Grants Committee Actions Bring Total Research Awards to $3.1 Million

Research Corporation's Cottrell Program Advisory Committee recommended 67 new grants in the total amount of $854,639 at its last 1982 meeting held in October. These grants, for basic research in the natural and physical sciences at 57 colleges and universities, bring the year's total to a hefty $3.1 million.

The awards were made under both of the foundation's Grants Program subdivisions: $238,054 was devoted to 19 Cottrell College Science Grants, and $616,585 will fund 48 Cottrell Research Grants. The first program supports research in the natural sciences at private undergraduate institutions. The second—Cottrell Research—aids work in the physical sciences at graduate universities and public undergraduate institutions.

The approval rate for grants applications presented at the committee meeting was somewhat lower than at some previous sessions: about 43 percent of applications presented won committee approval. Applications still pending will be considered at the first meeting in 1983, to be held in February. The following grants have been made as a result of actions taken in October.

Cottrell Research Program

THOMAS W. BELL, State University of New York at Stony Brook: Tetraalkyldiborane(4) reagents for olefin diboration—$10,000

FRANK D. BLUM, Drexel University: Polymer-diluent interactions as studied by deuterium magnetic resonance spectroscopy—$10,000

JOHN H. CARDELLINA II, Montana State University: Anticancer constituents of the sponge *Cinachyra alloclada*—$8,000

PHILLIP A. CHRISTIANSEN, Clarkson College: Computational chemistry for molecules containing heavy elements—$6,317

RICHARD W. CLINE, Purdue University: Experimental study of spin-polarized atomic hydrogen at high density—$24,814

DESMOND C. COOK, Old Dominion University: Study of the line narrowing of the 105.3keV Mössbauer transition in ^{155}Gd—$13,500

BRUCE N. DIEL, University of Idaho: Synthetic approaches to and physical studies of chalcocyanogen polymers, $(SCN)_x$ and $(SeCN)_x$, and their derivatives—$12,754

PAUL L. DUBIN, Indiana-Purdue University: Soluble complexes of polyelectrolytes and mixed micelles—$10,600

MAGED M. EL-BATANOUNY, Boston University: Studies of the structural and electronic properties of hydrogen overlayers on transition metal surfaces and their relationship to the associated hydrogen kinetics—$18,000

IHSAN ERDEN, San Francisco State University: Heterocyclic synthesis utilizing dipolar cycloaddition reactions—$9,000

FRANK M. ETZLER, East Carolina University: Selectivity of ions by solvents confined to narrow pores: Physical and biophysical significance—$7,600

JOSEPH GRANOT, Indiana-Purdue University: NMR studies of the interactions of DNA with divalent metal ions—$12,000

MICHAEL A. HAYES, Dartmouth College: Second order non-potential forces in irradiated magnetic plasmas—$15,000

MICHAEL C. HEAVEN, Illinois Institute of Technology: Laser photodissociation dynamics and spectroscopy in a free jet expansion—$18,000

WILLIAM H. HERSH, University of California, Los Angeles: Syntheses and reactions of dinuclear tungsten and rhenium carbenes and metallacycles —$10,000

REUBEN JIH-RU HWU, Johns Hopkins University: Methodology for the creation of four chiral centers in cyclopentane rings and application to the total synthesis of (±)-cephalotaxine—$10,000

PAUL W. JAGODZINSKI, West Virginia University: Resonance Raman studies of the catalytic mechanism of aldehyde dehydrogenase—$12,000

GEOFFREY B. JAMESON, Georgetown University: Systematic studies on the interaction of first-row transition-metal(II) complexes of quadridentate square-planar ligand systems, M(II) (L_4), with the σ-donor π-acceptor ligands NS, X-Ar-NC and X-Ar-NO. (X-Ar: substituted phenyl group)—$17,500

PATRICK L. JONES, Ohio State University: State-state chemical dynamics of molecule/surface interactions—$20,000

JOHN KIMBALL, State University of New York at Albany: Theory of the transmission of fast particles through solids—$1,500

GRANT A. KRAFFT, Syracuse University: Stereospecific removal of sulfur via transition metal insertion reactions—$14,000

NABIL M. LAWANDY and RICHARD D. JAMES, Brown University: Acoustic wave distributed feedback gas laser—$17,000

MARSHA I. LESTER, University of Pennsylvania: Laser spectroscopy of cold gas-phase free radicals—$17,500

TIMOTHY P. LODGE, University of Minnesota, Minneapolis: Diffusion of star-branched polymers in concentrated solutions of linear polymers by quasi-elastic light scattering—$16,000

THOMAS J. McCARTHY, University of Massachusetts, Amherst: Molecular level approaches to polymer surface modification—$8,000

G. MICHAEL MORRIS, University of Rochester: Experimental investigation of the wavelength sensitivity of stellar speckle patterns—$15,500

NIMAI C. MUKHOPADHYAY, Rensselaer Polytechnic Institute: Theoretical aspects of electroweak and other interactions in medium-energy nuclear physics—$7,000

E. E. MUSCHLITZ, JR. and THOMAS L. BAILEY, University of Florida: Excitation of molecular spectra using crossed supersonic and electron beams—$14,000

KEITH A. NELSON, Massachusetts Institute of Technology: Stimulated Brillouin scattering investigation of phase transition dynamics—$21,000

MARK A. PASSLER, Colorado School of Mines: Investigation of alloy surface structure and its role in martensitic phase transformations by low energy electron diffraction—$17,000

JILL D. PASTERIS, PHILIP FRAUNDORF and JOHN J. FREEMAN, Washington University: Application of laser Raman spectroscopy to analysis of fluid and solid inclusions in mantle minerals; Laser Raman spectroscopy of cellular biopolymers; and Micro-Raman spectroscopy of extraterrestrial materials—$20,000

DAVID W. PAUL, University of Arkansas: A fundamental study of the reaction between organic halides and lithium metal—$9,300

PHILLIP H. PEKALA, East Carolina University: The involvement of poly (ADP-ribose) in preadipocyte differentiation—$8,000

DEXTER PERKINS III, University of North Dakota: An experimental investigation of the reaction garnet = olivine + anorthite in the system CaO — FeO — Al_2O_3 — SiO_2—$13,000

ERWIN D. POLIAKOFF, Boston University: Studies of angular momentum transfer in molecular photoionization by laser-induced fluorescence—$17,000

SUZANNE T. PURRINGTON, North Carolina State University: N-fluoro-2-pyridones—$8,400

RICHARD S. QUIMBY, Worcester Polytechnic Institute: Photoacoustic investigation of surface plasmon radiative efficiencies—$12,500

BRUCE H. ROBINSON, University of Washington: Molecular dynamics of biological systems: discrimination among motional models by STEPR—$7,200

IAN P. ROTHWELL, Purdue University: Early transition metal cyclometallation reactions—$15,000

S. CLARK ROWLAND, Andrews University: Structural studies of amorphous semi-conductor-metal systems—$3,100

RUSSELL H. SCHMEHL, Tulane University: Photochemically induced substitution reactions of complexes having reactive metal to ligand charge transfer excited states—$14,000

PETER A. SCHULZ, Georgia Institute of Technology: State-resolved vacuum ultraviolet photodissociation of cold polyatomic molecules—$18,000

ALAN M. STOLZENBERG, Brandeis University: Model studies of the prosthetic groups in nitrite and sulfite reductases—$10,000

BRUCE J. TATARCHUK, Auburn University: Investigation of catalyst-support interactions: H_2S as a probe molecule—$14,000

WARREN S. WARREN, Princeton University: Multiple pulse phase coherent laser spectroscopy in gases and solids—$18,000

J. FRED WATTS, College of Charleston: Photoacoustic Raman spectroscopy on methane isotopes—$9,000

JOHN T. WELCH, State University of New York at Albany: Amino-deoxy-fluoro glycosides—$8,500

JOHN F. ZASADZINSKI, Illinois Institute of Technology: The interaction of superconductivity and magnetism: a microscopic investigation using superconducting tunneling—$18,000

Cottrell College Science Program

LARRY K. BLAIR, Berea College: Substitution and oxidation reactions of 2-coordinate halogen(I) complexes (two-year program)—$15,000

LARRY K. BLAIR, Berea College: New bromine(1) reagents in chemical synthesis. The oxidative-addition of bis(amine)bromine(1) to transition metal complexes—$3,500

GEORGE DELAHUNTY, Goucher College: Further studies on pineal-metabolism relationships in teleosts—$6,400

DAVID B. FENNER, University of Santa Clara: Ultrasonic investigation of phase transitions in polymer solutions (two-year program)—$11,000

GREGORY L. FLORANT, Swarthmore College: The effect of melatonin on hibernation (two-year program)—$16,000

DAVID A. GLENAR, Colgate University: Measurement of ν_4 band absorption in $^{13}CH_4$ using an elevated temperature tunable diode laser spectrometer—$15,750

KURTISS J. GORDON, Hampshire College: A radial-velocity study of the Pleiades—$2,340

FRED J. GRIEMAN, Pomona College: Spectroscopy of molecular ions cooled in a supersonic expansion—$17,000

DAVID E. HENDERSON, Trinity College, Conn.: Piezo-electric crystal thermogravimetry of polymer films (two-year program)—$14,000

C. WELDON JONES, Bethel College, Minn.: Molecular and genetic analysis of a steroid-inducible gene in *Drosophila* (two-year program)—$21,000

CAROL C. KAHLER, Swarthmore College: Crossed molecular beam study of 1,2-dioxetane decomposition (two-year program)—$18,600

HAMID S. KASMAI, Hamilton College: Synthesis and study of theoretically significant "4n + 2" and "4n" π-electron carbanionic and neutral π-excessive heterocyclic systems (two-year program)—$12,424

ROBERT F. PASTERNACK, Swarthmore College: Interaction of metalloporphyrins with oligonucleotides and related substances (two-year program)—$15,500

JOHN A. SODERQUIST, University of San Francisco: Applications of α-methoxyvinyl organometallic reagents to organic synthesis—$8,200

ROBERT Q. THOMPSON, Oberlin College: The kinetics of open-tubular immobilized enzyme reactors in static and flowing systems—$11,100

JOHN L. TYMOCZKO, Carleton College: Glucocorticoid-receptor complex interactions with RNA: a role in the mechanism of glucocorticoid action (two-year program)—$19,500

DAVID A. VAN BAAK, Calvin College: Measurement of the hyperfine-structure splitting of the metastable state of atomic hydrogen (two-year program)—$19,740

DAVID H. WHITE, University of Santa Clara: Synthesis of a neutral homoaromatic molecule—$2,500

ARTHUR G. ZAJONC, Amherst College: Atomic polarization after strong collisions—$8,500

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Authority in Business Development Joins IAP

Donald M. Coyne, a chemist, chemical engineer and expert in the development of new business has joined Research Corporation's Invention Administration Program. In addition to assisting with the evaluation and licensing of new technology, Dr. Coyne will help the foundation expand its technology transfer efforts.

Supplementing its patent licensing activities, Research Corporation will use venture capital and entrepreneurial techniques to develop inventions under plans now being formulated.

A native of Olathe, Kans., Dr. Coyne graduated from the Universities of Kansas and Pittsburgh, and holds an MBA as well as degrees in chemistry. After a number of years in the petrochemical industry, he joined Gulf Oil Corporation in 1963. An executive with Gulf Science & Technology Co. from 1975 until 1982, Coyne held posts as Manager of Marketing Research and Manager, Technology Transfer, and served as Washington representative.

Dr. Coyne is a member of the Commercial Development Association and immediate past president, and member of the American Chemical and Licensing Executives Societies.

Foundation Counsel to Guide Invention Patenting

Jerome (Jerry) M. Teplitz has been named in-house patent counsel for Research Corporation's Invention Administration Program. He will oversee the filing of patent applications and their prosecution by outside firms retained by the foundation. Teplitz joins attorney Robert J. Sanders, Jr., who has been made General Counsel.

Mr. Teplitz, trained both as a chemical engineer and an attorney, served as an examiner at the U.S. Patent and Trademark Office before undertaking a career in industry and later in private practice. Prior to joining Research Corporation, he was patent counsel for University Patents, Inc. of Norwalk, Conn. and a member of the firm of Holman and Stern of Washington, D.C.

He is registered to practice before the U.S. Patent and Trademark Office, and is admitted to the Illinois, Maryland and Federal Bars, and the Court of Customs and Patent Appeals.

Patent Associate Retires; Expert on Pharmaceuticals

Abraham Bavley, a research scientist and prolific inventor with over 60 patents in such fields as color photography, pharmaceuticals and chemical processes, has retired as a professional staff member of Research Corporation's Invention Administration Program.

Dr. Bavley, a Harvard-educated organic chemist well known in both business and academic circles, came to the foundation in 1974 following a career as an industrial scientist and executive for such firms as GAF, Philip Morris and Marion Laboratories, and as a faculty member in pharmaceutics for the Universities of Tennessee and Missouri.

During his years at Research Corporation, Dr. Bavley evaluated most of the drug inventions submitted to the foundation, including a number that later proved successful. Although retired, he will remain a consultant to the foundation on pharmaceuticals reviewed for patenting and licensing.

Foundation Annual Report Due in March

The Research Corporation annual report for 1982 is planned for March 1983 publication and will be available by early spring to all those requesting it.

In contrast to the reports of recent years, published in January, the new offering will be illustrated and will feature in-depth coverage of especially interesting grants and invention administration projects.

Those not now on the list to receive the foundation's report can request it by writing to Director of Communications, Research Corporation, 405 Lexington Ave., New York, N.Y. 10174.

QUARTERLY BULLETIN
FALL 1982

Research Corporation, 405 Lexington Ave., New York, N.Y. 10174-0370

A foundation for the advancement of science and technology, Research Corporation serves educational and scientific institutions through grants-in-aid for basic research in the natural sciences, and by furthering the application of scientific discoveries.

Grants Program

Cottrell Research Grants support basic investigations in the physical sciences at graduate universities and public undergraduate institutions.

Cottrell College Science Grants support academic research projects in the natural sciences at private undergraduate institutions.

In addition to these regular programs, Research Corporation occasionally supports other important scientific endeavors within its general fields of interest.

Invention Administration Program

Services contributed to educational and scientific institutions include evaluating faculty and staff inventions, accepting assignment of those which appear to be useful and marketable, applying for patents through qualified counsel, licensing issued patents to industry, and defending against infringement when necessary.

Royalties received from patents assigned to the foundation are apportioned among the inventor, the institution and Research Corporation, with the institution's patent policy determining the inventor's share. The foundation's share is used to help support its Grants and Invention Administration Programs.

The *Quarterly Bulletin* is published three times yearly, with the Annual Report constituting a fourth issue. Articles may be quoted in whole or in part with credit to Research Corporation. Invention administration projects are reported in *Research and Invention,* an occasional newsletter. Address correspondence to W. Stevenson Bacon, Director of Communications.