Differentiation of Submicroscopic Structure During Development;* 2 years; $21,300

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John R. Rowley, Department of Botany; *Submicroscopic Structure of the Pollen Grain Wall;* 1 year; $3,800

Shirley C. Tucker, Department of Botany; *Flora Ontogeny of Michelia Fuscata;* 2 years; $10,400

MISSOURI BOTANICAL GARDEN, St. Louis, Mo.; Norton H. Nickerson; *Growth Pattern Changes Induced by Treatment With Gibberellic Acid;* 2 years; $6,400

MONTANA STATE COLLEGE, Bozeman, Mont.; Ray F. Evert, Department of Botany and Bacteriology; *Seasonal Changes in Phloem Structure in Pyrus Malus;* 2 years; $11,200

NEW YORK BOTANICAL GARDEN, New York, N.Y.; Richard M. Klein; *Characterization of*

*Causal Agents in Crown Gall of Plants;* 1 year; $6,000

NEW YORK UNIVERSITY, New York, N.Y.

William J. Crotty, Department of Biology; *Control by Visible Radiation of Differentiation in Ferns;* 2 years; $10,000

Henry I. Hirshfield, Department of Biology; *Nuclear-cytoplasmic Relationships in Blepharisma Undulans;* 2 years; $12,600

UNIVERSITY OF NORTH DAKOTA, Grand Forks, N. Dak.; E. W. Pfeiffer, Department of Anatomy, School of Medicine; *Origin of the Ovarian Interstitial Cells of Dipodmys;* 1 year; $1,800

OGLETHORPE UNIVERSITY, Atlanta, Ga.; Arthur L. Cohen, Department of Biology; *Morphogenesis in the Myxomycetes;* 2 years; $20,700

UNIVERSITY OF OREGON, Eugene, Oreg.

Jacob Straus, Department of Biology; *Experimental Morhpogenesis and Physiology of Mature Plant Embryos;* 3 years; $22,000

R. L. Bacon, Department of Anatomy; *Development of Organ Antigens in the Sea Urchin;* 2 years; $25,100

Sanford S. Tepfer, Department of Biology; *Developmental Changes in the Shoot Apices of Flowering Plants;* 2 years; $11,000

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.

Paul B. Green, Department of Botany; *Structure and Development of the Plant Cell Wall;* 2 years; $20,000

L. V. Heilbrunn, Department of Zoology; *Changes in Marine Invertebrate Eggs During Early Development;* 3 years; $24,400

UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa.

Peter Gray, Department of Biological Sciences; *Embedding Media and Section Cutting Mechanics in Ultra-thin Sectioning;* 3 years; $13,400

Paul G. Mahlberg, Department of Biological Sciences; *Growth of the Non-articulated Laticifer;* 2 years; $7,500

PRINCETON UNIVERSITY, Princeton, N.J.; William P. Jacobs, Department of Biology; *Control of Differentiation and Growth in Higher Plants;* 3 years; $55,900

RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK, Albany, N.Y.

William Battin, Department of Biology; *Cytoplasmic DNA in Amphibian Oogenesis;* 3 years; $10,000

Arlene R. Seaman, Department of Anatomy, College of Medicine, N.Y.; *Histochemical and Fine Ultrastructural Study of the Prostate Gland;* 1 year; $3,200

RICE INSTITUTE, Houston, Tex.; Allen C. Enders, Department of Biology; *Phenomena Related to Implantation of the Blastocyst in the Armadillo;* 3 years; $39,100

STANFORD UNIVERSITY, Stanford, Calif.; Donald L. Stilwell, Jr., Department of Anatomy; *Blood Supply of the Vertebral Column;* 3 years; $17,400

STATE UNIVERSITY OF IOWA, Iowa City, Iowa; Reed A. Flickinger, Department of Zoology; *Carbon Dioxide Utilization in Flatworm Regeneration;* 3 years; $19,200

UNIVERSITY OF TENNESSEE, Knoxville, Tenn.; Ronald C. Fraser, Department of Zoology and Entomology; *Metabolic Events in Growth Stimulation;* 1 year; $6,500

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Charles Heimsch, Department of Botany; *Developmental Root Anatomy;* 2 years; $9,700

Addison E. Lee, Department of Botany; *Growth and Development of Excise Roots Carrying Various Gene Mutations;* 3 years; $16,700

W. Gordon Whaley, Department of Botany; *Physiological Basis of Heterosis;* 1 year; $4,400

TULANE UNIVERSITY, New Orleans, La.; Jerome O. Krivanek, Department of Zoology; *Chemical Analyses of the Developing Slime Mold,* Dictyostelium Discoideum; 3 years; $24,600

UNIVERSITY OF VERMONT AND STATE AGRICULTURAL COLLEGE, Burlington, Vt.; F. W. Dunihue, Department of Anatomy, College of Medicine; *Existence, Origin and Nature of Mesangial Cells;* 3 years; $13,100

UNIVERSITY OF VERMONT, Burlington, Vt.; Walter L. Wilson, Department of Physiology and Biophysics, School of Medicine; *The Cell Cortex in Cleavage and Development;* 2 years; $3,700

UNIVERSITY OF VIRGINIA, Charlottesville, Va.

B. E. Frye, Department of Biology; *Morphological and Functional Development of the Islets of Langerhans;* 1 year; $3,400

J. David Deck, Department of Anatomy; *A Study of Limb Regeneration in Larval and Adult Amphibians;* 3 years; $17,500

WASHINGTON UNIVERSITY, St. Louis, Mo.; Viktor Hamburger and Rita Levi-Montalcini, Department of Zoology; *Nerve Growth-Promoting Agents;* 2 years; $53,100

WESTERN CAROLINA COLLEGE, Cullowhee, N.C.; Francis W. Yow, Department of Science; *Morphogenesis in Euplotes Eurystomus;* 3 years; $6,000

WESTERN RESERVE UNIVERSITY, Cleveland, Ohio; Thomas D. Brock, Biological Laboratory; *Cell Growth and Reproduction in Yeasts;* 2 years; $11,100

WHITMAN COLLEGE, Walla Walla, Wash.; Arthur G. Rempel, Department of Biology; *Normal Development of the Digestive, Respiratory and Circulatory Systems in the Salamander;* 2 years; $4,800

WILKES COLLEGE, Wilkes-Barre, Pa.; Francis J. Michelini, Department of Biology; *Developmental Processes in Xanthium Italicum, Moretti;* 2 years; $8,500

WILSON COLLEGE, Chambersburg, Pa.; M. Jean Allen, Department of Biology; *Histochemistry of Developmental Stages of Polychaetes;* 2 years; $18,500

YALE UNIVERSITY, New Haven, Conn.

Edgar J. Boell, Department of Zoology; *Mitochondrial Differentiation During Embryonic Development;* 2 years; $24,700

Earl D. Hanson, Department of Zoology; *Role of Ribonucleic Acid in Nucleocytoplasmic Interaction;* 3 years; $26,100

Donald F. Poulson, Department of Zoology; *Physiological and Developmental Genetic Studies on Drosophila;* 2 years; $27,000

Dorothea Rudnick, Department of Zoology; *Localization of Glutamotransferase in Chick Embryo During Development;* 3 years; $14,300

## EARTH SCIENCES

UNIVERSITY OF ALASKA, College, Alaska; J. C. Cain, Geophysical Institute; *Analysis of IGY Magnetic Data;* 1 year; $26,000

AMERICAN MUSEUM OF NATURAL HISTORY, Central Park West, New York, N.Y.; James Reid McDonald; *Wounded Knee Fauna of South Dakota;* 18 months; $16,100

UNIVERSITY OF ARIZONA, Tucson, Ariz.; P. E. Damon, Department of Geology; *Geochemical Data in Southwestern United States;* 2 years; $30,000

BUCKNELL UNIVERSITY, Lewisburg, Pa.; George Theokritoff, Department of Geology; *Geology of Granville-Hampton Area, New York;* 1 year; $2,800

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.

H. A. Lowenstam, Division of Geological Sciences; *Trace Elements in Marine Invertebrates;* 2 years; $28,000

C. F. Richter, Seismological Laboratory; *Seismicity of Southern California;* 2 years; $17,000

G. J. Wasserburg, Department of Geology; *Rare Gases in Rock and Natural Gases;* 3 years; $40,000

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

M. N. Bramlette, Scripps Institution of Oceanography, La Jolla; *Diatom Distribution in Oceans;* 3 years; $25,200

Harmon Craig, Scripps Institution of Oceanography, La Jolla; *Geochemistry Volcanic Gases and Waters;* 3 years; $45,000

Frank W. Dickson, Institute of Geophysics, Los Angeles; *Ore Forming Processes;* 2 years; $29,750

Jack F. Evernden, Garniss H. Curtis, Department of Geological Sciences, Berkeley; *Absolute Dating by Potassium-Argon Method;* 2 years; $55,800

David T. Griggs, Institute of Geophysics, Los Angeles; *Plasticity at High Pressures and Temperatures;* 2 years; $38,000

Victor Vacquier, Scripps Institution of Oceanography, La Jolla, Calif.; *Deep Anomalies in Electrical Conductivity;* 3 years; $68,000

CASPER COLLEGE, Casper, Wyo.; Paul W. Netterstrom, Department of Geology; *Tectonic History of Bighorn Mountains;* 2 years; $3,000

UNIVERSITY OF CHICAGO, Chicago, Ill.

Robert N. Clayton, Department of Chemistry; *Oxygen Isotope Fractionation;* 3 years; $58,700

Mark A. Melton, Department of Geology; *Geomorphic-Ecologic Study of Non-Mature Drainage Systems;* 3 years; $11,200

UNIVERSITY OF CINCINNATI, Cincinnati, Ohio

Kenneth E. Caster, Department of Geology; *Upper Ordovician Fauna;* 2 years; $23,250

William F. Jenks, Department of Geology, and Geography; *Volcanic Rocks of Arizona;* 2 years; $17,700

COLUMBIA UNIVERSITY, New York, N.Y.

Maurice Ewing, Lamont Geological Observatory; *Marine and Bottom Research in High Southern Latitudes (Vema Cruise 15);* 1 year; $140,000

David B. Ericson, Lamont Geological Observatory; *Ocean Sediment Cores;* 2 years; $26,000

Paul F. Kerr, Department of Mineralogy; *Differential Thermal Analysis of Sulfides and Arsenides;* 2 years; $28,000

J. Oliver, Lamont Geological Observatory; *Earth Strain Meter;* 2 years; $30,000

John E. Nafe, Lamont Geological Observatory; *Geophysical Survey of North Rim Puerto Rico Trench;* 6 months; $30,000

Arie Poldervaart, Department of Geology; *Geology of Independence Area, Montana;* 2 years; $15,000

Arie Poldervaart, Department of Geology; *Katazonal Metamorphism in Africa and Europe;* 16 months; $5,650

CORNELL UNIVERSITY, Ithaca, N.Y.; E. P. Wheeler, Department of Geology; *Anorthosite and Adamellite Bodies of Northern Labrador;* 4 years; $10,000

DARTMOUTH COLLEGE, Hanover, N.H.; John B. Lyons, Department of Geology; *Systematic Compositional Variation in Metamorphic Minerals;* 1 year; $1,150

FLORIDA STATE UNIVERSITY, Tallahasse, Fla.; William F. Tanner, Geology Department; *Near-Shore Investigations;* 1 year; $13,800

FORDHAM UNIVERSITY, New York, N.Y.; Bartholomew Nagy, Department of Chemistry; *Clay Minerals and Carbohydrates in Sedimentary Diagenetics Environments;* 2 years; $16,100

UNIVERSITY OF HAWAII, Honolulu, Hawaii

J. J. Naughton, Department of Chemistry and Institute of Geophysics; *Oxidation-Reduction Systems of Silicates and Igneous Rocks;* 2 years; $20,000

G. Donald Sherman, Department of Agronomy and Soil Science; *Secondary Minerals in Highly Weathered Rocks;* 3 years; $49,500

UNIVERSITY OF HOUSTON, Houston, Texas; Jules R. DuBar, Department of Geology; *Waccamaw and Croatan Deposits of North and South Carolina;* 2 years; $11,400

UNIVERSITY OF ILLINOIS, Urbana, Ill.; Ralph E. Grim, Department of Geology; *Phase Changes in Silicates;* 2 years; $46,500

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.: M. Gordon Wolman, Department of Geography; *Comparison of Present and Pleistocene Susquehanna River;* 2 years; $8,800

LONG ISLAND UNIVERSITY, Brooklyn, N.Y.; Jean Hough, Department of Biology; *Oligocene and Miocene Faunas;* 2 years; $10,000

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.

M. J. Buerger, Department of Geology and Geophysics; *Structures and Properties of Crystals;* 3 years; $63,500

Theodore R. Madden, Department of Geology and Geophysics; *Crustal Electrical Investigation;* 3 years; $20,000

John W. Winchester, Department of Geology and Geophysics; *Analysis of Metamorphic Minerals by Neutron Activation and Related Methods;* 3 years; $23,000

UNIVERSITY OF MIAMI, Coral Gables, Fla.; Cesare Emiliani, The Marine Laboratory; *Paleotemperature Research;* 6 months; $9,000

UNIVERSITY OF MIAMI, Miami, Fla.; Fritz F. Koczy, The Marine Laboratory; *Radium Distribution at Water-Sediment Interface;* 1 year; $12,000

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Harold M. Mooney, School of Mines and Metallurgy; *Seismic Pulse Propagation;* 6 months; $1,000

UNIVERSITY OF MISSOURI, Columbia, Mo.; Walter D. Keller, Department of Geology; *Accelerated Rock Weathering by Hydrolysis;* 3 years; $19,250

MONTANA STATE COLLEGE, Bozeman, Mont.; William J. McMannis, Department of Geography and Geology; *Shoreline of Beltian Deposition, Southwestern Montana;* 2 years; $11,700

NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL, Washington, D.C.; William R. Thurston, Division of Earth Sciences; *A Study of the Feasibility and Desirability of Drilling a Hole to the Mohorovicic Discontinuity;* 1 year; $15,000

UNIVERSITY OF NEVADA, Reno, Nev.; Aleksis von Volborth, Nevada Mining Analytical Laboratory of the Mackay School of Mines; *Mineralogy of Allanite;* 2 years; $15,000

NEW YORK UNIVERSITY, New York, N.Y.; Brooks F. Ellis, Department of Geology; *Lithofacies and Ostracod Studies in Long Island Sound;* 2 years; $20,000

NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING, Raleigh, N.C.; Ralph J. McCracken, Department of Soils; *Weathering and Soil Genesis in Piedmont and Coastal Plain Regions;* 3 years; $27,700

OBERLINE COLLEGE, Oberlin, Ohio

Kathryn H. Clisby, Department of Geology and Geography; *Pollen Studies and Pleistocene Chronology of San Augustine Plains;* 2 years; $22,400

Fred Foreman, Department of Geology and Geography; *Sedimentary Petrology of San Augustine Plains;* 1 year; $10,200

UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE, Norman, Okla.; Leonard R. Wilson, Department of Geology; *Stratigraphic Palynology;* 3 years; $37,000

PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.

Charles D. Jeffries, Department of Agronomy; *Intermediate Weathering Products of Clay Minerals;* 3 years; $27,500

MacKenzie L. Keith, Department of Geophysics and Geochemistry; *Fractionation of Stable Isotopes;* 6 months; $560

Gerhard O. W. Kramp, Department of Geology; *Microflora of Modern Sediments and Coal Lithotypes;* 3 years; $29,600

Leonard F. Herzog, Department of Geophysics and Geochemistry; *Dating With Beryllium*$^{10}$; 2 years; $20,250

PRINCETON UNIVERSITY, Princeton, N.J.; H. D. Holland, Department of Geology; *Carbonate Solubility at High Temperatures and Pressures;* 3 years; $30,000

PURDUE RESEARCH FOUNDATION, Lafayette, Ind.; J. L. White, Department of Agronomy, Purdue University; *The Weathering Sequence of Micaceous Clay Minerals;* 3 years; $16,200

RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK, Albany, N.Y.; H. G. Wilm, College of Forestry; *Present Status of Knowledge of Forest Influences and Forest Hydrology in Europe and the United Kingdom;* 1 year; $1,675

Royal R. Marshall, Pasadena, Calif.; *Lead Isotopes in Basalts and Eclogites;* 1 year; $9,600

ST. LAWRENCE UNIVERSITY, Canton, N.Y.; R. O. Bloomer, Department of Geology and Geography; *Grenville Complex;* 3 years; $13,600

SOUTH DAKOTA STATE GEOLOGICAL SURVEY, Vermillion, S. Dak.; Daniel Lum; *Gravity Studies in Western South Dakota;* 2 years; $5,400

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.; K. O. Emery, Department of Geology; *Varved Sediments in Santa Barbara Basin;* 1 year; $8,100

STANFORD UNIVERSITY, Stanford, Calif.; John W. Harbaugh, Department of Geology; *Quantitative Study of Paleozoic Carbonate Rocks, Caballo Mountain, New Mexico;* 3 years; $16,000

STATE COLLEGE OF WASHINGTON, Pullman, Wash.; J. A. Kittrick, Department of Agronomy; *Solubility Product and the Soil Phosphate System;* 3 years; $12,500

STATE UNIVERSITY OF IOWA, Iowa City, Iowa; Lucien M. Brush, Jr., Iowa Institute of Hydraulic Research; *Sediment Sorting Experiments;* 2 years; $16,100

TEXAS A. & M. RESEARCH FOUNDATION, College Station, Tex.; R. G. Bader, Department of Oceanography, Agricultural and Mechanical College of Texas; *West Mississippi Delta;* 2 years; $16,400

UNIVERSITY OF UTAH, Salt Lake City, Utah; Joseph W. Berg, Jr., Department of Geophysics; *Crustal Structure in Utah and Nevada;* 1 year; $17,300

WASHINGTON UNIVERSITY, St. Louis, Mo.; H. LeRoy Scharon, Department of Geology; *Paleomagnetic Investigation of the St. Francois Mountains Igneous Rocks;* 2 years; $14,300

UNIVERSITY OF WASHINGTON, Seattle, Wash.; Maurice Rattray, Jr.; Department of Oceanography; *Oceanographic Model Studies of Puget Sound;* 2 years; $31,900

WAYNE STATE UNIVERSITY, Detroit, Mich.; Willard H. Parsons, Department of Geology; *Volcanic Rocks in the Northern Absaroka Region;* 2 years; $18,000

UNIVERSITY OF WICHITA, Wichita, Kans.; Paul Tasch, Department of Geology; *Permian Conchostracans of Kansas and Oklahoma;* 2 years; $9,750

WILLIAMS COLLEGE, Williamstown, Mass.; J. A. MacFadyen, Jr., Department of Geology; *Properties of Clay as a Model Material;* 3 years; $5,500

UNIVERSITY OF WISCONSIN, Madison, Wis.

R. C. Emmons, Department of Geology; *Chemical Analysis of Granitic Rock;* 1 year; $575

John C. Rose, Department of Geology; *Portable Apparatus for Determination of Absolute Gravity;* 2 years; $24,000

George P. Woollard, Department of Geology; *Gravity Data in the United States;* 1 year; $23,000

WOODS HOLE OCEANOGRAPHIC INSTITUTION, Woods Hole, Mass.

J. B. Hersey and Richard G. Leahy; *Geophysical Survey of North Rim, Puerto Rico Trench;* 1 year; $53,700

Francis Minot, Department of Engineering; *Design Concepts for Research Vessels;* 1 year, $18,400

YALE UNIVERSITY, New Haven, Conn.

E. S. Deevey, Geochronometric Laboratory; *Studies of Isotopic Carbon;* 2 years; $39,400.

P. B. Sears, Conservation Program; *Correlation of Pleistocene Deposits by Micropaleontology;* 3 years; $22,300

## ECONOMIC SCIENCES

UNIVERSITY OF ILLINOIS, Urbana, Ill.; William A. Neiswanger, Department of Economics; *Parameter Estimates in Economic Models;* 2 years; $20,500

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; F. Machlup, Department of Political Economy; *Economic Aspects of Inventions;* 3 years; $39,000

YALE UNIVERSITY, New Haven, Conn.; T. C. Koopmans, Cowles Foundation for Research in Economics; *Allocation of Resources Over Time;* 1 year; $18,000

ENGINEERING SCIENCES

UNIVERSITY OF ARIZONA, Tucson, Ariz.; Raymond W. Bliss, Jr., Institute of Atmospheric Physics; *Energy Transfer from Solar Collectors;* 3 years; $40,000

BROWN UNIVERSITY, Providence, R.I.; Daniel C. Drucker, Division of Engineering; *Mechanical Behavior of Metals in the Plastic Range;* 2 years; $61,200

UNIVERSITY OF BUFFALO, Buffalo, N.Y.; Anthony T. Balint, Department of Electrical Engineering; *Non-Linear Ferromagnetic Circuit;* 2 years; $9,200

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.

Donald Coles, Department of Aeronautics; *Stability and Transition in Fluid Flow;* 3 years; $57,000

Thad Vreeland, Jr., Division of Engineering; *The Atomic Mechanism of Yielding in Silicon-Iron Crystals;* 2 years; $20,700

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

Andreas Acrivos, Department of Chemical Engineering; *Determination of Local Mass Transfer Coefficients;* 2 years; $12,500

Boris Bresler, Department of Engineering; *Mechanism of Deformation and Failure in Plain Concrete;* 2 years; $25,100

R. W. Clough, Department of Civil Engineering; *Matrix Analysis of Structures;* 2 years; $22,700

J. T. Gier, R. V. Dunkle, and A. K. Oppenheim, Institute of Engineering Research; *Gaseous Radiation;* 1 year; $11,700

Eugene E. Petersen, Department of Chemical Engineering; *Effect of Ultrasonic Vibrations on Liquid Heat and Mass Transfer;* 2 years; $12,700

M. Polivka and J. W. Dorn, Institute of Engineering Research; *Effect of Temperature on Creep Characteristics of Portland Cement Compounds;* 2 years; $19,300

Egor P. Popov, Department of Civil Engineering; *Plastic Strength of Structures Under Repeated Loads;* 2 years; $21,800

John M. Prausnitz, Department of Chemical Engineering; *Jet Reactor Concentration and Temperature Fluctuations;* 2 years; $11,800

H. A. Schade, Institute of Engineering Research; *Towing Tank Reproduction of Non-Uniform Seas;* 1 year; $10,000

Erich G. Thomsen, Metal Processing Department; *Plastic Deformation of Metals;* 3 years; $40,000

Jack Washburn, Department of Metallurgy; *Relation of Dislocation Substructure to Properties;* 2 years; $34,000

Lotfi A. Zadeh, Electronics Research Laboratory; *Input-Output and Representation of Nonlinear Systems;* 3 years; $35,100

CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pa.

Charles L. McCabe, College of Engineering and Science; *Equilibrium Measurements in Reactive Metal Systems at High Temperatures;* 3 years; $47,400

James B. Woodford, Jr., Department of Electrical Engineering; *Research in Solid State Devices;* 2 years; $29,500

Carl F. Zorowski, Department of Mechanical Engineering; *Problems Associated With Cold Rolling of Mechanical Engineering;* 1 year; $9,200

CASE INSTITUTE OF TECHNOLOGY, Cleveland, Ohio; Donald P. Echman and Irving Lefkowitz, Department of Mechanical Engineering; *Automatic Control Systems;* 3 years; $45,400

COLORADO STATE UNIVERSITY RESEARCH FOUNDATION, Fort Collins, Colo.; I. S. Dunn, Department of Civil Engineering, Colorado State University; *Primary and Secondary Consolidation of Soils;* 2 years; $15,200

UNIVERSITY OF COLORADO, Boulder, Colo.

Warren DeLapp, Department of Civil Engineering; *An Experimental Investigation of the Mechanics of Air Entrainment;* 3 years; $28,000

Frank Kreith, Department of Mechanical Engineering; *Heat, Mass and Momentum Transfer in Rotating Systems;* 3 years; $52,400

COLUMBIA UNIVERSITY, New York, N.Y.

Morton B. Friedman, Department of Civil Engineering and Engineering Mechanics; *Analysis of Dissipative Media;* 2 years; $16,000

Wan H. Kim, Department of Electrical Engineering; *Network Topology and Network Synthesis;* 2 years; $22,400

Richard Skalak, Department of Civil Engineering; *Surface Waves on Rotating Fluids;* 3 years; $29,700

L. A. Zadeh and T. E. Stern, Department of Electrical Engineering; *Input-Output Analysis of Nonlinear System;* 4 years; $40,600

CORNELL UNIVERSITY, Ithaca, N.Y.; M. H. Cohen, Department of Electrical Engineering; *Solar Bursts at Meter Wave Lengths;* 19 months; $29,500

UNIVERSITY OF DAYTON, Dayton, Ohio; James P. Hsu, Department of Chemical Engineering; *Frequency Response Analysis of a Multipass Heat Exchanger;* 2 years; $4,800

UNIVERSITY OF DELAWARE, Newark, Del.;

J. A. Gerster, Department of Chemical Engineering: *Transient Response Characteristics of Distillation Column;* 3 years; $45,200

A. B. Metzner, Department of Chemical Engineering; *Catalytic Uses of Ion Exchange Resins;* 3 years; $28,700

UNIVERSITY OF FLORIDA, Gainesville, Fla.

Per Bruun, Department of Engineering Mechanics; *Wind-Water Relations in Coastal Waters;* 2 years; $43,000

Charles E. Huckaba, Department of Chemical Engineering; *Fundamental Analysis of Transient Conditions in Distillation Operations;* 3 years; $24,600

GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta, Ga.

M. R. Carstens, Department of Civil Engineering; *Transition From Laminar to Turbulent Flow;* 2 years; $29,500

Werner N. Grune, Department of Civil Engineering; *Anaerobic Digestion in the Presence of Radioactive Wastes;* 2 years; $26,800

Clyde Orr, Jr., Engineering Experiment Station; *Thermal Forces in Materials of High Thermal Conductivity;* 2 years; $19,000

HARVARD UNIVERSITY, Cambridge, Mass.; H. W. Emmons, Department of Engineering and Applied Physics; *High Temperature, High Speed Gas Dynamics;* 1 year; $28,300

ILLINOIS INSTITUTE OF TECHNOLOGY, Chicago, Ill.

F. Essenburg, Department of Mechanics; *Thermal Stresses in Plates and Shells;* 2 years; $15,700

Roy M. Gundersen, Department of Mathematics; *Compressible Flow With Weak Entropy Changes;* 2 years; $7,000

UNIVERSITY OF ILLINOIS, Urbana, Ill.

William J. Fry and Frederic S. Brunschwig, Department of Electrical Engineering; *Production of Uniform High Intensity Ultrasonic Fields;* 2 years; $44,800

P. D. Coleman, Department of Electrical Engineering; *Phase Energy Spectra Optimization in Linear Electron Accelerators;* 2 years; $43,900

C. P. Siess, Department of Civil Engineering; *Analytical Studies of Continuous Plates;* 3 years; $43,000

IOWA STATE COLLEGE, Ames, Iowa; Ladis H. Csanyi, Bituminous Research Laboratory; *Determination of the Constituents of Asphalts;* 2 years; $49,100

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.

Stanley Corrsin, Department of Mechanical Engineering; *Isotropic Turbulence;* 5 years; $166,000

H. E. Hoelscher, Department of Chemical Engineering; *Chemical and Physical Reactions in Flowing Liquid Systems;* 3 years; $31,500

UNIVERSITY OF KANSAS, Lawrence, Kans.

Donald L. Dean, Department of Civil Engineering; *Stress and Stability Problems of Structural Lattices;* 3 years; $26,500

Fred Kurata, Department of Chemical Engineering; *A Study of Phase and Volumetric Behavior at Extremely Low Temperatures;* 2 years; $54,000

LINFIELD RESEARCH INSTITUTE, McMinnville, Oreg.; W. P. Dyke, Director; *Energy Distribution in Field Emitted Electrons;* 3 years; $101,700

LOUISIANA STATE UNIVERSITY AND AGRICULTURAL AND MECHANICAL COLLEGE, Baton Rouge, La.; Dale R. Carver, Department of Engineering Mechanics; *A Study of the Dynamic Behavior of Sandwich Construction;* 3 years; $23,200

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.

William P. Allis, Research Laboratory of Electronics; *Interdepartmental Research Program on Ionized Plasmas;* 2 years; $500,000

Stephen H. Crandall, Department of Mechanical Engineering; *Variational Methods for Viscous Fluid Flow;* 1 year; $5,700

John F. Elliott, Department of Metallurgy; *Solution Calorimetry With Metals;* 5 years; $31,600

Peter Griffith, Department of Mechanical Engineering; *Transition Boiling Heat Transfer;* 2 years; $15,000

Morris Halle; *Linguistic Structure;* 3 years; $92,600

Joseph H. Keenan, Department of Mechanical Engineering; *Knudsen Flow of Gases Through Porous Plugs;* 2 years; $24,700

T. William Lambe, Department of Civil and Sanitary Engineering; *Research on Fundamental Factors Affecting the Strength of Clay;* 2 years; $19,000

Alan S. Michaels; Department of Chemical Engineering; *Tailored Polymers for Use as Perm-Selective Membranes;* 2 years; $17,400

R. C. Reid, Department of Chemical Engineering; *Cryogenic Chemistry;* 2 years; $19,300

Charles N. Satterfield and Robert C. Reid, Department of Chemical Engineering; *Oxidation Kinetics in Porous-walled Tubes;* 2 years; $11,400

Milton C. Shaw; Department of Mechanical Engineering; *Evaluation of the Radioactive Tracer Technique for use in Tool Wear Studies;* 1 year; $11,600

Tau-Yi Toong, Department of Mechanical Engineering; *Study of Basic Mechanism of Flame Stabilization in a Boundary Layer;* 2 years; $29,800

C. F. Taylor and A. R. Rogowski, Department of Mechanical Engineering; *Ignition and Combustion of Fuel Sprays;* 2 years; $37,500

John G. Trump, Department of Electrical Engineering; *The Production of Intense High-energy Particle Beams;* 2 years; $90,000

MICHIGAN STATE UNIVERSITY, East Lansing, Mich.; Emmett M. Laursen; Department of Civil Engineering; *The Distribution of Pressure and Shear on Dune-shaped Rough Boundaries;* 2 years; $39,000

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.

G. V. Berg, Department of Civil Engineering; *A Study of the Energy Functions for Structures Subjected to Earthquakes;* 2 years; $12,600

Samuel K. Clark; Department of Engineering Mechanics; *Analog for Transient Thermal Stresses;* 1 year; $10,700

G. Parravano, Department of Chemical and Metallurgical Engineering; *Fractional Crystallization of Inorganic, Organic, and Biological Materials;* 2 years; $19,000

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.

Paul Anderson, Department of Civil Engineering; *Behavior of Beams Curved in a Plane Perpendicular to Load Distribution;* 1 year; $10,600

Norman H. Ceaglske, Department of Chemical Engineering; *Analytical Studies of Automatic Process Control Systems;* 2 years; $14,700

Chieh C. Chang, Department of Aeronautical Engineering; *Theoretical Investigation of Ram Jet Buzz;* 2 years; $27,800

Richard C. Jordan and James L. Threlkeld, Department of Mechanical Engineering; *Incidence and Collection of Solar Radiation;* 2 years; $32,000

UNIVERSITY OF NEBRASKA, Lincoln, Nebr.; Nicolas M. Bashara, Department of Electrical Engineering; *Discharges in Dielectric Voids;* 2 years; $9,400

NEW YORK UNIVERSITY, New York, N.Y.

Max Kronstein, Department of Chemical Engineering; *Formation of Coherent Films from Fluid Polymers;* 1 year; $10,700

M. C. Li, Department of Civil Engineering; *Effect of Heat on Physicochemical Properties of Soils;* 2 years; $22,200

UNIVERSITY OF NOTRE DAME, Notre Dame, Ind.

Bernard D. Cullity, Department of Metallurgy; *Control of Preferred Orientation in Metals;* 3 years; $44,800

Lawrence H. N. Lee, Department of Engineering Sciences, *Plastic Buckling Strength of Initially Imperfect Cylinders;* 2 years; $20,500

OKLAHOMA STATE UNIVERSITY OF AGRICULTURE AND APPLIED SCIENCE; Truet B. Thompson, School of Electrical Engineering; *Time Series Approximation Synthesis of Delay-Type Devices;* 2 years; $17,900

UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE, Norman, Okla.; John E. Powers, Department of Chemical Engineering; *Barrier Systems in Thermogravitational Diffusion;* 3 years; $25,300

OREGON STATE COLLEGE, Corvallis, Oreg.

J. G. Knudsen, Department of Chemical Engineering; *Local Shell-Slide Heat Transfer Coefficients in Baffled Tubular Heat Exchangers;* 3 years; $12,500

J. S. Walton, Department of Chemical Engineering; *Solid-Vapor Equilibria of Binary Metal Salt Mixtures;* 2 years; $17,500

PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.

Philip L. Walker, Jr., Department of Fuel Technology; *Carbon-Oxygen Reactions;* 3 years; $22,500

A. H. Waynick, Department of Electrical Engineering; *Dynamical Processes in the Lower Ionosphere;* 2 years; $36,500

UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa.; J. F. Calvert and T. W. Sze, Department of Electrical Engineering; *Loss Minimization in Nonlinear Electrical Networks;* 2 years; $22,800

POLYTECHNIC INSTITUTE OF BROOKLYN, Brooklyn, N.Y.; Nathan Marcuvitz, Microwave Research Institute; *Magnetic Resonance Research;* 3 years; $149,000

PRATT INSTITUTE, Brooklyn, N.Y.; Abraham B. Finkelstein, Department of Engineering Science: *Unsteady Water Waves Influenced by the Motion of Solid Bodies or Distributions of Singularities, and Solutions of Periodic Flows Derivative Therefrom;* 2 years; $10,200

PURDUE RESEARCH FOUNDATION, Lafayette, Ind.

Carroll O. Bennett, School of Chemical and Metallurgical Engineering; *Diffusion Coefficients of Gases at High Pressure;* 2 years; $20,000

E. W. Comings, Department of Chemical and Metallurgical Engineering; *Measurement of Thermal Conductivity of Gases at High Pressure;* 3 years; $28,300

Alden H. Emery, Jr., School of Chemical Engineering, Purdue University; *Degree of Cure, Network Formation, and Heat Generation in Synthetic Elastomers;* 2 years; $10,800

A. G. Guy, Department of Metallurgical Engineering; *Research in Physical Metallurgy in the Soviet Union;* 1 year; $8,800

Hsu L. and R. J. H. Bollard, Department of Aeronautical Engineering; *Characteristics of Structural Elements at Elevated Temperatures;* 3 years; $50,000

J. E. Myers, School of Chemical and Metallurgical Engineering; *Influence of Surface Roughness on Heat, Mass, and Momentum Transfers;* 3 years; $17,800

J. Henry Rushton, Department of Chemical Engineering; *Rates of Mass Transfer at the Surface of Drops;* 3 years; $35,300

RICE INSTITUTE, Houston, Tex.

R. Kobayashi and Thomas Leland, Department of Chemical Engineering; *Thermodynamic Properties of Hydrocarbon and Hydrogen Mixtures;* 3 years; $13,100

Riki Kobayashi, Department of Chemical Engineering; *Viscosities of Hydrocarbon Mixtures at High Pressures;* 3 years; $17,800

RUTGERS, THE STATE UNIVERSITY, New Brunswick, N.J.

R. K. Bernhard, Department of General Engineering; *Soil Wave Characteristics in the Vicinity of a Disturbing Source;* 2 years; $27,100

A. R. Jumikis, Department of Civil Engineering; *Upward Migration of Water From the Ground-Water Temperature in Freezing Soil;* 3 years; $51,400

Sigmund Weisemann, Materials Research Laboratory; *Submicroscopic Investigation of Lattice Inhomogeneities of Metals;* 2 years; $25,800

STANFORD UNIVERSITY, Stanford, Calif.

Robert H. Eustis, Department of Mechanical Engineering; *Heat Transfer to Bubbles in Liquids;* 1 year; $16,400

George Leppert, Department of Mechanical Engineering; *Heat Transfer From A Single Sphere;* 2 years; $9,500

George Leppert, Department of Mechanical Engineering; *Local Boiling Pressure Drop With Forced Convection;* 2 years; $17,900

David M. Mason, Department of Chemical Engineering; *Effect of Kinetics on Forced-Convective Heat Transfer to Reacting Gases;* 3 years; $25,600

Richard H. Pantell, Microwave Laboratory; *Non-Periodic Circuit R–F Interaction With Slow-Moving Electrons;* 2 years; $65,000

Cornelius J. Pings, Department of Chemical Engineering; *Structure of Liquids;* 2 years; $16,200

STATE COLLEGE OF WASHINGTON, Pullman, Wash.

A. L. Betts and R. D. Harbour, Department of Electrical Engineering; *Pressure Gradient Potentials in Liquids;* 3 years; $23,300

E. R. Tinney, Division of Industrial Research; *The Advance of A Shallow Liquid Front Down A Dry Channel;* 2 years; $13,000

STATE UNIVERSITY OF IOWA, Iowa City, Iowa; Karl Kammermeyer, Department of Chemical Engineering; *Adsorption of Gases and Vapors at Elevated Temperatures and Pressures;* 2 years; $27,700

SWARTHMORE COLLEGE, Swarthmore, Pa.; Carl Barus, Department of Electrical Engineering; *Study of Learning Machines;* 3 years; $18,500

SYRACUSE UNIVERSITY RESEARCH INSTITUTE, Syracuse, N.Y.

S. Eskinazi and D. Dosanjh, Department of Mechanical Engineering; *Viscous Decay of a Vortex;* 2 years; $23,800

Gordon Kent, Department of Electrical Engineering; *High Current Density Electron Flow;* 2 years; $29,700

SYRACUSE UNIVERSITY, Syracuse, N.Y.; William Gill and Robert V. Jelinek, Department of Chemical Engineering; *The Kinetics of Reactions Between A Single-Component Gas and A Single Component Liquid;* 2 years; $20,200

UNIVERSITY OF TEXAS, Austin, Tex.; David M. Himmelblau, Department of Chemical Engineering; *Kinetics of Reactions of Sulfur Dioxide With Water;* 3 years; $18,000

UTAH STATE UNIVERSITY OF AGRICULTURE AND APPLIED SCIENCE, Logan, Utah; Clayton Clark, Department of Electrical Engineering; *Motion of Sporadic E. Patches;* 3 years; $20,700

UNIVERSITY OF UTAH, Salt Lake City, Utah

E. B. Christiansen, Chemical Engineering Department and Ivan B. Cutler, Ceramic Engineering Department; *Strength and Failure of Glass;* 2 years; $12,700

E. B. Christiansen and Ivan B. Cutler; College of Engineering; *Study of Silica Glasses Containing Vanadium Oxide;* 2 years; $9,300

Andrew W. Jenike, Utah Engineering Experiment Station; *Flow of Plastic-Rigid Solids in Convergent Channels Under the Action of Body Forces;* 3 years; $57,100

UNIVERSITY OF WASHINGTON, Seattle, Wash.; Albert L. Babb, Department of Chemical Engineering; *Fundamental Studies of Chemical Absorption;* 2 years; $14,300

UNIVERSITY OF WISCONSIN, Madison, Wis.; P. S. Myers, Department of Mechanical Engineering; *A Study of Combustible Mixture Formation With Liquid Fuels;* 3 years; $57,600

WOODS HOLE OCEANOGRAPHIC INSTITUTION, Woods Hole, Mass.; Richard G. Barakat and Charles E. Carver, Jr.; *Directional Spectrum of Water Waves;* 1 year; $24,000

UNIVERSITY OF WYOMING, Laramie, Wyo.; Eric J. Lindahl, Department of Mechanical Engineering; *Determination of The Characteristics of Pulsative Flow;* 2 years; $13,800

YALE UNIVERSITY, New Haven, Conn.

Barnett F. Dodge, Department of Chemical Engineering; *High Pressure of Materials;* 3 years; $41,400

Newman A. Hall and Aris Phillips, Department of Engineering; *Thermodynamics of Plasticity;* 2 years; $26,100

## ENVIRONMENTAL BIOLOGY

AMERICAN MUSEUM OF NATURAL HISTORY, New York, N.Y.; Charles M. Breder, Jr., Department of Fishes and Aquatic Biology; *Ecological Adjustments of Mollienisia;* 2 years; $6,000

BROOKLYN BOTANIC GARDEN, Brooklyn, N.Y.; Paul R. Burkholder, Director of Research; *Growth Substances in Marine Organisms and in Their Habitats;* 3 years; $31,300

BROOKLYN COLLEGE, Brooklyn, N.Y.; R. H. Whittaker, Department of Biology and Rudolph W. Becking, Department of Forestry, Alabama Polytechnic Institute; *Productivities of Plant Communities in the Great Smoky Mountains;* 1 year; $12,100

BUTLER UNIVERSITY, Indianapolis, Ind.; Marion T. Hall, Department of Botany; *Variability in Southwestern Species of Juniperus;* 1 year; $6,000

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; F. W. Went, Professor of Plant Physiology, and Sterling Emerson, Professor of Genetics; *Effects of Parental Environment on Progeny Phenotype;* 3 years; $56,500

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

Ralph W. Chaney, Department of Paleontology; *Relationships of Cenozoic Floras of Japan and Western North America;* 5 years; $37,800

Edward W. Fager, Scripps Institute of Oceanography, La Jolla; *Sand Bottom Communities;* 3 years; $30,700

Charles R. Goldman, Department of Biology, Davis; *Basic Productivity in California Lakes;* 3 years; $23,300

J. W. MacSwain, Department of Entomology and Parisitology, Berkeley; *Ethology and Floral Constancy Among Bees;* 3 years; $19,000

CARLETON COLLEGE, Northfield, Minn.; Paul Jensen, Department of Biology; *Aggregation of Invertebrates in a Prairie Community;* 3 years; $9,700

CHICAGO NATURAL HISTORY MUSEUM, Chicago, Ill.; Rainer Zangerl, Curator of Fossil Reptiles and Eugene S. Richardson, Jr.; Curator of Fossil Invertebrates; *Paleoecology of Pennsylvanian Black Shale;* 3 years; $33,200

UNIVERSITY OF CHICAGO, Chicago, Ill.

Thomas Park, Department of Zoology; *Experimental Studies of Competition;* 3 years; $22,600

Thomas Park, Department of Zoology; *Thesis Research in Population Ecology;* 3 years; $32,000

COLORADO STATE UNIVERSITY RESEARCH FOUNDATION, Fort Collins, Colo.

R. M. Hansen, Department of Range Management, Colorado State University; *Changes in Rodent Population in Response to Habitat;* 3 years; $34,100

R. M. Hansen and T. A. Vaughan, Assistant Biologists, Agricultural Experiment Station; *Interspecific Competition in Closely Related Thomomys;* 3 years; $15,800

John R. Olive, Department of Zoology; *Vertical Migratory Rhythmicity of Microcrustaceans;* 1 year; $5,750

COLUMBIA UNIVERSITY, New York, N.Y.; Harold C. Conklin; *Ethnoecological Investigations in the Philippines;* 2 years; $24,000

CONNECTICUT AGRICULTURAL EXPERIMENT STATION, New Haven, Conn.; Raimon L. Beard; *Long Range Effects of Insecticides on Insect Populations;* 2 years; $8,100

CORNELL UNIVERSITY, Ithaca, N.Y.

John P. Barlow, Department of Conservation; *Respiration of Zooplankton Populations;* 3 years; $25,800

Clifford O. Berg, Deparment of Entomology; *Biology of European Sciomyzidae;* 2 years; $6,400

LaMont C. Cole, Department of Zoology; *Effects of Movements on Rodent Population Structure;* 1 year; $5,900

William J. Hamilton, Jr., Department of Conservation; *Biology of Sorex Cinereus;* 3 years; $9,700

David Pimentel, Department of Entomology and Limnology; *Regeneration Mechanism in the Regulation of Certain Populations;* 4 years; $26,600

Edward C. Raney, Department of Conservation; *Life History and Ecology of Some Clupeiform Fishes;* 3 years; $13,700

DARTMOUTH COLLEGE, Hanover, N.H.

F. H. Bormann, Department of Botany; *Physiological Significance of Root Grafting in Pine;* 3 years; $14,500

Charles J. Lyon, Department of Botany; *Radiocarbon Dating of Drowned Forests;* 1 year; $3,000

UNIVERSITY OF DELAWARE, Newark, Del.

Carl N. Shuster, Department of Biological Sciences; *Effect of Environment on Shell Structure in Mollusks;* 2 years; $13,000

Donald P. de Sylva, Department of Biological Sciences; *Systematics and Ecology*

*of Eggs and Larvae of Delaware Bay Fishes;* 2 years; $20,000

DUKE UNIVERSITY, Durham, N.C.

I. E. Gray, Department of Zoology; *Distribution and Abundance of Fauna in Transitional Marine Habitats;* 2 years; $24,900

I. E. Gray, Department of Zoology; *Fauna of Transitional Marine Habitats;* 1 year; $5,000

Terry W. Johnson, Jr., Department of Botany; *Marine Mycology;* 3 years; $16,800

Paul J. Kramer, Department of Botany; *Plant Water Relations;* 5 years; $50,000

Daniel A. Livingstone, Department of Zoology; *Pleistocene Environmental Changes in the Tropics;* 3 years; $74,400

F. John Vernberg, Duke University Marine Laboratory; *Comparative Ecology of Tropical and Temperate Zone Crustaceans;* 2 years; $10,900

EMORY UNIVERSITY, Atlanta, Ga.; W. D. Burbanck, Department of Biology; *Ecology and Distribution of Cyathura;* 3 years; $23,600

UNIVERSITY OF GEORGIA, Athens, Ga.

Eugene P. Odum, Department of Zoology; *Tropic Structure and Productivity of a Salt Marsh Ecosystem;* 3 years; $17,500

John M. Teal, Marine Institute; *Energy Flow of a Salt Marsh Ecosystem;* 3 years; $15,600

GOUCHER COLLEGE, Baltimore, Md.; Kornelius Lems, Department of Biological Sciences; *Trends in Growth Forms of Flowering Plants;* 1 year; $3,800

UNIVERSITY OF ILLINOIS, Urbana, Ill.

Richard R. Graber, Illinois Natural History Survey; *Visual and Audio Studies of Nocturnal Migration;* 2 years; $16,200

S. Charles Kendeigh, Department of Zoology; *Physiological Ecology of Tropical Birds;* 1 year; $9,400

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; David G. Frey, Department of Zoology, Indiana University; *Cladocerans and Their Use in Interpreting Lake Ontogeny;* 2 years; $11,800

KANSAS STATE COLLEGE OF AGRICULTURE AND APPLIED SCIENCE, Manhattan, Kans.; Reginald H. Painter, Department of Entomology; *Interrelations of Insect Biotypes and Host Plants;* 3 years; $31,600

KANSAS STATE TEACHERS COLLEGE, Emporia, Kans.; Earl Segal, Department of Biology; *Effects of Rapid Temperature Change on Mollusks;* 3 years; $21,500

UNIVERSITY OF KANSAS, Lawrence, Kans.

Richard H. Benson, Department of Geology; *Paleoecology of Ostracoda in Pamlico Sound;* 2 years; $9,900

Henry S. Fitch, Department of Zoology; *Ecology of the Central Plains Herpetofauna;* 2 years; $7,600

Charles D. Michener and Robert E. Beer, Department of Entomology; *Arthropod Associates of Army Ants;* 2 years; $5,800

Robert R. Sokal, Department of Entomology; *Natural Selection During Growth in Tribolium Populations;* 3 years; $18,000

LINFIELD RESEARCH INSTITUTE, McMinnville, Oreg.; Jane C. Dirks-Edmunds; Department of Biology; *Biotic Succession in a Douglas Fir Forest;* 2 years; $15,200

LONG BEACH STATE COLLEGE, Long Beach, Calif.; Donald J. Reish, Department of Biological Sciences; *Animal Succession in Newly Developed Marine Harbors;* 3 years; $20,700

LOUISIANA STATE UNIVERSITY, Baton Rouge, La.; Philip S. Callahan, Department of Entomology; *Nocturnal Behavior and Reproduction of Certain Lepidoptera;* 2 years; $12,900

LOYOLA UNIVERSITY, New Orleans, La.; Walter G. Moore, Department of Biology; *Interspecific Relationships in Anostracs Populations;* 2 years; $6,500

MANCHESTER COLLEGE, North Manchester, Ind.; William R. Eberly, Department of Biology; *Factors in Development of Metalimnetic Oxygen Maxima in Lakes;* 2 years; $5,800

UNIVERSITY OF MIAMI, Coral Gables, Fla.

Samuel P. Meyers, The Marine Laboratory; *Marine Yeasts of Biscayne Bay;* 2 years; $16,000

Hilary B. Moore, The Marine Laboratory; *Tropical Level Sea Bottom Communities;* 2 years; $41,800

John E. Randall, The Marine Laboratory; *Ecology of Coral Reef Fishes;* 2 years; $28,000

Earl R. Rich, Department of Zoology; *Factors Affecting Fecundity in Tribolium;* 3 years; $14,100

MICHIGAN STATE UNIVERSITY OF AGRICULTURE AND APPLIED SCIENCE, East Lansing, Mich.; John L. Lockwood, Department of Botany and Plant Pathology; *Fungitoxicity in Natural Soils;* 2 years; $11,700

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.

William R. Dawson, Department of Zoology; *Temperature Compensation in Reptiles;* 3 years; $28,300

Samuel A. Graham, Department of Forestry; *Dynamics in Michigan Forest Ecology;* 2 years; $9,200

L. B. Slobodkin, Department of Zoology; *Efficiency and Predation in Experimental Populations;* 4 years; $61,500

Frederick E. Smith, Department of Zoology; *Population Density in Relation to Growth and Competition;* 3 years; $32,900

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.

Huai C. Chiang, Department of Biology, Deluth Branch; *Ecological Studies of Insect Flight;* 3 years; $12,300

William H. Marshall, Department of Entomology and Economic Zoology; *Electronic Methods for Tracing Animal Movements;* 1 year; $18,300

Arthur N. Wilcox, Cedar Creek Natural History Area; *Mapping and Obtaining Biometeorological Data in a Permanent Natural History Research Area;* 3 years; $55,800

UNIVERSITY OF NEW HAMPSHIRE, Durham, N.H.; Philip J. Sawyer, Department of Zoology; *Ecology of Pholis Gunnellus;* 2 years; $6,100

UNIVERSITY OF NEW MEXICO, Albuquerque, N. Mex.; Howard J. Dittmer, Department of Biology; *Root Systems of Desert and Semiarid Plants;* 2 years; $9,500

UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N.C.

Earl E. Deubler, Institute of Fisheries Research; *Biology and Ecology of Paralichthys Lethostigma;* 3 years; $21,400

William L. Engels, Department of Zoology; *Daylength and Zugunruhe in Transequatorial Migrants;* 3 years; $16,600

OHIO STATE UNIVERSITY, Columbus, Ohio; Jacob Verduin, Natural Resources Institute; *Photosynthesis and Respiration in an Aquatic Environment;* 1 year; $3,100

OHIO WESLEYAN UNIVERSITY, Delaware, Ohio; Elwood B. Shirling, Department of Botany; *Actinophages and Their Host Interactions;* 3 years; $20,400

UNIVERSITY OF OREGON, Eugene, Oreg.; Richard W. Castenholz, Department of Biology; *Growth of Marine Littoral Diatoms;* 2 years; $11,700

PACIFIC LUTHERAN COLLEGE, Parkland, Wash.; Jens W. Knudsen, Department of Biology; *Ecology and Life History of Puget Sound Brachyura and Anomura;* 2 years; $6,900

PAN AMERICAN COLLEGE, Edinburg, Tex.; Pauline James, Science Division; *Ecology and Behavior of Podiceps Dominicus;* 2 years; $9,100

PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.; Richard G. Schein, Department of Plant Pathology; *Ecology of Plant Parasitism;* 4 years; $24,300

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; H. T. Hammel, Department of Physiology; *Thermal and Metabolic Responses to Cold;* 1 year; $6,100

PORTLAND STATE COLLEGE, Portland, Oreg.; Quentin D. Clarkson, Division of Science; *Environmental Factors in Iris Hybridization;* 2 years; $4,900

PURDUE RESEARCH FOUNDATION, Lafayette, Ind.; Clarence J. Goodnight, Department of Biological Sciences; *Ecology of Soil Arachnids;* 3 years; $11,100

UNIVERSITY OF RHODE ISLAND, Kingston, R.I.; Richard D. Wood, Department of Botany; *Aquatic Plant Biology;* 1 year; $4,400

RUTGERS, THE STATE UNIVERSITY, New Brunswick, N.J.

Murray F. Buell, Department of Botany; *Continuum Concept in Vegetation Studies;* 4 years; $26,400

Paul G. Pearson, Department of Zoology; *Small Mammal Populations in Relation to Burning of Ground Cover;* 1 year; $1,600

David Pramer, Department of Agricultural Microbiology; *Ecology of Predacious Fungi;* 4 years; $15,700

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.

Robert M. Chew, Department of Biology; *Energy Metabolism and Water Balance of a Desert Community;* 1 month; $600

Olga Hartman and J. Laurens Barnard, Allan Hancock Foundation; *Benthic Fauna of Offshore Basins;* 1 year; $10,700

Olga Hartman and K. O. Emery, Allan Hancock Foundation; *Faunas of Submarine Canyons;* 2 years; $33,500

Norman T. Mattox, Department of Biology; *Life History of the Round Stingray;* 2 years; $5,200

Jay Savage and Andrew Starrett, Department of Biology; *Ecogeographic Analysis of Costa Rican Herpetofauna;* 1 year; $5,200

UNIVERSITY OF ST. THOMAS, Houston, Tex.; J. P. Kennedy, Biology Department; *Reproductive Success in Sceloporus;* 1 year; $5,800

SAN JOSE STATE COLLEGE, San Jose, Calif.; L. Richard Mewaldt, Department of Biology; *Migratory Restlessness in Birds;* 3 years; $20,600

SOUTHEASTERN STATE COLLEGE, Durant, Okla.; W. H. McCarley, Department of Biology; *Isolating Mechanisms in Peromyscu Sp.;* 4 years; $16,400

SOUTHWEST MISSOURI STATE COLLEGE, Springfield, Mo.; Paul L. Redfearn, Science Department; *Ecological Study of Bryophytes;* 2 years; $7,300

STATE COLLEGE OF WASHINGTON, Pullman, Wash.

Rexford Daubenmire, Department of Botany: *Patterns of Variation in Pristine Forest;* 5 years; $11,600

Richard A. Parker, Department of Zoology; *Copepod-Cladoceran Competition;* 2 years; $20,300

TEXAS TECHNOLOGICAL COLLEGE, Lubbock, Tex.; Donald W. Tinkle, Department of Biology; *Reproduction and Variation in Lizard Poulations;* 2 years; $4,600

UNIVERSITY OF TEXAS, Austin, Tex.

Louis S. Kornicker, Institute of Marine Science, Port Aransas; *Carbonate Sedimentation on a Living Coral Reef;* 3 years; $36,800

Calvin McMillan, Department of Botany; *Nature of the Grassland Type of Community;* 3 years; $27,000

Calvin McMillan, Department of Botany; *Phytogeographical Studies in Mexico and Texas;* 2 years; $28,200

ERNEST R. TINKHAM, Indio, Calif.; *Environmental Relationships of Desert Sand Dune Biota;* 3 months; $350

TULANE UNIVERSITY OF LOUISIANA, New Orleans, La.; Willis A. Eggler, Department of Botany, Newcomb College; *Plant Succession in Volanic Areas;* 2 years; $5,000

UNIVERSITY OF TULSA, Tulsa, Okla.; Harriet G. Barclay, Department of Botany; *Paramos of South America as Biotic Communities;* 1 year; $12,600

UNIVERSITY OF UTAH, Salt Lake City, Utah; Arden R. Gaufin, Department of Biology; *Ecology of Plecoptera;* 3 years; $9,700

VASSAR COLLEGE, Poughkeepsie, N.Y.; Gladys E. Baker and Louise F. Potter, Plant Science Department; *Physiological Studies of Microbial Populations;* 3 years; $17,700

WABASH COLLEGE, Crawfordsville, Ind.; Eliot C. Williams, Jr., Department of Zoology; *Loss of Pigmentation in Cave Planarians;* 2 years; $6,500

UNIVERSITY OF WASHINGTON, Seattle, Wash.

W. T. Edmondson, Department of Zoology; *Nutrient Supply and Productivity of Lake Washington;* 3 years; $42,300

Richard H. Fleming, Department of Oceanography; *Zoogeography of Bathypelagic Species of the North Pacific;* 2 years; $16,100

WEST VIRGINIA UNIVERSITY, Morgantown, W. Va.; H. L. Barnett and V. G. Lilly, Department of Plant Pathology; *Parasitism of Biotrophic Fungi on Other Fungi;* 3 years; $18,600

WISCONSIN STATE COLLEGE, La Crosse, Wis.; Howard F. Young, Department of Biology; *Avian Reproductive Success;* 2 years; $5,200

UNIVERSITY OF WISCONSIN, Madison, Wis.;

Myron P. Backus and William F. Whittingham, Department of Botany; *Ecology of Soils Microfungi;* 3 years; $47,400

J. T. Curtis, Department of Botany; *Behavioral Basis for the Description of Plant Communities;* 3 years; $19,800

WOODS HOLE OCEANOGRAPHIC INSTITUTION, Woods Hole, Mass.

Richard H. Backus, Research Associate in Marine Biology; *Composition of Oceanic Deep Scattering Layers;* 1 year; $58,100

George L. Clarke, Marine Biologist; *Feeding Metabolism and Growth of Zooplankton;* 3 years; $41,600

Gordon Riley, *Productivity of the Benthos of Coastal Waters;* 2 years; $14,500

William E. Schevill, Associate in Oceanography; *Environmental Cetology;* 3 years; $56,700

William C. Schroeder; *Biology of the Larger Pelagic Fishes of the Western Atlantic;* 3 years; $65,000

Harry J. Turner, Marine Biologist; *Environmental Influences of Reproductive Cycles of Benthic Marine Invertebrates;* 2 years; $34,100

YALE UNIVERSITY, New Haven, Conn.

John L. Brooks, Department of Zoology; *Influence on Relative Growth in Cyclomorphic Daphnia;* 2 years; $18,500

G. Evelyn Hutchinson, Department of Zoology; *Palaeolimnological Studies in Italian Lakes;* 3 years; $25,000

Talbot H. Waterman, Department of Zoology; *Diurnal Vertical Migrations by Aphotic Zone Zooplankton;* 2 years; $15,600

## GENETIC BIOLOGY

ALABAMA POLYTECHNIC INSTITUTE, Auburn, Ala.

John S. Mecham, Department of Zoology-Entomology; *Genetical Relationships and Isolating Mechanisms;* 2 years; $7,400

S. A. Edgar and L. W. Johnson, Department of Poultry Husbandry; *Cellular Antigens in Reproduction and Livability of Chickens;* 2 years; $12,900

UNIVERSITY OF ARIZONIA, Tucson, Ariz.; William B. Heed, Department of Zoology; *Evolutionary Studies in the Genus Drosophila;* 1 year; $10,000

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.

Sterling H. Emerson, Department of Biology; *Protoplasts of Neurospora Crassa;* 2 years; $16,000

E. B. Lewis, Department of Biology; *Collection of Mutant Types of Drosophila Melanogaster;* 3 years; $28,200

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

V. S. Asmundson, C. Stormont, W. J. Miller and F. X. Ogasawara, Department of Poultry Husbandry, Davis; *Serological Study of Turkeys and Related Gallinaceous Birds;* 3 years; $30,300

M. M. Green, Department of Genetics, Davis; *Wild-type Isoalleles at the White Locus of Drosophila Melanogaster;* 1 year; $1,000

Harlan Lewis, Department of Botany, Los Angeles; *Race and Species Formation in Clarkia;* 5 years; $77,600

Curt Stern, Department of Zoology, Berkeley; *Developmental Genetics of Drosophila Melanogaster;* 1 year; $8,700

CITY OF HOPE MEDICAL CENTER, Duarte, Calif.; William D. Kaplan, Department of Genetics; *Sterility Component of X-ray and Chemically Induced Dominant Lethals In D. Melanogaster;* 1 year; $7,400

COLUMBIA UNIVERSITY, New York, N.Y.

Th. Dobzhansky, Department of Zoology; *Genetic Heterozygosity and Developmental Variation;* 1 year; $8,700

Th. Dobzhansky, Department of Zoology; *Heterozygosity and Developmental Variation;* 2 years; $36,800

Jerry Hirsch, Department of Psychology; *Experimental Behavior Genetics;* 4 years; $31,700

John A. Moore, Department of Zoology; *Genetics and Evolution of Frogs;* 3 years; $35,200

Ruth Sager, Department of Zoology; *Non-Chromosomal Heredity;* 2 years; $21,500

CORNELL UNIVERSITY, Ithaca, N.Y.; Charles R. Henderson, Department of Animal Husbandry, New York State College of Agriculture, Ithaca; *Estimation of Genetic Parameters;* 2 years; $35,000

UNIVERSITY OF COLORADO, Denver, Colo.; Melvin L. Morse, Department of Biophysics, Medical School, Denver, Colo.; *Genetic Study of Bacteria;* 2 years; $11,000

DARTMOUTH COLLEGE, Hanover, N.H.; Raymond W. Barratt, Department of Botany; *Gene Control of Glutamic Acid Dehydrogenase Production;* 3 years; $36,900

DICKINSON COLLEGE, Carlisle, Pa.; Daniel J. McDonald, Department of Biology, *Adaptive Values in Populations of Tribolium;* 3 years; $10,500

FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; A. Gib DeBusk, Department of Biological Sciences; *Genic Transformation in Neurospora Crassa;* 1 year; $5,500

UNIVERSITY OF FLORIDA, Gainesville, Fla.; John D. Kilby, Department of Biology; *Genetic and Environmental Factors Governing Melanism in Poeciliid Fish;* 2 years; $11,600

GENETICS SOCIETY OF AMERICA BIOLOGICAL LABORATORIES, Harvard University, Cambridge, Mass.; Robert P. Wagner; *Committee on Maintenance of Genetic Stocks;* 3 years; $12,000

GOUCHER COLLEGE, Baltimore, Md.; Helen V. Crouse, Department of Biology; *Genetic and Cytological Studies on the Genus Sciara;* 2 years; $20,700

HARVARD UNIVERSITY, Cambridge, Mass.

R. P. Levine, The Biological Laboratories; *Genetics of Chlamydomonas Reinhardi;* 2 years; $18,500

R. P. Levine and J. D. Watson, The Biological Laboratories; *The Replication of Dna of Chlamdomonas Reinhardi;* 2 years; $22,900

John R. Raper, Department of Biology; *Genetics and Physiology of Tetrapolarity in the Higher Fungi;* 2 years; $17,500

HAVERFORD COLLEGE, Haverford, Pa.; Irving Finger, Department of Biology; *Immunogenetic Studies of Cytoplasmic Particles;* 2 years; $11,800

UNIVERSITY OF ILLINOIS, Champaign, Ill.

Arthur L. Hooker, Department of Plant Pathology; *Genetics and Physiology of Host-Parasite Interactions;* 1 year; $9,700

David L. Nanney, Department of Zoology; *Protozoan Genetics;* 15 months; $16,000

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; Stanley Zimmering, Department of Zoology; *Factors Influencing Crossing Over in Segregation of Chromosomes;* 1 year; **$4,400**

IOWA STATE COLLEGE, Ames, Iowa; A. W. Nordskog, Department of Poultry and Animal Husbandry; *Blood Group Studies in the Fowl;* 3 years; **$28,400**

KANSAS STATE COLLEGE OF AGRICULTURE AND APPLIED SCIENCE, Manhattan, Kans.

A. M. Guhl and J. V. Craig, Departments of Zoology and Poultry Husbandry; *Genetic Influence on Behavior;* 3 years; $12,800

Thad H. Pittenger, Department of Agronomy; *Cellular Heredity and Somatic Variation in Neurospora;* 2 years; $19,200

LONG ISLAND BIOLOGICAL ASSOCIATION, Cold Spring Harbor, N.Y.; A. Chovnick, Biological Laboratory; *Structural and Functional Studies of a Complex Locus in Drosophila Melanogaster;* 3 years; $26,000

MANHATTAN COLLEGE, NEW YORK, N.Y.; Robert E. Beardsley, Department of Biology; *Genetics of Agrobacterium Tumefaciens;* 2 years; $16,100

UNIVERSITY OF MASSACHUSETTS, Amherst, Mass.; Manley Mandel, Department of Bacteriology and Public Health; *Biology of Serratia Marcescens;* 2 years; $15,200

MINNEAPOLIS WAR MEMORIAL BLOOD BANK, Minneapolis, Minn.; G. Albin Matson, Director; *Hereditary Blood Factors Among Indians in Central and South America;* 2 years; $40,000

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Ralph E. Comstock, Department of Animal Husbandry; *Responses to Selection in Mice;* 5 years; $23,300.

UNIVERSITY OF MISSOURI, Columbia, Mo.

M. G. Nuffer, Department of Field Crops; *Mutational Behavior of Selected Loci in Maize;* 3 years; $31,300

G. Redei, Department of Field Crops; *Physiology of Gene Action in Arabidopsis;* 2 years; $9,800

Franklin W. Stahl, Department of Zoology; *Growth, Mutation, and Recombination in Bacteriophage;* 2 years; $21,200

NORTH CAROLINA STATE COLLEGE, Raleigh, N.C.

B. R. Farthing and J. E. Legates, Department of Animal Industry; *Quantitative Genetic Research With Mice;* 3 years; $33,800

Frank L. Haynes, Jr., Department of Horticulture; *Cytogenetic Studies in the Genus Solanum, Section Tuberarium;* 3 years; $21,000

NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING, Raleigh, N.C.; S. G. Stephens, Division of Biological Sciences; *Field Studies on the Origin and Differentiation of Caribbean Cottons;* 2 years; $9,600

NORTHERN ILLINOIS UNIVERSITY, DeKalb, Ill.; Cecil Jackson Bennett, Department of Biological Sciences; *Adaptation of Drosophila to Insecticides;* 2 years; $9,600

UNIVERSITY OF OREGON, Eugene Oreg.; E. Novitski, Department of Biology; *Studies on Chromosome Behavior in Drosophila;* 2 years; $26,700

PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.; Paul Grun, Department of Botany and Plant Pathology; *Cytogenetic Studies in the Genus Solanum;* 3 years; $17,000

PURDUE RESEARCH FOUNDATION, Lafayette, Ind.; Seymour Benzer, Department of Biological Sciences, Purdue University; *Genetic Fine Structure and Its Relation to the Dna Molecule;* 3 years; $44,100

QUEEN'S UNIVERSITY, Kingston, Ontario, Canada; Elof Axel Carlson, Department of Biology; *Experimental Analysis of Models Interpreting Complex Loci;* 2 years; $10,100

RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK, Albany, N.Y.; Frederick A. Valentine, Department of Forest Botany; *Mutation of Variegated to Orange Variegated Pericarp in Maize;* 3 years; $2,900

ROSCOE B. JACKSON MEMORIAL LABORATORY, Bar Harbor, Maine

Margaret C. Green; *Development of Short-Ear Mutant Mice;* 2 years; $10,000

Margaret C. Green; Staff Scientist; *Formal Genetics of the Mouse and Maintenance of Mutant Stocks;* 3 years; $51,000

RUTGERS, THE STATE UNIVERSITY, New Brunswick, N.J.

Seymour Abrahamson, Department of Biology; *Induction of Structural Changes in Drosophila Melanogaster;* 2 years; $14,000

Waclaw Szybalski, Institute of Microbiology; *Genetically Essential Fractions of Normal and Modified Dna in Bacteriophage and Bacteria;* 2 years; $27,600

SAN DIEGO STATE COLLEGE FOUNDATION, San Diego, Calif.; Frank J. Ratty, Department of Zoology, San Diego State College; *Effects of Proximal Heterochromatin on Mutation and Germinal Selection;* 3 years; $10,800

SOUTHERN ILLINOIS UNIVERSITY, Carbondale, Ill.; Carl C. Lindegren, Biological Research Laboratory; *Mathematical Analysis of Yeast Tetrad Data;* 1 year; $8,800

STANFORD UNIVERSITY, Stanford, Calif.

Joshua Lederberg, Department of Genetics: *Genetic Recombination in Bacteria;* 5 years; $109,500

Walter N. Strickland, Department of Biological Sciences; *Genetic Recombination in Neurospora;* 1 year; $16,500

Charles Yanofsky, Department of Biological Sciences; *Mutational Alterations of the A-Protein of Tryptophan Synthetase;* 3 years; $61,200

STATE UNIVERSITY OF IOWA, Iowa City, Iowa.

H. F. Hsu, Department of Hygiene and Preventive Medicine; *Biological Species of Schistosoma Japonicum and Their Formation;* 3 years; $32,200

Emil Witschi, Department of Zoology; *Genetics and Physiology of Sex Differentiation;* 2 years; $28,100

SYRACUSE UNIVERSITY, Syracuse, N.Y.; B. S. Strauss, Department of Zoology; *Mechanisms of Gene Aotion and Interaction;* 2 years; $23,000

UNIVERSITY OF TEXAS, Austin, Tex.; Wilson S. Stone, Department of Zoology; *Cytogenetics of Zea-Tripsacum Hybrids;* 3 years; $13,900

TRINITY COLLEGE, Hartford, Conn.; Stanley Zimmering, Department of Biology; *Interchromosomal Factors Influencing Crossing Over and Segregation;* 2 years; $11,900

TULANE UNIVERSITY, New Orleans, La.; Peter E. Volpe, Department of Zoology; *Genctics and Systematics of Anurans;* 2 years; $12,100

UNIVERSITY OF UTAH, Salt Lake City, Utah; Robert K. Vickery, Jr.; Department of Genetics; *Cytogenetic Studies of the Patterns of Evolution in Mimulus;* 1 year; $8,000

WASHINGTON UNIVERSITY, St. Louis, Mo.; Harrison D. Stalker and Hampton L. Carson, Department of Zoology; *Population Genetics of Drosophila;* 3 years; $46,600

UNIVERSITY OF WASHINGTON, Seattle, Wash.
Stanley M. Gartler, Division of Medical Genetics; *Human Biochemical Genetics;* 2 years; $18,500

David R. Stadler, Department of Botany; *Genetic Recombination in Neurospora;* 3 years; $24,000

WESLEYAN UNIVERSITY, Middletown, Conn.; Ernest Caspari, Department of Biology; *Genetic Control of Changes in Permeability for Riboflavin in the Moth Ephestia;* 2 years; $11,800

WESTERN RESERVE UNIVERSITY, Cleveland, Ohio; Jan H. Bruell, Department of Psychology; *Genetics of Behavior in Mice;* 2 years; $24,000

UNIVERSITY OF WISCONSIN, Madison, Wis.
James F. Crow, Department of Genetics; *Cytogenetic and Population Genetic Studies in Drosophila;* 2 years; $35,100

R. W. Hougas, Department of Genetics; *Haploid Induction in Solanum;* 3 years; $22,600

Newton E. Morton, Department of Medical Genetics; *Genetics of Interracial Crosses in Hawaii;* 1 year; $30,500

YALE UNIVERSITY, New Haven, Conn.
Walter R. Guild and Harry P. Rappaport, Biophysics Department; *Pneumococcus and the Transformation Process;* 2 years; $31,200

Francois Merger, Department of Forest Genetics; *Basic Research in Forest Genetics;* 5 years; $53,200

## HISTORY AND PHILOSOPHY OF SCIENCE

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.
Ernest W. Adams, Department of Philosophy, Berkeley; *Foundations of Measurement;* 1 year; $3,300

Rudolf Carnap, Department of Philosophy; *Theory of Inductive Probability;* 2 years; $28,000

UNIVERSITY OF CHICAGO, Chicago, Ill.; Cyril Stanley Smith, Institute for the Study of Metals; *Sources for the History of Metallurgy;* 3 years; $15,000

CITY COLLEGE, New York, N.Y.; A. Edel; *Social Science Variables in Philosophy;* 1 year; $7,500

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; E. Grant; *Mathematical Proportionality;* 2 years; $4,700

LEHIGH UNIVERSITY, Bethlehem, Pa.; Adolf Grunbaum, Department of Philosophy; *Philosophy of Fundamental Physical Theory;* 1 year; $3,200

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Richard M. Martin, Department of Philosophy; *Applications of Symbolic Logic;* 1 year; $5,900.

TULANE UNIVERSITY OF LOUISIANA, New Orleans, La.; Joseph Ewan, Department of Botany; *Studies on American Naturalists;* 2 years; $10,000

YALE UNIVERSITY, New Haven, Conn.; T. R. Forbes, Department of Anatomy; *Science and Medicine;* 1 year; $1,100

## MATHEMATICAL SCIENCES

AMERICAN MATHEMATICAL SOCIETY, Providence, R.I.; J. H. Curtiss, Executive Director; *Summer Research Institute in the Theory of Numbers;* 6 weeks; $41,000

UNIVERSITY OF ARIZONA, Tucson, Ariz.; Harvey Cohn, Department of Mathematics; *Study of Biquadratic Fields;* 3 years; $37,800

BRANDEIS UNIVERSITY, Waltham, Mass.
E. H. Brown and J. J. Kohn, Department of Mathematics; *Fiber Spaces;* 3 years; $30,400

Oscar Goldham, Leon Ehrenpreis, Maurice Auslander and Arnold Shapiro, Department of Mathematics; *Differentiable and Analytic Manifolds;* 3 years; $52,900

BROWN UNIVERSITY, Providence, R.I.; John Wermer, Department of Mathematics; *Polynominal Approximation in Several Complex Variables;* 2 years; $14,000

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.
Chen-Chung Chang, Department of Mathematics, Los Angeles; *Foundations of Mathematics;* 2 years; $11,600

R. C. Gilbert, C. J. A. Halberg, and V. A. Kramer; Department of Mathematics; *Generalizations of the Trace;* 1 year; $5,600

Louis Henyey, Computer Center; *Expansion of Computing Facility;* 1 year; $130,000

John L. Kelley, Department of Mathematics; *Functional Analysis;* 2 years; $51,600

John Myhill, Department of Philosophy; *Recursion Theory;* 1 year; $5,600

Ralph S. Phillips, Department of Mathematics, Los Angeles; *Functional Analysis and Partial Differential Equations;* 2 years; $21,800

Henry Scheffé, Department of Statistics; *Design and Analysis of Experiments;* 1 year; $8,400

Alfred Tarski, Department of Mathematics; *Foundation of Mathematics;* 3 years; $57,300

R. L. Vaught, Department of Mathematics; *The Theory of Models in Metamathematics;* 2 years; $12,100

CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pa.; Joseph Auslander, Department of Mathematics; *Pointwise Almose Periodic Transformation Groups;* 2 years; $10,100

CATHOLIC UNIVERSITY OF AMERICA, Washington, D.C.
Eugene Lukacs, Department of Mathematics; *Probability Theory and Mathematical Statistics;* 1 year; $4,000

Katsumi Nomizu, Department of Mathematics; *Isometries and Singularities of Submanifolds;* 3 years; $10,000

UNIVERSITY OF CHICAGO, Chicago, Ill.
Alberto P. Calderon, Department of Mathematics; *Research in Analysis;* 3 years; $69,900

Shiing-Shem Chern, Department of Mathematics; *Kaehlerian Homogeneous Spaces;* 1 year; $6,200

Eldon Dyer, Department of Mathematics; *Geometry and Topology;* 3 years; $14,600

Paul R. Halmos, Department of Mathematics; *Algebraic Logic and Set Theory;* 2 years; $18,200

UNIVERSITY OF CINCINNATI, Cincinnati, Ohio; Paul Herget, Director of Computing Center; *Support of Computing Center;* 2 years; $30,000

UNIVERSITY OF COLORADO, Boulder, Colo.; Sarvadaman Chowla, Department of Mathematics; *Dirichlet L Series and Allied Problems;* 2 years; $31,900

COLUMBIA UNIVERSITY, New York, N.Y.; Samuel Eilenberg, Department of Mathe-

matics; *Partial Differential Equations;* 2 years; $6,800

CORNELL UNIVERSITY, Ithaca, N.Y.; Justin J. Price and Constantine Kassimatis, Department of Mathematics; *Orthogonal Expansions and Trigonometric Integrals;* 1 year; $3,900

DARTMOUTH COLLEGE, Hanover, N.H.

Richard H. Crowell, Department of Mathematics; *Homological Algebra and Knot Theory;* 2 years; $6,900

J. Laurie Snell, Department of Mathematics; *Stochastic Processes and Their Applications;* 1 year; $15,800

GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta, Ga.; John A. Nohel, Department of Mathematics; *Differential Equations;* 2 years; $25,600

GOUCHER COLLEGE, Baltimore, Md.; Mary-Elizabeth Hamstrom, Department of Mathematics; *Nappings Whose Inverses Are 3-Manifolds;* 3 years; $6,200

HARVARD UNIVERSITY, Cambridge, Mass.

W. W. Leontief, Harvard Economic Research Project; *Numerical Analysis in Economic Research;* 2 years; $6,300

Lars V. Ahlfors, Department of Mathematics; *Riemann Surfaces and Complex Manifolds;* 1 year; $12,000

R. Brauer, J. Tate and O. Zariski, Department of Mathematics; *Algebra Number Theory and Algebraic Geometry;* 2 years; $35,400

W. W. Leontief, Harvard Economic Research Project; *Numerical Analysis in Economic Research;* 2 years; $6,300

UNIVERSITY OF ILLINOIS, Urbana, Ill.

Robert G. Bartle, Department of Mathematics; *Linear Operators;* 1 year; $7,000

Colin R. Blyth, Department of Mathematics; *Mathematical Statistics;* 1 year; $13,500

Stewart S. Cairns; Department of Mathematics; *Topology of Manifolds;* 1 year; $15,100

Lee Albert Rubel, Department of Mathematics; *Small Functions With Prescribed Zeros;* 15 months; $4,200

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; Ernst Snapper, Department of Mathematics, Indiana University; *Multiples of Divisors on Algebraic Varieties;* 2 years; $5,300

INSTITUTE FOR ADVANCED STUDY, Princeton, N.J.; Atle Selberg, School of Mathematics; *Studies in Mathematics;* 2 years; $48,000

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.

Wei-Liang Chow, Department of Mathematics; *Algebraic Geometry and Its Applications to Number Theory;* 5 years; $84,300

Frederick I. Mautner, Department of Mathematics; *Functional Analysis and Group Representations;* 1 year, $6,500

UNIVERSITY OF KANSAS, Lawrence, Kans.; Nachman Aronszajn, Department of Mathematics; *Differential Eigenvalue Problems;* 1 year; $21,200

UNIVERSITY OF MARYLAND, College Park, Md.

Avron Douglis, Department of Mathematics; *Partial Differential Equations;* 2 years; $18,000

R. E. Fullerton, Department of Mathematics; *Anayeis on Frechet Surfaces;* 1 year; $1,400

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Kenkichi Iwasawa, Department of Mathematics; *Galois Extensions of Algebraic Number Fields;* 2 years; $16,700

MICHIGAN STATE UNIVERSITY, East Lansing, Mich.; Howard E. Campbell, Robert H. Oehmke and Marvin L. Tomber, Department of Mathematics; *Derivation Algebras of Nonassociative Algebras;* 2 years; $44,100

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; G. S. Young, Department of Mathematics; *Applications of Topology in Analysis;* 6 months; $3,750

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.

Bjarni Jonsson, Department of Mathematics; *Foundations of Algebra;* 2 years; $7,000

Marguerite Frank, Department of Mathematics; *Lie Algebras;* 2 years; $12,500

Gerhard K. Kalisch, Department of Mathematics; *Group Algebra and $L_p$ Spaces;* 2 years; $10,800

UNIVERSITY OF MISSOURI, Columbia, Mo.

Henry E. Bent; *Establishment of Computing Center;* 1 year; $46,400

Joseph L. Zemmer, Department of Mathematics; *Infinite Independent Aba Groups;* 1 year; $2,500

UNIVERSITY OF NEBRASKA, Lincoln, Nebr.; Hugo Ribeiro, Department of Mathematics; *Relative Completeness of Sets of Sentences;* 2 years; $10,700

NEW YORK UNIVERSITY, New York, N.Y.; Richard Courant, Institute of Mathematical Sciences; *Research in Mathematical Sciences;* 2 years; $100,000

UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N.C.; D. W. Wall, Department of Mathematics; *Rings and Algebras With Radical;* 1 year; $9,900

NORTHWESTERN UNIVERSITY, Evanston, Ill.

Ralph P. Boas, Jr., Department of Mathematics; *External Problems for Polynomials Trigonometric Polynomials, and Entire Functions;* 2 years; $19,500

William M. Boothby, Department of Mathematics; *Differential Geometry and Lie Groups;* 1 year; $6,200

Bruno Harris, Department of Mathematics; *Cohomology Theory of Jordan Algebra;* 2 years; $3,100

H. C. Wang, Department of Mathematics; *Linear Groups;* 1 year; $6,700

Daniel Zelinsky, Department of Mathematics; *Homological Algebra;* 1 year; $14,400

UNIVERSITY OF NOTRE DAME, Notre Dame, Ind.; Arnold E. Ross; Department of Mathematics; *A Summer Number Theory Research Seminar;* 2 years; $41,600

OHIO STATE UNIVERSITY, Columbus, Ohio; Clifford Spector, Department of Mathematics; *Constructive Ordinals and Recursive Functions;* 1 year; $10,700

OREGON STATE COLLEGE, Corvallis, Oreg.; Arvid T. Lonseth, Department of Mathematics; *Computer Research;* 3 years; $24,600

UNIVERSITY OF OREGON, Eugene, Oreg.

Frank W. Anderson and Robert L. Blair, Department of Mathematics; *Extensions of Algebraic Systems of Continuous Functions;* 2 years; $8,800

Bertram Yood and Paul Civin, Department of Mathematics; *Involutions on Normed Algebras;* 2 years; $17,000

PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.

William Craig, Department of Mathematics; *Mathematical Logic;* 2 years; $6,900

Haskell Curry, Department of Mathematics; *Combinatory Logic;* 2 years; $21,200

PURDUE RESEARCH FOUNDATIONS, Lafayette, Ind.

Leonard Gillman and Meyer Jerison, Department of Mathematics; *Theory of Continuous Functions;* 3 years; $63,300

Casper Goffman, Department of Mathematics, Purdue University; *Area of Discontinuous Parametric Surfaces;* 2 years; $10,700

Merrill E. Shanks, Department of Mathematics and Statistics; *Algebraic Structures Over Manifolds;* 2 years; $21,200

PRINCETON UNIVERSITY, Princeton, N. J.; S. Lefschetz, Department of Mathematics; *Birational Invariance of Picard Varities;* 2 years; $5,750

STANFORD UNIVERSITY, Stanford, Calif.

Newton S. Hawley and Theodore T. Frankel, Applied Mathematics and Statistical Laboratory; *Study of Manifolds;* 3 years; $22,100

James L. McGregor, Department of Mathematics; *Difusion Processes;* 2 years; $4,200

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.; A. L. Whiteman, Department of Mathematics; *Cyclotomy and Transcendency Problems;* 1 year; $8,100

STEVENS INSTITUTE OF TECHNOLOGY, Hoboken, N.J.: Lawrence Goldman, Department of Mathematics; *The Zeros of Homogeneous Linear Differential Equations;* 1 year; $5,500

SYRACUSE UNIVERSITY RESEARCH FOUNDATION, Syracuse, N.Y.; P. T. Church, Department of Mathematics; *Applications of Topology to Analysis;* 2 years; $7,300

UNIVERSITY OF TENNESSEE, Knoxville, Tenn.; O. G. Harrold, Jr., Department of Mathematics; *Characterization of Locally Euclidean Spaces;* 2 years; $12,500

UNIVERSITY OF TEXAS, Austin, Tex.; H. S. Vandiver, Department of Mathematics; *Theory of Numbers;* 2 years; $35,500

TRINITY COLLEGE, Hartford, Conn.; Walter J. Klimczak, Department of Mathematics; *Convergence of Series of Eigenfunctions;* 2 years; $5,650

TULANE UNIVERSITY OF LOUISIANA, New Orleans, La.; A. D. Wallace, Department of Mathematics; *Research in Semigroups;* 3 years; $39,600

UNIVERSITY OF UTAH, Salt Lake City, Utah; C. E. Brugess, Department of Mathematics; *Continua in Euclidean Space;* 2 years; $10,700

WASHINGTON UNIVERSITY, St. Louis, Mo.; J. K. Goldhaber, Department of Mathematics; *Finite Projective Planes;* 2 years; $7,900

WAYNE STATE UNIVERSITY, Detroit, Mich.

Samuel Kaplan, Department of Mathematics; *The Second Dual of the Space of Continuous Functions;* 1 year; $3,300

Owen G. Owens, Department of Mathematics; *The Ultrahyperbolic Equation;* 1 year; $5,000

UNIVERSITY OF WISCONSIN, Madison, Wis.

Richard H. Bruck, Department of Mathematics; *Topics in Algebra and Geometry;* 1 year; $9,500

Stephen C. Kleene, Department of Mathematics; *Recursive Functions;* 18 months; $13,600

YALE UNIVERSITY, New Haven, Conn.

Felix E. Browder, Department of Mathematics; *Partial Differential Equations;* 28 months; $22,500

Oystein Ore, Department of Mathematics; *Theory of Graphs;* 2 years; $10,400

YESHIVA UNIVERSITY, New York, N.Y.; Leo Zippin and Harry E. Rauch, Department of Mathematics; *Transformation Groups-Topological and Differentiable;* 3 years; $49,400

## METABOLIC BIOLOGY

BERMUDA BIOLOGICAL STATION FOR RESEARCH INCORPORATED, St. George's West, Bermuda; Saul Roseman, The Rackham Arthritis Research Unit, University of Michigan; *Mucopolysaccharide Metabolism in Marine Organisms;* 2 years; $6,150

BOSTON UNIVERSITY, Boston, Mass.; F. J. Lionetti, Department of Biochemistry of Medicine; *Triose Metabolism in Human Erythrocytes;* 2 years; $16,800

BRANDEIS UNIVERSITY, Waltham, Mass.

John M. Lowenstein, Department of Biochemistry; *Factors Involved in the Generation of High Energy Phosphate;* 2 years; $16,000

Jerome A. Schiff, Department of Biology; *Reduction of Sulfate by Chlorella Pyrenoidosa;* 2 years; $10,000

BRIGHAM YOUNG UNIVERSITY, Provo, Utah, Richard D. Sagers, Department of Bacteriology; *Formation of Acetate by Anaerobic Microorganisms;* 3 years; $25,100

BRYN MAWR COLLEGE, Bryn Mawr, Pa.; Robert L. Conner, Department of Biology; *Mode of Action of Steroids in the Metabolism of Protozoa;* 1 year; $3,000

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif; James Bonner, Department of Biology: *Chemical Studies of Plant Growth Processes;* 3 years; $74,000

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

Edward A. Adelberg, Department of Bacteriology; *Enzymatic Changes in Genetic Adaptation of Microorganisms;* 3 years; $30,650

Frank W. Allen, Department of Biochemistry; *5-Ribosyl Uracil As A Component of Ribonucleic Acids;* 3 years; $30,000

Arthur L. Black, Department of Biochemistry; *Pyruvate Metabolism in the Cow;* 1 year; $2,800

O. H. Scherbaum, Department of Zoology, Los Angeles; *Role of Nucleic Acids in the Mechanism of Synchronous Cell Division;* 2 years; $31,600

Horace A. Barker, Department of Agricultural Chemistry, College of Agriculture; *Structure and Function of a Vitamin B-Containing Coenzyme;* 3 years; $40,000

David P. Hackett, Department of Biochemistry; *Respiratory Hydrogen Transport Chain in Plants;* 3 years; $46,100

David M. Prescott, Department of Anatomy, School of Medicine, Los Angeles; *Function of the Nucleus in the Life Cycle of the Cell;* 2 years; $12,000

UNIVERSITY OF CHICAGO, Chicago, Ill.; Lawrence Bogorad, Department of Botany; *Metabolism of Pyrrole and Porphyrin;* 4 years; $38,250

COLUMBIA UNIVERSITY, New York, N.Y.; Stuart W. Tanenbaum, Department of Microbiology, College of Physicians and Surgeons; *Biosynthesis of Patulin and Related Aromatic Compounds;* 2 years; $19,200

UNIVERSITY OF CONNECTICUT, Storrs, Conn.; Emil O. Berstein, Department of Zoology; *Acetate Metabolism and the Nature of Obligate Photoautotrophy;* 2 years; $16,200

CORNELL UNIVERSITY, Ithaca, N.Y.

Martin Alexander and Jeffery E. Dawson, Department of Agronomy; *Metabolism of the Chemoautotrophic and Heterotropic Nitrifying Bacteria;* 2 years; $12,200

Martin Gibbs, Department of Biochemistry and Nutrition; *Pathways of Carbohydrate Dissimilation in the Autotrophic Cell;* 3 years; $49,200

UNIVERSITY OF DELAWARE, Newark, Del.

Bruce M. Pollock, Department of Biological Sciences; *Physiological and Biochemical Mechanisms of the Rest Period in Seeds;* 3 years; $30,000

John C. Wriston, Jr., Department of Chemistry; *Metabolism of One-Carbon Compounds;* 2 years; $18,000

DICKINSON COLLEGE, Carlisle, Pa.; Barbara B. McDonald, Biology Department; *Deoxyribose Nucleic Acid Metabolism in Tetrahymena Pyriformis;* 3 years; $17,800

FORDHAM UNIVERSITY, New York, N.Y.

F. F. Nord, Department of Organic Chemistry and Enzymology; *Biochemical and Physico-Chemical Studies on Enzymes;* 2 years; $28,700

F. F. Nord, Department of Organic Chemistry and Enzymology; *Structural, Biochemical and Physico-Chemical Studies on Lignins;* 3 years; $41,000

UNIVERSITY OF GEORGIA, Athens, Ga.

Milton J. Cormier, Department of Chemistry; *Mechanisms of Bioluminescent Reactions;* 2 years; $15,750

Robert A. McRorie, Department of Chemistry; *Equipment for Research in Microbiology and Biochemistry;* 1 year; $12,000

William J. Payne and Robert A. McRorie, Department of Bacteriology; *Bacterial Metabolism of Uronic Acids;* 2 years; $16,000

GOUCHER COLLEGE, Baltimore, Md.; Helen M. Habermann, Department of Biological Sciences; *Physiology of Pigment-Deficient Mutants of Helianthus Annus L.;* 3 years; $37,100

HARVARD UNIVERSITY, Cambridge Mass.

Bernard D. Davis, Department of Bacteriology and Immunology; *Bacterial Physiology and Metabolism;* 4 years; $159,400

Edmund Chi Chien Lin, Department of Biological Chemistry; *Properties of Certain Enzymes in Bacterial Cells;* 3 years; $21,500

Frederick C. Neidhardt, Department of Bacteriology and Immunology, The Medical School; *Role of Pentose Nucleic Acid in the Growth of Bacteria;* 2 years; $14,400

K. V. Thimann, Department of Biology; *Growth and the Action of Auxin;* 3 years; $45,600

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL, Philadelphia, Pa.; Albert G. Moat, Department of Microbiology; *Site and Mode of Action of Biotin;* 3 years; $28,750

ILLINOIS INSTITUTE OF TECHNOLOGY, Chicago, Ill.; William F. Danforth, Department of Biology; *Cellular Permeability and Metabolic Regulation in Unicellular Organisms;* 1 year; $1,000

UNIVERSITY OF ILLINOIS, Urbana, Ill.

H. H. Draper, Department of Animal Science; *Function and Metabolism of Alpha-Tocopherol in Animals;* 2 years; $18,000

B. Connor Johnson, Department of Animal Science; *Role of Vitamin B12 in Intermediary Metabolism;* 2 years; $27,000

B. L. Larson, Department of Dairy Science; *Secretory Activity and Protein Synthesis in Mammary Gland Tissue Cultivated in Vitro;* 3 years; $40,000

James F. Nance, Department of Botany; *Lipide Metabolism and Growth in Plants;* 2 years; $7,500

Max E. Rafelson, Department of Biological Chemistry, College of Medicine, Chicago; *Growth and Two Carbon Metabolism in Microorganisms;* 3 years; $24,600

R. S. Wolfe, Department of Bacteriology; *Metabolic Reactions in Bacteria;* 3 years; $23,200

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; Henry R. Mahler, Department of Chemistry; *Studies of the Biosynthesis and Mode of Action of Respiratory Enzymes;* 5 years; $100,000

INSTITUTE FOR CANCER RESEARCH AND THE LANKENAU HOSPITAL RESEARCH INSTITUTE, Philadelphia, Pa.; Murray Strassman Division of Biochemistry; *Biosynthesis of Valine and Isoleucine;* 3 years; $22,000

INSTITUT PASTEUR, Paris, France; Jacques Monod, Head, Department of Cellular Biochemistry; *Specific Factors in Enzyme and Protein Biosynthesis;* 3 years: $40,250

IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS, Ames, Iowa; I. C. Anderson, Department of Agronomy; *Biochemical Studies on Some Inherited Differences in Plants;* 3 years; $16,000

IOWA STATE COLLEGE, Ames, Iowa; Sam Aronoff, Department of Botany and Plant Pathology; *Biogenesis of Chlorophyll;* 3 years; $28,750

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.

Herman M. Kalckar, Department of Biology, McCullum-Pratt Institute; *Enzymology of Glactose Metabolism;* 2 years; $15,000

Manfred M. Mayer, Department of Microbiology, School of Hygiene and Public Health; *Cytotoxic Reactions Mediated by Antibody and Complement;* 4 years; $72,000

Alvin Nason, McCollum-Pratt Institute; *Biochemistry of Nitrogen Fixation;* 1 year; $10,100

Alvin Nason, Department of Biology; *Attempted Characterization of Cellfree N2 Fixation;* 3 years; $45,000

MARQUETTE UNIVERSITY, Milwaukee, Wis.; Walter G. Rosen, Department of Biology; *Influence of Streptomycin on Chlorophyll and Chloroplast Synthesis;* 1 year; $4,000

UNIVERSITY OF MARYLAND, College Park, Md.; Samuel P. Bessman, Department of Pediatrics, School of Medicine, Baltimore; *Differential Formation of Fat or Cholesterol as a Function of Glycolysis;* 3 years; $28,900

MCGILL UNIVERSITY, Montreal, Canada; J. H. Quastel, Director, McGill-Montreal General Hospital Research Institute; *Factors Controlling Uptake and Transport of Amino Acids;* 3 years; $35,700

MICHIGAN STATE UNIVERSITY, East Lansing, Mich.

Robert S. Bandurski, Department of Botany and Plant Pathology; *Metabolism of Microorganisms and Higher Plants With Special Reference to Sulfate Reduction;* 3 years; $52,900

Edward C. Cantino, Department of Botany and Plant Pathology; *Biochemical Mechanisms of Stimulatory Effects of Light on Growth and Morphogenesis in Blastocladiella;* 3 years; $20,000

N. E. Tolbert, Department of Agricultural Chemistry; *Metabolism of Glycolic and Glyoxylic Acids in Plants;* 3 years; $48,000

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.

Morris Foster, Department of Zoology; *Physiological Studies of Melanogenesis;* 18 months; $8,000

William E. Lands, Department of Biological Chemistry; *Chemistry and Metabolism of Plasmalogen;* 3 years; $23,700

Peter M. Ray, Department of Botany; *Relation Between Cell Wall Metabolism and Growth of Plant Cells;* 3 years; $30,000

Alfred S. Sussman, Department of Botany; *Dormancy in Ascospores of Neurospora;* 2 years; $17,700

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.

Samuel Kirkwood, Department of Agricultural Biochemistry; *Enzyme Systems Concerned With Iodine Metabolism;* 3 years; $20,500

John F. van Pilsum, Department of Physiological Chemistry; *Guanidinium Compound Metabolism;* 2 years; $11,100

MONTANA STATE COLLEGE, Bozeman, Mont.; Richard H. McBee, Department of Botany and Bacteriology; *Cellulose Decomposition by Bacteria;* 3 years; $14,500

MOUNT SINAI MEDICAL RESEARCH FOUNDATION, Chicago, Ill.; S. G. A. Alivisatos, Department of Biochemical Research; *Metabolism of Histamine and Related Compounds;* 3 years; $39,700

NEW YORK BOTANICAL GARDEN, New York, N.Y.; Marjorie Anchel, Research Associate; *Metabolism of Fungal Polyacetylenes;* 3 years; $29,300

NEWARK STATE COLLEGE, Union, N.J.; Carl S. Hammen, Department of Science; *Carbon Dioxide Fixation in Invertebrates;* 3 years; $13,000

NORTH DAKOTA AGRICULTURAL COLLEGE, Fargo, N. Dak.; D. Stuart Frear, Department of Agricultural Chemistry; *Intermediary Metabolism of Flax Rust;* 3 years; $20,000

NORTHWESTERN UNIVERSITY, Evanston, Ill.; Ralph A. Slepecky, Department of Biological Sciences; *Relationships Between Dipicolinic Acid and Cell Metabolites in Bacterial Spores;* 3 years; $24,000

OHIO UNIVERSITY, Athens, Ohio; John T. McQuate, Department of Zoology; *Oxidative and Phosphorlative Activities of Subcellular Particles of Yeast;* 3 years; $36,300

OHIO STATE UNIVERSITY, Columbus, Ohio.

John E. Gander, Department of Agricultural Biochemistry; *Biosynthesis of Cyanogenic Glycosides in Plants;* 3 years; $19,600

J. E. Varner, Department of Agricultural Biochemistry; *Mass Spectrometer for Biochemical Research;* 2 years; $19,550

OKLAHOMA STATE UNIVERSITY, Stillwater, Okla.

Norman N. Durham, Department of Bacteriology; *The Biosynthesis of Induced Enzymes;* 1 year; $6,900

Arthur R. Schulz, Department of Biochemistry; *Function of Vitamin $K_1$ in Phosphorylation;* 2 years; $14,600

UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE, The University of Oklahoma, Norman, Okla.; H. H. Ramsey and T. E. Wilson, Department of Microbiology, School of Medicine, Oklahoma City; *Priority of Enzyme Synthesis in Microorganisms;* 2 years; $9,500

OREGON STATE COLLEGE, Corvallis, Oreg.

Vernon H. Cheldelin, Department of Chemistry, Science Research Institute; *Nutrition and Metabolism of Insects;* 3 years; $31,000

Leo W. Parks, Department of Bacteriology; *Ergosterol Metabolism in Saccharomyces Cerevisiae;* 2 years; $15,000

A. W. Pritchard, Department of Zoology; *Intermediary Carbohydrate Metabolism in the Crayfish;* 3 years; $11,300

Tsoo E. King, Science Research Institute; *Reconstitution of the Mitochondrial Respiratory Chain;* 2 years; $30,000

C. H. Wang, Department of Chemistry; *Radiorespirometric Studies of Glucose Metabolism;* 1 year; $12,500

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Alex Shrift, Department of Botany; *The Uncoupling of Cell Division from Growth;* 2 years; $12,600

UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa.; Ronald Bentley, Department of Biochemistry and Nutrition; *Carbohydrate Metabolism in Molds;* 3 years; $30,100

PURDUE RESEARCH FOUNDATION, Lafayette, Ind.; Bruce J. Rogers, Department of Botany and Plant Pathology, Purdue University; *Selective Action of 3-Amino-1, 2, 4-Triazole in Plants;* 2 years; $11,700

RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK, Albany, N.Y.

Dan A. Richert, Department of Biochemistry, College of Medicine, Syracuse; *Influence of Nutritional Deficiencies on Red Cell Production and Heme Synthesis;* 3 years; $24,800

Ernest Sondheimer, Department of Forest Chemistry, State University College of Forestry at Syracuse University; *The Effects of Rubbery Wood Virus on Lignin Biosynthesis;* 2 years; $7,000

Arthur M. Zimmerman, Department of Pharmacology, Downstate Medical Center, Brooklyn; *Effect on Adenosinetriphosphate on Living Cells;* 2 years; $12,100

RUTGERS, THE STATE UNIVERSITY, New Brunswick, N.J.

Werner Braun, Institute of Microbiology; *The Effect of Metabolic Factors Upon Bacterial Cell Populations;* 3 years; $42,000

Frank F. Davis, Department of Agricultural Biochemistry; *Low Molecular Weight Ribonucleic Acids from Yeast;* 2 years; $6,000

Gerald Litwack, Department of Agricultural Biochemistry; *Formation of Lysozyme Subtrate in Microbial Cell Walls;* 3 years; $12,000

Wayne W. Unbreit, Department of Bacteriology; *A Study of Autotrophy;* 3 years; $31,500

SCRIPPS CLINIC AND RESEARCH FOUNDATION, La Jolla, Calif.; Henry I. Nakada, Division of Laboratories; *Glyoxylic Acid Metabolism;* 4 years; $23,000

SMITHSONIAN INSTITUTION, Washington, D.C.; Herbert Friedmann, United States

National Museum; *Metabolic Aspects of the Digestion of Wax;* 2 years; $22,600

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.

Walter Marx, Department of Biochemistry and Nutrition; *Thyroxine and Yeast Metabolism;* 3 years; $27,800

Jack B. Wolfe, Department of Medical Microbiology, Medical School; *Glutarate Metabolism of Microorganisms;* 2 years; $11,900

STANFORD UNIVERSITY, Stanford, Calif.; C. B. Van Neil, Department of Biology; *Studies on Autotrophic Bacteria;* 3 years; $28,300

SYRACUSE UNIVERSITY, Syracuse, N.Y.

Donald G. Lundgren, Department of Bacteriology and Botany; *Biosynthesis in an Obligate Chemosynthetic Autotroph;* 2 years; $8,000

Trevor Robinson, Department of Bacteriology and Botany; *Enzymatic Pathways of Alkaloid Biosynthesis;* 2 years; $8,000

UNIVERSITY OF TENNESSEE, Knoxville, Tenn.

D. Frank Holtman, Department of Bacteriology; *Role of Amino Acids and Certain Enzyme Inhibitors in the Host-Parasite Relationship;* 2 years; $11,700

Samuel R. Tipton, Department of Zoology and Entomology; *Chemical Properties of Mitochondria;* 3 years; $15,000

TUFTS UNIVERSITY, Medford, Mass.

Morris E. Friedkin, Department of Pharmacology; *Enzymatic Conversion of Deoxyuridylic Acid to Thymidylic Acid;* 4 years; $70,600

Alton Meister, Department of Biochemistry, School of Medicine; *Analytical Ultracentrifuge for Biochemical Research;* 1 year; $26,000

Alton Meister, Department of Biochemistry, School of Medicine; *Mechanisms of Protein Synthesis;* 4 years; $80,000

Louis Shuster, Department of Pharmacology, School of Medicine; *Nucleotide Metabolism in Germinating Seeds;* 3 years; $33,500

UTAH STATE UNIVERSITY, Logan, Utah; Gene W. Miller, Department of Botany; *Lime-induced Chlorosis in Plants;* 2 years; $12,000

VANDERBILT UNIVERSITY, Nashville, Tenn.

Jane H. Park, Department of Physiology, School of Medicine; *Mechanisms of Oxidative Phosphorylation;* 3 years; $21,000

Oscar Touster, Department of Biochemistry, School of Medicine; *Metabolism of Polyols and Pentoses;* 4 years; $75,000

WAYNE STATE UNIVERSITY, Detroit, Mich.

Charles D. Jeffries, Department of Bacteriology; *Metabolic Requirements for the Production of Nuclease by Serratia Marcescens;* 3 years; $11,200

T. T. Tchen, Department of Chemistry; *Conversion of Inorganic Sulfur to Organic Sulfur;* 1 year; $6,500

WESLEYAN UNIVERSITY, Middletown, Conn.

Vincent W. Cochrans, Department of Biology; *Physiology of Spore Germination in Fungi;* 2 years; $15,000

William Firshein, Department of Biology; *Nucleic Acid Synthesis and Bacterial Pathogenicity;* 3 years; $10,000

UNIVERSITY OF WISCONSIN, Madison, Wis.

W. H. Peterson, Department of Biochemistry and G. J. Hajny, Forest Products Laboratory, Forest Service, U.S. Department of Agriculture; *Biosynthesis of Polyhydric Alcohols by Osmophilic Yeasts;* 2 years; $11,500

J. B. Wilson, Department of Bacteriology; *Physiological Basis of Virulence in the Brucellae;* 3 years; $22,000

Folke Skoog, Department of Botany; *Chemical Regulation of Growth and Morphogenesis in Plants;* 4 years; $80,000

WISTAR INSTITUTE OF ANATOMY AND BIOLOGY, Philadelphia, Pa.; A. F. Grahm; *The Physiology of Mammalian Cells Cultivated in Vitro;* 4 years; $80,000

WORCESTER FOUNDATION FOR EXPERIMENTAL BIOLOGY, Shrewsbury, Mass.; Erwin Schwenk; *Biosynthesis of Cholesterol;* 2 years; $25,000

YALE UNIVERSITY, New Haven, Conn.

Sofia Simmonds, Department of Biochemistry and Microbiology, School of Medicine; *Inducible Peptidases in Escherichia Coli;* 3 years; $13,000

Melvin V. Simpson, Department of Biochemistry; *Biosynthesis of Chymotrypsinogen in a Cell-free System;* 3 years; $60,000

Wolf Vishniac, Department of Microbiology; *Enzymatic Reactions in Microbial Metabolism;* 3 years; $27,300

## MOLECULAR BIOLOGY

ALTON OCHSNER MEDICAL FOUNDATION, New Orleans, La.; Dr. Otto Schales, Director; *The Chemical Structure of Urochrome;* 2 years; $20,000

BOYCE THOMPSON INSTITUTE FOR PLANT RESEARCH, INC., Yonkers, N.Y.; Beatrice S. Magdoff; *Structure of Southern Beau Mosaic Virus;* 3 years; $37,000

BRANDEIS UNIVERSITY, Waltham, Mass.

Martin D. Kamen, Graduate Department of Biochemistry; *Photochemistry of Electron Transport Systems;* 3 years; $58,000

Robert E. Kane, Department of Biochemistry; *Cytoplasmic Structural Proteins;* 2 years; $12,000

Harold P. Klein, Department of Biology; *Formation of A-Amylase by Pseudomonas Saccharophila;* 3 years; $26,000

Henry Linschitz and Nathan O. Kaplan, Department of Chemistry; *Particulates and Whole Cell Studies;* 2 years; $36,000

Helen Van Vunakis, Department of Biochemistry; *Functional Groups in Biologically Active Proteins;* 3 years; $40,000

BRIGHAM YOUNG UNIVERSITY, Provo, Utah; Leo P. Vernon, Department of Chemistry; *Photochemical Oxidizing Systems;* 3 years; $23,000

BROWN UNIVERSITY, Providence, R.I.; Seymour Lederberg, Department of Biology; *Subcellular Particles of Microorganisms;* 2 years; $30,000

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; Carl G. Niemann, Division of Chemistry and Chemical Engineering; *Substrate Control of Enzymatic Processes;* 2 years; $20,000

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

Charles A. Dekker, Department of Biochemistry; *Structural Studies on Nucleic Acids;* 3 years; $42,000

William G. Clark and William J. Hartmen, University of California Medical Center, Los Angeles; *Biosynthesis of Pharmacologically Active Amines in Cephalopods;* 2 years; $20,000

James B. Hendrickson, Department of Chemistry; *The Stimulated Biosynthesis of Strychnine;* 2 years; $10,000

Wilfried F. H. M. Mommaerts, School of Medicine, Los Angeles; *Electromicroscopy of the Contraction Process in Living Muscle;* 1 year; $7,000

Nello Pace, Department of Physiology, School of Medicine; *Ion Binding by Liver Microsome Subfractions;* 2 years; $24,000

T. A. Geissman, Department of Chemistry, Los Angeles; *Synthesis and Biogenesis of the Necic Acids;* 3 years; $45,000

D. H. Reynolds, College of Letters and Science; *Studies on Chitinase, With Especial Emphasis on Its Use as an Analytical Tool in Biochemical and Biological Research;* 2 years; $20,000

UNIVERSITY OF CHICAGO, Chicago, Ill.; John Westley, Department of Biochemistry; *Influence of Biochemical Environment on Protein Structure;* 2 years; $20,000

CHILDREN'S HOSPITAL OF PHILADELPHIA, Philadelphia, Pa; Fred Karush, Department of Pediatrics, University of Pennsylvania; *Exchangeable Hydrogen of Proteins;* 3 years; $34,000

CITY OF HOPE MEDICAL CENTER, MEDICAL RESEARCH INSTITUTE, Duarte, Calif.; Richard S. Schweet, Department of Biochemistry; *The Incorporation of Amino Acids Into Ribonucleic Acid;* 3 years; $45,000

COLLEGE OF MEDICAL EVANGELISTS, Loma Linda, Calif.; Robert L. Nutter, Department of Microbiology; *Multiplicity Reactivation in the T Even Bacteriophages;* 2 years; $12,000

COLUMBIA UNIVERSITY, New York, N.Y.

Teru Hayashi, Department of Zoology; *Interactions of Actin and Myosin in Contraction;* 3 years; $22,500

Karl Meyer, Department of Medicine; *Structure of Mucoids;* 3 years; $23,000

William L. Nastuk, Department of Physiology; *Physiochochemical Factors in Membrane Receptor Activation;* 4 years; $47,000

CORNELL UNIVERSITY, Ithaca, N.Y.; Harold A. Scheraga, Department of Chemistry; *Thermodynamic Properties of Proteins;* 3 years; $26,000

DUQUESNE UNIVERSITY, Pittsburgh, Pa.

Oscar Gowron, Department of Chemistry; *Reaction of Cyanide With Cystin. II. Kinetics of the Reaction;* 1 year; **$6,500**

Norman C. Li, Department of Chemistry; *Metal Complexation With Compounds of Biochemical Interest;* 3 years; $23,000

EASTERN PENNSYLVANIA PSYCHIATRIC INSTITUTE, Philadelphia, Pa.; George Karreman, Department of Basic Research; *Studies in the Field of Molecular Biology With Particular Reference to Quantum Biology;* 2 years; $30,000

FLORIDA STATE UNIVERSITY, Tallahassee, Fla.

Sidney W. Fox, Director of The Oceanographic Institute; *Thermal Synthesis of Biochemical Substances;* 3 years; $30,000

Earl Frieden, Department of Chemistry; *Copper Enzymes and Copper Ion Catalyses;* 2 years; $29,000

UNIVERSITY OF FLORIDA, Gainesville, Fla.; Arthur L. Koch, Department of Biochemistry; *Detection and Estimation of the Activity of Single Enzyme Molecules;* 3 years; $45,000

GEORGE WASHINGTON UNIVERSITY, Washington, D.C.; Erich Heinz, Department of Physiology; *Chemical and Physio-Chemical Basis of Transport;* 2 years; $30,000

UNIVERSITY OF GEORGIA, Athens, Ga.; Carroll T. Clark, Department of Chemistry; *Ascorbic Acid in Aromatic Hydroxylation;* 2 years; $10,000

HARVARD UNIVERSITY, Cambridge, Mass.

Paul Doty, Department of Chemistry; *Research on Polypeptides and Proteins;* 3 years; $60,000

John T. Edsall, Department of Biology; *Physical Chemistry of Amino Acids, Peptides, and Proteins;* 4 years; $80,000

Lowell P. Hager, Department of Chemistry; *Biological Halogenation Mechanisms;* 3 years; $34,000

Oleg Jardetzky, Department of Pharmacology, Harvard Medical School; *Nuclear Magnetic Resonance Studies of Biologically Important Molecules;* 3 years; $23,000

Bert L. Vallee, Medical School, Boston; *Structural Studies of Zinc Metallodehydrogenases;* 1 year; $14,000

UNIVERSITY OF HAWAII, Honolulu, Hawaii; Kerry T. Yasunobu, Department of Chemistry; *Functions and Physicochemical Properties of Plant Enzymes;* 2 years; $20,000

UNIVERSITY OF HOUSTON, Houston, Tex.; Allen H. Bartel, Department of Biology; *Immunochemical and Biophysical Study of Dissociable Macromolecules;* 2 years; $32,000

HOWARD UNIVERSITY, Washington, D.C.; Herman Branson, Department of Physics; *The Properties of Large Molecules: Ferritin and Apoferritin;* 2 years; $10,000

UNIVERSITY OF ILLINOIS, Urbana, Ill.

L. M. Black, Department of Botany; *Fundamental Research on Plant Viruses;* 3 years; $36,000

J. A. Hayashi, Department of Biological Chemistry; *Isolation of the Blood Group J Substance from Bovine Plasma;* 2 years; $15,000

Eugene Rabinowitch, Department of Botany; *Primary Light Processes in Photosynthesis and Related Processes;* 3 years; $54,000

G. L. Webster, Department of Chemistry, College of Pharmacy, Chicago; *Infrared Spectrophotometer for Biochemical Research;* 1 year; $5,000

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.

Walter L. Meyer, Department of Chemistry; *Synthetic Approaches to C–18 Functional Steroids;* 2 years; $24,000

Roy Repaske, Department of Bacteriology; *Terminal Oxidative Systems and Oxidation Phosphorylation in Bacteria;* 2 years; $25,000

INSTITUTE FOR CANCER RESEARCH, Philadelphia, Pa.; Thomas F. Anderson, Division of Biology; *Morphology and Growth of Bacteriophages;* 3 years; $35,000

IOWA STATE COLEGE OF AGRICULTURE AND MECHANIC ARTS, Ames, Iowa; David E. Metzler, Department of Chemistry; *Mechanism of the Catalytic Action of Riboflavin;* 2 years; $10,000

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.

Michael Beer, Department of Biophysics; *Chemistry of Electron Microscopy Stains and Histochemistry of Phloem Tissue;* 3 years, $30,000

Thomas C. Bruice, Department of Physiological Chemistry; *Intra VS Intermolecu-*

*lar Nucleophilic Attack at the Ester Level;* 2 years; $10,000

David R. Evans, Mergenthaler Laboratory for Biology; *Structural Basis of Stimulation by Carbohydrates;* 2 years; $16,000

Albert L. Lehninger, Department of Physiological Chemistry; *Secretory Functions of Mitochondria;* 3 years; $51,000

W. D. McElroy, McCollum-Pratt Institute; *Conversion of Chemical Energy Into Light Energy by Biological Systems;* 3 years; $45,000

Gifford B. Pinchot, McCollum-Pratt Institute; *Phosphorylation Coupled Electron Transport;* 3 years; $56,000

UNIVERSITY OF KANSAS, Lawrence, Kans.

Philip Newmark, Department of Biochemistry; *Nucleic Acid and Virus Biosynthesis in Plants;* 2 years; $23,000

Russell C. Mills, Department of Biochemistry; *Succinic Dehydrogenase Complex of Pasteurella Tularensis;* 2 years; $10,000

UNIVERSITY OF LOUISVILLE, Louisville, Ky.

R. D. Dallam and J. F. Taylor, Department of Biochemistry, School of Medicine; *Role of Quinones in Mitochondrial Enzyme Systems;* 3 years; $40,000

Robert S. Levy, Department of Biochemistry; *Human Serum Lipoproteins;* 1 year; $10,500

MARINE BIOLOGICAL LABORATORY, Woods Hole, Mass.

Frank H. Johnson and Yata Haneda; *Biochemical Nature of Luminescent Systems;* 1 year; $9,000

Rita Guttman; *Response of Muscle to Rapid Cooling;* 2 years; $7,000

Albert Szent-Gyorgyi, Institute for Muscle Research; *Bioenergetics;* 3 years; $75,000

MARQUETTE UNIVERSITY, Milwaukee, Wis.; M. Laskowski, Department of Biochemistry; *Proteolytic Inhibitors;* 3 years; $50,000

MARYCREST COLLEGE, Davenport, Iowa; Helen Ven Horst, Department of Chemistry; *Decomposition of Amino Acids in Blood Serum;* 1 year; $2,500

UNIVERSITY OF MARYLAND, College Park, Md.

Arthur J. Emery, Department of Biological Chemistry; *Fundamentals of the Mechanism of Protein Synthesis;* 2 years; $10,000

R. G. Grenell and Leopold May, The Psychiatric Institute, The School of Medicine; *Effect of Excitant and Depressant Molecules on the Structure of Brain Lipide-Protein Complexes;* 1 year; $5,000

Edward J. Herbst, Department of Biochemistry; *Molecular Form and Function of Spermine in Animal Tissues;* 2 years; $17,000

L. J. Mullins, School of Medicine; *Models of the Cell Membrane;* 3 years; $30,000

MASSACHUSETTS GENERAL HOSPITAL, Boston, Mass.; Roger W. Jeanloz; *Study of Uridine-diphosphate-aminosugar Derivatives;* 2 years; $21,000

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.

Cyrus Levinthal and A. Garen, Department of Biology; *Alterations in the Alkaline Phosphates Molecule caused by Mutation;* 4 years; $120,000

S. E. Luria, Department of Chemistry; *Molecular Aspects of Viral Function and Organization;* 4 years; $220,000

Francis O. Schmitt, Department of Biology; *Characterization of Macromolecules and Their Aggregation States;* 1 year; $24,000

MAY INSTITUTE FOR MEDICAL RESEARCH, Cincinnati, Ohio; Ernest C. Foulkes; *The Carrier Systems in Renal Transport Mechanisms;* 2 years; $21,000

MEDICAL COLLEGE OF VIRGINIA, Richmond, Va.; Alfred Richard, School of Pharmacy; *Macromolecular Degredation Products of Protein Hydrolysis;* 2 years; $24,000

MELLON INSTITUTE, Pittsburgh, Pa.; Edward Casassa; *Physical Chemistry of Seed Proteins;* 2 years; $20,000

MICHAEL REESE HOSPITAL, Chicago, Ill.; Herbert M. Rubinstein, Department of Medicine; *Mechanism of Antigen Binding by Tissues;* 2 years; $20,000

MICHIGAN STATE UNIVERSITY OF AGRICULTURE AND APPLIED SCIENCE, East Lansing, Mich.; Willis A. Wood; Department of Agricultural Chemistry; *Microbial Carbohydrate Metabolism;* 3 years; $27,000

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; Armand J. Guarino, Department of Biological Chemistry; *Acid-soluble Nucleotides of Phage Infected E. Coli;* 2 years; $14,000

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.

Allan H. Brown, Department of Botany; *Photosynthetic Research;* 3 years; $18,000

Irvin E. Liener, Department of Agricultural Biochemistry; *The Structural Basis of Enzyme Action;* 2 years; $13,000

John E. Wertz, Department of Chemistry; *Nuclear and Electron Spin Resonance;* 1 year; $26,000

Helmut Mangold, The Hormel Institute, Austin; *Vapor Phase Chromatograph for Phospholip Research;* 1 year; $2,000

UNIVERSITY OF MISSOURI, Columbia, Mo.; Charles W. Gehrke, Agricultural Experiment Station; *Quantitative Determination of Omino Acid by Gas Chromatography;* 2 years; $10,000

MONTANA STATE COLLEGE, Bozeman, Mont.; K. J. Goering, Department of Chemistry; *Isolation and Purification of Myrosin;* 2 years; $8,000

MOUNT SINAI HOSPITAL, New York, N.Y.; Harry Sobotka, Department of Chemistry; *Factor Converting Mesophilic into Thermophilic Microorganisms;* 2 years; $18,000

NATIONAL ACADEMY OF SCIENCE-NATIONAL RESEARCH COUNCIL, Washington, D.C.; Frank L. Campbell, Division of Biology and Agriculture; *Support of NAS–NRC Ad Hoc Committee on International Relations in Biophysics;* 3 years; $17,250

NAZARETH COLLEGE, Louisville, Ky.; Sister Virginia Heines, Department of Chemistry; *Activity of Peroxidase in Horse Radish Root;* 2 years; $3,000

NEW YORK UNIVERSITY, New York, N.Y.; Bernard L. Horecker, Department of Microbiology, College of Medicine; *Carbohydrate Cleavage and Group Transfer Reactions;* 3 years; $45,000

NORTH CAROLINA STATE COLLEGE, Raleigh, N.C.

Harold J. Evans, Department of Botany; *Nodule-Nitrate Reductase in Nitrogen Fixation by Leguminous Plants;* 3 years; $31,000

Marvin L. Speck, Department of Animal Industry; *Identity and Configuration of Amino Acids;* 2 years; $16,000

UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N.C.; Ralph Penniall, Department of Biochemistry; *Adenosinetriphosphatases of Heart Tissue;* 2 years; $15,000

NORTHWESTERN UNIVERSITY, Evanston, Ill.

Irving M. Klotz, Department of Chemistry; *Protein Interactions;* 4 years; $60,000

John H. Law, Department of Chemistry; *Biochemistry of the Glycolipides;* 2 years; $16,000

OKLAHOMA MEDICAL RESEARCH FOUNDATION, Oklahoma City, Okla.; Ranwel Caputto, Department of Biochemistry; *Chemical Studies on an Adenosine-Dinucleotide in Muscle Extracts;* 3 years; $31,000

UNIVERSITY OF OREGON, Eugene, Oreg.

H. S. Mason, Department of Biochemistry, School of Medicine, Portland; *Biochemistry of Natural Melanins;* 3 years; $27,000

F. J. Reithel and R. G. Wolfe, Department of Chemistry; *Homogeneous Beta-Galactosidase From E. Coli;* 2 years; $25,000

Bradley T. Scheer, Graduate School; *Thermodynamics and Kinetics of the Active Transport of Ions;* 1 year; $8,000

PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.; Andrew A. Benson, Department of Agricultural and Biological Chemistry; *Radiochemical Studies in Lipid Biochemistry;* 3 years; $53,000

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.

Donald C. Dittmer, Department of Chemistry; *Reactions of Pyridinium Compounds;* 3 years; $19,000

Philip George, Department of Chemistry; *Physicochemical Studies on Hemoproteins and Related Compounds;* 3 years; $42,000

UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa.; Klaus Hofmann, Department of Biochemistry, School of Medicine; *Synthesis of Peptides Possessing Corticotropic and Melanocyte-expanding Activity;* 3 years; $45,000

POLYTECHNIC INSTITUTE OF BROOKLYN, Brooklyn, N.Y.

Murray Goodman, Department of Chemistry; *Synthesis, Properties and Reactions of Peptides and their Derivatives;* 3 years; $40,000

David Harker; *Crystal Structure of Ribonuclease;* 1 year; $25,000

Herbert Morawetz, Department of Chemistry; *Reactions Involving Interactions of Several Functional Groups;* 2 years; $24,000

PRINCETON UNIVERSITY, Princeton, N.J.; Walter Kauzmann, Department of Chemistry; *Denaturation of Proteins;* 3 years; $54,000

PURDUE RESEARCH FOUNDATION, Lafayette, Ind.

Henry Koffler and J. F. Foster, Departments of Biological Sciences and Chemistry, Purdue University; *Biosynthesis and Properties of Proteins Containing Amino Acid Analogues;* 3 years; $40,000

L. J. Mullins, Department of Biophysics, Purdue University; *Kenetic Measurement of Active Transport in the Frog Skin;* 1 year; $11,000

Roy L. Whistler, Department of Biochemistry, Purdue University; *Synthesis of a New Polysaccharide Structure;* 2 years; $15,000

REED COLLEGE, Portland, Oreg.; Michael Litt, Department of Chemistry; *Kinetic Study of Ribonuclease;* 2 years; $6,500

RESEARCH FOUNDATION OF CHILDREN'S HOSPITAL, Washington, D.C.; John C. Houck, Biochemistry Section; *Kinetics and Thermodynamics of Ribonuclease Action;* 2 years; $14,000

RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK, Albany, N.Y.; Sol Kramer, Department of Biology; *Shortening and Stretch of Insect Muscle Models with Large Sarcomeres;* 18 months; $9,000

UNIVERSITY OF ROCHESTER, Rochester, N.Y.; Thomas T. Bannister, Department of Biology; *Investigation of the Primary Process in Photosynthesis,* 2 years; $30,000

ROCKEFELLER INSTITUTE, New York, N.Y.

Lyman C. Craig, Department of Biochemistry; *Isolation and Chemical Composition of Cypridina Luciferin;* 1 year; $9,000

S. William Pelletier; *Chemistry of the Sapogenins of Polygala Senega;* 2 years; $15,000

Gertrude E. Perlmann; *Studies on Protein Structure;* 1 year; $1,900

ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH, New York, N.Y.; Keith R. Porter; *Membrane-Limited Systems in the Cells of the Vertebrate Eye;* 2 years; $22,000

RUTGERS, THE STATE UNIVERSITY, New Brunswick, N.J.

Michael Heidelberger, Institute of Microbiology; *Chemical Constitution and Biological Specificity;* 3 years; $44,000

Walter W. Wainio, Department of Physiology and Biochemistry; *Purification and Characterization of the Cytochromes Oxidase, B and $C_1$ of Mammalian Heart Muscle;* 3 years; $60,000

SAINT LOUIS UNIVERSITY, St. Louis, Mo.; A. H. Weber, Department of Physics; *Structure Determination of Individual Virus Particles;* 2 years; $14,000

THE WIEZMANN INSTITUTE OF SCIENCE, Rehovoth, Israel; Sidney A. Bernhard; *Poly-Functional Catalysis by Heterogeneous Synthetic Polypeptides;* 6 months; $4,000

SMITH COLLEGE, Northampton, Mass.

Gladys A. Anslow, Department of Physics; *Structure of Small Peptides;* 2 years; $27,000

Dorothy Wrinch, Department of Physics; *Investigations of the Structure of Relatively Small Peptides;* 3 years; $28,000

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.; Milo Don Appleman, Department of Bacteriology; *Degradation of Ergothioneine by Bacteria;* 2 years; $20,000

STATE UNIVERSITY OF IOWA, Iowa City, Iowa; Charles Tanford, Department of Chemistry; *Configuration of Proteins in Solution;* 3 years; $31,000

STANFORD UNIVERSITY, Stanford, Calif.

Robert L. Baldwin, School of Medicine; *Ultracentrifugal Studies of Proteins;* 3 years; $23,000

Arthur Kornberg, Department of Biochemistry; *Enzymatic Synthesis of Desoxyribonucleic Acid and Studies of Virus;* 2 years; $28,000

UNIVERSITY OF TEXAS, Austin, Tex.

R. L. Airth, Department of Botany; *Mechanism of Bioluminescence in Fungi;* 2 years; $16,500

Austen F. Riggs, Department of Zoology; *Biochemistry of Hemoglobin and of Nitrogen Fixation;* 2 years; $15,000

TULANE UNIVERSITY, New Orleans, La.; Elliott Shaw, Department of Biochemistry; *Chemistry of Enzyme Active Centers;* 3 years; $32,000

VANDERBILT UNIVERSITY, Nashville, Tenn.

William J. Darby, Department of Biochemistry; *Radio-Chemical and Molecular Kinetic*

*Analyses of Biological Systems;* 1 year; $13,500

Jan van Eys, Department of Biochemistry, School of Medicine; *Control of and Mechanisms in Glycolysis;* 2 years; $15,000

WASHINGTON UNIVERSITY, St. Louis, Mo.

Robert K. Crane, Department of Biological Chemistry; *Utilization of Hexoses by Animal Cells;* 3 years; $36,000

Luis Glasser, Department of Biological Chemistry; *Biosynthesis of N-Acetyl-Galacto-Samine-Containing Polysaccharides;* 3 years; $21,000

Paul Horowicz, Department of Physiology; *Ion Transport Across Membranes in Muscle;* 3 years; $25,000

Jack L. Strominger, School of Medicine; *Structure and Biosynthesis of the Bacterial Cell Wall;* 3 years; $39,000

UNIVERSITY OF WASHINGTON, Seattle, Wash.

Donald J. Hanahan, Department of Biochemistry; *Chemistry and Biochemistry of Inositol-Containing Lipids;* 3 years; $40,000

Robert F. Labbe, Department of Pediatrics, School of Medicine; *Enzymatic Conversion of Protoprophyrin and Iron to Heme;* 3 years; $34,000

Howard V. Rickenberg, Department of Microbiology; *Induced Enzyme Formation in Mammalian Tissues;* 2 years; $18,000

WAYNE STATE UNIVERSITY, Detroit, Mich.; Laurence Levine, Department of Biology; *Contractile Function in Vorticellae;* 2 years; $12,000

WEST VIRGINIA UNIVERSITY, Morgantown, W. Va.; William J. Canady, School of Medicine; *Thermodynamics of Solution Processes;* 2 years; $7,000

WORCESTER FOUNDATION FOR EXPERIMENTAL BIOLOGY, Shrewsbury, Mass.

Ralph I. Dorfman; *Use of Nuclear Magnetic Resonance for Isotopic Analysis;* 2 years; $60,000

Eugene L. Hess; *Interaction of Glucocorticoids With Macromolecular Constituents of the Lymphocyte;* 2 years; $20,000

YALE UNIVERSITY, New Haven, Conn.

Joseph Fruton, Department of Biochemistry; *Hydrolysis and Synthesis of Peptide Bonds by Intracellular Enzymes;* 4 years; $55,000

Daniel L. Kline, Department of Physiology, School of Medicine; *Activation and Purification of Fibronolytic Enzymes;* 2 years; $18,000

YESHIVA UNIVERSITY, New York, N.Y.

Maurice M. Rapport, Department of Biochemistry, Albert Einstein College of Medicine; *Chemical Structure and Immunochemical Properties of Lipid Haptens;* 3 years; $22,000

Jonathan Wittenberg, Department of Physiology, Albert Einstein College of Medicine; *Oxygen Transport in Mammalian Systems;* 3 years; $30,000

## PSYCHOBIOLOGY

ADELPHI COLLEGE, Garden City, N.Y.; David Ehrenfreund, Department of Psychology; *Studies of Learning and Performance;* 2 years; $13,300

AMERICAN MUSEUM OF NATURAL HISTORY, New York, N.Y.; Helmut E. Adler, Department of Animal Behavior; *Sensory Factors in Bird Navigation;* 3 years; $49,900

AMHERST COLLEGE, Amherst, Mass.; Lincoln P. Brower, Department of Biology; *Analysis of Factors Controlling Mimicry;* 3 years; $23,100

UNIVERSITY OF ARIZONA, Tucson, Ariz.

Neil R. Bartlett, Department of Psychology; *Study of Skilled Sensory-Motor Reactions;* 4 years; $42,000

Joe T. Marshall, Jr., Department of Zoology; *Research on Speciation;* 1 year; $7,200

BOSTON UNIVERSITY, Boston, Mass.; J. M. Harrison, Department of Psychology; *Behavioral Analysis of the Auditory Pathways;* 4 years; $43,100

BROOKLYN COLLEGE, Brooklyn, N.Y.; Elizabeth Fehrer and David H. Raab, Department of Psychology; *Studies in Perception;* 2 years; $21,200

BROWN UNIVERSITY, Providence, R.I.; Trygg Engen, Department of Psychology; *Thresholds for Olfactory Stimuli;* 30 months; $15,900

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

Peter R. Marler, Department of Zoology, Berkeley; *Studies of Instinctive Behavior;* 2 years; $23,200

Allen Parducci, Department of Psychology, Los Angeles; *Stimulus Determinants in Judgment;* 3 years; $13,400

Leo J. Postman, Department of Psychology; *Retention of Verbal Materials;* 3 years; $46,500

CLARK UNIVERSITY, Worcester, Mass.; Joachim F. Wohlwill, Department of Psychology; *Development of Number Concepts;* 1 year; $4,200

COLUMBIA UNIVERSITY, New York, N.Y.

John Lotz, Language and Communication Research Center; *Physiological Foundations for Speech Typology;* 2 years; $36,900

William N. Schoenfeld and William W. Cumming, Department of Psychology; *Research on Schedules of Reinforcement;* 2 years; $42,100

COLUMBUS PSYCHIATRIC INSTITUTE AND HOSPITAL, Columbus, Ohio; Norma F. Besch; Research Division; *Studies in Associative Interference;* 2 years; $8,600

DARTMOUTH COLLEGE, Hanover, N.H.; William M. Smith, Department of Psychology; *Visual Contour Processes;* 2 years; $16,800

DUKE UNIVERSITY, Durham, N.C.

Irving T. Diamond, Department of Psychology; *Behavioral Analysis of the Somatic Cortex;* 2 years; $23,500

Gregory A. Kimble, Department of Psychology; *Inhibitory Processes in Eyelid Conditioning;* 3 years; $20,400

FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; Howard D. Baker and James C. Smith, Department of Psychology; *Behavioral Measurement of Visual Functions;* 1 year; $7,300

HARVARD UNIVERSITY, Cambridge, Mass.

Richard J. Herrnstein, Department of Psychology; *Stimulus Factors in Learning;* 2 years; $20,700

B. F. Skinner, Department of Psychology; *Research on Reinforcement Schedules;* 2 years; $78,600

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.

Russell L. Devalois, Department of Psychology; *Research on Visual Mechanisms;* 2 years; $21,100

James A. Dinsmoor, Department of Psychology, Indiana University; *Studies on Instrumental Conditioning;* 2 years; $14,500

Charles B. Ferster, Indiana University Medical Center, Indianapolis; *Studies of Reinforcement Phenomena;* 3 years; $37,500

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.

Stewart H. Hulse, Department of Psychology; *Study of Resistance to Extinction;* 2 years; $11,900

Edward F. MacNichol, Jr., Department of Biophysics; *Visual Research;* 3 years; $46,200

LOUISIANA STATE UNIVERSITY AND AGRICULTURAL AND MECHANICAL COLLEGE, Baton Rogue, La.; Brendan A. Maher, Department of Psychology; *Frontal Area Function in Lower Mammals;* 2 years; $12,300

UNIVERSITY OF MAINE, Orono, Maine; Gerald W. Barnes; Department of Psychology; *Reinforcing Properties of Auditory Stimuli;* 1 year; $4,700

UNIVERSITY OF MARYLAND, College Park, Md.; Henricus G. Kuypers, Department of Anatomy, School of Medicine; *Brain Reticular Formation;* 2 years; $12,600

MICHIGAN STATE UNIVERSITY OF AGRICULTURE AND APPLIED SCIENCE, East Lansing, Mich.

Paul Bakan, Department of Psychology; *Studies of Figural After-Effects;* 2 years; $11,000

S. Howard Bartley, Department of Psychology; *Studies of Brightness Vision;* 3 years; $50,900

Donald M. Johnson, Department of Psychology; *Analysis of Thinking;* 2 years; $13,000

MICHIGAN STATE UNIVERSITY, East Lansing, Mich.; Hans Toch, Department of Psychology; *Studies of Apparent Movement;* 1 year; $6,900

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; Clyde H. Coombs, Department of Psychology; *Psychological Measurement;* 3 years; $35,400

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.

Kenneth MacCorquodale and Paul E. Meehl, Department of Psychology; *Studies of Reinforcement;* 2 years; $13,800

David L. LaBerge, Department of Psychology; *Studies in Stimulus Generalization;* 15 months; $7,100

MOUNT HOLYOKE COLLEGE, South Hadley, Mass.

Horace H. Corbin, Department of Psychology; *Discrimination of Relative Numerousness;* 1 year; $7,200

John Volkmann, Department of Psychology; *Analysis of Visual Acuity;* 1 year; $8,700

NEW MEXICO COLLEGE, State College, N.M.; Merrell E. Thompson, Department of Psychology; *Stimulus Generalization and Inhibition;* 3 years; $21,600

NEW YORK UNIVERSITY, New York, N.Y.; Howard H. Kendler; *Research on Problem-Solving Behavior;* 3 years; $30,100

NEW YORK ZOOLOGICAL SOCIETY, New York, N.Y.; John T. Emlen, Jr., Department of Zoology, University of Wisconsin; *Ecology and Behavior of the Mountain Gorilla;* 30 months; $34,900

UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N.C.; Lyle V. Jones, The Psychometric Laboratory; *Multivariate Analysis in Psychological Research;* 5 years; $62,700

NORTHWESTERN UNIVERSITY, Evanston, Ill.

J. W. Cotton and W. F. Hill, Department of Psychology; *Experimental Studies of Extinction;* 3 years; $31,300

Winfred F. Hill, Department of Psychology; *Relationships Between Exploratory and Activity Drive;* 1 year; $5,700

OHIO STATE UNIVERSITY, Columbus, Ohio

Donald R. Meyer, Department of Psychology; *Studies in Primate Learning;* 1 year; $3,500

Delos D. Wickens, Department of Psychology; *Discriminability Within Complex Stimula;* 3 years; $36,800

UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE, Norman, Okla.

Charles C. Carpenter, Department of Zoology; *Ethological Studies of Reptiles;* 2 years; $17,800

Irene Hulicka, Department of Psychology, University of Oklahoma; *Drive and Incentive as Determinants of Performance;* 1 year; $2,100

UNIVERSITY OF OREGON, Eugene, Oreg.

Fred Attneave, Department of Psychology; *Perception of Sequential Stimulation;* 3 years; $20,100

Robert F. Fagot, Department of Psychology; *Psychophysical Measurement;* 18 months; $7,000

PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.

C. R. Carpenter, Department of Psychology; *A Field Study of Primate Population;* 1 year; $13,200

William F. Prokasy, Jr., Department of Psychology; *Studies in Conditioning;* 2 years; $11,500

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Robert C. Bolles, Department of Psychology; *Stimulus Properties of Drives;* 2 years; $12,300

UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa.; Lloyd E. Homme, Department of Psychology; *Analysis of Response Differentiation and Generalization;* 2 years; $13,900

QUEENS COLLEGE, Flushing, N.Y.; Eugene S. Gollin, Department of Psychology; *Development of Cognitive Behavior;* 2 years; $23,500

REED COLLEGE, Portland, Oreg.; Fredrick A. Courts, Department of Psychology; *Studies of Variability of Response;* 1 year; $9,400

RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK, Albany, N.Y.; Jack Richardson, Department of Psychology, Harpur College, Endicott; *Role of Similarity in Concept Formation;* 2 years; $2,700

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.

Everett J. Wyers, Department of Psychology; *Effects of Stimulation of Reticular Formation on Discriminative Behavior;* 2 years; $20,200

William W. Grings, Department of Psychology; *Studies of Reinforcement of Perception;* 1 year; $5,000

SOUTHERN METHODIST UNIVERSITY, Dallas, Tex.; Alvin J. North, Department of Psychology; *Studies of Discriminative Learning;* 1 year; $6,400

STATE COLLEGE OF WASHINGTON, Pullman, Wash.; Helmut K. Buechner, Department of Zoology; *Territorial Behavior in Uganda Kob;* 1 year; $6,200

SWARTHMORE COLLEGE, Swarthmore, Pa.; Solomon E. Asch, Department of Psychology; *Studies in Cognition;* 3 years; $28,000

TEACHERS COLLEGE, COLUMBIA UNIVERSITY, New York, N.Y.; Rosedith Sitgreaves, Department of Psychological Foundation and Services; *Psychometric Research;* 1 year; $12,100

TEXAS TECHNOLOGICAL COLLEGE, Lubbock, Tex.; A. C. Pereboom, Department of Psychology; *Analysis of Incentive Learning;* 1 year; $3,200

TRAINING SCHOOL AT VINELAND, Vineland, N.J.; Johs. Clausen; *Studies of Electrically Induced Visual Sensations;* 2 years; $14,400

TUFTS UNIVERSITY, Medford, Mass.; Paul D. Coleman, Department of Psychology; *Study of Auditory Localization;* 6 months; $4,900

UNIVERSITY OF VERMONT AND STATE AGRICULTURAL COLLEGE, Burlington, Vt.; Norman J. Slamecka, Department of Psychology; *Research on Retention;* 2 years; $7,800

UNIVERSITY OF WASHINGTON, Seattle, Wash.

Irwin G. Sarason, Department of Psychology; *Variables in Verbal Conditioning;* 1 year; $4,700

Moncrieff H. Smith, Jr., Department of Psychology; *Aspects of Biological Motivation;* 3 years; $30,300

WAYNE STATE UNIVERSITY, Detroit, Mich.; Eli Saltz, Department of Psychology; *Studies in Verbal Learning;* 3 years; $21,000

WESLEYAN UNIVERSITY, Middletown, Conn.; William R. Thompson, Department of Psychology; *Influence of Stress on Behavior;* 2 years; $24,200

WILLIAMS COLLEGE, Williamstown, Mass.; Thomas E. McGill, Department of Psychology; *Hearing in Submammalian Vertebrates;* 1 year; $2,000

UNIVERSITY OF WISCONSIN, Madison, Wis.

William A. Mason, Department of Psychology; *Behavior of Infrahuman Primates;* 2 years; $15,300

Karl U. Smith, Department of Psychology; *The Role of Perception in Patterned Motion;* 3 years; $27,000

YALE UNIVERSITY, New Haven, Conn.

Frank A. Logan, Department of Psychology; *Conditions of Reinforcement;* 3 years; $36,300

Neal E. Miller, Department of Psychology; *Physiological Analysis of Motivation;* 2 years; $16,000

## PHYSICS

AMHERST COLLEGE, Amherst, Mass.; Theodore Soller, Colby W. Dempesy, Joel E. Gordon, Department of Physics; *Research on Solids Below One-tenth Degree Absolute;* 2 years; $19,900

ARIZONA STATE COLLEGE, Tempe, Ariz.; Arnold G. Meister, Department of Physics; *Infrared Spectra of Simple Molecules;* 2 years; $28,600

UNIVERSITY OF ARIZONA, Tucson, Ariz.; Robert M. Kalbach, Department of Physics; *High Energy Particle Interactions;* 2 years; $22,700

BOSTON COLLEGE, Chestnut Hill, Mass.; Joseph H. Chen, Department of Physics; *Dielectric Relaxation Phenomena in Alkali Halides;* 7 months; $16,300

BOSTON UNIVERSITY, Boston, Mass.; Edward C. Booth, Department of Physics; *Resonant Scattering of Bremstrahlung;* 1 year; $8,700

BRANDEIS UNIVERSITY, Waltham, Mass.

Stanley Deser, Department of Physics; *Elementary Particle Theory;* 2 years; $12,900

David L. Falkoff and Kenneth W. Ford, Department of Physics; *Theoretical Nuclear and Elementary Particle Physics;* 2 years; $39,000

BRIGHAM YOUNG UNIVERSITY, Provo, Utah; Harvey J. Fletcher, Mathematics Department; *Dynamics of the Cochlea;* 2 years; $9,100

BROWN UNIVERSITY, Providence, R.I.

J. J. Bray, Department of Physics; *Quadrupole Coupling in Nuclear Magnetic Resonance;* 2 years; $17,700

J. F. Bunnett, Department of Chemistry; *Mechanism and Reactivity in Substitution at Unsaturated Centers;* 3 years; $30,900

Rohn Truell, Division of Applied Mathematics; *Ultrasonic Study of Defects in Solids;* 2 years; $30,900

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; Jesse W. M. DuMond, Department of Physics; *An Inhomogeneous Field Magnetic Spectrometer;* 3 years; $57,500

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

Francis A. Jenkins, Department of Physics and John G. Phillips, Department of Astronomy, Berkeley; *Analyses of Molecular Spectra;* 3 years; $123,600

Charles Kittel, Department of Physics; *Solid State Physics and Magnetism;* 3 years; $164,300

Malvin A. Ruderman and Eyvind H. Wichmann, Department of Physics; *Theory of Elementary Particles and High Energy Interactions;* 2 years; $36,400

David S. Saxon, Department of Physics, Los Angeles; *Research in Theoretical Nuclear and Solid State Physics;* 3 years; $115,400

CARLETON COLLEGE, Northfield, Minn.; William Butler and Robert Reizt, Department of Physics; *Carrier Mobilities in Alkali Halide Crystals;* 3 years; $19,700

CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pa.; Sergio DeBenedetti, Department of Physics; *Positronium Studies of Solids and Liquids;* 3 years; $66,300

CATHOLIC UNIVERSITY OF AMERICA, Washington, D.C.

James G. Brennan, Department of Physics; *Theory of Nuclear Spectroscopy;* 2 years; $11,500

Theodore A. Litovitz, Department of Physics, Robert Meister and George E. McDuffie, Jr., Department of Electrical Engineering; *Dielectric Relaxations in Liquids Under Pressure;* 2 years; $15,600

UNIVERSITY OF CHICAGO, Chicago, Ill.

Mark G. Inghram, Department of Physics; *Properties of High Temperature Gases and Condensed Vapors;* 3 years; $115,300

William Lichten, Department of Physics; *Molecular Beam Studies;* 3 years; $22,400

Marcel Schein, Department of Physics; *Cooperative Emulsion Flight For High Energy Events;* 3 years; $625,000

CLEMSON AGRICULTURAL COLLEGE, Clemson, S.C.; John E. Miller and Charles A. Reed, Department of Physics; *X-ray Diffraction Studies of the Debye Constant;* 2 years; $11,500

COLORADO STATE UNIVERSITY RESEARCH FOUNDATION, Fort Collins, Colo.; John J. Faris and William D. Derbyshire, Department of Physics, Colorado State University; *Magnetic Properties of Ferrimagnetic Materials;* 2 years; $34,400

UNIVERSITY OF COLORADO, Boulder, Colo.

Albert A. Bartlett, Department of Physics; *Beta-Ray Spectroscopy;* 2 years; $49,700

W. H. Tantilla, Department of Physics; *Lattice Vibrations and Defects;* 3 years; $39,800

CORNELL UNIVERSITY, Ithaca, N.Y.; Kenneth Greisen, Laboratory of Nuclear Science; *Cosmic Ray Shower and Particle Study;* 1 year; $31,800

DARTMOUTH COLLEGE, Hanover, N.H.

Robert W. Christy, Department of Physics; *Bleaching of X-irradiated Centers in Alkali Halides;* 2 years; $28,500

William P. Davis, Jr., Department of Physics; *Oscillations in Direct Current Glow Discharges;* 2 years; $14,100

DUKE UNIVERSITY, Durham, N.C.

William M. Fairbank and Michael J. Buckingham, Department of Physics; *Higher Order Transitions at Low Temperatures;* 1 year; $26,400

Hertha Sponer, Department of Physics; *Electronic Structure of Molecules in Condensed Systems;* 2 years; $31,200

FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; Joseph E. Lannutti, Department of Physics; *High Energy Nuclear Physics;* 2 years; $52,800

FORDHAM UNIVERSITY, New York, N.Y.

Joseph F. Mulligan, Department of Physics; *Electron Correlation in Atoms and Molecules;* 2 years; $14,800

Alfons Weber, Department of Physics; *Raman Spectroscopy of Gases;* 2 years; $32,200

FRANKLIN AND MARSHALL COLLEGE, Lancaster, Pa.; William T. Allen, Department of Physics; *Trapping Levels in Phosphors;* 2 years; $11,400

GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta, Ga.

Harold R. Brewer, Department of Physics; *M-Shell Internal Conversion Coefficients;* 15 months; $25,000

T. L. Weatherly and J. Q. Williams, School of Physics; *Determination of Molecular Constants by Microwave Spectroscopy;* 2 years; $21,600

L. D. Wyly and C. H. Braden, Department of Physics; *Studies of Nuclear Decay Schemes;* 3 years; $23,400

GREENVILLE COLLEGE, Greenville, Ill.; Ralph J. Miller, Department of Physics; *Cadmium Sulfide Activation, Preparation and Properties;* 2 years; $17,000

GRINNELL COLLEGE, Grinnell, Iowa; Roger J. Hanson, Department of Physics; *Soft Gamma Ray Background Radiation;* 2 years; $14,800

ILLINOIS INSTITUTE OF TECHNOLOGY, Chicago, Ill.

William E. Bennett, Department of Physics; *Nuclear Structure;* 3 years; $41,500

Forrest F. Cleveland, Department of Physics; *Structure of Polyatomic Molecules;* 3 years; $36,000

UNIVERSITY OF ILLINOIS, Urbana, Ill.

James S. Koehler, Department of Physics; *Research on Dislocation in Crystals;* 2 years; $37,100

Robert Novick, Department of Physics; *Study of Atomic and Ion Structure Using Beam Methods;* 3 years; $59,300

Clark S. Robinson, Department of Physics; *Nuclear Phenomena at High Energy;* 3 years; $46,800

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; E. J. Konopinski, Department of Physics; *The Theory and Interpretation of Elementary Particle Interactions;* 2 years; $64,200

INSTITUTE FOR ADVANCED STUDY, Princeton, N.J.; J. Robert Oppenheimer, Director; *Fundamental Theory of Particles and Fields;* 2 years; $90,000

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.

Theodore H. Berlin, Department of Physics; *Theories of High Energy Physics, Fields, and Statistical Mechanics;* 2 years; $50,200

Alhud Pevsner, Department of Physics; *Mechanized Analysis of Bubble Chamber Photographs;* 2 years; $61,900

UNIVERSITY OF KANSAS, Lawrence, Kans.

J. W. Culvahouse, Department of Physics; *Nuclear Orientation at Low Temperatures;* 2 years; $48,400

L. W. Seagondollar, Department of Physics; *Excitation Levels in Medium Mass Nuclei;* 2 years; $37,000

KENT STATE UNIVERSITY, Kent, Ohio; Anthony A. Silvidi, Department of Physics; *Improvement of the Diffusion Cloud Chamber as a Basic Research Tool;* 1 year; $2,400

KENTUCKY RESEARCH FOUNDATION, Lexington, Ky.; Vincent P. Kenney and John G. Dardis, Department of Physics; *High Energy Particle Studies;* 2 years; $72,700

LEHIGH UNIVERSITY, Bethlehem, Pa.

Raymond J. Emrich, Department of Physics; *Flow Studies in a Shock Tube;* 2 years; $59,300

Peter Havas, Department of Physics; *The Relativistic Theory of Interacting Particles;* 2 years; $24,500

MANHATTAN COLLEGE, New York, N.Y.; Brother Gabriel Kane, Department of Physics; *Primary Cosmic Ray Flux and Fragments Produced in Cosmic Ray Stars;* 2 years; $10,000

MARQUETTE UNIVERSITY, Milwaukee, Wis.; Kiuck Lee, Department of Physics; *Pear-Shaped Nuclear Deformation;* 2 years; $16,600

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Norman C. Rasmussen, Laboratory for Nuclear Science and Hans Mark, Department of Nuclear Engineering; *High Precision Measurement of Nuclear Gamma Rays;* 2 years; $67,300

UNIVERSITY OF MIAMI, Coral Gables, Fla.; Joseph Ford, Department of Physics; *Approach of One-Dimensional Systems to Equilibrium;* 1 year; $2,800

MICHIGAN STATE UNIVERSITY OF AGRICULTURE AND APPLIED SCIENCE, East Lansing, Mich.

Joseph Ballam, Department of Physics; *Heaby Mesons and Hyperons;* 2 years; $101,000

Jerry A. Cowen, Department of Physics; *Effects of the Lattice on Paramagnetic Resonance Absorption;* 2 years; $22,900

Thomas H. Edwards, and Clarence D. Hause, Department of Physics; *Near Infrared Molecular Spectroscopy;* 2 years; $26,000

Egon A. Hiedemann, Department of Physics; *Diffraction of Light by Ultrasonic Waves in Transparent Solids;* 2 years; $14,600

MICHIGAN STATE UNIVERSITY, East Lansing, Mich.; Julius S. Kovacs and Don B. Lichten-

berg, Department of Physics; *Theory of the Interactions of Mesons and Hyperons;* 2 years; $20,200

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Irving J. Lowe, Department of Physics; *Nuclear Magnetic Resonance Line Shapes and Relaxation;* 2 years; $28,200

UNIVERSITY OF MISSOURI, Columbia, Mo.; Newell S. Gingrich, Department of Physics; *X-Ray Diffraction by Liquids and Vapors;* 2 years; $23,500

MONTANA STATE UNIVERSITY, Missoula, Mont.; Mark J. Jakobson, Department of Physics; *Photo-Neutron Cross Sections;* 2 years; $23,700

NEBRASKA WESLEYAN UNIVERSITY, Lincoln, Nebr.; Walter R. French, Jr., Department of Physics; *Variations in Cosmic Ray Intensities;* 2 years; $7,300

UNIVERSITY OF NEBRASKA, Lincoln, Nebr.; Paul Goldhammer, Department of Physics; *Nuclear Forces and the Properties of Nuclei;* 2 years; $14,700

UNIVERSITY OF NEVADA, Reno, Nev.; George Barnes, Department of Physics; *A New Kind of Vacuum Gage;* 2 years; $21,300

UNIVERSITY OF NEW MEXICO, Albuquerque, N. Mex.

Jack Katzenstein, Department of Physics; *Discharge Through Small Conductors;* 2 years; $25,000

Victor H. Regener, Department of Physics; *Time Variations of Cosmic Radiation at High Altitudes;* 3 years; $33,900

UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N.C.; Paul S. Hubbard, Department of Physics; *Nuclear Magnetic Resonance;* 2 years; $38,800

UNIVERSITY OF NORTH DAKOTA, Grand Forks, N. Dak.; Earl N. Mitchell, Department of Physics; *Properties of Thin Ferromagnetic Films;* 2 years; $29,200

NORTHWEST NAZARENE COLLEGE, Nampa, Idaho; Gilbert C. Ford, Department of Physical Science; *Mass Spectrometer Studies;* 2 years; $31,500

NORTHWESTERN UNIVERSITY, Evanston, Ill.

Martin Ballyn, Department of Physics; *Transport Theory in Metals;* 2 years; $13,800

Sybrand Broersma, Department of Physics; *Magnetic Resonance Studies of Liquids and Solids;* 2 years; $12,900

Max Dresden, Department of Physics; *Problems in Superconductivity and Field Theory;* 2 years; $23,000

Jules A. Marcus, Department of Physics; *Magnetic Properties of Metal Crystals at Low Temperatures;* 2 years; $40,900

Edson R. Peck, Department of Physics; *Precision Measurements in Spectroscopy;* 2 years; $33,200

James H. Roberts, Department of Physics; *Hyperfragments in Nuclear Emulsions;* 3 years; $67,900

Stephen M. Shafroth, Department of Physics; *Nuclear Spin-Orbit Forces and Excited States;* 2 years; $70,000

Arnold J. F. Siegert, Department of Physics; *Theoretical Studies in Statistical Mechanics;* 2 years; $39,100

OBERLIN COLLEGE, Oberlin, Ohio; Thurston E. Manning, Department of Physics; *Machine Analysis of Complex Atomic Spectra;* 2 years; $15,400

OHIO UNIVERSITY, Athens, Ohio; Lawrence J. Callaher and A. I. Johnson, Department of Physics; *Binding Energies of Simple Nucleon Systems;* 1 year; $8,300

OHIO STATE UNIVERSITY, Columbus, Ohio

Clifford V. Herr, Department of Physics and Astronomy; *Atomic Oscillators at Low Temperatures;* 2 years; $27,600

Robert L. Mills and Andrew M. Sessler, Department of Physics; *Theoretical Nuclear Physics;* 2 years; $35,900

Robert A. Oetjen and Ely E. Bell, Department of Physics; *Far Infrared Spectroscopic Research;* 2 years; $56,000

Charles H. Shaw, Department of Physics; *Structure of Liquids and Solids at Low Temperatures;* 3 years; $40,700

UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE, Norman, Okla.; Chun C. Lin, Department of Physics, The University of Oklahoma; *Internal Rotation of Molecules;* 2 years; $19,600

PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.

John A. Sauer, Department of Physics and Arthur E. Woodward, Department of Chemistry; *Dynamic Mechanical Behavior of High Polymers Over a Wide Temperature Range;* 2 years; $25,000

Rolf G. Winter, Department of Physics; *High Energy Particle Interactions;* 2 years; $15,200

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.

Kenneth R. Atkins, Department of Physics; *Investigation of Liquid Helium;* 2 years; $37,600

Britton Chance, Johnson Foundation for Medical Physics; *The Application of New Methods of Measurement to Biological Phenomena;* 5 years; $73,900

Keith A. Brueckner, Department of Physics; *Theory of Many-Body Systems;* 3 years; $46,100

Barnett C. Cook and Norman Goldberg, Department of Physics; *Electron-Neutrino Relation in Decay of Helium;* 1 year; $6,800

Sherman Frankel, Department of Physics; *Low Energy Nuclear Spectroscopy;* 2 years; $49,200

William E. Stephens, Department of Physics; *Photonuclear Processes;* 3 years; $45,000

Roger H. Walmsley, Department of Physics; *Angular Momentum of Liquid Helium;* 2 years; $10,800

UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa.

Bernard L. Cohen, Radiation Laboratory; *Nuclear Structure and Nuclear Reactions;* 1 year; $48,700

Myron P. Garfunkel, Department of Physics; *Microwave Absorption Studies in Superconductors;* 2 years; $54,700

Sydney Meshkov, Department of Physics; *Two Body Interactions Between Nucleons and Nuclear Moments;* 2 years; $12,000

PURDUE RESEARCH FOUNDATION, Lafayette, Ind.

K. W. Meissner, Department of Physics, Purdue University; *High Precision Spectroscopy;* 3 years; $30,300

D. C. Peaslee and Masao Suqawara, Department of Physics, Purdue University; *Theory of Interactions of Elementary Particles;* 2 years; $18,300

RENSSELAER POLYTECHNIC INSTITUTE, Troy, N.Y.

H. B. Huntington, Department of Physics; *Ultrasonic Studies of Solids;* 1 year; $12,300

Heinrich A. Medicus and Paul F. Yergin, Department of Physics; *Photonuclear Research;* 2 years; $61,300

UNIVERSITY OF RHODE ISLAND, Kingston, R.I.; Leo Diesendruck, Department of Physics; *Theory of Electromagnetic Fields in Moving Anisotropic Media;* 14 months; $4,900

RICE INSTITUTE, Houston, Tex.

Harold E. Rorschach, Jr., Department of Physics; *Low Temperature Physics;* 2 years; $34,300

William Tobocman, Department of Physics; *Numerical Evaluation of the Direct Nucleon Interaction Theory;* 2 years; $22,500

RUTGERS, THE STATE UNIVERSITY, New Brunswick, N.J.; Peter Lindenfeld, Ernest Lynton, and Bernard Serin, Department of Physics; *Properties of Dilute Metallic Binary Alloys;* 2 years; $44,900

SAINT LOUIS UNIVERSITY, St. Louis, Mo.; James F. McGee, Department of Physics; *X-Ray Microscope;* 1 year; $9,100

ST. OLAF COLLEGE, Northfield, Minn.; Thomas D. Rossing, Department of Physics; *Ferromagnetic Resonance in Thin Magnetic Films;* 2 years; $27,600

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.

John Backus, Department of Physics; *The Properties of Orchestral Reed Instruments;* 2 years; $19,400

Harriet H. Forster, Department of Physics; *Coupling Constants in Beta Interactions;* 1 year; $10,200

STANFORD UNIVERSITY, Stanford, Calif.; Walter E. Meyerhof, Department of Physics; *Nuclear Structure Research with 3 Mev Particles;* 2 years; $180,000

STATE COLLEGE OF WASHINGTON, Pullman, Wash.; William Band, Department of Physics; *Theory of Shock Propagation in Solids;* 3 years; $16,000

STEVENS INSTITUTE OF TECHNOLOGY, Hoboken, N.J.; Kenneth C. Rogers, Department of Physics; *Gyromagnetic Ratio of the Free Mu Meson;* 2 years; $44,000

SYRACUSE UNIVERSITY, Syracuse, N.Y.

Richard L. Arnowitt, Department of Physics; *Theory of Elementary Particles;* 30 months; $25,000

Erich M. Harth, Department of Physics; *A High Repetition Rate Buble Chamber for Gamma Ray Studies;* 1 year; $22,200

SYRACUSE UNIVERSITY RESEARCH INSTITUTE, Syracuse, N.Y.; Arnold Honig, Department of Physics; *Electron Paramagnetic Investigations at Low Temperatures;* 2 years; $27,600

TEXAS COLLEGE OF ARTS AND INDUSTRIES, Kingsville, Tex.; James M. Robinson, Jr., Department of Physics; *Analysis of the Lithium Molecules;* 2 years; $15,900

UNIVERSITY OF VERMONT AND STATE AGRICULTURAL COLLEGE, Burlington, Vt.; Albert D. Crowell, Department of Physics; *Surface Adsorption Using Radioactive Tracers;* 2 years; $22,800

WASHINGTON UNIVERSITY, St. Louis, Mo.

Michael W. Friedlander, Department of Physics; *The Nature and Properties of Cosmic Ray Particles;* 2 years; $33,700

J. P. Hurley, Department of Physics; *Photon Splitting by the Coulomb Field;* 1 year; $10,100

T. A. Pond, Department of Physics; *Investigation of Beta Decay Interactions;* 2 years; $86,800

UNIVERSITY OF WASHINGTON, Seattle, Wash.

H. G. Dehmelt, Department of Physics; *Spin Resonance of Free Electrons;* 2 years; $23,100

Jere J. Lord, Department of Physics; *High Energy Particle Interactions in Emulsions;* 2 years; $13,500

WAYNE STATE UNIVERSITY, Detroit, Mich.; Suraj N. Gupta, Department of Physics; *Quantum Theory of Fields;* 2 years; $20,000

WEST VIRGINIA UNIVERSITY, Morgantown, W. Va.; Harvey N. Rexroad, Jack D. Graybeal, David F. Guinn, Gerald C. Michael, Department of Physics and Chemistry; *Microwave and EMR Studies of Molecules;* 1 year; $15,900

WESTERN RESERVE UNIVERSITY, Cleveland, Ohio; Berol L. Robinson, Department of Physics; *Low Energy Nuclear Physics;* 2 years; $44,100

UNIVERSITY OF WISCONSIN, Madison, Wis.; R. G. Herb, Department of Physics; *High Voltage Electrostatic Generators;* 3 years; $240,000

YALE UNIVERSITY, New Haven, Conn.; Vernon W. Hughes, Department of Physics; *Hyperfine Structure of Positronium;* 1 year; $23,000

## REGULATORY BIOLOGY

AMERICAN UNIVERSITY, Washington, D.C.; Alfred B. Chaet, Department of Biology; *Toxic Factors in Heat Death;* 2 years; $9,600

UNIVERSITY OF ARIZONA, Tucson, Ariz.

Joseph T. Bagnara, Department of Zoology; *Interrelationships of the Chromatotrophic Hormones, Pterins and Skin Pigments;* 3 years; $16,500

L. K. Sowls, Cooperative Wildlife Research Unit; *Reproduction in the Collared Peccary (Pecari Tajacu);* 3 years; $7,900

BERMUDA BIOLOGICAL STATION, St. George's West, Bermuda; Talbot H. Waterman, Department of Zoology, Yale University; *Polarized Light and Homing in Crustacea;* 1 year; $4,600

BOSTON UNIVERSITY, Boston, Mass.; Robert L. Hazelwood, Department of Physiology; *Hormonal and Metabolic Studies on the Glycogen Body of the Chick;* 3 years; $11,400

BOYCE THOMPSON INSTITUTE FOR PLANT RESEARCH, INC., Yonkers, N.Y.; Lela V. Barton; *Dormancy and After-Ripening of Seeds;* 3 years; $33,700

UNIVERSITY OF BRITISH COLUMBIA, Vancouver, Canada; William S. Hoar, Department of Zoology; *Osmoregulatory Function of Thyroid Gland in Flatfishes;* 3 years; $7,200

BROWN UNIVERSITY, Providence, R.I.; Paul F. Fenton, Department of Biology; *Inherited Metabolic and Endocrine Patterns;* 1 year; $3,900

UNIVERSITY OF BUFFALO, Buffalo, N.Y.; Herman Rahn, Department of Physiology; *Physiological Adaptations to Deep Submersion;* 3 years; $19,200

CALIFORNIA ARBORETUM FOUNDATION, INC., Arcadia, Calif.; William S. Steward, Director; *Mechanism of the Food Plant Preferences of Certain Insects;* 3 years; $29,900

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; A. Van Harreveld, Division of Biology; *Effects of Cerebral Asphyxiation on Conditioned Reflexes;* 2 years; $26,600

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

Howard A. Bern, Department of Zoology; *Properties of Neurosecretory Cells in Vertebrates and Invertebrates;* 5 years; $90,000

Richard M. Eakin and Robert C. Stebbins, Department of Zoology and Museum of Vertebrate Zoology; *Structure and Function of the Parietal Eye in the Reptiles;* 3 years; $30,700

Malcolm S. Gordon, Department of Zoology, Los Angeles; *Osmotic Regulation in Euryhaline Fishes;* 3 years; $18,600

Morton I. Grossman, Medical Center; *Studies on Pancreatic Physiology;* 3 years; $29,900

Karl M. Knigge, Department of Anatomy, School of Medicine, Los Angeles; *Neural Control of Corticotropin and Thyrotropin Secretion;* 3 years; $19,800

Leonard Machlis, Department of Botany; *Sexual Hormones in Algae and Fungi;* 5 years; $109,100

Elwin Marg, School of Optometry; *Neurophysiology of the Visual System;* 2 years; $27,000

P. F. Scholander, Scripps Institution of Oceanography, La Jolla; *Comparative Studies in Prolonged and Deep Diving;* 3 years; $13,500

Yoshinori Tanada, Department of Biological Control; *Virus Epizootiology of Insects;* 3 years; $33,900

UNIVERSITY OF CINCINNATI, Cincinnati, Ohio; Frank J. Etges, Department of Biological Sciences; *Chemotaxis and Chemotactic Agents;* 3 years; $22,700

CITY OF HOPE MEDICAL CENTER, Duarte, Calif.; Howard R. Bierman, Department of Internal Medicine; *Life Span of the Blood Elements;* 2 years; $15,200

COLUMBIA UNIVERSITY, New York, N.Y.

Herbert Elftman, Department of Anatomy, College of Physicians and Surgeons; *Cytochemistry of the Female Reproductive System;* 2 years; $11,600

Werner R. Lowenstein, Department of Physiology; *Nature and Localization of Generator Processes in Mechanoreceptors;* 3 years; $45,800

CORNELL UNIVERSITY, Ithaca, N.Y.

Richard H. Barnes, School of Nutrition, *Contributions of Intestinal Microflora to the Nutrition of the Host Animal;* 4 years; $55,400

Perry W. Gilbert, Department of Zoology; *Morphology and Physiology of the Middle and Inner Ear of Dipodomys;* 2 years; $6,500

William A. Wimsatt, Department of Zoology; *Studies of Hibernation and Digestion in Chiroptera;* 3 years; $38,300

DARTMOUTH COLLEGE, Hanover, N.H.; David S. Dennison, Department of Zoology; *Geotropism and Its Relation to Phototropism;* 2 years; $11,100

DARTMOUTH MEDICAL SCHOOL, Hanover, N.H.; S. M. Tenney, Department of Physiology; *Responses to Carbon Dioxide During Acclimatization to High Altitude;* 1 year; $1,500

DEPAUL UNIVERSITY, Chicago, Ill.; Mary A. McWhinnie, Department of Biological Sciences; *Hormonal Control in Crustacean Metabolism;* 2 years; $11,200

UNIVERSITY OF FLORIDA, Gainesville, Fla.

Darrell B. Pratt, Department of Bacteriology; *Osmotic Properties of Marine Bacteria;* 3 years; $28,400

Ernest B. Wright, Department of Physiology; *Excitation and Conduction in Nerve;* 2 years; $23,500

GEORGETOWN UNIVERSITY, Washington, D.C.; Estelle R. Ramey, Department of Physiology; *Relationship of the Sympathetic Nervous System to the Adrenal Cortex in the Response to Stress;* 3 years; $27,800

GEORGE WASHINGTON UNIVERSITY, Washington, D.C.; C. Adrian Hogben, Department of Physiology; *Excretory Function of Swimbladder and Gastric Mucosa;* 3 years; $11,200

UNIVERSITY OF GEORGIA, Athens, Ga.; Burlyn E. Michel, Department of Botany; *Growth Inhibitors Found in Cabbage and Other Crucifers;* 2 years; $9,600

HARVARD UNIVERSITY, Cambridge, Mass.; I. Mackenzie Lamb, Farlow Herbarium and Library; *Growth Regulation in Sporophores of Higher Fungi;* 2 years; $21,800

UNIVERSITY OF ILLINOIS, Urbana, Ill.

J. Woodland Hastings, Department of Chemistry; *Biochemical Mechanisms Involved in Clock-Like Daily Rhythms;* 4 years; $71,700

C. Ladd Prosser, Department of Physiology; *Comparative Physiology of Non-Striated Muscle and of Physiological Adaptation;* 5 years; $102,600

C. Ladd Prosser, Department of Physiology; *Conduction in Non-Striated Muscle;* 1 year; $6,500

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.

C. O. Miller, Department of Botany; *Chemical Basis of Plant Photomorphogenesis;* 3 years; $31,700

Sidney Ochs, Department of Physiology, Medical Center, Indianapolis; *Surface Responses From the Cerebral Cortex Elicited by Stimulation;* 3 years; $9,600

Sid Robinson, Department of Physiology, Indiana University; *Respiratory Adjustments of Mammals in Exercise;* 3 years; $45,700

IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS, Ames, Iowa; Walter E. Loomis, Department of Botany and Plant Pathology; *Translocation of Plants;* 3 years; $34,500

ISAAC ALBERT RESEARCH INSTITUTE OF THE JEWISH CHRONIC DISEASE HOSPITAL, Brooklyn, N.Y.; Sydney S. Lazarus, Endocrinology Laboratory; *Pancreatic B. Cell Destruction in Metadiabetes;* 3 years; $29,300

JEWISH HOSPITAL AND MEDICAL CENTER, Cincinnati, Ohio; Benjamin F. Miller and Paul Nathan, The May Institute for Medical Research and Department of Physiology; *Antibody Responsible for Destruction of Tissue and Organ Transplants;* 3 years; $22,600

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.

Abraham G. Osler, School of Hygiene and Public Health; *Mechanism of Hypersensitivity Phenomena;* 5 years; $81,100

Robert R. Wagner, Department of Medicine; *Interferon B: Its Properties and Role in the Viral Interference Phenomenon;* 5 years; $77,100

KAISER FOUNDATION, Oakland, Calif.; Ellsworth C. Dougherty, Laboratory of Comparative Physiology and Morphology; *Cultivation of Brachionid Rotifers;* 2 years; $8,500

KANSAS STATE COLLEGE OF AGRICULTURE AND APPLIED SCIENCE, Manhattan, Kans.; Francis C. Lanning, Department of Chemistry; *The Nature and Distribution of Silica in Plants;* 3 years; $13,600

UNIVERSITY OF KANSAS, Lawrence, Kans.; Cora M. Downs, Department of Bacteriology; *Study of Tissue Culture Cells Infected With Various Agents;* 3 years; $35,500

LEHIGH UNIVERSITY, Bethlehem, Pa.; John A. Freeberg, Department of Biology; *Lycopodium Porthalli and Their Endophytic Fungi;* 3 years; $22,000

LONG BEACH STATE COLLEGE, Long Beach, Calif.; Richard G. Lincoln, Department of Biological Sciences; *Photoperiodic Inhibition of Flowering;* 15 months; $10,800

LONGWOOD COLLEGE, Farmville, Va.; Robert T. Brumfield, Department of Biology; *Control of Cell Division and Growth in Plant Root Meristems;* 39 months; $38,600

LOUISIANA STATE UNIVERSITY AND AGRICULTURAL AND MECHANICAL COLLEGE, Baton Rouge, La.; John S. Roussel; Department of Entomology; *Evolution of Diapause in The Boll Weevil;* 3 years; $26,100

MAYO ASSOCIATION, Rochester, Minn.; Charles F. Code, Physiology Section, Mayo Clinic; *Factors Controlling Gastric Secretion;* 5 years; $60,100

UNIVERSITY OF MIAMI, Miami, Fla.; Charles E. Lane, Department of Marine Science; *The General Biology of the Land Crab;* 3 years; $37,900

MICHIGAN STATE UNIVERSITY, East Lansing, Mich.; Mravis Richardson, Department of Microbiology; *Parasitization by Brucella Abortus of Cells From Bovine Tissues;* 3 years; $36,500

MICHIGAN STATE UNIVERSITY OF AGRICULTURE AND APPLIED SCIENCE, East Lansing, Mich.; Emanuel Hackel, Department of Natural Science; *The Nature of Human Blood Group Antigens;* 3 years; $13,200

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Dwain W. Warner, Museum of Natural History; *Effects of Prolactin on the Reproductive Behavior of the Brown-Headed Cowbird;* 1 year; $7,800

UNIVERSITY OF MISSOURI, Columbia, Mo.

Jacob Levitt; *Physiological Basis of Resistance of Plants to Frost and Drought;* 3 years; $34,700

Boyd L. O'Dell, Agricultural Chemistry; *Unidentified Nutrients Required by the Guinea Pig;* 3 years; $28,000

John E. Peterson, Department of Botany; *Culture and Physiology of the Myxobacteria;* 2 years; $13,800

MOUNT SINAI HOSPITAL, New York, N.Y.; M. L. Littman, Department of Microbiology; *Vitamin, Amino Acid, Carbohydrate and Mineral Requirements of Pathogenic Fungi;* 3 years; $24,000

NEW YORK UNIVERSITY, New York, N.Y.; Silvio Baez, Department of Anesthesiology; *Structure and Behavior of the Microcirculation;* 2 years; $17,300

NEW YORK ZOOLOGICAL SOCIETY, New York, N.Y.; Thomas Goreau, Zoological Park, *Physiology of Reef Building Corals;* 1 year; $10,500

NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING, Raleigh, N.C.; N. N. Winstead and C. L. McCombs, Departments of Plant Pathology and Horticulture, North Carolina Agriculture Experimental Station; *Pathogenicity, Disease Development, and Resistance in Cucurbitaceae;* 3 years; $32,500

NORTHWESTERN UNIVERSITY, Evanston, Ill.

Ronald R. Novales, Department of Biology; *Responses of Melanophores to Intermedin and Drugs;* 3 years; $30,800

Albert Wolfson, Department of Biological Sciences; *Regulation of Migratory Behavior and Reproductive Cycles in Birds;* 3 years; $49,300

UNIVERSITY OF NOTRE DAME, Notre Dame, Ind.

Gerd T. A. Benda, Department of Biology; *Reaction of Plant Cells to Wounding;* 2 years; $9,500

Bernard S. J. Wostmann, Lobund Institute; *Electrophoretic Analysis of the Serum of Germfree Animals;* 1 year; $18,800

OHIO STATE UNIVERSITY, Columbus, Ohio; Frank A. Hartman and Katherine A. Brownell, Department of Physiology; *Hormone Controlling Fat Deposition in the Mammal;* 2 years; $21,300

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Vincent G. Dethier, Division of Biology; *Chemoreception (Mechanism of Action);* 5 years, $76,800

UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa.; Leonard A. Cohen, School of Medicine; *Coordination Between Hindlimb Reflexes;* 2 years; $14,300

PRINCETON UNIVERSITY, Princeton, N.J.; W. W. Swingle, Department of Biology; *Study of Adrenal Cortical Hormones in Salt and Water Metabolism;* 3 years; $34,600

PURDUE RESEARCH FOUNDATION, Lafayette, Ind.

Frederick N. Andrews, Department of Animal Sciences, Purdue University; *Growth Patterns Under Varying Temperature and Light Condition;* 3 years; $42,500

Charles M. Kirkpatrick, Department of Forestry and Conservation, Purdue University; *Thyroid Gland Morphology of the Gray Squirrel;* 1 year; $1,800

Marwin Moskowitz, Department of Biological Sciences; *Isolation and Physiology of Clone Cultures of Mammalian Cells;* 1 year; $6,100

REED COLLEGE, Portland, Oreg.; Gilbert F. Gwilliam, Department of Biology; *Morphological and Physiological Basis of Certain Aspects of Behavior;* 3 years; $9,400

UNIVERSITY OF ROCHESTER, Rochester, N.Y.; E. S. Nasset, Department of Physiology; *Influence of Thyroid Gland on the Secretion of Gastric Juice;* 1 year; $11,900

ROCKEFELLER INSTITUTE, New York, N.Y.

Alexander Mauro, Department of Biophysics; *Electrophysiological Study of Knife Fishes;* 2 years; $9,000

George E. Palade, Department of Cytology; *Anatomical Pathway of Various Substances Across the Wall of Glomerular Capillaries;* 2 years; $15,000

RUTGERS, THE STATE UNIVERSITY, New Brunswick, N.J.

James H. Leathem, Bureau of Biological Research; *Water and Salt Electrolyte Metabolism of the Desert Rat;* 1 year; $2,200

M. Wight Taylor, Department of Agricul-

tural Biochemistry; *Purchase of a Pellet Mill;* 1 year; $3,050

SMITHSONIAN INSTITUTION, Washington, D.C.; Herbert Friedmann, Museum of Natural History; *Endocrine Basis of Parasitic Breeding in Birds;* 3 years; $21,900

STATE UNIVERSITY OF IOWA, Iowa City, Iowa; Ruben H. Flocks, Department of Urology, University Hospital; *Antigenic Properties of Urogenital Organs;* 2 years; $46,400

STANFORD UNIVERSITY, Stanford Calif.

Winslow R. Briggs, Department of Biological Sciences; *Dosage-Response Relationships of Phototropic Induction;* 3 years; $32,700

Alan K. Done, Department of Pediatrics; *Role of Ascorbic Acid in Adrenal-Cortical Function;* 1 year; $4,400

Philip E. Smith, Department of Anatomy; *Gonadotrophic Hormone Content of the Anterior Hypophysis;* 2 years; $5,200

UNIVERSITY OF TENNESSEE, Knoxville, Tenn.; Howard F. L. Rock, Department of Botany; *Revision of the Genus Helenium, Section Tetrodus (Compositae);* 3 years; $9,900

UNIVERSITY OF TEXAS, Austin, Tex.

Walter V. Brown, Department of Botany; *Arid Land Grasses: Their Stomatal Activity;* 2 years; $10,200

Leroy J. Olson, Department of Microbiology; *Origin and Evolution of Host Parasite Relationship;* 3 years; $20,700

UNIVERSITY OF TEXAS, Dallas, Tex.; Robert M. Pike, Department of Microbiology; *Erythrocyte Sensitization and Rheumatoid Factor;* 2 years; $13,100

VALPARAISO UNIVERSITY, Valparaiso, Ind.; W. C. Gunther, Department of Biology; *Seasonal Variation of Reproductive Organs and Endocrine Glands;* 1 year; $1,600

UNIVERSITY OF VERMONT, Burlington, Vt.; Thomas Sporston, Department of Botany; *Influence of Photoperiods on the Development of Sexual Stage of the Trifoliorum Erik;* 2 years; $9,700

UNIVERSITY OF VERMONT AND STATE AGRICULTURAL COLLEGE, Burlington, Vt.

Calvin Hanna, Department of Pharmacology, School of Medicine; *Intracellular Distribution of Amines;* 3 years; $26,400

Martin W. Williams, Department of Pharmacology; *Differences Between the Longitudinal and Circular Muscles of the Vertebrate Gastro-Intestinal Tract;* 2 years; $13,100

WABASH COLLEGE, Crawfordsville, Ind.; Willis H. Johnson, Department of Biology; *Nutritive Requirements of Paramecium Multimicronucleatum;* 2 years; $5,500

WALLA WALLA COLLEGE, College Place, Wash.; Harold G. Coffin, Department of Biological Science; *Laboratory Culture of Marine Decapod Larvae;* 2 years; $8,000

WESTERN RESERVE UNIVERSITY, Cleveland, Ohio

M. Neil Macintyre, Department of Anatomy; *Physiological Induction of Sex Differentiation in Mammals;* 3 years; $39,300

Stanley F. Patten, Jr., Department of Anatomy, School of Medicine; *Fate and Function of Transfused Tritium Labeled Lymphocytes;* 2 years; $14,100

WILLIAMS COLLEGE, Williamstown, Mass.; Allyn J. Waterman, Department of Biology; *Fetal and Adult Thyroid-Pituitary System;* 3 years; $19,800

UNIVERSITY OF WISCONSIN, Madison, Wis.; Peter R. Morrison, Department of Zoology; *Body Temperature and Its Regulation in Mammals;* 3 years; $49,200

YALE UNIVERSITY, New Haven, Conn.; Grace E. Pickford, Bingham Oceanographic Laboratory; *Collection of Large Quantities of Freshly Frozen Pituitary Glands;* 1 year; $8,100

## SOCIOLOGICAL SCIENCES

UNIVERSITY OF CHICAGO, Chicago, Ill.; Donald J. Bogue, Population Research and Training Center; *Basic Research in Demographic Methodology;* 2 years; $13,500

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Harold E. Jones, and Susan M. Ervin, Institute of Human Development; *Verbal Behavior in Bilinguals;* 1 year; $15,200

CORNELL UNIVERSITY, Ithaca, N.Y.; Urie Bronfenbrenner, Department of Child Development and Family Relations; *Family Structure and Personality Development;* 3 years; $40,500

DUKE UNIVERSITY, Durham, N.C.

E. E. Jones, *Effects of Interaction Context on Persons Perception;* 3 years; $37,700

Jack W. Brehm, Department of Psychology; *Cognitive Dissonance and Attitude Change;* 3 years; $18,000

UNIVERSITY OF ILLINOIS, Urbana, Ill.; William McGuire, Department of Psychology; *Immunization to Persuasion;* 2 years; $13,900

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Ithiel de Sola Pool, Center for International Studies; *Acquaintanceship Networks;* 2 years; $27,000

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; Leslie Kish, Survey Research Center; *Analytical Statistics for Complex Samples;* 2 years; $18,000

NEW YORK UNIVERSITY, New York, N.Y.

Stuart W. Cook, Department of Psychology; *Measurement of Attitude;* 14 months; $18,200

Edith D. Neimark, Department of Psychology; *The Effect of "Social" Stimuli upon Discrimination and Choice Behavior;* 2 years; $10,200

PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.; Sidney Siegel, Department of Psychology; *Theoretical Models of Choice and Strategy Behavior;* 3 years; $21,700

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; R. D. Luce, *Individual Choice Behavior;* 2 years; $16,700

STANFORD UNIVERSITY, Stanford, Calif.; Bernard P. Cohen, Behavioral Sciences Division; *Probability Models for Conformity Behavior;* 2 years; $24,200

WESLEYAN UNIVERSITY, Middletown, Conn.; David C. Beardslee and Donald D. O'Dowd, Department of Psychology; *Relation Between Structure and Content of Attitudes;* 2 years; $4,200

## SYSTEMATIC BIOLOGY

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, Philadelphia, Pa.

Ruth Patrick, Department of Limnology; *Fresh-Water Diatoms of the United States;* 3 years; $22,200

James A. G. Rehn, Department of Insects; *Orthoptera of North America;* 2 years; $31,000

ALBION COLLEGE, Albion, Mich.; William J. Gilbert, Department of Biology; *Systematic Studies of Hawaiian Marine Algae;* 3 years; $7,100

AMERICAN MUSEUM OF NATURAL HISTORY, New York, N.Y.

Leonard J. Brass, Department of Mammals; *Biological Exploration of New Guinea;* 1 year; $13,500

William K. Emerson, Department of Fishes and Aquatic Biology; *Systematic Studies of Recent Mollusks;* 3 years; $22,000

Willis J. Gertsch; Department of Insects and Spiders; *Systematics and Biology of the California Spider Fauna;* 3 years; $11,700

Frederico Lane, Department of Insects and Spiders; *Systematic Studies of Neotropical Cerambycide (Coleoptera)*; 3 years; $17,300

Wesley E. Lanyon, Department of Birds; *Systematics and Evolution of Tyrant Flycatchers of the Genus Myiarchus;* 1 year; $4,000

Joseph C. Moore, Department of Mammals; *Revision of Indomalayan Sciuridae;* 2 years; $7,400

Norman D. Newell, Department of Geology and Paleontology; *The Living and Fossil Genera of Bivalve Mollusks;* 3 years; $11,600

Frederick H. Rindge, Department of Insects and Spiders; *Revisionary Studies of the Genera of North American Geometriae;* 3 years; $10,300

Albert Schwartz, Department of Amphibians and Reptiles; *Herpetological Survey of Cuba;* 3 years; $9,500

ANTIOCH COLLEGE, Yellow Springs, Ohio; John W. Crenshaw, Department of Biology; *Species Variation in Blood Protein Patterns;* 2 years; $12,700

ARCTIC INSTITUTE OF NORTH AMERICA, New York, N.Y.; Francis Harper; *Biological Investigations in Keewatin and the Ungava Peninsula;* 1 year; $9,700

UNIVERSITY OF ARIZONA, Tucson, Ariz.; Howard K. Gloyd, Department of Zoology; *The Genus Agkistrodon and Related Groups of Crotalid Snakes;* 2 years; $15,600

BEAUDETTE FOUNDATION FOR BIOLOGICAL RESEARCH, Solvan, Calif.; E. Yale Dawson; *The Marine Red Algae of Pacific Mexico;* 2 years; $8,800

BOSTON UNIVERSITY, Boston, Mass.

Arthur G. Humes, Department of Biology; *Parasitic Copepoda of Fishes and Invertebrates;* 2 years; $9,200

Arthur G. Humes, Department of Biology; *Systematics of Copepods From the West Indies;* 1 year; $1,800

BOTANICAL MUSEUM OF HARVARD UNIVERSITY, Cambridge, Mass.; Charles Schweinfurth; *Phytogeographical Study of the Orchidaceae of the Gayana Massif in Northern South America;* 3 years; $5,100

BROWN UNIVERSITY, Providence, R.I.

George L. Church, Department of Botany; *Origin of Species Complexes in Eastern Elymus;* 3 years; $19,600

Walter H. Snell and Esther Dick, Department of Botany; *Boleti of Northeastern North America;* 4 years; $12,800

UNIVERSITY OF BRITISH COLUMBIA, Vancouver, B.C., Canada; Shirley R. Sparling, Department of Biology and Botany; *Life Cycles of Red Algae;* 2 years; $4,000

UNIVERSITY OF BUFFALO, Buffalo, N.Y.; Carl Gans, Department of Biology; *Functional Morphology of Squamate Reptilia;* 3 years; $19,900

CALIFORNIA ACADEMY OF SCIENCES, San Francisco, Calif.; Edward S. Ross, Department of Entomology; *Monographic Studies of the Insect Order Embioptera;* 3 years; $18,000

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

Lincoln Constance, Department of Botany; *Taxonomic and Distributional Studies of South America Umbelliferae;* 3 years; $20,800

Frank E. Peabody, Department of Zoology, Los Angeles; *The Phylogeny and Paleoecology of Carboniferous Reptiles;* 1 year; $3,000

Willis P. Popenoe, Department of Geology; *Upper Cretaceous Molluscan Faunas of California;* 3 years; $14,500

Johannes Proskauer, Department of Botany; *Biosystematic Studies on Anthrocerotales;* 2 years; $9,100

S. A. Sher, Department of Plant Nematology; *The Nematode Subfamily Hoplolaiminae;* 2 years; $5,000

Ray F. Smith, Department of Entomology and Parasitology; *Biosystematics of Diabrotica and Related Genera of Beetles;* 3 years; $16,500

R. A. Stirton and S. P. Welles, Museum of Paleontology; *Vertebrate Fauna of the Moenkopi Formation;* 3 years; $25,000

John M. Tucker, Department of Botany; *Evolution of the Quercus Undulata Complex;* 2 years; $7,300

CAPE HAZE MARINE LABORATORY, Placida, Fla.; Dr. Eugenie Clark, Director; *Syngnathid Fishes of the Red Sea;* 1 year; $1,800

CARNEGIE MUSEUM, Pittsburgh, Pa.; Kenneth C. Parkes; *Investigation of the Natal and Juvenal Plumages of Non-Passerin Birds;* 3 years; $7,500

CATHOLIC UNIVERSITY OF AMERICA, Washington, D.C.; Ross H. Arnett, Jr., Department of Biology; *Ecological Factors Affecting Speciation of Oedemerid Beetles in the Sonoran Desert;* 1 year; $2,000

CHICAGO NATURAL HISTORY MUSEUM, Chicago, Ill.

Robert F. Inger, Department of Zoology; *The Amphibians and Reptiles of Borneo;* 3 years; $7,000

Robert F. Inger, Division of Amphibians and Reptiles; *Systematics and Zoogeography of the Fresh-Water Fishes of North Borneo;* 1 year; $6,800

UNIVERSITY OF CHICAGO, Chicago, Ill.; Everett C. Olson, Department of Geology; *Middle Permian Vertebrate Faunas;* 2 years; $10,000

UNIVERSITY OF CINCINNATI, Cincinnati, Ohio.

Maxine L. Abbott, Department of Biological Sciences; *Study of the Compression Flora of the Upper Freeport (No.7) Coal in Ohio;* 3 years; $20,900

Margaret Fulford, Department of Biological Sciences; *Leafy Hepaticae of Tropical America;* 3 years; $15,000

COLUMBIA UNIVERSITY, New York, N.Y.

J. Laurens Barnard, Department of Geology; *Taxonomy, etc., of Abyssal Marine Amphipods;* 3 years; $9,500

Robert J. Menzies, Lamont Geological Observatory; *Abyssal Isopods of the Atlantic Ocean;* 4 years; $30,000

UNIVERSITY OF CONNECTICUT, Storrs, Conn.; Francis R. Trainor, Marine Research Laboratory; *The Morphology of the Marine Alga Enteromorpha;* 2 years; $3,200

CORNELL UNIVERSITY, Ithaca, N.Y.

Richard P. Korf, Department of Plant Pathology; *Discomycete Flora of Asia;* 5 years; $29,200

Edward C. Raney, Department of Zoology; *Research in North American Ichthyology;* 3 years; $13,700

Charles G. Sibley, Department of Conservation; *A Taxonomic Study of Avian Proteins;* 3 years; $20,000

DUKE UNIVERSITY, Durham, N.C.

Lewis E. Anderson, Department of Botany; *Mosses of the United States and Canada;* 4 years; $41,000

Lewis E. Anderson, Department of Botany; *Renovation of the Grout Reference Slide Collection of Mosses;* 1 year; $3,200

FLORIDA STATE UNIVERSITY, Tallahassee, Fla.

Ruth S. Breen, Department of Botany; *An Illustrated Manual of the Mosses of Florida;* 2 years; $7,100

Alan J. Kohn, Department of Biological Sciences; *Systematics of Indo-West Pacific Marine Mollusks of the Family Conidae;* 3 years; $14,800

Robert B. Short, Department of Biological Sciences; *Taxonomic and Life History Studies on the Dicyemid Mesozoa;* 2 years; $10,400

Norman E. Weisbord, Department of Geology; *Late Cenozoic Invertebrates from Northern Venezuela;* 2 years; $7,000

Ralph W. Yerger, Department of Biological Sciences; *Freshwater Fishes of Florida;* 2 years; $5,000

UNIVERSITY OF FLORIDA, Gainesville, Fla; Coleman J. Goin, Department of Biological Sciences; *Systematics and Evolution of the Amphibia;* 1 year; $2,000

UNIVERSITY OF GEORGIA, Athens, Ga.; Elon E. Byrd, Department of Zoology; *Life History Studies of the Trematode Family Ochetosomatidae;* 3 years; $15,000

HANOVER COLLEGE, Hanover, Ind.; J. Dan Webster, Department of Zoology; *Taxonomic Study of the Grace Warbler and the Olive Warbler in Mexico;* 2 years; $1,500

HARVARD UNIVERSITY HERBARIUM, Cambridge, Mass.; Dr. Irving W. Bailey; *Phylogenetic Trends in the Cactaceae;* 3 years; $23,400

HARVARD UNIVERSITY, Cambridge, Mass.

Leslie A. Garay, Botanical Museum; *Orchid Flora of Colombia and Ecuador;* 4 years; $10,200

Richard A. Howard, Arnold Arboretum; *Vascular Patterns in Petioles of Woody Flowering Plants;* 2 years; $10,800

Reed C. Rollins, Gray Herbarium; *Differentiation and Evolution in Leavenworthia (Cruciferae)*; 3 years; $15,000

Richard E. Schultes, Botanical Museum; *Floristic Studies of the Northwest Amazon;* 4 years; $9,500

UNIVERSITY OF ILLINOIS, Urbana, Ill.

Robert S. Bader, Department of Zoology; *Osteometric Variability of Fossil and Recent Mammalian Populations;* 3 years; $16,500

G. Neville Jones, Department of Botany; *The American Species of Tilia;* 1 year; $5,000

Richard B. Selander, Department of Entomology; *Study of the Blister Beetle Genus Pyrota;* 2 years; $15,400

Lewis J. Stannard, Jr.; *Thysanoptera of Oceanic Islands;* 3 years; $18,600

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.

James E. Canright, Department of Botany; *Comparative Morphology and Relationships of the Annonaceae;* 3 years; $20,000

Charles B. Heiser, Jr., Department of Botany, University of Indiana; *Taxonomic and Cytogenetic Studies of Helianthus;* 3 years; $13,900

Frank N. Young, Department of Zoology; *Taxonomic and Ecological Studies on Aquatic Beetles;* 3 years; $14,000

IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS, Ames, Iowa; Wallace E. LaBerge, Department of Zoology and Entomology; *Bees of the Genus Andrena in North America;* 3 years; $15,000

IOWA STATE COLLEGE, Ames, Iowa; Martin J. Ulmer, Department of Zoology and Entomology; *Trematode and Cestode Parasites of Vertebrates;* 3 years; $15,000

KANSAS STATE TEACHERS COLLEGE, Emporia, Kans.; Gilbert A. Leisman, Department of Biology; *The Pennsylvanian Fossil Flora of Southeastern Kansas;* 2 years; $7,000

UNIVERSITY OF KANSAS, Lawrence, Kans.

Robert E. Beer, Department of Entomology; *Comparative Internal Anatomy of the Acarina;* 3 years; $15,800

George W. Byers, Department of Entomology; *The Genus Nephrotoma in North America;* 3 years; $7,000

Theodore H. Eaton, Jr., Museum of Natural History; *Phylogeny of Paleozoic Reptiles;* 1 year; $10,000

H. B. Hungerford, Department of Entomology; *Comparative Morphology and Taxonomy of the Aquatic and Semi-Aquatic Hemiptera of the World;* 3 years; $35,600

H. B. Hungerford, Department of Entomology; *A Monographic Study of the Micronectidae of the World;* 3 years; $10,100

Raymond C. Jackson, Department of Botany; *Biosystematic Investigation in Haplopappus;* 3 years; $7,800

Robert W. Lichtwardt, Department of Botany; *The Fungal Order Eccrinales;* 2 years; $10,000

Rufus H. Thompson, Department of Botany; *Life History and Cytogenetics of Representative Species Families of Green Algae;* 2 years; $12,600

Robert W. Wilson, Department of Zoology; *Systematics of Paleocene Mammals of the San Juan Basin, New Mexico;* 1 year; $7,400

KENTUCKY RESEARCH FOUNDATION, University Station, Lexington, Ky.; Dale M. Smith, Department of Botany; *Studies of the Polyploid Species of Helianthus;* 3 years; $12,000

LINFIELD RESEARCH INSTITUTE, McMinnville, Oreg.; Kenneth M. Fender; *Revisional Studies in the Lampyroid Beetles;* 2 years; $5,000

LOS ANGELES COUNTY MUSEUM, Los Angeles, Calif.; E. Yale Dawson; *The Marine Red*

*Algae of Pacific Mexico;* 2 years; $10,000

MARINE LABORATORY, UNIVERSITY OF MIAMI, Miami, Fla.; Gilbert L. Voss, The Marine Laboratory, Miami; *Cephalopods of the North Atlantic;* 3 years; $20,000

MARQUETTE UNIVERSITY, Milwaukee, Wis.; Peter Abramoff, Department of Biology; *Toad Populations of the Islands of Lake Michigan;* 1 year; $4,200

UNIVERSITY OF MARYLAND, College Park, Md.; Richard Highton, Department of Zoology; *Systematics of Plethodontid Salamanders;* 2 years; $7,900

UNIVERSITY OF MASSACHUSETTS, Amherst, Mass.; Rudolf M. Schuster, Department of Botany; *Evolution in the Suborder Ptilidiinae;* 4 years; $18,600

MERCER UNIVERSITY, Macon, Ga.; David W. Johnston, Department of Biology; *Biosystematics of American Crows;* 1 year; $2,600

MIAMI UNIVERSITY, Oxford, Ohio; Harvey A. Miller, Department of Botany; *Bryophytes of Pacific Islands;* 3 years; $19,300

UNIVERSITY OF MIAMI, Coral Gables, Fla.

Samuel P. Meyers, The Marine Laboratory; *Systematic Studies of Marine Fungi;* 2 years; $10,000

C. Richard Robins, The Marine Laboratory; *Monograph of the Fish Family Ophidiidae;* 2 years; $9,000

Henry Fredrick Strohecker, Department of Zoology; *Revisionary Synopsis of the Endomychidae;* 5 years; $17,600

MICHIGAN STATE UNIVERSITY, East Lansing, Mich.; John H. Beaman, Department of Botany and Plant Pathology; *Alpine Flora of Mexico and Guatemala;* 3 years; $23,000

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.

Reeve M. Bailey, Museum of Zoology; *Phylogeny of Spiny-Rayed Fishes (Perocoidea);* 2 years; $18,000

Emmet T. Hooper, Museum of Zoology; *Systematic Studies of the Rodent Family Cricetidae;* 3 years; $14,700

William R. Murchie, Flint College, Flint; *The Oligochaete Genus Diplocardia;* 3 years; $7,900

Alexander H. Smith, Department of Botany; *A Manual of the Fleshy Basidiomycetes;* 3 years; $20,000

Frederick K. Sparrow, Department of Botany: *The Fungus Genus Physoderma (Phycomycetes);* 3 years; $18,000

Erwin C. Stumm, Museum of Paleontology; *Studies of Paleozoic Invertebrates;* 1 year; $5,000

Henry K. Townes, Jr.; Museum of Zoology; *The Ichneumon Flies of the Old World;* 2 years; $5,000

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.

Ernst C. Abbe, Department of Botany; *Relationships of Plant Families Composing the Amentifera;* 2 years; $12,000

Edwin F. Cook, Department of Entomology and Economic Zoology; *A Systematic Study of the Genus Malacosoma;* 3 years; $29,900

Alexander A. Granovsky, Department of Entomology and Economic Zoology; *Research on Aphid Fauna;* 2 years; $10,000

John W. Hall, Department of Botany; *Pollen and Spore Analysis of the Dakota Cretaceous Formation;* 2 years; $9,900

Thomas Morley, Department of Botany; *Systematic Studies of the Melastomataceae;* 1 year; $5,900

Richard E. Norris, Department of Botany; *Morphological and Cytological Studies of Red Algae;* 3 years; $15,000

Gerald B. Ownbey, Department of Botany; *Taxonomic Cytotaxonomic and Evolutionary Studies in the Genus Cirsium;* 3 years; $20,000

UNIVERSITY OF MISSISSIPPI, University, Miss.; Frank M. Hull, Department of Biology; *Taxonomic and Phylogenetic Studies of Diptera;* 2 years; $15,400

MISSOURI BOTANICAL GARDEN, St. Louis, Mo.

Julian A. Steyermark, Research Department; *Flora of Missouri;* 1 year; $7,300

Robert E. Woodson, Jr.; *Flora of Panama;* 3 years; $36,800

MONTANA STATE COLLEGE, Bozeman, Mont.; Richard C. Froeschner, Department of Zoology and Entomology; *Taxonomic Revision of the Cydnidae for the World;* 3 years; $13,200

UNIVERSITY OF NEBRASKA, Lincoln, Nebr.; Harold W. Manter, Department of Zoology; *Digenetic Trematodes of Fishes of Hawaii;* 1 year; $8,000

NEW MEXICO INSTITUTE OF MINING AND TECHNOLOGY, Campus Station, Socorro, N. Mex.; Christina Lochman-Balk, Department of Geology; *The Faunas of the Deadwood Formation (Upper Cambrian) of the Black Hills;* 2 years; $8,800

UNIVERSITY OF NEW HAMPSHIRE, Durham, N.H.; Wilbur L. Bullock, Department of Zoology; *Acanthocephalan Parasites of Northern New England;* 4 years; $15,000

COLLEGE OF NEW ROCHELLE, New Rochelle, N.Y.; Mary D. Rogick, Department of Biology; *Bryozoa of the Antarctic;* 3 years; $4,400

NEW YORK BOTANICAL GARDEN, New York, N.Y.

Herman F. Becker; *The Oligocene Flora of the Ruby Basin of Montana;* 2 years; $19,800

Arthur Cronquist; *Vascular Plants of the Intermountain West;* 3 years; $19,000

Otto Degener, Collaborator in Hawaiian Botany; *Botanical Exploration of the Hawaiian Islands;* 3 years; $15,700

B. Maguire and J. J. Wurdack; *A Plant Survey of the Guiana Region of South America;* 5 years; $145,400

Clark T. Rogerson; *Monographic Studies in the Hypocreales (Ascomycetes);* 3 years; $20,100

Dr. William C. Steere, Director; *Arctic American Mosses;* 5 years; $29,900

NEW YORK ZOOLOGICAL SOCIETY, New York, N.Y; Jocelyn Crane, Department of Tropical Research; *The Ethology of Heliconiid Butterflies;* 3 years; $12,000

NORTH CAROLINA STATE COLLEGE, Raleigh, N.C.; Clyde F. Smith, Department of Entomology; *Eriosomatini (Aphidae: Homoptera);* 3 years; $25,000

UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N.C.; C. Ritchie Bell, Department of Botany; *Cytological Studies of North American Umbelliferae;* 1 year; $3,500

OHIO ACADEMY OF SCIENCE, Ohio State University, Columbus, Ohio; E. Lucy Braun, Department of Botany; *Vascular Flora of Ohio;* 4 years; $23,900

UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE, Norman, Okla.; J. Teague Self, Department of Zoology, The University of Oklahoma; *Biochemical Studies of Cestodes;* 1 year; $3,200

POMONA COLLEGE, Claremont, Calif.; Lyman Benson, Department of Botany; *Taxonomy and Distribution of the Cacti of the United States and Canada;* 3 years; $14,800

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Hui-Lin Li, Morris Arboretum; *Trees and Shrubs of Formosa;* 3 years; $13,800

PFEIFFER COLLEGE, Misenheimer, N.C.; Charles W. Foreman, Department of Biology; *Comparative Study of the Electromigration Properties of the Hemoglobins of Rodents and Certain Other Mammals;* 1 year; $2,000

PURDUE RESEARCH FOUNDATION, Lafayette, Ind.

Raymond M. Cable, Department of Biological Sciences; *Marine Digenetic Trematodes of Puerto Rico;* 1 year; $6,200

George B. Cummins, Department of Botany and Plant Pathology; *The Spermagonial Morphology of the Rust Fungi;* 3 years; $8,600

Grady L. Webster, Department of Biological Sciences; *Biosystematic Study of the West Indian Species of Phyllanthus;* 3 years; $13,000

QUEENS COLLEGE, Flushing, N.Y.; Max K. Hecht, Department of Biology; *Review of Cretaceous and Early Tertiary Frogs, Salamanders, Lizards and Snakes;* 3 years; $11,800

RANCHO SANTA ANA BOTANIC GARDEN, Claremont, Calif.; Lee W. Lenz; *Cytological and Taxonomic Investigation of Certain Apogon Irises;* 3 years; $7,100

ROBERT COLLEGE, Istanbul, Turkey; Dale J. Osborn, Biology Department; *Taxonomy and Distribution of Turkish Mammals;* 3 years; $5,200

UNIVERSITY OF ROCHESTER, Rochester, N.Y.; David H. Kistner, Department of Biology; *Systematic Studies of Stenaesthetini (Coleoptera);* 1 year; $3,200

RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK, Albany, N.Y: Josiah L. Lowe, College of Forestry, Syracuse, N.Y.; *Polyporaceae of North America;* 2 years; $12,000

RUTGERS, THE STATE UNIVERSITY, New Brunswick, N.J.; Alan A. Boyden, Serological Museum; *Serological Studies of the Classification of Vertebrata;* 1 year; $9,700

SMITHSONIAN INSTITUTION, Washington, D.C.

J. F. Gates Clarke, Department of Zoology; *Systematic Studies of South American Microlepidoptera;* 3 years; $22,900

Jose Cuatrecasas, Department of Botany, U.S. National Museum; *Taxonomic Study of the Phanerogams of Colombia;* 3 years; $35,000

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.; Jay M. Savage, Department of Biology; *Variation and Evolution in the Genus Bufo;* 2 years; $10,000

SOUTHERN ILLINOIS UNIVERSITY, Carbondale, Ill.; John Charles Downey, Department of Zoology; *Plebejus Icarioides;* 3 years; $18,300

SOUTHERN METHODIST UNIVERSITY, Dallas, Tex.; David L. Clark, Department of Geology; *Cretaceous Cephalopods of Texas;* 2 years; $12,000

STANFORD UNIVERSITY, Stanford, Calif.

Albert W. C. T. Herre, Curator of Ichthyology; *Monograph of the Genus Usnea in North America;* 1 year; $5,000

Victor C. Twitty, Department of Biological Sciences; *Biology and Genetic Relationships of the Californian Species of Taricha;* 5 years; $58,000

Ira L. Wiggins, Natural History Museum; *Research in Systematic Botany;* 3 years; $43,000

STATE COLLEGE OF WASHINGTON, Pullman, Wash.

George E. Hudson, Department of Zoology; *The Phylogeny of Gallinaceous Birds;* 2 years; $4,300

Marion Ownbey, Department of Botany; *Nature of Species with Special Reference to Tragopogon;* 3 years; $19,500

STATE UNIVERSITY OF IOWA, Iowa City, Iowa

Constantine J. Alexopoulos, Department of Botany; *Systematic Studies of the Myxomycetes;* 3 years; $13,100

Robert F. Thorne, Department of Botany; *Phylogeny of the Angiosperms;* 1 year; $2,900

TEXAS AGRICULTURAL EXPERIMENT STATION, College Station, Tex.; Frank W. Gould, Department of Range and Forestry; *Cytotaxonomic Studies of the Grass Bouteloua Curtipendula;* 3 years; $15,000

TEXAS A. & M. RESEARCH FOUNDATION, College Station, Tex.; Harry D. Thiers, Department of Biology, Agricultural and Mechanical College of Texas; *The Boletaceae of the Gulf Coastal Plain;* 3 years; $10,000

UNIVERSITY OF TEXAS, Austin, Tex.

Harold C. Bold, Department of Botany; *Algae of Texas Soils;* 3 years; $20,000

B. L. Turner, Department of Botany; *Cytotaxonomic Studies in the Tribe Helenieae;* 3 years; $22,200

TULANE UNIVERSITY, New Orleans, La.; Royal D. Suttkus, Department of Zoology; *Revision of the Garfishes;* 3 years; $20,000

UNIVERSITY OF TEXAS, Austin, Tex.; Robert K. Selander, Department of Zoology; *Comparative Study of Behavior in the Quiscaline Icterids;* 3 years; $10,000

URSINUS COLLEGE, Collegeville, Pa.; Robert C. Stein, Department of Biology; *A Behavioral and Morphological Study of Empidonax;* 1 year; $2,000

VANDERBILT UNIVERSITY, Nashville, Tenn.; Robert B. Channell, Department of Biology; *Taxonomic Revision of the "Eu-Rhynchospora" Portion of the Genus Rhynchospora;* 3 years; $18,000

WASHINGTON UNIVERSITY, St. Louis, Mo.; Robert E. Woodson, Jr.; Henry Shaw School of Botany; *Analysis of Peripheral Populations of Ascelpias Tuberosa Terminalis;* 1 year; $2,300

UNIVERSITY OF WASHINGTON, Seattle, Wash.; C. Leo Hitchcock, Department of Botany; *Vascular Plants of the Pacific Northwest;* 3 years; $6,900

WAYNE STATE UNIVERSITY, Detroit, Mich.

David R. Cook, Department of Biology; *Taxonomy Distribution and Ecology of the Microarthropoda;* 3 years; $15,000

William E. Duellman, Department of Biology; *The Hylid Frogs of Middle America;* 3 years; $10,800

COLLEGE OF WILLIAM AND MARY, Williamsburg, Va.; *Summer Institutes for High School Teachers of Science and Mathematics;* 6 weeks; $53,000

UNIVERSITY OF WISCONSIN, Milwaukee, Wis.

John W. Baxter, Department of Botany; *Rust Fungi of the Southwestern United States and Northern Mexico;* 3 years; $4,300

Kenneth B. Raper, Departments of Bacteriology and Botany; *A Comparative Study of the Aspergilli;* 3 years; $25,000

John W. Thomson, Department of Botany; *Manual of American Arctic Lichens;* 2 years; $14,000

YALE UNIVERSITY, New Haven, Conn.

Henry B. Bigelow, Professor of Zoology and Giles W. Mead, U.S. Fish and Wildlife Service; *Soft-Rayed Bony Fishes of the Western North Atlantic;* 3 years; $29,900

Gerd Heinrich, Peabody Museum, *Zoogeographic and Speciation Study of the Ichneumoninae of Angola;* 2 years; $11,500

Philip S. Humphrey, Peabody Museum of Natural History; *A Monographic Study of the Trachea and Syrnix of Ducks;* 2 years; $5,000

John R. Reeder, Department of Botany; *Phylogeny and Classification of the Gramineae;* 3 years; $14,900

S. Dillon Ripley, Peabody Museum of Natural History; *Studies in Systematic Ornithology;* 1 year; $19,900

William L. Stern, School of Forestry; *Anatomy and Taxonomy of Tropical Woody Plants;* 3 years; $20,000

ZOOLOGICAL SOCIETY OF PHILADELPHIA, Philadelphia, Pa.; Roger Conant; *Distribution and Speciation in the Water Snakes;* 3 years; $10,300

FACILITIES

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, Philadelphia, Pa.; H. Radclyffe Roberts; *Rehabilitation of Facilities for Systematic Biology;* 1 year; $60,000

BERNICE P. BISHOP MUSEUM, Honolulu, Hawaii; Alexander Spoehr; *Rehabilitation of Facilities for Systematic Biology at Bishop Museum;* 3 years; $171,600

UNIVERSITY OF BUFFALO, Buffalo, N.Y.; Dr. Clifford C. Furnas, Chancellor; *Research Reactor Facility;* 2 years; $425,000

CALIFORNIA ACADEMY OF SCIENCES, San Francisco, Calif.; Robert C. Miller; *Rehabilitation of Entomological Collections;* 3 years; $90,000

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.

Robert L. Sinchelmer, Division of Biology; *Nucleic Acid Studies;* 1 year; $27,000

James Bonner, Earhart Plant Research Laboratory; *Renovation and General Support of the Earhart Plant Research Laboratory;* 3 years; $155,000

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

Sherburne F. Cook, Department of Physiology, University of California Advisory Committee on High Altitude Research and Nello Pace, White Mountain Research Station; *Basic Research Facilities at the White Mountain Research Station;* 28 months; $52,000

Stanislavs Vasilevskis, Lick Observatory, Mount Hamilton; *Equipment Surveying and Automatic Measurement of Astrographic Plates;* 3 years; $100,000

UNIVERSITY OF CHICAGO, Chicago, Ill.

Howard F. Hunt, Department of Psychology, and H. B. Steinbach, Department of Zoology; *Construction of a Laboratory for Study of Animal Behavior;* 2 years; $80,000

Charles E. Olmsted, Department of Botany; *Controlled Environment Facilities for Plant Research;* 2 years; $150,000

COLORADO STATE UNIVERSITY RESEARCH FOUNDATION, Fort Collins, Colo.; Frank B. Salisbury, Department of Botany and Plant Pathology, The Colorado State University; *Controlled Environment Unit for Study of Photoperiodism and Related Problems;* 2 years; $17,200

CORNELL UNIVERSITY, Ithaca, N.Y.

Trevor R. Cuykendall and David D. Clark, Department of Engineering Physics; *Establishment of a Center for Nuclear Technology;* 2 years; $475,000

J. Barkley Rosser, Computing Center; *Purchase of Computing Machine;* 1 year; $250,000

DUKE UNIVERSITY, Durham, N.C.

C. G. Bookhout, The Marine Laboratory, Beaufort; *Expansion of Facilities for Research in Marine Biology;* 2 years; $78,500

Knut Schmidt-Nielsen, Department of Zoology; *Installation of Controlled Climate Facilities for Basic Physiological Research;* 2 years; $35,300

IOWA STATE COLLEGE, Ames, Iowa; Robert M. Stewart, Jr., Department of Physics; *Construction of Digital Computer;* 2 years; $100,000

LONG ISLAND BIOLOGICAL ASSOCIATION, Cold Spring Harbor, N.Y.; Miloslav Demerec, *Rehabilitation, Renovation and Enlargement of the Facilities of the Long Island Biological Laboratory;* 4 years; $135,000

MARINE BIOLOGICAL LABORATORY, Woods Hole, Mass.; Philip B. Armstrong; *General Support for the Marine Biological Laboratory;* 3 years; $105,000

UNIVERSITY OF MIAMI, Coral Gables, Fla; F. G. Walton Smith, The Marine Laboratory, Miami; *Construction of Laboratory Buildings for the Marine Biological Laboratory;* 1 year; $162,500

UNIVERSITY OF MISSOURI, Columbia, Mo.; Robert E. Steward, Department of Agricultural Engineering; *Construction of an Animal Calorimeter for Determination of Heat Losses by Radiation, Conduction, Convection, and Evaporation;* 2 years; $27,700

UNIVERSITY OF OKLAHOMA, Norman, Okla.; Gerald Tuma, Department of Electrical Engineering; *Construction of Digital Computer;* 18 months; $150,000

ROSCOE B. JACKSON MEMORIAL LABORATORY, Bar Harbor, Maine; Earl L. Green, Director of the Laboratory; *Construct and Equip an Addition to the Main Laboratory Building;* 1 year; $200,000

TEXAS AGRICULTURAL AND MECHANICAL COLLEGE SYSTEM, College Station, Tex.; Aaron Rose, Texas Engineering Experiment Station; *Nuclear Science Center of the Texas Agricultural and Mechanical College System;* 2 years; $350,000

UNIVERSITY OF WISCONSIN, Madison, Wis.; Folke Skoog, Biotron Committee; *Construction of a Controlled Environment Laboratory for Animal and Plant Research;* 3 years; $1,500,000

YALE UNIVERSITY, New Haven, Conn.; Norman S. Buck; *Establishment of a Computing Center;* 2 years; $500,000

GENERAL

UNIVERSITY OF ALABAMA, University, Ala.; B. V. Branscomb, Assistant Dean, School of Medicine, Medical Center; *Short Term Research by Medical Students;* 3 years; $4,140

AMERICAN PHYSIOLOGICAL SOCIETY, Washington, D.C.; Louis N. Kantz; *Program of Summer Research for Teachers of College Physiology;* 2 years; $74,500

BOSTON UNIVERSITY, Boston, Mass.; F. M. Siney, School of Medicine; *Short Term Research by Medical Students;* 3 years; $8,280

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.

E. B. Lewis, Division of Biology; *X-Ray Studies in Genetics, Immunology, Biophysics, Virology;* 1 year; $18,000

F. W. Went, Division of Biology; *A Mobile Research Laboratory for Desert Ecology;* 1 year; $24,000

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

John Field, School of Medicine, Los Angeles; *Short Term Research by Medical Students;* 3 years; $12,420

J. B. deC. M. Saunders, School of Medicine, San Francisco; *Short Term Research by Medical Students;* 3 years; $12,420

Paul K. Stumpf, Department of Agricultural Biochemistry, Davis; *Equipment for Investigations in Intermediary Metabolism and the Mechanisms of Enzyme Actions;* 2 years; $21,500

UNIVERSITY OF CINCINNATI, Cincinnati, Ohio: S. A. Trufant, College of Medicine; *Short Term Research by Medical Students;* 3 years; $16,560

UNIVERSITY OF COLORADO, Boulder, Colo.

R. H. Fitz, School of Medicine, Denver; *Short Term Research by Medical Students;* 3 years; $16,560

R. Thompson, Department of Microbiology; *Summer Course in the Principles and Techniques of Tissue Culture;* 3 years; $29,400

COLUMBIA UNIVERSITY, New York, N.Y.; W. J. Eckert, Director, Watson Scientific Computing Laboratory; *Research Requiring Computers;* 3 years; $145,000

CORNELL UNIVERSITY, Ithaca, N.Y.; Douglas S. Robson, Department of Plant Breeding, New York State College of Agriculture and Agricultural Experiment Station; *Cumulant Component Analysis;* 3 years; $22,500

UNIVERSITY OF DELAWARE, Newark, Del.; Robert F. Jackson, Computing Center; *Computing Research;* 3 years; $30,000

DUKE UNIVERSITY, Durham, N.C.; Thomas M. Gallie, Jr., John J. Gergen, Computer Laboratory; *Research Requiring Computers;* 2 years; $50,000

GEORGETOWN UNIVERSITY, Washington, D.C.; W. C. Hess, School of Medicine; *Short Term Research by Medical Students;* 3 years; $4,140

GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta, Ga.

William F. Atchison, Rich Electronic Computer Center; *Support of the Rich Electronic Computer Center and Basic Research Requiring Digital Computation;* 3 years; $150,000

P. Weber; *Support of a Nuclear Research Reactor Facility;* 2 years; $750,000

HARVARD UNIVERSITY, Cambridge, Mass.; F. M. Carpenter, Department of Biology; *Supplemental Funds for Operation of Electron Microscope Facility;* 1 year; $2,900

IOWA STATE COLLEGE, Ames, Iowa; Richard S. Bear; *A Recording Spectrophotometer;* 1 year; $17,000

JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA, Philadelphia, Pa.; W. A. Sodeman, Dean of the Medical College; *Short Term Research by Medical Students;* 3 years; $8,280

KANSAS STATE COLLEGE OF AGRICULTURE AND APPLIED SCIENCE, Manhattan, Kans.; S. Thomas Parker, Computing Center; *Establishment of a Computing Center;* 2 years; $24,000

UNIVERSITY OF LOUISVILLE, Louisville, Ky.; E. K. Hall, Chairman, Research Committee, School of Medicine; *Short Term Research by Medical Students;* 3 years; $8,280

MARQUETTE UNIVERSITY, Milwaukee, Wis.; J. S. Hirshboeck, Dean, School of Medicine; *Short Term Research by Medical Students;* 3 years; $4,140

UNIVERSITY OF MARYLAND, College Park, Md.; W. S. Stone, Dean, School of Medicine, Baltimore; *Short Term Research by Medical Students;* 3 years; $10,350

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; P. M. Morse, Computation Center; *Methods for Use of High-Speed Digital Computers;* 3 years; $167,325

MAYO ASSOCIATION, Rochester, Minn.; J. B. Berkson, Statistics Section; *Estimation Problems Bearing on Biological Problems;* 3 years; $35,900

UNIVERSITY OF MIAMI, Coral Gables, Fla.; J. C. Finerty, School of Medicine; *Short Term Research by Medical Students;* 3 years; $8,280

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; W. H. Marshall, Lake Itasca Forestry and Biological Station; *Summer Research at the Lake Itasca Forestry and Biological Station;* 2 years; $23,700

UNIVERSITY OF MISSISSIPPI, University, Miss.; D. S. Pankratz, Dean, School of Medicine, Jackson; *Short Term Research by Medical Students;* 3 years; $10,350

NEW YORK UNIVERSITY, New York, N.Y.; Alan W. Bernheimer, Department of Microbiology, Bellevue Medical Center; *Research in Biochemical Genetics, Metabolism, Immunity and Hypersensitivity;* 1 year; $22,000

UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N.C.

W. R. Berryhill, School of Medicine; *Short Term Research by Medical Students;* 3 years; $16,560

William M. Whyburn, Vice President for Graduate Studies and Research; *Numerical Analysis Center;* 1 year; $500,000

UNIVERSITY OF NORTH DAKOTA, Grand Forks, N. Dak.; T. H. Harwood, Dean, School of Medicine; *Short Term Research by Medical Students;* 3 years; $6,210

UNIVERSITY OF OKLAHOMA, Norman, Okla.; Carl D. Riggs, University of Oklahoma Biological Station; *Summer Research at the University of Oklahoma Biological Station;* 3 years; $15,000

UNIVERSITY OF OREGON, Eugene, Oreg.; D. W. E. Baird, University of Oregon Medical School, Portland; *Short Term Research by Medical Students;* 3 years; $16,560

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; David R. Goddard, Director, Division of Biology; *Equipment for Research in Plant Physiology;* 1 year; $21,000

UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa.; F. S. Cheever, Dean, School of Medicine; *Short Term Research by Medical Students;* 3 years; $12,420

UNIVERSITY OF PUERTO RICO, Rio Piedras, P.R.; E. Harold Hinman, Dean, School of Medicine, San Juan; *Short Term Research by Medical Students;* 3 years; $10,350

RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK, Albany, N.Y.; R. A. Moore, College of Medicine; Downstate

Medical Center, Brooklyn; *Short Term Research by Medical Students;* 3 years; $16,560

RICE INSTITUTE, Houston, Tex.; Zevi W. Salsburg and Jim Douglas, Jr., Departments of Chemistry and of Mathematics; *Development of Standard Programs for the Rice Institute Digital Computer;* 2 years; $28,200

SAINT LOUIS UNIVERSITY, St. Louis, Mo.

R. Walter Schlesinger, Department of Microbiology; *Research Equipment for Investigations on Biochemical Mechanisms of Growth and Multiplication of Viruses and Bacteria;* 1 year; $28,850

D. Smith, Assistant Dean, School of Medicine; *Short Term Research by Medical Students;* 3 years; $8,280

SETON HALL UNIVERSITY, South Orange, N.J.; C. L. Brown, Seton Hall College of Medicine and Dentistry, Jersey City; *Short Term Research by Medical Students;* 3 years; $10,350

STANFORD UNIVERSITY, Stanford, Calif.; L. M. Stowe, Associate Dean, School of Medicine, San Francisco; *Short Term Research by Medical Students;* 3 years; $12,420

TEMPLE UNIVERSITY, Philadelphia, Pa.; R. M. Bucker, Associate Dean, School of Medicine; *Short Term Research by Medical Students;* 3 years; $12,420

UNIVERSITY OF TEXAS, Austin, Tex.; Robert W. Lacky, Southwestern Medical School, Dallas; *Short Term Research by Medical Students;* 3 years; $12,420

TUFTS UNIVERSITY, Medford, Mass.; J. M. Hayman, School of Medicine; *Short Term Research by Medical Students;* 3 years; $12,420

TULANE UNIVERSITY OF LOUISIANA, New Orleans, La.; James W. Sweeney, Computting Laboratory; *Support of a Computing Laboratory;* 3 years; $120,000

UNION COLLEGE AND UNIVERSITY, Schenectady, N.Y.; H. C Wiggers, Albany Medical College; *Short Term Research by Medical Students;* 3 years; $8,280

UNIVERSITY OF VERMONT AND STATE AGRICULTURAL COLLEGE, Burlington, Vt.; G. A. Wolf, Jr., College of Medicine; *Short Term Research by Medical Students;* 3 years; $8,280

UNIVERSITY OF VIRGINIA, Charlottesville, Va.

T. H. Hunter, Dean, School of Medicine; *Short Term Research by Medical Students,* 3 years; $12,420

Horton H. Hobbs, Director, Mountain Lake Biological Station; *Support of Research at the Mountain Lake Biological Station;* 3 years; $18,000

WASHINGTON UNIVERSITY, St. Louis, Mo.; Edward S. Dempsey, Medical School; *Short Term Research by Medical Students;* 3 years; $20,700

UNIVERSITY OF WASHINGTON, Seattle, Wash.

R. C. Snyder and W. T. Edmondson, Department of Zoology; *Graduate Student Research at the Friday Harbor Laboratories;* 3 years; $41,400

R. J. Blandau, Assistant Dean, School of Medicine; *Short Term Research by Medical Students;* 3 years; $24,840

WAYNE STATE UNIVERSITY, Detroit, Mich.; M. Levitt, Assistant Dean, College of Medicine; *Short Term Research by Medical Students;* 3 years; $8,280

WESTERN RESERVE UNIVERSITY, Cleveland, Ohio; J. L. Caughey, Jr., School of Medicine; *Short Term Research by Medical Students;* 3 years; $16,560

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA, Philadelphia, Pa.; Marion Fay, Dean; *Short Term Research by Medical Students;* 3 years; $8,280

UNIVERSITY OF WYOMING, Laramie, Wyo.; Edward C. Bryant, Department of Statistics; *Purchase of Electronic Digital Computer and a Flexowriter;* 1 year; $33,200

## CONTINUING ANTARCTIC RESEARCH

*Aurora and Airglow*

U. S. WEATHER BUREAU, Washington, D.C.; F. W. Reichelderfer; *Conduct of Antarctic Field Operations of the Continuing U.S. Antarctic Research Program;* 2 years; $62,100

*Aurora and Airglow*

ARCTIC INSTITUTE OF NORTH AMERICA, New York, N.Y.

Walter A. Wood; *Conduct of the Aurora and Airglow Program of the Continuing U.S. Antarctic Research Program;* 2 years; $85,500

Walter A. Wood; *Conduct of the Aurora and Airglow Program of the Continuing U.S. Antarctic Research Program;* 18 months; $25,037

Walter A. Wood; *Conduct of an Aurora and Airglow Research Program at Ellsworth Station—1960;* 2 years; $34,500

Walter A. Wood; *Program in Antarctica in Aurora and Airglow Research—1960;* 2 years; $141,680

L. G. HANSCOMB AIR FORCE BASE, Bedford, Mass.; *Conduct of a Program in Antarctic Aurora and Airglow Research*—1960; 1 year; $18,320

*Biology and Medicine*

ARCTIC INSTITUTE OF NORTH AMERICA, New York, N.Y.; Elmer G. Worthley, Sr.; *Conduct of Program of Microflora Studies—1959 Program in the Continuing U.S. Antarctic Research Program;* 2 months; $9,000

DUKE UNIVERSITY, Durham, N.C.; Knut Schmidt-Nielsen; *The Salt and Water Metabolism of Adelie Penguins During the Nesting and Breeding Season;* 1 year; $8,826

GEORGE WASHINGTON UNIVERSITY, Washington, D.C.; Thelma Hunt, Department of Psychology; *Analysis of Selection and Performance Data Obtained From IGY Antarctic Scientific Personnel in the Continuing U.S. Antarctic Research Program;* 1 year; $12,075

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; W. J. L. Sladen and C. Eklund; *Antarctic Bird-Banding and Seal-Marking Program in the Continuing U.S. Antarctic Research Program;* 1 year; $4,600

STANFORD UNIVERSITY, Stanford, Calif.

D. E. Wohlschlag; *Continuation of Present Mc Murdo Sound Marine Ecological Studies in 1959–60;* 1 year; $24,143

D. E. Wohlschlag; *Program of Antarctic Marine Biology in 1959 in the Continuing U.S. Antarctic Research Program;* 1 year; $31,000

UNIVERSITY OF TENNESSEE, Knoxville, Tenn.

Madison E. Pryor; *A Survey of Land Invertebrates of the Antarctic in the Continuing U.S. Antarctic Research Program;* 1 year; $12,525

Madison E. Pryor; *Support for the Analysis of Data Collected on the Survey of Land Invertebrates of the Antarctic;* 1 year; $3,105

UNIVERSITY OF WISCONSIN, Madison, Wis.; Richard L. Penney; *Study of the Sexual and Parental Behavior of the Adelie Penguin and Orientation Mechanism in the Continuing U.S. Antarctic Research Program;* 1 year; $13,743

*Cosmic Rays*

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; W. B. Fretter and R. R. Brown; *Continued Support of Cosmic Ray Investigations in the Antarctic;* 3 years; $17,574

FRANKLIN INSTITUTE, Philadelphia, Pa.; M. A. Pomerantz; *Investigations of Time Variations of the Primary Cosmic Radiation at a Geomagnetic Pole;* 1 year; $36,600

*Executive Direction*

NATIONAL ACADEMY OF SCIENCES NATIONAL RESEARCH COUNCIL, Washington, D.C.; G. D. Meid; *Committee on Polar Research of the Continuing U.S. Antarctic Research Program;* 1 year; $23,590

*Glaciology*

AMERICAN GEOGRAPHICAL SOCIETY, New York, N.Y.; Dr. Charles B. Hitchcock, Director; *Revision of Antarctic Map and Preparation of Prospectus for an Antarctic Atlas;* 1 year; $9,000

ARCTIC INSTITUTE OF NORTH AMERICA, New York, N.Y.

Walter A. Wood; *Conduct of Program in Traverse Seismology of the Continuing U.S. Antarctic Research Program;* 2 years; $51,000

Walter A. Wood; *Conduct of Station and Traverse Glaciology of the Continuing U.S. Antarctic Research Program;* 2 years; $33,400

U.S. GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR, Washington, D.C.

John Reed; *Collection, Indexing and Evaluation of Cartographic and Gravity-Traverse Data Relative to Antarctica in the Continuing U.S. Antarctic Research Program;* 2 years; $25,000

John Reed; *Determination of Astronomic Positions During 1959 in the Continuing U.S. Antarctic Program;* 2 years; $23,000

John Reed; *Geological Investigations in Antarctica in the Continuing U.S. Antarctic Research Program;* 2 years; $60,000

OHIO STATE UNIVERSITY RESEARCH FOUNDATION, Columbus, Ohio; R. P. Goldthwait; *Reduction and Analysis of Glaciology Data From Antarctic, 1959–60;* 18 months; $41,872

TUFTS UNIVERSITY, Medford, Mass.; Robert L. Nichols; *Projects in Geomorphology, Glacial Geology, Glaciology, and Bedrock Geology in Selected Portions of the McMurdo Sound Area;* 1 year; $29,350

U.S. ARMY, SNOW, ICE AND PERMAFROST RESEARCH ESTABLISHMENT, Wilmette, Ill.

*Conduct of Thermal Deep Coring Development Program—1959 Program;* 1 year; $80,000

*Calendar Year 1960 Phase of the Deep Thermal Core Drilling in Ice Project;* 1 year; $120,000

UNIVERSITY OF WISCONSIN, Madison, Wis.; *Reconnaissance Trail and Airborne Measurements in Glaciology and Related Studies in Antarctica—1960;* 2 years; $566,985

*Geodesy and Cartography*

AMERICAN GEOGRAPHICAL SOCIETY, New York, N.Y.

W. A. Briesemeister; *Revision of Antarctic Map;* 1 year; $5,434

O. M. Miller; *Planning for an Antarctic Atlas;* 1 year; $11,159

U.S. GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR, Washington, D.C.; *Topographic Mapping of Antarctica;* 1 year; $200,000

*Geology*

U.S. GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR, Washington, D.C.; *Geological Mapping and Investigation in Antarctica;* 1 year; $100,000

UNIVERSITY OF MINNESOTA, Minneapolis, Minn., J. C. Craddock; *Bedrock Geology and Geomorphology of Some Nunataks in the Trans-Antarctic Trough;* 1 year; $18,791

*Geomagnetism*

U.S. COAST AND GEODETIC SURVEY, Washington, D.C.

H. Arnold Karo; *Conduct of Geomagnetism Program of the Continuing U.S. Antarctic Research Program;* 2 years; $38,000

*1960 Antarctic Magnetic Observatories;* 1 year; $69,000

*Ionospheric Physics*

NATIONAL BUREAU OF STANDARDS, Washington, D.C.

A. V. Astin; *Conduct of Ionospheric Physics Program of the Continuing U.S. Antarctic Research Program;* 2 years; $52,163

F. W. Brown; *Conduct of a Program in Ionospheric Physics—1960;* 1 year; $198,000

*Meteorology*

U.S. COAST AND GEODETIC SURVEY, Washington, D.C.; H. Arnold Karo; *Seismology Observations at Byrd and South Pole Stations in the Continuing U.S. Antarctic Research Program;* 2 years; $5,000

U.S. WEATHER BUREAU, Washington, D.C.

F. W. Reichelderfer; *Conduct of Meteorology Program of the Continuing U.S. Antarctic Research Program;* 2 years; $218,500

*Antarctic Meteorological Research Program—1960;* 1 year; $1,047,863

*U.S. Participation in International Southern Hemisphere Analysis Center—1959;* 2 years; $36,985

UNIVERSITY OF WISCONSIN, Madison, Wis.; G. T. Trewartha; *A Climatology of the Antarctic;* 2 years; $20,023

*Related Scientific Support*

ARCTIC INSTITUTE OF NORTH AMERICA, New York, N.Y.; Robert C. Faylor; *Related Scientific Support of U.S. Antarctic Research Program;* 1 year; $129,375

L. G. HANSCOMB AIR FORCE BASE, Bedford, Mass.; A. P. Crary; *For Travel and Per Diem;* 1 year; $3,000

U.S. WEATHER BUREAU, Washington, D.C.; *Conduct of Antarctic Field Operations of the Continuing U.S. Antarctic Research Program;* 1 year; $81,693

*Station Seismology*

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.

Hugo Benioff; *Conduct of Strain Stations in South America During the 1959 Antarctic Research Program;* 1 year; $7,000

Hugo Benioff; *Operation, Upkeep, Replacement, Transportation and Additional Equipment for the South American Earth's Strain Stations at Nana, Peru, and Santiago, Chile for the Year 1960;* 1 year; $26,097

Frank Press; *Exchange Scientists with U.S.S.R. Antarctic Expedition;* 1 year; $20,000

Frank Press; *Operation of Wilkes Seismograph Station and Interpretation of Records for Year 1960;* 1 year; $8,625

Frank Press; *Seismology Observations at Wilkes Station in the Continuing U.S. Antarctic Research Program;* 2 years; $2,500

COLUMBIA UNIVERSITY, New York, N.Y.

Maurice Ewing; *Seismology Observations at Hallett Station in the Continuing U.S. Antarctic Research Program;* 2 years; $2,500

J. Oliver; *Antarctic Station Seismology (Hallett Station) Program—1960;* 1 year; $6,037

U.S. COAST AND GEODETIC SURVEY, Washington, D.C.; *1960 Antarctic Seismological Observatories;* 1 year; $10,000

UNIVERSITY OF WISCONSIN, Madison, Wis.; G. P. Woollard; *Continuation of Data Reduction Center for Elevation, Seismic, Gravity, and Magnetic Observations Obtained on Traverse Operations in Antarctica;* 2 years; $135,930

INTERNATIONAL GEOPHYSICAL COOPERATION—1959

*Astronomy*

AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS, Cambridge, Mass.; Harry L. Bondy; *Indirect Flare Detection;* 1 year; $575

UNIVERSITY OF HAWAII, Honolulu, Hawaii; Walter Steiger; *Solar Activity Flare Patrol;* 1 year; $8,000

HIGH ALTITUDE OBSERVATORY, Boulder, Colo.; Walter O. Roberts; *Optical Solar Flare Patrol and Solar Activity Summaries;* 1 year; $10,600

NATIONAL BUREAU OF STANDARDS, Washington, D.C.; F. W. Brown; *Solar Activity Data;* 1 year; $14,900

UNIVERSITY OF NEW MEXICO, Albuquerque, N. Mex.; Victor H. Regener; *Zodiacal Light in the Tropics;* 1 year; $22,900

OFFICE OF NAVAL RESEARCH, Washington, D.C.; *Rocket Observations of Solar Flare Emissions in Ultraviolet and X-rays;* 1 year; $250,000

RENSSELAER POLYTECHNIC INSTITUTE, Troy, N.Y.; Robert Fleischer; *Indirect Flare Patrol;* 1 year; $8,000

*Atmospheric Sciences*

UNIVERSITY OF ALASKA, College, Alaska; M. H. Rees; *Role of Height in Auroral Spectroscopy;* 2 years; $138,000

UNIVERSITY OF CALIFORNIA, La Jolla, Calif.

C. D. Keeling; *Meteorological Aspects of Carbon Dioxide and Its Exchange With the Ocean;* 1 year; $24,700

N. W. Rakestraw; *Carbon Dioxide and Its Exchange with the Ocean;* 1 year; $26,900

John Knauss; *Direct Current Measurements;* 1 year; $50,000

Walter H. Munk; *Wave Station on San Clemente Island;* 1 year; $15,000

CARNEGIE INSTITUTION OF WASHINGTON, Washington, D.C.; Merle A. Tuve; *South American Ionspheric Studies;* 1 year; $9,569

COLUMBIA UNIVERSITY, New York, N.Y.; William L. Donn; *Observatories at Island Stations, of Sea Level and Long Period Ocean Waves;* 1 year; $25,600

CORNELL UNIVERSITY, Ithaca, N.Y.

C. W. Gartlein; *All-Sky Camera Operation;* 6 months; $11,500

C. W. Gartlein; *Visual Auroral Observations in the Antarctic;* 1 year; $5,500

C. W. Gartlein; *Visual Auroral Observations in the United States;* 1 year; $8,000

NATIONAL BUREAU OF STANDARDS, Washington, D.C.; F. W. Brown, *Airglow Photometer;* 1 year; $5,000

U.S. WEATHER BUREAU, Washington, D.C.

H. E. Landsberg; *Atmospheric Profiles;* 1 year; $40,000

F. W. Reichelderfer: *Arctic Basin Meteorology;* 1 year; $34,500

F. W. Reichelderfer; *Arctic Ice Floe Meteorology;* 1 year; $13,300

*Earth Sciences*

AMERICAN GEOGRAPHICAL SOCIETY, New York, N.Y.; William O. Field; *Glacier Observation in Southern Alaska;* 1 year; $28,100

ARCTIC INSTITUTE OF NORTH AMERICA, Washington, D.C.; John E. Sater; *Surface Ice Motion Studies on McCall Glacier, Alaska;* 6 months; $550

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif., Robert P. Sharp; *Lower Blue Glacier Project;* 2 years; $10,000

COLUMBIA UNIVERSITY, New York, N.Y.

Maurice Ewing; *Standardization and Calibration of Long-Period and "Lg" Seismograph Network;* 1 year; $21,500

J. Lamar Worzel; *Gravity Observations at Sea Using a Surface Vessel;* 1 year; $63,000

OHIO STATE UNIVERSITY RESEARCH FOUNDATION, Columbus, Ohio; James B. Case; *Glaciers of Western United States;* 1 year; $14,500

U.S. COAST AND GEODETIC SURVEY, Washington, D.C.; D. A. Rice; *Hawaiian Observations on Latitude and Longitude;* 6 months; $6,000

UNIVERSITY OF WISCONSIN, Madison, Wis.; G. P. Woollard and R. B. Meyer; *Crustal Studies in Selected Areas;* 2 years; $103,000

*Engineering Sciences*

DARTMOUTH COLLEGE, Hanover, N.H.; Millet G. Morgan; *IGC—1959, Whistlers—East Project;* 1 year; $39,800

NATIONAL BUREAU OF STANDARDS, Washington, D.C.

Ralph J. Slutz; *IGC—1959, Ionospheric Data Processing and Publication;* 1 year; $58,700

Ralph J. Slutz; *IGC—1959, South American Cooperative Ionospheric Stations;* 1 year; $24,000

Ralph J. Slutz; *IGC—1959, Support of World Warning Agency;* 1 year; $20,000

STANFORD UNIVERSITY, Stanford, Calif.

Robert A. Helliwell, *IGC—1959, Whistlers—West Project;* 1 year; $74,600

Allen M. Peterson; *IGC—1959, Riometer Observations;* 1 year; $9,900

Allen M. Peterson; *IGC—1959, Three-Frequency Backscatter Observation;* 1 year; $36,400

UNIVERSITY OF VIRGINIA, Charlottesville, Va.; E. C. Stevenson; *IGC—1959, Radio Star Scintillation and Atmospheric Winds;* 1 year; $20,000

*Physics*

UNIVERSITY OF CALIFORNIA, Santa Barbara, Calif.; P. H. Barrett; *Large Air Shower Detector;* 1 year; $6,900

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; W. B. Fretter; *Time Variations of Neutron, Hard and Soft Cosmic Ray Components;* 1 year; $5,000

UNIVERSITY OF CHICAGO, Chicago, Ill.; Peter Meyer; *Primary Cosmic Radiation;* 1 year; $20,100

FRANKLIN INSTITUTE, Philadelphia, Pa.; M. A. Pomerantz; *Low Energy Primary Cosmic Rays at Thule;* 1 year; $10,600

UNIVERSITY OF MARYLAND, College Park, Md.; William Webber; *Cosmic Ray Telescope at Thule;* 1 year; $6,400

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; E. P. Ney, and J. R. Winckler; *Continuous Balloon Monitoring of Cosmic Rays and Solar Phenomena;* 1 year; $350,000

UNIVERSITY OF NEBRASKA, Lincoln, Nebr.; R. L. Chasson; *Cosmic Ray Monitoring;* 1 year; $17,200

UNIVERSITY OF NEW HAMPSHIRE, Durham, N.H.; J. A. Lockwood; *Forbush-Type Decreased in Cosmic Rays;* 16 months; $3,200

NEW YORK UNIVERSITY, New York, N.Y.; S. A. Korff, *Cosmic Ray Neutron Monitor in Alaska;* 2 years; $34,600

STATE UNIVERSITY OF IOWA, Iowa City, Iowa; *Cosmic Ray Studies at High Altitudes;* 1 year; $40,400