

APPENDIX B

Research Support Program

BASIC RESEARCH GRANTS AWARDED IN FISCAL YEAR 1956

Anthropological and Related Sciences

- BERNICE P. BISHOP MUSEUM, Honolulu, T. H.; Charles E. Snow; *Prehistoric Inhabitants of Oaku*; 2 years; \$7,000.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; Robert J. Braidwood, The Oriental Institute; *Synthesis of Certain Aspects of the Transition from Food-Gathering to Food-Production*; 2 years; \$6,300.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; Sol Tax, Department of Anthropology; *Interrelations of Vegetation, Agricultural Patterns, and Human Culture in Mexico*; 2 years; \$15,800.
- CHICAGO NATURAL HISTORY MUSEUM, Chicago, Ill.; Donald Collier, South American Archaeology and Ethnology; *Archaeological Study of Urbanization in Prehistoric Peru*; 2 years; \$8,500.
- HARVARD UNIVERSITY, Cambridge, Mass.; Fred H. Allen, Jr., Harvard Medical School; *Blood Typing of Native Population at Hacienda Vicos, Peru*; 1 year; \$2,800.
- HARVARD UNIVERSITY, Cambridge, Mass.; Hallam L. Movius, Jr., Peabody Museum; *Upper Paleolithic Studies in the Dordogne Region*; 2 years; \$27,200.
- HARVARD UNIVERSITY, Cambridge, Mass.; Douglas L. Oliver, Department of Anthropology; *Anthropological Study of the Society Islands*; 2 years; \$11,900.
- INDIANA UNIVERSITY, Bloomington, Ind.; Sol Saporta, Research Center in Anthropology; *General Laws Regarding the Sequences of Phonemes*; 2 years; \$11,700.
- STATE UNIVERSITY OF NEW YORK, Albany, N. Y.; William A. Ritchie, New York State Museum and Science Service; *Development of Aboriginal Settlement Patterns in the Northeast*; 3 years; \$8,800.
- UNIVERSITY OF OREGON, Eugene, Oreg.; Walter T. Martin, Department of Sociology; *A Unifying Empirical Principle in the Analysis of Variations in Selected Mortality Rates*; 2 years; \$7,000.
- UNIVERSITY OF OREGON, Eugene, Oreg.; Lois W. Mednick, Department of Anthropology; *Morphology and Growth Patterns of Tupaia*; 1 year; \$4,000.
- SMITHSONIAN INSTITUTION, Washington, D. C.; Marshall T. Newman, Division of Physical Anthropology; *Physical Changes in the Indian Population of Hacienda Vicos*; 5 years; \$5,600.
- STANFORD UNIVERSITY, Stanford, Calif.; Leon Festinger, Department of Psychology; *Implications of the Theory of Cognitive Dissonance*; 2 years; \$16,500.

Astronomy

- AMHERST COLLEGE, Amherst, Mass.; Albert P. Linnell, Department of Astronomy; *Eclipsing Binary Stars*; 2 years; \$2,000.
- ASSOCIATED UNIVERSITIES, INC., New York, N. Y.; Richard M. Emberson; *Program for the Establishment of a National Radio Astronomy Facility*; 1 year; \$140,500.
- BRIGHAM YOUNG UNIVERSITY, Provo, Utah; D. H. McNamara, Department of Physics; *Spectrographic Study of Peculiar Eclipsing Binaries*; 2 years; \$5,800.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; George H. Herbig, Lick Observatory, Mount Hamilton, Calif.; *Spectroscopic Studies of T Tauri Stars*; 1 year; \$5,500.

- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Merle Walker, Department of Astronomy; *Color-Magnitude Diagrams of Extremely Young Clusters of Stars*; 6 months; \$3,700.
- CASE INSTITUTE OF TECHNOLOGY, Cleveland, Ohio; J. J. Nassau, Warner and Swasey Observatory; *Relocation of the Schmidt Telescope of the Warner and Swasey Observatory*; \$20,000.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; G. Van Biebroeck, Department of Astronomy; *Astrometric Investigations*; 1 year; \$4,600.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; A. Blaauw, Department of Astronomy; *Spectroscopic Binaries in the Nearest O-Associations*; 2 years; \$12,000.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; G. P. Kuiper, Department of Astronomy; *Physical and Statistical Studies of Asteroids*; 1 year; \$16,700.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; Bengt Stromgren and Robert H. Weitbrecht, Department of Astronomy; *Simultaneous Three-Color Photometry of Faint O-B Stars*; 2 years; \$4,100.
- FORDHAM UNIVERSITY, New York, N. Y.; Walter J. Miller, Astronomical Laboratory; *Faint Variable Stars in the Cygnus Cloud*; 2 years; \$9,000.
- HARVARD UNIVERSITY, Cambridge, Mass.; Bart J. Bok, Harvard College Observatory; *Radio Astronomy in the Microwave Region*; 1 year; \$24,200.
- HARVARD UNIVERSITY, Cambridge, Mass.; Sergei Gaposchkin, Department of Astronomy; *Southern Variable Stars*; 1 year; \$4,900.
- HAVERFORD COLLEGE, Haverford, Pa.; Louis C. Green, Department of Astronomy; *High Accuracy Atomic Wave Functions*; 1 year; \$6,200.
- INDIANA UNIVERSITY, Bloomington, Ind.; Frank K. Edmondson, Department of Astronomy; *Observations of Asteroids on International Astronomical Union Critical List*; 1 year; \$5,300.
- STATE UNIVERSITY OF IOWA, Iowa City, Iowa; Hugh M. Johnson, Department of Mathematics and Astronomy; *Photoelectric Photometry of Galactic Nebulas*; 1 year; \$3,700.
- LOWELL OBSERVATORY, Flagstaff, Ariz.; Henry L. Giclas, Astronomer; *Proper Motion Survey of the Northern Hemisphere*; 1 year; \$7,700.
- LOWELL OBSERVATORY, Flagstaff, Ariz.; E. C. Slipher and A. G. Wilson, Mars Committee; *Photographic Patrol of Mars*; 1 year; \$3,000.
- UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; Leo Goldberg, Department of Astronomy and Robert R. McMath, Director, McMath-Hulbert Observatory; *Studies Leading to the Establishment of an American Astronomical Observatory*; 9 months; \$250,000.
- UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N. C.; Morris S. Davis, Department of Physics; *Satellite Orbits and Mass of Saturn*; 1 year; \$8,600.
- OHIO STATE UNIVERSITY, Columbus, Ohio; John D. Kraus, Department of Electrical Engineering; *Construction of a Standing Paraboloid, Tilttable Flat-Sheet Reflector Radio Telescope Antenna*; 1 year; \$48,000.
- UNIVERSITY OF OKLAHOMA, Norman, Okla.; Balfour S. Whitney, Department of Mathematics and Astronomy; *Periods of Eclipsing Binary Stars*; 2 years; \$9,900.
- UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Frank Bradshaw Wood, Department of Astronomy; *Partial Support of Construction of New Astronomical Observatory*; 1 year; \$10,000.
- UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa.; N. E. Wagman, Director, Allegheny Observatory; *Spectroscopic Binaries*; 1 year; \$2,000.
- UNIVERSITY OF ROCHESTER, Rochester, N. Y.; Theodore Dunham, Jr., Institute of Optics; *Photoelectric Recording of Absorption Line Profiles*; 1 year; \$3,200.
- UNIVERSITY OF ROCHESTER, Rochester, N. Y.; M. P. Savedoff, Department of Physics; *Atmospheres of RR Lyrae and Delta Cephei*; 2 years; \$12,000.

- VANDERBILT UNIVERSITY, Nashville, Tenn.; Carl K. Seyfert, Department of Physics and Astronomy; *Distribution of Emission B-Type Stars*; 3 years; \$12,000.
- YALE UNIVERSITY, New Haven, Conn.; Dirk Brouwer, Department of Astronomy; *Systems of Fundamental Catalogs from Observations of Selected Minor Planets*; 2 years; \$11,500.

Chemistry

- UNIVERSITY OF ARIZONA, Tucson, Ariz.; Leslie S. Forster, Department of Chemistry; *Luminescence and Photochemistry of Diketones*; 2 years; \$5,100.
- UNIVERSITY OF ARKANSAS, Fayetteville, Ark.; T. C. Hoering, Department of Chemistry; *Oxygen Exchange Kinetics: Oxy-Anions and Water*; 2 years; \$11,000.
- BROWN UNIVERSITY, Providence, R. I.; John Ross, Department of Chemistry; *Absolute Viscosity of Molecular Gases*; 2 years; \$12,500.
- CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; Norman Davidson, Department of Chemistry; *Free Radicals in Rigid Media*; 2 years; \$18,000.
- CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; John D. Roberts, Department of Chemistry; *Chemistry of Small Ring Compounds*; 2 years; \$13,800.
- CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; Ernest H. Swift, Department of Chemistry; *Precipitation of Metal Sulfides by Thioacetamide*; 2 years; \$15,200.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Donald J. Cram, Department of Chemistry; *Transannular Effects in Large Ring Compounds*; 2 years; \$12,400.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; W. F. Giauque, Department of Chemistry; *Thermodynamic and Magnetic Properties of Chemical Substances Particularly at Low Temperatures*; 1 year; \$52,600.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Joel H. Hildebrand, Department of Chemistry; *Properties and Solubility Relations of Nonelectrolytes*; 2 years; \$14,200.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; James D. McCullough, Department of Chemistry, Los Angeles, Calif.; *Structural and Equilibrium Studies on Group VIIb Compounds*; 2 years; \$14,600.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Donald S. Noyce, Department of Chemistry; *Cyclic Systems and New Types of Transannular Interaction*; 2 years; \$14,000.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; R. L. Pecsok and P. S. Farrington, Department of Chemistry, Los Angeles, Calif.; *Chromatographic Analysis of Gaseous Mixtures for Trace Components*; 2 years; \$20,900.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; James N. Pitts, Jr., Department of Chemistry, Riverside, Calif.; *Structure and Photochemical Reactivity of Ketones*; 3 years; \$14,300.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Saul Winstein, Department of Chemistry, Los Angeles, Calif.; *Nature and Behaviour of Ion Pairs in Solvolysis*; 3 years; \$39,000.
- CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pa.; Robert B. Carlin, Department of Chemistry; *Fischer Indole Synthesis*; 2 years, \$12,600.
- CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pa.; Frederick D. Rossini, Department of Chemistry; *Thermochemistry of Hydrocarbons and Related Compounds*; 2 years; \$18,000.
- CENTRAL STATE COLLEGE, Wilberforce, Ohio; E. O. Woolfolk, Department of Chemistry; *Identification and Chromatographic Separation of Colorless Organic Compounds*; 2 years; \$5,200.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; Thomas S. Lee, Department of Chemistry; *Electrochemical Behavior of Metal Ions at Extreme Dilution*; 2 years; \$8,000.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; Harold C. Urey, Institute for Nuclear Studies; *Isotopic Abundances and Geochemical Phenomena*; 2 years; \$32,300.

- UNIVERSITY OF COLORADO, Boulder, Colo.; R. N. Keller, Department of Chemistry; *Radiocarbon Dating*; 1 year; \$7,000.
- COLUMBIA UNIVERSITY, New York, N. Y.; Gilbert Stork, Department of Chemistry; *Stereospecific Syntheses of Natural Products*; 3 years; \$19,500.
- UNIVERSITY OF CONNECTICUT, Storrs, Conn.; Emil J. Slowinski, Jr., Department of Chemistry; *Temperature Effects in Molecular Vibrational Spectra*; 2 years; \$18,500.
- CORNELL UNIVERSITY, Ithaca, N. Y.; James L. Hoard, Department of Chemistry; *X-Ray Structural Analysis of Iron Group Chelate Complexes*; 2 years; \$15,400.
- CORNELL UNIVERSITY, Ithaca, N. Y.; William T. Miller, Jr., Department of Chemistry; *S-2' Substitution Reactions of Fluoro Olefins*; 2 years; \$13,000.
- DUKE UNIVERSITY, Durham, N. C.; Charles K. Bradsher, Department of Chemistry; *Benzoquinolizinium Salts*; 2 years; \$12,800.
- FORDHAM UNIVERSITY, New York, N. Y.; Charles F. Ferraro and Tibor S. Laszlo, Department of Chemistry; *Development and Construction of a Solar Furnace for High Temperature Research*; 1 year; \$14,000.
- HOWARD UNIVERSITY, Washington, D. C.; J. Leon Shereshefsky, Department of Chemistry; *Capillary Properties of Liquids in Micro-Systems*; 2 years; \$15,000.
- HARVARD UNIVERSITY, Cambridge, Mass.; Frederick C. Uhle, Department of Pharmacology; *Chemistry of the Ergot Alkaloids*; 1 year; \$9,300.
- HARVARD UNIVERSITY, Cambridge, Mass.; R. B. Woodward, Department of Chemistry; *Synthesis and Transformations of Triterpenes*; 3 years; \$42,600.
- HOFSTRA COLLEGE, Hempstead, N. Y.; Aaron Wold, Department of Chemistry; *Ternary Compounds of the Rare Earths*; 2 years; \$7,200.
- UNIVERSITY OF ILLINOIS, Urbana, Ill.; H. A. Laitinen, Department of Chemistry; *Adsorption Processes at Electrode Surfaces*; 2 years; \$11,800.
- INDIANA UNIVERSITY, Bloomington, Ind.; Harrison Shull, Department of Chemistry; *Theory of Atomic and Molecular Structure*; 2 years; \$17,000.
- STATE UNIVERSITY OF IOWA, Iowa City, Iowa; Norman C. Baenziger, Department of Chemistry; *Structures of Intermetallic Compounds*; 2 years; \$11,000.
- STATE UNIVERSITY OF IOWA, Iowa City, Iowa; Stanley Wawzonek, Department of Chemistry; *Preparation and Properties of Aminimides*; 2 years; \$13,300.
- JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; J. D. H. Donnay, Department of Chemistry; *Crystal Structure of Nickel Etioporphyrin II*; 1 year; \$4,400.
- UNIVERSITY OF LOUISVILLE, Louisville, Ky.; Richard H. Wiley, Department of Chemistry; *Pyrimidines*; 3 years; \$16,000.
- MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Richard C. Lord, Department of Chemistry; *Rotation-Vibration Spectra and Molecular Structure*; 3 years; \$27,500.
- UNIVERSITY OF MASSACHUSETTS, Amherst, Mass.; Louis A. Carpino, Department of Chemistry; *Synthesis and Reactivity of Mono-Substituted Diimides*; 2 years; \$10,300.
- UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; William E. Parham, Department of Chemistry; *A New Synthesis of Aromatic Compounds. A New Type of Quinone*; 2 years; \$11,600.
- MISSISSIPPI STATE COLLEGE, State College, Miss.; Lyell C. Behr, Department of Chemistry; *Position Isomerism in the Azoxybenzenes*; 6 months; \$2,100.
- MONMOUTH COLLEGE, Monmouth, Ill.; G. W. Thiessen, Department of Chemistry; *Benzenoid Inhibition in the Kolbe Electrolysis*; 2 years; \$12,500.
- MONTANA STATE COLLEGE, Bozeman, Mont.; Charles N. Caughlan, Department of Chemistry; *Organic Compounds of Titanium*; 2 years; \$9,900.
- MORGAN STATE COLLEGE, Baltimore, Md.; Clyde R. Dillard, Department of Chemistry; *Kinetics of Thermal Decomposition of Stannane and Homologous Compounds*; 2 years; \$13,200.

- MUNDELEIN COLLEGE FOR WOMEN, Chicago, Ill.; Sister Mary Martinette, Department of Chemistry; *Stereochemistry of Complex Inorganic Compounds*; 2 years; \$1,200.
- UNIVERSITY OF NEW HAMPSHIRE, Durham, N. H.; Ben Millard, Department of Chemistry; *Differential Capacity of Gold Electrodes*; 2 years; \$6,600.
- UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N. C.; J. F. Bunnett, Department of Chemistry; *Ether Cleavage in Aromatic Substitution Reactions*; 2 years; \$14,000.
- UNIVERSITY OF NORTH DAKOTA, Grand Forks, N. Dak.; Roland G. Severson, Department of Chemistry; *Unsaturated Silicon Heterocycles*; 2 years; \$7,400.
- NORTHWESTERN UNIVERSITY, Evanston, Ill.; R. L. Burwell, Jr., and A. S. Hussey, Department of Chemistry; *Summer Research for College Chemistry Teachers*; 3 months; \$3,400.
- NORTHWESTERN UNIVERSITY, Evanston, Ill.; Robert L. Letsinger, Department of Chemistry; *New Types of Organoboron Compounds*; 2 years; \$12,000.
- OCCIDENTAL COLLEGE, Los Angeles, Calif.; Frank L. Lambert, Department of Chemistry; *Preparation of Organic Halides Using Inorganic and Organic Hypohalites*; 1 year; \$4,800.
- OKLAHOMA AGRICULTURAL AND MECHANICAL COLLEGE, Stillwater, Okla.; George Gorin, Department of Chemistry; *Oxygen Reduction by Cysteine-Metal Complexes*; 2 years; \$11,000.
- OREGON STATE COLLEGE, Corvallis, Oreg.; Allen B. Scott, Department of Chemistry; *Impurities in Ionic Solids*; 2 years; \$17,300.
- PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.; B. P. Block, Department of Chemistry; *Steric Nature of Unusual Inorganic Compounds*; 3 years; \$13,500.
- PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.; Norman C. Deno, Department of Chemistry; *Arylcarbonium Ion Equilibria and Application to Inorganic Chemistry*; 2 years; \$5,300.
- UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Charles C. Price, Department of Chemistry; *Influence of Structure on Reactivity*; 2 years; \$14,900.
- POMONA COLLEGE, Claremont, Calif.; C. Freeman Allen, Department of Chemistry; *Degradative Structure Determination of C_{22} -Phthienoic Acid*; 2 years; \$8,600.
- PRINCIPIA COLLEGE, Elmhurst, Ill.; Ernest H. Lyons, Jr., Department of Chemistry; *Reaction Kinetics at Electrodes*; 2 years; \$4,800.
- UNIVERSITY OF REDLANDS, Redlands, Calif.; Reinhold J. Krantz and Harold W. Woodrow, Department of Chemistry; *Physical Properties and Chemical Structure of the Tertiary Nonyl Alcohols*; 2 years; \$8,300.
- RESEARCH FOUNDATION OF THE STATE UNIVERSITY OF NEW YORK, Albany, N. Y.; Max Metlay, Department of Chemistry and Robert H. Penfield, Department of Physics, Harpur College, Endicott, N. Y.; *Electron Affinities with a Radio Frequency Mass Spectrometer*; 2 years; \$12,000.
- RICE INSTITUTE, Houston, Tex.; Edward S. Lewis, Department of Chemistry; *Hydrogen Isotope Effects in Ionic Organic Reactions*; 1 year; \$7,100.
- RICE INSTITUTE, Houston, Tex.; Richard B. Turner, Department of Chemistry; *Heats of Catalytic Hydrogenation in Solution*; 3 years; \$19,000.
- COLLEGE OF ST. THOMAS, St. Paul, Minn.; William D. Larson, Department of Chemistry; *Thermodynamics of Acetic Acid Solutions*; 1 year; \$2,200.
- UNIVERSITY OF SOUTH CAROLINA, Columbia S. C.; DeLos F. DeTar, Department of Chemistry; *Free Radical Intermediates in Diazonium Salt Reactions*; 2 years; \$18,400.
- UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.; Jerome A. Berson, Department of Chemistry; *Conversion of Carbon Asymmetry into Molecular Asymmetry*; 2 years; \$16,300.

- UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.; Jerry Donohue, Department of Chemistry; *X-Ray Crystallographic Studies of Unusual Inorganic Compounds*; 3 years; \$28,000.
- STANFORD UNIVERSITY, Stanford, Calif.; Carl R. Noller, Department of Chemistry; *Isolation and Constitution of Saponins and Bitter Principle in Echinocystis Fabacea Roots*; 2 years; \$11,000.
- STANFORD UNIVERSITY, Stanford, Calif.; Richard A. Ogg, Jr., Department of Chemistry; *Nuclear Magnetic Spectroscopy and Chemical Kinetics*; 2 years; \$25,700.
- TEMPLE UNIVERSITY, Philadelphia, Pa.; Francis H. Case, Department of Chemistry; *Substituted Ferrocene, Cuproene, and Terrocene Reacting Heterocyclic Nitrogen Ligands*; 3 years; \$14,000.
- UNIVERSITY OF TENNESSEE, Knoxville, Tenn.; J. F. Eastham and C. W. Keenan, Department of Chemistry; *Kinetics of Alkali Metal Reactions in Solution*; 2 years; \$6,900.
- TEXAS SOUTHERN UNIVERSITY, Houston, Tex.; Ray Floyd Wilson, Department of Chemistry; *Quantitative Spectrophotometry and Polarography of Rare Earth and Transition Element Complexes*; 2 years; \$7,900.
- UNIVERSITY OF TEXAS, Austin, Tex.; Gilbert H. Ayres, Department of Chemistry; *Analytical Chemistry of the Platinum Metals*; 2 years; \$9,800.
- VANDERBILT UNIVERSITY, Nashville, Tenn.; Donald E. Pearson, Department of Chemistry; *Mechanisms of Electrophilic Reactions*; 3 years; \$12,500.
- UNIVERSITY OF VERMONT AND STATE AGRICULTURAL COLLEGE, Burlington, Vt.; Clinton D. Cook, Department of Chemistry; *Hindered Phenoxy Radicals*; 3 years; \$16,200.
- UNIVERSITY OF VIRGINIA, Charlottesville, Va.; Loren G. Hepler, Department of Chemistry; *Thermodynamics of Association Reactions in Aqueous Solutions*; 2 years; \$9,700.
- WASHINGTON UNIVERSITY, St. Louis, Mo.; C. David Gutsche, Department of Chemistry; *Synthesis of Seven-Membered Ring Compounds*; 3 years; \$27,200.
- WAYNE UNIVERSITY, Detroit, Mich.; Calvin L. Stevens, Department of Chemistry; *Gem-Dihalides from the Hofmann Reactions*; 2 years; \$15,600.
- WESTERN RESERVE UNIVERSITY, Cleveland, Ohio; E. L. Pace, Department of Chemistry; *Thermodynamics and Structure of Simple Fluorine Compounds*; 2 years; \$8,500.
- WHEATON COLLEGE, Wheaton, Ill.; Stanley M. Parmerter, Department of Chemistry; *Reactions of Hydrazones and Formazyls*; 2 years; \$5,500.
- WILSON COLLEGE, Chambersburg, Pa.; Louise C. Monack, Department of Chemistry; *Nucleophilic Aromatic Substitution*; 2 years; \$5,200.
- UNIVERSITY OF WISCONSIN, Madison, Wis.; Louis J. Gosting, Department of Chemistry; *Diffusion Studies on Electrolytes and Proteins*; 3 years; \$17,700.
- UNIVERSITY OF WISCONSIN, Madison, Wis.; William S. Johnson, Department of Chemistry; *Synthesis of Structures Related to the Steroids*; 2 years; \$20,100.
- UNIVERSITY OF WISCONSIN, Madison, Wis.; A. L. Wilds, Department of Chemistry; *Total Synthesis of Non-Aromatic Steroids*; 2 years; \$20,200.
- YALE UNIVERSITY, New Haven, Conn.; William Von E. Doering; Department of Chemistry; *Use of Oxygen-18 in Organic Reaction Mechanism Studies*; 3 years; \$24,400.
- YALE UNIVERSITY, New Haven, Conn.; Lars Onsager, Department of Chemistry; *Theory of Cooperative Phenomena*; 3 years; \$16,100.
- YALE UNIVERSITY, New Haven, Conn.; Andrew Patterson, Jr., Department of Chemistry; *Activity Coefficients by Ebulliometry*; 2 years; \$8,000.

Developmental Biology

- ALBERTUS MAGNUS COLLEGE, New Haven, Conn.; Dorothea Rudnick, Department of Biology; *Glutamotransferase in the Chick Embryo*; 1 year; \$3,800.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Daniel Mazia, Department of Zoology; *Growth and Division in Synchronized Cell Populations*; 1 year; \$11,000.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; Everett C. Olson, Department of Geology; *Biometrical Study of Morphological Integration in Evolution*; 3 years, \$16,000.
- COLUMBIA UNIVERSITY, New York, N. Y.; L. G. Barth, Department of Zoology; *Chemical Embryology*; 2 years; \$11,500.
- FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; Earl Frieden, Department of Chemistry; *Biochemistry of Amphibian Metamorphosis*; 3 years; \$8,000.
- FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; Charles B. Metz, Department of Zoology; *Physiology of Fertilization in Marine Invertebrates*; 3 years; \$20,100.
- FORDHAM UNIVERSITY, New York, N. Y.; Charles A. Berger, Department of Biology; *Cytological Aspects of Development*; 3 years, \$9,000.
- GRINNELL COLLEGE, Grinnell, Iowa; Guillermo Mendoza, Department of Biology; *Reproduction in the Goodeidae*; 2 years; \$6,000.
- INTERNATIONAL INSTITUTE OF EMBRYOLOGY, Utrecht, Holland; Chr. P. Raven, Secretary; *International Workshop on Embryology*; 1 year; \$1,800.
- STATE UNIVERSITY OF IOWA, Iowa City, Iowa; Jerry J. Kollros, Department of Zoology; *Thyroxin Thresholds and Effects in Anuran Metamorphosis*; 3 years; \$8,500.
- MARQUETTE UNIVERSITY, Milwaukee, Wis.; John W. Saunders, Jr., Department of Biology; *Tissue Interactions During Organogenesis*; 2 years; \$14,000.
- MIAMI UNIVERSITY, Oxford, Ohio; John R. Harrison, Department of Zoology; *In Vitro Growth of Embryonic Chick Eye*; 2 years; \$4,000.
- UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N. C.; Donald P. Costello, Department of Zoology; *Methods for Obtaining and Handling Marine Eggs and Embryos*; 1 year; \$6,700.
- UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Ralph O. Erickson, Department of Botany; *Cell Division and Cell Growth in Higher Plants*; 1 year; \$9,000.
- UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.; Walter E. Martin, Department of Biology; *Artificial Culturing of Trematodes*; 1 year; \$3,400.
- STANFORD UNIVERSITY, Stanford, Calif.; Donald L. Stilwell, Department of Anatomy; *Blood Supply of Vertebral Column*; 3 years; \$7,200.
- UNIVERSITY OF VERMONT AND STATE AGRICULTURAL COLLEGE, Burlington, Vt.; Walter L. Wilson, Department of Physiology and Biophysics, College of Medicine; *Functional and Structural Studies of the Cell Cortex*; 2 years; \$4,600.
- WESLEYAN UNIVERSITY, Middletown, Conn.; Hubert B. Goodrich, Department of Biology; *Color Pattern Formation in Two Teleost Fish*; 2 years; \$7,000.
- WILKES COLLEGE, Wilkes-Barre, Pa.; Francis J. Michelini, Department of Biology; *Plastochron Index in the Elucidation of Plant Development*; 2 years; \$7,400.
- YALE UNIVERSITY, New Haven, Conn.; Edgar John Boell, Department of Zoology, Osborn Zoological Laboratory; *Biochemical Differentiation of the Central Nervous System*; 3 years; \$18,000.
- YESHIVA UNIVERSITY, New York, N. Y.; Salome Gluecksohn-Waelsch, Department of Anatomy, Albert Einstein College of Medicine; *Effect of Genetic Factors on Inductive Interaction in Mouse Embryos*; 3 years; \$26,500.
- YESHIVA UNIVERSITY, New York, N. Y.; Richard N. Stearns, Department of Physiology; *Enzyme Synthesis in Dissociated Embryo Cells*; 1 year; \$5,300.

Earth Sciences

- AMERICAN MUSEUM OF NATURAL HISTORY, New York, N. Y.; G. G. Simpson; *Geological Investigation of the Alto Rio Jurua, Brazil*; 1 year; \$8,000.
- UNIVERSITY OF ARIZONA, Tucson, Ariz.; Edmund Schulman, Laboratory of Tree-Ring Research; *Millenium-Long Tree-Ring Histories of Climatic Changes*; 3 years; \$18,800.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; D. T. Griggs, Institute of Geophysics, Los Angeles, Calif.; *Plasticity at High Pressures and Temperatures*; 2 years; \$20,000.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Robert M. Kleinpell, Department of Paleontology; *Illustration and Identification of Early Tertiary Foraminiferal Types*; 3 years; \$17,200.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; John Verhoogen, Department of Geological Sciences; *Physical Properties of Magnesium-Aluminum Silicates and Oxides*; 2 years; \$12,500.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; Horace R. Byers, Department of Meteorology; *Liquid Water Content of Clouds*; 2 years; \$25,800.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; George W. Platzman, Department of Meteorology; *Energy Exchange in Models of the Atmosphere*; 2 years; \$17,600.
- COLUMBIA UNIVERSITY, New York, N. Y.; Maurice Ewing, Lamont Geological Observatory; *Paleoclimate in the Mediterranean Area*; 2 years; \$8,600.
- COLUMBIA UNIVERSITY, New York, N. Y.; J. Lamar Worzel, Lamont Geological Observatory; *Shallow Water Gravity Observations on the Bahamas Platform*; 1 year; \$10,400.
- FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; F. C. W. Olson, Oceanographic Institute; *Salinity and Current Distribution in the St. Marks River Estuary*; 1 year; \$650.
- HARVARD UNIVERSITY, Cambridge, Mass.; Elso S. Barghoorn, Biology Department; *Organic Residues in Fossil Sediments*; 3 years; \$28,800.
- HARVARD UNIVERSITY, Cambridge, Mass.; John P. Miller, Department of Geology; *Geological Processes in the Truchas Mountains, N. Mex.*; 2 years; \$8,800.
- UNIVERSITY OF HAWAII, Honolulu, T. H.; Walter R. Steiger, Geophysics Committee; *Survey of Mount Haleakala as a Coronagraphic Site*; 1 year; \$2,100.
- HIGH ALTITUDE OBSERVATORY OF THE UNIVERSITY OF COLORADO, Boulder, Colo.; Walter Orr Roberts, Director; *Responses of Atmospheric Circulation to Solar Activity*; 6 weeks; \$8,000.
- UNIVERSITY OF ILLINOIS, Urbana, Ill.; George W. White, Department of Geology; *Properties of Glacial Till*; 2 years; \$15,000.
- LAFAYETTE COLLEGE, Easton, Pa.; James R. Beerbower, Department of Geology and Geography; *Paleontology and Paleocology of Dunkard Group*; 2 years; \$4,300.
- MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; William H. Dennen and Ely Mencher, Department of Geology and Geophysics; *Geochemical Investigations of Sedimentary Rocks*; 2 years; \$17,700.
- UNIVERSITY OF MIAMI, Coral Gables, Fla.; Frank Chew, Marine Laboratory; *Heat-Transport of the Florida Current*; 1 year; \$5,000.
- UNIVERSITY OF MIAMI, Coral Gables, Fla.; H. B. Moore, Marine Laboratory; *Oxygen-Density Relationships and Phosphate Content of Caribbean Waters*; 1 year; \$7,800.
- UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Samuel S. Goldich, Department of Geology and Mineralogy and Alfred O. C. Nier, Department of Physics; *Dating of the Igneous Rocks of the Lake Superior Region*; 2 years; \$23,000.

- NATIONAL ACADEMY OF SCIENCES, Washington, D. C.; Robert C. Stephenson, Executive Director; *Operation of the American Geological Institute*; 3 months; \$13,000.
- NEW MEXICO INSTITUTE OF MINING AND TECHNOLOGY, Socorro, N. Mex.; Frederick J. Kuellmer, New Mexico Bureau of Mines and Mineral Resources; *Exsolution and Triclinicity of Alkali Feldspars in Tertiary Intrusive Rocks of the Cordilleran Region*; 2 years; \$12,700.
- UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N. C.; Cornelius H. M. Van Bavel, Department of Agronomy; *Soil Moisture Measurements by Neutron Moderation*; 3 years; \$18,400.
- OREGON STATE COLLEGE, Corvallis, Oreg.; W. H. Taubeneck, Department of Geology; *Structure and Petrogenesis of Part of the Wallowa Mountains*; 4 years; \$17,600.
- PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.; O. F. Tuttle, Division of Earth Sciences; *Solubility of Volatile Materials in Silicate Liquids and Their Effect on the Melting Temperatures*; 2 years; \$24,000.
- POMONA COLLEGE, Claremont, Calif.; Donald B. McIntyre, Department of Geology; *Metamorphic Rocks of Southern California*; 2 years; \$13,500.
- PRINCETON UNIVERSITY, Princeton, N. J.; Erling Dorf, Department of Geology; *Tertiary Flores of the Yellowstone Park Region, Wyo.*; 3 years; \$15,000.
- PRINCETON UNIVERSITY, Princeton, N. J.; Heinrich D. Holland, Department of Geology; *Radiation Damage Measurements as a Guide in Geologic Age Determinations*; 1 year; \$5,700.
- PURDUE RESEARCH FOUNDATION, Lafayette, Ind.; Joe L. White, Department of Agronomy; *Influence of Parent Material and Topography on Soil Genesis*; 2 years; \$18,500.
- SOUTH DAKOTA SCHOOL OF MINES AND TECHNOLOGY, Rapid City, S. Dak.; James R. Macdonald; *Paleontological Research*; 1 year; \$875.
- STANFORD UNIVERSITY, Stanford, Calif.; Siemon Wm. Muller, Department of Geology; *Early Mesozoic Paleontology and Stratigraphy*; 3 years; \$9,200.
- UNIVERSITY OF UTAH, Salt Lake City, Utah; J. Vern Hales, Department of Meteorology; *Statistical Studies of Rainfall Patterns*; 1 year; \$2,300.
- WASHINGTON UNIVERSITY, St. Louis, Mo.; Henry N. Andrews, Jr., Henry Shaw School of Botany; *American Carboniferous Plants*; 2 years; \$5,800.
- UNIVERSITY OF WASHINGTON, Seattle, Wash.; Thomas G. Thompson and Tsaihwa J. Chow, Department of Oceanography; *Distribution of Some Minor Constituents of Sea Water*; 2 years; \$13,500.
- WOODS HOLE OCEANOGRAPHIC INSTITUTION, Woods Hole, Mass.; Vaughan T. Bowen; *Research Instrumentation for Sampling Sea Water at All Depths*; 1 year; \$3,500.
- YALE UNIVERSITY, New Haven, Conn.; E. S. Deevey, Geochronometric Laboratory; *Radiocarbon Dating and Other Forms of Geochronometry*; 2 years; \$27,200.
- YALE UNIVERSITY, New Haven, Conn.; Paul B. Sears, Conservation Program; *Micro Paleobotanical Study of Sediments*; 2 years; \$6,900.

Engineering Sciences

- BUREAU OF RECLAMATION, DEPARTMENT OF THE INTERIOR, Washington, D. C.; James E. Backstrom, Engineering Laboratories Division, Denver, Colo.; *Air Void System and Durability of Air-Entrained Concrete*; 2 years; \$9,000.
- CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; Robert T. Knapp, Division of Engineering; *Mechanics of Cavitation Damage*; 2 years; \$16,700.
- CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; J. Harold Wayland, Division of Engineering; *Streaming Birefringence as a Hydrodynamic Research Tool*; 2 years; \$11,300.

- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Andrew Acrivos and Eugene E. Petersen, Department of Chemistry and Chemical Engineering; *Heat and Mass Transfer in Multiphase Flow Systems*; 2 years; \$9,400.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; R. Hultgren, Department of Metallurgy; *Heat Capacity of Alloys*; 2 years, \$22,600.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; J. W. Johnson, Department of Engineering; *Forces Exerted by Breaking Waves on Piles and Impervious Walls*; 1 year; \$8,700.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; S. F. Ravitz and D. W. Mitchell, Department of Metallurgy; *Heats of Formation and Heat Capacities of Molten Silicate Systems*; 2 years; \$20,700.
- CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pa.; Lawrence N. Canjar, Department of Chemical Engineering; *Phase Equilibria and Thermodynamic Data for Mixtures*; 1 year; \$6,000.
- CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pa.; L. A. Finzi, Department of Electrical Engineering; *Rotating Electric Machinery Analysis*; 2 years; \$15,000.
- CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pa.; Gaylord W. Penney, Department of Electrical Engineering; *Electrostatic Phenomena Related to Aerosols*; 2 years; \$13,000.
- COLORADO AGRICULTURAL AND MECHANICAL COLLEGE, Fort Collins, Colo.; M. L. Albertson, Department of Civil Engineering; *Flow in Open Channels*; 2 years; \$11,100.
- CORNELL UNIVERSITY, Ithaca, N. Y.; Marshall H. Cohen, Department of Electrical Engineering; *Polarization Dispersion of the 200 mc. Bursts from the Sun*; 3 years; \$23,800.
- UNIVERSITY OF DELAWARE, Newark, Del.; Vaughan C. Behn, Department of Civil Engineering; *Settling and Rheological Properties of Sewage Sludges*; 1 year; \$6,000.
- UNIVERSITY OF FLORIDA, Gainesville, Fla.; Per Bruun, Department of Engineering Mechanics; *Absorption of Water Wave Energy*; 2 years; \$5,800.
- GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta, Ga.; M. R. Carstens, Department of Civil Engineering; *Fluid-Turbulence Characteristics and Diffusion of Solid Particles*; 2 years; \$13,300.
- GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta, Ga.; Werner N. Grunc, School of Civil Engineering; *Treatment and Disposal of Radioactive Sludges*; 2 years; \$14,900.
- HARVARD UNIVERSITY, Cambridge, Mass.; Bruce Chalmers, Division of Applied Sciences; *Kinetics of Crystal Growth from the Melt*; 2 years; \$20,500.
- ILLINOIS INSTITUTE OF TECHNOLOGY, Chicago, Ill.; Robert C. Kintner, Department of Chemical Engineering; *Notion of Gas Bubbles and Liquid Drops in a Liquid Medium*; 2 years; \$6,700.
- UNIVERSITY OF ILLINOIS, Urbana, Ill.; R. W. Balluffi, Department of Mining and Metallurgical Engineering; *Effect of Crystal Imperfections on Diffusion*; 2 years; \$17,700.
- UNIVERSITY OF ILLINOIS, Urbana, Ill.; William J. Fry, Department of Electrical Engineering; *Methods for Producing Uniform High Intensity Ultrasonic Fields*; 2 years; \$22,600.
- UNIVERSITY OF ILLINOIS, Urbana, Ill.; James H. Robertson, Department of Theoretical and Applied Mechanics; *Homologous Turbulence*; 2 years; \$18,400.
- JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; H. E. Hoelscher, Department of Chemical Engineering; *Catalytic Reactions in a Water Tunnel*; 2 years; \$9,800.
- KENTUCKY RESEARCH FOUNDATION, Lexington, Ky.; P. K. Kadaba, Department of Electrical Engineering; *Dielectric Relaxation of Mixtures of Dipolar Liquids at Microwave Frequencies*; 2 years; \$9,300.

- UNIVERSITY OF MARYLAND, College Park, Md.; S. F. Shen, Department of Aeronautical Engineering; *Laminar Instability of the Mixing of Two Different Cases*; 2 years; \$10,400.
- MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Albert G. H. Deitz, Department of Civil and Sanitary Engineering; *Reinforced Plastics*; 2 years; \$24,800.
- MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Morris Halle, Research Laboratory of Electronics; *Acoustic Analysis of Speech Sounds*; 1 year; \$10,000.
- MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Carl Wagner, Department of Metallurgy; *High Temperature Corrosion of Alloys*; 2 years; \$11,800.
- UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; John S. McNown, Department of Engineering Mechanics; *Effect of Vertical Acceleration on Fall Velocity*; 18 months; \$8,400.
- UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Neal R. Amundson, Department of Chemical Engineering; *Theoretical Analysis of Chemical Reactors*; 2 years; \$22,300.
- UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; H. S. Isbin, Department of Chemical Engineering; *Natural Convection in Regions of Maximum Fluid Densities*; 6 months; \$1,400.
- UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; George W. Preckshot, Department of Chemical Engineering; *Heat Transfer Coefficients of Pool Boiling Liquids*; 2 years; \$8,200.
- UNIVERSITY OF MISSOURI, Columbia, Mo.; Gladwyn V. Lago, Department of Electrical Engineering; *Sampled-Data Feedback Systems*; 18 months; \$10,500.
- UNIVERSITY OF MISSOURI, Columbia, Mo.; L. Leney, Department of Forestry; *Cutting Action in Wood at the Cellular Level*; 2 years; \$6,500.
- UNIVERSITY OF MISSOURI, Columbia, Mo.; M. E. Straumanis, Department of Metallurgical Engineering, School of Mines and Metallurgy, Rolla, Mo.; *Imperfections in Recrystallized and Deformed Materials*; 2 years; \$12,600.
- UNIVERSITY OF NEBRASKA, Lincoln, Nebr.; George C. Ernst, Department of Civil Engineering; *Beam to Column and Knee Connections of Reinforced Concrete*; 3 years; \$8,500.
- UNIVERSITY OF NEW MEXICO, Albuquerque, N. Mex.; E. M. Zwoyer, Department of Civil Engineering; *Shear Strength of Simply Supported Prestressed Concrete Beams with Web Reinforcement*; 18 months; \$10,200.
- UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE, Norman, Okla.; J. E. Powers, Department of Chemical Engineering, University of Oklahoma; *Barrier Systems in Thermogravitational Thermal Diffusion Columns*; 2 years; \$11,500.
- PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.; David R. Mitchell, Division of Mineral Engineering; *Magnetic Separation of Weakly Magnetic Susceptible Minerals*; 2 years; \$16,100.
- PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.; A. H. Waynick, Department of Electrical Engineering; *Dynamical Processes in the Upper Atmosphere*; 2 years; \$23,400.
- POLYTECHNIC INSTITUTE OF BROOKLYN, Brooklyn, N. Y.; Satio Okada, Microwave Research Institute; *Algebraic Electromagnetic Theory*; 1 year; \$9,700.
- PURDUE RESEARCH FOUNDATION, Lafayette, Ind.; J. M. Woods and J. M. Smith, School of Chemical Engineering; *Kinetic Studies of Acetylene Reactions on Solid Catalysts*; 2 years; \$12,700.
- PURDUE UNIVERSITY, Lafayette, Ind.; F. J. Friedlaender, School of Electrical Engineering; *Magnetic Amplifiers*; 2 years; \$19,600.

- RENSSELAER POLYTECHNIC INSTITUTE, Troy, N. Y.; Joel O. Hougen, Department of Chemical Engineering; *Reduction of Tungsten Oxides with Hydrogen*; 2 years; \$7,300.
- RUTGERS UNIVERSITY, New Brunswick, N. J.; A. R. Jumikis, Department of Civil Engineering; *Upward Migration of Soil Moisture under Freezing Conditions*; 3 years; \$22,700.
- STANFORD UNIVERSITY, Stanford, Calif.; Robert A. Huggins, Department of Metallurgy; *Mechanism of Internal Oxidation Hardening of Metals*; 2 years; \$12,800.
- STANFORD UNIVERSITY, Stanford, Calif.; John G. Linvill, Department of Electrical Engineering; *Avalanche Phenomenon in Transistors*; 2 years; \$10,000.
- STANFORD UNIVERSITY, Stanford, Calif.; David M. Mason, Department of Chemistry and Chemical Engineering; *Heat Transfer Processes in Chemically Reacting Fluids*; 3 years; \$19,000.
- STEVENS INSTITUTE OF TECHNOLOGY, Hoboken, N. J.; Sidney J. Borg, Department of Civil Engineering; *Theory of Wedge-Water Entry*; 1 year; \$5,300.
- UNIVERSITY OF WASHINGTON, Seattle, Wash.; Albert L. Babb, Department of Chemical Engineering; *Reaction Kinetics of the System: CO₂-H₂S-Na₂O-H₂O*; 2 years; \$8,800.
- UNIVERSITY OF WASHINGTON, Seattle, Wash.; A. E. Harrison, Department of Electrical Engineering; *Modulation Characteristics of Microwave Tubes*; 2 years; \$22,100.
- UNIVERSITY OF WISCONSIN, Madison, Wis.; P. S. Myers, O. A. Uychara and M. M. El-Wakil, Department of Mechanical Engineering; *Combustible Mixture Formation with Liquid Fuels*; 2 years; \$20,700.
- UNIVERSITY OF WYOMING, Laramie, Wyo.; Donald R. Lamb, Department of Civil Engineering; *Nuclear Radiations on Bituminous Materials*; 2 years; \$7,000.
- YALE UNIVERSITY, New Haven, Conn.; F. R. E. Crossley, Department of Mechanical Engineering; *Mechanical Vibration*; 18 months; \$12,000.

Environmental Biology

- AMERICAN MUSEUM OF NATURAL HISTORY, New York, N. Y.; C. M. Breder, Jr., Department of Fishes and Aquatic Biology; *Interaction of the Endocrine System, Pigmentation, Behavior, and Light in Teleosts as a Feature of Autecology*; 1 year; \$6,800.
- BEREA COLLEGE, Berea, Ky.; Frank B. Gailey, Department of Biology; *Changes During the Greening of Dark Grown Seedlings*; 3 years; \$14,000.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Walter E. Howard, Agricultural Experiment Station, Davis, Calif.; *Relation of Soil Fertility to Population Dynamics of Field Rodents*; 3 years; \$10,000.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Kenneth S. Norris, Los Angeles, Calif. (Marineland of the Pacific Biological Laboratory); *Habitat Selection of the Inter-Tidal Fish, Girella Nigricans*; 1 year; \$4,100.
- CARLETON COLLEGE, Northfield, Minn.; J. Bruce Guyselmann, Department of Zoology; *Persistent Rhythms of Locomotor Activity in Crustaceans*; 2 years; \$7,000.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; Thomas Park, Hull Zoological Laboratory; *Effect of Irradiation on Laboratory Populations*; 2 years; \$14,800.
- COLORADO AGRICULTURAL AND MECHANICAL COLLEGE, Fort Collins, Colo.; Paul H. Baldwin, Department of Zoology; *Ecology Rocky Mountain Picidae*; 3 years; \$8,800.
- UNIVERSITY OF COLORADO, Boulder, Colo.; John W. Marr, Department of Biology; *Ecology of Certain Areas in the Alaska Range*; 2 years; \$8,800.
- DUKE UNIVERSITY, Durham, N. C.; Howard T. Odum, Department of Zoology; *Stability, Structure, and Metabolism of Steady State Microcosms*; 2 years; \$10,000.

- DUKE UNIVERSITY, Durham, N. C.; F. John Vernberg, Department of Zoology; *Physiological Mechanisms for Climatic Adaptation in Decapod Crustaceans*; 3 years; \$12,800.
- GEORGIA STATE COLLEGE OF BUSINESS ADMINISTRATION, Atlanta, Ga.; Helen B. Jordan, Department of Biology; *Transmission of Saurian Malaria*; 3 years; \$9,200.
- UNIVERSITY OF GEORGIA, Athens, Ga.; Eugene P. Odum, Department of Biology; *Trophic Structure and Productivity of Salt Marsh Ecosystems*; 3 years; \$12,000.
- UNIVERSITY OF GEORGIA, Athens, Ga.; Lawrence R. Pomeroy, Marine Biological Laboratory; *Dynamics of Basic Plant Nutrients in Estuaries*; 3 years; \$14,900.
- UNIVERSITY OF GEORGIA, Athens, Ga.; Robert A. Ragotzkie, Department of Biology; *Nature and Distribution of Organic Detritus in Estuarine Waters*; 3 years; \$14,300.
- UNIVERSITY OF GEORGIA, Athens, Ga.; Charles C. Wilson, Department of Botany; *Productivity of Some Natural Plant Habitats*; 3 years; \$14,700.
- UNIVERSITY OF HAWAII, Honolulu, T. H.; Maxwell S. Doty, Department of Botany; *Pioneer Populations on Recent Lava Flows*; 1 year; \$1,400.
- UNIVERSITY OF ILLINOIS, Urbana, Ill.; S. Charles Kendeigh, Department of Zoology; *Physiological and Ecological Studies of Manitoba Flora and Fauna*; 2 years; \$6,900.
- KANSAS STATE COLLEGE, Manhattan, Kans.; Reginald H. Painter; *Interrelations of Host Plants and Insects*; 3 years; \$9,700.
- UNIVERSITY OF KANSAS, Lawrence, Kans.; Charles D. Michener and Robert E. Beer, Department of Entomology; *Biology of the Arthropod Associates of Army Ants*; 2 years; \$4,800.
- KENTUCKY RESEARCH FOUNDATION, Lexington, Ky.; John M. Carpenter, Department of Zoology; *Seasonal Fluctuations in the Frequency of Drosophila Species*; 2 years; \$7,100.
- UNIVERSITY OF MIAMI, Coral Gables, Fla.; Hilary B. Moore, Marine Laboratory; *Interactions of Physical Factors in Controlling Vertical Distribution of Zooplankton*; 2 years; \$12,600.
- UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; William R. Dawson, Department of Zoology; *Temperature Adaptations in Reptiles*; 3 years; \$14,100.
- UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; Samuel A. Graham, Department of Forestry; *Dynamics in the Ecology of Some Michigan Forests*; 3 years; \$17,800.
- UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; A. Glenn Richards, Department of Entomology and Economic Zoology; *Temperature Effects and Membrane Properties in Insects*; 3 years; \$27,100.
- UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Lloyd L. Smith, Jr., Department of Entomology and Economic Zoology; *Natural Factors in the Success of Fish Reproduction*; 3 years; \$19,800.
- UNIVERSITY OF MISSOURI, Columbia, Mo.; Peter W. Frank, Department of Zoology; *Prediction of Population Growth in Daphnia*; 3 years; \$7,200.
- MONTANA STATE COLLEGE, Bozeman, Mont.; John C. Wright, Department of Botany and Bacteriology; *Limnology of Canyon Ferry Reservoir*; 1 year; \$3,000.
- NEW MEXICO HIGHLANDS UNIVERSITY, Las Vegas, N. Mex.; Lora M. Shields, Department of Biology; *Contribution of Algae to Nitrogen and Organic Content of Desert Soils*; 1 year; \$4,500.
- RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK, Albany, N. Y.; Hugh Wilcox, Department of Forest, Botany, and Pathology, College of Forestry, Syracuse, N. Y.; *Mycorrhizal Association of Pinus Resinosa*; 1 year; \$3,300.
- NORTH DAKOTA AGRICULTURAL COLLEGE, Fargo, N. Dak.; Loren David Potter, Department of Botany; *Phytosociological Studies of Vegetation in the San Augustin Basin*; 1 year; \$7,500.

- OHIO WESLEYAN UNIVERSITY, Delaware, Ohio; Elwood B. Shirling, Department of Botany; *Lysogeny and Related Phenomena in the Genus Streptomyces*; 3 years; \$9,000.
- PURDUE UNIVERSITY, Lafayette, Ind.; Clarence J. Goodnight, Department of Biological Sciences; *Arachnids in Relation to Soil Ecology*; 3 years; \$9,000.
- QUINCY COLLEGE, Quincy, Ill.; Troy C. Dorris, Department of Biological Sciences; *Productivity Studies in the Middle Mississippi River*; 1 year; \$3,100.
- STANFORD UNIVERSITY, Stanford, Calif.; Gilbert M. Smith, Department of Biological Sciences; *External Factors in the Development of Sexuality in Chlamydomonas*; 2 years; \$10,000.
- STANFORD UNIVERSITY, Stanford, Calif.; Donald E. Wohlschlag, Department of Biological Sciences; *Seasonal Environmental Effects on the Population Dynamics of a Natural Predator-Prey Relationship*; 3 years; \$8,300.
- TEXAS AGRICULTURAL AND MECHANICAL RESEARCH FOUNDATION, College Station, Tex.; Sewell H. Hopkins, Department of Oceanography; *Ecological Relations Between Phytoplankton and Their Periphytic Bacteria*; 1 year; \$4,400.
- UNIVERSITY OF TEXAS, Austin, Tex.; Irwin Spear, Department of Botany; *Physiology of Photoperiodic Effects in Plants*; 2 years; \$10,500.
- UNIVERSITY OF WASHINGTON, Seattle, Wash.; W. T. Edmonson, Department of Zoology; *Arid Land Limnology*; 1 year; \$9,900.
- WOODS HOLE OCEANOGRAPHIC INSTITUTION, Woods Hole, Mass.; Laurence Irving, Associate in Physiology; *Regulation of Body Heat in Homiothermous Animals*; 1 year; \$4,900.
- WOODS HOLE OCEANOGRAPHIC INSTITUTION, Woods Hole, Mass.; Gordon A. Riley; *Productivity of the Benthos in Coastal Waters*; 2 years; \$9,700.
- WOODS HOLE OCEANOGRAPHIC INSTITUTION, Woods Hole, Mass.; John H. Ryther; *Effects of Ultraviolet Radiation Upon Marine Plankton Algae*; 2 years; \$11,400.
- WOODS HOLE OCEANOGRAPHIC INSTITUTION, Woods Hole, Mass.; William C. Schroeder, Ichthyologist; *Biology of Larger Pelagic Fishes of the Western Atlantic*; 3 years; \$30,000.
- UNIVERSITY OF WYOMING, Laramie, Wyo.; Kenneth R. John, Jackson Hole Biological Research Station; *Predator-Prey Relationships in a Fish Community*; 2 years; \$6,500.
- YALE UNIVERSITY, New Haven, Conn.; Edward S. Deevey, Jr., Osborn Zoological Laboratory; *Animal and Plant Microfossils in Lake Sediments*; 2 years; \$7,100.

Genetic Biology

- ALABAMA POLYTECHNIC INSTITUTE, Auburn, Ala.; S. A. Edgar and L. W. Johnson, Department of Poultry Husbandry; *Cellular Antigens in Reproduction and Livability of Chickens*; 3 years; \$8,100.
- CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; Renato Dulbecco, Department of Biology; *Quantitative Study of Animal Virus-Host Complexes*; 1 year; \$15,000.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Harlan Lewis, Department of Botany, Los Angeles; *Race and Species Formation in the Genus Clarkia*; 3 years; \$22,500.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; Benson E. Ginsburg, The College; *Mechanisms of Gene Action in Sound Induced Seizures*; 2 years; \$12,000.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; Aaron Novick, Biological Sciences Division; *Bacterial Mutation Rates*; 1 year; \$10,600.
- EMORY UNIVERSITY, Emory University, Ga.; Charles Ray, Jr., Department of Biology; *Cytogenetics of Tetrahymena Pyriformis*; 2 years; \$8,100.
- HARVARD UNIVERSITY, Cambridge, Mass.; Paul C. Mangelsdorf, Department of Biology; *The Evolution of the Maize Plant*; 2 years; \$11,500.

- HOWARD UNIVERSITY, Washington, D. C.; David T. Ray, Department of Zoology; *Sensitivity of Different Meiotic Stages of the Eggs of Mormoniella*; 2 years; \$6,500.
- INDIANA UNIVERSITY, Bloomington, Ind.; Richard C. Starr, Department of Botany; *Nuclear and Cytoplasmic Inheritance in the Desmids*; 2 years; \$6,800.
- JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; C. P. Swanson, Department of Botany; *Role of Oxygen in Chemical Mutagenesis*; 1 year; \$7,800.
- LONG ISLAND BIOLOGICAL ASSOCIATION, Cold Spring Harbor, N. Y.; M. Demerec, Director; *Genes and Chromosomes in Bacteria*; 2 years; \$19,800.
- MICHIGAN STATE UNIVERSITY OF AGRICULTURE AND APPLIED SCIENCE, East Lansing, Mich.; Allen S. Fox, Department of Zoology; *Immunogenetic Studies of Position Effect in Drosophila Melanogaster*; 1 year; \$7,600.
- UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Joseph G. Gall, Department of Zoology; *Submicroscopic Morphology of the Animal Cell Nucleus*; 2 years; \$13,800.
- RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK, Albany, N. Y.; Evelyn M. Witkin, Department of Medicine, College of Medicine at New York City; *Induced Mutations in Bacteria*; 2 years; \$20,000.
- NEW YORK UNIVERSITY, New York, N. Y.; W. Lane Barksdale, Department of Microbiology; *Prophage and Toxin Production in Corynebacterium*; 3 years; \$12,000.
- UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N. C.; Ben W. Smith, Department of Genetics, Agricultural Experiment Station; *Relation of Dioecious Sexual Reproduction to the Natural Occurrence of Polyploidy*; 2 years; \$10,000.
- NORTHWESTERN UNIVERSITY, Evanston, Ill.; A. Gib De Busk, Department of Biological Sciences; *Enzymes and Enzyme Systems in Mutation*; 3 years; \$20,500.
- OHIO STATE UNIVERSITY, Columbus, Ohio; Margaret C. Green, Department of Zoology and Entomology; *Development in Short-Ear Mutant Mice*; 2 years; \$15,500.
- OHIO STATE UNIVERSITY, Columbus, Ohio; Henry L. Plaine, Department of Zoology and Entomology; *Induction of Uncontrolled Growths and Pheno-Copies by Specific Genes in Drosophila*; 2 years; \$10,500.
- PURDUE RESEARCH FOUNDATION, Lafayette, Ind.; J. Ralph Shay, Department of Botany and Plant Pathology; *Study in Host-Parasite Relationship*; 3 years; \$21,000.
- SANTA BARBARA BOTANIC GARDEN, Santa Barbara, Calif.; Marta S. Walters; *Spontaneous Chromosome Breakage in Hybrid Plants*; 2 years; \$14,000.
- SOUTH DAKOTA STATE COLLEGE, College Station, S. Dak.; James G. Ross, Department of Agronomy; *Homozygous Diploid Mutants in Sorghum*; 3 years; \$17,400.
- VIRGINIA POLYTECHNIC INSTITUTE, Blacksburg, Va.; James McDonald Grayson, Department of Biology; *Genetics of Resistance to Insecticides in the German Cockroach*; 1 year; \$600.
- WASHINGTON UNIVERSITY, St. Louis, Mo.; H. L. Carson, Department of Zoology; *Population Genetics, Ecology, and Parthenogenesis in Diptera*; 3 years; \$22,200.
- UNIVERSITY OF WASHINGTON, Seattle, Wash.; W. Siang Hsu, Department of Zoology, *Bdelloid Cytology*; 2 years; \$2,300.
- UNIVERSITY OF WASHINGTON, Seattle, Wash.; Herschel Roman and David R. Stadler, Department of Botany; *Chromosome Mapping in Yeast and Neurospora*; 3 years; \$11,400.
- WESLEYAN UNIVERSITY, Middletown, Conn.; Ernst Caspari, Department of Biology; *Genetic Control of the Formation of Pigment Granules in Ephestia*; 2 years; \$9,000.
- UNIVERSITY OF WISCONSIN, Madison, Wis.; R. A. Brink, Department of Genetics; *Mutable Alleles at the P Locus in Maize*; 3 years; \$22,500.
- UNIVERSITY OF WISCONSIN, Madison, Wis.; Joshua Lederbert, Department of Genetics; *Genetic Transduction by Bacteriophage*; 3 years; \$23,000.

Mathematical Sciences

- AMERICAN MATHEMATICAL SOCIETY, Providence, R. I.; C. E. Allendoerfer, Chairman; *Differential Geometry in the Large*; Summer of 1956; \$31,000.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Leon Henkin, Department of Mathematics; *Concept of Formal Systems*; 3 months; \$1,900.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Ernst G. Straus, Department of Mathematics, Los Angeles, Calif.; *Arithmetic of Analytic Functions*; 1 year; \$3,800.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; J. G. van der Corput; Department of Mathematics; *Asymptotic Expansions*; 2 years; \$31,500.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; Augustus F. Bausch, Department of Mathematics; *Logistic Method and Effective Processes*; 1 year; \$6,100.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; Paul R. Halmos, Department of Mathematics; *Algebraic Logic and Set Theory*; 3 years; \$8,850.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; Andre Weil, Department of Mathematics; *Abelian Varieties and Their Applications*; 1 year; \$7,200.
- UNIVERSITY OF COLORADO, Boulder, Colo.; Sarvadaman Chowla, Department of Mathematics; *Theory of Dirichlet L-Series*; 2 years; \$13,800.
- COLUMBIA UNIVERSITY, New York, N. Y.; Samuel Eilenberg, Department of Mathematics; *Homological Algebra and Homotopy Theory*; 2 years; \$16,800.
- COLUMBIA UNIVERSITY, New York, N. Y.; E. R. Lorch, Department of Mathematics; *Volume in Hilbert Space*; 2 years; \$9,500.
- DARTMOUTH COLLEGE, Hanover, N. H.; John G. Kemeny, Department of Mathematics; *Mathematical Methods in the Behavioral Sciences*; 2 years; \$14,000.
- GOUCHER COLLEGE, Baltimore, Md.; Mary Elizabeth Hamstrom, Department of Mathematics; *Continuous Collections of Continuous Curves*; 1 year; \$4,900.
- HARVARD UNIVERSITY, Cambridge, Mass.; R. Brauer, J. Tate, and O. Zariski, Department of Mathematics; *Algebra, Number Theory, and Algebraic Geometry*; 2 years; \$32,700.
- INDIANA UNIVERSITY, Bloomington, Ind.; V. Hlavaty, E. Hopf, and J. W. T. Youngs, Department of Mathematics; *Geometry and Rational Mechanics*; 2 years; \$50,000.
- INDIANA UNIVERSITY, Bloomington, Ind.; George Whaples, Department of Mathematics; *Local Class Field Theory*; 2 years; \$11,500.
- INSTITUTE FOR ADVANCED STUDY, Princeton, N. J.; Hassler Whitney and Arne Beurling, Department of Mathematics; *Studies in Group Theory, Algebraic Geometry, and Finite Groups*; 2 years; \$33,000.
- UNIVERSITY OF KANSAS, Lawrence, Kans.; G. Baley Price, Department of Mathematics; *Geometry of Function Space*; 2 years, \$36,500.
- KENTUCKY RESEARCH FOUNDATION, Lexington, Ky.; V. F. Cowling, Department of Mathematics, University of Kentucky, Lexington, Ky.; *Summability and Analytic Functions*; 1 year; \$6,600.
- KENYON COLLEGE, Gambier, Ohio; O. M. Nikodym, Department of Mathematics; *Ordered Algebraic Fields*; 2 years; \$11,700.
- MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Warren Ambrose and Witold Hurewicz, Department of Mathematics; *Topics in Topology and Differential Geometry*; 2 years; \$32,400.
- UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; R. C. Lyndon, R. M. Thrall and J. E. McLaughlin, Department of Mathematics; *Algebras, Groups, and Lattices*; 2 years; \$17,200.
- UNIVERSITY OF MISSOURI, Columbia, Mo.; Joseph L. Zemmer, Department of Mathematics; *A Class of Non-Associative Algebras*; 1 year; \$3,300.
- NEW YORK UNIVERSITY, New York, N. Y.; Lipman Bers, Institute of Mathematical Sciences; *Partial Differential Equations of Mixed Type*; 1 year; \$7,500.

- NEW YORK UNIVERSITY, New York, N. Y.; Lipman Bers and K. O. Friedrichs, Department of Mathematics; *Functional Analysis*; 2 years; \$26,000.
- NORTHWESTERN UNIVERSITY, Evanston, Ill.; R. P. Boas, Jr., Department of Mathematics; *Problems in Trigonometric Series*; 2 years; \$13,900.
- UNIVERSITY OF NOTRE DAME, Notre Dame, Ind.; Ky Fan, James Jenkins, and Vladimir Seidel, Department of Mathematics; *Problems in Analysis*; 3 years; \$61,000.
- UNIVERSITY OF OKLAHOMA, Norman, Okla.; Casper Goffman, Department of Mathematics; *Ordered Systems*; 2 years; \$8,000.
- UNIVERSITY OF OREGON, Eugene, Oreg.; Paul Civin and Bertram Yood, Department of Mathematics; *Semi-Reflexive Spaces*; 18 months; \$7,800.
- UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Murray Gerstenhaber and I. N. Herstein, Department of Mathematics; *Algebraic Functions and Simple Rings*; 2 years; \$14,500.
- PRINCETON UNIVERSITY, Princeton, N. J.; F. E. P. Hirzebruch, Department of Mathematics; *Topological Methods in Algebraic Geometry*; 6 month; \$3,500.
- PURDUE RESEARCH FOUNDATION, Lafayette, Ind.; Lamberto Cesari, Department of Mathematics, Purdue University, Lafayette, Ind.; *Periodicity and Stability for Differential Systems*; 1 year; \$3,000.
- PURDUE RESEARCH FOUNDATION, Lafayette, Ind.; J. H. B. Kemperman, Department of Mathematics, Purdue University, Lafayette, Ind.; *Distribution of Round-Off Errors*; 2 years; \$12,500.
- QUEENS COLLEGE, Flushing, N. Y.; Leo Zippin, Department of Mathematics; *Topological Transformation Groups*; 2 years; \$15,200.
- UNIVERSITY OF ROCHESTER, Rochester, N. Y.; Mary Ellen Rudin, Department of Mathematics; *Topological Properties of Non-Compact Spaces*; 1 year; \$4,700.
- TULANE UNIVERSITY, New Orleans, La.; A. D. Wallace, Department of Mathematics; *Topological Algebra*; 2 years; \$60,000.
- UNIVERSITY OF UTAH, Salt Lake City, Utah; C. E. Burgess, Department of Mathematics; *Homogeneous Continua*; 1 year; \$5,300.
- VIRGINIA POLYTECHNIC INSTITUTE, Blacksburg, Va.; Maurice C. K. Tweedie, Department of Mathematics; *Statistical Estimation Theory*; 2 years; \$11,700.
- UNIVERSITY OF WASHINGTON, Seattle, Wash.; Edwin Hewitt and F. H. Brownell, Department of Mathematics; *Functional Analysis*; 3 years; \$60,000.
- WAYNE UNIVERSITY, Detroit, Mich.; George Lorentz, Department of Mathematics; *Banach Spaces and Summability*; 2 years; \$13,500.

Molecular Biology

- HUGO BAUER, Bethesda, Md.; *Analysis and Identification of Products of Histidine Metabolism*; 1 year; \$2,500.
- BARNARD COLLEGE, New York, N. Y.; Helen B. Funk, Department of Botany; *Hemoglobin in Root Nodules of Legumes*; 2 years; \$9,000.
- CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; Dan H. Campbell, Robert B. Corey, and James F. Bonner, Division of Chemistry and Chemical Engineering, and Division of Biology; *High Molecular Weight Biological Compounds*; 3 years; \$16,000.
- CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; Herschel K. Mitchell, Division of Biology; *Nature and Function of Some Phospholipids*; 3 years; \$18,000.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Robert W. Cowgill, Department of Biochemistry; *Metabolism of Methylhistidines and Anserine in Animal Tissues*; 3 years; \$8,500.

- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Donald L. MacDonald, Department of Biochemistry; *Studies on the Degradation of Sugars Via Their Disulfones*; 3 years; \$9,000.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Allen G. Marr, Department of Bacteriology, Davis, Calif.; *Metabolism of Hydrogen*; 2 years; \$11,500.
- CARNEGIE INSTITUTION OF WASHINGTON, Washington, D. C.; David W. Bishop, Department of Embryology, Baltimore, Md.; *Molecular Basis of Sperm Activity*; 1 year; \$1,600.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; Lawrence Bogorad, Department of Botany; *Enzymatic Synthesis of Porphyrins From Porphobilinogen*; 3 years; \$23,000.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; Kenneth D. Kopple, Department of Chemistry; *Interaction of Amines and Carbonyl*; 2 years; \$9,500.
- THE CHILDREN'S HOSPITAL OF PHILADELPHIA, Philadelphia, Pa.; Fred Karush, Professor of Immunology; *Structural Role of the Intramolecular Disulfide Bond in Proteins*; 2 years; \$15,000.
- COLUMBIA UNIVERSITY, New York, N. Y.; Robert R. Becker, Department of Chemistry; *Reaction of N-Carboxyamino Acid Anhydrides with Proteins*; 3 years; \$12,000.
- COLUMBIA UNIVERSITY, New York, N. Y.; Bernard F. Erlanger and Sam M. Beiser, Department of Microbiology, and Seymour Lieberman, Department of Obstetrics and Gynecology, College of Physicians and Surgeons; *Chemical, Biological, and Immunochemical Properties of Steroid Hormone-Protein Conjugates*; 2 years; \$14,000.
- COLUMBIA UNIVERSITY, New York, N. Y.; William L. Nastuk, Department of Physiology, College of Physicians and Surgeons; *Ionic Permeability Change Produced at the End-Plate Membrane*; 2 years; \$21,000.
- CONNECTICUT AGRICULTURAL EXPERIMENT STATION, New Haven, Conn.; H. B. Vickery, Chief Biochemist; *Metabolism of the Organic Acids of Leaves*; 3 years; \$24,500.
- CORNELL UNIVERSITY, Ithaca, N. Y.; Harold A. Scheraga, Department of Chemistry; *Thermodynamic Properties of Proteins*; 3 years; \$18,000.
- UNIVERSITY OF DELAWARE, Newark, Del.; John C. Wriston, Jr., Department of Chemistry; *Metabolism of One-Carbon Compounds*; 3 years; \$20,000.
- DUQUESNE UNIVERSITY, Pittsburgh, Pa.; Norman C. Li, Department of Chemistry; *Thermodynamics and Kinetic Studies of Metal Complexes with Some Peptides and Related Substances*; 3 years; \$20,000.
- UNIVERSITY OF GEORGIA, Athens, Ga.; Paul R. Burkholder, Department of Bacteriology; *Obligate and Facultative Photoautotrophy in the Genus Chlamydomonas*; 2 years; \$9,300.
- UNIVERSITY OF ILLINOIS, Urbana, Ill.; S. S. Barkulis, Department of Biological Chemistry; *Immunochemical Methods for the Measurement and as an Index of Purity of Streptococcal Components and Antigens*; 2 years; \$11,000.
- UNIVERSITY OF ILLINOIS, Urbana, Ill.; L. M. Henderson, Department of Chemistry and Chemical Engineering; *Biological Oxidation of 3-Hydroxyanthranilate*; 2 years; \$13,000.
- UNIVERSITY OF ILLINOIS, Urbana, Ill.; Clyde W. Kearns, Department of Entomology; *Purification and Study of the Mechanism of Action of the Enzyme DDT-Dehydrochlorinase*; 2 years; \$16,000.
- UNIVERSITY OF ILLINOIS, Urbana, Ill.; Terrell C. Myers, Department of Biological Chemistry; *Phosphonic Acid Analogs of Nucleoside Phosphates*; 2 years; \$11,000.
- UNIVERSITY OF ILLINOIS, Urbana, Ill.; Elizabeth Thorogood, Department of Bacteriology; *Microbial Chromoproteins*; 1 year; \$9,000.
- UNIVERSITY OF ILLINOIS, Urbana, Ill.; Willis A. Wood, Dairy Science Department; *Oxidative, Cleavage, and Transfer Reactions in Aerobic Bacteria*; 3 years; \$17,500.

- INSTITUTE FOR CANCER RESEARCH AND THE LANKENAU HOSPITAL RESEARCH INSTITUTE, Philadelphia, Pa.; Theodore F. Lavine, Department of General Biochemistry; *Biochemical Reactions of Aldehydes with Sulfur Compounds*; 2 years; \$7,500.
- IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS, Ames, Iowa; David E. Metzler and Ernest Wenkert, Department of Chemistry; *Mechanism of the Catalytic Action of Riboflavin*; 2 years; \$10,000.
- IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS, Ames, Iowa; Robert L. Sinsheimer, Department of Physics; *Structure of the Ribose Nucleic Acid of Tobacco Mosaic Virus*; 2 years; \$10,000.
- IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS, Ames, Iowa; Robert L. Sinsheimer, Department of Physics, Dexter French and William F. Harrington, Department of Chemistry; *Ultra Centrifugal Preparations and Analyses*; 3 years; \$18,500.
- STATE UNIVERSITY OF IOWA, Iowa City, Iowa; George Kalnitsky, Department of Biochemistry, College of Medicine; *Mechanism of Action of Enzymes: Ribonuclease*; 3 years; \$14,000.
- STATE UNIVERSITY OF IOWA, Iowa City, Iowa; Charles Tanford, Department of Chemistry; *Physical Chemistry of Aqueous Solutions of Proteins*; 3 years; \$19,000.
- JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; Albert L. Lehninger, Department of Physiological Chemistry; *Biochemical Aspects of The Secretory Functions of Mitochondria*; 3 years; \$21,000.
- JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; Alvin Nason, McCollum-Pratt Institute; *Inorganic Nitrogen Metabolism of Nitrogen-Fixing Organisms*; 3 years; \$27,000.
- JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; Robert Van Reem, McCollum-Pratt Institute; *Interrelationships Between Micronutrient and Enzyme Systems*; 2 years; \$10,000.
- UNIVERSITY OF KANSAS, Lawrence, Kans.; Harold Edelhoeh, Department of Pathology and Ancology; *Effects of Denaturing Agents on Kinetics Pepsin Denaturation*; 2 years; \$10,000.
- UNIVERSITY OF KANSAS, Lawrence, Kans.; Philip Newmark, Department of Biochemistry; *Pyrimidine and Purine Biosynthesis in Tobacco Plants*; 2 years; \$9,000.
- MARINE BIOLOGICAL LABORATORY, Woods Hole, Mass.; Albert Szent-Gyorgyi, Institute for Muscle Research; *Mechano-Chemical Coupling in Muscle*; 3 years; \$34,500.
- MARQUETTE UNIVERSITY, Milwaukee, Wis.; Michael Laskowski, Department of Biochemistry, School of Medicine; *Proteolytic Inhibitors*; 3 years; \$27,000.
- MASSACHUSETTS GENERAL HOSPITAL, Boston, Mass.; Roger W. Jeanloz; *Uridine-Diphosphate-Aminosugar Derivatives*; 3 years; \$20,500.
- MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Richard S. Bear, Department of Biology; *Structure of Fibrous Systems by Means of Optical Analogue Diffraction*; 2 years; \$19,000.
- MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; John M. Buchanan, Division of Biochemistry; *Enzyme Systems in Synthesis of Nucleic Acids*; 3 years; \$30,000.
- MEHARRY MEDICAL COLLEGE, Nashville, Tenn.; Edward G. High, Department of Biochemistry; *Spectrophotometric Studies of Selected Carotenoids*; 2 years; \$11,000.
- UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; M. J. Coon, Department of Biological Chemistry; *Studies on Amino Acid Metabolism*; 1 year; \$8,100.
- UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; Armand J. Guarino, Department of Biological Chemistry; *Incorporation of Guanine-8-C¹⁴ into the Acid-Soluble Nucleotides of Rat Liver*; 2 years; \$9,000.

- UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Albert W. Frenkel, Department of Botany; *Phosphorylation by Cell-Free Preparations of Purple Bacteria*; 3 years; \$24,000.
- UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; H. Burr Steinbach, Department of Zoology; *Ion Binding and Enzyme Activation in Muscle*; 3 years; \$22,000.
- MOUNT SINAI HOSPITAL, New York, N. Y.; Ross F. Nigrelli and Harry Sobotka, Department of Chemistry; *Steroid Glycosides from Marine Animals*; 2 years; \$12,000.
- NAZARETH COLLEGE, Louisville, Ky.; Sister Virginia Heines, Department of Chemistry; *Mechanism of Inhibition of Peroxidase by Organic Mercurial Chemistry*; 3 years; \$1,400.
- UNIVERSITY OF NEBRASKA, Lincoln, Nebr.; J. H. Pazur, Department of Biochemistry and Nutrition, Agricultural Experiment Station; *Galactosyl Oligosaccharides*; 2 years; \$11,500.
- RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK, Albany, N. Y.; Dan A. Richert and Martin P. Schulman, Department of Biochemistry, College of Medicine, Syracuse, N. Y.; *Mechanism of Action of Pyridoxal Phosphate on Glycine Metabolism with Special Reference to Heme Synthesis*; 2 years; \$9,000.
- NEW YORK UNIVERSITY, New York, N. Y.; Elijah Adams, Department of Pharmacology, College of Medicine; *The Metabolism of Certain Amino Acids in Bacteria*; 2 years; \$12,000.
- OREGON STATE COLLEGE, Corvallis, Oreg.; Tsoo E. King and Frank P. McWhorter, School of Science; *Biochemical Studies of a New Virus*; 3 years; \$12,000.
- UNIVERSITY OF OREGON, Eugene, Oreg.; F. J. Reithel, Department of Chemistry; *Carbohydrate Metabolism of the Sapotaceae*; 2 years; \$12,000.
- UNIVERSITY OF OREGON, Eugene, Oreg.; Bradley T. Scheer, Department of Biology and Pierre van Rysselberghe, Department of Chemistry; *Thermodynamics of Diffusion and Active Transport of Ions Considered as Irreversible Processes*; 3 years; \$15,000.
- UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Philip George, John Harrison Laboratory of Chemistry; *Physicochemical Origin of the Specificity of Haemoprotein Reactions*; 3 years; \$25,000.
- UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Samuel Gurin, Department of Biochemistry; *Metabolic Processes in Mammalian and Plant Tissues*; 3 years; \$29,000.
- UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; L. V. Heilbrunn, Department of Zoology; *Colloidal Behavior of Various Types of Protoplasm*; 2 years; \$5,600.
- UNIVERSITY OF PITTSBURGH, Pittsburgh, Pa.; Klaus Hofmann, Department of Biochemistry; *New Routes to Complex Polypeptides*; 3 years; \$16,500.
- PRINCETON UNIVERSITY, Princeton, N. J.; Walter Kauzmann, Department of Chemistry; *Denaturation of Proteins*; 3 years; \$24,000.
- UNIVERSITY OF PUERTO RICO, San Juan, P. R.; 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.; Seymour Benzer, Department of Physics, Purdue University, Lafayette, Ind.; *Genetic Fine Structure and Its Relation to the Molecular Structure of Desoxyribonucleic Acid*; 3 years; \$26,500.
- PURDUE RESEARCH FOUNDATION, Lafayette, Ind.; Joseph F. Foster, Department of Chemistry, Purdue University, Lafayette, Ind.; *Physical Chemistry of Polysaccharides*; 3 years; \$17,000.
- REED COLLEGE, Portland, Oreg.; Arthur H. Livermore, Department of Chemistry; *Synthesis of Glutathione by the Yeast *T. Utilis**; 1 year; 2,800.
- UNIVERSITY OF ROCHESTER, Rochester, N. Y.; Harold F. Parks, Department of Anatomy, School of Medicine and Dentistry; *Electron Microscopy*; 1 year; \$1,280.

- RUTGERS UNIVERSITY, New Brunswick, N. J.; Michael Heidelberger, Institute of Microbiology; *Chemical Constitution and Immunological Specificity*; 3 years; \$39,000.
- TEXAS A. AND M. RESEARCH FOUNDATION, College Station, Tex.; Raymond Reiser, Department of Biochemistry and Nutrition, Texas Agricultural Experiment Station; *Metabolism of Glycerides*; 2 years; \$12,000.
- TRINITY COLLEGE, Hartford, Conn.; W. Scott Worrall, Department of Chemistry; *Reaction Mechanisms of Certain Protein Enzymes*; 3 years; \$11,000.
- TUFTS COLLEGE, Medford, Mass.; Alton Meister, Department of Biochemistry; School of Medicine; *Glutamine Metabolism*; 3 years; \$30,000.
- UNIVERSITY OF UTAH, Salt Lake City, Utah; John D. Spikes; *Kinetics of the Photochemical Activity of Isolated Chloroplasts*; 3 years; \$15,000.
- VANDERBILT UNIVERSITY, Nashville, Tenn.; Oscar Touster, Department of Biochemistry, School of Medicine; *The Metabolism of L-Xylulose*; 3 years, \$25,500.
- VIRGINIA POLYTECHNIC INSTITUTE, Blacksburg, Va.; Kendall W. King, Department of Biology; *Significance of the Cellulodextrins Produced During Enzymatic Hydrolysis of Cellulose*; 3 years; \$10,000.
- WAKE FOREST COLLEGE, Winston-Salem, N. C.; Samuel H. Love, Department of Microbiology and Immunology; *Purine Metabolism in Bacteria*; 2 years; \$10,000.
- WASHINGTON UNIVERSITY, St. Louis, Mo.; Barry Commoner, Henry Shaw School of Botany; *Nucleoproteins in Growing Leaves*; 3 years; \$15,000.
- WASHINGTON UNIVERSITY, St. Louis, Mo.; Martin D. Kamen, Institute of Radiology; *Photo-Activation and Electron Transfer in Bacteria*; 5 years; \$32,500.
- UNIVERSITY OF WASHINGTON, Seattle, Wash.; Philip E. Wilcox, Department of Biochemistry; *Chemical Modification of Proteins*; 2 years; \$10,500.
- UNIVERSITY OF WISCONSIN, Madison, Wis.; Reinhold Benesch, Institute for Enzyme Research; *Reactivity of Sulfhydryl Groups in Peptides and Proteins*; 1 year; \$4,000.
- UNIVERSITY OF WISCONSIN, Madison, Wis.; Lafayette H. Noda, Institute for Enzyme Research; *High-Energy-Phosphate Transferring Enzymes*; 3 years; \$17,000.
- YALE UNIVERSITY, New Haven, Conn.; Henry A. Harbury, Department of Chemistry; *Prosthetic Group Interaction in Proteins*; 3 years; \$12,000.
- YESHIVA UNIVERSITY, New York, N. Y.; Alex B. Novikoff, Department of Pathology, Albert Einstein College of Medicine; *Biochemical and Electron Microscope Study of Microsomes*; 2 years; \$13,000.
- YESHIVA UNIVERSITY, New York, N. Y.; Jonathan Wittenberg, Department of Medicine; *Biosynthesis of Sphingosine and the Structure of Related Compounds*; 3 years; \$20,000.

Physics

- AMHERST COLLEGE, Amherst, Mass.; R. H. Romer, Department of Physics; *Nuclear Spin Relaxation in Metals*; 2 years; \$10,800.
- ANTIOCH COLLEGE, Yellow Springs, Ohio; A. B. Stewart and G. E. Owen, Department of Physics; *Glow Discharge Oscillations*; 3 years; \$15,700.
- UNIVERSITY OF ARKANSAS, Fayetteville, Ark.; B. L. Robinson, Department of Physics and R. W. Fink, Department of Chemistry; *Coincidence Studies of Nuclear Decay Schemes*; 2 years, \$20,700.
- BOWDOIN COLLEGE, Brunswick, Maine; M. A. Jeppesen, Department of Physics; *Optical Studies of Crystalline and Amorphous Solids*; 3 years; \$16,100.
- BRYN MAWR COLLEGE, Bryn Mawr, Pa.; W. C. Michels, Department of Physics; *Nuclear Solid-State and Bioelectric Research*; 3 years; \$24,100.
- BROWN UNIVERSITY, Providence, R. I.; P. J. Bray, Department of Physics; *Nuclear Resonance Investigation of Molecular and Crystalline Structure*; 2 years; \$10,300.

- BROWN UNIVERSITY, Providence, R. I.; Rohn Truell, Research Division of Applied Mathematics; *High Precision Ultrasonic Velocity Measurements*; 1 year; \$4,000.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; David S. Saxon, Department of Physics; *Theoretical Optical Model of the Nucleus*; 2 years; \$48,600.
- CARLETON COLLEGE, Northfield, Minn.; Frank Verbrugge, Department of Physics; *Carrier Mobilities in Mixed Alkali Halide Crystals*; 3 years; \$14,700.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; M. G. Inghram, Department of Physics; *Mass Spectrometric Investigations*; 3 years; \$43,700.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; Marcel Schein, Department of Physics; *Production and Interaction of Hyperons and Heavy Mesons*; 2 years; \$20,800.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; Marcel Schein, Department of Physics; *Institute for Cooperative Emulsion Research*; 8 weeks; \$11,500.
- COLUMBIA UNIVERSITY, New York, N. Y.; H. A. Boorse, Department of Physics; *Research on Superconductors*; 2 years; \$33,000.
- COLUMBIA UNIVERSITY, New York, N. Y.; H. M. Foley, Department of Physics; *Nuclear Structure Problems and Hyperfine Interactions*; 2 years; \$19,200.
- CORNELL UNIVERSITY, Ithaca, N. Y.; Kenneth Greisen, Department of Physics; *Cosmic Ray Air Shower and Particle Study*; 2 years; \$35,600.
- CORNELL UNIVERSITY, Ithaca, N. Y.; H. S. Sack, Department of Engineering Physics; *Dielectric Dispersion in Illuminated Phosphors of the ZnS Type*; 3 years; \$13,500.
- DEPAUW UNIVERSITY, Greencastle, Ind.; Austin D. Sprague, Department of Physics; *High Energy Particles in Nuclear Emulsions*; 1 year; \$4,300.
- DUKE UNIVERSITY, Durham, N. C.; William M. Fairbank, Department of Physics; *Theoretical Study of Quantum Liquids*; 1 year; \$4,500.
- DUKE UNIVERSITY, Durham, N. C.; L. W. Nordheim and E. Greuling, Department of Physics; *Nuclear Shell Structure*; 2 years; \$20,100.
- UNIVERSITY OF IDAHO, Moscow, Idaho; Mark Gurevitch, Department of Physical Sciences; *Production and Characteristics of Small Metal Particles*; 2 years; \$7,700.
- UNIVERSITY OF ILLINOIS, Urbana, Ill.; W. G. Moulton, Department of Physics; *Nuclear Resonance Study of the Amino Group*; 2 years; \$8,000.
- UNIVERSITY OF ILLINOIS, Urbana, Ill.; C. S. Robinson, Department of Physics; *High Energy Nuclear Phenomena*; 3 years; \$26,100.
- JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; G. H. Dicke, Department of Physics; *Spectroscopy of Rare Earths at Low Temperatures*; 1 year; \$4,700.
- JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; H. Meissner, Department of Physics; *Intermediate State of Superconductivity*; 2 years; \$16,900.
- MARQUETTE UNIVERSITY, Milwaukee, Wis.; A. G. Barkow, Department of Physics; *Elementary Particle Reactions in Photographic Emulsions*; 2 years; \$4,300.
- MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; G. R. Harrison, Department of Physics; *Interferometric Control of the Ruling of Diffraction Gratings*; 1 year; \$10,000.
- MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, Mass.; Bruno B. Rossi, Department of Physics; *Cosmic Ray Research*; 3 years; \$25,100.
- MIDWESTERN UNIVERSITIES RESEARCH ASSOCIATION, Urbana, Ill.; D. W. Kerst, University of Illinois; *High-Energy Accelerator Problems*; 9 months; \$100,000.
- MIDWESTERN UNIVERSITIES RESEARCH ASSOCIATION, Urbana, Ill.; D. W. Kerst, University of Illinois; *High-Energy Accelerator Problems*; 9 months; \$60,000.
- MONTANA STATE UNIVERSITY, Missoula, Mont.; M. J. Jakobson, Department of Physics; *Measurement of Photo-Neutron Cross Sections*; 2 years; \$10,300.
- NEW YORK UNIVERSITY, New York, N. Y.; H. Kallmann, Department of Physics; *Metastable States in Fluorescent Processes*; 2 years; \$13,200.
- NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING, Raleigh, N. C.; C. Beck, Department of Physics; *Nuclear Reactor Operations and Research*; 1 year; \$15,000.

- NORTHWESTERN UNIVERSITY**, Evanston, Ill.; S. Broersma, Department of Physics; *Nuclear Magnetic Relaxation of Non-Uniform Systems*; 2 years; \$9,700.
- NORTHWESTERN UNIVERSITY**, Evanston, Ill.; J. A. Marcus, Department of Physics; *Magnetic Properties of Single Crystals at Low Temperatures*; 2 years; \$13,600.
- OHIO STATE UNIVERSITY**, Columbus, Ohio; J. G. Daunt, Department of Physics; *Physical Phenomena at Very Low Temperatures*; 3 years; \$76,000.
- OHIO STATE UNIVERSITY**, Columbus, Ohio; H. H. Nielsen, Department of Physics; *Infra-Red Spectra of Polyatomic Molecules*; 3 years; \$42,200.
- UNIVERSITY OF OKLAHOMA RESEARCH INSTITUTE**, Norman, Okla.; Chun C. Lin, Department of Physics; *Internal Rotation of Molecules*; 2 years; \$17,200.
- UNIVERSITY OF OREGON**, Eugene, Oreg.; S. Y. Ch'en, Department of Physics; *Shift and Broadening of Spectral Lines under High Pressures*; 3 years; \$25,500.
- UNIVERSITY OF OREGON**, Eugene Oreg.; J. L. Powell, Department of Physics; *Dynamics of Synchrotron Orbits*; 1 year; \$4,700.
- UNIVERSITY OF PENNSYLVANIA**, Philadelphia, Pa.; M. E. Caspari, Department of Physics; *Dielectric Breakdown in Crystals*; 2 years; \$13,200.
- UNIVERSITY OF PENNSYLVANIA**, Philadelphia, Pa.; B. Chance, Johnson Foundation for Medical Physics; *Physical Methods for the Measurement of Biological Phenomena*; 3 years; \$35,300.
- PURDUE RESEARCH FOUNDATION**, Lafayette, Ind.; Frederik J. Belinfante, Department of Physics, Purdue University, Lafayette; *Field Theory of Interacting Particles*; 3 years; \$12,000.
- PURDUE RESEARCH FOUNDATION**, Lafayette, Ind.; H. M. James, Department of Physics, Purdue University, Lafayette, Ind.; *Imperfections in Bombarded Semiconductors*; 2 years, \$12,500.
- PURDUE RESEARCH FOUNDATION**, Lafayette, Ind.; K. W. Meissner, Department of Physics, Purdue University, Lafayette, Ind.; *Precision Interferometric Wavelength Measurements*; 3 years; \$21,100.
- UNIVERSITY OF REDLANDS**, Redlands, Calif.; A. V. Baez, Department of Physics; *X-Ray Microscopy*; 1 year; \$4,800.
- ST. LOUIS UNIVERSITY**, St. Louis, Mo.; W. A. Barker, Department of Physics; *Knight Shift in Metals and Semiconductors*; 2 years; \$9,400.
- UNIVERSITY OF TENNESSEE**, Knoxville, Tenn.; D. T. King, Department of Physics; *Multiple Meson Production in Energetic Collisions of Nucleons*; 2 years; \$19,700.
- UNIVERSITY OF TEXAS**, Austin, Tex.; D. S. Hughes, Department of Physics; *Elastic Properties of Solids at High Pressure and Temperature*; 2 years; \$12,400.
- VANDERBILT UNIVERSITY**, Nashville, Tenn.; S. K. Haynes, Department of Physics; *Beta-Ray Spectroscopy at Very Low Energies*; 2 years; \$12,800.
- UNIVERSITY OF VIRGINIA**, Charlottesville, Va.; J. W. Beams, Department of Physics; *Ultracentrifuge Method for Molecular Weights Measurement*; 3 years; \$14,600.
- WASHINGTON UNIVERSITY**, St. Louis, Mo.; J. P. Hurley, Department of Physics; *Photon Splitting by the Coulomb Field of the Nucleus*; 2 years; \$17,200.
- WESLEYAN UNIVERSITY**, Middletown, Conn.; F. I. Boley, Department of Physics; *Low Energy Inelastic Neutron Scattering*; 2 years; \$14,900.
- WILLAMETTE UNIVERSITY**, Salem, Oreg.; Robert L. Purbrick, Department of Physics; *Vibrational Constants of Diatomic Molecules*; 3 years; \$4,000.
- YALE UNIVERSITY**, New Haven, Conn.; *Experimental Investigation of Liquid Helium*; 2 years; \$30,600.

Psychobiology

- THE AMERICAN MUSEUM OF NATURAL HISTORY**, New York, N. Y.; T. C. Schneirla, Department of Animal Behavior; *Behavior Patterns in Lower Mammals*; 1 year; \$8,900.
- UNIVERSITY OF ARKANSAS**, Fayetteville, Ark.; Merrell E. Thompson, Department of Psychology; *Stimulus Generalization and Inhibition*; 2 years; \$8,400.

- BOSTON UNIVERSITY, Boston, Mass.; J. M. Harrison, Department of Psychology; *Neurophysiology and Behavior*; 3 years; \$22,100.
- BRANDEIS UNIVERSITY, Waltham, Mass.; Richard Held, Department of Psychology; *Visual-Motor Coordination*; 2 years; \$10,700.
- BROWN UNIVERSITY, Providence, R. I.; J. W. Kling, Department of Psychology; *An Analysis of Factors Influencing Response Strength*; 1 year; \$5,100.
- BROWN UNIVERSITY, Providence, R. I.; Carl Pfaffman, Department of Psychology; *Psychophysiological Studies of Taste and Olfaction*; 5 years; \$29,800.
- BRYN MAWR COLLEGE, Bryn Mawr, Pa.; Donald R. Brown, Department of Psychology; *Research and Training in Experimental Psychology*; 2 years; \$11,200.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; David Krech, Department of Psychology; *Brain Chemistry and Behavior*; 3 years; \$38,000.
- CARLETON COLLEGE, Northfield, Minn.; Sumner C. Hayward, Department of Psychology; *Modification of Innate Behavior*, 2 years; \$8,000.
- CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pa.; Lee W. Gregg, Department of Psychology; *Distribution of Muscle Action Potentials During Learning*; 2 years; \$8,500.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; Howard F. Hunt and Irving T. Diamond, Department of Psychology; *Effect of Rhinencephalic Ablations on Behavior*; 2 years; \$15,000.
- COLUMBIA UNIVERSITY, New York, N. Y.; Fred A. Mettler, Department of Anatomy, College of Physicians and Surgeons; *Function of the Striatum*; 2 years; \$15,200.
- CORNELL UNIVERSITY, Ithaca, N. Y.; Howard E. Evans, Department of Entomology; *Behavior Patterns of Solitary Hymenoptera*; 2 years; \$7,200.
- DUKE UNIVERSITY, Durham, N. C.; Gregory A. Kimble, Department of Psychology; *Research in Eyelid Conditioning*; 2 years; \$10,200.
- DUKE UNIVERSITY, Durham, N. C.; Kellogg V. Wilson, Department of Psychology; *Multidimensional Stimulus Scaling*; 2 years; \$8,800.
- FISK UNIVERSITY, Nashville, Tenn.; S. Oliver Roberts, Department of Psychology; *Research and Training in Experimental Psychology*; 2 years; \$10,000.
- FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; Lloyd M. Beidler, Department of Physiology; *Research on Chemoreception*; 2 years; \$9,900.
- FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; Daniel R. Kenshalo, Department of Psychology; *An Analysis of Tactile Stimuli*; 1 year; \$5,100.
- HARVARD UNIVERSITY, Cambridge, Mass.; Solomon E. Asch, Department of Social Relations; *Studies in Cognition*; 1 year; \$7,500.
- HARVARD UNIVERSITY, Cambridge, Mass.; Ernst Mayr, Museum of Comparative Zoology; *Research on the Behavior of Neotropical Laridae*; 2 years; \$11,500.
- HARVARD UNIVERSITY, Cambridge, Mass.; Philip Teitelbaum, Department of Psychology; *Effect of Hypothalamic Lesions on Behavior*; 18 months; \$12,000.
- ILLINOIS COLLEGE, Jacksonville, Ill.; Nicholas E. Collias, Department of Biology; *Behavior in Ploceidae*; 1 year; \$14,500.
- INDIANA UNIVERSITY, Bloomington, Ind.; Lloyd R. Peterson, Department of Psychology; *Stimulus Variables in Forgetting*; 1 year; \$4,400.
- STATE UNIVERSITY OF IOWA, Iowa City, Iowa; Don Lewis, Department of Psychology; *Research on Perceptual-Motor Behavior*; 2 years; \$13,500.
- JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; Curt P. Richter, Psychobiological Laboratory, Medical School; *Research in Electrophysiology*; 5 years; \$62,100.
- KENT STATE UNIVERSITY, Kent, Ohio; Charles C. Perkins, Jr. Department of Psychology; *Study of Stimulus Generalization*; 2 years; \$10,000.
- MCGILL UNIVERSITY, Montreal, Canada; Herbert Jasper and D. O. Hebb, Neurological Institute and Department of Psychology; *Neuro-Psychological Studies*; 2 years; \$16,700.

- UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; Frederick H. Test, Department of Zoology; *An Experimental Analysis of Territorial Behavior*; 1 year; \$5,800.
- UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; Edward L. Walker, Department of Psychology; *Comparison of Conditioning Techniques*; 2 years; \$10,900.
- UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Eugene S. Gollin, Institute of Child Welfare; *Department of Visual and Tactual Recognition*; 1 year; \$5,300.
- UNIVERSITY OF MISSOURI, Columbia, Mo.; Melvin H. Marx, Department of Psychology; *Experimental Analysis of Food Hoarding Behavior*; 1 year; \$7,000.
- MONTANA STATE UNIVERSITY, Missoula, Mont.; James H. Straughan, Department of Psychology; *Mathematical Analysis of Human Learning*; 1 year; \$3,500.
- MOUNT HOLYOKE COLLEGE, South Hadley, Mass.; T. W. Reese, Department of Psychology; *Effects of Secondary Reinforcing Agents on Extinction*; 15 months; \$8,600.
- NEW MEXICO A. AND M. COLLEGE, State College, N. Mex.; Merrell T. Thompson, Department of Psychology; *Stimulus Generalization and Inhibition*; 2 years; \$8,400.
- THE RESEARCH FOUNDATION OF THE STATE UNIVERSITY OF NEW YORK, Albany, N. Y.; Jack Richardson, Department of Psychology, Harpur College, Endicott, New York; *Role of Similarity in Concept Formation*; 2 years; \$3,800.
- NEW YORK UNIVERSITY, New York, N. Y.; Howard H. Kendler and Tracy S. Kendler, Department of Psychology; *Research on Problem-Solving Behavior*; 3 years; \$22,600.
- NORTHWESTERN UNIVERSITY, Evanston, Ill.; A. Leonard Diamond, Department of Psychology; *The Psychophysiology of Vision: Simultaneous Brightness Contrast*; 3 years; \$19,200.
- OHIO STATE UNIVERSITY, Columbus, Ohio; Delos D. Wickens, Department of Psychology; *Discriminability Within Complex Stimuli*; 2 years; \$9,500.
- OHIO WESLEYAN UNIVERSITY, Delaware, Ohio; Harry P. Bahrck, Department of Psychology; *Factors Influencing Psychomotor Control*; 2 years; \$10,000.
- PENNSYLVANIA STATE UNIVERSITY, University Park, Pa.; John F. Hall and Alec J. Slivinske, Department of Psychology; *Studies of Stimulus Discriminability*; 2 years; \$11,900.
- UNIVERSITY OF PUERTO RICO, San Juan, P. R.; E. H. Hinman, School of Medicine; *Asphyxia Neonatorum Brain*; 1 year; \$1,600.
- UNIVERSITY OF ROCHESTER, Rochester, N. Y.; Arnold A. Gerall, Department of Psychology; *Conditioning of the Pupillary Response*; 1 year; \$6,600.
- RUTGERS UNIVERSITY, New Brunswick, N. J.; Daniel S. Lehrman, Department of Psychology; *Psychobiological Studies of Behavior*; 3 years; \$24,600.
- SAMUEL S. FELS RESEARCH INSTITUTE FOR THE STUDY OF HUMAN DEVELOPMENT, Yellow Springs, Ohio; William D. Thompson, Department of Psychophysiology; *Behavior Effects of Thiamine Deficiency*; 1 year; \$5,000.
- COLLEGES OF THE SENECA, HOBART AND WILLIAM SMITH COLLEGES, Geneva, N. Y.; Neil Bartlett, Department of Psychology; *Research and Training in Experimental Psychology*; 3 years; \$7,800.
- SOUTHERN ILLINOIS UNIVERSITY, Carbondale, Ill.; Israel Goldiamond, Department of Psychology; *Development of Psychophysical Techniques*; 1 year; \$5,900.
- SOUTHERN METHODIST UNIVERSITY, Dallas, Tex.; Alvin J. North, Department of Psychology; *Studies of Discrimination Learning*; 2 years; \$10,200.
- STANFORD UNIVERSITY, Stanford, Calif.; Robert R. Sears, Department of Psychology; *Analysis of Motivation Measures*; 1 year; \$3,900.
- UNIVERSITY OF TENNESSEE, Knoxville, Tenn.; Ernest Furchtgott, Department of Psychology; *Magnitude of Reward and Acquisition*; 1 year; \$2,000.

- THE TRAINING SCHOOL AT VINELAND, NEW JERSEY, Vineland, N. J.; Johs. Clausen, Laboratory for Experimental and Physiological Psychology; *Psychophysical Problems in Electrically Induced Visual Sensations*; 2 years; \$11,900.
- UNIVERSITY OF UTAH, Salt Lake City, Utah; James L. Morey, Department of Psychology; *Research on Latent Learning*; 1 year; \$5,400.
- UNIVERSITY OF VERMONT AND STATE AGRICULTURAL COLLEGE, Burlington, Vt.; Bennet B. Murdock, Jr., Department of Psychology; *Research on Transfer of Training*; 2 years; \$10,000.
- STATE COLLEGE OF WASHINGTON, Pullman, Wash.; David Ehrenfreund, Department of Psychology; *Research on Motivation*; 1 year; \$6,900.
- UNIVERSITY OF WASHINGTON, Seattle, Wash.; Sidney W. Bijou, Department of Psychology; *Motivation and Learning in Children*; 2 years; \$11,000.
- UNIVERSITY OF WISCONSIN, Madison, Wis.; Karl U. Smith, Department of Psychology; *The Role of Perception in Patterned Motion*; 3 years; \$17,700.
- YALE UNIVERSITY, New Haven, Conn.; Paul D. MacLean and John P. Flynn, Department of Psychiatry; *Effects of Hippocampal Seizures on Conditioned Behavior*; 3 years; \$35,000.
- YALE UNIVERSITY, New Haven, Conn.; Seth K. Sharpless, Department of Psychology; *Effects of Biochemical Agents on Behavior*; 1 year; \$6,500.

Regulatory Biology

- UNIVERSITY OF ARKANSAS, Fayetteville, Ark.; Robert L. Wixom and Paul L. Day, Department of Biochemistry; *Biosynthesis of Amino Acids from Carbohydrate*; 3 years; \$11,900.
- BRYN MAWR COLLEGE, Bryn Mawr, Pa.; Robert L. Conner, Department of Biology; *Steroids in Ciliate Protozoa*; 3 years; \$14,600.
- THE UNIVERSITY OF BUFFALO, Buffalo, N. Y.; David P. Hackett, Department of Biology; *Mechanisms of Respiration and Energy Supply in Plant Tissues*; 3 years; \$17,750.
- CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; George C. Latices, Division of Biology; *Nature and Function of Coexisting Respiratory Systems of Plant Tubers*; 3 years; \$22,900.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; C. A. Barraclough, Department of Anatomy, Los Angeles, Calif.; *Mechanisms Involved in Hormone-Induced Sterility in Mice*; 2 years; \$11,000.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Thomas W. James and Theodore L. Jahn, Department of Zoology, Los Angeles, Calif.; *Metabolism in Relation to Cellular Division*; 2 years; \$20,000.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Barbara B. Oakeson, Department of Biological Sciences, Santa Barbara, Calif.; *Comparative Thyroid Histology in Resident and Migratory Birds*; 2 years; \$8,150.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Robert C. Stebbins and Richard M. Eakin, Museum of Vertebrate Zoology, and Department of Zoology; *Structure and Function of the Parietal Eye in Reptiles*; 1 year; \$5,000.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; P. K. Stumpf, Department of Plant Biochemistry; *Enzymatic Mechanisms Participating in Fat Metabolism of Higher Plants*; 3 years; \$30,000.
- CENTRE NATIONAL DE TRANSFUSION SANGUINE, 6 Rue Alexandre-Cabanel, Paris, France; Alfred L. Copley; *Role of Endothelium in Fibrin Formation, Platelet Agglutination and Production of Vascular Purpura*; 2 years; \$9,200.
- COLUMBIA UNIVERSITY, New York, N. Y.; Herbert Elftman, Department of Anatomy; *Cytochemistry of the Anterior Pituitary Gland*; 2 years; \$10,900.

- COLUMBIA UNIVERSITY, New York, N. Y.; Harry Grundfest, Department of Neurology; *Fundamental Mechanisms of Bioelectric Activity*; 3 years; \$45,000.
- COLUMBIA UNIVERSITY, New York, N. Y.; Beatrice C. Seegal, Department of Microbiology; *Immunological Mechanisms in Experimental Nephritis*; 2 years; \$24,500.
- CORNELL UNIVERSITY, Ithaca, N. Y.; William A. Wimsatt, Department of Zoology; *Physiology of Hibernation and Absorption in the Bat*; 3 years; \$19,650.
- EMORY UNIVERSITY, Emory University, Ga.; Chauncey G. Goodchild, Department of Biology; *Role of Mucosa and Luminal Contents in Nutrition of Intestinal Parasites*; 2 years; \$10,800.
- FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; H. Arliss Denyes, Department of Physiology; *Function of Cortical Tubular Cells in Acclimation and Hibernation*; 2 years; \$7,000.
- UNIVERSITY OF HAWAII, Honolulu, T. H.; Yoshinori Tanada, Department of Zoology and Entomology; *Synergism Among Insect Viruses*; 2 years; \$9,000.
- UNIVERSITY OF ILLINOIS, Urbana, Ill.; R. H. Hageman, Department of Agronomy; *Heterosis in Corn in Relation to the Composition, Quantity, and Efficiency of Enzymes*; 2 years; \$10,000.
- UNIVERSITY OF ILLINOIS, Urbana, Ill.; C. Ladd Prosser, Department of Physiology; *Conduction in Non-Striated Muscle*; 3 years; \$16,000.
- UNIVERSITY OF ILLINOIS, Urbana, Ill.; R. S. Wolfe, Department of Bacteriology; *Mechanisms of Carbon Dioxide Fixation in Chemo-Autotrophic Bacteria*; 3 years; \$19,000.
- INSTITUT NATIONAL D'HYGIENE, Paris, France; Alfred L. Copley; *Role of the Capillary Endothelium in Fibrin Formation and Platelet Agglutination*; 1 year; \$4,600.
- STATE UNIVERSITY OF IOWA, Iowa City, Iowa; Emil Witschi, Department of Zoology; *Comparative Endocrine Studies on the Vertebrate Hypophysis*; 3 years; \$30,000.
- JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; Ralph D. DeMoss, Department of Biology, McCollum-Pratt Institute; *Bacterial Pigments*; 2 years; \$11,300.
- JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; Nathan O. Kaplan, McCollum-Pratt Institute and Abraham G. Osler, Department of Microbiology; *Cellular Inhibitory Factors Regulating Enzymatic Activity*; 2 years; \$24,500.
- JOHNS HOPKINS UNIVERSITY, Baltimore, Md.; Gilbert H. Mudge, Department of Pharmacology and Experimental Therapeutics, School of Medicine; *Cellular Mechanism of Electrolyte Transport in the Kidney*; 3 years; \$23,900.
- KENTUCKY RESEARCH FOUNDATION, Lexington, Ky.; J. G. Rodriguez, Agricultural Experiment Station, University of Kentucky; *The Nutrition of Plant-Feeding Mites*; 2 years; \$10,250.
- LOUISIANA STATE UNIVERSITY AND AGRICULTURAL AND MECHANICAL COLLEGE, Baton Rouge, La.; Howard J. Saz, Department of Pharmacology, School of Medicine, New Orleans, La.; *Intermediary Carbohydrate Metabolism of Ascaris Lumbricoides*; 5 years; \$24,400.
- MICHAEL REESE HOSPITAL, Chicago, Ill.; Rachmiel Levine and Maurice S. Goldstein, Department of Metabolic and Endocrine Research; *Hepatic and Muscle Factors Concerned with Integration of Metabolic Events*; 3 years; \$28,000.
- UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; Wilbur B. Quay, Department of Anatomy; *Structure and Function of the Mammalian Pineal Body*; 2 years; \$8,600.
- UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Arnold Lazarow, Department of Anatomy; *Isolated Pancreatic Islet Tissue of the Toadfish*; 2 years; \$16,600.
- UNIVERSITY OF MINNESOTA, Minneapolis, Minn.; Grover C. Stephens, Department of Zoology; *Crustacean Endocrinology*; 3 years; \$14,400.
- UNIVERSITY OF MISSOURI, Columbia, Mo.; D. S. Van Fleet, Department of Botany; *Cell Division and Differentiation in Plants*; 2 years; \$10,900.

- CITY COLLEGE OF NEW YORK, New York, N. Y.; William Etkin, Department of Biology; *Inter-relationships of the Pars Intermedia, the Hypothalamus, and the Adrenal Cortex*; 2 years; \$8,000.
- NEW YORK UNIVERSITY, New York, N. Y.; Bernard D. Davis, Department of Pharmacology, College of Medicine; *Bacterial Growth Factors and Protein Synthesis*; 2 years, 6 months; \$15,250.
- NEW YORK UNIVERSITY, New York, N. Y.; Henry I. Hirshfield, Department of Biology, Washington Square College; *Photolytic Pigment in Cell Growth and Differentiation*; 2 years; \$10,250.
- NEW YORK UNIVERSITY, New York, N. Y.; W. N. Hubbard, Jr., New York University College of Medicine; *Short-Term Research by Medical Students*; 3 years; \$10,800.
- RESEARCH FOUNDATION OF THE STATE UNIVERSITY OF NEW YORK, Albany, N. Y.; James B. Hamilton, Department of Anatomy, College of Medicine at New York, New York; *Mechanism of Integumentary Control in Experimental Animals*; 2 years; \$10,000.
- NORTHWESTERN UNIVERSITY, Evanston, Ill.; C. L. Turner, Department of Biology; *Effects of ACTH and Cortisone upon Regeneration of Tissues of Vertebrates*; 2 years; \$9,000.
- UNIVERSITY OF OREGON, Portland, Oreg.; D. W. E. Baird, Medical School; *Short-Term Research by Medical Students*; 3 years; \$9,750.
- UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Edward C. Cantino, Department of Botany; *Metabolic and Morphogenetic Relationships and Light-Induced Growth in Fungi*; 3 years; \$14,700.
- UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; Eugene I. Rosanoff, Department of Microbiology, School of Veterinary Medicine; *Tissue Culture Studies on Brucellosis*; 2 years; \$9,600.
- PRINCETON UNIVERSITY, Princeton, N. J.; Colin S. Pittendrigh, Department of Biology; *Physiological Basis of Time Measurements (Clocks) in Organisms*; 3 years; \$19,800.
- PRINCETON UNIVERSITY, Princeton, N. J.; W. W. Swingle, Department of Biology; *Biological Properties of Adreno-Cortical Steroids*; 3 years; \$17,250.
- UNIVERSITY OF ROCHESTER, Rochester, N. Y.; Donald G. Anderson, School of Medicine and Dentistry; *Summer Research by Medical Students*; 3 years; \$9,900.
- UNIVERSITY OF ROCHESTER, Rochester, N. Y.; Alworth D. Larson, Department of Bacteriology; *Factors Involved in the Utilization of Valine Isomers by Bacteria*; 2 years; \$4,000.
- RUTGERS UNIVERSITY, New Brunswick, N. J.; Werner Braun, Institute of Microbiology; *Selective Bacterial Inhibition by Metabolic Factors*; 3 years; \$25,900.
- RUTGERS UNIVERSITY, New Brunswick, N. J.; James B. Durand, Department of Zoology; *Relation of Neurosecretory Activity to the Molt Cycle of the Crayfish*; 1 year; \$2,300.
- ST. FRANCIS HOSPITAL, Wichita, Kans.; Richard F. Straw, Biochemistry Department; *Identification of Estrogens and Related Substances*; 3 years; \$5,800.
- ST. JOHN'S UNIVERSITY, Brooklyn, N. Y.; Daniel M. Lilly, Department of Biology; *Nutritional Factors in the Growth of Hypotrichous Ciliates*; 2 years; \$11,050.
- UNIVERSITY OF SOUTH DAKOTA, Vermillion, S. Dak.; Keatha K. Krueger, Department of Biochemistry, School of Medicine; *Metabolism of Organisms in the Genus Neisseria*; 2 years; \$5,400.
- SOUTHERN ILLINOIS UNIVERSITY, Carbondale, Ill.; Frank J. Finamore, Department of Physiology; *Nucleic Acid Metabolism During the Early Developmental Stages of *Rana Pipiens**; 2 years; \$8,350.

- SYRACUSE UNIVERSITY, Syracuse, N. Y.; Bernard S. Strauss, Department of Zoology; *Biochemical Events During Morphogenesis of Fungi*; 3 years; \$12,000.
- TEMPLE UNIVERSITY, Philadelphia, Pa.; John M. Ward, Department of Biology; *Biochemical Aspects of Morphogenesis of Physarum Polycephalum*; 2 years; \$9,800.
- UNIVERSITY OF TENNESSEE, Memphis, Tenn.; James S. Davis, Division of Anatomy; *Effects of Accessory Nutritional Factors on the Nucleic Acids of Uterine Tissue*; 2 years; \$1,000.
- TRINITY UNIVERSITY, San Antonio, Tex.; Walton B. Geiger; *Immunological Relationships in Smooth Muscle*; 3 years; \$27,200.
- TULANE UNIVERSITY, New Orleans, La.; Jerome O. Krivanek, Department of Zoology, Newcomb College; *Histochemistry of the Developing Slime Mold, Dictyostelium Discoideum Raper*; 2 years; \$8,100.
- UNIVERSITY OF UTAH, Salt Lake City, Utah; Philip B. Price, College of Medicine; *Short-Term Research by Medical Students*; 3 years; \$7,500.
- VANDERBILT UNIVERSITY, Nashville, Tenn.; Charles R. Park, Department of Physiology; *Mechanisms of Glucose Transfer Through Cell Membranes*; 2 years; \$17,450.
- UNIVERSITY OF VERMONT AND STATE AGRICULTURAL COLLEGE, Burlington, Vt.; Donald B. Johnstone, Department of Microbiology; *Lysine Synthesis by Azotobacter*; 2 years; \$8,600.
- UNIVERSITY OF WASHINGTON, Seattle, Wash.; Donald J. Hanahan, Department of Biochemistry, School of Medicine; *Biochemistry of Phospholipides*; 3 years; \$23,400.
- UNIVERSITY OF WASHINGTON, Seattle, Wash.; Bastiaan J. D. Meeuse, Department of Botany; *Nature and Metabolic Role of Moss Oxalic Acid Oxidase*; 2 years; \$9,850.
- WASHINGTON UNIVERSITY, St. Louis, Mo.; Robert K. Crane, Department of Biological Chemistry; *Utilization of Hexoses by Animal Cells*; 3 years; \$20,100.
- WESTERN RESERVE UNIVERSITY, Cleveland, Ohio; John L. Caughey, Jr., School of Medicine; *Short-Term Research by Medical Students*; 3 years; \$8,100.
- WESTERN RESERVE UNIVERSITY, Cleveland, Ohio; M. Neil Macintyre, Department of Anatomy; *Physiological Induction of Sex Differentiation in Mammals*; 3 years; \$19,000.
- WESTMINSTER COLLEGE, Fulton, Mo.; C. D. Day and L. M. Elrod, Department of Biology; *Metabolic Mechanisms Related to Growth and Respiration of Cells*; 2 years; \$2,000.
- WILLIAMS COLLEGE, Williamstown, Mass.; Allyn J. Waterman, Department of Biology; *Functional Differentiation of the Mammalian Thyroid Gland*; 3 years; \$8,800.
- UNIVERSITY OF WISCONSIN, Madison, Wis.; Paul J. Allen, Department of Botany; *Biological Mechanisms of Development of Obligate Parasites*; 3 years; \$28,600.
- UNIVERSITY OF WISCONSIN, Madison, Wis.; Dexter S. Goldman, Institute for Enzyme Research; *Fatty Acid Metabolism of the Tubercle Bacillus*; 3 years; \$14,900.
- UNIVERSITY OF WISCONSIN, Madison, Wis.; J. T. Medler and S. D. Beck, Department of Entomology; *Nutrition of Plant-Sucking Hemiptera and Homoptera*; 2 years; \$10,750.
- YALE UNIVERSITY, New Haven, Conn.; Morris Foster, Osborn Zoological Laboratory; *Enzymatic Studies of Mammalian Melanin Formation*; 2 years; \$7,050.
- YALE UNIVERSITY, New Haven, Conn.; Arthur W. Galston, Department of Plant Science; *Light-Controlled Growth Reactions*; 30 months; \$17,000.
- YALE UNIVERSITY, New Haven, Conn.; William W. Winternitz, Department of Psychology, School of Medicine; *Mechanism of Adrenocortical Hormone Action on Carbohydrate Metabolism*; 2 years; \$15,200.

- YESHIVA UNIVERSITY, New York, N. Y.; Henry D. Hoberman, Department of Biochemistry; *Endocrine Regulation of Amino Acid Catabolism*; 2 years; \$15,200.
- YESHIVA UNIVERSITY, New York, N. Y.; Marcus D. Kogel, Albert Einstein College of Medicine; *Short-Term Research by Medical Students*; 3 years; \$6,000.
- YESHIVA UNIVERSITY, New York, N. Y.; Abraham White, Department of Biochemistry, Albert Einstein College of Medicine; *Mechanism of the Effects of Adrenal Cortical Steroids*; 3 years; \$30,000.

Sociophysical Sciences

- UNIVERSITY OF CHICAGO, Chicago, Ill.; T. W. Schultz, Department of Economics; *An Econometric Model of the Development and Acceptance of a New Technology*; 2 years; \$13,000.
- HARVARD UNIVERSITY, Cambridge, Mass.; I. Bernard Cohen, Committee on Higher Degrees in History of Science and Learning; *Development of Physical Science*; 3 years; \$7,400.
- HARVARD UNIVERSITY, Cambridge, Mass.; Frederick Mosteller, Laboratory of Social Relations; *Experimental and Mathematical Studies of Choice Behavior*; 2 years; \$17,500.
- YALE UNIVERSITY, New Haven, Conn.; Henry Morgenau; Department of Physics; *The Meaning of Measurement of Quantum Mechanics*; 2 years; \$16,500.

Systematic Biology

- ALLEGHENY COLLEGE, Meadville, Pa.; David J. Rogers, Department of Biology; *Variation in Manihot Utilissima*; 2 years; \$8,000.
- ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, Philadelphia, Pa.; Ruth Patrick; *Fresh-Water Diatoms of the United States*; 2 years; \$14,500.
- ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, Philadelphia, Pa.; James A. G. Rehn, Department of Insects; *Orthoptera of North America*; 3 years; \$36,000.
- AMERICAN MUSEUM OF NATURAL HISTORY, New York, N. Y.; Mont A. Cazier, Department of Insects and Spiders; *Revision of the Genus Diplotaxis*; 1 year; \$2,500.
- AMERICAN MUSEUM OF NATURAL HISTORY, New York, N. Y.; Nicholas S. Obraztsov, Department of Insects and Spiders; *Revision of North American Tortricidae*; 2 years; \$10,200.
- BARNARD COLLEGE, New York, N. Y.; Donald D. Ritchie, Department of Botany; *Panamanian Marine Fungi*; 1 year; \$2,400.
- BERNICE P. BISHOP MUSEUM, Honolulu, T. H.; J. Linsley Gressitt, Department of Entomology; *Zoogeography of Pacific Insects*; 3 years; \$23,000.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Lincoln Constance, Department of Botany; *Taxonomy of South American Umbelliferae*; 3 years; \$6,800.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Adriance S. Foster, Department of Botany; *Study of Plants of New Caledonia and Australia*; 1 year; \$3,000.
- UNIVERSITY OF CALIFORNIA, Berkeley, Calif.; Irwin M. Newell, Division of Life Sciences; Riverside, California; *Correlation of Larvae and Adults of the Polytrichous Trombidiform Mites*; 2 years; \$7,600.
- UNIVERSITY OF CINCINNATI, Cincinnati, Ohio; Margaret Fulford, Department of Botany; *Leafy Hepaticae of Tropical America*; 3 years; \$15,000.
- COLORADO A. AND M. COLLEGE, Fort Collins, Colo.; Tyler A. Woolley, Department of Zoology; *Investigation of Colorado Oribatid Mites*; 2 years; \$2,500.
- CORNELL UNIVERSITY, Ithaca, N. Y.; Charles G. Sibley, Department of Conservation; *Systematic and Evolutionary Study of Interspecific Hybridization in Birds*; 3 years; \$15,000.

- DUKE UNIVERSITY, Durham, N. C.; Lewis E. Anderson, Department of Botany; *Cytotaxonomy of North American Mosses*; 3 years; \$14,000.
- DUKE UNIVERSITY, Durham, N. C.; Terry W. Johnson, Jr., Department of Botany; *Marine Fungi: Taxonomy and Seasonal Fluctuation*; 3 years; \$7,500.
- FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; Ruth S. Breen, Department of Botany; *An Illustrated Guide to the Mosses of Florida*; 2 years; \$7,800.
- FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; Robert K. Godfrey, Department of Botany; *Vascular Plants of Aquatic and Marsh Habitats of Western Florida*; 2 years; \$7,200.
- FLORIDA STATE UNIVERSITY, Tallahassee, Fla.; Arthur W. Ziegler, Department of Botany; *Water Molds of Florida*; 2 years; \$5,000.
- FUNDACIÓN MIGUEL LILLO; Tucumán, Argentina; Rolf Singer, Botanical Department; *Basidiomycete Flora of South America*; 1 year; \$4,500.
- GRINNELL COLLEGE, Grinnell, Iowa; Norman H. Russell, Jr., Department of Biology; *Taxonomy of the Acaulescent Species of Viola*; 2 years; \$3,100.
- UNIVERSITY OF GRONINGEN, Groningen, Netherlands; R. van der Wijk, Department of Systematic Biology; *New Index Muscorum*; 3 years; \$5,100.
- HARVARD UNIVERSITY, Cambridge, Mass.; I. MacKenzie Lamb, Farlow Herbarium; *New Index of Lichens*; 2 years; \$3,900.
- HARVARD UNIVERSITY, Cambridge, Mass.; Reed C. Rollins and Carroll E. Wood, Jr., Gray Herbarium and Arnold Arboretum; *Flora of Southeastern United States*; 3 years; \$24,300.
- HARVARD UNIVERSITY, Cambridge, Mass.; Richard Evans Schultes, Department of Botany; *Floristic Studies of the Northwest Amazon*; 3 years; \$5,000.
- HARVARD UNIVERSITY, Cambridge, Mass.; Charles Schweinfurth, Orchid Herbarium of Oakes Ames; *Orchidaceae of Guayana Highlands*; 3 years; \$4,440.
- UNIVERSITY OF HAWAII, Honolulu, T. H.; Harold St. John, Department of Botany; *Pandanus of the Pacific Islands*; 3 years; \$12,000.
- UNIVERSITY OF IDAHO, Moscow, Idaho; Henry A. Imshaug, Department of Biological Sciences; *Alpine Lichens of Western North America*; 1 year; \$2,300.
- UNIVERSITY OF ILLINOIS, Urbana, Ill.; Paul C. Silva, Department of Botany; *Taxonomic and Phytogeographic Studies of the Marine Algae of California*; 3 years; \$4,100.
- INDIANA UNIVERSITY, Bloomington, Ind.; Charles B. Heiser, Department of Botany; *Variation and Speciation in Sunflowers*; 3 years; \$10,000.
- IOWA STATE TEACHERS COLLEGE, Cedar Falls, Iowa; Martin L. Grant, Department of Science; *Society Islands Flora*; 2 years; \$3,200.
- STATE UNIVERSITY OF IOWA, Iowa City, Iowa; Robert F. Thorne, Department of Botany; *Vascular Plants of Iowa*; 2 years; \$7,000.
- KANSAS STATE COLLEGE, Manhattan, Kans.; Thomas H. Lord, Department of Bacteriology, and Merle F. Hansen, Department of Zoology; *Microflora of the Digestive Tract of Parasitic Nematodes*; 2 years; \$7,000.
- KNOX COLLEGE, Galesburg, Ill.; George H. Ward, Department of Biology; *The Artemisia Tridentata Complex*; 2 years; \$5,000.
- UNIVERSITY OF MASSACHUSETTS, Amherst, Mass.; Charles P. Alexander, Department of Entomology; *Crane-Flies of Western North America*; 2 years; \$2,400.
- UNIVERSITY OF MASSACHUSETTS, Amherst, Mass.; Dana P. Snyder, Department of Zoology; *Intraspecific Variation in Mammals*; 2 years; \$3,000.
- MICHIGAN STATE COLLEGE, East Lansing, Mich.; G. W. Prescott, Department of Botany; *Desmids of North America, Their Ecology and Taxonomy*; 3 years; \$7,700.
- UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; William R. Taylor, Department of Botany; *Manual of the Marine Algae of the Arctic, Temperate, and Tropical Coast of North, Central, and Northern South America*; 3 years; \$11,500.

- UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; Josselyn van Tyne, Museum of Zoology; *Trachea and Syrinx of Ducks: Variation and Possible Taxonomic Significance*; 2 years; \$10,600.
- UNIVERSITY OF MISSISSIPPI, University, Miss.; Frank M. Hull, Department of Biology; *Taxonomy and Phylogeny of Diptera*; 2 years; \$8,600.
- UNIVERSITY OF NEBRASKA, Lincoln, Nebr.; Dwight D. Miller, Department of Zoology; *Taxonomic Study of Wild Species of Drosophila*; 2 years; \$6,000.
- UNIVERSITY OF NEBRASKA, Lincoln, Nebr.; Hilliard Pivnick, Department of Bacteriology; *Studies of Bacteria from Soluble Oil Emulsions*; 2 years; \$4,500.
- UNIVERSITY OF NEW HAMPSHIRE, Durham, N. H.; Marian H. Pettibone, Department of Zoology; *Polychaetous Annelids of New England*; 2 years; \$12,400.
- NEW YORK BOTANICAL GARDEN, New York, N. Y.; Otto Degener, Collaborator in Hawaiian Botany; *Botanical Exploration of Hawaiian Islands*; 3 years; \$12,000.
- NEW YORK BOTANICAL GARDEN, New York, N. Y.; Bassett Maguire, Curator; *Flora of the Guayana Highland*; 2 years; \$13,000.
- UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N. C.; Ritchie Bell, Department of Botany; *Cytological Investigation of the Umbelliferae of North America*; 4 years; \$7,900.
- NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING, Raleigh, N. C.; Theodore B. Mitchell, Division of Biology; *Native Hymenoptera of Eastern United States*; 2 years; \$11,000.
- NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING, Raleigh, N. C.; C. F. Smith, Department of Entomology; *Catalogue of the Homoptera of the World*; 2 years; \$12,000.
- NORTH DAKOTA AGRICULTURAL COLLEGE, Fargo, N. Dak.; D. R. Moir, Department of Botany and Plant Pathology; *Floristic Survey of Northwestern Ontario*; 2 years; \$4,300.
- NORTHWESTERN UNIVERSITY, Evanston, Ill.; Lewis H. Tiffany, Department of Botany; *Effect of Metabolites on Polymorphism of Some Chlorococcaceae*; 1 year; \$7,000.
- OREGON STATE COLLEGE, Corvallis, Oreg.; Herman A. Scullen, Department of Entomology; *Taxonomic Studies of the Wasp Tribe Cercerini*; 2 years \$2,500.
- UNIVERSITY OF PENNSYLVANIA, Philadelphia, Pa.; John M. Fogg, Jr., Department of Botany; *Bibliography of the Flowering Plants of Mexico*; 2 years; \$6,500.
- UNIVERSITY OF RHODE ISLAND, Kingston, R. I.; Richard D. Wood, Department of Botany; *Revision of Characae*; 1 year; \$5,300.
- THE ROCKY MOUNTAIN BIOLOGICAL LABORATORY, Crested Butte, Colo.; Herbert W. Levi and Lorna R. Levi; *Survey of Spiders of Central and Southern Colorado Mountains*; 2 years; \$2,000.
- SMITHSONIAN INSTITUTION, Washington, D. C.; Jose Cuatrecasas, Department of Botany; *Taxonomic Study of the Phanerogams of Colombia*; 3 years; \$24,000.
- SMITHSONIAN INSTITUTION, Washington, D. C.; Alfred R. Loeblich, Jr.; Associate Curator and Helen T. Loeblich; *Recent Foraminifera from Ifaluk Atoll*; 2 years; \$9,000.
- SMITHSONIAN INSTITUTION, Washington, D. C.; Lyman B. Smith, Department of Botany; *Botanical Studies in Southeastern Brazil*; 1 year; \$5,400.
- SMITHSONIAN INSTITUTION, Washington, D. C.; Mildred S. Wilson, Anchorage, Alaska; *Monograph of Fresh-Water Calanoid Copepods*; 5 years; \$9,200.
- UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.; John S. Garth, Department of Biology; *Revision of Pacific American Porcellanidae*; 2 years; \$10,300.
- UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, Calif.; John L. Mohr, Department of Biology; *Revision of Cyamidae (Crustacea: Amphipoda)*; 1 year; \$2,000.
- SOUTHERN METHODIST UNIVERSITY, Dallas, Tex.; Lloyd H. Shinnars, Director of the Herbarium; *Flora of the Gulf Southwest*; 5 years; \$11,000.

- STANFORD UNIVERSITY, Stanford, Calif.; William C. Steere, Department of Biological Sciences; *Arctic American Mosses*; 3 years; \$13,800.
- SWARTHMORE COLLEGE, Swarthmore, Pa.; Neal A. Weber, Department of Biology; *Ant Fungi and Ant Secretions*; 1 year; \$5,000.
- UNIVERSITY OF TENNESSEE, Knoxville, Tenn.; Arthur Charles Cole, Jr., Department of Entomology; *Revisionary Studies of the Ant Genus Pogonomyrmex*; 2 years; \$6,000.
- UNIVERSITY OF TEXAS, Austin, Tex.; W. Frank Blair, Department of Zoology; *Interbreeding of Amphibian Populations*; 2 years; \$11,400.
- UNIVERSITY OF TEXAS, Austin, Tex.; Clark Hubbs, Department of Zoology; *Interbreeding of Fish Populations*; 2 years; \$8,100.
- TULANE UNIVERSITY, New Orleans, La.; George H. Penn, Department of Zoology; *Speciation in Crawfish*; 1 year; \$3,900.
- TUSCULUM COLLEGE, Greeneville, Tenn.; Arnold Van Pelt, Department of Biology; *Altitudinal Distribution of Ants in Southern Blue Ridge*; 1 year; \$1,200.
- UNIVERSITY OF UTAH, Salt Lake City, Utah; William H. Behle, Department of General Biology; *Avifauna of Utah*; 1 year; \$3,300.
- UNIVERSITY OF UTAH, Salt Lake City, Utah; George F. Edmunds, Jr., Department of Zoology; *Higher Classification of Ephemeroptera*; 2 years; \$2,400.
- UNIVERSITY OF WASHINGTON, Seattle, Wash.; C. Leo Hitchcock, Department of Botany; *Vascular Plants of the Pacific Northwest*; 3 years; \$5,900.
- UNIVERSITY OF WYOMING, Laramie, Wyo.; Glenn A. Noble; *Intestinal Amoebae in Mammals*; 1 year; \$1,800.
- YALE UNIVERSITY, New Haven, Conn.; William L. Stern, School of Forestry; *Anatomy of Woody Plants of the Florida Keys*; 2 years; \$3,500.
- YALE UNIVERSITY, New Haven, Conn.; Oswald Tippo, Plant Science Department; *Comparative Anatomy and Phylogeny of Related Orders in Plants*; 2 years; \$10,600.

General

- AMERICAN PHYSIOLOGICAL SOCIETY, MEDICAL COLLEGE OF GEORGIA, Augusta, Ga.; C. Ladd Prosser, Project Director; *Workshops for Teachers of Physiology in Undergraduate Colleges*; 3 years; \$23,550.
- AMERICAN SOCIETY FOR ENGINEERING EDUCATION, Urbana, Ill.; Eric A. Walker, Chairman of the Survey; *Survey of Engineering Colleges Research Capabilities*; 18 months; \$40,000.
- BROWN UNIVERSITY, Providence, R. I.; William Prager, Chairman, Physical Sciences Council; *Summer Research for High-School Teachers*; 3 months; \$7,000.
- CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, Calif.; Frits W. Went, Division of Biology; *Research Facilities in Plant Physiology, Ecology, and Genetics, at the Earhart Plant Research Laboratory*; 3 years; \$75,000.
- UNIVERSITY OF CHICAGO, Chicago, Ill.; A. A. Albert, Chairman, Survey Committee; *Survey of Research Potential and Training in the Mathematical Sciences*; 9 months; \$5,000.
- UNIVERSITY OF COLORADO, Boulder, Colo.; H. J. Dodge, Department of Preventive Medicine; *Tissue Culture Techniques*; 3 years; \$15,000.
- HARVARD UNIVERSITY, Cambridge, Mass.; Donald R. Griffin, Chairman, Departmental Committee on Summer Research by Students; *Summer Research by Advanced Students in Biology*; 3 years; \$11,000.
- INSTITUTE FOR ADVANCED STUDY, Princeton, N. J.; John von Neumann, Committee Chairman; *A Study of University Computing Facilities*; 1 year; \$5,000.
- MARINE BIOLOGICAL LABORATORY, Woods Hole, Mass.; Philip B. Armstrong, Director; *Marine Biology*; 2 years; \$50,000.

UNIVERSITY OF MICHIGAN, Ann Arbor, Mich.; A. M. Sotckard, Director, Biological Station; *Research and Training at the University of Michigan Biological Station*; 2 years; \$13,800.

REED COLLEGE, Portland, Oreg.; Lewis H. Kleinholz, Department of Biology; *Basic Research by Advanced Biology Students*; 3 years; \$12,600.

UNIVERSITY OF VIRGINIA, Charlottesville, Va.; Bruce D. Reynolds, Mountain Lake Biological Station; *Biological Research at Mountain Lake Biological Station*; 3 years; \$18,000.

CONTRACTS FOR BASIC RESEARCH IN SYNTHETIC RUBBER
AWARDED IN FISCAL YEAR 1956

University of Akron.....	\$45,000
Burke Research Company.....	150,000
Case Institute of Technology.....	40,000
University of Chicago.....	37,000
Cornell University (2).....	10,000
	51,000
University of Illinois.....	107,000
Massachusetts Institute of Technology.....	98,000
Mellon Institute of Industrial Research.....	84,000
University of Minnesota.....	74,000
National Bureau of Standards.....	194,000
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Total	890,000

OPERATION AND MANAGEMENT OF GOVERNMENT LABORATORIES,
AKRON, OHIO

University of Akron.....	\$950,000
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Grand Total	\$1,840,000