

APPENDIX C

Grants for Basic Research

ANTHROPOLOGICAL SCIENCES

UNIVERSITY OF ARIZONA, Tucson, Ariz.

Emil W. Haury, Department of Anthropology; *Culture History of the Point of Pines Region*; 3 years; \$19,700

Terah L. Smiley, Geochronology Laboratories; *Late Prehistory of Northern Arizona*; 2 years; \$12,000

BRYN MAWR COLLEGE, Bryn Mawr, Pa.; Frederica de Laguna, Department of Anthropology; *Ethnological Research Among the Indians of Copper River*; 5 years; \$13,800

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Joseph B. Birdsell, Department of Anthropology and Sociology, Los Angeles, Calif.; *Culture and Environmental Adaptation*; 1 year; \$10,000

UNIVERSITY OF FLORIDA, Gainesville, Fla.; William H. Sears, Florida State Museum; *Prehistoric Processes on the Gulf Coastal Plain*; 3 years; \$13,400

GEORGE WASHINGTON UNIVERSITY, Washington, D. C.; Demitri B. Shmkin, The Graduate Council; *Siberian Linguistic Analysis*; 1 year; \$5,300

HARVARD UNIVERSITY, Cambridge, Mass.; Douglas L. Oliver, Department of Anthropology; *Anthropology Study of the Society Islands*; 3 years; \$19,200

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.

Sol Saporta, Research Center in Anthropology, Folklore, and Linguistics, Indiana University; *Psycholinguistic Analysis of Consonant Clusters*; 2 years; \$20,000.

Thomas A. Sebeok, Research Center in Anthropology, Folklore, and Linguistics, Indiana University; *Computer Research in Psycholinguistics*; 2 years; \$20,000

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; Richard K. Beardsley, Department of Anthropology; *Ethnographic Analysis of Farm Communities*; 2 years; \$800

UNIVERSITY OF OREGON, Eugene, Oreg.; Luther C. Cressman, Department of Anthropology; *Oregon Coast Prehistory*; 1 year; \$6,300

SACRAMENTO STATE COLLEGE, Sacramento, Calif.; Thomas Rhys Williams, Department of Anthropology; *Dusun Anthropology*; 1 year; \$9,800

SCHOOL OF AMERICAN RESEARCH, Santa Fe, N. Mex.; Fred Wendorf, Associate Director for Research; *Monahans Ecology*; 1 year; \$8,000

SMITHSONIAN INSTITUTION, Washington, D. C.

Clifford Evans and Betty J. Meggers, Division of Archaeology; *Reconstruction of Migration Routes*; 1 year; \$2,100

Marshall T. Newman, U. S. National Museum; *Aboriginal History of the Peruvian Coast*; 1 year; \$3,100

STANFORD UNIVERSITY, Stanford, Calif.; Alan R. Beals, Department of Anthropology; *Process in Community Differentiation*; 2 years; \$11,000

TEMPLE UNIVERSITY, Philadelphia, Pa.; William B. Schwab, Department of Sociology and Anthropology; *Gwelo Urban Study*; 2 years; \$5,000

TULANE UNIVERSITY OF LOUISIANA, New Orleans, La.; E. Wyllys Andrews, Middle American Research Institute; *Development of Pre-Columbian Culture*; 2 years; \$25,000

UNIVERSITY OF WASHINGTON, Seattle, Wash.; James B. Watson, Department of Anthropology; *New Guinea Studies*; 1 year; \$4,100

UNIVERSITY OF WISCONSIN, Madison, Wis.; David A. Baerreis, Department of Sociology; *Interrelations of Biological and Cultural Change*; 1 year; \$15,500

ASTRONOMY

BRIGHAM YOUNG UNIVERSITY, Provo, Utah; D. H. McNamara, Department of Mathematics; *A Spectrographic Study of Eclipsing Binaries and of Beta Canis Majoris Variables*; 2 years; \$10,400.

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; Jesse L. Greenstein, Chairman, Department of Astrophysics; *The Identification of Radio Sources*; 6 months; \$3,200

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Otto Struve and C. R. Lynds, Department of Astronomy; *A Search for Variable Stars in Galactic Clusters*; 2 years; \$4,800

CARNEGIE INSTITUTION OF WASHINGTON, Washington, D. C.; M. A. Tuve, Chairman, Department of Terrestrial Magnetism; *Investigation and Construction of Photoelectric Image Tubes For Research in Astronomy*; 15 months; \$255,000

CASE INSTITUTE OF TECHNOLOGY, Cleveland, Ohio; J. J. Nassau, Head, Department of Astronomy; *Distribution of A-Type Stars in Selected Galactic Regions*; 1 year; \$5,900

UNIVERSITY OF CHICAGO, Chicago, Ill.; G. van Biesbroeck, Department of Astronomy; *Astrometric Investigations*; 1 year; \$5,200

UNIVERSITY OF FLORIDA, Gainesville, Fla.; A. G. Smith, Department of Physics; *Planetary Emissions at Radio Frequencies*; 2 years; \$20,000

FORDHAM UNIVERSITY, New York, N. Y.; Walter J. Miller, Fordham University Astronomical Laboratory; *Faint Variable Stars in the Cygnus Cloud of the Milky Way*; 2 years; \$5,900

GEORGETOWN UNIVERSITY, Washington, D. C.
Heinrich K. Eichhorn, Department of Astronomy; *Determination of the Inner Systematic Errors of the Northern Hyderabad Zones of the Astrographic Catalogue and Redetermination of Its Plate Constants*; 2 years; \$12,500

Carl C. Kless, Georgetown College Observatory; *A Search for Faint Lines in the Spectrum of the Sun and the Measurement of the Laboratory Spectrum of Titanium*; 1 year; \$24,000

HARVARD UNIVERSITY, Cambridge, Mass.

David Layzer, Harvard College Observatory; *Theoretical Energy Levels and Transition Probabilities*; 2 years; \$9,900

T. K. Menon and H. I. Ewen, Harvard College Observatory; *Radio Astronomy in the Microwave Region*; 1 year; \$34,300

UNIVERSITY OF ILLINOIS, Urbana, Ill.; Ivan R. King, Department of Astronomy; *The Dynamical Evolution of Star Clusters*; 2 years; \$4,200

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; John D. Strong, Laboratory of Astrophysics and Physical Meteorology; *High Altitude Astronomy*; 1 year; \$40,000

LOUISIANA STATE UNIVERSITY AND AGRICULTURAL AND MECHANICAL COLLEGE, Baton Rouge, La.; Kenneth M. Yoss, Department of Physics and Astronomy; *Relative Frequencies of G and K Giants With Weak and Strong Absorption*; 2 years; \$9,300

LOWELL OBSERVATORY, Flagstaff, Ariz.; H. L. Giclas, Astronomer; *Proper Motion Survey of the Northern Hemisphere*; 3 years; \$29,400

MICHIGAN STATE UNIVERSITY OF AGRICULTURE AND APPLIED SCIENCE, East Lansing, Mich.; John S. Mathis, Department of Physics and Astronomy; *The Kinematics of the Interior Regions of Globular Clusters*; 1 year; \$2,900

NEW MEXICO COLLEGE OF AGRICULTURE AND MECHANICAL ARTS, State College, N. M.; Clyde W. Tombaugh, Physical Sciences Laboratory; *An Observational Patrol and Geophysical Research of the Moon and the Planets*; 1 year; \$25,000

OHIO STATE UNIVERSITY, Columbus, Ohio.

John D. Kraus, Department of Electrical Engineering; *A Fixed Paraboloid and Tilt-able-Flat Reflector for Radio Astronomy Research*; 1 year; \$58,650

A. Slettebak, Department of Physics and Astronomy; *A Spectrographic Study of A-Type Stars Near the North Galactic Pole*; 1 year; \$3,500

UNIVERSITY OF OREGON, Eugene, Oreg.; E. G. Ebbighausen, Department of Physics; *An Investigation of Spectroscopic Binaries With Particular Attention to the Detection of Changes in the Orbital Elements*; 1 year; \$8,000

PRINCETON UNIVERSITY, Princeton, N. J.; Martin Schwarzschild, Department of Astronomy; *High Altitude Astronomy*; 3 years; \$285,000

RENSSELAER POLYTECHNIC INSTITUTE, Troy, N. Y.; J. Mayo Greenberg, Department of Physics; *The Scattering of Light by Small Particles*; 2 years; \$19,400

SWARTHMORE COLLEGE, Swarthmore, Pa.; Peter van de Kamp, Director, Sproul Observa-

tory; *Astrometric Study of Nearby Stars*; 2 years; \$27,000

VANDERBILT UNIVERSITY, Nashville, Tenn.; Carl K. Seyfert, Director, Arthur J. Dyer Observatory; *An Investigation of the Structure of the Galaxy Through the Study of the Nearer Associations of OB Stars*; 2 years; \$14,000

WAYNE STATE UNIVERSITY, Detroit, Mich.; Bertram Donn, Department of Physics; *Astrochemical Research*; 2 years; \$13,500

UNIVERSITY OF WISCONSIN, Madison, Wis.

Arthur D. Code, Director, Washburn Observatory; *Absolute Calibration of the Energy Distribution of Astronomical Radiation Sources*; 2 years; \$16,700

J. E. Mack, Department of Physics; *Interferometric Study of Coronal Emission*; 1 year; \$10,700

YALE UNIVERSITY, New Haven, Conn.

Dirk Brouwer, Director, Yale University Observatory; *Relocation of the Yale Observatory*; 1 year; \$22,000

Harlan J. Smith, Department of Astronomy; *Investigation of Planetary Non-thermal Radio Emission*; 2 years; \$21,000

Rupert Wildt, Yale University Observatory; *Constitution of the Late-Type Stellar Atmospheres and Interiors*; 2 years; \$7,500

CHEMISTRY

UNIVERSITY OF ARIZONA, Tucson, Ariz.

James W. Berry, Department of Chemistry; *Heterocyclic Tropolones and Tropones*; 2 years; \$4,100

Leslie Forster, Department of Chemistry; *Singlet-Triplet Transitions in Fluid Systems*; 2 years; \$11,200

ARIZONA STATE COLLEGE, Tempe, Ariz.; Roland K. Robins, Department of Chemistry; *Physical and Chemical Properties and Structure of Certain Purines and Purine Antagonists*; 2 years; \$14,400

UNIVERSITY OF ARKANSAS, Fayetteville, Ark.

Richard W. Fink, Department of Chemistry; *Radiochemical Studies of Decay Properties of Radioactive Nuclei*; 2 years; \$30,200

Thomas C. Hoering, Department of Chemistry; *Kinetics of Exchange of Isotopic Oxygen Between Oxy-Anions and Water*; 2 years; \$14,300

Samuel Siegel, Department of Chemistry; *Stereochemistry of Catalytic Hydrogenation of Aromatic and Hydroaromatic Compounds*; 2 years; \$15,000

K. H. Stern, Department of Chemistry; *Thermodynamics of Ion Pair Formation*; 2 years; \$13,800

AUBURN RESEARCH FOUNDATION, INC., Auburn, Ala.; G. M. Kosolapoff, Department of Chemistry; *Physical Constants of Organophosphorus Compounds*; 3 years; \$18,500

BRANDEIS UNIVERSITY, Waltham, Mass.

Saul G. Cohen, Department of Chemistry; *Chemistry of Free Radicals in Solution*; 3 years; \$25,400

Harold Conroy, Department of Chemistry; *Structure and Theoretical Biogenesis of Alkaloids*; 3 years; \$34,800

BRIGHAM YOUNG UNIVERSITY, Provo, Utah.

Elliot A. Butler and Keith Anderson, Department of Chemistry; *Detection of Molecu-*

lar Species in Ionic Equilibria; 3 years; \$26,400

K. Lerol Nelson, Department of Chemistry; *Low Temperature Kinetics in Aprotic Solvents*; 2 years; \$20,400

BROWN UNIVERSITY, Providence, R. I.

Robert H. Cole, Department of Chemistry; *Dielectric Properties of Imperfect Gases*; 2 years; \$15,700

John Ross, Department of Chemistry; *Viscosity of Gases*; 3 years; \$14,000

BRYN MAWR COLLEGE, Bryn Mawr, Pa.; Ernest Berliner, Department of Chemistry; *Relative Reactivities of Polynuclear Aromatic Systems*; 3 years; \$11,100

UNIVERSITY OF BUFFALO, Buffalo, N. Y.; Howard Tieckelmann, Department of Chemistry; *Synthesis of Compounds Related to the Vitamin B₁ Pyrimidine*; 3 months; \$4,500

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.

John H. Richards, Department of Chemistry; *Sandwich Compounds of Ruthenium*; 1 year; \$2,200

John D. Roberts, Department of Chemistry; *Chemistry of Small Ring Compounds*; 3 years; \$21,200

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

Thomas L. Allen, Department of Chemistry; Davis, Calif.; *Thermodynamic Properties of Metallic Halides*; 3 years; \$9,200

Robert K. Brinton, Department of Chemistry, Davis, Calif.; *Elementary Gas Phase Radical Reactions*; 3 years; \$11,000

Joel H. Hildebrand, Department of Chemistry; *Properties and Solubility Relations of Nonelectrolytes*; 2 years; \$16,900

CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pa.; Robert B. Carlin, Department of Chemistry; *Fischer Indole Synthesis*; 2 years; \$14,100

CENTRAL STATE COLLEGE, Wilberforce, Ohio; E. Oscar Woolfolk, Department of Chemistry; *Identification and Chromatographic Separation of Colorless Organic Compounds*; 2 years; \$6,300

UNIVERSITY OF CHICAGO, Chicago, Ill.

Robert A. Clement, Department of Chemistry; *Bronsted Rate Law Applied to Organic Reactions*; 2 years; \$13,000

R. S. Mulliken, Department of Physics, and W. G. Brown, Department of Chemistry; *Structure, Spectra and Reactions of Molecular Complexes*; 3 years; \$58,000

Stuart A. Rice, Department of Chemistry; *Configurational and Thermodynamic Properties of Polyelectrolytes and Polar Polymers*; 3 years; \$31,700

Henry Taube, Department of Chemistry; *Chemistry of Oxygen and Oxy-Compounds*; 3 years; \$44,200

CLEMSON AGRICULTURAL COLLEGE, Clemson, S. C.; F. I. Brownley, Jr., Department of Chemistry and Geology; *Determination of Fluoride*; 2 years; \$4,400

COE COLLEGE, Cedar Rapids, Iowa; Frank C. Pennington, Department of Chemistry; *New Method of Synthesizing Indoles*; 2 years; \$6,600

UNIVERSITY OF COLORADO, Boulder, Colo.

Stanley J. Cristol, Department of Chemistry; *Mechanisms of Addition and Elimination Reactions*; 3 years; \$36,400

John S. Meek, Department of Chemistry; *Bridgehead Compounds*; 3 years; \$16,200

CORNELL COLLEGE, Mount Vernon, Iowa

James B. Culbertson, Department of Chemistry; *Steric Effects With Substituted Cyclohexane Compounds*; 3 months; \$1,600

James B. Culbertson, Department of Chemistry; *Steric Effects With Substituted Cyclohexanes*; 3 years; \$8,500

William A. Deskin, Department of Chemistry; *Spectrophotometric Studies of Metals*; 3 months; \$1,400

William A. Deskin, Department of Chemistry; *Complexes of the Transition Metals*; 3 years; \$10,500

CORNELL UNIVERSITY, Ithaca, N. Y.

Equipment Grants for High Polymer Research

UNIVERSITY OF DENVER, Denver, Colo.; Earl A. Engle and G. Howard McCormick, Department of Chemistry; *Determination of Zirconium, Iron Chelate Compounds*; 3 months; \$3,500

DEPAUL UNIVERSITY, Chicago, Ill.; Eugene Lieber, Department of Chemistry; *Reaction of Hydrazoic Acid With Ammono-Carbonic Acids*; 2 years; \$5,500

DUKE UNIVERSITY, Durham, N. C.; C. R. Hauser, Department of Chemistry; *Rearrangements, Eliminations, Displacements and Condensations*; 3 years; \$19,500

EMORY UNIVERSITY, Emory University, Ga.; R. A. Day, Jr., Department of Chemistry; *Anion Exchange Studies of Metal Complexes*; 2 years; \$12,000

FISK UNIVERSITY, Nashville, Tenn.; S. P. Massie, Department of Chemistry; *1,2-Dianilinoethane and 1,3-Dianilinopropane Derivatives*; 18 months; \$3,500

FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; John E. Lefler, Department of Chemistry; *Iodine as a Substituent*; 3 years; \$21,700

UNIVERSITY OF FLORIDA, Gainesville, Fla.; E. E. Muschlitz, W. H. Cramer and T. L. Bailey, Department of Chemistry; *Negative Ion Studies by Mass Spectrometry*; 2 years; \$20,000

GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta, Ga.; Jack Hine, Department of Chemistry; *Relative Acidity of Hydrocarbons and Other Weak Acids*; 2 years; \$6,700

GRINNELL COLLEGE, Grinnell, Iowa; William A. Nevill, Department of Chemistry; *Halogenated Cyclobutane Acids*; 3 years; \$9,500

HARVARD UNIVERSITY, Cambridge, Mass.

George B. Kistiakowsky, Department of Chemistry; *Unstable Intermediates in Gas Reactions*; 2 years; \$15,000

Francis G. Stone, Department of Chemistry; *Chemistry of Boron*; 3 years; \$24,100

Robert B. Woodward, Department of Chemistry; *Structure and Synthesis of Natural Products*; 3 years; \$62,100

HUNTER COLLEGE, New York, N. Y.; Horst W. Hoyer, Department of Chemistry; *Electrophoretic Mobility of Micelles*; 2 years; \$12,000

UNIVERSITY OF ILLINOIS, Urbana, Ill.

Equipment Grant for High Polymer Research

David Y. Curtin, Department of Chemistry; *Steric Control of Organic Reactions*; 3 years; \$20,900

H. S. Gutowsky, Department of Chemistry; *Nuclear and Quadrupole Relaxation*; 2 years; \$24,200

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.

V. J. Shiner, Jr., Department of Chemistry; Indiana University; *Effect of Deuterium Substitution on Rates of Organic Reactions*; 3 years; \$20,300

Harrison Shull, Department of Chemistry, Indiana University; *Theoretical Studies of Atomic and Molecular Structure*; 30 months; \$43,700

IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS, Ames, Iowa.

Lawrence S. Bartell, Department of Chemistry; *High Precision Molecular Structures by Electron Diffraction*; 3 years; \$23,700

George S. Hammond, Department of Chemistry; *Diffusion Kinetics in Thermal Decompositions*; 2 years; \$19,200

KALAMAZOO COLLEGE, Kalamazoo, Mich.; Kurt D. Kaufman, Department of Chemistry; *Furocoumarins*; 3 years; \$12,000

KANSAS STATE COLLEGE OF AGRICULTURE AND APPLIED SCIENCE, Manhattan, Kans.; Jack L. Lambert, Department of Chemistry; *Metal Complexes and Chelates of Aromatic Acids*; 3 years; \$14,400

LEHIGH UNIVERSITY, Bethlehem, Pa.; David M. Hercules, Department of Chemistry; *Luminescence of Orthohydroxy Aromatic Acids*; 3 years; \$21,000

LONG BEACH STATE COLLEGE, Long Beach, Calif.; Robert B. Henderson, Department of Chemistry; *Summer Research for High School and College Chemistry Teachers*; 3 months; \$5,200

UNIVERSITY OF LOUISVILLE, Louisville, Ky.; J. P. Phillips, Department of Chemistry; *Analytical Reagents Related to 8-Quinolinol*; 3 years; \$11,000

LOYOLA UNIVERSITY, Chicago, Ill.; John L. Huston, Department of Chemistry; *Exchange Reactions in Nonaqueous Ionizing Solvents*; 2 years; \$13,300

LUTHER COLLEGE, Decorah, Iowa; Adrian Docken, Department of Chemistry; *Condensed, Five-Membered Carbocyclic Systems*; 1 year; \$2,000

UNIVERSITY OF MAINE, Orono, Maine; Robert Dunlap, Department of Chemistry; *Thermodynamic Properties of Fluorocarbon Solutions*; 3 years; \$18,300

UNIVERSITY OF MARYLAND, College Park, Md.

William J. Bailey, Department of Chemistry; *Pyrolysis of Esters*; 3 years; \$43,800

Ernest F. Pratt, Department of Chemistry; *Selective Reaction of Organic Compounds Adsorbed on Solids*; 1 year; \$11,400

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.

Klaus Biemann, Department of Chemistry; *Boron Trifluoride as a Titrant in Organic Analysis*; 3 years; \$16,600

Arthur C. Cope, Department of Chemistry; *Stereochemistry of the Reactants Upon Ionic and Radical Reactions*; 5 years; \$98,200

Herbert O. House, Department of Chemistry; *Stereochemistry of Elimination Reactions Occurring on Metal Surfaces*; 3 years; \$16,200

C. Gardner Swain, Department of Chemistry; *Polar Displacement Reactions*; 8 years; \$21,500

UNIVERSITY OF MASSACHUSETTS, Amherst, Mass.; Richard S. Stein, Department of Chemistry; *Relationship Between Crystal Morphology and Mechanical Properties of Crystalline High Polymers*; 2 years; \$12,100

MELLON INSTITUTE OF INDUSTRIAL RESEARCH, Pittsburgh, Pa.; P. J. Flory, Executive Director of Research; *Properties of Polymers and Their Solutions*; 1 year; \$16,200

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Maurice M. Kreevoy, Department of Chemistry; *Acid Cleavage of Organomercurials*; 2 years; \$5,400

MISSISSIPPI STATE COLLEGE, State College, Miss.; Lyell C. Behr, Department of Chemistry; *Reactivity of Oxadiazoles in Substitution*; 3 years; \$6,400

MONMOUTH COLLEGE, Monmouth, Ill.; G. W. Thiessen, Department of Chemistry; *The Kolbe Electrolysis*; 2 years; \$12,200

NEWARK COLLEGE OF ENGINEERING, Newark, N. J.; James A. Bradley, Department of Chemistry; *Sulfonation of Aromatic Compounds*; 3 months; \$2,100

UNIVERSITY OF NEW HAMPSHIRE, Durham, N. H.; Alexander R. Amell, Department of Chemistry; *Kinetics of the Gas Phase Reaction Between Nitrogen Pentoxide and Some Reducing Agents*; 2 years; \$10,000

NEW MEXICO HIGHLANDS UNIVERSITY, Las Vegas, N. Mex.; E. Gerald Meyer, Department of Chemistry; *Summer Research for High School Chemistry Teachers*; 3 months; \$4,300

NEW YORK UNIVERSITY, New York, N. Y.; Benson R. Sudheim, Department of Chemistry; *Dissociation Constants of Excited Molecules*; 3 years; \$10,100

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

J. C. Morrow, Department of Chemistry; *Magnetochemical and Crystallographic Studies of Transition Metal Compounds*; 3 years; \$17,200

Oscar K. Rice, Department of Chemistry; *Decomposition of Azomethane*; 2 years; \$15,900

UNIVERSITY OF NORTH DAKOTA, Grand Forks, N. Dak.; Edward J. O'Reilly, Jr., Department of Chemistry; *Vibrational Assignment of Symmetrically Substituted Naphthalene-D-4*; 2 years; \$10,900

NORTHWESTERN UNIVERSITY, Evanston, Ill.; Fred Basolo, Department of Chemistry; *Nuclear Magnetic Resonance Studies of Metal Complexes*; 2 years; \$17,100

UNIVERSITY OF NOTRE DAME, Notre Dame, Ind.; Louis Pierce, Department of Chemistry; *Molecular Microwave Spectroscopy*; 2 years; \$18,300

OHIO STATE UNIVERSITY, Columbus, Ohio.

Michael P. Cava, Department of Chemistry; *The Benzocyclobutene Series*; 3 years; \$39,800

Melvin S. Newman, Department of Chemistry; *Differentiation and Isolation of Rotamers*; 1 year; \$8,200

Melville L. Wolfrom, Department of Chemistry; *Structural Investigation of Polysaccharides*; 3 years; \$25,000

UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE, Norman, Okla.; Norman Fogel, Department of Chemistry, University of Oklahoma; *Effects of Ionic Strength on the Distribution of Species of Complex Ions*; 2 years; \$10,400

OREGON STATE COLLEGE, Corvallis, Oreg. Ervin F. Kurth, Department of Chemistry; *Conifer Bark Lignin Components*; 8 years; \$17,700

W. H. Slabaugh, Department of Chemistry; *Ion Exchange of Graphite Oxide*; 2 years; \$8,500

UNIVERSITY OF OREGON, Eugene, Oreg.; Terrell L. Hill, Department of Chemistry; *Theoretical Studies in Statistical Chemical Thermodynamics*; 3 years; \$82,600

PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.

Norman C. Deno, Department of Chemistry; *Quantitative Theory Relating Acid-Catalyzed Reaction Ranges to Acid Concentrations and Other Media Changes*; 3 years; \$17,200

Maurice Shamma, Department of Chemistry; *Synthesis and Chemistry of Tetrahydropyridines*; 2 years; \$8,000

Harry D. Zook, Department of Chemistry; *Nature and Reactivity of Enolates*; 3 years; \$19,100

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; John G. Miller, Department of Chemistry; *Compressibility Factor Measurements of Thermodynamic and Molecular Properties of Gaseous Mixtures*; 1 year; \$11,000

POLYTECHNIC INSTITUTE OF BROOKLYN, Brooklyn, N. Y.; C. G. Overberger, Department of Chemistry; *Chemistry of 1,1- and 1,2-Substituted Hydrazines and Cyclic Azo Compounds*; 3 years; \$26,200

POMONA COLLEGE, Claremont, Calif.; Corwin Hansch, Department of Chemistry; *Summer Research for College Chemistry Teachers*; 3 months; \$5,300

PRINCETON UNIVERSITY, Princeton, N. J. James R. Arnold, Department of Chemistry; *Natural and Induced Radioactivities*; 1 year; \$11,800

Charles P. Smyth, Chemistry Department; *Rotational Isomerism and Intramolecular Motion*; 2 years; \$17,000

PURDUE RESEARCH FOUNDATION, Lafayette, Ind.

Robert A. Benkeser, Department of Chemistry, Purdue University; *Organic Chemistry of Silicon, Germanium and Tin Compounds*; 2 years; \$15,400

Robert A. Benkeser, Department of Chemistry, Purdue University; *Reductions by Lithium in Amine Solvents*; 2 years; \$10,600

Norbert Muller, Department of Chemistry, Purdue University; *High Resolution Nuclear Magnetic Resonance Spectrometry*; 3 years; \$34,000

J. M. Honig, Department of Chemistry, Purdue University; *Interaction Between Metal Oxides and Nitrogen Dioxide*; 2 years; \$17,500

R. L. Livingston, Department of Chemistry, Purdue University; *Molecular Structure of Certain Organic Compounds by Electron Diffraction*; 2 years; \$12,800

RENSSELAER POLYTECHNIC INSTITUTE, Troy, N. Y.

George J. Janz, Department of Chemistry; *Raman Spectra of Molten Salts*; 2 years; \$28,000

Robert L. Strong, Department of Chemistry; *Primary Photochemical Act in Solution Reactions*; 2 years; \$11,000

RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK, Albany, N. Y.; Michael Szwarc, Department of Chemistry, College of Forestry, Syracuse, N. Y.; *Chemistry of Free Radicals*; 3 years; \$80,200

UNIVERSITY OF ROCHESTER, Rochester, N. Y.; A. B. F. Duncan, Department of Chemistry; *Electronic Structure of Polyatomic Molecules*; 2 years; \$12,000

ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH, New York, N. Y.; D. A. MacInnes, Department of Chemistry; *Redetermination of the Value of the Faraday*; 1 year; \$15,300

RUTGERS, THE STATE UNIVERSITY, New Brunswick, N. J.; Donald B. Denney, Department of Chemistry; *Organic Tri- and Pentavalent Phosphorus Compounds*; 2 years; \$12,000

ST. LOUIS UNIVERSITY, St. Louis, Mo.; George W. Schaeffer, Department of Chemistry; *Reduction of Inorganic Substances With Aqueous Sodium Borohydride*; 3 years; \$10,500

SMITH COLLEGE, Northampton, Mass.; Milton D. Soffer, Department of Chemistry; *Synthesis and Structure of Sesquiterpenes*; 2 years; \$15,500

UNIVERSITY OF SOUTH CAROLINA, Columbia, S. C.

H. W. Davis, Department of Chemistry; *Summer Research for High School and College Chemistry Teachers*; 3 months; \$3,000

DeLos F. DeTar, Department of Chemistry; *Organic Reaction Mechanisms*; 3 years; \$20,500

John L. Kice, Department of Chemistry; *Reactivity Toward Free Radicals of Non-Benzenoid Aromatic Hydrocarbons*; 2 years; \$15,000

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.

Jerome A. Berson, Department of Chemistry; *Stereochemistry of Biphenyl Systems*; 2 years; \$16,800

Norman Kharasch, Department of Chemistry; *Reaction of 2,4-Dinitrobenzenesulfonyl Chloride With Phenylacetylene and P-Substituted Phenylacetynes*; 3 years; \$10,300

SOUTHERN METHODIST UNIVERSITY, Dallas, Tex.; John J. Banewicz, Department of Chemistry; *Magnetic And Electrical Properties of Antiferromagnetic Semiconductors*; 2 years; \$9,600

STANFORD UNIVERSITY, Stanford Calif.; George S. Parks, Department of Chemistry and Chemical Engineering; *Heats of Combustion of Typical Oxygen Containing Organic Compounds*; 3 years; \$25,600

THIEL COLLEGE, Greenville, Pa.; Walter H. Puterbaugh, Department of Chemistry; *Mechanism and Influence of Metallic Cation in Organo-Metallo Reactions*; 2 years; \$5,000

TULANE UNIVERSITY OF LOUISIANA, New Orleans, La.; Joseph H. Boyer, Department of Chemistry; *Reaction of O-Nitroso Compounds With Unsaturated Groups*; 2 years; \$13,100

UNIVERSITY OF UTAH, Salt Lake City, Utah; Henry Eyring, Department of Chemistry; *Theoretical and Experimental Study of Rate Processes*; 2 years; \$45,000

UNIVERSITY OF VIRGINIA, Charlottesville, Va.; Thomas I. Crowell, Department of Chemistry; *Kinetic Studies of Amines*; 3 years; \$14,000

UNIVERSITY OF WASHINGTON, Seattle, Wash. B. S. Rabinovitch, Department of Chemistry; *Homogeneous Isomerisation Reactions*; 3 years; \$15,500

Kenneth B. Wiberg, Department of Chemistry; *Mechanisms of Oxidation Reactions*; 5 years; \$68,200

WAYNE STATE UNIVERSITY, Detroit, Mich. Norman L. Allinger, Department of Chemistry; *Conformational Effects In Medium Rings*; 3 years; \$15,300

Stanley Kirschner, Department of Chemistry; *Summer Research For High School and College Chemistry Teachers*; 3 months; \$8,300

C. L. Stevens, Department of Chemistry; *Gem-Dihalides From the Hofmann Degradation Reaction*; 2 years; \$15,400

WEST VIRGINIA UNIVERSITY, Morgantown, W. Va.; Chester W. Muth, Department of Chemistry; *Intramolecular Cyclization Involving a Nitro Group*; 2 years; \$9,600

WESTERN KENTUCKY STATE COLLEGE, Bowling Green, Ky.; Ward C. Sumpter, Department of Chemistry; *Identification and Characterization of Indole Derivatives by Fusion Methods*; 2 years; \$6,000

WESTERN MICHIGAN UNIVERSITY, Kalamazoo, Mich.; Don C. Iffland, Department of Chemistry; *Chemistry of Azoacetates; A New Class of Compounds*; 3 years; \$15,200

WHITWORTH COLLEGE, Spokane, Wash.; James R. Brathovde, Department of Chemistry; *X-Ray Phase and Structure Studies of N-Aliphatic Amides*; 3 years; \$6,900

COLLEGE OF WOOSTER, Wooster, Ohio; Thomas E. Ferington, Department of Chemistry; *Kinetics of Vinyl Polymerization*; 2 years; \$5,200

DEVELOPMENTAL BIOLOGY

UNIVERSITY OF ARIZONA, Tucson, Ariz.; John V. Slater, Department of Zoology; *Nucleo-Cytoplasmic Interactions During Intracellular Differentiation*; 2 years; \$8,000

BOSTON DISPENSARY, Boston, Mass.; Gerhard Schmidt; *Embryochemical Studies on Lipides, Proteins, and Nucleic Acids*; 2 years; \$15,500

BRANDEIS UNIVERSITY, Waltham, Mass.; Maurice Sussman, Department of Biology; *Morphogenesis in the Cellular Slime Molds*; 2 years; \$11,500

BROWN UNIVERSITY, Providence, R. I.; William Montagna, Department of Biology; *Comparative Histology and Histochemistry of the Skin of Primates*; 2 years; \$10,000

UNIVERSITY OF CALIFORNIA, Berkeley, Calif. William A. Jensen, Department of Bi-

ology; *Early Cell Wall Formation in the Root Tip*; 2 years; \$12,100

Julian L. Kavanau, Department of Zoology, Los Angeles, Calif.; *Chemical Background of Cell Division*; 2 years; \$13,500

CANISIUS COLLEGE, Buffalo, N. Y.; John L. Blum, Department of Biology; *Sexuality in Botrydium and Protosiphon*; 2 years; \$10,300

CARLETON COLLEGE, Northfield, Minn.; William H. Muir, Department of Biology; *Differentiation in Plant Tissue Cultures of Single Cell Origin*; 2 years; \$6,900

CENTRAL WASHINGTON COLLEGE OF EDUCATION, Ellensburg, Wash.; Janet M. Lowe, Department of Zoology; *Early Chick Embryo Differentiation and Development*; 2 years; \$5,000

CORNELL UNIVERSITY, Ithaca, N. Y.; Perry W. Gilbert, Department of Zoology; *Structural and Functional Relationship of Developing Young to Mother*; 1 year; \$3,000

CREIGHTON UNIVERSITY, Omaha, Nebr.; Allen B. Schlesinger, Department of Biology; *Effect of Spatially Distributed Yolk Components Upon Embryonic Development*; 2 years; \$6,600

UNIVERSITY OF DELAWARE, Newark, Del.; Franklin C. Daiber, Department of Biological Sciences; *Reproductive Functions in Elasmobranch Fishes*; 2 years; \$10,000

FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; James R. Fisher, Department of Chemistry; *Cell Particulates in Sea Urchin Eggs*; 1 year; \$3,000

GRINNELL COLLEGE, Grinnell, Iowa; Guillermo Mendoza, Department of Biology; *Reproduction in the Goodellidae*; 3 years; \$13,300

UNIVERSITY OF IDAHO, Moscow, Idaho; Lorin W. Roberts, Department of Botany; *A Histochemical Study of Protein-Bound Sulfhydryl Groups in Wound Meristems*; 2 years; \$5,300

UNIVERSITY OF ILLINOIS, Urbana, Ill.; S. Meryl Rose, Department of Zoology; *Specific Inhibition During Differentiation in Tubularia*; 1 year; \$15,000

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; Robert Briggs, Department of Zoology, Indiana University; *Nuclear Differentiation in Embryonic Cells*; 3 years; \$26,000

JOHNS HOPKINS UNIVERSITY, Baltimore, Md. Andre T. Jagendorf, Department of Biology; *Chloroplast Growth Processes*; 3 years; \$23,000

Clement L. Markert, Department of Biology; *Biochemical Basis of Cell Differentiation*; 3 years; \$35,000

Malcolm S. Steinberg, Department of Biology; *Chemical Bonds Between Vertebrate Embryonic Cells*; 2 years; \$12,000

LOYOLA UNIVERSITY, Chicago, Ill.; Boris B. N. Spiroff, Department of Biological Sciences; *Functions of the Pineal Body*; 1 year; \$4,000

MARQUETTE UNIVERSITY, Milwaukee, Wis. Walter G. Rosen, Department of Biology; *Chemotropism of Pollen Tubes*; 2 years; \$12,000

John W. Saunders, Jr., Department of Biology; *Tissue Interactions During Organogenesis*; 3 years; \$27,000

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Robert J. Hansen, Department of Civil Engineering; *The Form and Function of the Foot*; 2 years; \$16,000

MIAMI UNIVERSITY, Oxford, Ohio; John R. Harrison, Department of Zoology; *Growth and Differentiation of Embryonic Chick Tissues in Vitro*; 2 years; \$10,300

UNIVERSITY OF MIAMI, Coral Gables, Fla.; Charlotte J. Avers, Department of Botany; *Histochemical Studies of the Differentiating Root Epidermis*; 2 years; \$13,800

UNIVERSITY OF NEW HAMPSHIRE, Durham, N. H.; Charlotte G. Nast, Department of Botany; *Fertilization Studies of Angiosperms*; 1 year; \$7,400

NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING, Raleigh, N. C.; Ernest Ball, Division of Biological Sciences; *Growth in Vitro of the Shoot Apex of Certain Seed Plants*; 3 years; \$23,000

NORTHWESTERN UNIVERSITY, Evanston, Ill.; Robert C. King, Cresap Laboratory of Biology; *Radiation-Induced Ovarian Tumors in Drosophila*; 2 years; \$18,000

OGLETHORPE UNIVERSITY, Oglethorpe University, Ga.; Arthur L. Cohen, Department of Biology; *Morphogenesis in the True Myxomycetes*; 1 year; \$1,700

UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa. Casimer T. Grabowski, Department of Anatomy; *Organization and Cellular Differentiation in Embryos*; 2 years; \$12,000

Ian M. Sussex, Department of Biological Sciences; *Morphogenesis in the Shoot of Vascular Plants*; 2 years; \$17,300

PRINCETON UNIVERSITY, Princeton, N. J.; Lionel I. Rebhun, Department of Biology; *Fertilization and Cleavage in Marine Invertebrate Eggs*; 2 years; \$8,900

UNIVERSITY OF ROCHESTER, Rochester, N. Y.; William B. Muchmore, Department of Biology; *Immunochemical Studies of Muscle Development*; 3 years; \$24,000

SOUTHERN ILLINOIS UNIVERSITY, Carbondale, Ill.; Frank J. Finamore, Department of Physiology; *Nucleic Acid Metabolism During Early Developmental Stages*; 3 years; \$15,000

STANFORD UNIVERSITY, Stanford, Calif.; Clifford Grobstein, Department of Biological Sciences; *Cell and Tissue Interactions in Development*; 2 years; \$33,100

UNIVERSITY OF WYOMING, Laramie, Wyo.; Charles S. Thornton, Jackson Hole Biological Research Station, Moran, Wyo.; *Amphibian Limb Regeneration*; 3 years; \$6,200

TEXAS AGRICULTURAL EXPERIMENT STATION, College Station, Tex.; R. O. Berry, Department of Animal Husbandry and Dairy Science; *In Vitro Culture and Low Temperature Storage of Bovine Follicular Ova*; 2 years; \$6,600

TEXAS SOUTHERN UNIVERSITY, Houston, Tex.; Alberta J. Seaton, Department of Biology; *Cytological Organization of the Egg*; 1 year; \$4,700

TRINITY UNIVERSITY, San Antonio, Tex.; Tom P. Sergeant, Department of Biology; *Growth Initiating Substances in "Conditioned" Media*; 2 years; \$17,300

UNIVERSITY OF WASHINGTON, Seattle, Wash.; Arthur H. Whiteley, Department of Zoology;

Physiology of Formation and Development of Eggs of Marine Invertebrates; 2 years; \$22,000

WAYNE STATE UNIVERSITY, Detroit, Mich.; Werner G. Helm, Department of Biology; *Changes in Serum Proteins During Ontogeny of Mammals*; 2 years; \$15,900

WESLEYAN UNIVERSITY, Middletown, Conn.; Hubert B. Goodrich, Department of Biology; *Color Pattern Formation in Two Teleost Fish*; 1 year; \$2,900

YALE UNIVERSITY, New Haven, Conn. Edgar J. Boell, Department of Zoology; *Developmental Changes in Mitochondria*; 1 year; \$7,000

John P. Trinkaus, Department of Zoology; *The Potencies of Tissue Cells*; 3 years; \$19,000

EARTH SCIENCES

KURT TEICHERT, U. S. Geological Survey, Federal Center, Denver, Colo.; *Studies of Stratigraphy and Paleogeology in West Germany*; 4 months; \$1,400

UNIVERSITY OF ALASKA, College, Alaska; V. P. Hessler, Geophysical Institute; *Earth Potentials*; 2 years; \$13,800

AMHERST COLLEGE, Amherst, Mass.; Bruce B. Benson, Department of Physics; *Oxygen Isotope Variations in Ocean Water*; 1 year; \$15,000

UNIVERSITY OF ARIZONA, Tucson, Ariz.; L. J. Battan and A. R. Kassander, Jr., Institute of Atmospheric Physics; *Seeding of Summer Cumulus Clouds*; 1 year; \$22,200

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.

R. H. Jahns, Department of Geology; *Laboratory Synthesis of Pegmatite Minerals*; 2 years; \$22,600

C. C. Patterson and T. J. Chow, Division of Geological Sciences; *Lead Isotopes in the Oceans*; 1 year; \$10,350

W. B. Ray, Department of Geology; *High Pressure Polymorphs of Ice*; 3 years; \$27,600

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

L. H. Adams and G. C. Kennedy, Institute of Geophysics, Los Angeles, Calif.; *Rapidly Running Mineral Transitions*; 1 year; \$20,000

M. N. Bramlette, Department of Geology, Scripps Institution of Oceanography, La Jolla, Calif.; *Fossil Coccolithophorids*; 3 years; \$29,000

Perry Byerly, Seismographic Station; *S Wave of Earthquakes*; 2 years; \$3,795

R. L. Hay, Department of Geology; *Weathering and Diagenesis in the Clarno Formation*; 2 years; \$10,800

W. H. Munk, Scripps Institution of Oceanography, La Jolla, Calif.; *Chandler Wobble*; 3 years; \$17,250

M. A. Murphy and P. Rodda, Department of Geology, Riverside, Calif.; *Cretaceous Rocks of Northwestern Sacramento Valley*; 2 years; \$14,500

M. Neiburger, Department of Meteorology, Los Angeles, Calif.; *Cloud Drop Growth*; 3 years; \$64,750

George Tunell, Department of Geology, Los Angeles, Calif.; *Ore Forming Processes*; 2 years; \$22,600

J. E. Tyler, Scripps Institution of Oceanography, La Jolla, Calif.; *Volume Scattering Function of Natural Waters*; 2 years; \$24,000

UNIVERSITY OF CHICAGO, Chicago, Ill.

H. R. Byers, Department of Meteorology; *Detection of Ice Nucleating Agents*; 2 years; \$81,000

H. R. Byers and L. J. Battan, Department of Meteorology; *Seeding of Summer Cumulus Clouds*; 1 year; \$18,500

CITY COLLEGE, New York, N. Y.; C. H. Kindle, Department of Geology; *Stratigraphy and Fauna of Western Newfoundland*; 3 years; \$16,800

COLUMBIA UNIVERSITY, New York, N. Y.

W. S. Broecker, Lamont Geological Observatory; *Radiocarbon Age Determinations*; 3 years; \$34,000

D. B. Ericson, Lamont Geological Observatory; *Ocean Sediment Cores*; 1 year; \$13,000

John Imbrie, Department of Geology; *Evolution of Common Biofacies*; 3 years; \$23,800

FRANKLIN AND MARSHALL COLLEGE, Lancaster, Pa.; Donald U. Wise, Department of Geology; *Basement Structure and Tectonics in Wyoming*; 2 years; \$5,000

UNIVERSITY OF HAWAII, Honolulu, T. H.; Thomas F. Bates, Department of Agronomy and Soil Science; *Parent Rock to Clay Mineral Alteration in the Hawaiian Islands*; 1 year; \$2,500

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; J. B. Droste, Department of Geology, Indiana University; *Clay Minerals in Evaporite Deposits*; 2 years; \$11,300

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; A. C. Waters, Department of Geology; *Iron-Bearing Layered Silicates*; 2 years; \$26,000

LAWRENCE COLLEGE, Appleton, Wis.; W. F. Read, Department of Geology; *Subsurface Studies of St. Peter Sandstone*; 1 year; \$900

LOS ANGELES COUNTY MUSEUM, Los Angeles, Calif.; Theodore Downs, Department of Vertebrate Paleontology; *Cenozoic Vertebrates of Imperial Valley*; 2 years; \$11,000

LOUISIANA STATE UNIVERSITY AND AGRICULTURAL AND MECHANICAL COLLEGE, Baton Rouge, La.; G. E. Murray, Department of Geology; *Stratigraphic Studies in Northeastern Mexico*; 3 years; \$24,000

UNIVERSITY OF MAINE, Orono, Maine; P. H. Osberg, Department of Geology; *Structure of Pittsford Area, Vermont*; 6 months; \$350

MASSACHUSETTS INSTITUTE OF TECHNOLOGY; Cambridge, Mass.

W. F. Brace, Department of Geology and Geophysics; *Mineral Plasticity and Hardness*; 3 years; \$20,000

M. J. Buerger, Department of Geology and Geophysics; *Computational Work on Crystal Structures*; 1 year; \$8,000

W. H. Dennen and Ely Mencher, Department of Geology and Geophysics; *Geochemical Investigations of Sedimentary Rocks*; 1 year; \$11,000

H. G. Houghton, Department of Meteorology; *The Prosecution of Atmospheric Research in the United States of America*; 18 months; \$52,400

UNIVERSITY OF MIAMI, Coral Gables, Fla.

Cesare Emiliani; *The Marine Laboratory; Pleistocene Ocean Temperatures*; 2 years; \$28,000

F. F. Kocsy, Marine Laboratory; *Water Masses of the Straits of Florida*; 1 year; \$8,000

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; A. N. Dingle, Department of Meteorology; *Raindrop Size Spectra*; 3 years; \$40,000

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.

S. S. Goldich, Department of Geology and A. O. C. Nier, Department of Physics; *Radiometric Dating by K⁴⁰/A⁴⁰ Method*; 2 years; \$39,000

F. M. Swain, Department of Geology; *Bituminous Deposits*; 1 year; \$10,250

H. E. Wright, Jr., Department of Geology; *Pleistocene Limnology*; 2 years; \$17,000

MONTANA STATE UNIVERSITY, Missoula, Mont.; John Hower, Jr., Department of Geology; *Genesis of Glauconite*; 2 years; \$16,500

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.

NATIONAL BUREAU OF STANDARDS, Washington, D. C.; H. F. McMurdie; *Silver Iodide Studies*; 1 year; \$20,000

UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N. C.; Virgil I. Mann, Department of Geology; *Gravity Survey in North Carolina*; 2 years; \$9,200

UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE, Norman, Okla.; C. G. Dodd, Department of Petroleum Engineering, University of Oklahoma; *Clay Mineral Surface Chemistry*; 2 years; \$20,000

PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.

G. W. Brindley, Department of Ceramic Technology; *Thermal Reactions in Ceramic Systems*; 3 years; \$34,000

Robert N. Clayton, Department of Geochemistry; *Extraction of Oxygen for Isotopic Analysis*; 1 year; \$4,000

Rustum Roy, Department of Geochemistry; *Phase Rule in Subsolidus State Reactions*; 3 years; \$24,500

J. V. Smith, Department of Mineralogy and Petrology; *The Mineralogy of the Amphiboles*; 2 years; \$15,700

O. F. Tuttle, Division of Earth Sciences; *Weight Losses at High Temperatures and Pressures*; 1 year; \$7,300

O. F. Tuttle, Division of Earth Sciences; *Melting Temperatures of Silicates*; 1 year; \$10,000

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; E. K. Ralph, Department of Physics; *Carbon 14 Half-Life*; 1 year; \$2,500

PRINCETON UNIVERSITY, Princeton, N. J.

William E. Bonini, Department of Geological Engineering; *Seismic Study of Faulting Along the Beartooth Front*; 2 years; \$16,350

Franklyn B. Van Houten, Department of Geology; *Sedimentology and Paleomagnetism of the Brunswick Shale and Lockatong Argillite*; 2 years; \$14,000

RENSSELAER POLYTECHNIC INSTITUTE, Troy, N. Y.; Samuel Katz, Department of Geophysics; *Blastic Constants and Density at High Pressure and Temperature*; 6 months; \$3,450

TEXAS AGRICULTURAL AND MECHANICAL RESEARCH FOUNDATION, College Station, Tex.

Richard G. Bader, Department of Oceanography and Meteorology; *Bathymetry and Sediments of the Bay of Campeche*; 1 year; \$5,000

D. W. Hood, Department of Oceanography and Meteorology; *Calcium Carbonate Solubility Equilibrium in Sea Water*; 1 year; \$10,000

UNIVERSITY OF TEXAS, Austin, Tex.; Edward C. Jonas, Department of Geology; *Effect of Brackish-Water Organisms*; 2 years; \$12,300

UNIVERSITY OF UTAH, Salt Lake City, Utah. J. W. Berg, Jr. and K. L. Cook, Department of Geophysics; *Deep Seismic Refraction Studies*; 1 year; \$11,000

K. L. Cook and J. W. Berg Jr., Department of Geophysics; *Geophysical Studies in Utah and Nevada*; 2 years; \$32,500

WASHINGTON AND LEE UNIVERSITY, Lexington, Va.; E. W. Spencer, Department of Geology; *Deformation of Madison Range, Montana*; 3 years; \$18,000

WASHINGTON UNIVERSITY, St. Louis, Mo.; H. N. Andrews, Jr., Henry Shaw School of Botany; *Paleozoic Plants*; 3 years; \$10,250

STATE COLLEGE OF WASHINGTON, Pullman, Wash.; C. D. Campbell, Department of Geology; *Magnetization of Basalt Lavas*; 1 year; \$6,000

UNIVERSITY OF WASHINGTON, Seattle, Wash.; T. G. Thompson, Department of Oceanography; *Organic Compounds in Sea Water*; 2 years; \$15,500

UNIVERSITY OF WISCONSIN, Madison, Wis.; H. H. Lettau, Department of Meteorology; *Convective Energy Transfer*; 15 months; \$22,000

YALE UNIVERSITY, New Haven, Conn.

K. K. Turekian, Department of Geology; *Crustal Abundance of Nickel, Cobalt and Chromium*; 2 years; \$19,900

K. M. Waage, Department of Geology; *Cephalopod Faunas of Fox Hills Formation*; 3 years; \$8,700

ECONOMIC SCIENCES

ANTIOCH COLLEGE, Yellow Springs, Ohio; Julian H. Blau, Department of Mathematics; *Mathematical Economics*; 3 years; \$10,500

UNIVERSITY OF CHICAGO, Chicago, Ill.; Zvi Griliches, Department of Economics; *Econometric Investigations of Technological Change*; 2 years; \$16,800

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Jacob Schmookler, School of Business Administration; *The Economics of Invention*; 2 years; \$19,000

NATIONAL BUREAU OF ECONOMIC RESEARCH, New York, N. Y.; Millard Hastay; *Use of Computers in Economic Analysis*; 2 years; \$40,000

ENGINEERING SCIENCES

ALFRED UNIVERSITY, Alfred, N. Y.; Charles H. Greene, Department of Glass Technology, New York State College of Ceramics; *Distribution and Nature of Flaws in Glass*; 2 years; \$22,000

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; George W. Housner and Donald E. Hudson, Division of Engineering; *Local Ground Motions of Strong-Motion Earthquakes*; 3 years; \$25,300

UNIVERSITY OF CALIFORNIA, Berkeley, Calif. Werner Godsmith and Don M. Cunningham, Department of Engineering Design; *Investigation of Penetration*; 2 years; \$21,800

W. D. Hersberger, Department of Engineering, Los Angeles, Calif.; *Paramagnetic Resonance and the "Maser" Principle*; 3 years \$43,300

Ralph Hultgren, Department of Mineral Technology; *Heat Capacity of Alloys*; 3 years; \$25,000

J. W. Johnson, Department of Engineering; *Waves Generated by a Moving Pressure Area*; 2 years; \$15,900

R. S. Seban, Department of Mechanical Engineering, Institute of Engineering Research; *Heat Transfer From a Flat Plate*; 2 years, \$25,500

C. J. Vogt, Department of Mechanical Engineering; *Liquid Hydrocarbons at Elevated Temperatures and Pressures*; 1 year; \$7,800

CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pa.; Robert F. Mehl, Metals Research Laboratory; *Recovery and Recrystallization Characteristics of High Purity Iron*; 2 years; \$17,800

CENTRAL INSTITUTE FOR THE DEAF, St. Louis, Mo.; Jerome R. Cox, Jr.; *The Production of Acoustic Transients*; 2 years, \$21,300

COLORADO STATE UNIVERSITY, Fort Collins, Colo.

Jack E. Cermak, Department of Civil Engineering; *Atmospheric Surface Layer Phenomena*; 2 years; \$28,000

A. T. Corey, Department of Civil Engineering; *Distribution of Fluid Phases in a Porous Field*; 1 year; \$8,000

COLUMBIA UNIVERSITY, New York, N. Y.; Elmer L. Gaden, Jr., Department of Chemical Engineering; *Kinetics of Fermentation Processes*; 3 years; \$32,500

UNIVERSITY OF FLORIDA, Gainesville, Fla.

Ralph W. Kluge, Department of Civil Engineering; *Torsional Strength of Prestressed Concrete*; 2 years; \$10,600

Frank E. Richart, Department of Civil Engineering; *Arching in Granular Elastic Media*; 1 year; \$7,400

John H. Schmertmann, Department of Civil Engineering; *Shear Strength of Clays*; 1 year; \$9,600

GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta, Ga.; Charles W. Gorton, School of Mechanical Engineering; *Velocity Profiles in Non-Isothermal Flow*; 2 years; \$8,500

HARVARD UNIVERSITY, Cambridge, Mass.; R. W. P. King, Department of Engineering & Applied Physics; *Electrohydrodynamics and Related Phenomena*; 2 years; \$17,200

ILLINOIS INSTITUTE OF TECHNOLOGY, Chicago, Ill.

Lloyd H. Donnell, Department of Mechanics; *Large Shell Displacement Theory*; 2 years; \$8,400

August J. Durelli, Department of Civil Engineering; *Embedded Grid Method of Stress Analysis*; 2 years; \$16,500

- Philip G. Hodge, Jr., Department of Mechanics; *Theory of Piecewise Linear Plasticity*; 2 years; \$28,000
- UNIVERSITY OF ILLINOIS, Urbana, Ill.
Clyde E. Kesler, Department of Theoretical and Applied Mechanics; *Accumulative Fatigue Damage in Concrete*; 3 years; \$63,000
Ralph Peck, Department of Civil Engineering; *Illite and Illitic Soils*; 2 years; \$16,500
- STATE UNIVERSITY OF IOWA, Iowa City, Iowa; Hunter Rouse, Institute of Hydraulic Research, *Irrrotational Flow at Weirs and Conduit Outlets*; 2 years; \$8,400
- JOHNS HOPKINS UNIVERSITY, Baltimore, Md.
Stanley Corrsin; Department of Mechanical Engineering; *Motion of Particles in Turbulent Flow*; 2 years; \$15,000
Stanley Corrsin, Department of Mechanical Engineering; *Isotropic Turbulence*; 5 years; \$66,000
S. K. Friedlander, Department of Chemical Engineering; *Chemical Reactions in Flowing Aqueous Solutions*; 2 years; \$16,900
- MARQUETTE UNIVERSITY, Milwaukee, Wis.; Richard C. Kolf, Department of Engineering; *Vorticity in Horizontal Orifice Flow*; 2 years; \$12,000
- MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.
Alan S. Michaels, Department of Chemical Engineering; *Gas Transmission Through Polymer Films*; 2 years; \$13,000
Edwin R. Gilliland and Raymond F. Baddour, Department of Chemical Engineering; *Flow of Gases Through Microporous Solids*; 2 years; \$19,000
Warren M. Rohsenow, Department of Mechanical Engineering; *Mechanism of Gaseous Freeze-Out Processes*; 2 years; \$14,800
- UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.
Lloyd L. Kempe, Department of Chemical Engineering; *The Effects of Agitation on Mass Transfer in Aerobic Fermentation*; 2 years; \$7,500
Gordon J. Van Wylen, Department of Mechanical Engineering; *Limit Line of Superheated Nitrogen Vapor*; 2 years; \$16,900
- UNIVERSITY OF MINNESOTA, Minneapolis, Minn.
W. F. Brown, Department of Electrical Engineering; *Rigorous Calculation of Ferromagnetic Microstructure*; 2 years; \$25,000
James P. Hartnett, Department of Mechanical Engineering; *Free Convection of Liquid Metals*; 2 years; \$10,800
Robert F. Lambert, Department of Electrical Engineering; *Sound Propagation in Moving Media*; 2 years; \$16,800
Edgar L. Piret, Department of Chemical Engineering; *Crushing and Grinding Energetics*; 2 years; \$19,900
- UNIVERSITY OF MISSOURI, Columbia, Mo.
George B. Clark, Department of Mining Engineering, School of Mines and Metallurgy, Rolla, Mo.; *Stresses in Heterogeneous Geological Bodies Under Gravitational Forces*; 3 years; \$29,000
Donald L. Waldelich, Department of Electrical Engineering; *Impedance and Equivalent Circuit of a Probe Coil Near a Plane Conductor*; 2 years; \$14,400
- MONTANA STATE COLLEGE, Bozeman, Mont.
Lewis G. Mayfield, Department of Chemical Engineering; *Kinetics of Destructive Hydrogenation of Quinolone*; 2 years; \$11,500
Donald K. Weaver, Jr., Electrical Engineering; *Quadrature Signal Functions*; 1 year; \$5,100
- NEW YORK UNIVERSITY, New York, N. Y.
John Happel, Department of Chemical Engineering; *Catalytic Vapor Phase Dehydrogenation of N-Butane*; 2 years; \$17,400
Polykarp Herasymenko, Metallurgical Laboratory; *Titanium-Aluminum and Titanium-Manganese Alloys*; 2 years; \$18,800
- NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING, Raleigh, N. C.; J. F. Lee, Department of Mechanical Engineering; *Condensation Shock*; 2 years; \$22,800
- NORTHWESTERN UNIVERSITY, Evanston, Ill.
J. O. Brittain, Department of Metallurgy; *Imperfections of Metals at Elevated Temperatures*; 2 years; \$25,400
D. F. Mason and George Thodos, Department of Chemical Engineering; *Studies in the Critical Region for Pure Components and Mixtures*; 2 years; \$20,500
J. M. Smith, Department of Chemical Engineering; *Heat Transfer, Mass Transfer and Chemical Reaction in Flowing Gas*; 3 years; \$16,800
- UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE, Norman, Okla.
O. K. Crosser, Department of Chemical Engineering, University of Oklahoma; *Thermal Conductivity of Saturated Liquids and Vapors*; 2 years; \$8,800
C. M. Slipevich, Department of Chemical Engineering, University of Oklahoma; *Dynamic Response Characteristics of a Continuous, Agitated Reactor*; 3 years; \$25,000
- OREGON STATE COLLEGE, Corvallis, Oreg.; James G. Knudsen, Department of Chemical Engineering; *Heat Transfer and Flow Characteristics of Two Immiscible Liquids*; 3 years; \$22,000
- PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.
Arthur Rose, Department of Chemical Engineering; *Vapor-Liquid Equilibrium and Distillation of Fatty Acids, Esters and Alcohols*; 2 years; \$16,600
A. W. Taylor, Department of Ceramic Technology; *Influence of Wetting Agents on Clays*; 2 years; \$9,100
George J. Young, Department of Fuel Technology; *Adsorption in the Carbon-Water System*; 3 years; \$16,600
- UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa.; J. G. Bassett, Department of Metallurgical Engineering; *Behavior of Hydrogen in Steel*; 2 years; \$23,800
- POLYTECHNIC INSTITUTE OF BROOKLYN, Brooklyn, N. Y.; Ernst Weber, Vice President for Research; *The Linear Algebra and Topology of Kirchoff Networks and Switching Circuits*; 15 months; \$10,400
- PURDUE RESEARCH FOUNDATION, Lafayette, Ind.
Leslie C. Case, Department of Chemical Engineering, Purdue University; *Cross Linking in Elastomers*; 3 years; \$14,500
R. J. Grosh, Department of Mechanical Engineering, Purdue University; *Theory of Moving Heat Sources*; 2 years; \$18,000

George A. Hawkins, Director, Engineering Experiment Station; *Conceptual Study of a Nuclear Research Reactor*; 1 year; \$30,000

G. A. Leonards, Department of Soil Mechanics; *Consolidation Characteristics of Artificially Sedimented Clays*; 2 years; \$8,700

G. A. Leonards, Department of Civil Engineering; *Freezing Phenomena in Fine-Grained Soils*; 2 years; \$15,400.

J. C. Samuels, Department of Engineering Sciences; *Properties of Stochastic Systems*; 3 years; \$20,200

J. L. Waling, Department of Civil Engineering, Purdue University; *Dynamic Response of Reinforced Concrete Slabs*; 3 years; \$36,800

ROCKY MOUNTAIN HYDRAULIC LABORATORY, Allenspark, Colo.; R. W. Powell and C. J. Posey; *Open Channel Flow Research*; 2 years; \$9,800

STANFORD UNIVERSITY, Stanford, Calif.

Stephen J. Kline, Department of Mechanical Engineering; *Flow Models in Turbulent Boundary Layers*; 2 years; \$22,900

Ray K. Linsley, Department of Civil Engineering; *Characteristics of Streamflow Hydrographs for Small Drainage Basins*; 2 years; \$20,000

William H. Schwarz, Department of Chemistry; *Turbulent Mixing*; 2 years; \$21,300

STEVENS INSTITUTE OF TECHNOLOGY, Hoboken, N. J.; Sidney F. Borg, Department of Civil Engineering; *Wedge Entry Into a Conical Viscous Fluid*; 1 year; \$6,800

SYRACUSE UNIVERSITY, Syracuse, N. Y.

E. E. Drucker and K. N. Tong, Mechanical Engineering Department; *Thermodynamic Behavior of Initially Saturated Vapors*; 2 years; \$22,700

C. S. Grove, Department of Chemical Engineering; *Mass Transfer in Liquid Metal Systems*; 2 years; \$16,900

TEXAS AGRICULTURAL AND MECHANICAL RESEARCH FOUNDATION, College Station, Tex.; Warren Rice, Department of Mechanical Engineering; *Transfer Coefficients in the Turbulent Boundary Layer*; 2 years; \$17,300

UNIVERSITY OF TEXAS, Austin, Tex.

David M. Himmelblau, Department of Chemical Engineering; *Study of Ionization Constants Using Radioactive Tracers*; 2 years; \$11,000

Kenneth A. Kobe, Department of Chemical Engineering; *Solubility of Gases in Liquids*; 3 years; \$13,300

Enrico Volterra, Department of Engineering Mechanics; *Internal Constraints Applied to Dynamic Problems*; 2 years; \$19,000

UNIVERSITY OF VERMONT, Burlington, Vt.; Arthur R. Eckels, Department of Electrical Engineering; *Feedback Techniques in Electroballistocardiography*; 1 year; \$5,200

UNIVERSITY OF VERMONT AND STATE AGRICULTURAL COLLEGE, Burlington, Vt.; J. O. Outwater, Mechanical Engineering Department; *Fiber Reinforced Materials*; 2 years; \$14,900

UNIVERSITY OF WASHINGTON, Seattle, Wash.

Morris E. Childs, Department of Mechanical Engineering; *Turbulent Two-Dimensional Jet Mixing*; 2 years; \$17,900

A. E. Harrison, Department of Electrical Engineering; *Traveling-Wave Microwave*

Tubes—Modulation Characteristics; 2 years; \$22,800

UNIVERSITY OF WISCONSIN, Madison, Wis.; Vincent C. Rideout, Department of Electrical Engineering; *Computer Correlation of Linear and Nonlinear Systems*; 3 years; \$44,200

YALE UNIVERSITY, New Haven, Conn.; Robert B. Gordon, Department of Metallurgy; *Plasticity of Ionic Crystals*; 2 years; \$15,500

ENVIRONMENTAL BIOLOGY

UNIVERSITY OF ALASKA, College, Alaska; Laurence Irving, Biologist; *Adaptation to Cold in Arctic Inhabitants*; 1 year; \$17,300

AMERICAN GEOGRAPHICAL SOCIETY, New York, N. Y.; Calvin J. Heusser; *Radiocarbon Dating of Peats*; 1 year; \$2,900

AMERICAN MUSEUM OF NATURAL HISTORY, New York, N. Y.

Jack McCormick; *Vegetation of the Chiricahua Mountains*; 3 years; \$20,000

Richard G. Zweifel, Department of Amphibians and Reptiles; *Embryonic Temperature Adaptation in Anurans*; 3 years; \$5,500

UNIVERSITY OF ARIZONA, Tucson, Ariz.

E. Lendell Cockrum, Department of Zoology; *Biology of Southwestern Chiropterans*; 3 years; \$18,900

Robert R. Humphrey, Department of Agronomy and Range Management; *Analysis of Annual Ring Patterns in Desert Shrubs*; 3 years; \$36,600

Terah L. Smiley, Geochronology Laboratories; *Postglacial Pollen Sequence in the Southwest*; 2 years; \$32,600

BOWDOIN COLLEGE, Brunswick, Maine

Charles E. Huntington, Department of Biology; *Mortality and Reproductive Rates in *Ocenodroma**; 5 years; \$17,900

James M. Moulton, Department of Biology; *Relations of Sound to Behavior of Fishes*; 2 years; \$12,000

BRADFORD JUNIOR COLLEGE, Bradford, Mass.; Norman S. Bailey, Department of Natural Sciences; *Bio-Ecological Studies of New England Tingidae*; 2 years; \$5,300

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

William L. Belser, Scripps Institution of Oceanography, La Jolla Calif.; *Bioassay Technique for Organic Materials in Sea Water*; 2 years; \$10,000

Brian P. Boden, Scripps Institution of Oceanography, La Jolla; *Sonic-Scattering Layer Research*; 1 year; \$2,000

Theodore H. Bullock, Department of Zoology, Los Angeles, Calif.; *Physiological Ecology of Marine Invertebrates*; 1 year; \$5,600

Wilbur W. Mayhew, Division of Life Sciences Riverside, Calif.; *Climatic Stress Effects on Desert Vertebrates*; 3 years; \$15,200

Robert H. Parker, Scripps Institution of Oceanography, La Jolla, Calif.; *Marine Macro-Invertebrate Zoogeography as Related to Depositional Environments*; 2 years; \$11,600

Fred B. Phleger, Scripps Institution of Oceanography, La Jolla, Calif.; *Foraminifera and Sedimentology*; 3 years; \$39,900

CARLETON COLLEGE, Northfield, Minn.; J. Bruce Guyselman, Department of Zoology; *Persistent Rhythms of Locomotor Activity in Crustaceans*; 2 years; \$5,700

COLORADO STATE UNIVERSITY, Fort Collins, Colo.

Robert R. Lechleitner, Department of Zoology; *Distributional Ecology of Cynomys*; 3 years; \$14,900

Richard T. Ward, Department of Botany and Plant Pathology; *Ecology of Reproduction in Fagus Grandifolia*; 2 years; \$4,000

UNIVERSITY OF COLORADO, Boulder, Colo.; Gordon Alexander, Department of Biology; *Influence of Altitude Upon Orthoptera*; 3 years; \$20,100

CORNELL UNIVERSITY, Ithaca, N. Y.; Lamont C. Cole, Department of Zoology; *Effects of Movements on Rodent Population Structure*; 2 years; \$13,900

DUKE UNIVERSITY, Durham, N. C.

W. Dwight Billings, Department of Botany; *Alpine Vegetation in Relation to Soil Development and Snow Patterns*; 2 years; \$3,000

C. G. Bookhout, Department of Zoology; *Environmental Influences in the Development of Balanus Nauplii*; 3 years; \$26,000

F. John Vernberg, Department of Zoology; *Comparative Ecology of Tropical and Temperate Zone Crustaceans*; 1 year; \$5,400

EARLHAM COLLEGE, Richmond, Ind.; James B. Cope, Department of Biology; *Distribution, Migration and Orientation of Chironomids*; 3 years; \$17,300

FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; A. W. Ziegler, Department of Biological Sciences; *Factors Influencing Seasonal Occurrence of Water Fungi*; 2 years; \$9,500

UNIVERSITY OF FLORIDA, Gainesville, Fla.; Archie Carr, Department of Marine Chelonia; *Reproductive Ecology of Marine Chelonia*; 2 years; \$15,500

UNIVERSITY OF HAWAII, Honolulu, T. H.

Henry A. Bess, Department of Zoology and Entomology; *Insect Population Dynamics*; 2 years; \$12,200

Leonard D. Tuthill, Director of Research; *Biology of Marine Midges*; 1 year; \$4,700

UNIVERSITY OF ILLINOIS, Urbana, Ill.

Lawrence C. Bliss, Department of Botany; *Productivity of Alpine Plant Communities*; 2 years; \$5,100

S. Charles Kendeigh, Department of Zoology; *Physiology and Ecology of Certain Sub-Arctic and Tropical Fauna*; 1 year; \$7,300

IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS, Ames, Iowa; Paul L. Errington, Department of Zoology and Entomology; *Population Phenomena in Higher Vertebrates*; 1 year; \$6,000

STATE UNIVERSITY OF IOWA, Iowa City, Iowa; G. Edgar Folk, Jr., Department of Physiology; *Influence of Environmental Factors on Mammalian Activity Rhythms*; 2 years; \$11,100

UNIVERSITY OF KANSAS, Lawrence, Kans.; A. W. Kuchler, Department of Geography; *Natural Vegetation of the United States*; 3 years; \$36,500

KENTUCKY RESEARCH FOUNDATION UNIVERSITY STATION, Lexington, Ky.; Richard C. Dugdale, Department of Zoology, Univer-

sity of Kentucky; *Nutrient Supply of Certain Alaska Lakes*; 1 year; \$8,100

L. S. HATHEWAY SCHOOL OF CONSERVATION, South Lincoln, Mass.; William H. Drury, Jr., Director; *Activity Patterns and Migration*; 3 years; \$13,000

MACALESTER COLLEGE, St. Paul, Minn.; Waldo S. Glock, Department of Geology; *Tree Growth and Rainfall*; 3 years; \$8,500

UNIVERSITY OF MAINE, Orono, Maine; George M. Woodwell, Department of Botany; *Upland Deciduous Forests of Maine*; 2 years; \$2,600

MARQUETTE UNIVERSITY, Milwaukee Wis.; Ralph L. Dix, Department of Biology; *Phytosociological Study of Grasslands*; 3 years; \$13,000

UNIVERSITY OF MIAMI, Coral Gables, Fla.; Samuel P. Meyers, Marine Laboratory; *Marine Yeasts of Biscayne Bay*; 1 year; \$5,300

MICHIGAN STATE UNIVERSITY OF AGRICULTURE AND APPLIED SCIENCE, East Lansing, Mich.

G. W. Prescott, Department of Botany; *Ecological Factors in the Distribution of Tropical Algae*; 1 year; \$19,200

George C. Williams, Department of Natural Sciences; *Movements of Early Stages of Marine Fishes*; 1 year; \$4,200

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.

W. S. Benninghoff, Department of Botany; *Phytosociological Survey in Michigan*; 3 years; \$23,500

L. B. Slobodkin, Department of Zoology; *Predation, Immigration, and Environmental Variation in Laboratory Populations*; 2 years; \$23,600

UNIVERSITY OF MISSOURI, Columbia, Mo.; W. H. Elder, Department of Zoology; *Population Dynamics of Myotis Species*; 2 years; \$6,700

MONTANA STATE UNIVERSITY, Missoula, Mont.; Richard D. Taber, School of Forestry, and Robert S. Hoffman, Department of Zoology; *Ecology of Alpine Communities*; 3 years; \$13,000

UNIVERSITY OF NEW MEXICO, Albuquerque, N. Mex.; C. Clayton Hoff, Department of Biology; *Pseudoscorpions of the Rocky Mountain Region*; 2 years; \$4,400

NEW YORK ZOOLOGICAL SOCIETY, New York, N. Y.; William Beebe, Department of Tropical Research; *Biology of Tropical Avifauna*; 3 years; \$16,200

UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N. C.; William E. Fahy, Institute of Fisheries Research; *Meristic Structures in Fishes*; 3 years; \$19,600

NORTH DAKOTA STATE COLLEGE, Fargo, N. Dak.; Gabriel W. Comita, Department of Zoology and Physiology; *Life Cycle of a Cyclopoid Copepod*; 2 years; \$4,800

UNIVERSITY OF NORTH DAKOTA, Grand Forks, N. Dak.; Paul B. Kanno, Department of Biology; *Ant Distribution in Relation to Environmental Factors*; 2 years; \$5,400

RESEARCH FOUNDATION, Oklahoma State University of Agriculture and Applied Science, Stillwater, Okla.; Troy C. Dorris, Department of Zoology, Oklahoma State University; *Productivity of an Aquatic Community*; 1 year; \$4,000

UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE, Norman, Okla.; Elroy L. Rice and

William T. Penfound, Department of Plant Sciences, University of Oklahoma, *Microclimate of Devils Canyon*; 1 year; \$15,100

OREGON STATE COLLEGE, Corvallis, Oreg.

H. Irgens-Moller, Agricultural Experiment Station; *Ecotype Variation in Douglas-Fir*; 3 years; \$12,400

Robert M. Storm, Department of Zoology; *Herpetofauna of a Primitive Forest*; 2 years; \$6,500

UNIVERSITY OF OREGON, Eugene, Oreg.

Peter W. Frank, Department of Biology, *Analysis of Predictions of Population Numbers*; 2 years; \$9,000

R. W. Morris, Department of Biology; *Environmental Relationships of Some Marine Cottid Fishes*; 3 years; \$15,500

PURDUE RESEARCH FOUNDATION, Lafayette, Ind.; Durward L. Allen, Department of Forestry and Conservation; *Ecology of Canis Lupus*; 3 years; \$11,800

RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK, Albany, N. Y.; John G. New, Science Department, State University Teachers College, Oneonta, N. Y.; *Life History of Percini Peltata Peltata (Stauffer)*; 2 years; \$2,200

RUTGERS, THE STATE UNIVERSITY, New Brunswick, N. J.; George K. Reid, Department of Zoology; *Effects of Conservation Measures Upon Stream Ecology*; 2 years; \$12,200

COLLEGE OF ST. THOMAS, St. Paul, Minn.; Lester J. McCann, Department of Biology; *Bird Distribution and Nutrition*; 1 year; \$1,100

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.

Robert M. Chew, Department of Biology; *Energy Metabolism and Water Balance of a Desert Community*; 2 years; \$10,700

Louis C. Wheeler, Department of Biology; *Absorption of Certain Cations by Plants*; 3 years; \$20,200

STANFORD UNIVERSITY, Stanford, Calif.; Walter C. Brown, Department of Biological Sciences; *Herpetofauna of Philippine Tropical Forests*; 3 years; \$12,100

TEXAS TECHNOLOGICAL COLLEGE, Lubbock, Tex.; William W. Milstead, Department of Biology; *Interrelationships of Canyon Lizard Species*; 3 years; \$5,300

UNIVERSITY OF TEXAS, Austin, Tex.

Louis S. Kornicker, Institute of Marine Science, Port Aransas, Tex.; *Living Ostracods in Texas Bays*; 2 years; \$14,000

Bassett Maguire, Jr., Department of Zoology; *Dispersal and Colonization by Small Aquatic Organisms*; 3 years; \$8,000

UNIVERSITY OF UTAH, Salt Lake City, Utah
Walter P. Cottam, Department of Botany; *Phytosociological Study of the Wasatch Range*; 3 years; \$16,000

Albert W. Grundmann, Department of Zoology and Entomology; *Parasitism of Isolated Rodent Populations*; 2 years; \$8,000

UTAH STATE UNIVERSITY, Logan, Utah; William F. Sigler, Department of Wildlife Management; *Population Dynamics of Small Benthic Fish*; 3 years; \$22,500

UNIVERSITY OF WISCONSIN, Madison, Wis.

P. R. Morrison and J. C. Neess, Department of Ecology; *Field Investigations in Physiological Ecology*; 1 year; \$3,900

J. C. Neess and W. G. Reeder, Department of Zoology; *Soils and the Distribution of Small Animals*; 1 year; \$4,000

WOODS HOLE OCEANOGRAPHIC INSTITUTION, Woods Hole, Mass.

John W. Kanwisher; *Energy Requirements of Marine Bottom Communities*; 2 years; \$17,900

Gordon Riley; *Productivity of the Benthos of Coastal Waters*; 3 years; \$26,700

UNIVERSITY OF WYOMING, Laramie, Wyo.;

Garth S. Kennington, Jackson Hole Biological Research Station; *High Altitude Animal Physiology*; 3 years; \$4,800

YALE UNIVERSITY, New Haven, Conn.; Edward S. Deevey, Osborn Zoological Laboratory; *Animal and Plant Microfossils in Lake Sediments*; 2 years; \$14,000

GENETIC BIOLOGY

ALABAMA POLYTECHNIC INSTITUTE, Auburn, Ala.; John S. Mecham, Department of Zoology-Entomology; *Genetical and Ecological Relationships of Closely Related Species of Hybrid Amphibians*; 1 year; \$2,500

ARLINGTON STATE COLLEGE, Arlington, Tex.; W. F. Pyburn, Department of Biology; *Variation in Distribution of Vertebral Stripe Color Gene Frequencies in Cricket Frogs*; 2 years; \$7,000

BRIGHAM YOUNG UNIVERSITY, Provo, Utah; Howard C. Stutz, Department of Botany; *Cytogenetic Studies of Secale L. and Related Grasses*; 2 years; \$10,000

CALIFORNIA BOTANICAL SOCIETY, Davis, Calif.; Marion S. Cave, Department of Botany, University of California, Berkeley, Calif.; *Index to Plant Chromosome Numbers*; 1 year; \$2,100

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

R. W. Allard, Department of Agronomy, Davis, Calif.; *Quantitative Genetics*; 3 years; \$20,000

Spencer W. Brown, Department of Genetics; *Cytology of State Insects*; 2 years; \$11,500

Gerald E. McClearn, Department of Psychology; *Genetic Determination of Learning Phenomena*; 2 years; \$14,000

Curt Stern, Department of Zoology; *Developmental Genetics of Drosophila Melanogaster*; 2 years; \$18,000

Frank C. Vasek, Department of Life Sciences, Riverside, Calif.; *Cytogenetics of Clarkia Batis*; 2 years; \$6,700

DICKINSON COLLEGE, Carlisle, Pa.; Daniel J. McDonald, Department of Biology; *Deleterious Mutations in Populations of Tribolium Confusum*; 18 months; \$2,500

EMORY UNIVERSITY, Emory University Ga.; Charles Ray, Jr., Department of Biology; *Cytogenetic Studies of Tetrahymena Pyriformis*; 2 years; \$13,500

FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; A. Gib DeBusk, Department of Biological Sciences; *Enzymes and Enzyme Systems in Mutation*; 1 year; \$9,200

HARVARD UNIVERSITY, Cambridge, Mass.

Paul C. Mangelsdorf, Department of Biology; *Cytogenetics of Mutations in Maize-Teosinte Hybrids*; 2 years; \$11,900

Ernst Mayr, Department of Zoology; *Analysis of Variation in Two Marine Intertidal Organisms*; 2 years; \$21,000

Haverford College, Haverford, Pa.; Irving Finger, Biology Department; *Genetic Control of the Immobilization Antigens of Paramecium Aurelia*; 2 years; \$12,000

Indiana University, Bloomington, Ind.; R. R. Humphrey, Department of Zoology, *Lethal and Sublethal Traits in the Mexican Azotli*; 3 years; \$5,600

Johns Hopkins University, Baltimore, Md.

Ronald R. Cowden, Department of Biology, *Nuclear Ribonucleic Acid*; 2 years; \$7,000

P. E. Hartman, Department of Biology; *Mutability in Salmonella Typhimurium*; 3 years; \$8,800

Carl P. Swanson, Department of Botany; *Metabolic Factors in Mutagenic Systems*; 3 years; \$19,400

Kentucky Research Foundation, Lexington, Ky.; Herbert Parkes Riley, Department of Botany, University of Kentucky; *Cytology and Evolution in South African Plants*; 2 years; \$6,000

Long Island Biological Association, Cold Spring Harbor, N. Y.; A. Sokoloff; *Phenotypic Variation in Natural Populations of Drosophila*; 2 years; \$9,500

University of Michigan, Ann Arbor, Mich.; Robert R. Miller, Department of Zoology, *Speciation in the Genus Poecilopsis*; 3 years; \$19,000

Minneapolis War Memorial Blood Bank, Minneapolis, Minn.; G. Albin Matson, Director; *Study of Hereditary Blood Factors*; 1 year; \$10,000

University of Minnesota, Minneapolis, Minn.

Joseph G. Gall, Department of Zoology, *Structural and Chemical Features of Animal Cell Nuclei*; 2 years; \$16,900

David J. Merrell, Department of Zoology; *Dominant Bernsi Mutation in Natural Populations of Rana Pipiens*; 3 years; \$7,500

Missouri Botanical Garden, St. Louis, Mo.; Edgar Anderson, Department of Genetics; *Introgression in Wild and Cultivated Plants*; 3 years; \$17,000

University of Missouri, Columbia, Mo.; E. H. Coe, Jr., Department of Field Corps; *Gene Action in Maize*; 2 years; \$8,000

North Carolina State College of Agriculture and Engineering, Raleigh, N. C.

D. U. Gerstell & L. L. Phillips, Department of Field Crops; *Artificial Amphidiploids in the Genera Gossypium and Nicotiana*; 3 years; \$17,000

H. F. Robinson and C. Clark Cockerham, Institute of Statistics; *Quantitative Genetics Research in Drosophila*; 3 years; \$32,000

Ben W. Smith, Division of Biological Sciences; *The Relation of Dioecious Sexual Reproduction to the Natural Occurrence of Polyploidy*; 3 years; \$24,000

Ohio State University, Columbus, Ohio.; Henry L. Plaine, Department of Zoology and Entomology; *Induction of Uncontrolled Growths by Specific Genes in Drosophila*; 2 years; \$11,500

University of Pennsylvania, Philadelphia, Pa.

J. S. Gots, Department of Microbiology; *Gene-Enzyme Interactions in Bacteria*; 3 years; \$28,900

P. W. Whiting, Department of Zoology; *Cytological and Morphological Study of the Wasp*; 2 years; \$4,600

University of Pittsburgh, Pittsburgh, Pa.; Ellis Englesberg, Department of Biological Sciences; *Genetics and Physiology of the Diauxic Phenomenon and "Active Transport" in Bacteria*; 2 years; \$28,500

Purdue Research Foundation, Lafayette, Ind.

A. E. Bell, Department of Poultry Sciences, Purdue University; *Theoretical Concepts in Quantitative Genetics*; 3 years; \$40,000

Jules Janick, Department of Horticulture, Purdue University; *Genetics of Seed Determination*; 2 years; \$8,500

Oliver R. Nelson, Department of Botany and Plant Pathology, Purdue University; *Genetic Fine Structure*; 2 years; \$10,000

University of Rochester, Rochester, N. Y.; A. H. Doermann, Department of Biology; *Genetics of Bacterial Viruses*; 1 year; \$3,000

Santa Barbara Botanic Garden, Santa Barbara, Calif.; Marta S. Walters; *Chromosome Distribution and Spindle Behavior in Interspecific Hybrids of Bromus*; 2 years; \$14,000

South Dakota State College of Agriculture and Mechanic Arts, Brookings, S. D.; James G. Ross, Agronomy Department; *Formation of Homozygous Diploid Mutants in Sorghum*; 2 years; \$22,100

Stanford University, Stanford, Calif.; Charles Yanofsky, Department of Biological Sciences; *Genetic Control of Enzyme Formation*; 18 months; \$16,600

University of Texas, Austin, Tex.

A. C. Faberge, Department of Zoology, *Chromosome and Nuclear Structure*; 1 year; \$2,300

T. C. Hsu, Anderson Hospital and Tumor Institute, Houston, Tex.; *Mammalian Chromosomes in Vivo and in Vitro*; 2 years; \$10,350

University of Washington, Seattle, Wash.; Stanley M. Gartler, Department of Medicine; *Human Biochemical Genetics Utilizing Twins*; 1 year; \$8,500

Wesleyan University, Middletown, Conn.; Ernst Caspari, Department of Biology; *Genetic Control of Competence for Pigment Formation*; 2 years; \$10,000

University of Wisconsin, Madison, Wis.

R. Alexander Brink, Department of Genetics; *Invariable Genetic Change of the R⁺ Gene in Maize*; 3 years; \$26,800

Arthur B. Chapman and N. E. Morton, Department of Genetics; *Statistical Analysis in Genetics*; 2 years; \$10,700

James F. Crow, Department of Genetics; *Genetic Analysis of DDT Resistant Drosophila*; 1 year; \$1,500

Woman's Medical College of Pennsylvania, Philadelphia, Pa.; Max Levitan, Department of Anatomy; *Population Dynamics of Linked Chromosomal Variants*; 3 years; \$5,900

Yale University, New Haven, Conn.

Norman H. Giles, Department of Botany; *Genetic Control of Adenine Biosynthesis*; 2 years; \$12,000

Earl D. Hanson, Department of Zoology; *Nucleocytoplasmic Interaction*; 2 years; \$12,800

HISTORY AND PHILOSOPHY OF SCIENCE

AMERICAN UNIVERSITY OF BEIRUT, Beirut, Lebanon; E. S. Kennedy, Department of Mathematics; *History of Islamic Astronomy*; 2 years; \$12,600

COLUMBIA UNIVERSITY, New York, N. Y.; Helmut de Terra, Department of History; *Early American Science*; 1 year, \$3,500

EARLHAM COLLEGE, Richmond, Ind.; Otto T. Benfey, Department of Chemistry; *Development of Structural Theory in Organic Chemistry*; 3 years; \$3,700

UNIVERSITY OF FLORIDA, Gainesville, Fla.; James A. Olson, Department of Biochemistry; *Historical Study in Italian Science*; 1 year; \$700

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Giorgio de Santillana, Department of Humanities; *Development of Physics*; 1 year; \$8,700

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Herbert Feigl, Minnesota Center for Philosophy of Science; *Philosophical Foundation of Physics*; 1 year; \$14,300

PALO ALTO MEDICAL RESEARCH FOUNDATION, Palo Alto, Calif.; Charles D. O'Malley, Department of History; *Origins of Modern Anatomy and Physiology*; 1 year; \$5,700

MATHEMATICAL SCIENCES

JAN G. VAN DER CORPUT, UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; *Asymptotic Expansions*; 2 years; \$30,400

AMERICAN MATHEMATICAL SOCIETY, Providence, R. I.; Tibor Rado, Chairman; *Summer Research Institute in Surface Area Theory*; 6 weeks; \$30,000

UNIVERSITY OF BRITISH COLUMBIA, Vancouver, Canada; Marvin Marcus, Department of Mathematics; *Doubly Stochastic Matrices*; 2 years; \$4,700

BROWN UNIVERSITY, Providence, R. I.; W. S. Massey and D. A. Buchsbaum, Department of Mathematics; *Algebraic Topology and Homological Algebra*; 3 years; \$35,200

UNIVERSITY OF CALIFORNIA, Berkeley, Calif. William G. Bade and Frantisek Wolf, Department of Mathematics; *Theory and Application of Operators*; 2 years; \$30,500

David Blackwell, E. L. Lehmann, Michel Løève, Jerzy Neyman, and Henry Scheffé, Department of Statistics; *Research in Mathematical Statistics and Probability*; 2 years; \$30,000

Earl A. Coddington, Department of Mathematics, Los Angeles, Calif.; *Spectral Theory of Differential Operators*; 2 years; \$10,500

J. G. van der Corput, Department of Mathematics; *Asymptotic Expansions*; 1 year; \$19,200

Lowell J. Paige, Department of Mathematics, Los Angeles, Calif.; *Non-Associative Algebras*; 2 years; \$6,200

CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pa.; Walter Noll, Department of Mathematics; *Theoretical Continuum Mechanics*; 3 years; \$20,100

CATHOLIC UNIVERSITY OF AMERICA, Washington, D. C.; Eugene Lukacs, Department of Mathematics; *Characteristic Functions and Statistics*; 3 years; \$26,400

UNIVERSITY OF CHICAGO, Chicago, Ill.

A. A. Albert, Department of Mathematics; *Linear Algebras*; 2 years; \$13,600

Saunders MacLane, Department of Mathematics; *Topics in Topology, Geometry, Logic and Analysis*; 2 years; \$29,100

UNIVERSITY OF CINCINNATI, Cincinnati, Ohio; Paul Herget, Cincinnati Observatory; *Computing Research*; 1 year; \$20,000

COLUMBIA UNIVERSITY, New York, N. Y. Harish-Chandra, Department of Mathematics; *Spherical Functions on a Semisimple Lie Group*; 1 year; \$5,000

E. R. Lorch, Department of Mathematics; *Integration in Functional Analysis*; 1 year; \$6,500

UNIVERSITY OF CONNECTICUT, Storrs, Conn.; Elliot S. Wolk, Department of Mathematics; *Order Compatible Topologies*; 2 years; \$4,000

CORNELL UNIVERSITY, Ithaca, N. Y.; W. H. J. Fuchs, Department of Mathematics; *Topics in Complex Variable*; 2 years; \$25,000

DARTMOUTH COLLEGE, Hanover, N. H.; John G. Kemeny, Department of Mathematics; *Stochastic Processes*; 2 years; \$19,000

UNIVERSITY OF DELAWARE, Newark, Del.; Robert F. Jackson, Department of Mathematics; *Computing Research*; 1 year; \$10,000

UNIVERSITY OF GEORGIA, Athens, Ga.; M. L. Curtis, Department of Mathematics; *Subgroups of the Homotopy Groups*; 2 years; \$14,500

HARVARD UNIVERSITY, Cambridge, Mass.; Howard Aiken, Computer Laboratory; *Computing Research*; 1 year; \$25,000

ILLINOIS INSTITUTE OF TECHNOLOGY, Chicago, Ill.; M. A. McKiernan, Department of Mathematics; *Iteration and Functional Equations*; 1 year; \$4,500

UNIVERSITY OF ILLINOIS, Urbana, Ill.; Howard A. Osborn, Department of Mathematics; *Local Problems in Differentiable Manifolds*; 2 years; \$13,600

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.

Louis Auslander, Department of Mathematics, Indiana University; *Discrete Groups of Affine Motions*; 2 years; \$7,900

George Whaples, Department of Mathematics; *Algebraic Number Theory*; 2 years; \$15,000

INSTITUTE FOR ADVANCED STUDY, Princeton, N. J.; Frank Harary, Department of Mathematics; *Theory of Graphs*; 10 months; \$4,800

INSTITUTE OF MATHEMATICAL STATISTICS, Stanford, Calif.; I. R. Savage; *Summer Research Institute in Non-Parametric Inference*; 6 weeks; \$15,000

IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS, Ames, Iowa.

John Gurland, Statistical Laboratory; *Distribution and Estimation Theory*; 3 years; \$21,200

H. O. Hartley, Statistical Laboratory; *Estimation of Parameters from Incomplete Data*; 2 years; \$9,000

Oscar Kempthorne, Statistical Laboratory; *A General Formulation of the Design of Experiments*; 3 years; \$9,800

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; G. D. Mostow, Department of Mathematics; *Compact Transformation Groups*; 3 years; \$23,200

UNIVERSITY OF KANSAS, Lawrence, Kans.

U. W. Hochstrasser, Computing Center; *Computing Research*; 1 year; \$20,000

G. Baley Price, Department of Mathematics; *Geometry of Function Space*; 2 years; \$40,300

Robert Schatten, Department of Mathematics; *The Trace-Class of Operators*; 1 year; \$9,400

Robert Schatten, Department of Mathematics; *The Trace-Class of Operators*; 6 months; \$3,000

KENYON COLLEGE, Gambier, Ohio; Otton Nikodym, Department of Mathematics; *Operators in Hilbert Space*; 2 years; \$11,700

LEHIGH UNIVERSITY, Bethlehem, Pa.; Theodore Halperin, Department of Mathematics; *Logical Principles Valid in All Finite Domains*; 3 years; \$6,200

LOUISIANA STATE UNIVERSITY AND AGRICULTURAL AND MECHANICAL COLLEGE, Baton Rouge, La.; R. D. Anderson, Department of Mathematics; *Mappings of Higher Dimensional Spaces*; 3 years; \$15,300

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Warren Ambrose, Department of Mathematics; *Topics in Topology and Differential Geometry*; 2 years; \$33,300

MICHIGAN STATE UNIVERSITY OF AGRICULTURE AND APPLIED SCIENCE, East Lansing, Mich.

Leo Katz, Department of Mathematics; *Discrete Methods in Mathematical Statistics*; 2 years; \$20,000

Lawrence W. Von Tersch and Gerald P. Weeg, Computer Laboratory; *Computing Research*; 1 year; \$20,000

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.

Arthur W. Burks, Department of Philosophy; *Logical Design of Computer Nets*; 2 years; \$31,700

R. L. Wilder, Department of Mathematics; *Generalized Manifolds*; 6 months; \$3,900

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.

Eugenio Calabi, Leon W. Green and Hidehiko, Department of Mathematics; *Topological and Differential Structure Manifolds*; 2 years; \$14,800

Bjarni Jonsson, Department of Mathematics; *Lattice Theory*; 1 year; \$3,000

UNIVERSITY OF NEW MEXICO, Albuquerque, New Mexico; I. I. Kolodner, Department of Mathematics and Astronomy; *Partially Ordered Spaces*; 2 years; \$32,500

NEW YORK UNIVERSITY, New York, N. Y.; Richard Courant, Institute for Mathematical Sciences; *Research in Applied Mathematics*; 1 year; \$50,000

NORTHWESTERN UNIVERSITY, Evanston, Ill. Teruhisa Matsusaka, Department of Mathematics; *Problems in Algebraic Geometry*; 2 years; \$4,100

Alex Rosenberg and Daniel Zelinsky, Department of Mathematics; *Homological Algebra*; 2 years; \$9,000

Maxwell A. Rosenlicht, Department of Mathematics; *Algebraic Transformation Groups*; 1 year; \$9,600

K. Aa. Strand, Computing Center; *Research Computing Center*; 1 year; \$11,400

Hsien-Chung Wang, Department of Mathematics; *Totally Discontinuous Groups on Homogeneous Spaces*; 2 years; \$4,300

PRINCETON UNIVERSITY, Princeton, N. J.

S. Lefschetz, Department of Mathematics; *Singularities of Differential Systems*; 2 years; \$6,800

H. D. Smyth, Department of Engineering; *Computing Research*; 1 year; \$30,000

PURDUE RESEARCH FOUNDATION, Lafayette, Ind.

Arthur H. Copeland, Jr.; Department of Mathematics; *Maps on Topological Pairs*; 2 years; \$3,200

J. H. B. Kemperman, Department of Mathematics; *The Distribution of a Sequence*; 1 year; \$8,900

REED COLLEGE, Portland, Oreg.; J. B. Roberts, Department of Mathematics; *Polynomial Identities*; 3 years; \$7,800

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.

Herbert Busemann, Department of Mathematics; *Convex Surfaces and Finsler Spaces*; 2 years; \$6,300

C. C. Chang, Department of Mathematics; *Research Program in the Foundations of Mathematics*; 2 years; \$12,800

James Dugundji, Department of Mathematics; *Homology and Homotopy*; 2 years; \$12,200

R. S. Phillips & H. A. Dye, Department of Mathematics; *Operator Theory*; 2 years; \$29,800

STANFORD UNIVERSITY, Stanford, Calif.; Solomon Feferman, Department of Mathematics; *Generalized Product Theories*; 1 year; \$2,400

SYRACUSE UNIVERSITY, Syracuse, N. Y.; Bruce Gilchrist, Computing Center; *Computing Research*; 1 year; \$12,000

TULANE UNIVERSITY OF LOUISIANA, New Orleans, La.; A. D. Wallace & A. H. Clifford, Department of Mathematics; *The Topology of Groups and Semi-Groups*; 2 years; \$65,500

WASHINGTON UNIVERSITY, St. Louis, Mo.

Harvey Cohn, Department of Mathematics; *Computational Studies in Pure Mathematics*; 2 years; \$17,200

Allen Devinatz, Department of Mathematics; *Spectral Problems in Harmonic Analysis*; 2 years; \$7,600

UNIVERSITY OF WASHINGTON, Seattle, Wash.; Edwin Hewitt, Department of Mathematics; *Functional Analysis*; 3 years; \$75,000

WAYNE STATE UNIVERSITY, Detroit, Mich.; Felix Haas, Department of Mathematics; *Non-Linear Oscillations*; 2 years; \$9,700

UNIVERSITY OF WISCONSIN, Madison, Wisc.; R. H. Bing, Department of Mathematics; *Topology in Three Dimensional Space*; 18 mos.; \$12,100

YALE UNIVERSITY, New Haven, Conn.; Morris S. Davis, Computation Laboratory; *Computing Research*; 1 year; \$20,000

METABOLIC BIOLOGY

AMERICAN UNIVERSITY OF BEIRUT, Beirut, Lebanon; John H. Schneider, Department of Biochemistry; *Synthesis of Deoxyribose*

Nucleic Acid in Normal and Regenerating Liver; 3 years; \$10,000

BRANDEIS UNIVERSITY, Waltham, Mass.

Lawrence Grossman, Department of Biochemistry; *Nucleic Acid Metabolism of Host Cells Infected with Virus*; 3 years; \$24,000

Nathan O. Kaplan, Department of Biochemistry; *Enzymatic and Immunochemical Factors Regulating Cellular Activity*; 3 years; \$43,800

Morris Soodak, Department of Biochemistry and Biology; *Biosynthesis of L-Fucose and of Thyroglobulin*; 2 years; \$15,300

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

I. L. Chaikoff, Department of Physiology, School of Medicine; *Basic Aspects of Mammalian Carbohydrate Metabolism*; 3 years; \$45,000

Nicholas T. Mirov, Department of Geography; *Relation Between Boron and Carbohydrate Metabolism*; 2 years; \$7,000

Irving Zabin, Department of Physiological Chemistry, Los Angeles; *Lipid Metabolism of the Brain*; 2 years; \$17,000

UNIVERSITY OF CHICAGO, Chicago, Ill.

William B. Martin, Department of Microbiology; *Metabolism of Itaconic and Mesaconic Acids by Fungi*; 2 years; \$6,700

Lloyd J. Roth, Department of Pharmacology; *Biogenesis and Metabolism of Tropane Alkaloids in Plants*; 2 years; \$9,800

COLUMBIA UNIVERSITY, New York, N. Y.

Erwin Chargaff, Department of Biochemistry, College of Physicians and Surgeons; *Nucleic Acids Endowed With Biological Specificity*; 3 years; \$45,000

Philip Feigelson, Department of Biochemistry, College of Physicians and Surgeons; *Induced Enzyme Formation in Mammals*; 2 years; \$17,500

Seymour Lieberman, Department of Obstetrics and Gynecology; *Biogenesis of the Steroid Hormones*; 3 years; \$36,000

CORNELL UNIVERSITY, Ithaca, N. Y.

Walter D. Bonner, Jr., Department of Botany; *Mechanics of Cellular Oxidations in Plant Tissues*; 3 years; \$14,000

Walter D. Bonner, Jr. and Conrad S. Yocum, Department of Botany; *Double-beam Spectrophotometer for Research on Kinetics of Cellular Processes*; 1 year; \$7,200

DARTMOUTH COLLEGE, Hanover, N. H.; Frank G. Carpenter, Department of Physiological Sciences, The Medical School; *Resting Metabolism of Immature Nerve Fibers*; 3 years; \$4,300

UNIVERSITY OF DELAWARE, Newark, Del.; Bruce M. Pollock, Department of Biological Sciences; *Physiological and Biochemical Mechanisms of the Rest Period*; 18 months; \$8,450

EMORY UNIVERSITY, Emory University, Ga.; Elliot Juni, Department of Bacteriology and Immunology; *Bacterial Oxidation of Simple Aliphatic Alcohols*; 3 years; \$17,000

UNIVERSITY OF FLORIDA, Gainesville, Fla.; Howard J. Teas, Department of Botany, Agricultural Experiment Station, *Biosynthesis of Lysine and Tryptophan*; 2 years; \$14,000

UNIVERSITY OF GEORGIA, Athens, Ga.; Robert G. Eagon, Department of Bacteriology; *Synthesis of Polysaccharide by Pseudomonas Fluorescens*; 2 years; \$6,000

GOUCHER COLLEGE, Baltimore, Md.; Helen B. Funk, Department of Physiology and Bacteriology; *The Role of Hemopoietic Vitamins in the Biosynthesis of Leghemoglobin*; 2 years; \$8,200

HAHNEMANN MEDICAL COLLEGE, Philadelphia, Pa.; William L. Gaby, Division of Microbiology; *Role of Phospholipides in the Transport of Amino Acids*; 1 year; \$7,100

HARVARD UNIVERSITY, Cambridge, Mass.

Boris Magasanik, Department of Immunology and Bacteriology; *Transfer of Single Carbon Units in Histidine and Purine Metabolism of Micro-Organisms*; 3 years; \$19,500

Alwin M. Pappenheimer, Jr., Department of Biology; *The Mode of Action of Diphtheria Toxin*; 2 years; \$43,000

W. R. Sistrom, Biological Laboratories; *Composition, Structure, and Function of Bacterial Chromatophores*; 3 years; \$14,600

T. Hastings Wilson, Department of Physiology, The Medical School; *Mechanisms of Intestinal Absorption of Sugars and Nucleotides*; 2 years; \$16,400

HOPE COLLEGE, Holland, Mich.; Philip G. Crook, Department of Biology; *Effect of Mammalian Hormones on Unicellular Organisms*; 2 years; \$3,350

HOWARD UNIVERSITY, Washington, D. C.; Lawrence M. Marshall, Department of Biochemistry; *Role of the Tricarboxylic Acid Cycle in the Synthesis of Vitamin B-12*; 2 years; \$10,000

ILLINOIS INSTITUTE OF TECHNOLOGY, Chicago, Ill.; Allan H. Roush, Department of Biology; *Metabolism of Compounds Related to Lignin by Basidiomycetes*; 2 years; \$7,500

UNIVERSITY OF ILLINOIS, Urbana, Ill.

I. C. Gunsalus, Division of Biochemistry; *Metabolic Biogenesis and Degradation of Terpenes by Microorganisms*; 4 years; \$73,500

R. H. Hageman, Department of Agronomy; *Physiological Basis of Hybrid Vigor in Corn*; 2 years; \$15,850

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.

Felix Haurowitz, Department of Chemistry, Indiana University; *Biosynthesis and Structure of Proteins and Antibodies*; 3 years; \$21,000

W. J. Van Wagtenonk, Department of Zoology; *Nucleic Acid Turnover of Paramecium Aurelia*; 2 years; \$13,000

KAISER FOUNDATION, Oakland, Calif.; Mary Belle Allen, Laboratory of Comparative Physiology and Morphology; *Comparative Biochemistry of Photosynthetic Pigments*; 2 years; \$11,200

UNIVERSITY OF KANSAS, Lawrence, Kans.; H. J. Nicholas, Department of Gynecology and Obstetrics, Medical Center, Kansas, City, Kans.; *Metabolism of Cholesterol in the Central Nervous System*; 2 years; \$13,700

UNIVERSITY OF MARYLAND, University Hospital, Baltimore, Md.; Samuel P. Bessman, Department of Pediatrics, Medical School, Baltimore, Md.; *A Feed Back System Relating Glucose Metabolism to Oxidations*; 2 years; \$13,000

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.

Gene M. Brown, Department of Biology; *Metabolism and Function of B Vitamins*; 3 years; \$23,650

John M. Buchanan, Division of Biochemistry, Department of Biology; *Biosynthesis of Amino Acids and Polypeptides*; 3 years; \$60,000

Edward Herbert, Department of Biology; *Synthesis of Ribonucleic Acid by Cell-Free Systems*; 3 years; \$30,000

MICHIGAN STATE UNIVERSITY OF AGRICULTURE AND APPLIED SCIENCE, East Lansing, Mich.

Robert P. Scheffer, Department of Botany and Plant Pathology; *Physiology of Parasitism*; 2 years; \$11,000

Harold M. Sell, Department of Agricultural Chemistry; *The Biochemistry of Natural and Synthetic Growth Substances in Higher Plants*; 2 years; \$16,100

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.

I. A. Bernstein, Department of Dermatology, University Hospital; *Biosynthesis of Deoxyribose Nucleic Acid in Intact Cells*; 2 years; \$14,700

G. Robert Greenberg, Department of Biological Chemistry; *Biosynthesis of Riboflavin*; 2 years; \$14,700

James F. Hogg, Department of Biological Chemistry, Medical School; *Enzymatic Pathway of Glyconeogenesis*; 2 years; \$14,000

MONTANA STATE COLLEGE, Bozeman, Mont.; John E. Gander, Department of Chemistry; *Mechanism of Glucosidic Cyanide Formation in Plants*; 2 years; \$7,000

UNIVERSITY OF NEBRASKA, Lincoln, Nebr.; J. H. Pazur, Department of Biochemistry and Nutrition; *Enzymatic Synthesis of Galactosyl Oligosaccharides*; 2 years; \$12,500

UNIVERSITY OF OREGON, Eugene, Oreg.; Bradley T. Scheer, Department of Biology; *Humoral Control of Metabolism in Crustaceans*; 2 years; \$23,000

PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.

Carl O. Clagett, Department of Agricultural and Biological Chemistry; *Role of Peptides in Plant Metabolism*; 2 years; \$6,100

Eugene S. Lindstrom, Department of Bacteriology; *Light Induced Phosphorylation in Photosynthetic Bacteria*; 1 year; \$6,000

PURDUE RESEARCH FOUNDATION, Lafayette, Ind.

Harry Beevers, Department of Biological Sciences; *The Glyoxylate Cycle in Plant Metabolism*; 3 years; \$30,200

Henry Koffler, Department of Biological Sciences; *Biosynthesis and Function of Certain Fungal Carbohydrates*; 3 years; \$20,700

REED COLLEGE, Portland, Oreg.; Helen A. Stafford, Department of Biology; *Dihydroxyfumarate and Its Derivatives in the Carbohydrate Metabolism of Higher Plants*; 3 years; \$10,000

THE ROCKEFELLER INSTITUTE, New York, N. Y.; Fritz Lipmann; *Metabolic Group Activation*; 4 years; \$120,000

RUTGERS, THE STATE UNIVERSITY, New Brunswick, N. J.; Henry J. Vogel, Institute of Microbiology; *Comparative Microbial Biosynthesis of Amino Acids*; 3 years; \$25,400

SCRIPPS CLINIC AND RESEARCH FOUNDATION, La Jolla, Calif.; Grant R. Bartlett, Division of Laboratories; *Metabolism of the Mammalian Erythrocyte*; 2 years; \$13,000

SETON HALL COLLEGE OF MEDICINE AND DENTISTRY, Medical Center, Jersey City, N. J.; R. L. Garner, Department of Biochemistry; *Adaptive Fermentation of the Methyl Pentoses*; 2 years; \$12,000

SMITH COLLEGE, Northampton, Mass.; Stanley M. Bloom, Department of Chemistry; *Role of Mevalonic Acid in Metabolism of Penicillium Griseo-Fulvum*; 2 years; \$8,700

SMITHSONIAN INSTITUTION, Washington, D. C.; Herbert Friedmann, United States National Museum; *Metabolic Aspects of the Digestion of Wax*; 1 year; \$7,700

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.

Walter Marx, Department of Biochemistry & Nutrition; *Thyroxine and Yeast Metabolism*; 1 year; \$6,000

Sydney C. Rittenberg, Department of Bacteriology; *Oxidation of Propionate by Pseudomonas Fluorescens*; 2 years; \$17,800

TEMPLE UNIVERSITY, Philadelphia, Pa.; John M. Ward, Department of Biology; *Biochemical Aspects of Morphogenesis*; 2 years; \$17,400

UNIVERSITY OF TEXAS, Austin, Tex.

Jack Myers, Department of Zoology; *Physiology and Biochemistry of Algae*; 3 years; \$19,000

Lothar L. Salomon, Department of Biochemistry and Nutrition, Medical Branch, Galveston, Tex.; *The Nature, Role and Metabolism of Adrenal Ascorbic Acid*; 2 years; \$8,600

UNIVERSITY OF UTAH, Salt Lake City, Utah; Richard W. Van Norman, Department of Experimental Biology; *Relative Participation of Chloroplast Pigments in Photosynthesis*; 2 years; \$13,600

VANDERBILT UNIVERSITY, Nashville, Tenn.; Charles R. Park, Department of Physiology; *Glucose Transport in Mammalian Cells*; 3 years; \$32,000

VIRGINIA POLYTECHNIC INSTITUTE, Blacksburg, Va.; M. Daniel Lane, Department of Biochemistry and Nutrition; *The Enzymatic Carboxylation of Propionyl Coenzyme A*; 3 years; \$17,200

WALDEMAR MEDICAL RESEARCH FOUNDATION, INC., Port Washington, Long Island, N. Y.; William H. Pearlman, Associate Scientific Director; *The Metabolism of Certain Steroid Hormones*; 3 years; \$40,000

WASHINGTON UNIVERSITY, St. Louis, Mo.

Theodore Cayle, Henry Shaw School of Botany; *Distribution of C^{14} in the Early Products of Photosynthesis*; 2 years; \$11,000

Oliver H. Lowry, Department of Pharmacology, School of Medicine; *Riboflavin Enzymes*; 3 years; \$48,000

UNIVERSITY OF WASHINGTON, Seattle, Wash.; Bastiaan J. D. Meeuse, Department of Botany; *Oxalic Acid Metabolism in Plants*; 1 year; \$6,950

UNIVERSITY OF WISCONSIN, Madison, Wis.

Harlyn O. Halvorson, Department of Bacteriology; *Protein Biosynthesis in Yeast*; 1 year; \$10,000

Glenn S. Pound, Department of Plant Pathology; *Physiology of Virus Multiplication in Plants*; 2 years; \$9,000

WORCESTER FOUNDATION, Shrewsbury, Mass.; Ralph I. Dorfman, Director of Laboratories; *Mechanism of Hormone Action*; 2 years; \$18,300

YALE UNIVERSITY, New Haven, Conn.

Morris Foster, Section of Dermatology, Yale University School of Medicine; *Physiological Studies of Melanogenesis*; 2 years; \$11,300

Arthur W. Galston, Department of Botany; *The Relation of Light and Photomimetic Substances to Growth and Flowering in Plants*; 3 years; \$29,000

Arthur W. Galston, Department of Botany; *Light-Controlled Growth Reactions in Plants*; 2 years; \$16,500

C. N. H. Long, Department of Physiology; *Hormone Regulation of Protein and Carbohydrate Metabolism*; 3 years; \$57,600

YESHIVA UNIVERSITY, New York, N. Y.

San Seifter, Department of Biochemistry, Albert Einstein College of Medicine; *Formation of Hydroproline and Hydroxylysine*; 2 years; \$15,300

Harold J. Strecker, Department of Biochemistry, Albert Einstein College of Medicine; *Interconversion of Glutamic Acid and Proline*; 2 years; \$18,000

Abraham White, Department of Biochemistry, Albert Einstein College of Medicine; *Effects of Adrenal Cortical Steroids on Metabolism of Lymphoid Tissue*; 3 years; \$34,000

MOLECULAR BIOLOGY

Dr. HUGO BAUER, NATIONAL INSTITUTES OF HEALTH, Bethesda, Md.; *Products of Histidine Metabolism*; 1 year; \$4,000

BARNARD COLLEGE, New York, N. Y.; William A. Corpe, Department of Botany; *Capsular Material of Chromobacterium SPP*; 1 year; \$1,000

BOSTON UNIVERSITY, Boston, Mass.; William C. Boyd, Department of Biochemistry, School of Medicine; *Antibody-Antigen Reactions*; 3 years; \$25,000

BRANDEIS UNIVERSITY, Waltham, Mass.

William P. Jencks, Department of Biochemistry; *Energy Transferring Reactions in Biological Systems*; 3 years; \$23,500

Mary Ellen Jones, Graduate Department of Biochemistry; *Biosynthetic and Transfer Reactions Involving Nitrogen Compounds*; 3 years; \$22,000

Martin D. Kamen, Department of Biochemistry; *Photoactivation and Electron Transfer Processes in Photosynthetic Bacteria*; 1 year; \$18,600

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; H. K. Mitchell, Division of Biology; *Amino Acid-Containing Lipids*; 3 years; \$36,000

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

Allen G. Marr, Department of Bacteriology, Davis, Calif.; *Biochemical Cytology of the Azotobacter*; 2 years; \$12,000

P. K. Stumpf, Department of Plant Biochemistry; *Enzymatic Mechanisms Participating in Fat Metabolism of Higher Plants*; 3 years; \$34,400

UNIVERSITY OF CHICAGO, Chicago, Ill.

Kenneth D. Kopple, Department of Chemistry; *Peptide Models of Enzymes*; 3 years; \$25,500

H. B. Steinbach, Department of Zoology; *Ion Binding and Enzyme Activation in Muscle*; 2 years; \$13,500

Birgit Vennesland, Department of Biochemistry; *Enzyme Reactions of Chloroplasts*; 3 years; \$35,000

John Westley, Department of Biochemistry; *Biochemical Environment and Protein Structure*; 2 years; \$14,000

CITY OF HOPE MEDICAL CENTER, Duarte, Calif.; Richard S. Schweet, Division of Research; *Soluble Enzymes Related to Protein Synthesis*; 2 years; \$11,600

COLUMBIA UNIVERSITY, New York, N. Y.

S. M. Beiser and F. Agate, College of Physicians and Surgeons; *Biological Properties of Steroid Hormone-Protein Conjugates*; 2 years; \$17,000

E. A. Kabat, Department of Microbiology, College of Physicians and Surgeons; *Spectrophotometry in Biochemical Research*; 1 year; \$8,000

Elvin A. Kabat, College of Physicians and Surgeons; *Immunochemical Studies on Polysaccharides*; 3 years; \$88,000

Stanley L. Miller, Department of Biochemistry, College of Physicians and Surgeons; *Synthesis of Organic Compounds on the Primitive Earth*; 2 years; \$16,000

David Nachmansohn, Department of Neurology; *Molecular Forces in Nerve Impulse Conduction*; 3 years; \$45,000

William L. Nastuk, Department of Physiology, College of Physicians and Surgeons; *Ionic Permeability Change Produced at the End-Plate Membrane*; 1 year; \$9,000

David Shemin, Department of Biochemistry; *Biosynthesis and Function of Porphyrins*; 3 years; \$46,000

Stephen Zamenhof, Department of Biochemistry; *Introduction of Unnatural Bases Into Deoxyribose Nucleic Acids and the Genetical Effects of Such Introduction*; 3 years; \$32,000

CORNELL UNIVERSITY, Ithaca, N. Y.

George P. Hess, Department of Biochemistry and Nutrition; *Structural and Functional Interrelationships in Enzymes*; 2 years; \$16,000

Robert W. Holley, Department of Biochemistry and Nutrition; *Biosynthesis of Proteins*; 3 years; \$27,000

DARTMOUTH COLLEGE, Hanover, N. H.; Arthur Samuels and Manuel Morales, Department of Biochemistry; *Immunochemical Reagents and Their Application to Muscle Studies*; 2 years; \$25,000

DUQUESNE UNIVERSITY, Pittsburgh, Pa.; Oscar Gawron, Department of Chemistry; *Reaction of Cyanide With Cystine*; 2 years; \$6,000

EARLHAM COLLEGE, Richmond, Ind.; William K. Stephenson, Department of Biology; *Ion Distribution and Electrical Membrane Properties in Muscle Fibers*; 2 years; \$10,000

FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; Sidney W. Fox, The Oceanographic Institute; *Biogenesis: Thermal Prebiochemical Reactions*; 2 years; \$10,000

GEORGE WASHINGTON UNIVERSITY, Washington, D. C.; Erich Heinz, Department of Physiology, School of Medicine; *Basis of Active Transport Across a Living Membrane*; 1 year; \$4,700

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL, Philadelphia Pa.

M. John Boyd, Department of Biological Chemistry; *Spectrophotometry in Biochemical Research*; 1 year; \$8,000

Jay S. Roth, Division of Biological Chemistry; *Isolation, Characterization and Biological Function of an Inactive Ribonuclease*; 2 years; \$15,000

HARVARD UNIVERSITY, Cambridge, Mass.

James D. Watson, Department of Biology; *Structure and Function of Bacterial Microsomes*; 2 years; \$46,000

Morton M. Weber, Department of Bacteriology; *Electron Transport in Anaerobic Microorganisms*; 2 years; \$12,000

F. H. Westheimer, Department of Chemistry; *Chemical Models for Enzyme Systems*; 4 years; \$42,000

HOWARD UNIVERSITY, Washington, D. C.; Felix Friedberg, Department of Biochemistry; *Peptides in Creatine Transphosphorylase*; 2 years; \$12,500

UNIVERSITY OF ILLINOIS, Urbana, Ill.

Robert Emerson, Department of Botany; *Quantum Yield of Photosynthesis*; 3 years; \$32,000

John W. Hastings, Department of Chemistry; *Luminescence in the Marine Dinoflagellates*; 2 years; \$16,700

Eugene Rabinowitch, Department of Botany; *Photochemical and Photogalvanic Storage of Light Energy in Heterogeneous Systems*; 3 years; \$26,000

S. Spiegelman, Department of Bacteriology; *Synthesis of Ribonucleic Acid and Deoxyribonucleic Acid in Subcellular Systems*; 3 years; \$30,000

STATE UNIVERSITY OF IOWA, Iowa City, Iowa; Henry B. Bull, Department of Biochemistry, College of Medicine; *Electrophoresis of Adsorbed and of Dissolved Proteins*; 3 years; \$45,000

MARYCREST COLLEGE, Davenport, Iowa; Sister Helene Ven Horst, Department of Chemistry; *Effect of Radiations on Amino Acids*; 1 year; \$1,000

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Rufus Lumry, School of Chemistry; *Reaction Kinetics of Hydrolytic Enzymes*; 2 years; \$12,500

UNIVERSITY OF MISSOURI, Columbia, Mo.

Warren R. Fleming, Department of Zoology; *Permeability Properties and the Potential Across the Isolated Frog Skin*; 2 years; \$14,000

Owen J. Koeppe, Department of Biochemistry, School of Medicine; *Mechanism of Action of Glyceraldehyde-3-Phosphate Dehydrogenases*; 2 years; \$11,000

MOUNT SINAI HOSPITAL, New York, N. Y.; Harry Sobotka and Ross F. Nigrelli, Department of Chemistry; *Digitalis-like Products From Marine Animals*; 2 years; \$12,000

NEW YORK UNIVERSITY, New York, N. Y.

Robert Warner Chambers, Department of Biochemistry, College of Medicine, *Synthesis of Nucleotides*; 3 years; \$21,000

Paul R. Cross, Department of Biology; *Purchase of a Spinco Ultracentrifuge*; 2 years; \$6,000

OKLAHOMA STATE UNIVERSITY OF AGRICULTURE AND APPLIED SCIENCE, Stillwater, Okla.; L. M. Henderson, Department of

Agricultural Chemistry; *Biological Oxidation of 3-Hydroxyanthranilate*; 3 years; \$31,000

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.

David L. Drabkin, Department of Biochemistry, Graduate School of Medicine; *Differentiation of Hemoglobins*; 2 years; \$20,000

Elizabeth Trorogood, Botany Department; *Legume Nodule Heme Proteins*; 2 years; \$17,000

UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa.

Gary Felsenfeld, Department of Biophysics; *The Active Site in Some Copper-Carrying Proteins*; 3 years; \$23,000

Peter S. Olmsted, Department of Biochemistry; *Mechanism of in Vitro Polynucleotide Synthesis*; 3 years; \$30,000

POLYTECHNIC INSTITUTE OF BROOKLYN, Brooklyn, N. Y.; Murray Goodman, Department of Chemistry; *Synthesis and Reactions of Peptides and Their Derivatives*; 2 years; \$16,000

PRINCETON UNIVERSITY, Princeton, N. J.

Aurin M. Chase, Department of Biology; *Mechanism of Enzyme Action: Luciferase*; 3 years; \$10,000

E. Newton Harvey, Department of Biology; *Isolation and Chemical Composition of Cypridina Luciferin*; 1 year; \$6,900

Frank H. Johnson, Department of Biology; *Biochemistry of Luminescent Systems*; 3 years; \$30,000

UNIVERSITY OF PUERTO RICO, San Juan, Puerto Rico; David B. Tyler, Department of Pharmacology; *Kinetics and Biological Significance of Metal Complexes of Oxaloacetic Acid*; 2 years; \$11,000

PURDUE RESEARCH FOUNDATION, Lafayette, Ind.; Bernard Axelrod, Department of Biochemistry, Purdue University; *Protein Synthesis at the Sub-Cellular Level*; 3 years; \$28,000

REED COLLEGE, Portland, Oreg.; A. H. Livermore, Department of Chemistry; *Cysteine and Homocysteine Desulphydrases*; 2 years; \$13,000

THE ROCKEFELLER INSTITUTE, New York, N. Y.; Edward J. Murphy; *Electrical Conduction in Hydrogen-Bonded Substances*; 2 years; \$32,000

ST. LOUIS UNIVERSITY, St. Louis, Mo.; Elijah Adams, Department of Pharmacology, School of Medicine; *Amino Acid Metabolism in Bacteria*; 2 years; \$53,000

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.; Richard W. Eppley, Department of Biology; *Active Transport in Porphyrin Perforata*; 2 years; \$11,500

STATE COLLEGE OF WASHINGTON, Pullman, Wash.; Leonard B. Kirschner, Department of Zoology; *Movement of Water in Biological Systems*; 2 years; \$10,000

UNIVERSITY OF TENNESSEE, Knoxville, Tenn.; John L. Wood, Division of Chemistry, School of Medicine, Memphis, Tenn.; *Purchase of an Infrared Spectrophotometer for Biochemical Research*; 1 year; \$14,000

VILLANOVA UNIVERSITY, Villanova, Pa.; Thomas H. Doyne, Research and Development Division; *Crystal Structure of Amino Acid and Dipeptide Metallic Salts*; 2 years; \$15,500

UNIVERSITY OF VIRGINIA, Charlottesville, Va.; Donald W. Kupke, Department of Biochemistry, School of Medicine; *Protein Component Involved in the Photochemical Transformation of Protochlorophyll to Chlorophyll-A*; 3 years; \$23,000

WASHINGTON UNIVERSITY, St. Louis, Missouri; Philipp Strittmatter, Department of Biological Chemistry, School of Medicine; *Characterization of Mammalian Cytochromes*; 3 years; \$20,000

UNIVERSITY OF WASHINGTON, Seattle Wash.; Robert F. Labbe, Department of Pediatrics, School of Medicine; *The Mechanism by Which Iron Is Incorporated Into Heme*; 1 year; \$7,800

UNIVERSITY OF WISCONSIN, Madison, Wis. Robert A. Alberty, Department of Chemistry; *Physical Chemical Studies of Fumarate*; 4 years; \$60,000

Stephen A. Kuby, Institute of Enzyme Research; *ATP-Transphosphorylase Catalyzed Reactions*; 3 years; \$22,000

Edward E. Smisson, School of Pharmacy; *Synthesis and Study of Biosynthetic Intermediates*; 3 years; \$19,000

YALE UNIVERSITY, New Haven, Conn. Henry A. Harbury, Department of Biochemistry; *Protein-Prosthetic Group Interaction*; 2 years; \$17,000

G. Evelyn Hutchinson, Osborn Zoological Laboratory; *Diagenetic Changes in Pigments in Lacustrine Sediments*; 1 year; \$5,800

Frederic M. Richards, Department of Biochemistry; *Chemistry of the Functional Groups of Ribonuclease*; 2 years; \$12,000

YESHIVA UNIVERSITY, New York, N. Y. Henry D. Hoberman, Department of Biochemistry, Albert Einstein College of Medicine; *Coenzyme-Linked Oxidation-Reduction Reactions*; 3 years; \$30,000

Alex B. Novikoff, Albert Einstein College of Medicine; *Biochemical and Structural Correlations of Microsomes*; 2 years; \$13,500

PSYCHOBIOLOGY

AMERICAN MUSEUM OF NATURAL HISTORY, New York, N. Y.

Helmut E. Adler, Department of Animal Behavior; *Sensory Factors in Bird Navigation*; 1 year; \$14,400

Evelyn Shaw, Department of Animal Behavior; *Development of Schooling Behavior*; 1 year; \$9,700

UNIVERSITY OF ARIZONA, Tucson, Ariz.; Joe T. Marshall, Jr.; Department of Zoology; *Research on Speciation*; 1 year; \$4,200

BRANDEIS UNIVERSITY, Waltham, Mass.; Richard Held, Department of Psychology; *Visual-Motor Coordination*; 2 years; \$21,200

BROWN UNIVERSITY, Providence, R. I.; Frances L. Clayton, Department of Psychology; *Analysis of Secondary Reward*; 2 years; \$8,500

UNIVERSITY OF CALIFORNIA, Berkeley, Calif. W. E. Jeffrey, Department of Psychology, Los Angeles; *Research on Discrimination Learning*; 2 years; \$19,800

John P. Seward, Department of Psychology, Los Angeles; *Drive-Incentive Interaction*; 1 year; \$5,200

CENTRAL INSTITUTE FOR THE DEAF, St. Louis, Mo.; Ira J. Hirsh, Psychology Laboratory; *Studies in Temporal Perception*; 3 years; \$56,200

UNIVERSITY OF CHICAGO, Chicago, Ill. Robert A. Butler, Department of Psychology; *Effects of Brain Damage on Responsiveness to Visual and Auditory Incentives*; 2 years; \$25,500

I. T. Diamond, Department of Psychology; *Behavioral Analysis of the Somatic Cortex*; 2 years; \$21,600

CLEVELAND HEARING AND SPEECH CENTER, Cleveland, Ohio; Earl D. Schubert, Acting Director; *Interaural Temporal Disparity*; 1 year; \$5,700

COLLEGE OF WILLIAM AND MARY, Williamsburg, Va.; John K. Bare, Department of Psychology; *Physiological Bases of Motivation*; 2 years; \$4,600

COLUMBIA UNIVERSITY, New York, N. Y.; William N. Schoenfeld and William W. Cumming, Department of Psychology; *Research on Schedules of Reinforcement*; 1 year; \$2,800

COLUMBUS STATE INSTITUTE OF PSYCHIATRY, Columbus, Ohio; Seymour Levine, Research Division; *Studies in Drive Discrimination*; 2 years; \$10,600

CORNELL UNIVERSITY, Ithaca, N. Y. William C. Dilger, Laboratory of Ornithology; *Ethological Studies of Agapornis*; 2 years; \$15,600

Eleanor J. Gibson & Richard D. Walk, Department of Psychology; *Study of Visual Depth Discrimination*; 2 years; \$12,900

J. E. Hochberg, Department of Psychology; *Dimensions of Form Perception*; 2 years; \$5,800

DARTMOUTH COLLEGE, Hanover, N. H.; Wolfgang Kohler, Department of Psychology; *Problems in Gestalt Psychology*; 3 years; \$32,000

DUKE UNIVERSITY, Durham, N. C.; Kellogg V. Wilson, Department of Psychology; *Multidimensional Stimulus Scaling*; 1 year; \$4,900

EMORY UNIVERSITY, Emory University, Ga.; Henry W. Nissen, Director, Yerkes Laboratories of Primate Biology; *The Basic Research Program of the Yerkes Laboratories of Primate Biology*; 1 year; \$40,000

FRANKLIN AND MARSHALL COLLEGE, Lancaster, Pa.; Kenneth R. John, Department of Biology; *Study of Schooling Behavior*; 1 year; \$3,600

UNIVERSITY OF GEORGIA, Athens, Ga.; Gerard S. Martof, Department of Zoology; *Behavior of Amphibians*; 2 years; \$9,300

HARVARD UNIVERSITY, Cambridge, Mass.; Philip Teitelbaum, Department of Psychology; *Effect of Hypothalamic Lesions on Behavior*; 2 years; \$17,500

UNIVERSITY OF HAWAII, Honolulu, T. H.; A. Leonard Diamond, Department of Psychology; *Simultaneous Brightness Contrast*; 2 years; \$11,000

UNIVERSITY OF ILLINOIS, Urbana, Ill. Donelson E. Dulany, Jr., Department of Psychology; *Reinforcement of Verbal Behavior*; 1 year; \$6,300

G. Robert Grice, Department of Psychology; *Studies in Human Conditioning*; 3 years; \$17,200

Harold W. Hake, Department of Psychology; *Role of Recognition in Perception*; 3 years; \$15,700

Lawrence I. O'Kelly, Department of Psychology; *Influence of Physiological Variables on Behavior*; 3 years; \$20,000

Garth J. Thomas, Department of Electrical Engineering; *Behavioral Alterations Following Lesions in the Rhinencephalon*; 2 years; \$34,000

INDIANA UNIVERSITY FOUNDATION, Bloomington, Ind.; W. K. Estes and C. J. Burke, Department of Psychology, Indiana University; *Analysis of Learning*; 5 years; \$68,400

INSTITUTE OF LIVING, Hartford, Conn.; John S. Stamm; *Effects of Cortical Stimulation on Learning and Retention*; 2 years; \$16,600

KENT STATE UNIVERSITY, Kent, Ohio; Charles C. Perkins, Jr., Department of Psychology; *Study of Stimulus Generalization*; 1 year; \$7,500

LOUISIANA STATE UNIVERSITY AND AGRICULTURAL AND MECHANICAL COLLEGE, Baton Rouge, La.; Donald J. Lewis, Department of Psychology; *Persistence of Unrewarded Responses in Human Adults*; 3 years; \$21,300

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Walter A. Rosenblith, Department of Electrical Engineering; *Research on Speech Perception*; 2 years; \$50,400

MCGILL UNIVERSITY, Montreal, Canada; Herbert H. Jasper, Montreal Neurological Institute; *Neurophysiological Research*; 2 years; \$21,400

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich. Mathew Alpern, Department of Ophthalmology; *Studies of Contrast Phenomena*; 2 years; \$15,200

John E. Bardach, Department of Fisheries; *Behavior of Reef Fishes*; 6 months; \$600

Donald G. Marquis and W. Crawford Clark, Department of Psychology; *Temporal Characteristics of the Visual System*; 1 year; \$5,200

Robert W. Storer, Department of Zoology; *Comparative Behavior of Grebes*; 4 years; \$14,100

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Kenneth MacCorquodale and Paul E. Meehl, Department of Psychology; *Studies of Reinforcement*; 1 year; \$6,900

MONTANA STATE UNIVERSITY, Missoula, Mont.; Clyde E. Noble, Department of Psychology; *Analysis of Trial-and-Error Learning*; 2 years; \$15,400

NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL, Washington, D. C.; Glen Finch, Executive Secretary, Division of Anthropology and Psychology; *International Directory of Psychologists*; 1 year; \$2,000

NEW YORK UNIVERSITY, New York, N. Y.; Leo M. Hurvich, Department of Psychology; *Investigation of the Visual Response Processes*; 3 years; \$32,000

OHIO STATE UNIVERSITY, Columbus 10, Ohio; Donald R. Meyer, Department of Psychology; *Studies in Primate Learning*; 1 year; \$17,000

PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.; John F. Corso, Department of Psychology; *Neural Quantum Theory of Hearing*; 1 year; \$9,300

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Elliot Stellar, Institute of Neurological Sciences; *Physiological Mechanisms of Motivation*; 3 years; \$23,500

PRINCETON UNIVERSITY, Princeton, N. J.

Robert C. Bolles, Department of Psychology; *Stimulus Properties of Drives*; 1 year; \$3,600

Byron A. Campbell, Department of Psychology; *Methodological Study of the Aversive Properties of Stimuli*; 2 years; \$15,000

QUEENS COLLEGE, Flushing, N. Y.; Eugene S. Gollin, Department of Psychology; *Development of Visual and Tactual Recognition*; 1 year; \$9,500

SMITHSONIAN INSTITUTION, Washington, D. C.

Martin Moynihan, Canal Zone Biological Area; *Behavior of Neotropical Lepidoptera*; 1 year; \$4,800

Martin Moynihan, Canal Zone Biological Area; *Comparative Analysis of Behavior in Tropical Birds*; 3 years; \$22,000

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.; W. W. Grings, Department of Psychology; *Stimulus Patterning in Learning*; 1 year; \$5,000

UNIVERSITY OF TEXAS, Austin, Tex.; Robert K. Young, Department of Psychology; *Studies of Verbal Learning*; 2 years; \$5,000

TULANE UNIVERSITY, New Orleans, La. Abram Amsel, Department of Psychology, Newcomb College; *Factors in Reward Situations*; 2 years; \$12,600

Edward A. Bilodeau, Department of Psychology; *Studies of Learning and Retention*; 3 years; \$14,900

UNIVERSITY OF VIRGINIA, Charlottesville, Va.; Frank W. Finger and L. Starling Reid, Department of Psychology; *Research on Induced Drive States*; 3 years; \$16,800

UNIVERSITY OF WISCONSIN, Madison, Wisc.; W. J. Brogden, Department of Psychology; *Learning and Conditioning*; 3 years; \$30,700

YALE UNIVERSITY, New Haven, Conn. William N. Dember, Department of Psychology; *Study of Perception and Learning*; 1 year; \$5,600

Frank A. Logan, Department of Psychology; *Conditions of Reinforcement*; 1 year; \$6,000

Fred D. Sheffield, Department of Psychology; *Studies in Conditioning*; 2 years; \$9,100

YESHIVA UNIVERSITY, New York, N. Y.; Seth K. Sharpless, Department of Pharmacology; *Biochemical Correlates of Behavior*; 2 years; \$23,900

PHYSICS

BOSTON UNIVERSITY, Boston, Mass.; Robert K. Nesbet, Department of Physics; *Semi-Empirical Calculation of Molecular-Electronic Wave Functions*; 2 years; \$11,800

BRANDEIS UNIVERSITY, Waltham, Mass. Max Chretien, Department of Physics; *Elementary Particle Studies With Bubble Chambers*; 2 years; \$15,400

Silvan S. Schweber, Department of Physics; *Quantum Theory of Fields*; 2 years; \$10,300

BRIGHAM YOUNG UNIVERSITY, Provo, Utah; John H. Gardner, Department of Physics;

Gyromagnetic Ratio of the Free Electron; 2 years; \$22,000

BROWN UNIVERSITY, Providence, R. I.

Phillip J. Bray, Department of Physics; *Nuclear Resonance Studies of Electron Distributions and Crystal Structure*; 2 years; \$16,200

David Feldman, Department of Physics; *Theoretical High-Energy Physics*; 2 years; \$26,800

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; Harry A. Kirkpatrick, Department of Physics; *Precision Measurements of Certain Fundamental Natural Constants*; 2 years; \$26,400

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.

Robert Karplus and Malvin A. Ruderman, Department of Physics; *Elementary Particles and High Energy Interactions*; 2 years; \$30,900

W. A. Nierenberg and G. O. Brink, Department of Physics; *Hyperfine Structure Anomalies of Isotopes*; 2 years; \$18,200

M. Tinkham, Department of Physics; *Studies of Solids at Millimeter and Sub-Millimeter Wavelengths*; 2 years; \$23,500

CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pa.

Robert T. Schumacher, Department of Physics; *Magnetic Resonance Studies*; 2 years; \$18,000

S. A. Friedberg, Department of Physics; *Investigation of Solids at Low Temperatures*; 2 years; \$13,400

UNIVERSITY OF CHICAGO, Chicago, Ill.

A. W. Lawson and M. H. Cohen, Department of Physics; *Solid State Properties of Bismuth, Antimony, and Arsenic*; 2 years; \$30,800

Marcel Schein, Department of Physics; *Interaction of Hyperons and Heavy Mesons*; 2 years; \$23,000

Marcel Schein, Department of Physics; *Cooperative Emulsion Flight for High Energy Events*; 3 years; \$450,000

CLARKSON COLLEGE OF TECHNOLOGY, Potsdam, N. Y.; John Weymouth, Department of Physics; *Thermal Diffuse X-Ray Scattering of Solids*; 2 years; \$11,800

COLUMBIA UNIVERSITY, New York, N. Y.

Henry A. Boorse, Department of Physics; *Researches in Low Temperature Physics*; 3 years; \$73,300

Gerard G. Harris and Jay Orear, Department of Physics; *Properties and Interactions of Elementary Particles*; 2 years; \$21,600

CORNELL UNIVERSITY, Ithaca, N. Y.; Robert M. Cotts, Department of Physics; *A Nuclear Spin Resonance Study of Solids*; 3 years; \$45,100

DARTMOUTH COLLEGE, Hanover, N. H.; J. W. Dewdney, Department of Physics; *Energy Distribution of Photoelectrons*; 2 years; \$12,500

FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; H. S. Plendl, Department of Physics; *Nuclear Spectroscopy*; 3 years; \$19,600

FRANKLIN INSTITUTE, Philadelphia, Pa.; F. R. Metzger, Bartol Research Foundation, Swarthmore, Pa.; *Nuclear Resonance Fluorescence Studies Using a Centrifuge Method*; 2 years; \$43,600

GEORGETOWN UNIVERSITY, Washington, D. C.; Robert N. Schwartz, Department of Physics;

Shock Wave Study of Vibrational Excitations in Gases; 2 years; \$19,100

HARVARD UNIVERSITY, Cambridge, Mass.

Francis M. Pipkin, Department of Physics; *Radio-Frequency Alignment of Nuclear Spins*; 2 years; \$25,700

Norman F. Ramsey, Department of Physics; *Molecular Beam Studies*; 2 years; \$56,600

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; Hans Meissner, Department of Physics; *Studies on Superconductivity*; 2 years; \$17,500

UNIVERSITY OF ILLINOIS, Urbana, Ill.; Frederick Seitz, Department of Physics; *Imperfections in Crystalline Materials*; 2 years; \$15,600

STATE UNIVERSITY OF IOWA, Iowa City, Iowa; J. M. Jauch, Department of Physics; *A Study of the Scattering Matrix*; 2 years; \$16,500

MARQUETTE UNIVERSITY, Milwaukee, Wis.; A. G. Barkow, Department of Physics; *Elementary Particle Reactions*; 2 years; \$8,600

UNIVERSITY OF MARYLAND, College Park, Md.

Laurens Jansen, Institute of Molecular Physics; *Physical Properties of Condensed Non-Polar Gases*; 2 years; \$160,000

Joseph Weber, Department of Physics; *Research on Relativity Theory*; 2 years; \$8,700

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Bruno Rossi, Department of Physics; *Cosmic Ray Air Shower Research*; 2 years; \$134,300

MICHIGAN STATE UNIVERSITY OF AGRICULTURE AND APPLIED SCIENCE, East Lansing, Mich.

Joseph Ballam, Department of Physics; *Properties of Heavy Mesons and Hyperons*; 2 years; \$28,800

Sherwood K. Haynes, Department of Physics; *Beta-Ray Spectroscopy at Very Low Energies*; 2 years; \$17,600

MIDWESTERN UNIVERSITIES RESEARCH ASSOCIATION, Madison, Wis.; Keith R. Symon, The University of Wisconsin; *High Energy Accelerator Studies*; 1 year; \$160,000

MONTANA STATE COLLEGE, Bozeman, Mont.; Hack Arroe, Department of Physics; *Hyperfine Structure in Atomic Spectra*; 2 years; \$19,400

NEW MEXICO COLLEGE, State College, N. Mex.; Robert E. McDaniel, Department of Physics; *Heavy Nuclei Component of Cosmic Radiation*; 2 years; \$4,800

UNIVERSITY OF NEW MEXICO, Albuquerque, N. Mex.; John R. Green, Department of Physics; *Penetrating Showers Produced in Light Elements*; 1 year; \$9,800

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

Bryce S. DeWitt, Department of Physics; *Gravitational Field Theory*; 2 years; \$13,400

R. E. Glover, Department of Physics; *Superconductivity in Thin Films*; 2 years; \$38,200

OHIO STATE UNIVERSITY, Columbus, Ohio

John G. Daunt, Department of Physics; *Physical Phenomena at Very Low Temperatures*; 5 years; \$208,000

R. L. Mills and A. M. Sessler, Department of Physics; *Theoretical Problems in Nuclear Physics*; 2 years; \$28,000

UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE, Norman, Okla.

R. G. Fowler and O. H. Theimer, Department of Physics, University of Oklahoma; *Influence of the Debye Shielding Effect of Strong Plasmas*; 2 years; \$13,000

Chun C. Lin, Department of Physics; *Pressure Broadening of Microwave Spectral Lines*; 2 years; \$6,500

J. R. Nielsen and O. H. Theimer, Department of Physics, University of Oklahoma; *Vibrational Spectra of Crystals and Polymers*; 2 years; \$18,600

UNIVERSITY OF OREGON, Eugene, Oreg.; Bernd Crasemann, Department of Physics; *Electron Capture Branching Ratios and Fluorescence Yields*; 3 years; \$16,100

PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.; Edwin R. Fitzgerald, Department of Physics; *Dynamic Properties of Metals*; 3 years; \$23,300

UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa.

C. Dean and G. A. Jeffrey, Department of Physics; *Study of Crystal and Molecular Structure*; 2 years; \$10,300

T. M. Donahue, Department of Physics; *Oxygen and Sodium in the Upper Atmosphere*; 1 year; \$8,100

COLLEGE OF PUGET SOUND, Tacoma, Wash.; Martin E. Nelson, Department of Physics; *Primary Cosmic Ray Studies Using Nuclear Emulsions*; 2 years; \$7,100

PURDUE RESEARCH FOUNDATION, Lafayette, Ind.; Kenneth L. Andrew, Department of Physics, Purdue University; *The Spectra of the Carbon Group and Their Analyses*; 2 years; \$10,200

REED COLLEGE, Portland, Oreg.; R. L. Martin, Department of Physics; *Optical Properties of Silver Halides*; 2 years; \$10,100

UNIVERSITY OF ROCHESTER, Rochester, N. Y.; M. Parker Givens, Institute of Optics; *A Study of the Optical Constants of Metals*; 2 years; \$18,700

SEATTLE PACIFIC COLLEGE, Seattle Wash.; Donald D. Kerlee, Department of Physics; *Primary Cosmic Ray Studies Using Nuclear Emulsions*; 2 years; \$12,000

SEATTLE UNIVERSITY, Seattle, Wash.; Paul S. Luger, S. J., Department of Physics; *Radionuclide Half-Life Measurement With a Precision Recording Electrometer*; 2 years; \$3,200

SYRACUSE UNIVERSITY, Syracuse, N. Y.; Peter G. Bergmann, Department of Physics; *Radiation Theory in General Relativity and Electrodynamics*; 2 years; \$22,000

UNIVERSITY OF TENNESSEE, Knoxville, Tenn.; D. T. King, Department of Physics; *Multiple Meson Production in Energetic Collisions of Nucleons*; 2 years; \$27,000

TRINITY COLLEGE, Hartford, Conn.; Robert Lindsay, Department of Physics; *Magnetization Studies of Antiferromagnetic Substances*; 2 years; \$11,600

UTICA COLLEGE OF SYRACUSE UNIVERSITY, Utica, N. Y.; Peter Fong, Department of Physics; *Theory of Nuclear Fission*; 2 years; \$6,500

WASHINGTON UNIVERSITY, St. Louis, Mo.; J. P. Hurley, Department of Physics; *Photon Splitting by the Coulomb Field*; 1 year; \$9,000

UNIVERSITY OF WISCONSIN, Madison, Wis.; Julian E. Mack, Department of Physics; *Structure of Atomic Spectra*; 2 years; \$31,500

UNIVERSITY OF WYOMING, Laramie, Wyo.; Frederick J. Bueche, Department of Physics; *Mechanical Properties of High Polymers*; 2 years; \$10,300

YALE UNIVERSITY, New Haven, Conn.; Henry A. Fairbank, Department of Physics; *Experimental Research in Low Temperature Physics*; 2 years; \$29,400

REGULATORY BIOLOGY

VICTOR H. DROPKIN, Nematode Research Laboratory, U. S. Department of Agriculture, Seaford, N. Y.; *A Bioassay of Root-Knot Nematodes Parasitic on Plants*; 6 months; \$800

UNIVERSITY OF ARIZONA, Tucson, Ariz.; William J. McCauley, Department of Zoology; *The Water Balance and Respiratory Metabolism of the Gila Monster*; 3 years; \$12,000

UNIVERSITY OF ARKANSAS, Fayetteville, Ark.; Charles D. Wood and Joseph E. Stone, Department of Physiology and Pharmacology; *Alterations Produced by Drugs to the Central Nervous System*; 2 years; \$20,100

BARNARD COLLEGE, New York, N. Y.; Aubrey Gorbman, Department of Zoology; *Comparative Physiology of Thyroid Function*; 3 years; \$28,700

BOSTON UNIVERSITY, Boston, Mass.; John D. Ifft, Department of Anatomy, School of Medicine; *Relationship of the Hypothalamus to the Gonadotrophic Activities of the Pituitary*; 3 years; \$17,100

Alfred B. Chaet, Department of Physiology, School of Medicine; *Toxic Factors in Heat Death*; 2 years; \$13,050

Rae Whitney, Department of Biology; *Responses to Homo-Transplants in Hamsters as a Function of Inbreeding*; 1 year; \$1,150

BUCKNELL UNIVERSITY, Lewisburg, Pa.; Roger H. Bowman, Department of Biology; *Growth Hormone Content of the Pituitary as Affected by Age*; 2 years; \$5,500

UNIVERSITY OF BUFFALO, Buffalo, N. Y.; Simon Rodbard, Chronic Disease Research Institute; *Regulation of the Circulating Plasma Volume by the Autonomic Nervous System*; 2 years; \$12,400

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; C. A. G. Wiersma, Division of Biology; *Integrative Action of the Crustacean Nervous System*; 3 years; \$39,900

UNIVERSITY OF CALIFORNIA, Berkeley, Calif. Alden S. Crafts, Department of Botany, Davis; *Uptake, Distribution, and Fate of Isotopically Labeled Compounds in Plants*; 2 years; \$6,700

Thomas W. James and Theodore L. Jahn, Department of Zoology, Los Angeles, Calif.; *Synchronously Dividing Cells*; 3 years; \$36,800

S. H. Madin, Department of Bacteriology, Naval Biological Laboratory; *Characterization of an Unknown Lethal Virus of Swine*; 2 years; \$18,600

John H. Phillips, Department of Bacteriology; *The Immune Mechanisms of Invertebrates*; 2 years; \$13,100

Charles H. Sawyer, Department of Anatomy, School of Medicine, Los Angeles; *Central Nervous Mechanisms Controlling the Neurohypophysis*; 3 years; \$21,300

Beatrice M. Sweeney, Biology Division, Scripps Institution of Oceanography, La Jolla, Calif.; *Endogenous Diurnal Rhythm in Cell Division in Marine Dinoflagellates*; 3 years; \$14,100

CITY COLLEGE OF NEW YORK, New York, N. Y.; William Etkin, Department of Biology; *Secretory Function of the Pituitary in the Absence of its Nerve Supply*; 2 years; \$16,900

COLORADO STATE UNIVERSITY, Fort Collins, Colo.; Frank B. Salisbury, Department of Botany and Plant Physiology; *The Influence of Growth Regulators Upon Flowering*; 2 years; \$13,400

UNIVERSITY OF COLORADO, Boulder, Colo.; Robert Samuels, Department of Microbiology, Medical Center, Denver, Colo.; *Nutrition of *Trichomonas Augusta**; 2 years; \$8,800

COLUMBIA UNIVERSITY, New York, N. Y.

Herbert Elftman, Department of Anatomy; *Effect of Transplantation on the Cytology of the Pituitary*; 1 year; \$5,400

Harry Grundfest, Department of Neurology; *Fundamental Mechanisms of Bioelectric Activity*; 5 years; \$75,900

Beatrice C. Seegal, Department of Microbiology; *Immunological Mechanisms in Experimental Nephritis*; 1 year; \$12,880

CONNECTICUT COLLEGE FOR WOMEN, New London, Conn.; John F. Kent, Department of Zoology; *Functional Significance of the Gastrointestinal Argentaffin Cells*; 3 years; \$13,100

CORNELL UNIVERSITY, Ithaca, N. Y.

Damon Boynton, Department of Pomology; *Natural Growth Regulators and Intermediary Nitrogenous Compounds in Growth and Flower Initiation*; 2 years; \$11,800

A. van Tienhoven, Department of Poultry Husbandry; *Neural Control of Ovulation*; 3 years; \$12,100

DE PAUL UNIVERSITY, Chicago, Ill.; John R. Cortelyou, Department of Biological Sciences; *Parathyroid Glands in Anuran Amphibians*; 2 years; \$8,300

DUKE UNIVERSITY, Durham, N. C.

John W. Everett, Department of Anatomy; *Neural Mechanisms Controlling the Pituitary Gland*; 2 years; \$16,750

Talmage L. Peele, Department of Anatomy; *Interdependence of Amygdala and Hypothalamus*; 2 years; \$20,000

GEORGE WASHINGTON UNIVERSITY, Washington, D. C.; Eugene M. Renkin, Department of Physiology, School of Medicine; *Regulatory Mechanisms in Blood Circulation*; 2 years; \$15,500

HARVARD UNIVERSITY, Cambridge, Mass.; Frederick L. Hisaw, Department of Biology; *Reproductive Hormonal Processes in Elasmobranch Fishes and Ascidians*; 2 years; \$9,400

KANSAS STATE COLLEGE OF AGRICULTURE AND APPLIED SCIENCE, Manhattan, Kans.; Byron S. Miller and John A. Johnson, Department of Flour and Feed Milling Indus-

tries; *Resistance of the Wheat Plant to Attack by the Hessian Fly*; 3 years; \$8,700

UNIVERSITY OF KANSAS, Lawrence, Kans.; H. W. Barrett, Department of Biochemistry; *Intestinal Absorption of Peptides*; 2 years; \$8,700

UNIVERSITY OF LOUISVILLE, Louisville, Ky.; Warren S. Rehm, Department of Physiology; *Electrophysiological Studies on Gastric Mucosa*; 3 years; \$35,300

MICHIGAN STATE UNIVERSITY OF AGRICULTURE AND APPLIED SCIENCE, East Lansing, Mich.; W. J. Hooker, Department of Botany and Plant Pathology; *Virus Multiplication as Influenced by Inherent Resistance of the Plant Host*; 2 years; \$13,000

UNIVERSITY OF MISSOURI, Columbia, Mo.

J. Levitt, Department of Botany; *Physiological Basis of Resistance of Plants to Frost and Drought*; 2 years; \$12,500

Thomas D. Luckey, Department of Biochemistry; *Role of Intestinal Microorganisms in Vitamin Nutrition in the Chicken*; 3 years; \$28,400

NEW YORK UNIVERSITY, New York, N. Y.; William B. Hebard, Department of Biology; *Species, Age, and Seasonal Variation in Amphibian Blood Composition*; 3 years; \$8,400

NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING, Raleigh, N. C.; Robert P. Upchurch, Department of Field Crops; *Uptake of Organic Substances by Plant Roots*; 3 years; \$23,900

OHIO STATE UNIVERSITY, Columbus, Ohio; Leo A. Sapirstein, Department of Physiology; *Movement of Dissolved Materials Between the Circulating Blood and Cells*; 2 years; \$25,800

OREGON STATE COLLEGE, Corvallis, Oreg.; Carroll W. Fox, Department of Dairy and Animal Husbandry; *Dietary Influences on Fertility*; 1 year; \$6,100

Austin Pritchard, Department of Zoology; *Action of Thyroid Hormone in Embryonic Sharks*; 1 year; \$1,200

UNIVERSITY OF OREGON, Eugene, Oreg.; George M. Austin, Division of Neurosurgery Medical School, Portland, Oreg.; *Single Cell Activity of Spinal Cord in Relation to Intra-spinal Sprouting of New Terminals*; 2 years; \$24,100

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; William S. Yamamoto, Department of Physiology, School of Medicine; *Regulation of the Arterial CO₂ Concentration*; 3 years; \$13,100

PRINCETON UNIVERSITY, Princeton, N. J.; Colin S. Pittendrigh, Department of Biology; *Physiological and Chemical Study of the Mechanisms of Biological Clocks*; 3 years; \$30,000

PURDUE RESEARCH FOUNDATION, Lafayette, Ind.

George A. Gries, Department of Botany and Plant Pathology; *Senescence of Plant Roots*; 1 year; \$900

Richard C. Sanborn, Department of Biological Sciences; *The Extracellular Fluid of Arthropods*; 2 years; \$12,100

UNIVERSITY OF ROCHESTER, Rochester, N. Y.; Terence A. Rogers, Department of Physiology, School of Medicine and Dentistry;

Distribution of Magnesium in Tissues; 1 year; \$7,500

RUTGERS, THE STATE UNIVERSITY, New Brunswick, N. J.; W. Rei Robbins, Department of Plant Physiology; Physiologically Active and Inactive Forms of Iron in Plants; 1 year; \$2,000

ST. JOHN'S UNIVERSITY, Brooklyn, N. Y.; Daniel M. Lilly, Department of Biology; Growth and Nutrition in Hypotrichous Ciliates; 2 years; \$14,000

SOUTHWESTERN LOUISIANA INSTITUTE, Lafayette, La.; Velvl W. Greene, Department of Bacteriology; Interaction of Pure Strains of Lactic Streptococci; 2 years; \$5,300

UNIVERSITY OF TEXAS, Austin, Tex.; Sidney Ochs, Department of Physiology, Medical Branch, Galveston, Tex.; Surface Responses From the Cerebral Cortex Elicited by Stimulation; 3 years; \$9,600

UNIVERSITY OF TORONTO, Toronto, Canada; D. S. Van Fleet, Department of Botany; Cell Division and Differentiation in Plants; 1 year; \$2,350

TRINITY UNIVERSITY, San Antonio, Tex.; William A. Kratz, Department of Biology; Thermal Tolerant and Thermophilic Algae; 2 years; \$7,100

TULANE UNIVERSITY OF LOUISIANA, New Orleans, La.; Harold Baer, Department of Microbiology, School of Medicine; Properties and Uses of Fluorescent Antibodies; 2 years; \$17,000

UNIVERSITY OF UTAH, Salt Lake City, Utah; James R. King, Department of Experimental Biology; Avian Energy Metabolism; 3 years; \$15,000

VALPARAISO UNIVERSITY, Valparaiso, Ind. W. C. Gunther, Department of Biology; Seasonal Variation of Reproductive Organs and Endocrine Glands; 1 year; \$1,600

Robert J. Hanson, Department of Biology, The Phagocytosis of Influenza Virus; 3 years; \$8,880

WALDEMAR MEDICAL RESEARCH FOUNDATION, INC., Port Washington, Long Island, N. Y.; Norman Molomut, Scientific Director; The Effects of Neurogenic Stress on Tissue Regeneration; 18 months; \$14,500

WAYNE STATE UNIVERSITY, Detroit, Mich.; Walter Chavin, Department of Biology; Nature and Role of the Thyroid Hormone in Primitive Vertebrates; 2 years; \$13,000

WILKES COLLEGE, Wilkes-Barre, Pa.; Charles B. Reif, Department of Biology; Proto-plasmic Similarities Between Green and Colorless Forms of Euglena; 2 years; \$7,400

UNIVERSITY OF WISCONSIN, Madison, Wis. Harold R. Wolfe, Department of Zoology; Relation of Age to Antibody Response; 2 years; \$18,000

Charles M. Weise, Department of Zoology; Physiological Factors Influencing Migration and Molt in Birds; 2 years; \$6,500

YALE UNIVERSITY, New Haven, Conn. Philip B. Cowles, Department of Microbiology; Bacteriophagy and Bacteriocinogeny; 2 years; \$11,000

Jerome P. Sutin, Department of Anatomy, School of Medicine; Central Nervous System Mechanisms Regulating Food Intake; 3 years; \$26,900

SOCIOLOGICAL SCIENCES

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Richard C. Atkinson, Department of Psychology, Los Angeles, Calif.; Multi-Person Decision Processes; 1 year; \$5,000

UNIVERSITY OF CHICAGO, Chicago, Ill.; Beverly Duncan, Population Research and Training Center; Metropolitan Residential Structure; 2 years; \$10,000

CORNELL UNIVERSITY, Ithaca, N. Y.; Urie Bronfenbrenner, Department of Child Development and Family Relations; Identification and Family Structure; 1 year; \$9,500

HARVARD UNIVERSITY, Cambridge, Mass. R. Duncan Luce, Laboratory of Social Relations; Mathematics of Imperfect Discrimination; 1 year; \$7,300

R. Duncan Luce, Laboratory of Social Relations; Individual Choice Behavior; 3 years; \$24,500

JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; Clinton De Sota, Department of Psychology; Conceptual Learning of Relationships; 2 years; \$7,100

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.

Daniel Lerner, Center for International Studies; Soviet Science; 1 year; \$13,800

Marvin E. Shaw, School of Industrial Management; Use of Information in Small Groups; 2 years; \$9,700

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; Robert B. Zajonc, Research Center for Group Dynamics; Selective Factors in Cognition; 3 years; \$25,200

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Harold H. Kelley, Laboratory of Research and Social Relations; Patterns of Interdependency in Small Groups; 3 years; \$20,300

UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N. C.; Daniel O. Price, Institute for Research in Social Science; Computer Research in Demography; 1 year; \$9,900

UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Dorothy S. Thomas, Department of Sociology; Migration Differentials; 2 years; \$20,200

RUTGERS, THE STATE UNIVERSITY, New Brunswick, N. J.; John W. Riley, Jr., Department of Sociology; Statistical Methods for Social System Data; 3 years; \$14,600

SYSTEMATIC BIOLOGY

ALLEGHENY COLLEGE, Meadville, Pa.; Robert E. Bugbee, Department of Biology; Revision of North American Species of Eurytoma; 2 years; \$2,000

AMERICAN MUSEUM OF NATURAL HISTORY, New York, N. Y.

Joseph C. Moore, Department of Mammals; Revision of the Indomalayan Sciuridae; 1 year; \$2,700

Nicholas S. Obraztsov, Department of Insects and Spiders; Revision of North American Tortricidae; 2 years; \$12,000

AMHERST COLLEGE, Amherst, Mass.; Albert E. Wood, Department of Biology, Evolution of Early Rodents and Lagomorphs; 3 years; \$8,000

UNIVERSITY OF ARKANSAS, Fayetteville, Ark.; Herndon G. Dowling, Department of Zoology; *American Species of Elaphe (Reptilia)*; 2 years; \$9,000

BERNICE P. BISHOP MUSEUM, Honolulu, T. H.; J. Linsley Gressitt, Department of Entomology; *Zoogeography and Evolution of Pacific Insects*; 2 years; \$25,000

BOSTON UNIVERSITY, Boston, Mass.; Arthur G. Humes, Department of Biology; *Copepoda (Crustacea) of Africa and Madagascar*; 1 year; \$4,800

UNIVERSITY OF CALIFORNIA, Berkeley, Calif. Martin W. Johnson, Scripps Institution of Oceanography, La Jolla, Calif.; *Taxonomic and Zoogeographic Studies of Copepods (Crustacea)*; 1 year; \$2,100

Maynard F. Moseley, Department of Botany, Santa Barbara College, Goleta, Calif.; *Morphological Studies of Nymphaeaceae*; 3 years; \$8,000

Irwin M. Newell, Division of Life Science, Riverside; *Correlation of Larvae and Adults of Polytrichous Trombidiform Mites*; 3 years; \$16,800

Ruben A. Stirton, Museum of Paleontology; *Tertiary Mammals of Australia*; 2 years; \$7,100

CANISIUS COLLEGE, Buffalo, N. Y.; John L. Blum, Department of Biology; *Composition and Phytogeography of the Coastal Vaucheria Belt*; 2 years; \$3,800

CHICAGO ACADEMY OF SCIENCES, Chicago, Ill.; Dr. Howard K. Gloyd, Director; *The Crotalid Snake Genus Agkistrodon*; 2 years; \$4,400

UNIVERSITY OF CHICAGO, Chicago, Ill.; Barbara F. Palser, Department of Botany; *Floral Morphology of the Ericales*; 2 years; \$10,000

CLAREMONT GRADUATE SCHOOL, Claremont, Calif.; Sherwin Carlquist, Department of Botany; *Wood Anatomy of Compositae*; 3 years; \$7,300

COLLEGE OF MEDICAL EVANGELISTS, Loma Linda, Calif.; Bruce W. Halstead and F. Rene Modglin, Department of Biototoxicology; *Phylogenetic Relationships in Sting-rays*; 2 years; \$9,000

COLORADO STATE UNIVERSITY, Fort Collins, Colo.; Tyler A. Woolley, Department of Zoology; *Systematics of Oribatid Mites*; 3 years; \$12,000

UNIVERSITY OF CONNECTICUT, Storrs, Conn.; James A. Slater, Department of Zoology and Entomology; *Systematic Studies of the Family Lygaeidae (Hemiptera)*; 4 years; \$18,000

CORNELL UNIVERSITY, Ithaca, N. Y.

Helen J. Illick, Biology Department, Russell Sage College, Troy, N. Y.; *Morphology of the Lateral-Line System in Cyprinidae*; 1 year; \$1,750

Edward C. Raney, Department of Conservation; *Systematics and Speciation in Fishes*; 1 year; \$8,300

Charles G. Sibley, Department of Conservation; *Paper Electrophoresis As a Method in Avian Taxonomy*; 1 year; \$5,400

DUKE UNIVERSITY, Durham, N. C.

H. L. Blomquist, Department of Botany; *Systematics of Sphagnum in North America*; 2 years; \$8,400

Robert L. Wilbur, Department of Botany; *A Systematic Study of the Genus Amorpha (Leguminosae)*; 2 years; \$4,600

FLORIDA STATE UNIVERSITY, Tallahassee, Fla.

Robert K. Godfrey, Department of Biological Sciences; *Vascular Plants of Aquatic Marsh Habitats of Western Florida*; 2 years; \$6,000

Robert B. Short, Department of Biological Sciences; *Taxonomic Studies of Dicyemid Mesozoa*; 2 years; \$6,300

UNIVERSITY OF FLORIDA, Gainesville, Fla.

Coleman J. Goin, Department of Biology; *Systematics and Evolution of the Amphibia*; 2 years; \$2,400

William J. Riemer, Florida State Museum; *Herepetofauna of the Apalachicola Basin*; 3 years; \$7,400

Minter J. Westfall, Jr., Department of Biology; *Systematic Studies of North American Zygoptera*; 3 years; \$15,000

GRINNELL COLLEGE, Grinnell, Iowa.

Kenneth A. Christiansen, Department of Biology; *Systematic Studies of Collembola*; 2 years; \$5,400

Norman H. Russell, Department of Biology; *The Genus Viola in North America*; 3 years; \$11,600

HARVARD UNIVERSITY, Cambridge, Mass.

Richard A. Howard, Arnold Arboretum; *Flora of the Lesser Antilles*; 3 years; \$21,000

I. Mackenzie Lamb, Farlow Herbarium; *New Index of Lichens*; 2 years; \$3,900

Herbert W. Levi, Museum of Comparative Zoology; *Type Species of Rare Spider Genera*; 1 year; \$2,200

Alfred S. Romer, Museum of Comparative Zoology; *Study of Carboniferous Tetrapods*; 2 years; \$7,800

Alfred S. Romer, Museum of Comparative Zoology; *Triassic Vertebrates of Argentina*; 1 year; \$3,000

Ernest E. Williams, Museum of Comparative Zoology; *Systematics and Ecology of Anolis in Cuba*; 2 years; \$9,700

UNIVERSITY OF HAWAII, Honolulu, T. H.; Leonard D. Tuthill, Department of Entomology; *Insects of Hawaii*; 3 years; \$37,500

IDAHO STATE COLLEGE, Pocatello, Idaho; Marie L. Hopkins, Department of Zoology; *Bison Latifrons and Associated Pleistocene Fauna*; 3 years; \$4,800

UNIVERSITY OF ILLINOIS, Urbana, Ill.

Donald P. Rogers, Department of Botany; *Lower Basidiomycetes of Oregon*; 2 years; \$10,000

Milton W. Sanderson, State Natural History Survey Division; *West Indian Species of Phyllophaga (Coleoptera)*; 3 years; \$8,800

Wilson N. Stewart, Department of Botany; *Petrifaction Fossils of the Pennsylvania period*; 3 years; \$10,000

STATE UNIVERSITY OF IOWA, Iowa City, Iowa; Robert F. Thorne, Department of Botany; *Vascular Plants of Iowa*; 3 years; \$10,000

KAISER FOUNDATION, Oakland, Calif.; Benjamin G. Chitwood, Laboratory of Comparative Physiology and Morphology; *Marine Nematodes and Other Scolecids*; 2 years; \$12,000

KANSAS STATE COLLEGE OF AGRICULTURE AND APPLIED SCIENCE, Manhattan, Kans.; Reginald H. Painter, Department of Entomology;

Taxonomic Study of Poecilantrax (Diptera); 2 years; \$2,000

UNIVERSITY OF KANSAS, Lawrence, Kans.

Robert W. Baxter, Department of Botany; *The Pennsylvanian Fossil Flora of Eastern Kansas*; 3 years; \$11,600

E. Raymond Hall, Department of Zoology; *Systematics Studies of North American Mammals*; 3 years; \$11,000

Ronald L. McGregor, Department of Botany; *A Biosystematic Study of Echinacea (Compositae)*; 2 years; \$5,300

UNIVERSITY OF MAINE, Orono, Maine.

Gordon E. Gates, Department of Zoology; *Classification of Oligochasta*; 4 years; \$26,000

Martin A. Rosinski, Department of Botany and Plant Pathology; *Morphology and Cytology of Ceratocystis*; 2 years; \$3,700

UNIVERSITY OF MARYLAND, College Park, Md.; G. W. Wharton, Department of Zoology; *Basic Research in Acarology*; 3 years; \$27,800

UNIVERSITY OF MASSACHUSETTS, Amherst, Mass.; Charles P. Alexander, Department of Entomology; *Crane-Flies of Western North America*; 2 years; \$3,200

MICHIGAN STATE UNIVERSITY OF AGRICULTURE AND APPLIED SCIENCE, East Lansing, Mich.; Henry A. Imshaug; Department of Botany and Plant Pathology; *Taxonomic and Phytogeographic Study of West Indian Lichens*; 3 years; \$19,000

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.

Claude W. Hibbard, Museum of Paleontology; *Pleistocene Faunas of the High Plains Region*; 3 years; \$18,600

Warren H. Wagner, Department of Botany; *Fern Taxonomy*; 1 year; \$8,000

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; A. Orville Dahl, Department of Botany; *Fine Structure of Pollen Grains*; 2 years; \$11,000

MISSOURI BOTANICAL GARDEN, St. Louis, Mo.; Julian A. Steyermark, Research Department; *Revised Catalogue of Missouri Flora*; 1 year; \$1,750

UNIVERSITY OF NEW HAMPSHIRE, Durham, N. H.

Marian H. Pettibone, Department of Zoology; *Polychaetous Annelids of New England*; 4 years; \$15,000

Emery F. Swan, Department of Zoology; *Growth and Variation in Sea Urchins (Echinoidea)*; 4 years; \$18,600

NEW YORK BOTANICAL GARDEN, New York, N. Y.; David D. Keck; Assistant Director and Head Curator; *Studies in Systematic Botany*; 1 year; \$30,000

NEW YORK ZOOLOGICAL SOCIETY, New York, N. Y.; Myron Gordon, Genetics Laboratory; *A Biological Synthesis of the Poeciliid Fishes*; 2 years; \$11,000

NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING, Raleigh, N. C.

Clyde F. Smith, Division of Biological Sciences; *Catalogue of the Homoptera of the World*; 1 year; \$6,900

Theodore B. Mitchell, Division of Biological Sciences; *Native Bees of the Eastern United States*; 3 years; \$34,000

UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N. C.; Albert E. Radford, Department of Botany; *Flora of North and South Carolina*; 2 years; \$16,000

Austin B. Williams, Institute of Fisheries Research; *Decapod Crustaceans of the South-eastern United States*; 3 years; \$8,000

OKLAHOMA STATE UNIVERSITY AND APPLIED SCIENCE, Stillwater, Okla.; George A. Moore, Department of Zoology; *Comparative Morphology of Sunfishes*; 2 years; \$7,000

UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE, Norman, Okla.; Norman H. Boke, Department of Plant Sciences, University of Oklahoma; *Developmental Anatomy of Cactaceae*; 3 years; \$16,200

OREGON STATE COLLEGE, Corvallis, Oreg.

Harold J. Jensen, Department of Botany and Plant Pathology; *Survey of Marine Nematodes*; 3 years; \$9,900

Herman A. Scullen, Department of Entomology; *Taxonomic Studies of Cercerini*; 2 years; \$5,800

William P. Stephen, Department of Entomology; *Systematic Studies of Apidae*; 3 years; \$9,400

RANCHO SANTA ANA BOTANIC GARDEN, Claremont, Calif.; Philip A. Munz, Director; *Cytological and Systematic Investigations of Onagraceae*; 3 years; \$10,600

ROOSEVELT UNIVERSITY, Chicago, Ill.; Charles H. Seevers, Department of Biology; *Systematics and Evolution of the Staphylinidae*; 3 years; \$6,900

RUSSELL SAGE COLLEGE, Troy, N. Y.; Geneva Sayre, Department of Biology; *Nomenclature and Classification of Bryophytes*; 1 year; \$8,500

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

Ruth E. Gordon, Institute of Microbiology; *Taxonomic Study of Actinomycetes*; 3 years; \$20,000

Marion A. Johnson, Department of Botany; *Serological Study of Festuceae*; 3 years; \$15,000

ST. JOHN FISHER COLLEGE, Rochester, N. Y.; Ross H. Arnett, Jr., Department of Biology; *Speciation of Oedemerid Beetles*; 2 years; \$3,500

SMITHSONIAN INSTITUTION, Washington, D. C.

Carl J. Drake, Department of Zoology; *Monographic Studies of Tingidae and Presmididae (Hemiptera)*; 2 years; \$19,000

Mason E. Hale, Jr.; Department of Botany; *Lichens of West Virginia*; 1 year; \$1,650

Porter M. Kier, Department of Geology; *Studies of Cassiduloidea (Echinoidea)*; 1 year; \$2,700

Floyd A. McClure, Department of Botany; *Taxonomy of the Bamboos*; 2 years; \$14,000

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.; John S. Garth, Department of Biology; *Xanthidae of the Pacific American Coast*; 2 years; \$11,500

SOUTHWESTERN LOUISIANA INSTITUTE, Lafayette, La.; William D. Reese, Department of Biology; *The Moss Genus Calymperes in South America*; 2 years; \$3,300

STANFORD UNIVERSITY, Stanford, Calif.; George S. Myers, Natural History Museum; *Systematic Study of Zecomorph Fishes*; 3 years; \$16,000

UNIVERSITY OF TENNESSEE, Knoxville, Tenn.

Arthur C. Cole, Jr., Department of Entomology; *The Ant Genus Pogonomyrmex*; 2 years; \$6,000

Aaron J. Sharp, Department of Botany; *Vascular Plants of Tennessee*; 3 years; \$15,000

TEXAS RESEARCH FOUNDATION, Renner, Tex.; Donovan S. Correll, Botanical Laboratory; *Section Tuberarium of Solanum in North, Central and South America*; 3 years; \$14,000

UNIVERSITY OF TEXAS, Austin, Tex.

W. Frank Blair, Department of Zoology; *Speciation in Amphibian Populations*; 3 years; \$15,300

Harold C. Bold, Department of Botany; *Algae of Texas Soils*; 1 year; \$6,000

Clark Hubbs, Department of Zoology, *Speciation in Fish Population*; 3 years; \$11,800

Wilson S. Stone and Marshall R. Wheeler, Department of Zoology; *Drosophilidae of the Caribbean Regions*; 3 years; \$25,000

UNIVERSITY OF TULSA, Tulsa, Okla.; Albert F. Blair and Hague L. Lindsay, Jr., Department of Life Sciences; *Population Studies of Plethodontid Salamanders*; 2 years; \$2,800

UNIVERSITY OF UTAH, Salt Lake City, Utah; George F. Edmunds, Department of Zoology and Entomology; *Higher Classification of Ephemeroptera*; 2 years; \$6,300

VALPARAISO UNIVERSITY, Valparaiso, Ind.; Carl H. Krekeler, Department of Biology; *Systematic Studies of Cavernicolous Coleoptera*; 3 years; \$4,500

UNIVERSITY OF VERMONT AND STATE AGRICULTURAL COLLEGE, Burlington, Vt.; Hubert W. Vogelmann, Department of Botany; *A Study of Pringle's Undistributed Botanical Collections*; 2 years; \$6,400

UNIVERSITY OF VIRGINIA, Charlottesville, Va.; Perry C. Holt, Biology Department; *Systematic Studies of Branchiobdellidae*; 2 years; \$5,800

UNIVERSITY OF WASHINGTON, Seattle, Wash.; Paul L. Illig, Department of Zoology; *Systematics of Crustacea*; 2 years; \$17,700

WASHINGTON UNIVERSITY, St. Louis, Mo.; Carroll W. Dodge, Henry Shaw School of Botany; *Lichen Flora of the Antarctic Continent*; 2 years; \$13,100

UNIVERSITY OF WISCONSIN, Madison, Wis.; John W. Thomson, Department of Botany; *A Manual of American Arctic Lichens*; 2 years; \$8,000

YOUNGSTOWN UNIVERSITY, Youngstown, Ohio; Fred H. Glenny, Department of Biology; *The Aortic Arch System of Birds*; 1 year; \$1,300

CONTINUING ANTARCTIC RESEARCH

Antarctic Field Operations

U. S. WEATHER BUREAU, Washington, D. C.; F. W. Reichelderfer, Chief; *Conduct of Antarctic Field Operations*; 2 years; \$51,500

Aurora and Airglow

ARCTIC INSTITUTE OF NORTH AMERICA, New York, N. Y.; Walter A. Wood, Director; *Conduct of the Aurora and Airglow Program*; 2 years; \$20,000

Biology and Medicine

ARCTIC INSTITUTE OF NORTH AMERICA, New York, N. Y.; Walter A. Wood, Director; *Establishment of a Biological Laboratory at the Antarctic McMurdo Base*; 2 years; \$82,000

Executive Direction

NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL, Washington, D. C.; G. D. Meid, Business Manager; *Committee on Polar Research*; 1 year; \$30,000

Geomagnetism

U. S. COAST AND GEODETIC SURVEY, Washington, D. C.; H. Arnold Karo, Director; *Conduct of Geomagnetism Program*; 2 years; \$10,000

Glaciology

ARCTIC INSTITUTE OF NORTH AMERICA, New York, N. Y.

Walter A. Wood, Director; *Conduct of Program in Traverse Seismology*; 2 years; \$42,000

Walter A. Wood, Director; *Conduct of Station and Traverse Glaciology*; 2 years; \$265,000

Ionospheric Physics

NATIONAL BUREAU OF STANDARDS, Washington, D. C.; A. V. Astin, Director; *Conduct of Ionospheric Physics Program*; 2 years; \$109,300

Meteorology

U. S. WEATHER BUREAU, Washington, D. C.; F. W. Reichelderfer, Chief; *Conduct of Meteorology Program*; 2 years; \$301,000

Oceanography

WOODS HOLE OCEANOGRAPHIC INSTITUTION, Woods Hole, Mass.; John McGilvray, Business Manager; *Procurement of Deep Water Large Sample Bottles*; 1 year; \$2,000

Station Seismology

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; Frank Press, Director, *Seismological Laboratory; Seismology Observations at Wilkes Station*; 2 years; \$2,500

COLUMBIA UNIVERSITY, New York, N. Y.; Maurice Ewing, Director, *Lamont Geological Observatory; Seismology Observations at Hallett Station*; 2 years; \$2,500

U. S. COAST AND GEODETIC SURVEY, Washington, D. C.; H. Arnold Karo, Director; *Seismology Observations at Byrd and South Pole Stations*; 2 years; \$5,000

GENERAL

AMERICAN PHYSIOLOGICAL SOCIETY, Washington, D. C.; Louis N. Katz, President; *Program of Summer Research for Teachers of College Physiology*; 1 year; \$50,000

UNIVERSITY OF ARIZONA, Tucson, Ariz.; Kenneth F. Wertman, Department of Bacteriology; *Purchase of an Electron Microscope for Basic Research*; 1 year; \$30,200

BAYLOR UNIVERSITY, Waco, Tex.; Stanley W. Olson, Dean, College of Medicine, Texas Medical Center, Houston, Tex.; *Short Term Research by Medical Students*; 3 years; \$12,000

BERMUDA BIOLOGICAL STATION, St. George's West, Bermuda; W. H. Sutcliffe, Jr., Director; *Research at the Bermuda Biological Station*; 5 years; \$12,500

COLUMBIA UNIVERSITY, New York, N. Y.; Willard C. Rappleye, Dean, College of Physicians and Surgeons; *Short Term Research by Medical Students*; 3 years; \$12,000

DUKE UNIVERSITY, Durham, N. C.; Kenneth E. Penrod, Assistant Dean, School of Medicine; *Short Term Research by Medical Students*; 3 years; \$10,800

UNIVERSITY OF FLORIDA, Gainesville, Fla.; George T. Harrell, Dean, The College of Medicine; *Short Term Research by Medical Students*; 3 years; \$3,600

GULF COAST RESEARCH LABORATORY, Ocean Springs, Miss.; Gordon Gunter, Director; *Summer Research at the Gulf Coast Research Laboratory*; 2 years; \$12,000

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL, Philadelphia, Pa.; Harold A. Taggart, Associate Dean; *Short Term Research by Medical Students*; 3 years; \$12,000

HARVARD UNIVERSITY, Cambridge, Mass.; F. M. Carpenter, Department of Biology; *An Electron Microscope for Biological Research*; 1 year; \$32,800

HIGHLAND BIOLOGICAL STATION, INC., Highlands, N. C.; Thelma Howell, Executive Director; *Summer Research at the Highlands Biological Station*; 3 years; \$17,400

UNIVERSITY OF KANSAS, Kansas City, Kans.; Alvar A. Werder, Chairman of the Research Committee, School of Medicine; *Short Term Research by Medical Students*; 3 years; \$10,800

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; A. H. Stockard, Director, University of Michigan Biological Station; *Summer Research at the University of Michigan Biological Station*; 2 years; \$15,100

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Robert B. Howard, Associate Dean, The Medical School; *Short Term Research by Medical Students*; 3 years; \$12,000

NEW YORK UNIVERSITY, New York, N. Y.; W. N. Hubbard, Jr., Associate Dean, New York University College of Medicine; *Short Term Research by Medical Students*; 3 years; \$12,000

NORTHWESTERN UNIVERSITY, Evanston, Ill.; Richard H. Young, Dean, The Medical School, Chicago, Ill.; *Short Term Research by Medical Students*; 3 years; \$12,000

UNIVERSITY OF ROCHESTER, Rochester, N. Y.; Donald G. Anderson, Dean, School of Medicine and Dentistry; *Short Term Research by Medical Students*; 3 years; \$12,000

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.; Frederick J. Moore, Research Committee, School of Medicine; *Short Term Research by Medical Students*; 3 years; \$12,000

UNIVERSITY OF TEXAS, Austin, Tex.; John B. Truslow, Executive Director, Medical Branch, Galveston, Tex.; *Short Term Research by Medical Students*; 3 years; \$12,000

TULANE UNIVERSITY OF LOUISIANA, New Orleans, La.; M. E. Lapham, Dean, The School of Medicine; *Short Term Research by Medical Students*; 3 years; \$12,000

UNIVERSITY OF UTAH, Salt Lake City, Utah; Philip B. Price, Dean, College of Medicine; *Short Term Research by Medical Students*; 3 years; \$12,000

VANDERBILT UNIVERSITY, Nashville, Tenn.; John B. Youmans, Dean, The School of Medi-

cine; *Short Term Research by Medical Students*; 3 years; \$12,000

UNIVERSITY OF WISCONSIN, Madison, Wis.; F. E. Shideman, Chairman, Committee on Scholarships and Fellowships of the Medical School; *Short Term Research by Medical Students*; 3 years; \$12,000

WORCESTER FOUNDATION FOR EXPERIMENTAL BIOLOGY, Shrewsbury, Mass.; Hudson Hoagland, Executive Director; *Distilling Equipment for Hazardous Volatile Solvents*; 1 year; \$4,500

YESHIVA UNIVERSITY, New York, N. Y.; Marcus D. Kogel, Dean, Albert Einstein College of Medicine; *Short Term Research by Medical Students*; 3 years; \$12,000

FACILITIES

BOTANICAL SOCIETY OF AMERICA, INC., Pasadena, Calif.; F. W. Went, President; *Feasibility Study for Construction of a Controlled Environment Facility*; 1 year; \$20,200

UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Stanislavs Vasilevskis, Lick Observatory; *Design of Equipment Consisting of an Automatic Machine for Measuring Astrographic Positions and Magnitudes*; 1 year; \$67,200

HARVARD UNIVERSITY, Cambridge, Mass.; Alfred S. Romer, Director, Museum of Comparative Zoology; *Museum Facilities for Research in Systematic Zoology and Paleontology*; 5 years; \$300,000

UNIVERSITY OF HAWAII, Honolulu, T. H.; A. H. Banner, Acting Director; *Improvement of Research Facilities at the Hawaii Marine Laboratory*; 1 year; \$13,500

INDIANA UNIVERSITY, Bloomington, Ind.; Ralph E. Cleland, Botany Department; *A Controlled Environment Room for Botanical Research*; 1 year; \$25,000

IOWA STATE COLLEGE, Ames, Iowa; R. M. Stewart, Department of Physics; *Construction of a High Speed Digital Computer*; 1 year; \$50,000

MARINE BIOLOGICAL LABORATORY, Woods Hole, Mass.; Phillip B. Armstrong, Director; *Construction of a Research Building and of Housing for Basic Biological and Medical Sciences*; 3 years; \$544,250

UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; S. E. Warschawski, Department of Mathematics; *Acquisition of a High Speed Digital Computer*; 1 year; \$100,000

UNIVERSITY OF OKLAHOMA, Norman, Okla.; Gerald S. Tuma, School of Electrical Engineering; *Construction of a High Speed Digital Computer*; 1 year; \$50,000

UNIVERSITY OF VIRGINIA, Charlottesville, Va.; Horton H. Hobbs, Jr., Director; *Improvement of Research Facilities at the Mountain Lake Biological Station*; 1 year; \$5,200

Lawrence R. Quarles, Dean of the School of Engineering; *Research Reactor Facility*; 2 years; \$150,000

STATE COLLEGE OF WASHINGTON, Pullman, Wash.; Harold W. Dodgen, Department of Chemistry; *Research Reactor Facility*; 2 years; \$300,000

YALE UNIVERSITY, New Haven, Conn.; Edgar J. Boell, Department of Zoology; *Facility for a Rectriculating Sea-Water System*; 1 year; \$4,700