

## Research Corporation for Science Advancement ARCHIVES, 1896-present

### BOX AND FOLDER LIST

#### Record series I: History of the Foundation

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- F. 50 Employment Policy, Correspondence, 1923-1931 [*Includes document "Research Corporation to award prizes to employees," which proposes rewarding employees who "contribute outstanding improvements in the art of electrical precipitation or improved methods or equipment whereby the business of Research Corporation is benefited."*]
- F. 51a Employment Policy, Correspondence, 1941-1973, 2012
- F. 51b Employment Policy, Pension
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- F. 54 Employment Policy, "Some special rights and responsibilities of professional and supervisory personnel," 1981
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- F. 56 Establishing Research Corporation, Correspondence, 1912-1917
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- F. 59a Establishing Research Corporation, Report by Arthur Hamerschlag on survey of the first ten years of the foundation, 1922
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F. 88a "Minute Adopted by the Research Corporation in Recognition of the Service Rendered by Frederick G. Cottrell, B.S., Ph.D., to the Advancement of Science," 1915

F. 88b Nonprofit status

F. 89 Office space [*The Foundation's first offices (1912-1918) were within the John B. Pine law office at 63 Wall Street. The Foundation's address in 1920 was 25 W. 43<sup>rd</sup> St., Room No. 1008, NY, NY; phone number was Broad 2874. In 1930-1931, the Foundation moved to the Chrysler Building at 405 Lexington Avenue, New York City. Research Corporation moved from New York to Arizona in 1982. Its offices in Tucson have been: 6480 E. Broadway Blvd. (1982-1991); 101 North Wilmot Street (1991-2004); and 4703 East Camp Lowell Drive (2004-present). Locations for regional offices included: 1290 Baysshore Highway, Burlingame, California; 1320 Second Street and 225 Santa Monica Boulevard, Santa Monica, California; 137 Newbury Street, Boston; 77 Massachusetts Avenue, Cambridge, Massachusetts; Washington, D.C.; and 59 East Van Buren Street, Chicago; 6075 Roswell Road N.E., Atlanta, Georgia*], 1937-1982

F. 90 Patents, Electrostatic Precipitation, Correspondence, 1912-1917

F. 91 Patents, Electrostatic Precipitation, Correspondence, 1919

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F. 98 Real Estate [*Papers related to sale of property owned by Research Corporation at 21-33 West 96<sup>th</sup> Street in New York*], 1934-1942

F. 99 Real Estate [*Papers relating to property in Bound Brook, New Jersey*], Correspondence, 1932-1955

F. 100 Real Estate [*Papers relating to property in Bound Brook, New Jersey*], Legal Documents

F. 101 Real Estate [*Papers relating to rental of the Swann Satsuma Orange Grove in Lyman, Mississippi*], 1933

F. 102-107 Related Business: Research Corporation/Western Precipitation. *This business began in 1906 when Frederick Cottrell successfully precipitated sulfuric acid fumes in a small electrostatic precipitator test unit through the use of a high voltage transformer and the newly-invented synchronous mechanical rectifier. In 1907, Dr. Cottrell and his associates formed the International Precipitation Company for the marketing of his newly invented electrostatic precipitation process. Western Precipitation was established as a licensee for commercializing the electrostatic precipitator in the state of California. Offices were at 1016 West Ninth Street in Los Angeles. It was Dr. Cottrell's intent to establish similar operating companies throughout the United States and Canada and then around the world.*

*The commercial feasibility of the electrostatic precipitator was first demonstrated at the Hercules Works, a sulfuric acid plant owned by E.I. DuPont de Nemours Company in Pinole, California, on the San Francisco Bay, where arsenic vapors were impacting the operation of their catalytic converters. The Western Precipitation electrostatic precipitator proved to be the effective solution and with its success, a second installation at the Selby Smelter followed that same year. This installation was designed for the collection of sulphuric fumes escaping from the gold melting drums and remained in operation for several decades.*

*In 1911, Western Precipitation, under the direction of its president Walter A. Schmidt (who remained at that post for over 48 years), designed and constructed the first large electrostatic precipitator, which was installed at the Riverside Cement Company in Crestmore, California for the recapture of cement kiln dust. This unit not only proved the process successful on very large gas flows, but also remained in service for 54 years. As a result of those first successes, Western Precipitation was granted additional territory for the six western states in 1911.*

*In 1912, Dr. Cottrell with the other international patent holders, Sir Oliver Lodge of England and Dr. Erwin Moeller of Germany, formed the Research Company as a non-profit patent administrative company in the interest of developing the electrostatic precipitation process worldwide. This organization acted as a clearinghouse for process improvements and established operating territories for the participating companies, which included Western Precipitation of Los Angeles, Research Corporation of New York, Lodge-Cottrell of England, Lurgi Apparatebau-Gesellschaft of Germany and Japanese Cottrell Corp. of Japan. This international cooperative provided for the accelerated development of the process until World War II when it was disbanded. Western Precipitation, Research Corporation and Lodge-Cottrell, Ltd. continued their relationship until the United States government declared that the patent control and the territory distribution violated the Anti-Trust Laws. Consequently, Western Precipitation and Research Corporation entered into a Consent Decree in 1946, under which all territory restrictions were abrogated. Western Precipitation was then free to operate throughout the world.*

*The company was acquired by and became a division of the Joy Manufacturing Company in 1959. Today, Western Precipitation is known as Diamond Power International, Inc. <http://www.diamondpower.com/>], Air Conditioning, Correspondence, 1936-1943 (not inclusive)*

F. 108 Related Business: Research Corporation/Western Precipitation, Air Conditioning, Miscellaneous

#### **Box 9, F. 109-121**

F. 109-112 Related Business: Research Corporation/Western Precipitation, Anti-trust Litigation, Correspondence, ca. 1939

F. 113-114 Related Business: Research Corporation/Western Precipitation, Anti-trust Litigation, Legal Documents

F. 115 Related Business: Research Corporation/Western Precipitation, Anti-trust Litigation, Miscellaneous

F. 116-121 Related Business: Research Corporation/Western Precipitation, General, Correspondence, 1916-1931

#### **Box 10, F. 122-137**

F. 122-131 Related Business: Research Corporation/Western Precipitation, General, Correspondence, 1931-1937

#### **Box 11, F. 132-142**

F. 132-142 Related Business: Research Corporation/Western Precipitation, General, Correspondence, 1938-1946

#### **Box 12, F. 143-155**

F. 143-147 Related Business: Research Corporation/Western Precipitation, Fly Ash [*Fly ash is the finely divided mineral residue resulting from the combustion of powdered coal in electric generating plants*], Correspondence, 1937-1941

F. 148 Related Business: Research Corporation/Western Precipitation, Fly Ash, Miscellaneous

F. 149-152 Related Business: Research Corporation/Western Precipitation, Fly Ash, Grants, Chicago District Electric Generating Corporation, Correspondence, 1935-1942

F. 153 Related Business: Research Corporation/Western Precipitation, Fly Ash, Grants, Chicago District Electric Generating Corporation, Legal Documents

F. 154 Related Business: Research Corporation/Western Precipitation, Fly Ash, Grants, Chicago District Electric Generating Corporation, Miscellaneous

F. 155-156 Related Business: Research Corporation/Western Precipitation, Fly Ash, Grants, Chicago District Electric Generating Corporation, Reports, 1937-1940

#### **Box 13, F. 157-172**

- F. 157-158 Related Business: Research Corporation/Western Precipitation, Fly Ash, Grants, Chicago District Electric Generating Corporation, Reports, 1931-1944
- F. 159-166 Related Business: Research Corporation/ Western Precipitation, Goodell Process [*Goodell invented a "black liquor recovery process adaptable to sods and sulfate pulp and paper mills." These papers chronicle the process of Goodell and Research Corporation coming to a patent agreement.*], Correspondence, 1920 -1933
- F. 167 Related Business: Research Corporation/Western Precipitation, Goodell Process, Legal Documents
- F. 168 Related Business: Research Corporation/Western Precipitation, Goodell Process, Patents
- F. 169 Related Business: Research Corporation/Western Precipitation, International Precipitation
- F. 170-172 Related Business: Research Corporation/Western Precipitation, Joint Development Program, Correspondence [*Foreign patents granted to Western Precipitation on "cooperative development" inventions*], 1939-1942

#### **Box 14, F. 173-179**

- F. 173-174 Related Business: Research Corporation/Western Precipitation, Legal Documents, 1911-1982
- F. 175 Related Business: Research Corporation/Western Precipitation, Miscellaneous
- F. 176-177 Related Business: Research Corporation/Western Precipitation, Patent Agreements
- F. 178-179 Related Business: Research Corporation/Western Precipitation, Reports

#### **Box 15, F. 180-193**

- F. 180-186 Related Business: Research Corporation/Lodge-Cottrell Ltd. [*Much of the early work in electrostatic precipitation was done in England by Sir Oliver Lodge (a physicist). Lodge and Cottrell exchanged technical information on precipitation prior to World War I and development work continued after the war. Lodge-Cottrell was organized in Britain under the direction of Sir Oliver's son, Lionel. Shares of the business were presented to Cottrell in recognition of his contributions to the process.*], Correspondence, 1930-1948 (not inclusive)
- F. 187-188 Related Business: Research Corporation/Lodge-Cottrell Ltd., Correspondence with Lurgi Apparatebau-Gesellschaft, 1931-1932
- F. 189 Related Business: Research Corporation/Lodge-Cottrell Ltd., Miscellaneous
- F. 190-193 Related Business: Research Corporation/Research Associates Inc. [*Funded by "grants" from Research Corporation, Research Associates was organized January 1, 1935 with offices in Washington D.C. It was an outgrowth of a laboratory set up for Cottrell by Research Corporation around 1929 in quarters furnished by the Smithsonian Institution. Research Associates was an effort by Cottrell to create another Research Corporation which would, in time, become self supporting through returns for its services and products. Among its projects were the Brackett Headlights, Detergents, Heat Wave Roasting of Fullers Earth, the Greger Fuel Cell and Royster Stoves and Deodorizers. The organization eventually floundered. In a letter dated September 18, 1951, J.W. Barker discussed "the main problem at Research Associates, Inc.—the complete inability of this brilliant heterogeneous group of prima donnas to stick sufficiently long on any line of investigation to determine either that it would or would not work. It seemed as if the moment any particular experiment was started everyone, including Cottrell particularly, lost all interest in that experiment. Sparks began flying about some other experiment and dropping the older one without any specific determinations, off they would go after the new spark."*], Correspondence, 1934-1936

#### **Box 16, F. 194-203**

- F. 194-197 Related Business: Research Corporation/Research Associates Inc., Correspondence, 1937-1938
- F. 198 Related Business: Research Corporation/Research Associates Inc., Legal Documents
- F. 199 Related Business: Research Corporation/Research Associates Inc., Miscellaneous
- F. 200-201 Related Business: Research Corporation/Research Associates Inc., Royster Stove/Deodorizer [*This device was designed by Cottrell to effectively and economically destroy organic odors carried by streams of gases*], Correspondence, 1931-1941
- F. 202 Related Business: Research Corporation/Research Associates Inc., Royster Stove/Deodorizer, Miscellaneous
- F. 203 Related Business: Research Corporation/Research Associates Inc., Cottrell-Royster Deodorizer, Publications

#### **Box 17a, F. 204-214**

- F. 204 Related Business: Research Corporation/Research Construction Co. Inc. [Radar was patented by British scientist Sir Robert Watson-Watt for meteorological applications in 1935. Since practical applications for airborne microwave radar had not been developed before World War II, the government of England requested assistance from the U.S. National Defense Research Committee (NDRC) to develop this capability. In October 1940, MIT was chosen as the site of an independent laboratory that would be staffed by civilian and academic scientists from every discipline. Fourteen months before the U.S. entered World War II, MIT's newly formed Radiation Laboratory began its investigation of microwave electronics. During World War II, large-scale research at MIT's Radiation Laboratory was devoted to the rapid development of microwave radar. Projects included physical electronics, microwave physics, electromagnetic properties of matter, and microwave communication principles. The "RadLab" designed almost half of the radar deployed in World War II, created over 100 different radar systems, and constructed \$1.5 billion worth of radar. At the height of its activities, the RadLab employed nearly 4,000 people working on several continents. Research Construction Co. Inc., in cooperation with the Radiation Laboratory at MIT, produced for the government, on a "no profit and no loss" basis, \$12 million worth of experimental radar apparatus. Research Construction Company was located at 230 Albany St., Cambridge, Massachusetts], Contract
- F. 205-213 Related Business: Research Corporation/Research Construction Co. Inc., Correspondence, 1937-1960 (Includes some discussion of licensing the resnatron; not inclusive)
- F. 214 Related Business: Research Corporation/Research Construction Co. Inc., Legal Documents

#### **Box 17b, F. 215-216**

- F. 215 Related Business: Research Corporation/Research Construction Co. Inc., Miscellaneous
- F. 216 Related Business: Research Corporation/Research Construction Co. Inc., Reports

#### **Box 18, F. 217-226**

- F. 217 Related Business: Research Corporation/Research Construction Co. Inc., Reports
- F. 218-219 Related Business: Research Corporation/Research Corporation High Altitude Station, Echo Lake, Colorado [In 1949, Research Corporation purchased a ranch near Echo Lake and established a facility to house scientists engaged in cosmic ray research in the area.], Correspondence, 1949-1953
- F. 220 Related Business: Research Corporation/Research Corporation High Altitude Station, Echo Lake, Colorado, Legal Documents
- F. 221 Related Business: Research Corporation/Research Corporation High Altitude Station, Echo Lake, Colorado, Miscellaneous
- F. 222 Related Business: Research Corporation/Research-Cottrell [*For its first 15 years, Research Corporation was operated almost solely as a business, producing and selling the electrostatic precipitators invented by Cottrell. The royalties from that business began the endowment that funds the foundation today. In 1954, Research Corporation gave rise to Research-Cottrell. Offices were located in Bound Brook, New Jersey. The same year, Research-Cottrell Inc. became a taxable subsidiary and an independent producer of equipment for control of air, water and thermal pollution. The company was acquired by the Hamon Group in 1997 and is now known as Hamon Research Cottrell (<http://www.hamonusa.com/>)*], Divestiture
- F. 223 Related Business: Research Corporation/Research-Cottrell, Facilities
- F. 224 Related Business: Research Corporation/Research-Cottrell, Formation
- F. 225 Related Business: Research Corporation/Research-Cottrell, Meetings
- F. 226 Related Business: Research Corporation/Research-Cottrell, Miscellaneous

#### **Box 19, F. 227-235**

- F. 227 Related Business: Research Corporation/Research-Cottrell, Publications
- F. 228 Related Business: Research Corporation/Research-Cottrell, Stocks, General
- F. 229 Related Business: Research Corporation/Research-Cottrell, Stocks, "Securities and Exchange Commission/Washington, D.C. 20549/Exhibits to Form S-1/Registration Statement under the Securities Act of 1933/Research-Cottrell, Inc.
- F. 230 Related Business: Research Corporation/Research-Cottrell, Willow Island, West Virginia [*In 1978, 51 workmen building a cooling tower for Research-Cottrell in Willow Island, West Virginia fell to their deaths when the scaffolding inside the tower gave way.*], Miscellaneous



- F. 231 Related Business: Research Corporation/Research Software (*see also Press releases, 1984*) [*a program established in 1983 to copyright and publicize software programs of potential interest to the academic community*], Miscellaneous
- F. 232a Related Business: Research Corporation/Research Corporation Limited/Research Corporation Trust [*In the mid-1980s, hoping to take advantage of the privatization of industry taking place at that time in the U.K., Research Corporation and Investors in Industry (a major independent U.K. financial institution) formed Research Corporation Trust, a joint venture to designed encourage and sponsor the commercial development of research projects by British universities. A subsidiary, Research Corporation Limited, was established in the United Kingdom to evaluate, patent and license inventions. The project was abandoned after several years*], Miscellaneous
- F. 232b Related Business: Research Corporation/Research Corporation-Europe [*Proposal for subsidiary to be established in Europe to handle Research Corporation's European university clients and to help with its international licensing efforts. There is no evidence of any action in response to this proposal.*]
- F. 233 Related Business: Research Corporation/Research Corporation Technologies [*In 1987, Research Corporation spun off its technology development and commercialization activities in the form of Research Corporation Technologies (RCT). This was done in keeping with a provision of the Tax Reform Act of 1986, which permitted the foundation to make a program-related investment in a separate technology transfer organization. The new company absorbed the foundation's scientists, engineers, lawyers and marketing experts, assumed its patent holdings and took over its agreements with over 300 universities to evaluate, patent and commercialize their inventions. Patent rights, assignments and the program's records were transferred to the new organization.*], Patents (*See also separate Research Corporation Patents archives*), Miscellaneous
- F. 234 Related Business: Research Corporation/Research Corporation Technologies, Publications
- F. 235 Research Corporation background [*Contains overviews of the foundation, created in-house; brief history and grants breakdown, state-by-state, prepared by Goodman Media, 2011*]

#### **Box 20, F. 236-247**

- F. 236 Smithsonian Institution, Correspondence [*Includes correspondence between Cottrell, Walcott (secretary of the Smithsonian from 1907 to 1927), Alexander Graham Bell, Charles F. Choate Jr., etc.*], 1911-1915
- F. 237-241 Smithsonian Institution, Correspondence with C.G. Abbot, [*Charles Greeley Abbot was an astronomer and secretary of the Smithsonian from 1928 to 1944*], 1928-1941 (not inclusive)
- F. 242-244 Smithsonian Institution, Correspondence with Chester G. Gilbert [*Gilbert was curator of the Division of Mineral Technology at the Smithsonian. Contains a great deal of discussion, in 1934, about the establishment of Research Associates, Cottrell and Royster. Contains interesting comments about the aging Cottrell.*], 1931, 1934
- F. 245 Smithsonian Institution [*Includes minutes of Smithsonian Board of Regents meetings; diary entries by Charles Walcott pertaining to meetings with Cottrell and the establishment of Research Corporation; December 30, 1911 article from the Washington Herald, announcing "Smelter Patent Given to Science"*], Miscellaneous
- F. 246-247 Smithsonian Institution copies, [*Note: In 2006, Archivist Dena McDuffie visited the Smithsonian Institution Archives to research the materials on deposit there pertaining to Research Corporation. Due to time and reproduction constraints, copies were made of a very small portion of those papers. Complete records at the Smithsonian related to Research Corporation are contained in Record Units 45, 50 and 51.*], Correspondence, 1911-1912

#### **Box 21, F. 248-266**

- F. 248-253 Smithsonian Institution copies, [*Note: In 2006, Archivist Dena McDuffie visited the Smithsonian Institution Archives to research the materials on deposit there pertaining to Research Corporation. Due to time and reproduction constraints, copies were made of a very small portion of those papers. Complete records at the Smithsonian related to Research Corporation are contained in Record Units 45, 50 and 51.*], Correspondence, 1913-1959
- F. 254 Smithsonian Institution copies, Grants and Fellowships
- F. 255 Smithsonian Institution copies, Robert Goddard and invention of rocketry
- F. 256 Smithsonian Institution copies, International Auxiliary Language Association (IALA)
- F. 257 Smithsonian Institution copies, Legal Documents
- F. 258 Smithsonian Institution copies, Charles Marchand and invention of Meatox,
- F. 259 Smithsonian Institution copies, Miscellaneous
- F. 260 Smithsonian Institution copies, Reports
- F. 261 Smithsonian Institution copies, Research Corporation Awards

F. 262-266 Tax exempt status, Correspondence, 1916-1957 (not inclusive)

### **BOX 22, F. 267-291**

F. 267-268 Tax-exempt status, Correspondence, 1916-1957 (not inclusive)

F. 269 Tax -exempt status, Miscellaneous

F. 270 Women in science

### **Record series II: Correspondence**

F. 271-277 Early Research Corporation correspondence, 1912-1918

F. 278a A-C, Miscellaneous [*Includes Roger Adams of University of Illinois, 1947; John C. Bailar Jr. of University of Illinois; Paul D. Bartlett of Harvard University; Herbert C. Brown of Purdue University; M. Calvin of University of California, Berkeley; H.E. Carter of University of Illinois; Arthur H. Compton of Washington University; E.U. Condon, U.S. Department of Commerce; A.C. Cope of MIT*]

F. 278b American Institute of Physics

F. 278c Andreen, Brian

F. 279-282 Barker, Joseph W., 1946-1957

F. 283 D, Miscellaneous [*Includes P. Debye of Cornell University; L.A. DuBridge of California Institute of Technology; Vincent du Vigneaud of Cornell Medical School*]

F. 284 Davis, Harvey N. [*Davis was president of the Stevens Institute in Hoboken, New Jersey. In 1931, Research Corporation had an arrangement with Stevens to take on some Research Corporation employees who were being laid off from Research Corporation. Includes a nice letter from Poillon discussing how he'd rather lay people off in May when the weather is nice than in February when it's cold.*], 1929-1931

F. 285 E, Miscellaneous [*Includes Milton S. Eisenhower of Kansas State College*]

F. 286 Einstein, Albert [*Correspondence between Einstein and Research Corporation relating to Sergei Hessen who had been a professor at the University of St. Petersburg in Russia, but had recently moved to Prague. Einstein asks for financial assistance for Hessen, as well as other "emigrated Russian men of learning who are prevented even from recording the results of their scientific work because of their pressing need of the means merely to keep alive."*], 1929

F. 287 F, Miscellaneous [*Includes Louis F. Fieser of Harvard University; James Franck of University of Chicago*]

F. 288a G, Miscellaneous [*Includes Paul Gyorgy of University of Pennsylvania; Henry Gilman of Iowa State College; L.M. Gould of Carleton College*]

F. 288b Gentile, James M.

F. 289 H, Miscellaneous [*Includes Joel H. Hildebrand of University of California, Berkeley; Mayor Robert F. Wagner of New York; J.R. Heller, Director of National Cancer Institute, etc.*], 1957-1968

F. 290-291 Hadley, Hamilton, 1938-1953

### **BOX 23, F. 292-308**

F. 292 Hinkley, J.W., 1957-1967

F. 293 I, Miscellaneous

F. 294 International Cooperation Administration (ICA), 1956-1957

F. 295 J, Miscellaneous [*Largely correspondence between R.R. Williams and D.K. Jardine*], 1954-1969

F. 296-297 Jolliffe, Norman [*Includes wonderful travelogues, in the form of letters to their son, of a trip Dr. & Mrs. Jolliffe made to Japan, China, India and Formosa in 1954, under the auspices of the Williams-Waterman Fund. On the Formosa leg of that trip, Jolliffe taught a class on nutrition and conducted a clinical study of subjects in and around Taipei. After Jolliffe's death in 1961, his wife established the Norman Jolliffe Fellowship, through the Williams-Waterman Fund.*], 1953-1967

F. 298 K, Miscellaneous [*Includes C.F. Kettering of General Motors Corporation; M.S. Kharasch of University of Chicago; G.B. Kistiakowsky of Harvard*], 1955-1967

F. 299 Kelleher, Alfred, [*Kelleher was a Program Officer at Research Corporation.*] 1958-1962

F. 300-301 King, W. Kendall [*King joined Research Corporation in 1968 as assistant vice president for grants. He became vice president in 1977 with full responsibility for planning and managing the corporation's grants program. He also administered the corporation's research and training project in public health and nutrition in Latin America and the Caribbean.*],

Correspondence largely about Williams-Waterman grants in Haiti, 1965-1976

F. 302 King, W. Kendall, haiku written by King

F. 303 L, Miscellaneous, 1955-1966

F. 304-308 Lawrence, Ernest O. [*American physicist and Nobel Laureate best known for his invention, utilization and improvement of the cyclotron beginning in 1929, and his later work in uranium-isotope separation in the Manhattan Project. Folders include descriptions of Lawrence's work, photographs and an invitation to Lawrence's wedding*], 1931-1933

#### **BOX 24, F. 309-326**

F. 309-318 Lawrence, Ernest O., 1934-1946

F. 319 M, Miscellaneous [*Includes Arthur E. Martell of University of California; C.S. Marvel of University of Illinois; P.J. McCormick of Catholic University of America; R.A. Millikan of California Institute of Technology*], 1931-1966

F. 320-326 Morris, Dave Hennen, [*Dave Hennen Morris (1872-1944) graduated from Harvard in 1896. He became an attorney and later a diplomat and, with his wife, Alice Vanderbilt Morris, he cofounded the International Auxiliary Language Association (IALA), which in 1951 would present Interlingua to the general public. He was treasurer of IALA from its establishment in 1924 to his death in 1944. His son, Lawrence, then assumed the position. From 1933 to 1937, he was U.S. Ambassador to Belgium and Envoy to Luxembourg. During this joint appointment, he resided in Belgium, where he and his wife continued to make international contacts for IALA. He also was Vice President of Research Corporation.*], 1930-1944 (not inclusive)

#### **BOX 25, F. 327-341**

F. 327 N, Miscellaneous [*Includes W. Albert Noyes Jr. of University of Rochester*]

F. 328 O, Miscellaneous

F. 329 P, Miscellaneous [*Includes G.E. Pake of Stanford University; Linus Pauling of California Institute of Technology*]

F. 330 Parke, Davis and Company, 1933-1946

F. 331 Poillon, Howard A. [*Correspondence relating to P.E. Askenasy, C.P. Derleth and fly ash*], 1937

F. 332 Q, Miscellaneous [*Includes Quaker Oats, Elena S. Quigogue*], 1951-1957

F. 333 R, Miscellaneous [*Includes I.I. Rabi of Columbia University; H.M. Randall of University of Michigan; Bruno Rossi of MIT; Harold Rice of Stanford*], 1956-1968

F. 334-336 Ramsey III, Hal H. [*Ramsey joined the Research Corporation Grants Program in 1958, serving as Western Regional Director for over 27 years.*] [*Correspondence concerning Research Corporation's consideration of expansion of grants program into South America*], 1957-1984

F. 337 S, Miscellaneous, 1956-1969 [*Includes H.I. Schlesinger of University of Chicago; Indumati Sreenivasan of Elphinstone College in Bombay, India; Nevin Scrimshaw of MIT*], 1956-1969

F. 338-341 Schauer, Charles H. "Hap" [*Schauer was Director of the Grants Program and later Vice President of Research Corporation*], 1945-1978

#### **BOX 26, F. 342-353**

F. 342-345 Scherer, Paul A., 1960-1964 [*Scherer was executive director of the Carnegie Institution, then worked for Research Corporation, then became a director of the National Science Foundation*]

F. 346-353 Schmidt, Walter A., [*Schmidt was the head of Western Precipitation Co. and a prolific letter-writer! He often wrote two to four letters per day to Howard Poillon of Research Corporation.*], 1928-1934

#### **BOX 27a, F. 354-362**

F. 354-361 Schmidt, Walter A., 1935-1944

F. 362 Sebrell, Henry, 1956-1961 [*A leading international authority on nutrition, Sebrell first recognized and described the dietary deficiency disease, ariboflavinosis, and made significant contributions to knowledge of dietary needs and deficiencies. He was head of the NIH from 1950 to 1955.*]

F. 362a-362b Smith, Sam Corry [*Smith was a biochemist and was director of grants for Research Corporation during the 1960s. In 1975, he became executive director of the M.J. Murdock Charitable Trust, a position he held until 1988.*], 1955-1967

#### **Box 27b, F. 362c-366b**

F. 362c-362h Smith, Sam Corry, 1968-1978

F. 363a Thwaite, Walter E. Jr.

F. 363b Miscellaneous, T-V



- F. 363c Miscellaneous, W [*Includes Roger J. Williams of University of Texas; Simon H. Wender of University of Oklahoma; W.A. Woods of Research Corporation; James M. Watt, director of the National Heart Institute; S.P. Yang of Purdue University; Charlotte M. Young of Cornell; John B. Youmans of Vanderbilt*]  
 [Note: See Special Archives, Williams-Waterman for information about Robert E. Waterman and Robert R. Williams]
- F. 363d Wilson, Carroll L. [*Carroll Louis Wilson was professor of management at the Sloan School of Management at Massachusetts Institute of Technology and a representative (i.e., searching for inventions that Research Corporation might be interested in exploiting) of Research Corporation at MIT. After Karl Taylor Compton became president of MIT in 1930, Compton began a reorganization of the university, appointing Wilson the first assistant to the president. Wilson remembered his duties as: "...serving as General Administrative Assistant to the President and working with Dr. Compton on a number of outside activities including the Science Advisory Board, 1933-1935...the Engineers Council for Professional Development...Patent Policy Committee of the National Research Council, etc."* Wilson also gathered information for Compton and Vannevar Bush in preparation for speeches, memoranda and policy decisions.], 1944
- F. 364 A, Miscellaneous [*Includes Charles Greeley Abbott; Arthur S. Adams; Herbert S. Adler; Frederick R. Adler*]
- F. 365 Anderson, Evald [*Evald Anderson's pioneering work in 1919 and Walther Deutsch's in 1922, gave origin to the classic equation of collection efficiency for electrostatic precipitators, known as the Deutsch-Anderson equation*]
- F. 366a Andreen, Brian [*Andreen was a program officer, one of the founders of the Council on Undergraduate Research (CUR), and later vice president of Research Corporation. Includes "Investing in Undergraduate Research," a talk given at the 5<sup>th</sup> CUR national conference, 6/22/1994, and "Chronicles of a Field Representative," a retirement address made by Andreen, 9/10/1997.*]
- F. 366b Atanasoff, John V. [*Atanasoff was the inventor of the first automatic electronic digital computer, a special-purpose machine that has come to be called the Atanasoff-Berry Computer. RC funded his early work at Iowa State College.*]

#### **BOX 28, F. 367-384**

Record series III: Biographical [*Biographical information and/or photos*]

- F. 367 B, Miscellaneous. [*Includes W. Stevenson (Steve) Bacon; Leo H. Baekeland; R. Palmer Baker; Richard S. Baldwin; Neil Bartlett; Abraham Bayley; David G. Black Jr.; Sherri Benedict; Lawrence E. Braymer of Questar [See also special archives for Rachel Brown/Elizabeth Lee Hazen]*]
- F. 368 Barker, Joseph W. [*Barker was dean of engineering at Columbia University before becoming president of Research Corporation from 1946 to 1957*]
- F. 369 Bartlett, Neil [*Bartlett's seminal discovery was that noble gases were indeed reactive enough to form bonds.*]
- F. 370 Bush, Vannevar [*Bush was an American engineer and science administrator, known for his work on analog computing, his political role in the development of the atomic bomb, and the idea of the memex—seen as a pioneering concept for the World Wide Web. A leading figure assistants on the table-top of an academic lab but by large, multidisciplinary teams of scientists and engineers in the development of the military-industrial complex and the military funding of science in the United States, Bush was a prominent policymaker and public intellectual during World War II and the ensuing Cold War*]
- F. 371 C, Miscellaneous [*Includes Paul C. Collins; Stuart B. Crampton; Richard G. Cunningham; Donald M. Coyne. [See also special archives for Frederick Gardner Cottrell*]
- F. 372 Caldwell, Carlyle G. [*Caldwell was president of the National Starch and Chemical Corp. and a member of the Research Corporation Board of Directors*]
- F. 373 Campins, Humberto [*Campins is Provost Research Professor of Physics and Astronomy and Head of the Astronomy Group at the University of Central Florida, Orlando. He is also adjunct faculty at the Lunar and Planetary Laboratory of the University of Arizona, Tucson. He was a program officer at Research Corporation from 1998 to 2002.*]
- F. 374 Coles, James Stacy "Spike" [*Coles was president of Bowdoin College, then president of Research Corporation from 1967 to 1982*]
- F. 375 D, Miscellaneous [*Includes Albert S. Davis Jr.; Robert H. Dicke; Carl Djerassi; Burt N. Dorsett; Helen Day; Harvey Nathaniel Davis*]
- F. 376 Dalldorf, Gilbert [*Dalldorf discovered the Coxsackie viruses circa 1948 while working at the New York State Department of Health in Albany, New York. He was a friend and mentor to Rachel Brown and Elizabeth Hazen who worked under Dalldorf when they discovered nystatin, the first antifungal medication. See also Brown-Hazen special archives and Publications*]
- F. 377 Dorsett, Burt N.

- F. 378 Douglass, A.E. [*Douglass was an American astronomer who discovered a correlation between tree rings and the sunspot cycle. See also Research Corporation Awards, 1930*]
- F. 379 Doyle, Michael P. [*Doyle was vice president of Research Corporation and, very briefly in 1999, president. He is currently chair of the department of chemistry and biochemistry at University of Maryland at College Park.*]
- F. 380a E, Miscellaneous [*Includes Hans A. Eckhardt; Joseph Clifton Elgin*]
- F. 380b Edelman, Philip E. [*Edelman was RCSA's first-ever grantee in 1917.*]
- F. 381 F, Miscellaneous [*Includes James S. Fulleylove; Walter R. French Jr.*]
- F. 382 Fox, Charles L. Jr. [*Fox was a pioneer in the use of silver sulfadiazine for the treatment of burns.*]
- F. 383 G, Miscellaneous [*Includes John D. Garrison; Daniel Gasch; I. Robert Goldsmith; Mary Lynn Grayeski; Roger Griffioen; Mitchell M. Griffith; Robert M. Gavin Jr.; Roger E. Gay; Frederick A. Goetzge; Tom Goodwin*]
- F. 384 Gentile, James [*Gentile was a professor and dean of natural sciences at Hope College for 30 years before becoming president of Research Corporation in 2004. Includes 2005 interview on Arizona Illustrated television show*]

#### **BOX 29, F. 385-405**

- F. 385 Goddard, Robert H. [*Goddard, the inventor of rocketry, received a grant from Research Corporation (through the Smithsonian Institution) in 1923.*]
- F. 386a Gray, Harry Barkus
- F. 386b H, Miscellaneous [*Includes Bayard R. Hand; William G. Hendrickson; H. Gordon Howe; A.J. Haagen-Smit; William R. Hewlett; Hamilton Hadley; Arthur A. Hamerschlag; Bayard R. Hand; Carl W. Hedberg; William G. Hendrickson; Harold L. Hoefman; Robert Holland Jr.; Joseph A. Holmes. See also special archives for Rachel Brown/Elizabeth Lee Hazen*]
- F. 387 Hall, H. Tracy [*Hall was an American physical chemist who first synthesized a diamond using a press of his own design.*]
- F. 388 Hinkley, J. William III [*Hinkley was president of Research Corporation from 1957 until his death in 1967.*]
- F. 389 Hooker, Elon Huntington [*Hooker founded the Hooker Electrochemical Company and was president of Research Corporation from 1915 to 1922.*]
- F. 390 I-K, Miscellaneous [*Includes Brent L. Iverson; James A. Jacobson; Suzanne D. Jaffe; John W. Johnstone Jr.; Alfred Kelleber; Bernard M. Kosloski; Endel Karmas; James R. Killian Jr; Edwin Krebs.*]
- F. 391 Jolliffe, Norman [*Norman Jolliffe was the Director of the City of New York Department of Health's Bureau of Nutrition and a member of the Advisory Committee of the Williams-Waterman Fund. Upon his death, his wife contributed approximately \$100,000 to establish the Norman Jolliffe Fellowship for advanced training in clinical nutrition and metabolic diseases in man. The fellowship was a part of the Williams-Waterman Fund and was administered by the fund.*]
- F. 392 Jones, Donald F. and Mangelsdorf, Paul C. [*Jones and Mangelsdorf invented the production of hybrid corn seed without detasseling*]
- F. 393a Kellman, Raymond [*Kellman was a program officer at RC from 1992 until 2003 when he was named vice-president, a position he held until he retired in 2008.*]
- F. 393b Kendall, Edward C. [*Kendall was a chemist who, together with Philip S. Hench and Tadeus Reichstein, won the Nobel Prize for Physiology or Medicine in 1950 for research at the Mayo Clinic on the structure and biological effects of adrenal cortex hormones. He discovered the hormone Cortisone.*]
- F. 394 King, Kendall W. [*King was an important component of the Williams-Waterman work in Haiti. He was vice president of the grants program at Research Corporation.*]
- F. 395 L, Miscellaneous [*Includes Fred Lanro; Robert L. Lichter; Sigmund Lasker*]
- F. 396 Law, S. Edward [*Law was an agricultural engineer who invented the electrostatic application of agricultural pesticide sprays and other biological/ chemical agents.*]
- F. 397 Lawrence, E.O. [*Lawrence was the inventor of the cyclotron, an accelerator of subatomic particles, and a 1939 Nobel Laureate in physics for that achievement. The Radiation Laboratory he developed at Berkeley during the 1930s ushered in the era of "big science," in which experiments were no longer done by an individual researcher, but, instead, by groups of researchers in entire buildings full of sophisticated equipment and huge scientific machines. During World War II, Lawrence and his accelerators contributed to the Manhattan Project, and he later played a leading role in establishing the U.S. system of national laboratories.*], Manhattan Project
- F. 398 Lawrence, E.O., Miscellaneous
- F. 399 Lawrence, E.O., Photographs

- F. 400 M, Miscellaneous [*Includes Colin B. Mackay; Margaret L.A. MacVicar; Margaret M. McCarthy; Carl S. Marvel; Phillip C. Miller; Robert W. Morse; Gary M. Munsinger; Timothy McNeese*]
- F. 401 Marcy, Willard [*Marcy was vice president of the invention administration program at Research Corporation.*]
- F. 402 Morris, Dave Hennen [*Morris was an attorney and cofounder with his wife, Alice Vanderbilt Shepard, of the International Auxiliary Language Association. He was U.S. ambassador to Belgium from 1933 to 1937 and a vice president of Research Corporation.*]
- F. 403 N and O, Miscellaneous [*Includes Pauline Newman; Thomas M. Noone; Mark E. Ogram; Harold S. Osborne; Patrick S. Osmer*]
- F. 404a P and Q, Miscellaneous [*Includes Robert W. Pivonka; R. Scott Pyron; Jack W. Powers*]
- F. 404b Parson, Kathleen [*Parson joined RCSA as a program officer in 2008.*]
- F. 405 Poillon, Howard A. [*Poillon was president of Research Corporation from 1927 to 1946.*]

### Box 30, F. 406-418

- F. 406 R, Miscellaneous [*Includes I.I. Rabi; Leon J. Radziemski; S. Dillon Ripley; Robert H. Ritchings; Silvia Ronco; Benjamin A. Rubin. Note: See also special archives, Grote Reber*]
- F. 407 Ramsey III, Hal H.
- F. 408
- F. 409 Rosenberg, Barnett, Biographical
- F. 410 Rosenberg, Barnett, Correspondence
- F. 411 Rosenberg, Barnett, Patents
- F. 412-413 Rosenberg, Barnett, Publications, 1969-1992
- F. 414 S, Miscellaneous, S-Z [*Includes Robert J. Sanders Jr; Donald T. Sanyer; Walter A. Schmidt, John E. Schork; Morton Schwarcz; W. Henry Sebrell; L. Donald Shields; George L. Shinn; Orin R. Smith; Whitney Stone; Michael J. Suber*]
- F. 415 Schaefer, John P.—Biographical
- F. 416 Schaefer, John P.—Photographs
- F. 417 Schaefer, John P.—Publications about Schaefer
- F. 418 Schaefer, John P.—Publications about Schaefer, CDs

### Box 31, F. 419-429

- F. 419 Schaefer, John P.—Publications by Schaefer
- F. 420 Schaefer, John P.—Speeches, 1982-2001
- F. 421a Schauer, Charles H. [*Schauer was Director of Grants and Executive Vice President of Research Corporation in the 1950s.*]
- F. 421b Scott, Lloyd N. [*Scott was a mining engineer, a lawyer and one of the original organizers of Research Corporation. He served the foundation for over 35 years.*]
- F. 422 Sebrell, W. Henry [*Sebrell was director of the National Institutes of Health and Assistant Surgeon General. He was a medical doctor with interests in pellagra. In 1956, he became head of the Williams-Waterman Fund for Research Corporation.*], 1956-1968
- F. 423 Seitz, Frederick [*Seitz was a physicist, president of the National Academy of Sciences from 1962 until 1969, and president of Rockefeller University from 1968 through 1978.*]
- F. 424 Smith, Sam Corry [*Smith was a biochemist and was director of grants for Research Corporation during the 1960s. In 1975, he became executive director of the M.J. Murdock Charitable Trust, a position he held until 1988.*]
- F. 425 T-V, Miscellaneous [*Includes Sheila Tobias; Byron K. Trippet; Joan S. Valentine. Note: See also special archives: Charles Hard Townes*]
- F. 426 Van Allen, James [*Van Allen was an American astrophysicist at the University of Iowa. He discovered the Van Allen radiation belts, which are named after him. He also is credited with discovery of a new moon of Saturn in 1979, as well as radiation belts around that planet.*]
- F. 427 van de Graaff, Robert Jemison [*Van de Graaff was an American physicist and instrument maker, and professor of physics at Princeton University. He invented the Van de Graaff generator, an electrostatic machine which uses a moving belt to accumulate very high voltages on a hollow metal globe.*]
- F. 428 VanderWerf, Calvin A. [*VanderWerf was president of Hope College, then a chemistry professor and head of the College of Arts and Sciences at University of Florida. He served on the Research Corporation Board of Directors.*]

F. 429 W-Z, Miscellaneous [*Includes G. King Walters; Theodore M. Welp; David A. Wiersma; Laurel L. Wilkening; Francis S. Williams; Robert M. Williams; Roger J. Williams; James P. Wolfe. Note: See also special archives: Williams-Waterman*]

### **Box 32, F. 430-448**

#### **Record series IV: Grants**

##### **Grants, General**

F. 430 Walcott, Charles Doolittle [*Walcott was a paleontologist and secretary of the Smithsonian Institution from 1907 to 1927. He was instrumental in helping Cottrell establish Research Corporation. Included are papers of Walcott's son, Sidney Walcott.*]

F. 431a Wiener, Richard [*Wiener, a physicist, joined RCSA as a program officer in 2006.*]

F. 431b White, Harry J. [*White was a physicist who did graduate work with E.O. Lawrence. He worked for Research Corporation from 1935 to 1960, studying electrostatic precipitation.*]

F. 432 Woodward, Robert B. [*Woodward was a chemist who synthesized chlorophyll, strychnine, cholesterol, lysergic acid, reserpine and many other complex products. He was a Nobel laureate.*]

F. 433-434 Applications for Grants, 1938-1939

F. 435-448 Correspondence, 1931-1965 [*Includes letters from Karl Compton, president of MIT; C.G. Abbot, secretary of the Smithsonian Institution; Vannevar Bush, president of the Carnegie Institution of Washington; H.A. Barton, director of the American Institute of Physics; Isaiah Bowman, president of Johns Hopkins University; R.J. Van de Graaff of MIT; E.O. Lawrence; J.W. Barker of Columbia University; Robert R. Williams; Warren Weaver of the Rockefeller Foundation; letter written in German requesting money for equipment for a school, dated February 9, 1931, with photograph of group of school children attached; letter from Richard D. Kleeman, The Physical Laboratory at Union College, Schenectady, N.Y. asking Research Corporation to publish two books on thermodynamics; letter dated 1929 from H. Greger of Akita Mining College in Japan requesting money to pay workers for their help with his research.*]

### **Box 33a, F. 449-464**

F. 449-451 Correspondence, 1931-1965 [*Includes letters from Karl Compton, president of MIT; C.G. Abbot, secretary of the Smithsonian Institution; Vannevar Bush, president of the Carnegie Institution of Washington; H.A. Barton, director of the American Institute of Physics; Isaiah Bowman, president of Johns Hopkins University; R.J. Van de Graaff of MIT; E.O. Lawrence; J.W. Barker of Columbia University; Robert R. Williams; Warren Weaver of the Rockefeller Foundation; letter written in German requesting money for equipment for a school, dated February 9, 1931, with photograph of group of school children attached; letter from Richard D. Kleeman, The Physical Laboratory at Union College, Schenectady, N.Y. asking Research Corporation to publish two books on thermodynamics; letter dated 1929 from H. Greger of Akita Mining College in Japan requesting money to pay workers for their help with his research.*]

F. 452 Development /Program Support Efforts [*In the early 1970s, Research Corporation began a Program Support campaign to generate financial support from other corporations/foundations. The project was headed by J.W. "Jack" Powers who had previously been a regional program officer based in Atlanta. Files include correspondence with the National Science Foundation, Council on Foundations, Science magazine, Charles Stewart Mott Foundation; proposals; memoranda regarding meetings with organizations such as the Corn Refiners Association and American Society for Testing Materials; and photographs of a Westinghouse representative presenting a check to Research Corporation President James Coles*], 1975-1982

F. 453 Early Grants and Grantees, lists and miscellaneous and minutes of grants program staff meetings, 1912-1982

F. 454 Early Grants and Grantees, University of Arkansas, Barnett Sure, 1938-1940

F. 455 Early Grants and Grantees, California Institute of Technology, S.R. Atkinson, 1939-1941

F. 456-458 Early Grants and Grantees, California Institute of Technology, E.R. Buchman and J. Bonner [*Includes several letters signed Linus Pauling*], 1937-1941

F. 459 Early Grants and Grantees, University of California, E.O. Lawrence, Correspondence with Chemical Foundation, 1934-1935

F. 460 Early Grants and Grantees, University of California, L.B. Loeb and R.T. Birge, 1937-1940

F. 461 Early Grants and Grantees, University of California, A.P. Krueger, 1937-1939

F. 462 Early Grants and Grantees, Catholic University, F.O. Rice, 1936-1951

F. 463 Early Grants and Grantees, University of Chicago, W.D. Harkins, 1937-1938



F. 464 Early Grants and Grantees, University of Chicago and Research Corporation Development Laboratory of Chicago, M.S. Kharasch and M.H. Daskais, Correspondence, 1935-1950

#### **Box 33b, F. 465-474**

F. 465-470 Early Grants and Grantees, University of Chicago and Research Corporation Development Laboratory of Chicago, M.S. Kharasch and M.H. Daskais, Correspondence, 1935-1950

F. 471 Early Grants and Grantees, University of Chicago and Research Corporation Development Laboratory of Chicago, M.S. Kharasch and M.H. Daskais, Miscellaneous

F. 472 Early Grants and Grantees, Columbia University, A. Kolin, 1941-1944 [*Includes letter of reference from Albert Einstein*]

F. 473 Early Grants and Grantees, Columbia University, V. Paschkis, 1940-1947

F. 474 Early Grants and Grantees, Columbia University, I.I. Rabi, Cyclotron, 1937-1941

#### **Box 34, F. 475-484**

F. 475 Early Grants and Grantees, Columbia University, Miscellaneous Projects, 1937-1942

F. 476 Early Grants and Grantees, Columbia University, Reports [*Includes Low Temperature Research by Shirley L. Quimby and Harold C. Urey; The Columbia Microphotometer by G.B. Pegram and H.W. Webb; Chemical and Biochemical Investigations with Artificial Radioactive Indicators by G.B. Pegram and L.P. Hammett*]

F. 477 Early Grants and Grantees, Cornell University, R.C. Gibbs, 1937-1941

F. 478 Early Grants and Grantees, Harvard College Observatory, H. Shapley and B.J. Bok [*Bok was born in the Netherlands in 1906. He directed astronomical observatories at Harvard, Mount Stromlo Observatory near Canberra, Australia, and the Steward Laboratory in Tucson. Bok died in Tucson in 1983.*], 1949-1953

F. 479-483 Early Grants and Grantees, Harvard and Commission on Plasma Fractionation and Related Processes, E.J. Cohn [*Cohn was an early protein scientist. He made important advances in the physical chemistry of proteins, and was responsible for the blood fractionation project that saved thousands of lives in World War II.*], Correspondence, 1944-1950

F. 484 Early Grants and Grantees, Harvard and Commission on Plasma Fractionation and Related Processes, E.J. Cohn, Correspondence, 1950-1957

#### **Box 35, F. 484-496**

485-487 Early Grants and Grantees, Harvard and Commission on Plasma Fractionation and Related Processes, E.J. Cohn, Correspondence, 1950-1957

F. 488 Early Grants and Grantees, Harvard and Commission on Plasma Fractionation and Related Processes, E.J. Cohn, Miscellaneous

F. 489 Early Grants and Grantees, Harvard and Commission on Plasma Fractionation and Related Processes, E.J. Cohn, Publications

F. 490 Early Grants and Grantees, Harvard, Hickman and C.S. Hurlbut Jr., 1939-1940

F. 491 Early Grants and Grantees, Massachusetts Institute of Technology, [*Includes correspondence relating to grants to R.J. Van de Graaff (Van de Graaff invented a constant-potential electrostatic generator later known as the Van de Graaff generator. Widely used in atomic research, the device was also adapted to produce high-energy x-rays for medical and industrial uses.) and F.G. Keyes (Keyes was a physical chemist who made notable theoretical and experimental advances in thermodynamics, equations of state of gases, and thermodynamic properties, in particular liquid water and steam.)*], Correspondence, 1941-1942

F. 492-494 Early Grants and Grantees, Rutgers University, W. Rudolfs [*Rudolfs was a primary force in industrial waste research. The Willem Rudolfs medal, awarded to an industrial employee for noteworthy accomplishments in any aspect of industrial waste control, is named in his honor.*], Correspondence, 1934-1935

F. 495-496 Early Grants and Grantees, Rutgers University, W. Rudolfs, 1936-1940

#### **Box 36, F. 497-506**

F. 497 Early Grants and Grantees, Santa Clara County Hospital, San Jose, California, F. Proescher, 1940

F. 498 Early Grants and Grantees, Stanford University, W.J. Crook, [*Crook was professor of metallurgy at Stanford. He was the godson of Thomas Welton Stanford, brother of Leland Stanford, with whom his father was associated in*



*Australian business ventures. Professor Crook joined the faculty in 1927. He retired in 1951 but continued almost until his death to report daily to his laboratory in the School of Earth Sciences. He was the author of Abacus Arithmetic.*), Correspondence, 1937-1939

F. 499 Early Grants and Grantees, Stanford University, W.J. Crook, Miscellaneous

F. 500 Early Grants and Grantees, Stanford University, J.W. McBain (*McBain made many contributions to colloid science including: the discovery of the association of surfactant molecules in solution above a critical concentration, the experimental verification of the Gibbs equation relating surface and bulk concentration, and devising the McBain quartz spiral spring for measuring the mass of adsorbed gases on porous solids.*), 1934-1941

F. 501 Early Grants and Grantees, Stanford University, D.L. Webster (*This application was denied by the foundation.*), 1947

F. 502 Early Grants and Grantees, Stevens Institute of Technology, H. Burris-Meyer (*Burris-Meyer was an American engineer who applied audio and acoustic technology to the live theater.*)

F. 503 Early Grants and Grantees, Stevens Institute of Technology, K. Davidson (*In 1935, Davidson established one of the largest and most renowned hydrodynamic and ocean engineering research facilities in the U.S. at Stevens Institute of Technology.*), Correspondence, 1936-1941

F. 504 Early Grants and Grantees, Stevens Institute of Technology, K. Davidson, Miscellaneous

F. 505-506 Early Grants and Grantees, Stevens Institute of Technology, Human Engineering Laboratory, J. O'Connor (*O'Connor is known as "the father of aptitude testing." His Human Engineering Laboratory at Stevens Institute of Technology tested hundreds of thousands of people, then concluded that a powerful vocabulary is directly linked to success in the worlds of business, academia or politics.*), 1935-1943

#### **Box 37, F. 507-519**

F. 507-509 Early Grants and Grantees, Stevens Institute of Technology, Human Engineering Laboratory, J. O'Connor (*O'Connor is known as "the father of aptitude testing." His Human Engineering Laboratory at Stevens Institute of Technology tested hundreds of thousands of people, then concluded that a powerful vocabulary is directly linked to success in the worlds of business, academia or politics.*), 1935-1943

F. 510 Early Grants and Grantees, Stevens Institute of Technology, Miscellaneous

F. 511 Early Grants and Grantees, University of Texas, R.J. Williams, 1945-1950

F. 512 Early Grants and Grantees, University of Virginia, J.W. Beams and A. Chanutin, Correspondence, 1938-1941

F. 513 Early Grants and Grantees, University of Virginia, J.W. Beams and A. Chanutin, Miscellaneous

F. 514 Financial Information, General

F. 515 Financial, Treasurer's Department, 1941-1944

F. 516 Grants and Grantees [*After weeding grants files, materials were scanned and saved on CDs. The first twelve disks are Frederick Gardner Cottrell Research Grants (CRGs); the remaining disks contain the beginning of the Cottrell College Science Awards. Those awards are numbered "C" or "CC." Unfortunately, no inventory was made of the files on each CD so the information is somewhat difficult to access. Work is under way to create an inventory of each disk. This project was coordinated by Brian Andreen.*]

F. 517 National Science Teachers Association [*Includes interesting notes on whether or not the NSTA was a subversive organization, ca. 1954*], 1954-1958

F. 518 Grants Programs [*New programs and changes to existing programs, notes. Includes history and information on numbering of grants programs, compiled by Brian Andreen ca. 1999*]

F. 519 Newspaper clippings re: grants [*Note: See also scrapbooks*]

**Box 38** Scrapbook of newspaper clippings relating to grants programs, 1924 through 1929

**Box 39** Scrapbook of newspaper clippings relating to grants programs, January 1963 through December 1968

**Box 40** Scrapbook of newspaper clippings relating to grants programs, January 1969 through December 1974

**Box 41** Scrapbook of newspaper clippings relating to grants programs, 1975 through 1981

#### **BOX 42, F. 520-532**

F. 520 Philosophy [*Includes "Note Concerning the Minutes of the March 26, 1959 Meeting of the Advisory Committee on Grants," 1959; "Strengthening the Sciences in the Liberal Arts Colleges," 1966; "Guidelines for Departmental Grant*

*Proposals*," 1966; "A Philosophy for the Frederick Gardner Cottrell Grants Program," 1971; "Research Corporation Grants," ca. 1983; "The Cast in Research Corporation Grants Program," 1988; and "Purposes and Evaluation of Research Corporation Grants," n.d.]

F. 521 Praise for Grants programs

F. 522 Program Advisory Committee/Science Advisory Committee/Science Advancement Committee

F. 523 Reports on Research, 1931 [Includes reports on *Investigation of the Breaking of Rock Structures under Their Own Weight* by Philip B. Bucky; *Photoelastic Investigations* by George B. Karelitz; *Recording Microphotometer*; *Molecular Beam Experiments* by I.I. Rabi; and *Heat Exchange and Dust Settler for Blast Furnace Gases*]

F. 524 Reports on Research, 1932 [Includes reports by *Division of Radiation and Organisms*, *International Auxiliary Language Association in the U.S.*, *Radiation Laboratory of the University of California* and R.J. Van de Graaff and K.T. Compton]

F. 525 Reports on Research, 1933 [Includes reports by C.G. Abbot, F.S. Brackett, K.T. Compton and L.C. Van Atta and R.J. Van de Graaff, E.O. Lawrence, M.S. Kharasch, J. O'Connor, H.N. Shenton, W.T. Swingle and Pfiffner and J.L. Crane Jr.]

F. 526 Reports on Research, 1934 [Includes reports by C.G. Abbot, R.J. Van de Graaff, J.G. Trump, E.O. Lawrence, H.N. Shenton, J. O'Connor, W.T. Swingle, W.M. Malisoff, J.J. Pfiffner, F.S. Brackett and M.S. Kharasch]

F. 527 Reports on Research, 1935 [Includes reports by C.G. Abbot, E.O. Lawrence, R.J. Van de Graaff, John G. Trump, L.A. DuBridge, S.M. Davidson, H. N. Shenton, J. O'Connor, J.J. Pfiffner, M.S. Kharasch, W.M. Malisoff, W.T. Swingle and a summary of activities of Research Associates Inc.]

F. 528 Reports on Research, 1936 [Includes reports by C.G. Abbot, E.O. Lawrence, K. Davidson, H. Burris-Meyer, Stevens Institute of Technology, R.J. Van de Graaff and associates, J.G. Trump, H.N. Shenton, T. Franck and J.A. Bearden, R.D. Fowler, Columbia University, R.T. Birge, L.A. DuBridge, M.S. Kharasch, W.D. Harkins, W. Rudolfs, J.W. McBain and reports on ephedra project.]

F. 529 Reports on Research, 1937 [Includes reports by C.G. Abbot, J.G. Aston, H. Burris-Meyer, W.J. Crook, A.L. DuBridge, R.C. Gibbs, K. Lark-Horovitz, W.D. Harkins, M.S. Kharasch, E.O. Lawrence, L.B. Loeb, J.W. McBain, J. O'Connor, S.P. Horton, G.B. Pegram and H.W. Webb, G.B. Pegram and L.P. Hammett, I.I. Rabi, H.C. Urey and S.L. Quimby, F.O. Rice, W. Rudolfs, J.G. Trump, L.C. Van Atta and reports of patents granted and applied for under MIT-RC patent agreement]

F. 530 Reports on Research, 1938 [Includes reports by E.O. Lawrence, A.L. DuBridge, G.B. Pegram, R.D. Fowler, L.C. Van Atta and R.J. Van de Graaff, I.I. Rabi, J.W. Beams, J.W. McBain, H.C. Urey, L.P. Hammett and J.R. Dunning A. Chanutin, J.G. Aston, D.H. Andrews, F.O. Rice, C.G. Abbot, A.P. Krueger, B. Sure and R.M. Theis, W. Bleakney, L.B. Loeb, J.V. Irwin, J. O'Connor, W. Rudolfs and a report of patents granted and applied for under MIT-RC patent agreement]

F. 531 Reports on Research, 1939 [Includes reports by E.O. Lawrence, R.J. Van de Graaff and L.C. Van Atta, G.B. Pegram, L.R. Hammett and John R. Dunning, I.I. Rabi, J.W. Beams, J.W. McBain, D.H. Andrews, F.O. Rice, C.S. Hurlbut Jr., C.G. Abbot, B. Sure, L.B. Loeb, J.V. Irwin and J. O'Connor]

F. 532 Reports on Research, 1940 [Includes reports by E.O. Lawrence, G.B. Pegram, I.I. Rabi, R.J. Van de Graaff, R.F. Bacher, J.W. McBain, J.W. Beams, J.A. Bearden, O.M. Arnold, F.G. Keyes, L.B. Loeb, F.O. Rice, C.G. Abbot, B. Sure, J. O'Connor and Mary Bray]

#### **BOX 43, F. 533-549**

F. 533a Reports on Research, 1941 [Includes reports by E.O. Lawrence, A. Kolin, R.J. Van de Graaff, J.W. McBain, J.V. Atanasoff, D.H. Andrews, A.H. Corwin, J.G. Aston, J.L. Rosenholtz, L.B. Loeb, W.W. Swingle, O.M. Arnold, C.G. Abbot, Mary Bray and J. O'Connor]

Grants, Programs (Information arranged chronologically)

F. 534a Fellowship in Applied Science, 1916-1917

[Note: See Box 91, Folders 1237-1242 for Williams-Waterman Fund for the Combat of Dietary Diseases.]

F. 535 Grants-in-Aid of Postwar Scientific Research, 1945 [Established to help U.S. scientists and universities restart their research programs after World War II, this was RCSA's first formal grant program. It was organized by Charles Schauer who established a structure built around field staff visiting campuses.]

F. 536 Cottrell Research Grants, 1946-1987 [This program was established in 1946 to stimulate science teaching in smaller colleges and universities through the promotion of research. Areas supported include astrophysics, anti-malarial, chemistry,

*electronics, engineering, psychology, mathematics, nuclear physics and forestry. The program was terminated in 1950 after five years of operation and approximately \$2.5 million in expenditures. Four hundred and sixty-four grants were made to 217 institutions, the vast majority of which were liberal arts colleges and small universities.]*

F. 537 Howard Andrews Poillon Fund [*The Howard Andrews Poillon Fund was a discretionary fund for the use of the foundation's president in support of worthy causes outside its normal grants program*], 1948-1967

F. 538 Kendall-Hench Fund, 1949-1957 [*Edward Calvin (aka E.C. and Nick) Kendall and Philip Showalter Hench (both working at the Mayo Clinic in Rochester, Minnesota) successfully applied an adrenal hormone (later known as cortisone) in the treatment of rheumatoid arthritis in 1948. Kendall, Hench and Tadeus Reichstein of Switzerland received the Nobel Prize for Physiology or Medicine in 1950 for discoveries concerning hormones of the adrenal cortex, their structure and biological effects. The Kendall-Hench Fund was established by a \$100,000 grant from Merck & Co. and an allotment by Research Corporation of a portion of its income from patent rights in cortisone. The grants were designed to support research in endocrinology; however, the research area proved too narrow and the program lapsed. In 1951, when Kendall retired from the Mayo Foundation, he accepted the position of Visiting Professor in the Department of Biochemistry at Princeton University (a position funded by the Kendall-Hench Fund) to continue his research.*], Annual Reports on Research, 1954-1971

F. 539 Kendall-Hench Fund, Awards [*Nobel prize winners dinner, hosted by Mr. and Mrs. Joseph Barker of Research Corporation, November 20, 1950 at the Waldorf Astoria*]

F. 540 Kendall-Hench Fund, Cortisone conference, Commodore Hotel, New York, September 1949

F. 541 Kendall-Hench Fund, Cortisone conference, July 27, 1951

F. 542-549 Kendall-Hench Fund, Correspondence [*Contains voluminous correspondence during the late 1940s and early 1950s*], 1941-October 1949

#### **BOX 44, F. 550-558**

F. 550-558 Kendall-Hench Fund, Correspondence, November 1949-1954

#### **BOX 45, F. 559-570**

F. 559-564 Kendall-Hench Fund, Correspondence 1955-1972

F. 565-566 Kendall-Hench Fund, Legal Documents

F. 567 Kendall-Hench Fund, Manuscripts

F. 568 Kendall-Hench Fund, Meetings

F. 569 Kendall-Hench Fund, Miscellaneous

F. 570 Kendall-Hench Fund, Patents

#### **BOX 46, F. 571-585**

F. 571 Kendall-Hench Fund, Press

F. 572 Kendall-Hench Fund, Publications

F. 573 Donald F. Jones-Paul C. Mangelsdorf Fund [*Jones and Mangelsdorf invented a process for growing hybrid seed corn in 1949. They assigned their patent to Research Corporation and a program was funded from the royalties. The goal of the awards was to support good science and encourage basic cytogenetics research.*], ca. 1955 Announcements and Applications

F. 574-580 Donald F. Jones-Paul C. Mangelsdorf Fund, Correspondence, 1950-1982

F. 581 Donald F. Jones-Paul C. Mangelsdorf Fund, Evaluation

F. 582 Donald F. Jones-Paul C. Mangelsdorf Fund, Miscellaneous

F. 583 Donald F. Jones-Paul C. Mangelsdorf Fund, National Academy of Sciences Progress Report, 1971

F. 584 Donald F. Jones-Paul C. Mangelsdorf Fund, Legal Documents

F. 585 Donald F. Jones-Paul C. Mangelsdorf Fund, Meetings, 1971-1972

#### **BOX 47, F. 586-605**

F. 586-589 Donald F. Jones-Paul C. Mangelsdorf Fund, Meetings, 1973-1976

F. 590 Donald F. Jones-Paul C. Mangelsdorf Fund, Press

F. 591a Donald F. Jones-Paul C. Mangelsdorf Fund, Publications

F. 591b West Germany Grants Program, 1952-1961 [*Near the end of 1952, back royalties accrued under the license to E. Merck of Darmstadt for the manufacture of Vitamin B1 in Germany became available. It was decided that the funds, which*

*were in the form of blocked marks in Germany, would be left there and used to fund a program in aid of scientific research in Germany and other countries of Western Europe.]*

F. 592 Summer Grants, 1953

F. 593 Departmental Grants [*These grants were intended to fund upgrading individual science departments or divisions according to plans drawn by the institutions. Those awarded included Augustana College, Sioux Falls, South Dakota; Occidental College, Los Angeles, California; Lebanon Valley College, Annville, Pennsylvania; Furman University, Greenville, South Carolina; and Hope College, Hope, Michigan. Following the initiation of the NSF College Science Improvement Program in 1966, RC's Departmental Grants program was discontinued in 1968.*], 1958-1968

F. 594 Unrestricted Venture Grant [*These grants were designed to identify talented young scientists and provide them with money for three years, to be used at their discretion in their research.*]: Smith College, Mount Holyoke, Amherst College and University of Massachusetts [*Combined effort of four universities to provide high-quality teaching in astronomy.*], 1959-1976

F. 595 Joseph H. DeFrees Endowment, 1964-1981

F. 596 Grant in aid to University of New Brunswick [*Grant to bring four scientists to the university to appraise its physics, geology, biology and chemistry departments.*], 1966-1967

F. 597 Joseph Warren Barker Fellowship in Engineering, 1966-1976  
[*See also special archives for Brown-Hazen and Williams-Waterman funds*]

F. 598 Cottrell College Science Awards (CCSA) (formerly called Cottrell College Science Grants and Cottrell College Science Program), 1972-present [*This initiative began formally in 1971 as an extension of the program that was started in 1946 under the name of Frederick Gardner Cottrell Grants. Its purpose was to promote involvement in research by faculty and students in predominately undergraduate colleges. A motivation for the program stemmed from the realization that the majority of science majors attending graduate school were the products of liberal arts colleges. In 2009, the Multi-investigator CCSA was introduced, aimed at initiating collaborative programs of research by cross-disciplinary teams of faculty in science departments at within a single primarily undergraduate institution.*]

F. 599 Norman Joliffe Fellowship, 1970

F. 600 Gilbert Dalldorf Fellowship Program, 1978-1990

F. 601 Research Opportunity Awards (ROA), 1987-2008. [*Started in 1988 to address the problems of successful mid-career scientists who have lost funding for research for valid reasons (e.g. return to teaching after an administrative assignment, change of direction in research, termination of an agency program, etc.).*], Applications, brochures and flyers, survey results

F. 602 1988-1999, 2009-present [*This program began in 1988, intended as Research Corporation's response to nationally expressed concerns about the quality of science education in our secondary schools, the preparedness of high school science teachers in their subject matter, and the limited involvement of college and university faculty members with the high school community. Partnerships were created between high school teachers and faculty members and two summers were spent in the laboratory or field doing scientific research. An annual conference was held during which teachers had an opportunity to present their research and experiences. The program has been national in scope. In 1990, M.J. Murdock Charitable Trust joined Research Corporation in funding the program in the Pacific Northwest and providing some additional support services to partners in that region. When Research Corporation discontinued this program in 1998, the Murdock Trust continued the program in the Pacific Northwest.*], Applications, Brochures and Flyers

F. 603 Partners in Science Awards conference, "Enriching Science Teaching through Research," presentations by Glenn A. Crosby, Washington State University on "Science Education at the Interface: Dissolving the Boundaries"; Neville J. Woolf, University of Arizona on "The Liberal Sciences," 1988

F. 604 Partners in Science Awards conference, "Science Research: The Boundless Frontier," presentations by Sheila Tobias on "What Makes Science Hard?"; Robert L. Park of American Physical Society on "A Palladium Curtain Descends over Utah"; Stephen Thompson of Colorado State University on "Learning Science by Doing It—A Heresy or the New Way?"; Susan Adams Nye of General Electric on "Silicone Polyimides from Siloxane-Equilibrated Dianhydrides"; and Peter Strittmatter of University of Arizona on "Frontiers of Astronomy," 1989

F. 605 Partners in Science Awards conference, "Stalking the Second Tier," presentations by Donald Huffman of University of Arizona on "C<sub>60</sub>, A New Form of Carbon"; Paul Saltman of University of California San Diego on "Breakfast of Champions... Nutrition and Athletic Performance"; Sheila Tobias on

“What Did We Learn from our Learners?”; John Brooks Slaughter of Occidental College on “Filling the Pipeline with Excellence through Equity,” 1991

#### **BOX 48a, F. 606-620**

F. 606 Partners in Science Awards conference, “Global Climate Change,” presentations by Ralph Cicerone of University of California, Irvine on “How Small Changes in Atmospheric Chemical Composition Cause Ozone Depletion and Climate Change”; Margaret Tolbert of University of Colorado, Boulder on “Stratospheric Ozone Depletion: An Example of Ongoing Global Change”; George D. Nelson of University of Washington on “Personal View of the Planet—The Space Perspective”; Robert E. Dickinson of University of Arizona on “Man-induced Changes in Global Climate, Projections of What They Will Be and How to Look for Them: What We Do and Don’t Know”; and Paul Handler of University of Illinois on “The Impact of Volcanic Aerosols on Global Climate,” 1992

F. 607 Partners in Science Awards conference, “Detectives in Science,” presentations by Arthur Ellis of University of Wisconsin and George Lisensky of Beloit College on “A Study in Scarlet and the Sign of Four or How Holmes Deduced the Big from the Little”; Lawrence Kaplan of Williams College on “The Evidence Never Lies—Student Detectives in the Laboratory”; Bryant Bannister of University of Arizona on “Andrew Ellicott Douglass: A Detective in Science,” 1993 (see also Box 76, F. 1051c)

F. 608 Partners in Science Awards conference, “The World of Molecular Biology: Science with a Twist,” presentations by Brian W. Matthews, University of Oregon on “Proteins: Folding, Form and Function”; Thomas R. Cech of University of Colorado, Boulder on “The Discovery of RNA Catalysis” Carol L. Cech of Somatogen on “The Road to Artificial Blood,” 1994

F. 609 Partners in Science Awards conference, “Reaching for the Stars,” presentations by Eugene Shoemaker of U.S. Geological Survey on “The Clementine Mission to the Moon” and “The Crash of Periodic Comet Shoemaker-Levy 9 on Jupiter”; Christopher Impey of University of Arizona on “Cosmic Catastrophes,” 1995

F. 610 Partners in Science Awards conference, “DNA: The Fabric of Designer Genes,” presentations by Leroy Hood, University of Washington on “The Human Genome Project: Implications for Biology and Medicine of the 21<sup>st</sup> Century” and “Ethical, Social and Legal Dilemmas of the New Genetics”; Davis Galas of Darwin Molecular Corporation on “Peeking at the Blueprints—Gene Discovery and Modern Biology” 1996

F. 611 Partners in Science Awards conference, “Outer Space/Inner Space,” presentations by Leon Lederman of Illinois Institute of Technology on “From Quarks to the Cosmos” and “The Ever More Pressing Problem of Science Literacy—We Will Fight on the Beaches”; George Smoot of University of California, Berkeley on “Observing the Early Universe,” 1997

F. 612 Partners in Science Awards conference, “Science in Space: A Close Look,” presentations by Fernando Caldeiro of NASA on “Science on the Space Shuttle”; Robert G. Strom of University of Arizona on “Ancient Oceans and Ice Sheets on Mars”; Billy Joe Evans of University of Michigan on “Special Mentor Section: Are We There Yet?” 1998

F. 613 Partners in Science Awards conference, “Metals for Life and Energy,” presentations by Thomas V. O’Halloran of Northwestern University on “Heavy Metals in Concert with Life: Chaperones are Important, But Are They Easily Fooled?” and Harry B. Gray of California Institute of Technology on “Clean Fuel from Solar Photochemistry,” 1999

F. 614 Partners in Science Awards conference, “Chemical Communication,” presentations by M. Bonner Denton of University of Arizona on “Advances in the Application of Array Detectors for Improved Chemical Analysis”; Jerrold Meinwald of Cornell University on “Sex, Violence and Drugs in the World of Insects: A Chemists’ View,” 2000

F. 615 Partners in Science newsletters, 1989-1995

F. 616a Partners in Science supplemental awards, 1992-2001

F. 616b Partners in Science/M.J. Murdock Charitable Trust, 2008-

F. 617 Department Development Award, General, 1991-present [*This program in its modern guise was initiated in 1991. It is motivated by a conviction that the foundation staff’s knowledge and experiences can be used to accelerate the evolution and advancement of carefully selected college science departments. Awards are based on a mutually agreed upon set of goals and*



*consist of significant financial commitments from both the institution and Research Corporation. Consultants are used extensively; a listing of Research Corporation consultants from 1992-2008 is included.*], Miscellaneous

F. 618 Department Development Award, University of Wisconsin, Eau Claire, 1991

F. 619 Department Development Award, Hendrix College, 1993

F. 620 Department Development Award, Lawrence University, 1995

[*Note: Western Washington University received a DDA in 2000; no information has been made available to the archives*]

#### **BOX 48b, F. 621-625c**

F. 621 Cottrell Scholar Awards [*Initiated in 1994, this program was designed to emphasize the dual importance of teaching and research in a research university.*], 1994-present

F. 622 Cottrell Scholar Awards, conference, 2004

F. 623 Cottrell Scholar Awards, conference, 2005

[*Note: No materials are available from the 2006 Cottrell Scholar Awards conference*]

F. 624a Cottrell Scholar Awards, conference, 2007-2008

F. 624b Cottrell Scholar Awards, conference, 2009-2010

F. 624c Cottrell Scholar Awards, conference, 2011-2012

F. 624d Cottrell Scholar Awards, conference, 2013-2014

F. 625a Research Innovation Awards, 1997-2004. RIA awards were initiated in 1997 as an effort to re-enter the university community as a funding source in the sciences.

F. 625b Scialog, Miscellaneous [In 2008, Research Corporation initiated the Scialog initiative (Introductory literature read as follows: “*Research Corporation for Science Advancement (RCSA) is committed to providing catalytic and opportunistic funding for scientific research and the development of academic scientists through innovation, collaboration and dialog. It is fitting that we take this approach because today’s major questions in science are becoming increasingly interdisciplinary and dauntingly complex. Scialog is an RCSA initiative that aims to accelerate the work of twenty-first century transformational science through funding research, intensive dialog, and community building. Scialog has been conceived as a three-year research grant program with emphasis on annual meetings and the opportunity and encouragement to form cross-disciplinary teams. Each three-year initiative will focus on promoting scientific innovation on complex research questions that are contemporary science drivers. Successful grantees will be challenged to address a few narrowly focused issues on a particular research initiative and to communicate with one another in an annual closed conference environment for the purpose of sharing insights and building further collaborations. Success will be measured in terms of subsequent partnerships formed and how research clusters intersect with others in the academy, with the private industrial sector, and with the federal sector to continue promising lines of research.*”) Includes report from Jack Pladziemiński on 2009 Gordon Conference; white paper titled “*Scialog: A Program of Scientific Research and Dialog*”], Miscellaneous

F. 625c Scialog, AzRISE (Arizona Research Institute for Solar Energy). [AzRISE is an institute created by Dr. Joseph Simmons at University of Arizona with the mission (as stated on the AzRISE website) “*AzRISE is a global institute created with academic and industrial partners to foster support and coordinate collaborative efforts between academia, industry, business, national laboratories, local governments and the public through research and development, economic and public policy analysis and education at all levels.*” In October 2008, Research Corporation funded a workshop presented by AzRISE on photovoltaics, held in Rio Rico, Arizona.]

F. 625d Scialog, Conference, 2010 [Includes conference program, DVD copies of talks by Nate Lewis, Arun Majumdar, Eric Mazur and publication “*Accelerating Solar Conversion Science,*” reprint of keynote speech delivered by Nate Lewis at the first annual Scialog conference], 2011 [Includes ????

#### **BOX 49, F. 626-638**

Record series V: Manuscripts

Manuscripts, *Internal Annual Reports*

F. 626 1925-1926 [Two pages of 1925 report; in 1926, RC had assets of about \$145,000; One grant, to Robert Goddard (then at Clark University in Wooster, Massachusetts) for his work on rocketry was made in the amount of \$2,500.]

F. 627 1931 [The concept of Research Corporation being an organization that others might “submit patentable ideas to, for the purpose of having it obtain patents and commercializing those it thought worthwhile” was discussed. Grants: Smithsonian Institution \$20,000 for study of radiation; International Auxiliary Language Association \$4,000 for investigation of international language (Esperanto); Leland Stanford Junior University (now Stanford University) \$2,500 for vibration research

*in connection with earthquakes; Columbia University \$3,000 for a recording microphotometer, a velocity sorter for molecular beam experiments and for photoelastic investigations; Harvard University \$2,750 for equipment to prevent atmospheric pollution at its medical school; Smithsonian \$1,000 to develop an instrument for analyzing meteorological and solar data; Kaiser Wilhelm Institute for Medical Research \$1,500 for study of micro-ray cell puncture; Stevens Institute of Technology up to \$10,250 to pay laid-off Research Corporation employees who are willing to work at Stevens; MIT \$10,000 for equipment to help Van de Graaff construct high-voltage generator; and University of California \$5,000 in aid of E.O. Lawrence's work. 1930 Research Corporation Awards presented to Andrew E. Douglass for tree-ring research and Ernst Antevs for study of glacial sediment deposits]*

F. 628 1932 [*Deals with sales and installation of precipitators. No doubt due to the Depression, workers' compensation had been reduced by 10 percent, but plans were to retain all employees on either part- or full-time basis. Cottrell and others visited educational institutions*]

F. 629 1933 [*Deals with sales and installation of precipitators. Grants as follows: Smithsonian Institution for continued study of radiation, \$15,000; International Auxiliary Language Association for studies on establishing an international language, \$4,000; MIT for development of Van de Graaff generator, \$2,500; Stevens Institute of Technology for investigating the effect of English teaching on engineering school students, \$1,000; and University of Chicago to support work of M.S. Kharasch, \$2,950*]

F. 630 1934 [*Electrical precipitation main business of Research Corporation. Other projects: Multiclones, static dust collectors; Coey Forced Draft Water Cooling Tower; Downs Air Conditioning System; Tennessee Valley Authority; Rudolfs-Slagle Sewage System; Royster Rheoclastic Stove; Sloan X-Ray Machine; Brackett Non-glare Headlight; Spherules, a filler in cleaning compounds and soaps; Sintering Method for processing fly ash; Synthetic Pile Fabrics; Stabilization of Ergot; and New Chemical Reaction by J.M. Weiss. Grants to Smithsonian Institution, International Auxiliary Language Association, MIT, Stevens Institute of Technology, University of California, Princeton University; Columbia University, University of Pennsylvania, University of Chicago and Rutgers University*]

F. 631 1945-1946 [*First full year of peacetime operations after WWII. Establishment of separate grants department at Research Corporation, headed by R.R. Williams. Frederick Gardner Cottrell Grants Program initiated; 34 grants were made to 24 institutions; six colleges and universities had entered into agreements with Research Corporation for patent administration*]

F. 632 1946-1947 [*Thirty-seven General Grants (\$240,080.00), One-hundred and thirty-two Cottrell Grants (\$510,000.00) and 44 Williams-Waterman Grants (\$218,430)*]

F. 633 1947-1948 [*Frederick Gardner Cottrell died November 16, 1948. New or renewed grants totaled \$750,000.00. R.R. Williams director of grants; Research Corporation Award presented to Lee A. DuBridge, president of CalTech*]

F. 634 1948-1949 [*Two-hundred and seventeen Cottrell Grants (\$510,389.00) and Seventy General Grants (321,832.00) were awarded. Williams-Waterman Fund granted total of \$225,062.00. Frederick Arthur Goetze, one of the founders of Research Corporation, died on March 7, 1950; 1949 Research Corporation Award to Edward Calvin Kendall of the Mayo Foundation for his fundamental steroid chemical development of cortisone*]

F. 635 1950-1951 [*Fifty-three General Grants (\$228,000), One hundred and ninety-one Cottrell Grants (\$359,786.00), 43 Williams-Waterman Grants (\$265,000) and one Kendall-Hench Fund grant \$22,500), total of \$875,000; Board member Boris Alexander Bakmeteff died 6/21/51; Nicholas Milas patent for synthesis of Vitamin A and Jones-Mangelsdorf patent both acquired by Research Corporation : 1950 Research Corporation Award to Edwin M. McMillan, professor of physics at University of California for invention of the synchrotron and synchrocyclotron and as co-discoverer of neptunium and plutonium*]

F. 636 1951-1952 [*Sixty-one General Grants (\$249,414), 147 Cottrell Grants (\$309,326) and 50 Williams-Waterman Fund (\$238,949) in place. Total grants \$797,689. Statement regarding "subversive" activities of grantees or their institutions (i.e., McCarthy hearings); 1951 Research Corporation Award to W.F. Libby, physical chemist at University of Chicago for development of the technique of radiocarbon dating*]

F. 637 1952-1953 [*General Grants (\$268,839), Cottrell Grants (\$419,742) and Williams-Waterman Grants (\$155,702) in place. Total grants \$744,283. 1952 Research Corporation Award to H.S. Black, electrical engineer for Bell Telephone Laboratories for invention and development of the negative feedback system, a major advance in electronics*]

F. 638 1953-1954 [*Nystatin first appears on market; in October 1954, Precipitation Division of Research Corporation separated from the foundation and became Research-Cottrell, a wholly owned subsidiary; Two-hundred and thirty-nine Cottrell Grants and General Grants combined for a total of \$595,000, Thirty-two Williams-Waterman Grants (\$191,000) and West German Grants programs in place. Also Kendall-Hench Fund; Howard A. Poillon (RC president from 1927-1944) died in 1954; the 1954 Research Corporation Award for Contribution to Science awarded to Willis E. Lamb Jr., professor of physics at Stanford*]

## Box 50, F. 639-646

- F. 639 1954-1955 [*First year of new organizational plan wherein all foundation activities operated under Research Corporation and all precipitator-related activities operated under Research-Cottrell, Inc.; Discussion of the state of public high schools in the U.S. and the Secondary School Pilot Program in Connecticut; One-hundred and sixty-eight Cottrell grants totaling \$385,000 and Seventy-seven General grants totaling \$233,000; 1955 Research Corporation Award presented to Robert B. Woodward, professor of chemistry at Harvard; Institutions using Research Corporation's patent development program totaled eighty-two*]
- F. 640 1956 [*Joe Barker's last year as president of Research Corporation ; Eighty-nine colleges and universities had entered into agreements with Research Corporation for patent administration; 1956 Research Corporation Award to Claude E. Shannon of Bell Telephone Laboratories for his work related to information theory; Patent issued on Jay Forrester's (MIT) multi-coordinate digital information storage device*]
- F. 641 1957 [*J. William Hinkley's first year as president of Research Corporation; Brown-Hazen program of grants in the medical-biological science was established*]
- F. 642 1958 [*Reports that Research Corporation at that time had "patent agreements with most of the major institutions throughout the country excepting several of the large state universities"; Sputnik I launched on October 4, 1957, prompting reflection on science and science education in the U.S.; Research Corporation disbursed about \$1.25 million in grants; Hal Ramsey joined Research Corporation ; Research Corporation Award presented to Chien-Shiung Wu for the experimental demonstration of parity non-conservation*]
- F. 643 1959 [*Grants of \$1,198,000; discussion of newer, bigger foundations impinging on Research Corporation's tradition; Research Corporation Award made to Melvin Calvin, professor of chemistry at University of California, for investigations of the photosynthetic process*]
- F. 644 1960 [*MIT suspended its licensing program for the Forrester patent with Research Corporation ; Three-hundred and three grants made, totaling \$1,182,000; Rudolf L. Mössbauer selected for the Research Corporation Award for his discovery of the Mössbauer Effect which involves the emission and absorption of gamma rays from the excited states of a nucleus*]
- F. 645 1961 [*Two-hundred and twenty grants made, totaling \$898,300; Last year of West German program; Research Corporation Award presented to Francis H.C. Crick and James D. Watson; Vitamin B<sub>1</sub> patent expired*]
- F. 646 1962 (one copy) [*MIT cancelled agreement with Research Corporation; Research Corporation awardee Bernd T. Matthias*]

## BOX 51, F. 647-657

- F. 647 1963 [*Losses reported for Research-Cottrell; Research Corporation Award to Paul J. Cohen of Stanford and Heisuke Hironaka of Brandeis for mathematics*]
- F. 648 1964 [*Brian Andreen joined Research Corporation as its Midwest representative; Discretionary Funds referred to as "our on-the-spot gambling money"; Research Corporation Award presented to physicist William M. Fairbank of Stanford University for his work in very low temperature physics*]
- F. 649 1965 [*Research-Cottrell's business improving; Robert R. Williams died; Research Corporation Award to Neil Bartlett, professor of chemistry at University of British Columbia, for his work with the preparation of xenon hexafluoroplatinate*]
- F. 650 1966 [*Grants of almost \$3 million, the largest amount ever for the foundation; Research Corporation Award (now granted to awardee's institution rather than the individual) was awarded to Marshall W. Nirenberg for his "pioneering work in the discovery of the mechanism through which the code in genetic material determines the proteins synthesized by a cell"*]
- F. 651 1967 [*J. William Hinkley died; James Stacy Coles succeeded Hinkley as president of Research Corporation; Research-Cottrell went public and 300,000 shares of stock were sold and Research Corporation divested almost one-third of its total ownership of the company; Research Corporation Award made to Val Logsdon Fitch and James Watson Cronin for "their demonstration that the combined symmetry of parity and of charge conjugation is not, as had been previously believed, a universal symmetry of nature"; a fourth regional representative was added to Research Corporation's staff*]
- F. 652 1968 [*Government funding decreases, and the needs of researchers because of those decreased, inspire Research Corporation to create larger grants programs; Field office opened in Atlanta; Grants payments of \$2.6 million; Discussion of whether the Research Corporation Award should be continued produced the conclusion that, although the award should be continued, it could be handled more effectively; Research Corporation Award presented to Murray Gell-Mann for "contributions of highest significance to the theory of elementary particles and, specifically, for his prediction of the Omega Minus particle; Two-*

*hundred and seventy awards approved, totaling \$1,991,900; Research Corporation received \$23 million from its sale of one-third of its Research-Cottrell stock (1,725,000 shares)]*

F. 653 1969 *(one copy with label citing "Corrected as of 2/18/70") Three-hundred and seventy-four grants awarded, totaling \$2.53 million; no mention of Research Corporation Award]*

*[Note: During the 1970s, internal annual reports became much less chatty and much more finance-oriented]*

F. 654 1970 *[Contains external annual report and separate financials (internal annual report) for the foundation; Four-hundred and seventy-seven grants approved, totaling \$3.5 million]*

F. 655 1971 *[Contains external annual report and separate financials (internal annual report) for the foundation; Four-hundred and eighty-nine grants approved, totaling \$5.9 million; new programs: Cottrell College Science Program, Donald F. Jones Fund (a program with a limited life, funded by monies generated by the Jones-Mangelsdorf patent)]*

F. 656 1972 *[Contains external annual report and separate financials (internal annual report) for the foundation; Townes Fund initiated using a portion of Townes' patent on the laser, fund to have a four-year lifespan; Four-hundred and twenty-six grants approved, totaling \$3.5 million]*

F. 657 1973 *[Contains external annual report and separate financials (internal annual report) for the foundation; Four-hundred and twenty-two grants approved, totaling \$3.9 million; 70 testimonials (related to the good deeds done by Research Corporation ) extracted from letters of over 70 college presidents and Principle Investigators]*

#### **BOX 52, F. 658-666**

F. 658 1974 *[Contains external annual report and separate financials (internal annual report) for the foundation; Four-hundred and thirty-three grants totaling \$3.9 million were approved; drop in market value of Research Corporation 's investment portfolio and increase in needs of scientific and academic communities; John Schaefer elected to Research Corporation 's Board; patent on Nystatin expired. Also contains regional office annual reports for Northeastern and Midwestern offices.]*

F. 659 1975 *[One copy contains external annual report and separate financials (internal annual report) for the foundation and second copy of only internal report; Three-hundred and twenty-four grants approved, totaling \$2.6 million; J.W. Barker (RC president from 1947 to 1957) and Elizabeth Hazen (co-inventor of Nystatin) died; Sam Smith resigned Research Corporation to become director of the then-new M.J. Murdock Charitable Trust. Also contains regional office annual reports for Northeastern, South Central, Williams-Waterman and Brown-Hazen, and Midwestern offices.]*

F. 660 1976 *[Contains external annual report and separate financials (internal annual report) for the foundation; Three-hundred and seven grants totaling \$3.3 million were approved; Research Corporation's 65<sup>th</sup> anniversary; Cooperative grants in concert with Hercules Inc., National Starch and Chemical Corp., Pennwalt Corp., Schering-Plough Corp. and the M.J. Murdock Charitable Trust; patents on maser, reserpine and sugar esters expired. Also contains regional office annual report for South Central office.]*

F. 661 1977 *[Two-hundred and sixty-three grants totaling \$1.9 million were approved; Cooperative grants in concert with Crown Zellerbach Corp., Joseph H. DeFrees, Dorothy Fennell Memorial Fund, Hercules Inc., M.J. Murdock Charitable Trust, Pennwalt Corp., Pioneer Hi-Bred International Inc., Schering-Plough Corp., and Susan Greenwall Foundation]*

F. 662 1978 *[Two-hundred and six grants approved, totaling \$1.7 million; Cooperative grants continue]*

F. 663 1979 *[Two-hundred and fifty-three grants approved, totaling \$2.3 million; Research Corporation had patent licensing agreements with 278 institutions; Cooperative grants continue]*

F. 664 1980 *[Two-hundred and eighty-four grants approved, totaling \$2.9 million; Cooperative grants continue]*

F. 665 1981 *[Two-hundred and forty-seven grants approved, totaling \$2.7 million; Cooperative grants continue]*

F. 666 1982 *[Two-hundred and sixty-six grants approved, totaling \$2.7 million; Cooperative grants continue; John P. Schaefer became president of Research Corporation]*

F. 667 1983 *[Two-hundred and forty-five grants approved, totaling \$2.5 million; Cooperative grants continue; Communications department established]*

#### **BOX 53a, F. 668-673**

F. 668 1984 *[Two-hundred and thirty grants approved, totaling \$2.4 million; Cooperative grants continue]*

F. 669 1985 *[Two-hundred and thirty-six grants approved, totaling \$2.9 million; Cooperative grants continue]*

F. 670 1986 *[Two-hundred and one grants approved, totaling \$2.3 million; Cooperative grants continue; this appears to be the last internal annual report. Also includes "Research Corporation: An Examination of the Operation of Services and Grant-making Activities through Separate Organizations."]*



- F. 671 1987 and 1988 [*Partial reports*]
- F. 672a 1989 and 1990 [*Partial reports*]
- F. 672b 1992 and 1993
- F. 672c 1994 and 1995
- F. 672d 1996 and 1997
- F. 672e 1998 and 1999

Manuscripts, *Miscellaneous*

- F. 673 “What the Research Corporation Has Done for Others,” “How the Research Corporation Functions,” “The Origin of the Research Corporation” and two untitled documents, 1920s-1930s

**BOX 53b, F. 674-691**

- F. 674 Handwritten draft of and correspondence relating to a proposed publication about Research Corporation, written by Elwood Hendrick of Columbia University. Also includes discussion of possible “slogan” for the foundation] 1928
- F. 675 “Grants Made by Research Corporation, 1912-1944,” ca. 1945
- F. 676 “Random Notes by Walter A. Schmidt with Reference to Suit Filed by the Department of Justice Against Western, International, Research and Schmidt,” written by Walter A. Schmidt, August 27, 1945
- F. 677 “Exploitation of Inventions” by Albert S. Davis Jr., 1949
- F. 678 “Inside Doctor Cottrell” and “Further Contribution to the Cottrellian Saga,” both by P.H. Royster, [Includes a letter from Royster, dated May 8, 1951, to Cottrell biographer Frank Cameron], ca. 1950
- F. 679 “Notes on the Founding of the Research Corporation,” by Lloyd N. Scott, 1952
- F. 680 “Research Corporation: A Story of Invention in Relation to Science” by Robert R. Williams. Unpublished, 1956
- F. 681 “Research Corporation” by Charles H. Schauer, Vice President and Secretary, Research Corporation, ca. 1965
- F. 682 “Report of the Committee on Goals and Objectives,” adopted at the Research Corporation Board of Directors meeting, June 1979
- F. 683a Miscellaneous speeches and manuscripts prepared by Steve Bacon and Ellis Yochelson, ca. 1980s-1990s
- F. 683b “A Brief History of Research Corporation’s Grants Programs” by John P. Schaefer, ca. 2002 and “Press Book,” manuscripts written in-house during 2007
- F. 683c Unpublished manuscripts, 2008, and RCSA Case Book, October 2011

**Record series VI: Press Releases**

**Press Releases**

- F. 684 1945 [*“Research Corporation Offers \$2,500,000.00 in Grants-In-Aid of Postwar Scientific Research,”*] October 9, 1945
- F. 685 1971-1979 [*Includes press release about Research Corporation granting \$5.1 million in grants in 1970, no title, 2/4/1971; Press release about inception of Cottrell College Science Grants, no title, 6/7/1971; “Barker Fellowship for 1972 Offered,” 11/8/71; “Academic Research Needs Highlighted by Foundation Report,” 2/1/1972; “National Academy Award to Commemorate Pioneer in Pollution Control,” 3/29/1972; “The Norman Jolliffe Fellowship, 1973-1974,” 4/18/1972; “Discoverer of Photochemical Smog Formation to Receive First Cottrell Award,” 4/21/1972; “1973 Barker Fellowship Offered,” 5/30/1972; “Research Corporation Names Patent Counsel (Robert J. Sanders Jr.),” 9/27/1972; “College Science Study Offers Data for Future Planning,” n.d. “Basic Research Seen as Ultimately Relevant,” 1/29/1973; “Foundation Spurs Basic Research, Use of New Technology,” 1/14/1974; “Foundation Initiates Science Support Program,” 7/22/1975; “John E. Schorke Named to Foundation Board,” 2/7/1979]*]
- F. 686 1980-1984 [*Includes press release about venture between Northwest Area Foundation and Research Corporation, no title, 1/25/1980; “R. Palmer Baker Named to Research Corporation Board,” 7/21/1980; “CPC International Contributes Plastics Patents to Research Corporation,” 8/12/1980; “Rachel Fuller Brown: Distinguished Woman Scientist, Co-discoverer of First Antifungal Antibiotic,” n.d.; “University of Arizona President [John P. Schaefer] to Head New York Foundation,” 6/22/1981; 1982-1983 [Includes “Dr. John P. Schaefer Will Head Up Research Corporation,” 6/24/1982; “Pauline Newman Named to Foundation Board,” 8/19/1982; “New Executive to Press Development of University Inventions,”*]



9/15/1982; "Research Corporation to Establish Tucson Office," 9/17/1982); "University President [L. Donald Shields] Elected to Foundation Board," 2/23/1983; "Agreement Set to License Basic Computer Telesoftware Patent," 6/27/1983; "Foundation Backs National Clearing House for Advanced Computer Software," 8/15/1983; "Foundation Offers LSU Crawfish Harvester to Industry," 12/12/1983; "Research Grants Program Undergoes Staff, Administrative Changes," 12/15/1983; "Theodore M. Welp Named to Research Corporation Board," 2/16/1984; "Method Patented for Making Human-Human Hybridomas," 2/28/1984; "Foundation Introduces Oyster Growth-promoting Bacterium," 3/14/1984; "Unique Clearinghouse Offers Works by Arizona State Software Authors," 4/11/1984 (see also Photographs/Subjects/Research Corporation/Research Software); "U.S. Foundation and U.K. Investment Firm Join to Spur European Science and Technology," 5/29/1984; "Foundation Names New Vice President for Finance," 7/10/1984; "Agricultural Patent Upheld by U.S. District Court," 7/1/1984; "New Invention Safeguards Computer Data," 7/18/1984; "For Snack Food Addicts—Fish Chewies' Are Coming!" 8/22/1984; "Foundation Awards \$200,000 for Young Scientists, Research Ideas," 9/20/1984; "[George]Cunningham Joins Research Corporation Invention Administration Program," 10/5/1984; "A Sampling of Exciting Microsoftware You Can Order from the Research Corporation /RS Catalogue," n.d.]

F. 687 1985-1989 [Includes "Venture Capitalist (Frederick R. Adler) to Help Guide Foundation Programs for Academic Science and Technology," 1/11/1985; "Research Corporation Sets Record in 1984," 2/27/1985; "New Telescope Mirror Construction Process Introduced; May Have Industrial Applications," 6/12/1985; "Engelhard President and CEO (Orin R. Smith) Joins Research Corporation Board," 7/24/1985; "Noted Woman Scientist (Margaret L.A. MacVicar) to Help Guide Foundation," 7/24/1985; "Helical Oarlock to be Patented," 8/1/1985; "Hal H. Ramsey, Director of Grants for Research Corporation (obituary notice)," 8/6/1985; "Cast Iron's 'Brave New Weld,'" 8/26/1985; "New High Temperature Alloys Developed," 9/16/1985; "Inventors' Technique Directly Monitors Drugs in Body Fluids," 10/23/1985; "Multipurpose Antigen Prevents, Promotes Conception," (popular and professional versions), n.d.; "Invention May Spur Production of New Drugs and Chemicals," 1/17/1986; "Coronary Heart Disease is Target of Promising New Compounds," 4/3/1986; "Noted Research Scientist Joins Foundation's Board of Directors," 4/23/1986; "New Thermal Analysis Technique Licensed for Commercial Development; Measures Chemical and Thermal Reactions at High Temperatures and Pressures," 7/10/1986; "New Food and Drug Coating Technology Offers Significant Advantages," 7/31/1986; "Patent Protection Assured for Gallstone Dissolution Technology," 8/18/1986; "Water-soluble Polymers Offer Variety of Tools for Chemical and Pharmaceutical Manufacturing," 8/29/1986; "Garden Geranium Goes High-brow and High-tech," 10/3/1986; "Flameless' Helium Torch for Chemical Analysis" and "Torch Uses Helium 'Fuel' for Analytical Spectrometry," 2/21/1987; "Changes and New Directions: Research Corporation Grants Program," 2/27/1987; "Foundation Supports New Organization to Develop Inventions," 8/3/1987; "U.S. Foundation Hosts International Conference on Developing New Technology," 11/25/1987; "Foundation to Award \$3 Million for Academic Research in 1988," 1/6/1988; "Arizona and New Mexico Science Teachers To Do University Research," 2/2/1988; "Research Partnerships Give High School Science Teachers Opportunity To Do University Research," 2/2/1988; "Sharing the Thrill of Scientific Discovery: Foundation Stipends Give High School Teachers a Chance at University Research," 2/11/1988; "California High School Science Teachers To Do College Research," 5/19/1989; "Arizona High School Science Teachers To Do College Research," 5/1/1989; "High School Science Teachers Do Cutting-edge Research Under Foundation Program," 5/19/1989]

F. 688 1990-1994 [Includes "They're Not Dumb, They're Different' Profiles Students Who Shun Science," 5/9/1990; "Grants Approved, April 1990," 6/22/1990; "High School Science Teachers Spend Summer at Laboratory Bench Under Research Corporation's Partners in Science Program," 8/2/1990 (nationwide version); "Arizona High School Science Teachers Doing Frontier Research," 8/1/1990 (Arizona version); "California High School Science Teachers Doing Frontier Research," 8/1/1990 (California version); \$510,000 Award Launches New Program to Bolster Undergraduate Science," 6/4/1991; "High School Teachers do Advanced Research as 'Partners in Science'; Program Expands to New States; Candidates Invited to Apply for 1992," 8/20/1991; "Research Corporation Annual Report Documents 'The State of Academic Science' as Seen by Faculty Scientists," 11/5/1991 (short and long versions); "Global Climate Change the Theme of 'Partners' Science Conference," 1/3/1992; "Frederick Gardner Cottrell Elected to Inventors Hall of Fame" (national, Arizona and California versions), 2/11/1992; "Frederick Gardner Cottrell Inducted Into Inventors Hall of Fame," 4/21/1992; "Research Corporation Names Vice President," 5/13/1992; "Foundation Awards Over \$2 Million for Research in Chemistry, Physics and Astronomy," 5/22/1992; "Thirteen States to Feature Teacher Participation in Advanced Summer Research Under Foundation's Partners in Science Program," 7/17/1992; "Report on Reforming Science Education: Less Innovation, More Persuasion Needed," 7/28/1992; "Science Literacy, New Awards Topics of Research Corporation Annual Report," 12/16/1992; "Detectives in Science' is Conference Theme," 1/8/1993; "Research Corporation Study

*Spurs National Teleconference*,” 3/19/1993; “*High School Teachers To Do Research in Natural Sciences Under ‘Partners in Science’ Program*,” 4/5/1993; “*Foundation Awards \$2.8 Million for Research in Physical Sciences*,” 5/18/1993; “*Cottrell: Samaritan of Science: How One Man Revolutionized American Academic Science*,” 6/25/1993; “*\$50,000 Awards Spur Both University Research and Teaching*,” 8/18/1993; “*Research Corporation Annual Report: Over-direction Threatens Both Science and Technology*,” 12/1/1993; “*Research Corporation Awards \$588,000 to Aid Science at Hendrix*,” 12/2/1993; “*Two Women Scientists Elected to Inventors Hall of Fame*,” 1/6/1994; “*Nobel Prize Winner to Speak at Molecular Biology Conference for High School Teachers and Scientists*,” 1/10/1994; “*From the Cosmos to Carbon Molecules: All Targets of Partners in Science Summer Research*,” 3/16/1994; “*\$50,000 Cottrell Scholars Awards to Fund Young Scientists’ Innovative Research and Teaching Plans*,” 4/26/1994; “*Curiosity-directed Research Vital to Science and Technology*,” 11/10/1994]

F. 689 1995-1999 [Includes “*Small-college Physics Department to Receive \$300,000; Award is the Third Under Research Corporation’s Development Program*,” 1/3/1995; “*\$50,000 Cottrell Scholars Awards to Fund Pioneering Research, Teaching, by New Faculty Scientists*,” 5/2/1995; “*Rethinking Science as a Career, Addresses Supply and Demand for Scientists in a New Way*,” 7/17/1995; “*Antiscientism the Theme of Research Corporation Annual Report*,” 11/28/1995; “*Eighteen New Cottrell Scholars to Receive \$50,000 Research and Teaching Awards*,” 5/10/1996; “*Early Support for Science: Annual Report Marks Anniversaries of Research Corporation, the Smithsonian Institution*,” 11/7/1996; “*Research Innovation Awards Aim at Research Universities, New Opportunities for Scientific Discovery*,” 1/8/1997; “*Nobel Prize Winner to Urge Teachers to ‘Fight on the Beaches’ at Partners in Science Conference*,” 1/9/97; “*Summer Research Involves Science Teachers in Everything from Hunger to Black Bears, and from Astronomy to Air Pollution*,” 3/4/1997; “*Twenty-two New Cottrell Scholars to Receive \$50,000 Research and Teaching Awards*,” 5/6/1997; “*Science Advancement Foundation Elects Two Directors*” (Adler and Holland), 5/15/1997; “*Over \$300,000 Contributed to ‘Partners in Science*,” 6/3/1997; “*Research Corporation Names Michael P. Doyle Vice President*,” 8/12/1997; “*Physicist, Two Chemists (Iverson, Haeger, Dorhout) Join Foundation Advisory Committee*,” 11/25/1997; “*Research Corporation Publishes 1996 Annual Report*,” 11/26/1997; “*First Awards Announced for Highly Innovative Research*,” 12/2/1997; “*Original Research and Teaching Plans Win Cottrell Scholars Awards for 13 Faculty Scientists*,” 5/19/1998; “*Cottrell Science Program Awards \$1.7 Million for Diversified Research*,” 5/19/1998; “*Astronomer, Space Grant Consortium Director, Named Research Corporation Program Officer*” (Campins), 6/26/1998; “*Research Corporation Annual Report Asks: What Happens When Universities Become Businesses?*” 11/4/1998; “*Over \$1.5 Million Granted for Innovative Research at U.S. and Canadian Universities*,” 11/23/1998; “*Over \$1.5 Million Granted fro Innovative Research at U.S. and Canadian Universities*,” 11/23/1998; *Endowment ‘Gold’: What Does It Mean for College Science?*” 12/6/1999]

F. 690 2000-2005 [Includes “*Two Prominent in Chemistry (Deardorff and Tirrell) Join Foundation Grants Advisory Committee*,” 1/25/2000; “*Foundation Awards for Highly Original Research Total \$6.1 Million in 1999*,” 1/25/2000; “*Bringing the Excitement of Science to the Classroom: A Program to Help Science Teachers and Students Participate in Discovery*,” 1/27/2000 “*Undergraduate Research Fosters Excellence in College Science Departments*,” 11/15/2000; “*New Book Offers Guidelines for Achieving and Supporting Excellence in Undergraduate Science*,” 12/15/2000; “*Faculty Scientists Become Cottrell Scholars with Original Research and Teaching Plans*,” 6/15/2001; “*Research Corporation Announces New President*” (Doyle), 1/3/2002; “*Three Scientists Receive Research Opportunity Awards from Research Corporation*,” 5/14/2004; “*Fifty-one Scientists Receive Cottrell College Science Awards from Research Corporation*,” 5/14/2004; “*Eleven Scientists Selected as Cottrell Scholars by Research Corporation*,” 5/14/04; “*Research Corporation Names Dr. James M. Gentile as Next President*,” 6/14/04; “*Research Corporation Awards \$1.4 Million in Grants to Scientists in Chemistry, Physics and Astronomy*,” 12/1/04; “*Research Corporation Awards \$3.6 Million in Grants to Scientists in Chemistry, Physics and Astronomy: Awards Promote Research at Primarily Undergraduate Institutions and Encourage Ph.D.-Granting Institutions to Excel at Both Teaching and Research*,” 6/3/05; “*Research Corporation Announces Fall 2005 Awards*,” 11/21/05]

F. 691a 2006-2012 [Includes “*Research Corporation Awards \$4 Million in Grants for Scientific Research and Education*,” 5/26/2006; “*Research Corporation Announces 2008 Cottrell College Science Awards*,” 6/23/2008; “*Research Corporation Announces 2008 Cottrell Scholars*,” 5/3/2008; “*Research Corporation, the Nation’s Second-oldest Foundation, Changes its Name for the First Time*,” 11/7/2008; “*RCSA Announces New Funding Initiative to Encourage Research Collaborations at Primarily Undergraduate Institutions*,” 2/2/2009; “*Research Corporation for Science Advancement Announces a New Book by Sheila Tobias and Anne Baffert, Entitled Science Teaching as a Profession: Why It Isn’t, How It Could Be*,” 5/6/2009; “*Research Corporation for Science Advancement Announces 2009 Cottrell Scholar Awards*,” 6/1/09; “*Major Research Initiative, Designed to Accelerate 21<sup>st</sup>-Century Transformational Science, Will Initially Focus on Solar Energy*”

*Conversion*,” 6/16/09; “Research Corporation for Science Advancement Announces August 17<sup>th</sup> Deadline for Pre-proposals for Grant Awards through Scialog, a Major Research Initiative Designed to Accelerate 21<sup>st</sup>-Century Transformational Science,” 8/3/09; “New Publication from RCSA Provides, For the First Time, Research-based Evidence of the Personal and Professional Value of Undergraduate Research,” 3/3/2010; “Martha Gilliland Named Vice President of RCSA,” 5/3/2010; “RCSA Announces \$2 Million in 2010 Cottrell College Science Awards,” 5/21/10; “RCSA Convenes Award-winning Early Career Scientists to Discuss Giving Greater Value to Undergraduate Science Education,” 7/12/10 “RCSA to Hold a Week-long Science Dialog—“Scialog”—on the Potential for Transformative Change in Solar Energy Conversion from October 12 to 15, 9/9/10; “Speeches by World-renowned Scientists to be Streamed Live from Historic ‘Scialog’ Conference on Solar Energy Conversion,” 10/7/2010; “RCSA Congratulates Richard Heck and Ei-Ichi Negishi—Two Former Grantees of the Foundation—For Winning the Nobel Prize in Chemistry (Note: This press release contained incorrect information: RCSA never funded Richard Heck), 10/7/2010; “Speeches by World-renowned Scientists Available Online,” 11/16/2010; “Research Corporation for Science Advancement Announces Fall 2010 Cottrell Scholar Awards,” 12/6/2010; “Scientists Receive Additional Funding for Innovative Projects in Solar Energy Research,” 12/9/2010; “RCSA Publishes New Book by Award-winning Harvard University Undergraduates Designed to Encourage High School Students Interested in Scientific Research,” 1/31/2011; “Research Corporation for Science Advancement Announces Scialog Fellows,” 5/11/2011; “Research Corporation for Science Advancement Announces \$1.8 Million in Spring 2011 Cottrell College Science Awards,” 5/18/2011; “Cottrell Scholars Collaborative Announces Its Leadership,” 7/29/2011; “Leaders in Science Join Upcoming Celebration of the 100<sup>th</sup> Anniversary of the Oldest Science Foundation in America,” 12/6/2011; “Science Foundation Awards Collaborative Grants in Solar Energy Conversion,” 1/4/2012; “America’s Oldest Science Foundation, Celebrating its 100<sup>th</sup> Anniversary, Announces the 10 Colleges That Have Been Awarded the Most Research Grants in its History,” 1/17/2012; “Growing Scientists at America’s Top Liberal Arts Colleges,” 1/24/2012; “Nation’s Oldest Science Foundation Celebrates 100<sup>th</sup> Anniversary,” 2/16/2012; “Four Colleges Win Multi-investigator Grants through RCSA’s Cottrell College Science Awards,” 6/20/2012; “Research Corporation for Science Advancement Announces Cottrell College Science Awards,” 6/21/2012; “Research Corporation for Science Advancement Announces Cottrell College Science Awards,” 6/21/2012; “Investigation, Education Cited in Award for Astronomy Researcher,” University of Toledo news blog, July 9, 2012; “Chemistry Professor Receives National Research Award,” Hendrix College press release, July 10, 2012; “Closing the Gap in STEM Education: STEM Solutions Summit 2012,” U.S. News, July 12, 2012; Student-faculty Team Works to Understand Causes of Mad Cow, Alzheimer’s and Parkinson’s Diseases,” Lafayette news, July 13, 2012; “Astronomy Researchers Receives Prestigious Award for Investigation, Education,” University of Toledo news blog, July 19, 2012; “Eric Hudson of UCLA Receives Prestigious Cottrell Scholar Award for Science Research and Teaching,” UCLA Department of Physics & Astronomy newsletter, July 19, 2012; “Cottrell Grant to Aid Materials Science Research,” Harvey Mudd College press release, July 20, 2012; “UT Professor Wins Scholarship Award,” ToledoBlade.com, July 23, 2012; “The Large Synoptic Survey Telescope Reaches a Major Milestone in Space Exploration”; “Science Foundation with Ties to Bowdoin Turns 100,” bowdoindailysun.com, February 15, 2012; “Professor is Working to Improve Solar Panels,” mercedsunstar.com, February 22, 2012; Profiles of CCSA awardees sent out as press releases: Abby R. O’Connor of The College of New Jersey; Amy Lytle of Franklin and Marshall College; Benjamin C. Gorske of Bowdoin College; Amy L. Lane of University of North Florida; Andrew Mitchell of Illinois State University; Christopher C. Marvin of Hendrix College; Corina Maeder of Texas State University, San Marcos; David J. Gorin of Smith College; James Wollack of St. Catherine University; David A. Rider of Western Washington University; David Hanneke of Amherst College; Joseph Caron of College of Charleston; Jun-Hyun Kim of Illinois State University; Kerry Roubier of Kenyon College; Kristin Michelle Slade of Hobart and William Smith Colleges; Justin K. Hines of Lafayette College; Klebert Feitosa of James Madison University; Kristine Nolin of University of Richmond; Mark R. Ams of Allegheny College; Michael D. Bridges of California State University, Fullerton; Mishkatul Bhattacharya of Rochester Institute of Technology; Megan E. Bolitho of University of San Francisco; Mike Twiner of University of Michigan, Dearborn; Nicholas Salzameda of California State University, Fullerton; Peifang Tian of John Carroll University; Lisa E. Prevette of University of St. Thomas; Sharon Gerbode of Harvey Mudd College; Prashanth Jaikumar of California State University, Long Beach; Shannon O’Leary of Lewis and Clark College; Swapam Jain of Bard College; Tania Betancourt of Texas State University, San Marcos; William Collins of Fort Lewis College; William Collins of Fort Lewis College; Fr. Eric J. Watson SJ of Seattle University; Tatiana Prytkova of Chapman College; David Rupke of Rhodes College; and Heather Abbott-Lyon of Kennesaw State University; ; “Cross Campus,” Yale Daily News, April 16, 2012; “Organic Chemistry Profs Receive Awards: Prof. Ganem and Prof. Dichtel Recognized for Their Achievements,” Cornell Daily Sun, April 18, 2012; “Prof. Hutchinson Wins Cottrell Scholar Award,” Hutchinson Group news, April 19, 2012; “William Dichtel Receives Cottrell Scholar Award,” ChronicleOnline, April 23, 2012; “Catalyst for

Change," *Hendrix Magazine*, Spring 2012 issue; "College of Wooster Scientists Receive Grant to Study Microbial Degradation of Antidepressants," *College of Wooster*, July 25, 2012; "Wooster Scientists Receive Grant to Study Microbial Degradation of Antidepressants," *College News*, July 26, 2012; "College of Wooster Students Spend Portion of Their Summer Conducting Research," *UPublish*, July 26, 2012; "Wooster Students Spend Portion of Their Summer Conducting Research," *The College of Wooster press release*, July 27, 2012; "Three Professors Awarded \$100,000 to Fund Collaborative Study of Enzymes with Students," *College News*, July 30, 2012; "Grant Awarded to Dr. Christian Laing," *Wilkes University press release*, July 31, 2012; "Chemistry Professor Kristine Nolin Receives Two-year, \$35,000 Grant to Study Bond-forming Reactions," *University of Richmond press release*, July 31, 2012; Recently funded, *University of Denver Natural Sciences & Mathematics newsletter*, n.d.; *Welcome to the CCE Division, Caltech Division of Chemistry and Chemical Engineering*, n.d.; "Professor Geoff Hutchinson Receives a 2012 Cottrell Scholar Award," *University of Pittsburgh Department of Chemistry*, n.d.; ]

F. 691b 2013- [Includes "Research Corporation for Science Advancement Announces Leadership Transition, As It Enters Its Second Century: With Centennial Year Celebrations Completed, RCSA President James M. Gentile Has Decided to Return to Teaching," January 15, 2013; "Research Corporation for Science Advancement Announces 2013 Cottrell Scholars," February 25, 2013; ]

## **BOX 54, F. 692-738**

### **Record series VII: Publications**

#### **Publications, about Research Corporation**

- F. 692 "Contribution from the chemical laboratory of the University of California: Some of the properties of liquid hydriodic Acid" by R.S. Norris and F.G. Cottrell. Published in *The American Chemical Journal*, 1896
- F. 693 "On the heat of solution of liquid hydriodic acid" by F.G. Cottrell. Published in *The Journal of Physical Chemistry*, 1898
- F. 694 "Contributions from the chemical laboratory of the University of California: Note on the action of liquid hydriodic acid on ethyl ether" by F.G. Cottrell and Roy Ravone Rogers. Published in *The American Chemical Journal*, 1899
- F. 695 "On the solubility of manganous sulphate" by F.G. Cottrell. Published in *The Journal of Physical Chemistry*, 1900
- F. 696 "Review of physical chemistry" by F.G. Cottrell. Published in *The Journal of the American Chemical Society*, 1904
- F. 697 "The liquid air plant of the chemistry department, University of California" by F.G. Cottrell. Published in *The California Journal of Technology*, 1905
- F. 698 "On air liquefiers" by F.G. Cottrell. Published in *The Journal of Physical Chemistry*, 1906
- F. 699 "On crystalline habit" by F.G. Cottrell. Published in *The Journal of Physical Chemistry*, 1906
- F. 700 "Review: Recent progress in physical chemistry" by F.G. Cottrell. Published in *The Journal of the American Chemical Society*, 1907
- F. 701 "Review: Recent progress in physical chemistry" by F.G. Cottrell. Published in *The Journal of the American Chemical Society*, 1910; "Electrostatic ore separation." Published in *Metallurgical and Chemical Engineering*, January-December issue, 1910.
- F. 702a "Cottrell system of fume condensation," author not cited. Published in *The Engineering and Mining Journal*, October 1911
- F. 702b "The electrical precipitation of suspended particles" by F.G. Cottrell. Published in *The Journal of Industrial and Engineering Chemistry*, 1911
- F. 702c "Electrical fume-precipitation" by F.G. Cottrell, San Francisco, California. Presented at meeting of the American Institute of Mining Engineers, February 1912. Published by the American Institute of Mining Engineers, ca. 1912
- F. 703 "Mineral losses in gases and fumes" by F.G. Cottrell. Published in *The Journal of Industrial and Engineering Chemistry*, March 1912
- F. 704 Portion of article mentioning establishment of Research Corporation, *The Engineering and Mining Journal*, October 12, 1912
- F. 705 "The Research Corporation: An experiment in public administration of patent rights" by F.G. Cottrell. Reprint from: Original communications, Eighth International Congress of Applied Chemistry. New

York meeting, October 12, 1912 and Reprinted from the *Journal of Industrial and Engineering Chemistry*, December 1912

F. 706 “Problems in smoke, fume, and dust abatement” by F.G. Cottrell. Published in the Annual Report of the Smithsonian Institution, 1914

F. 707 “Some reactions of liquid anhydrous ammonia and acetylene” by F.G. Cottrell. Published in *Journal of Physical Chemistry*, 1914 and “The problem of smelter smoke” by F.G. Cottrell. Published in Transactions of the Commonwealth Club, San Francisco, California, 1914

F. 708 “Interesting Westerners: The enemy of the smoke nuisance” by Riley E. Scott. Published in *Sunset, the Pacific Monthly*, November 1914

F. 709a “The Cottrell Dinner.” Published in *The Engineering and Mining Journal*, January 23, 1915; “The Cottrell System’s Commercial Applications Presented to the American Institute of Electrical Engineers—Its Relation to the Iron Industry.” Published in *The Iron Age*, Vol. XCV, Jan.-June, 1915.

F. 709b “Practical applications of electrical precipitation and progress of Research Corporation” by Linn Bradley. For presentation to the 3<sup>rd</sup> Midwinter Convention of the American Institute of Electrical Engineers, New York, February 1915

F. 709c “Electrical precipitation: Historical sketch” by F.G. Cottrell. Introductory address delivered to the 3<sup>rd</sup> Midwinter Convention of the American Institute of Electrical Engineers, New York, February 19, 1915.

F. 710 “Bureau of Mines and Insurance Team Mates” article including speech by F.G. Cottrell, published in *The Daily Field*, October 8, 1915. “Solution of smoke, fume and dust problems by electrical precipitation” by Linn Bradley. Reprinted from *Metallurgical & Chemical Engineering*, December 1, 1915

F. 711 “Scientific events: The Research Corporation.” Published in *Science*, August 10, 1917

F. 712 “The corporation which forbids itself to pay dividends,” *The Sun*, July 24, 1917

F. 713a “Dr. Cottrell, smoke wizard, makes rich gift to nation,” *The Sun*, September 2, 1917

F. 713b “Turning smoke into money: The origin and development of the Cottrell Electric Precipitation,” by Robert H. Moulton. Published in *Scientific American*, July 20, 1918; “Helium in natural gas” by Colonel G.A. Burrell. Published in *Natural Gas and Gasoline Journal*, January 1919. “Our mineral resources: How the stimulus of war demands developed old resources and discovered new ones” by Theodore MacFarlane Knappen. Published in *The American Review of Reviews*, January 1919; “Cheaper oxygen coming.” Published in *The Chemical Engineer*, March 1919; “Production of helium for use in airships.” Published in *Aviation and Aeronautical Engineering*, August 1, 1919. “The Interallied Chemical Conference.” Published in *Science*, September 5, 1919

F. 713c “Interallied Chemical Conference in Paris,” published in *The Journal of Industrial and Engineering Chemistry*, July 1919; “The director of the Bureau of Mines.” Published in *Science* magazine, May 14, 1920. “G. Cottrell succeeds Van. H. Manning as Director of Bureau of Mines.” Published in *Mining and Metallurgy*, June 1920. “Willard Gibbs Medal Award,” with presentation by W.R. Whitney and medal address by F.G. Cottrell. Published in *The Journal of Industrial and Engineering Chemistry*, July 1920

F. 714 “The romance of invention-XIV: Cottrell—Catalyser,” by C.H. Claudy. Published in *Scientific American*, July 3, 1920; “Took riches from air for humanity’s benefit.” Published in *Compressed Air Magazine*, December 1920.

F. 715 “Eliminating waste and nuisance in smoke, fume and gas” by P.E. Landolt, Chemical Engineer, Research Corporation. Reprinted from *Chemical and Metallurgical Engineering*, August 31, 1921

F. 716 “Electrical precipitation in retrospect,” by Walter A. Schmidt. Reprint from *Industrial and Engineering Chemistry*, October 1924

F. 717 “The award of the Research Corporation prizes,” reprinted from *The Scientific Monthly*, December 1931

F. 718 “Patent experience of the Research Corporation,” by F.G. Cottrell. Published in *Transactions of the American Institute of Chemical Engineers*, 1932

F. 719 “The protection of patents of scientific discoveries,” by Joseph Rossman, F.G. Cottrell, A.W. Hull and A.F. Woods. An occasional publication of the American Association for the Advancement of Science, published as a supplement to *Science*, January 1934

F. 720 “Dr. Cottrell recipient of the Washington Award” with a note by H.E. Howe of the *Journal of Industrial and Engineering Chemistry*. Published in *The Scientific Monthly*, April 1937



- F. 721 “Lawrence, ‘atom-smasher,’ wins award; Bridgman also honored for scientific work,” source unknown, June 1937
- F. 722 “The social responsibility of the engineer,” by Frederick Gardner Cottrell, presented at the Western Society of Engineers Meeting, Chicago, February 1923; published in *Journal of the Western Society of Engineers*, April 1937 and in *Science*, June 1937
- F. 723 “Life begins with vitamins” by William L. Laurence, published in *Ladies Home Journal*, July 1941
- F. 724 “Morale in a test tube” by Jeff Kobler and James Rorty, published in *Saturday Evening Post*, November 1941; and *Modern Americans in Science and Invention* by Edna Yost, published by Frederick A. Stokes Company, New York and Toronto, 1941. Contains chapters on both Frederick Gardner Cottrell and Robert R. Williams.
- F. 725 “The Perkin Medal” awarded to Robert R. Williams, reprinted from *Industrial and Engineering Chemistry*, April 1947
- F. 726 “Frederick Gardner Cottrell 1877-1848,” by Vannevar Bush, published in *National Academy Biographical Memoirs—Vol. XXVII*, 1948
- F. 727 *New Trailblazers of Technology* by Harland Manchester, published by Charles Scribners Sons, New York, 1976. Article entitled “He lives a thousand lives,” about Frederick Gardner Cottrell. Also, reprint condensed from *Argosy* (March 1948), published in *Reader’s Digest*, April 1948 [Includes note commenting on article, from C.H. Schauer to J.W. Hinkley]
- F. 728 “Frederick Gardner Cottrell: 1877-1948” by Farrington Daniels, published in *Science*, November 11, 1949
- F. 729 “Frederick Gardner Cottrell (1877-1948)” by Farrington Daniels, reprinted from *Year Book of the American Philosophical Society*, 1950
- F. 730 “How firm a foundation?” by Charles H. Schauer, reprinted from *Physics Today*, October 1950
- F. 731 “Research Corporation (1912-1952): Dedicated to Progress in Education and Science,” by Dr. Joseph Warren Barker. Presented to and published by the Newcomen Society in North America, 1952
- F. 732 “Research Corporation,” by J. William Hinkley, President. Published in *American Institute of Biological Sciences Journal*, 1957
- F. 733 “It is more blessed . . .,” an editorial by Charles H. Schauer, published in *American Journal of Physics*, September 1961
- F. 734 “Research Corporation: Experiment in administration of patent rights for the public good” by Charles H. Schauer, published in *Research Management*, 1962
- F. 735 “Grants for staff in small colleges” by Charles H. Schauer. Published in the *American Mathematical Monthly*, August-September 1964
- F. 736 “The endowment of science by invention” by Willard Marcy, published in *Research Management*, 1966
- F. 737 “Community Mothercraft Centers: A practical program for educating mothers in child-feeding and hygiene in the emerging nations” by Kendall W. King, published by Virginia Polytechnic Institute, October 1967
- F. 738 “Invention repays science: The vision of Frederick Gardner Cottrell” by James S. Coles, published in *The Chemist*, December 1968

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- F. 740 “Factors influencing student choice of college and course of study” by W. Rodman Snelling and Robert Boruch, published in *Journal of Chemical Education* [Report on study sponsored by Research Corporation], 1970
- F. 741 “Science graduates of private and selective liberal arts colleges” by W. Rodman Snelling, Robert F. Boruch and Nancy B. Boruch, published in *College and University* [Report on study sponsored by Research Corporation], 1971
- F. 742a “Nutritional status of middle and low income groups in the Dominican Republic,” special edition of *Archivos Latino Americanos de Nutricion*, July 1972
- F. 742b “Electrostatic precipitation of fly ash reaches fiftieth anniversary” by Dennis Carlton-Jones of Research-Cottrell Inc. Published in the *Journal of the Air Pollution Control Association*, November 1974

- F. 743 “Robert R. Williams (1886-1965)—A biographical sketch” by Richard S. Baldwin. Published in *The Journal of Nutrition*, January 1975
- F. 744 “Research in the undergraduate college: Faculty involvement in research benefits both students and faculty” by Jack W. Powers and David G. Black Jr., published in *Journal of College Science Teaching*, January 1976
- F. 745 Cover of *Journal of Chemical Education* [Features Research Corporation inventors as part of the bicentennial theme “Chemistry in America”] November 1976
- F. 746 “Elizabeth Lee Hazen 1885-1975” by W. Stevenson Bacon, published in *Mycologia*, September-October 1976
- F. 747 “Patent pitfalls” articles from *Research and Invention*, Research Corporation quarterly newsletter. Reprinted by The Research Foundation of State University of New York, with permission of Research Corporation, ca. 1977
- F. 748 “Frederick Gardner Cottrell 1877-1948” by Harry J. White, published in *APCA Journal*, 1977
- F. 749 “Research as a vital element in the undergraduate college” by Jack W. Powers and David G. Black Jr., published in *Journal of Chemical Education*, September 1977
- F. 750 “Centenary of Frederick Gardner Cottrell” by Harry J. White, published in *Journal of Electrostatics*, 1977/1978
- F. 751 “Foundations and basic research” letter to the editor written by James S. Coles, published in “Viewpoints,” *Foundation News*, November/December 1978
- F. 752 “Research Corporation: A winning combination,” published in *Foundation News*, May/June 1980
- F. 753 “Scientific history: Robert R. Williams Papers,” published by the Library of Congress, Acquisitions, Manuscript Division, 1981
- F. 754 “Funding basic research,” published in *Chemical Marketing Reporter*, June 1981
- F. 755 “Science and the private sector” by James Stacy Coles, 1981
- F. 756 “Foundations, industry, and the care and feeding of academic research” by John P. Schaefer. Published in *Foundation News*, July/August 1982
- F. 757 “University independence in an era of corporate support” by W. Stevenson Bacon, *Grants Magazine*, December 1982
- F. 758a “Universities, professors, and patents: A continuing controversy” by Charles Weiner, *Technology Review*, February/March 1986; “Agents vie to help universities move from labs to marketplace” by Gilbert Fuchsberg. Published in *The Chronicle of Higher Education*, September 20, 1989; *Physical Chemistry from Ostwald to Pauling: The Making of a Science in America* by John W. Servos. Published by Princeton University Press, Princeton, N.J., 1990; “Construction to proceed on Mount Graham Observatory.” Published in *The Chronicle of Higher Education*, June 10, 1992; “The U of Arizona renames the Columbus telescope.” Published in *The Chronicle of Higher Education*, May 12, 1993.
- F. 758b “New degrees for today’s scientists” by Sheila Tobias and Daryl E. Chubin. Published in *The Chronicle of Higher Education*, July 12, 1996; “Research Corporation supports basic research in academia,” edited by Barrett H. Ripin, American Physical Society, 1997; *Chemical Achievers* [Contains brief biography of Cottrell] by Mary Ellen Bowden, published by the Chemical Heritage Foundation, 1997
- F. 759a “The limits of ‘eco-efficiency’: Arsenic pollution and the Cottrell Electrical Precipitator in the U.S. copper smelting industry,” by Timothy LeCain. Published in *Environmental History*, Vol. 5, No. 3, July 2000; and “Patenting and licensing university inventions: Lessons from the history of the Research Corporation,” by David C. Mowery and Bhaven N. Sampat. Published in *Industrial and Corporate Change*, Vol. 10, No. 2, 2001; “More women teach science in college....” Published in *The Chronicle of Higher Education*, June 6, 2001; “More women are teaching science at undergraduate colleges, study finds” by Susannah Dainow. Published in *The Chronicle of Higher Education*, June 25, 2001.
- F. 759b “On a mountaintop, a fight between science and religion” by Sarah Hebel. Published in *The Chronicle of Higher Education*, June 28, 2002. “Research Corporation helps young scientists get going,” by Pamela Zerbinos, American Physical Society, 2003
- F. 759c *Ostwald’s American Students* (Contains information on Cottrell’s Ph.D. research under Ostwald at University of Leipzig) by John T. Stock, published by Plaidswede Publishing, Concord, New Hampshire, 2003

- F. 760 “John Schaefer profile: Shooting for the stars” by Jeffrey Mervis. Published in *Science*, Vol. 305, no. 5688, August 27, 2004
- F. 761a “Letters” in response to August 27, 2004 article in *Science* (see F. 760). Published in *Science*, Vol. 306, no. 5699, November 12, 2004
- F. 761b *Sur la route de l'électricité* by Pierre Langlois. Published by Éditions MultiMondes, Quebec, Canada, 2005 [Features chapter 2-21 titled “Moin de Pollution Grâce à L'électrostatique” in which Frederick Gardner Cottrell and his work are discussed. In French]; “One Hundred Years of American Women in Biochemistry” by Adele J. Wolfson, *Biochemistry and Molecular Biology Education*, Vol. 34, No. 2, pp. 75-77, 2006 [Note: This article erroneously credits Brown and Hazen for being instrumental in the creation of RCSA.]
- F. 761c “Sticky Stuff,” episode of Modern Marvels, television show by A&E Television Networks. Cottrell and the electrostatic precipitator are featured in this show, 2007; “Federal programs to improve science education are not well reviewed, panel finds” by Burton Bollag. Published in *The Chronicle of Higher Education*, May 18, 2007.
- F. 761d “Scientific Stagnation” by Jill Gregorie and Jordan Zyglis. Published in *Generation*, a publication of the student body of University of Buffalo, November 13, 2007 and *Research Teams and Partnerships; Trends in the Chemical Sciences: Report of a Workshop*, National Research Council (US) Chemical Sciences Roundtable, Washington (DC): National Academies Press (US); 1999. ISBN: 0-309-06827-4; PMID: 20669502. Chapter one “The Evolving Structure of University-Industry Collaboration in the United States: Three Cases,” by David C. Mowery, features discussion of Research Corporation patent licensing activities.
- F. 761e “Multidisciplinary Research Funding” by William G. Schulz, Published in *Chemical & Engineering News Online*, March 24, 2008 and “Risky Research: The Sky’s the Limit” by Virginia Gerwin. Published in *Nature*, July 18, 2012; miscellaneous announcements of Jim Gentile’s resignation as president of RCSA, 2013;

## **BOX 56, F. 762-775**

### ***News clippings and Miscellaneous about Research Corporation***

- F. 762 1940s [Obituaries for F.G. Cottrell; miscellaneous newspaper clippings]
- F. 763 1950s [“Down with beriberi” from *Time*, April 30, 1951; reviews of *Cottrell: Samaritan of Science* by Frank Cameron; obituaries for Howard Poillon; press about West German grants program; miscellaneous newspaper clippings]
- F. 764 1960s [Miscellaneous newspaper clippings]
- F. 765 1971-1974 [Includes “Fungus infections that itch, torment and kill” by Steve Bacon, *Science Digest*, October; Electrostatic precipitation of fly ash reaches fiftieth anniversary” by Dennis Carlton-Jones, *Journal of the Air Pollution Control Association*, November; miscellaneous newspaper clippings]
- F. 766 1975 [“Battling world famine: smaller foundations can help” by Frederick Willman, *Foundation News*, July/August; “Malnutrition: don’t just stand there” by Kendall W. King, *Chemical Technology*, July; “Haiti’s ‘save the children’ plan” by Richard S. Baldwin and Kendall W. King, *Life and Health*, June; “Stack gas scrubber makes the grade,” *Chemical and Engineering News*, January 27; miscellaneous newspaper clippings]
- F. 767 1976-1977 [“Electrostatic sprayer reduced pesticide pollution in crops” by Evan Powell, *Popular Science*; “A candid conversation with Kendall W. King” by Warren H. Strother, *Context*; “The Nobel factory that flourishes in Manhattan” by Gene Bylinsky, *Fortune*, April 1976; miscellaneous newspaper clippings]
- F. 768 1978 [“The laser’s roots: Townes recalls the early days,” *Laser Focus*, August; miscellaneous newspaper clippings]
- F. 769 1979 [“Electrostatic sprayer gives plants protection,” *NY Times*, Sept. 22; “Research Corp seeks to fund more physics,” *Physics Today*, Aug.; “New deacidification process to be used to stop book deterioration,” *Publishers Weekly*, n.d.; “Same-day blood test for cancer wins U.S. patent,” *Medical Group News*, July/Aug.; “Cooling tower firm hiring replacements,” *Today*, Cocoa, Fla., April; miscellaneous newspaper clippings.]
- F. 770 1980 [“Research Corporation: A winning combination,” *Foundation News*, May/June; “Protective coating for coal,” *NY Times*, Aug. 2; “Invention royalties help support research programs,” *Penn State Intercom*, Aug. 7; “Down the highways and byways with American philanthropy,” *Foundation News*, Jan.-Feb.; “Less painful vaccine for rabies may hit market later in 1980,” *Wall Street Journal*, Jan. 28; “Recognition for employed inventors,” *Chemical and Engineering News*, May 26; etc.]

F. 771 1981 ["Universities take to the market place," *New Scientist*, Dec. 3; "Garden watch," *Newsday*, Sept. 27; "New head for Research Corp," *Science & Government Report*, July 15; "Young astronomers, in search of an observatory, start their own," *Smithsonian*, July; "Funding basic research," *Chemical Marketing Reporter*, June 1; "Exploring the process and discovery of science," *Wall Street Journal*, May 26; miscellaneous newspaper clippings.]

F. 772 1982 ["Firm seeks more patent money for academia" *Chemical and Engineering News*, July 26; reviews of *Fungus Fighters* by Richard S. Baldwin; announcements of the appointment of John Schaefer as president of Research Corporation; miscellaneous newspaper clippings]

F. 773 1983 [Articles about "Fish chewies" licensed by Research Corporation; "After almost half a century, the father of the computer gets a celebration" [about Atanasoff], *Chronicle of Higher Education*, Oct. 19; miscellaneous newspaper clippings]

F. 774 1984 ["The staffs of life" by E.J. Kahn, *The New Yorker*, June 18 (article about Jones-Mangelsdorf); "A bloom in the desert," *Northwest Orient*, March; "Hackers beware! Coding device aids computer security," *Tucson Business Chronicle*, Aug. 6; "Colleges turn research into cash," *San Francisco Chronicle*, May 29; miscellaneous newspaper clippings]

F. 775 1985 [Profiles in Chemistry, "A matter of life and breath: Frederick Gardner Cottrell and the Research Corporation" by Albert B. Costa, *Journal of Chemical Education*, February; miscellaneous newspaper clippings]

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F. 776 1986 ["Physics in the colleges" by Jerry Gollub and Neal Abraham, *Physics Today*, June; "Biotechnology: The university-industrial complex" by Martin Kenney, Yale University Press; "Luck plays key part in picking patents," *Arizona Daily Star*, Dec. 21; "Preventing infections of bladder," *NY Times*, Sept. 20; miscellaneous newspaper clippings]

F. 777 1987 ["Europe proposes new deal for campus capitalists," *New Scientist*, Dec. 17; "The mirror maker," *Discover*, Dec.; "Treating cancer with endorphins," *Chemical Week*, Sept. 2; "New group to seek commercial applications for academic research," *Chronicle of Higher Education*, Aug. 12; announcements of the formation of Research Corporation Technologies; miscellaneous newspaper clippings]

F. 778 1988 ["Acridine groups used in molecular tweezers," *Chemical and Engineering News*, June 27; "Wet precipitators tackle incinerator stack gases," *Chemical Week*, May 25; "Artificial blood vessels," *NY Times*, Mar. 5; "Research partnerships give high school teachers opportunity," *Science Education News*, Feb.; miscellaneous newspaper clippings]

F. 779 1989 ["John Schaefer: Renaissance at TEP," *Arizona Trend*, Nov.; "Agents view to help universities move research from labs to marketplace," *Chronicle of Higher Education*, Sept.; "Environmentalists needn't be combative enemies," *Tucson Citizen*, Aug. 22; "Bessel beam makes light of diffusion," *The Engineer*, Aug.; miscellaneous newspaper clippings]

F. 780 1990 ["Undergraduate education and research," *Issues in Teaching and Learning*, Fall; "Researchers develop new carbon form," *Ceramic Industry*, Nov.; miscellaneous newspaper clippings]

F. 781 1991-1992 ["Partners in Science' program expands," *Chemical and Engineering News*, Sept. 9, 1991; "Summer research program expands," *Science Education News*, Sept 1991; "Chemistry program receives \$510,000," *Summer Times*, June 17, 1991; "Doing science off the beaten path at liberal arts schools," *The Scientist*, Nov. 23, 1992; "Program unites teachers and scientists in research teams," *NSTA Reports*, Oct./Nov. 1992; "Research Corporation saves Columbus Project," *UofA Foundation Report*, Fall 1992; miscellaneous newspaper clippings]

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F. 785 1997-1998 ["Private support of science," *Chemical and Engineering News*, June 16, 1997; "Mothers of invention" (includes Brown and Hazen) *Washington Post*, Mar. 12, 1997; "Research Corporation supports basic research in academia," APS News, Jan. 1997; "Research hones undergraduates," *Chemical and Engineering News*, Aug. 3, 1998; Partners in Science; miscellaneous newspaper clippings]

F. 786 1999-2005 ["Millennial musings," *Chemical and Engineering News*, 1999; miscellaneous newspaper clippings; Knowledge flows and knowledge collectives: *Understanding the role of science and technology policies in development/Volume 1: Knowledge flows, innovation, and learning in developing countries*, a project of the Global Inclusion Program of the Rockefeller Foundation, <[www.isme.info/documenti/CSPO\\_Rockefeller\\_Vol1.pdf](http://www.isme.info/documenti/CSPO_Rockefeller_Vol1.pdf)>, excerpt, ca. 2002]

F. 787a 2006-2008 ["What works-Personal reflections: Shaping a scholarly journal" PKAL Publication, 2006; "What lasts-A story from the PKAL Community: People you meet along the way" by James Gentile, PKAL Publication, 2007; "Let's ensure a skilled work force in America" Guest Opinion by James Gentile, published in *Arizona Daily Star*, February 14, 2007; "What works-PKAL Café Scientifique: Reflections on the January 2008 PKAL "Café Scientifique": New paradigms for undergraduate science education" by James Gentile, PKAL publication, 2008; "Laying a science foundation" Viewpoint by James Gentile, published in *Arizona Republic*, February 24, 2008; "Multidisciplinary research funding," published in *Science*, March 24, 2008; "Overhaul of energy possible but pricey" by Richard Wiener, published in *Arizona Republic*, August 12, 2008; Posting, written by James M. Gentile, about the appointment of Steven Chu to U.S. Secretary of Energy, published in *Huffington Post*, December 22, 2008]

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F. 787e 2012 [“University of Oregon Professor is Awarded Collaborative Grant in Solar Energy Conversion,” *nanotech-nom.com*, January 4, 2012; “UC Merced Prof Major Contributor to National Research Team’s Work on Solar Panels,” *mercedsunstar.com*, January 4, 2012; “UA Professor Awarded Grant for Uber-Geeky Solar Energy Research,” *tucsoncitizen.com*, January 10, 2012; “Western Professor Gains Grant, Starts Research,” *westernfrontonline.net*, January 13, 2012; “Learning Already from the 2012 Intel Science Talent Search,” Commentary by James M. Gentile, published in the *Huffington Post*, January 18, 2012; “Scientists Create Novel RNA Repair Technology,” *www.sciencedaily.com*, January 18, 2012; “Plass Receives 5-year NSF Award,” *collegenews.org*, January 19, 2012; “Hope Tops List in Support from Research Corporation,” Hope College news, January 24, 2012; “Pomona College a Top Recipient of RCSA Science Research Grants,” *www.pomona.edu*, January 25, 2012; “Science Education Experts Respond to Obama’s Speech,” *Scientific American*, January 25, 2012; “Fractals, Nature’s Best-kept Secret, Could Help Solve Energy Crisis,” *www.theaggie.org*, January 31, 2012; “College Recognized by Research Corporation for Science Advancement,” Amherst alumni news, February 1, 2012; “America’s Oldest Science Foundation, Celebrating its 100<sup>th</sup> Anniversary, Announces the 10 Colleges That Have Been Awarded the Most Research Grants in its History,” *collegenews.org*, February 3, 2012; “PCAST Report: Launching the U.S. to Greater STEM Heights,” Commentary by James M. Gentile, published in the *Huffington Post*, February 15, 2012; “Arun Majumdar Should Be Confirmed as Undersecretary of Energy,” Commentary by James M. Gentile, published in the *Huffington Post*, February 23, 2012; “UC Merced Professor Awarded Collaborative Grant in Solar Energy Conversion,” *ucmercednews.blogspot.com*, February 24, 2012; “Santorum’s Stance on Global Warming Ignores ‘Real Science,’” guest column, Grand Rapids, Michigan news, February 27, 2012; “My Take: It’s Rick Santorum Who’s Practicing ‘Political Science,’” *Hollandsentinel.com*, February 29, 2012; “American Chemical Society and the Research Corporation for Science Advancement Host March 14 Capitol Hill Briefing,” American Chemical Society release, February 29, 2012; Advertisement in *Arizona Daily Star*, “Research Corporation: High risk + high reward = 40 Nobel Prizes,” by Teya Vitu, published in *BizTucson*, Spring 2012; “Daisuke Nagai (Assistant Professor of Physics) Has Been Named a 2012 Cottrell Scholar,” *Yale Daily News*, “Work of Southeast Professor Appears in Prestigious Scientific Journal,” Southeast Missouri State University press release, March 2, 2012; March 15, 2012; Tucson Festival of Books insert, March 2012; “Nagai, Galaxy Cluster Expert, Named 2012 Cottrell Scholar,” *Yale news*, March 19, 2012; “The Science Teacher’s Legacy,” Commentary by James M. Gentile, published in the *Huffington Post*, March 20, 2012; “Research Corporation Turns 100,” *Chemical and Engineering News*, April 9, 2012; “Basic Scientific Research and Its Transformational Potential,” Commentary by James M. Gentile, published in the *Huffington Post*, May 1, 2012; “Herzon, Chemist, Named 2012 Cottrell Scholar,” *Yale news*, May 7, 2012; “New University of Arizona Health Network Board Named,” *Arizona Daily Star*, May 7, 2012; “New UA Health Board Members Named,” *Inside Tucson Business*, May 11, 2012; “Dateline Pittsburgh,” *Post-Gazette.com*, May 13, 2012; “Schools That Should Teach America About Teaching Science,” Commentary by James M. Gentile, published in the *Huffington Post*, May 15, 2012; “Is High-risk Science Nuts or Brilliant?” *Discovermagazine.com*, May 15, 2012; “High-risk, High-reward Science: A Mega-watt Panel at the NY Academy of Sciences,” *Brainworldmagazine.com*, May 18, 2012; “Howard Hughes Medical Institute Initiative Promotes Science Education,” Commentary by James M. Gentile, published in the *Huffington Post*, May 30, 2012; “Research Corporation Grant to Shannon O’Leary,” Clark University news, May 2012; “Physics Professor Receives Research Corporation Grant,” Clark University news, June 4, 2012; “Professor Receives Honor,” *Indiana Gazette online*, June 9, 2012; “Bard College Faculty member Swapan Jain Awarded Grant for Research in Chemistry,” Bard College news, June 13, 2012; “Carl Wieman and the Challenge of Science Education,” Commentary by James M. Gentile, published in the *Huffington Post*, June 15, 2012; “100 Days of Science: Research Corp. Here a Key Science Backer,” *Arizona Daily Star*, June 18, 2012; “Cultural Inclusivity Key to STEM Approaches, Education Leaders Say,” *U.S. News*, June 28, 2012; “Norman Augustine: Leader Recognized for Character Education,” Commentary by James M. Gentile, published in the *Huffington Post*, June 29, 2012; “STEM Solutions Summit 2012: Focusing on the

Gaps,” Commentary by James M. Gentile, published in the *Huffington Post*, July 6, 2012; “Texas State Among Schools Winning Science Honors,” *San Marcos Daily Record*, July 8, 2012; “Leading Scholar-Educators Address Undergraduate Science Education,” Commentary by James M. Gentile, published in the *Huffington Post*, July 19, 2012; Commentary by James M. Gentile, published in the *Huffington Post*, July 24, 2012; “Prizing High-risk, High-reward Research,” Commentary by James M. Gentile, published in the *Huffington Post*, August 20, 2012; “Salute to Science Underscores its Importance to Arizonans,” *Arizona Daily Star*, September 2, 2012; “Accepting the Challenge of Continued U.S. Science Leadership,” Commentary by James M. Gentile, published in the *Huffington Post*, September 12, 2012; “Gender Bias and America's Science Preeminence,” Commentary by James M. Gentile, published in the *Huffington Post*, October 4, 2012; “Immigration, Science and Technology,” Commentary by James M. Gentile, published in the *Huffington Post*, October 24, 2012; “Gender Bias and the Sciences,” Commentary by James M. Gentile, published in the *Huffington Post*, November 1, 2012; “Gender Bias and the Sciences: Facing Reality,” Guest blog by James M. Gentile, published in *Scientific American*, December 4, 2012; “Crazy or Brilliant: Betting on High-Risk, High-Reward Science,” published in *Discover*, December 2012; “PCAST Report: The Future of U.S. Research,” Commentary by James M. Gentile, published in the *Huffington Post*, December 19, 2012; “Celebrate with EEF,” Ray Davies Lifetime Humanitarian Achievement Award presented to Research Corporation, 2012] F. 787f 2013 [Includes “Television Ads for Math and Science,” Commentary by James M. Gentile, published in the *Huffington Post*, January, 4, 2013; “Gentile retires from Research Corp.,” published in News & Notes, *Arizona Daily Star*, January 15, 2013; “Research Corp. president James Gentile to step down, return to academics,” published in *Inside Tucson Business*, January 18, 2013; ...]

#### **Publications, *Publications by Research Corporation***

- F. 788 “Research Corporation: Organized under the Laws of the State of New York,” 1917
- F. 789 “Research Corporation: An Engineering Foundation Organized to Transact Business for the Advancement of Science to which its Profits are Applied,” ca. 1920s
- F. 790 “Research Corporation: For the Administration of Inventions and New Industrial Processes in the Public Interest,” 1923
- F. 791 “Research Corporation: Founded for the Purpose of Administrating Inventions and New Industrial Processes in the Public Interest,” 1924
- F. 792 “Research Corporation: An Engineering Foundation Organized to Transact Business for the Advancement of Science to which its Profits are Applied,”
- F. 793 “Research Corporation: An Engineering Foundation Organized to Transact Business for the Advancement of Science to which its Profits are Applied,” 1931
- F. 794 *Research Corporation: Organized to Introduce Inventions into Use and Secure Funds for the Support of Scientific Research, A Review for the Period 1912-1945*, ca. 1945
- F. 795 *Grants-in-Aid of Scientific Research and Fields of Patent Interest: An Opportunity for Self-support and its Potential, the Potential of Science Itself*, 1947
- F. 796 *Research Corporation: Frederick Gardner Cottrell Grants to Smaller Institutions*, 1948
- F. 797 *Research in Small Colleges*, presented by J.W. Barker, president of Research Corporation, at the annual meeting of the Association of American Colleges, Cincinnati, Ohio, January 13, 1948 and published by Research Corporation, 1948
- F. 798 *Invention repays Research: Grants-in-Aid of Scientific Research and Service through Patent Management*, 1949

#### **Box 58, F. 799-824**

- F. 799 *Better Health through Better Rice*, Williams-Waterman Fund, 1950
- F. 800 *Long Shots in Science: How Research Corporation, a Non-Profit Foundation, Devotes the Earnings of Inventions to the Furtherance of Scientific Discovery*, ca. 1955
- F. 801 *Research Corporation: Fields of Activity*, 1952
- F. 802 *Research Corporation (A Foundation): Fields of Activity*, 1955
- F. 803 *Research Corporation (A Foundation): Fields of Activity*, 1958
- F. 804 *The Patent System*, ca. 1957-1958
- F. 805 *Activities of the Foundation*, 1960

- F. 806 *Research Corporation: The Foundation's First Fifty Years*, 1962
- F. 807 *Research Corporation 1912-1963*, 1963
- F. 808 *University Patent Management* by S. Blake Yates, 1963
- F. 809 *Twenty Five (sic) Years in Support of the Advancement of Science: An Evaluation of the Grants Programs of Research Corporation, 1945-1970*, 1970
- F. 810 *Science Invention and Society: The Story of a Unique American Institution*, 1972
- F. 811 *Evaluating and Patenting Faculty Inventions*, 1972
- F. 812 *From University to Industry: A Program for Technology Transfer: Putting Academic Inventions to Work*, 1973
- F. 813 Patents and the University Inventor, 1974 (reprinted in 1979 and 1984)
- F. 814 "Research Corporation: A Unique Nonprofit Institution Established in 1912 for the Advancement of Science and Technology," brochure, 1975; "Opportunities to Aid Science and Technology," ca. 1975
- F. 815 "Report of the President" by James S. Coles, reprint from the Research Corporation Annual Report, 1976
- F. 816 *Stimulating Invention Disclosures by Faculty Researchers: A Guide for the University Invention Administrator* by Willard Marcy, October 1978
- F. 817 *Macromers Technical Bulletin*. ca. 1982
- F. 818 Condensation of Research Corporation 1982 annual report, prepared for U.K. distribution, 1984
- F. 819 *Curb Science?* by John P. Schaefer. Promotional piece for the foundation, 1984
- F. 820 *Research Corporation*. Profile piece, 1984
- F. 821 "Putting Academic Inventions to Work," brochure about technology transfer, 1984, 1985, 1986; "Guide to University-Industry Research Agreements," prepared by the Society of Research Administrators, published with the assistance of Research Corporation, 1984
- F. 822 "About Research Corporation," brochure, 1986
- F. 823 *Research Corporation Technologies: Realizing the Potential of Inventions from Research*, published by Research Corporation Technologies, 1987
- F. 824 *At the Frontiers of Science: Progress Reports of Current Grants*, December 1988

#### **Box 59, F. 825-836**

- F. 825a *Gilbert Dalldorf and the Dalldorf Fellowship in Medical Mycology*, introduction by W. Stevenson Bacon and autobiographical memoir by Gilbert Dalldorf, 1991
- F. 825b Brochure "Advancing science since 1912," promoting Research Corporation for Science Advancement programs, 2011; update of brochure, 2012

#### **Annual Reports**

- F. 826 Annual Report of the President for the Year 1924-1927
- F. 827 Annual Report of the President for the Year 1931-1934
- F. 828 Annual Report of the President for the Year 1944
- F. 829 Annual Report, 1949-1951
- F. 830 Annual Report, 1952-1953
- F. 831 Annual Report, 1954-1955
- F. 832 Annual Report, 1956-1957
- F. 833 Annual Report, 1958-1959
- F. 834 Annual Report, 1960-1961
- F. 835 Annual Report, 1962-1963
- F. 836 Annual Report, 1964-1965

#### **Box 60, F. 837-842**

- F. 837 Annual Report, 1966-1967
- F. 838 Annual Report, 1968-1969
- F. 839 Annual Report, 1970-1971
- F. 840 Annual Report, 1972-1973
- F. 841 Annual Report, 1974-1975

F. 842 Annual Report, 1976-1977

**Box 61, F. 843-854**

F. 843 Annual Report, 1978-1979

F. 844 Annual Report, 1980-1981

F. 845 Annual Report, 1982-1983

F. 846 Annual Report, 1984-1985

F. 847 Annual Report, 1986-1987

F. 848 Annual Report, 1988-1989

F. 849 Annual Report, 1990, "The state of academic science" and 1991, "Achieving science literacy"

F. 850 Annual Report, 1992-1993, "Time, technology and scientific discovery: The long, often circuitous road between inspiration and application"

F. 851 Annual Report, 1994, and 1995, "Early support for U.S. science"

F. 852 Annual Report, 1996-1997

F. 853 Annual Report, 1998, "The Midas Touch: Do soaring endowments have any impact on college science?"; and 1999,

F. 854 Annual Report, 2000, "Research and excellence at undergraduate institutions" and 2001, "Research Corporation and the Large Binocular Telescope"

**Box 62, F. 855-864**

F. 855 Annual Report, 2002, "A history of grants programs at Research Corporation" and 2003, "America's private science foundations: Catalysts for change"

F. 856 Annual Report, 2004, "Exploring light: Optical sciences and the visual arts" and 2005, "Interdisciplinary research: Opportunities, obstacles and options"

F. 857a Annual Report, 2006, "Behind door No. 2: A new paradigm for undergraduate science education" and 2007, "President's message"

F. 857b Annual Report, 2008, "A Culture of Inquiry and Risk" and 2009, "Programs in Transition: A Year to Rededicate and Advance"

F. 857c Annual Report, 2010, "Investing in the Future" and 2011, "Risk and Reality"

**Books published by Research Corporation**

F. 858a-b *Cottrell: Samaritan of Science: The Biography of Scientist and Inventor F.G. Cottrell* by Frank Cameron. Two editions. First published by Country Life Press, Garden City, New York, 1952 (two copies); reprinted by Research Corporation, Tucson, Arizona, 1993 (two copies), Books

F. 859-862 *Cottrell: Samaritan of Science: The Biography of Scientist and Inventor F.G. Cottrell* [Includes letters of thanks upon receiving copies of the book from Dean Rusk, Warren Weaver], Correspondence, 1948-1954

F. 863 *Cottrell: Samaritan of Science: The Biography of Scientist and Inventor F.G. Cottrell*, Miscellaneous

F. 864 *Cottrell: Samaritan of Science: The Biography of Scientist and Inventor F.G. Cottrell*, Reviews

**Box 63, F. 865-874**

F. 865 *Williams-Waterman Fund for the Combat of Dietary Diseases: A History of the Period 1935 through 1955* by Robert R. Williams, Books, 1956

F. 866 *A Practical Guide to Combating Malnutrition in the Preschool Child: Nutritional Rehabilitation through Maternal Education (aka Guía Práctica para Combatir la Desnutrición en el Niño de Edad Preescolar)*, report of a Working Conference on Nutritional Rehabilitation or Mothercraft Centers, National Institute of Nutrition, Bogota, Colombia, March 1969. Published in English and Spanish, Books, 1970

F. 867 *Science in Liberal Arts Colleges: A Longitudinal Study of 49 Selective Colleges* by W. Rodman Snelling and Robert F. Boruch. Published by Columbia University Press for Research Corporation, Books, 1972

[Note: In 1989, Sheila Tobias was hired as a consultant to the foundation to write a series of papers on science and education. During the next six years, she wrote and/or co-wrote three books.]

F. 868 *They're Not Dumb, They're Different: Stalking the Second Tier*, by Sheila Tobias, 1990, Books

F. 869 *They're Not Dumb, They're Different: Stalking the Second Tier*, Comments by readers



- F. 870-872 *They're Not Dumb, They're Different: Stalking the Second Tier*, Correspondence, 1988-1997
- F. 873 *They're Not Dumb, They're Different: Stalking the Second Tier*, Manuscripts
- F. 874 *They're Not Dumb, They're Different: Stalking the Second Tier*, Miscellaneous

**Box 64, F. 875-893**

- F. 875 *They're Not Dumb, They're Different: Stalking the Second Tier*, Related Materials
- F. 876 *They're Not Dumb, They're Different: Stalking the Second Tier*, Reports
- F. 877 *They're Not Dumb, They're Different: Stalking the Second Tier*, Reviews of First Draft
- F. 878 *They're Not Dumb, They're Different: Stalking the Second Tier*, Reviews Published
- F. 879 *Revitalizing Undergraduate Science: Why Some Things Work and Most Don't* by Sheila Tobias; edited by W. Stevenson Bacon, 1992, Books
- F. 880 *Revitalizing Undergraduate Science: Why Some Things Work and Most Don't*, Comments by readers
- F. 881 *Revitalizing Undergraduate Science: Why Some Things Work and Most Don't*, Correspondence, 1991-1992
- F. 882 *Revitalizing Undergraduate Science: Why Some Things Work and Most Don't*, Miscellaneous
- F. 883 *Revitalizing Undergraduate Science: Why Some Things Work and Most Don't*, Related materials
- F. 884 *Revitalizing Undergraduate Science: Why Some Things Work and Most Don't*, Reports
- F. 885 *Revitalizing Undergraduate Science: Why Some Things Work and Most Don't*, Reviews of first draft
- F. 886 *Revitalizing Undergraduate Science: Why Some Things Work and Most Don't*, Reviews Published
- F. 887 *Revitalizing Undergraduate Science: Why Some Things Work and Most Don't*, Teleconference
- F. 888 *Frontier: A Guide to Exploration and Discovery through Scientific Research* by Emil M. deGoma, 1994
- F. 889 *Rethinking Science as a Career: Perceptions and Realities in the Physical Sciences* by Sheila Tobias, Daryl E. Chubin and Kevin Aylesworth; edited by W. Stevenson Bacon, 1995, Books
- F. 890 *Rethinking Science as a Career: Perceptions and Realities in the Physical Sciences*, Comments by Readers
- F. 891 *Rethinking Science as a Career: Perceptions and Realities in the Physical Sciences*, Correspondence, 1993-1996
- F. 892 *Rethinking Science as a Career: Perceptions and Realities in the Physical Sciences*, Manuscripts
- F. 893 *Rethinking Science as a Career: Perceptions and Realities in the Physical Sciences*, Miscellaneous

**Box 65, F. 894-904**

- F. 894 *Rethinking Science as a Career: Perceptions and Realities in the Physical Sciences*, Related Materials
- F. 895 *Rethinking Science as a Career: Perceptions and Realities in the Physical Sciences*, Reports
- F. 896 *Rethinking Science as a Career: Perceptions and Realities in the Physical Sciences*, Reviews Published
- F. 897 *Bridging the Gap between Science and Education* by Bonnie Brunkhorst and John Rigden, project never completed
- F. 898 *Bringing the Excitement of Science to the Classroom: Using Summer Research Programs to Invigorate High School Science* by the teachers and mentors of the Partners in Science program, edited by W. Stevenson Bacon. Published by Research Corporation, 2000, Books
- F. 899 *Bringing the Excitement of Science to the Classroom: Using Summer Research Programs to Invigorate High School Science*, Miscellaneous
- F. 900 *Academic Excellence: The Role of Research in the Physical Sciences at Undergraduate Institutions* edited by Michael P. Doyle, 2000, Books
- F. 901 *Academic Excellence: The Role of Research in the Physical Sciences at Undergraduate Institutions*, Manuscript
- F. 902 *Academic Excellence: The Role of Research in the Physical Sciences at Undergraduate Institutions*, Miscellaneous
- F. 903 *Academic Excellence: The Role of Research in the Physical Sciences at Undergraduate Institutions*, Reviews Published
- F. 904 *Academic Excellence: The Sourcebook: A Study of the Role of Research in the Natural Sciences at Undergraduate Institutions*, cosponsored by The Camille and Henry Dreyfus Foundation, The Robert A. Welch Foundation, W.M. Keck Foundation, M.J. Murdock Charitable Trust and Research Corporation, 2001, Books

**Box 66, F. 905-912**

- F. 905 *Academic Excellence: The Sourcebook: A Study of the Role of Research in the Natural Sciences at Undergraduate Institutions*, cosponsored by The Camille and Henry Dreyfus Foundation, The Robert A. Welch Foundation, W.M. Keck Foundation, M.J. Murdock Charitable Trust and Research Corporation, 2001, Books

- F. 906 *Establishing Research Corporation: A Case Study of Patents, Philanthropy, and Organized Research in Early Twentieth-Century America* by Thomas D. Cornell, edited by James E. Turner. Published by Research Corporation, 2004, Books
- F. 907a *Establishing Research Corporation: A Case Study of Patents, Philanthropy, and Organized Research in Early Twentieth-Century America*, Correspondence, 1986-2002
- F. 907b *Establishing Research Corporation: A Case Study of Patents, Philanthropy, and Organized Research in Early Twentieth-Century America*, Miscellaneous
- F. 908a *Science in Solution: The Impact of Undergraduate Research on Student Learning*, by David Lopatto. Published by the Council on Undergraduate Research and Research Corporation, 2009, Books
- F. 908b *Science Teaching as a Profession: Why it Isn't How it Could Be* by Sheila Tobias. Published by Research Corporation, 2010, Books
- F. 908c *Success with Science: The Winners' Guide to High School Research* by Shiv Gaglani with Marie Elena de Obaldia, Scott Duke Kominers, Dayan Li and Carol Y. Suh, with a foreword by Dudley Herschbach. Published by Research Corporation, 2011, Books

**Newsletters, 1963-present** [*The name of Research Corporation's newsletter has varied over the years: from Research Corporation News to Research Corporation Quarterly Bulletin to Research Corporation Quarterly Bulletin to Research Corporation Report to Research Corporation Newsletter*]

- F. 909a Index
- F. 909b Early newsletters, August 1954, February 1954
- F. 910 1963-Fall; 1964-Spring, Summer, Fall; 1965-Spring, Fall, reprint from Fall
- F. 911 1966-Spring, reprint from Spring, Summer, Fall; 1967-Spring, Summer, Fall; 1968-Spring, Summer, Fall; 1969-Spring, Summer, Fall; 1970-Spring-Summer, Fall
- F. 912 1971-Spring, Summer; 1972-Spring, Summer, Fall; 1973-Spring, Summer, Fall; 1974-Spring, Summer, Fall, 2 reprints from Fall; 1975-Spring, Summer, Fall

**Box 67, F. 913-929**

- F. 913 1976-Spring, Summer, Fall; 1977-Spring, Summer, Fall; 1978-Spring, Summer, Fall; 1979-Spring, Summer, Fall; 1980-Spring, Summer, Fall
- F. 914 1981-Spring, Summer, Fall; 1982-Spring, reprint from Spring, Summer, Fall; 1983, 1984, 1985-None
- F. 915 1986-None; 1987-Fall; 1989-1988-Winter; 1990-Spring;
- F. 916 1991-Fall/Winter 1990-1991; 1992-Spring; 1993-Spring; 1994-Winter, Fall; 1995-Fall
- F. 917 1996-Spring; 1997-1996-Winter; 1998-Spring; 1999-Winter; 2000-Spring, Summer
- F. 918 2001-Spring, Fall, Winter; 2002-Winter, Spring, Fall; 2003-Spring, Fall; 2004-Summer; 2005-Winter, Fall
- F. 919 2006-Spring; 2007-None; 2008, 2009, 2010

*Research and Invention (R&I)*

- F. 920 R&I Indexes
- F. 921 1972-Spring/Summer, Fall, Winter; 1972/1973-Winter; 1973-Spring, Summer, Fall; 1974-Spring, Summer; 1974/1975-Winter; 1975-Summer, Fall/Winter
- F. 922 1976-Spring, Fall; 1977-Spring, Fall; 1977/1978-Winter; 1978-Summer; 1979-Spring; 1980-Spring
- F. 923 1981-Spring, Summer; 1982-; 1983; 1984-Fall; 1984/1985-Winter; 1985-Spring/Summer, 1986-Spring, Fall
- F. 924 Reprints

**Record series VIII: Activity Files**

**Conferences and Symposia** (*arranged chronologically*)

[Note: See also Williams-Waterman special archive for information about Vitamin B<sub>1</sub> Assay Conference arranged by Research Corporation to coincide with the American Chemical Society annual meetings in St. Louis, Missouri, April 8, 1941

- F. 925a Conference on The Astrophysical Implications of the Cosmic Radiation, sponsored by the New York Academy of Sciences and Research Corporation, New York, April 12, 1947
- F. 925b Cortisone Conference, New York, September 7, 1949, Correspondence
- F. 926 Cortisone Conference, Miscellaneous

- F. 927 Conference for New Science Department Chairmen [*This conference was hosted by Research Corporation*], Point Clear, Alabama, July 12-16, 1971
- F. 928 Conference for New Science Department Chairmen at Public Institutions, Snowmass-at-Aspen, Colorado, June 26-30, 1972; Conference for New Science Department Chairmen at Private Institutions, Point Clear, Alabama, July 10-14, 1972
- F. 929 Conference for New Science Department Chairmen at Public Institutions, Warren, Vermont, June 25-29, 1973; Conference for New Science Department Chairmen at Private Institutions, Point Clear, Alabama, July 16-20, 1973

#### **Box 68a, F. 930-939**

- F. 930 U.S. Department of Commerce, Research Corporation exhibit, 1973
- F. 931 Conference for New Science Department Chairmen at Public Institutions, Point Clear, Alabama, July 15-19, 1974; Conference for New Science Department Chairmen at Private Institutions, Point Clear, Alabama, July 14-19, 1974
- F. 932 Conference on Research at the Undergraduate Level, Pine Mountain, Georgia, April 13-16, 1975 [Includes "Report of a Conference on Research at the Undergraduate Level," written by Jack W. Powers, vice president of program support, and David G. Black Jr., regional director of grants, Research Corporation]
- F. 933 Cottrell Centennial Symposium: Air Pollution and its Impact on Agriculture at California State College, Stanislaus, in Turlock, Calif., with support from Research Corporation, January 13 and 14, 1977, Miscellaneous
- F. 934a Cottrell Centennial Symposium, Proceedings, 1977
- F. 934b "Conference on Critical Issues Influencing Research at Predominantly Undergraduate Institutions," sponsored, in part, by Research Corporation, in Wayzata, Minnesota, July 27-29, 1983
- F. 935 "Science, Universities and Society in the Twenty-first Century," Research Corporation 75<sup>th</sup> anniversary symposium, University of Arizona, Tucson, 1987 [*Includes very nice portrait of Leon Lederman*]
- F. 936 "The Computer and the Brain, an International Symposium," at Tempe, Arizona, April 12-15, 1987
- F. 937 Academic Excellence Survey: Conference at Fermi National Accelerator Laboratory, Batavia, Illinois, June 24-26, 2001
- F. 938 Academic Excellence Survey: Special Reports dated October 2001, December 2001, February 2002, April 2002 and August 2002
- F. 939 Models in Academic Leadership conference at Tucson, Arizona, July 29-30, 2004 [*Note: See also "Awards, Cottrell Scholars" for Cottrell Scholars annual conference information.*]

#### **Box 68b, F. 940-941f**

- F. 940 "Amazing Light: Visions for Discovery," an international symposium in honor of the 90<sup>th</sup> birthday of Charles Townes. Young Scholars competition sponsored by the John Templeton Foundation and Research Corporation, University of California, Berkeley, October 6-8, 2005
- F. 941a Strategic Planning [*With the appointment of Jim Gentile as president of Research Corporation in 2005, staff, board of directors and a Presidential Advisory Panel began work on a strategic plan for the foundation.*], 2006-2007
- F. 941b Strategic Planning: Presidential Advisory Panel [Established in 2005, the original panel met in Tucson in October and included Ken Keller, John G. Hildebrand, Randall S. Murch, Jose N. Onuchic, Gregory A. Petsko, Geraldine L. Richmond, Joaquin Ruiz, James W. Serum, David A. Tirrell, Shirley Malcom, Gail D. Burd, Robert Full, Jay Labov, Jeanne Narum, Judith Ramaley, James Stith, Orlando Taylor, Michael Turner, Sheldon Wettack and Alfredo Gonzales.
- F. 941c Strategic Planning: Presidential Advisory Committee [Meeting in Tucson in July 2009; members included Vicki Chandler, Robert Full, Eric Mazur, Randy Murch, David Oxtoby, Gregory Petsko, Geri Richmond, Joaquin Ruiz and Carl Weiman]
- F. 941d Philanthropy Roundtable
- F. 941e Formula for the Future [Program focusing on STEM (science, technology, engineering and mathematics) teacher recruitment in 2008, teacher preparation and support in 2009, and STEM teacher retention in 2010]

F. 941f Strategic Partnerships [*This program began in 2010 to form partnerships with “a variety of institutions, corporate, nonprofit and public-partnerships with government” to provide support for RCSA programs. The fundraising consultant firm Changing Our World [www.changingourworld.com/] was hired to facilitate the project and Alicia Sanchez directed the program.*]

F. 941g Social Media [Efforts began in 2012 to establish a social media presence for RCSA using Facebook and Twitter], Loft Cinema [Independent theatre in Tucson presenting “Science and Cinema” series, funded by a grant from the Sloan Foundation. Jim Gentile arranged for Steve Schlozman, Harvard professor and author of “The Zombie Autopsies,” to speak at the showing of “Night of the Living Dead.”] and John B. Wright Elementary [RCSA unofficially “adopted” students from Tucson Unified School District elementary school with a large minority/low-income population.], 2012-?

F. 941h Strategic Planning [In 2012, the firm of Bernuth & Williamson was hired to conduct strategic planning efforts. The RCSA Board of Directors met in February 2013 to discuss the project.], 2012-?

#### **Box 68c, F. 944-948a**

##### ***Projects, Miscellaneous (arranged alphabetically)***

F. 942-943 Amity Plan [Amity High School is a regional high school system located in Woodbridge, Connecticut, providing high school education to residents of the three towns of Woodbridge, Orange and Bethany. Research Corporation sponsored a project aimed at improving science curriculum.], ca. 1975

F. 944-947 Amity Plan [Amity High School is a regional high school system located in Woodbridge, Connecticut, providing high school education to residents of the three towns of Woodbridge, Orange and Bethany. Research Corporation sponsored a project aimed at improving science curriculum.], ca. 1975

F. 948a Astronomy-Large Binocular Telescope (LBT) [The Large Binocular Telescope is a large optical/infrared telescope that utilizes two 8.4-meter diameter mirrors.]

#### **Box 69, F. 948b-957**

F. 948b Astronomy-Large Binocular Telescope (LBT), Dedication

F. 949 Astronomy-Large Synoptic Survey Telescope (LSST)

F. 950

F. 951-953 Atomic Pioneers, Inc. [In 1952, Research Corporation bought patents and applications covering inventions in the field of atomic energy made by members of the Atomic Pioneers, Inc.: J.R. Dunning, E.T. Booth, J.C. Morrell, A.O.C. Nier and A.V. Grosse], Correspondence, 1951-1964

F. 954 Atomic Pioneers, Miscellaneous

F. 955 Carpenter’s bench, etc. [John J. Ralph presented Howard Poillon (then-president of Research Corporation) with a plan to employ “unemployables,” making and selling work benches, “posture chairs,” desks and cabinets, etc. There is no evidence that Research Corporation took part in this project.], 1934

F. 956 Electrostatic Precipitator, General [Includes web article “Wet Electrostatic Precipitators,” published at <http://www.sulphuric-acid.com/techmanual/GasCleaning/esp.htm> by DKL Engineering Inc., May 3, 2010.]

F. 957 Ephedra, Correspondence, 1933

#### **Box 70, F. 958-969**

F. 958 Ephedra, Correspondence, 1934-1938

F. 959 Ephedra, Miscellaneous

F. 960a Great Salt Lake Diking Project [*Includes correspondence with Henry H. Blood, a prominent businessman and the governor of Utah from 1933 to 1941.*], 1933-1934

F. 960b Mount Lemmon SkyCenter [RCSA lent support to the SkyCenter, a project of the University of Arizona, with plans to include nine telescopes, astronomy camp, and an infrared astronomy museum atop Mt. Lemmon in southern Arizona’s Santa Catalina mountains], 2006-

F. 961 Penicillin, 1943

F. 962a Science Foundation Arizona [<http://www.sfaz.org/about-sfaz/about-sfaz.aspx>: “*Science Foundation Arizona (SFAz) was established to deliver and manage “an investment strategy in purpose-driven research and innovation for Arizona’s knowledge-based economy to grow and prosper.”*”]

F. 962b Science Lecture Series, University of Arizona, [*Beginning in 2006, RCSA made annual discretionary awards to the University of Arizona College of Science to support its public lecture series. Note: The lecture series was suspended in 2007.*]

F. 962c Seaphire International [*Seaphire International developed technology in Arizona to grow salt-tolerant (halophytic) crops that could convert arid seacoasts to productive farmlands using a unique plan of integrating aquaculture with halophyte production. Research Corporation provided resources for expansion, a growth in partnerships, and the management necessary to turn the plan from an experiment into a business. Seaphire is no longer in business.*], ca. 1982

F. 963-964 Steam Glycol Vaporizer, Correspondence, 1943-1944

F. 965 Steam Glycol Vaporizer, Miscellaneous

F. 966-969 Tennessee Valley Authority [The Tennessee Valley Authority (TVA) was created in 1933 to provide navigation, flood control, electricity generation, fertilizer manufacturing, and economic development in the Tennessee Valley, a region particularly hard hit by the Great Depression. It was one of the most ambitious projects of Roosevelt's New Deal. Research Corporation became involved in the TVA in 1933 when RC entered into a contract with TVA to "design or build such blast furnaces and auxiliary equipment as the Authority may request..." and Howard Poillon was enlisted to advise the project on patent management. The outcome was unsatisfactory and in his 1934 Research Corporation report of the president, Poillon says "I state with considerable regret that our work has left much to be desired in the minds of those in whose hands we placed our results."], Correspondence, 1933-1934

#### **BOX 71, F. 970-984**

F. 970-972 Tennessee Valley Authority, Correspondence, 1935-1939

F. 973 Tennessee Valley Authority, Legal Documents

F. 974 Tennessee Valley Authority, Miscellaneous

F. 975 Tennessee Valley Authority, Publications

F. 976 Tennessee Valley Authority, Renegotiation

#### *Awards (arranged alphabetically)*

F. 977 American Chemical Society Awards

F. 978 American Physical Society Awards

F. 979 National Inventors Hall of Fame, Miscellaneous

F. 980 National Inventors Hall of Fame, Harold S. Black, 1981

F. 981 National Inventors Hall of Fame, Robert R. Williams, 1991 [*see also Special Archives, Williams-Waterman*]

F. 982 National Inventors Hall of Fame, Frederick Gardner Cottrell, 1992 [*see also Special Archives, F.G. Cottrell*]

F. 983 National Inventors Hall of Fame, Brown & Hazen, 1994 [*see also Special Archives, Brown & Hazen*]

F. 984 National Medal of Science Nomination, John P. Schaefer [not selected], 1994

#### **Box 72, F. 985-1001**

F. 985 Nobel Prize [*Research Corporation is proud to have supported the early work of 32 Nobel Laureates (as of 2006). When available, the proposals for the projects supported by Research Corporation are included here, arranged chronologically by year of Nobel award.*], Miscellaneous

F. 986 Nobel Prize, Felix Bloch, 1952

F. 987 Nobel Prize, Edward M. Purcell, 1952

F. 988a Nobel Prize, Herbert C. Brown, 1979

F. 988b Nobel Prize, Dudley Herschbach, 1986

F. 989 Nobel Prize, Donald J. Cram, 1987

F. 990 Nobel Prize, Thomas R. Cech, 1989

F. 991 Nobel Prize, Elias J. Corey, 1990

F. 992 Nobel Prize, Rudolph A. Marcus, 1992

F. 993 Nobel Prize, Joseph H. Taylor, 1993 [See also Box 78, Folder 1054, 5-College Radio Astronomy Observatory]

F. 994 Nobel Prize, Frederick Reines, 1995



- F. 995 Nobel Prize, Robert C. Richardson, 1996
- F. 996 Nobel Prize, Richard E. Smalley, 1996
- F. 997 Nobel Prize, A.H. Zewail, 1999
- F. 998a Nobel Prize, Carl E. Wieman, 2001
- F. 998b Nobel Prize, K. Barry Sharpless, 2001
- F. 999 Nobel Prize, Richard R. Schrock, 2005
- F. 1000 Nobel Prize, Robert H. Grubbs, 2005
- F. 1001-1002 Research Corporation Awards [*The Research Corporation Awards, which consisted of an honorarium, a plaque and a citation describing the achievement that resulted in the award, were presented from 1925 to 1969. The award was presented irregularly until 1935; after that, it was presented on an annual basis until it was discontinued in 1969.*], Correspondence, 1927-1948

**Box 73, F. 1003-1029**

- F. 1003-1006 Research Corporation Awards, Correspondence, 1949-1970
- F. 1007 Research Corporation Award, 1925, presented to John J. Abel of Johns Hopkins University “for his work in connection with ductless glands, animal tissues and fluids”
- F. 1008 Research Corporation Award, 1929, presented to Bergen Davis “for his contributions to experimental physics, including the Davis Double X-ray Spectrometer, his demonstration of the Raman effect and the extension of the Compton effect to the scattering of X-rays by bound orbital electrons” and Werner Heisenberg “for his contribution to matrix mechanics, for his exposition of the principle of indeterminance and other brilliant studies in this field”
- F. 1009 Research Corporation Award, 1930, presented to Andrew Ellicott Douglass “for his studies of tree rings with reference to variations in solar radiation” and Ernst Antevs “for his studies of sedimentary rocks and clays with reference to variation in clay bands and their relation to variations of solar radiation.”  
[*Note: Research Corporation Awards were presented to Hugh S. Taylor “for his work in the field of catalysis” and Vannevar Bush “for his fruitful and stimulative work with colleagues in the development of powerful and rapid methods of computation” in 1938.*]
- F. 1010 Research Corporation Award, 1937, presented to Percy W. Bridgman “for his pioneer work on a wide variety of physical phenomena under extremely high pressure” and Ernest O. Lawrence “for his work in nuclear physics.”
- F. 1011 Research Corporation Award, 1945, presented to Lee A. DuBridge “for his scientific contributions in the field of radar and for his outstanding administration of the wartime microwave laboratory.”
- F. 1012 Research Corporation Award, 1946, presented to Merle A. Tuve “for his scientific contributions in making possible the proximity fuze and his outstanding administration of the scientific, engineering and production groups that equipped the Armed Forces with this device.”  
[*Note: Research Corporation Awards were also presented to Bruno Rossi “for his outstanding contributions in the fields of cosmic radiation and properties of mesons,” in 1948 and to Edward C. Kendall in 1949 “for work in the field of steroid chemistry which culminated with the synthesis of cortisone.” The years these awards were made are unknown. Also, the 1948 award was presented to A.A. Knowlton and to Henry Eyring “for his outstanding contributions to the field of chemical kinetics and rate processes.” See also Box 74.*]
- F. 1013 Research Corporation Award, 1950, presented to Edwin M. McMillan “co-discoverer of Neptunium and Plutonium, for outstanding contributions in the world of nuclear physics.”
- F. 1014 Research Corporation Award, 1951, presented to Willard F. Libby “for developing the technique and apparatus for determining the ages of archeological items of vegetable or animal origin by measuring their residual radioactivities.”
- F. 1015 Research Corporation Award, 1952, presented to Harold S. Black “specifically for his invention and development of the negative feedback system.”  
[*Note: In 1953, the Research Corporation Award was presented to Sam Goudsmit and George Uhlenbeck “for their discovery of electron spin.” See F. 1032 for photographs.*]
- F. 1016 Research Corporation Award, 1954, presented to Willis Eugene Lamb Jr. “in recognition of major contributions in the field of atomic structure and quantum electrodynamics.”

- F. 1017 Research Corporation Award, 1955, presented to Robert Burns Woodward “for his major achievements in chemical synthesis and elucidation of chemical structures.”
- F. 1018 Research Corporation Award, 1956, presented to Claude Elwood Shannon “for his pioneering researches on the mathematical foundations of information theory.”
- F. 1019 Research Corporation Award, 1957, presented to Charles Hard Townes “in recognition of his distinguished researches in microwave spectroscopy which have added to the understanding of the fundamentals of molecular structures.”
- F. 1020 Research Corporation Award, 1958, presented to Chien-Shiung Wu “for her part in disproving the long-held law of parity which was one of the greatest universal laws of nature.”
- F. 1021 Research Corporation Award, 1959, presented to Melvin Calvin “in recognition of his contributions in the field of biochemistry, especially for investigations on the mechanism of photosynthesis.”
- F. 1022 Research Corporation Award, 1960, presented to Rudolf L. Mössbauer “for his discovery of the recoilless resonance absorption in nuclei.”
- F. 1023 Research Corporation Award, 1961, presented to James D. Watson and Francis H.S. Crick “in recognition of their distinguished contributions in the field of biochemical genetics, especially for their revelation of the structure of DNA, the fundamental replicative unit of living matter.”
- F. 1024 Research Corporation Award, 1962, presented to Bernd T. Matthias “for his discovery of new and unexpected superconductors and ferroelectrics.”
- F. 1025 Research Corporation Award, 1963, presented to Paul J. Cohen and Heisuke Hironaka “for highly original solutions to separate problems in mathematics: respectively, proof of the independence of the continuum hypothesis and of the axiom of choice; and resolution of singularities of an algebraic manifold.”
- F. 1026 Research Corporation Award, 1964, presented to William M. Fairbank “for his elegant and precise performance of several crucial experiments of fundamental importance in the field of very low temperature physics, and especially for his discovery of flux quantization.”
- F. 1027 Research Corporation Award, 1965, presented to Neil Bartlett “for his discovery of compounds of the noble gases.”
- F. 1028 Research Corporation Award, 1966, presented to Marshall W. Nirenberg “for his pioneering work in the discovery of the mechanism through which the code in genetic material determines the proteins synthesized by a cell.”
- F. 1029 Research Corporation Award, 1967, presented to James W. Cronin and Val L. Fitch “for their demonstration that the combined symmetry of parity and of charge conjugation is not, as had been previously believed, a universal symmetry law of nature.”

**Box 74** Scrapbooks related to Research Corporation Award to A.A. Knowlton (1947) and Henry Eyring (1948)

**BOX 75, F. 1030-1048**

- F. 1030 Research Corporation Award, 1968, presented to Murray Gell-Mann “for contributions of the highest significance to the theory of elementary particles and, specifically, for his successful prediction of the Omega Minus particle.”
- F. 1031 Research Corporation Award, 1969, presented to Brian D. Josephson “in recognition of his theoretical discovery of the macroscopic interference between the quantum fields of two superconductors.”
- F. 1032 Research Corporation Award, Miscellaneous
- F. 1033 Research Corporation Award [*Sculptor Herbert Adams designed the plaque which was molded in white Bakelite. (A leading sculptor of the Renaissance Revival movement, Adams was born in Concord, Vermont in 1858; he studied at MIT and was a student at the Ecole des Beaux Arts in Paris. He earned honorable mention in the Paris Salon of 1888. Among his productions are a number of works for the Library of Congress, Washington, D.C., including the bronze doors ["Writing"] begun by Olin Warner, and the statue of Professor Joseph Henry; memorial tablets for the Massachusetts State House; a memorial to Jonathan Edwards, at Northampton, Massachusetts; statues of Richard Smith, the type-founder, in Philadelphia, and of William Ellery Channing, in Boston [1902]; and the Vanderbilt memorial bronze doors for St. Bartholomew's Church in New York. Adams died in 1945.)*], Plaque (photocopy) [*Note: Plaque is on display in President's office*]  
*Speeches*

- F. 1034 *Frederick Gardner Cottrell's acceptance speech upon being awarded the Perkin Medal Award in 1919 for "his notable work in the field of electrical precipitation"*]
- F. 1035 "The Cottrell Legacy: Research Corporation, a Foundation for the Advancement of Science," presentation by James S. Coles at the Cottrell Centennial Symposium, California State College, Stanislaus, January, 1977
- F. 1036 "The Challenge of the 80s: Science and Technology in the University," presentation by James S. Coles at the second annual conference of the Interamerican Organization for Higher Education, Buenos Aires, Argentina, November, 1981
- F. 1037 Includes "Complete Patent Management: A New Option under Research Corporation's Invention Administration Program," presentation by John P. Schaefer, October; "University-Industry Symbiosis in Academic Research: Support of, Results from The Constructive Role of Research and Development Organizations," presentation by James S. Coles at the sixth international conference of national research and development Organizations, Stockholm, Sweden, June; outline of address by John P. Schaefer, to be presented at the Conference on the Commercial and Legal Aspects of DNA Research, at the Waksman Institute of Microbiology, Rutgers, New Jersey, December], 1982
- F. 1038 "Foundation Roles in University-Industry Interaction," presentation by John P. Schaefer at Invention Administration Program; "New Alliances for Graduate Education," and "A Private Foundation Views the Instrumentation Crisis," presentations by John P. Schaefer at the twenty-fifth annual meeting of the Western Association of Graduate Schools, March, 1983
- F. 1039 "United Way 1984 Campaign," for videotape featuring John P. Schaefer, July; "New Directions in University Technology Transfer," presentation by John P. Schaefer at the seventh NRDO conference, Kyoto, Japan, October; "Inventions from Universities, Technology for Industry: Research Corporation, a Pioneer in Technology Transfer," presentation by H. Gordon Howe at the Second International Seminar, "Invention-Technological Innovation: Mechanisms of Action," Sao Paulo, Brazil, November, 1984
- F. 1040 "Technology Transfer to the Year 2001," presentation by John P. Schaefer at Indiana University Research Expo, April; "Education, Technology and the Modern World," presentation by John P. Schaefer at University of Arizona seminar, Tucson, October, 1985
- F. 1041 "The Role of the Technology Transfer Organization in the University/Industry Relationship," presented by H. Gordon Howe at Technology Transfer Society Symposium Proceedings in Indianapolis, June; "Perspectives on Research Funding," presentation at the twenty-sixth annual meeting of the Council of Graduate Schools in the U.S., John P. Schaefer presiding, December, 1986
- F. 1042 Smithsonian Presentation by Steve Bacon, in Washington D.C., April; "Research Corporation: Pioneer in Technology Transfer, before the Ninth International Conference on Technology Transfer," presented by John P. Schaefer in Tucson, December, 1987
- Operations
- F. 1043 Stationery, Letterhead
- F. 1044 Stationery, Miscellaneous
- F. 1045 Stationery, Press release letterhead
- F. 1046 Research Corporation Christmas cards
- F. 1047 Art collection, inventory/appraisal, 1992
- F. 1048a Art collection, inventory/appraisal, 2006
- [See also oversize Box77, for 1986 calendar, featuring photography by John P. Schaefer]
- F. 1048b Name and logo change

## Box 76, F. 1049-1054

### Record series IX: Photographs

#### People

- F. 1049-1050 Research Corporation employees [See also Boxes 77 and 78]
- F. 1051a Scientists/professors/ administrators, A-L [Includes Virginia D. Adams, Pacific Lutheran University; Mary Allen, Biology, Mount Holyoke; V. Ara Apkarian, Chemistry, University of California, Irvine; Frances H. Arnold, Chemical Engineering, Caltech; Berea College; John Brandenberger of Lawrence University; Harry Brittain of Seton Hall University; Jeremy Q. Broughton, Materials Sciences, SUNY Stony Brook; James Bultman, president of Hope College; Caltech Physics; Lou Burnett, Biology, University of San Diego; Jared A. Butcher, Chemistry, Ohio University; Alan Champion of University of Texas; Sylvia T. Ceyer, MIT; Ronald L. Christensen, Chemistry, Bowdoin; Columbia University; Peter J. Coney, Middlebury College; A.J. Cox of University of Redlands; Glenn Crosby, Chemistry, Washington State University; Hai

Lung Dai, *Chemistry, University of Pennsylvania*; Lawrence Davis, *Biochemistry, Kansas State*; Cecil Dybowski, *Chemistry, University of Delaware*; Marye Anne Fox, *chancellor of North Carolina State University*; Peter J. Gruber, *Biological Sciences, Mount Holyoke*; Andrew D. Hamilton, *Chemistry, Princeton*; Bill Harris of *Columbia University and Biosphere II*; Nicole Herbots of *Arizona State University*; Paul A. Heiney, *Ann M. Hirsch, Wellesley College*; *University of Florida*; Gary G. Ibas, *University of Florida*; Carol Kabler, *Chemistry, Swarthmore College*; Donald Kennedy of *Stanford*; Lon B. Knight Jr., *Furman*; Richard Koehn of *Utah*; Steve Koonin and Stephen Mayo and Frances H. Arnold of *California Institute of Technology*; William J. Laughner Jr. and James H. Barrow Jr., *Biology, Hiram College*; Marsba I. Lester, *University of Pennsylvania*; Ariel Loewy, *Biology, Haverford College*; Charles M. Lovett Jr.; Jim Lowe, *University of the South*.]

F. 1051b Scientists/professors/administrators, M-Z [Includes Gail A. Mabood, *Stanford*; Stephen L. Mayo, *Biology, Caltech*; Keith McAdam of *University of Kentucky*; Middlebury College, Richard Muller, *UC-Berkeley*; Vermont; Yvonne Myers, *Elms College, Chicope, Massachusetts*; Daniel G. Nocera, *Chemistry, Michigan State University*; Jill Pasteris, *Washington University*; Harry C. Payne of *Williams College*; Jay M. Pasachoff, *Williams College*; Joseph Patterson of *Columbia University*; Louis F. Pitelka, *Bates College*; David E. Richardson, *Chemistry, University of Florida*; Mary Beth Saffo, *Biology, Swarthmore*; Suresh C. Sharma of *University of Texas*; Larry D. Shinn, *president of Berea College*; John K. Snyder, *Chemistry, Boston University*; Peter W. Stanley, *president of Pomona College*; Rich Staub, *Biology, Carleton College*; Diana Stein, *Mount Holyoke*; Jeffrey D. Tassin, *Chemistry, University of the South*; Fu-Ming Tao, *Chemistry, Cal State Fullerton*; Brian Tissue of *Virginia Polytechnic*; and Patrick A. Wegner and Fu-Ming Tao of *California State University Fullerton*; Thompson/Zoellner; John Tymoczko, *Biology, Carleton College*; *Vassar College, Biology*; Richard Warch, *President, Lawrence University*; Patrick A. Wegner, *Chemistry, Cal State Fullerton*; Robert A. Weller, *Yale University*; Suzanne E. Willis, *University of Oklahoma*; Mark Zaitlin, *Physics, Dartmouth*; Jonathan Zavelon, *Rider College*]

F. 1051c Conferences, Partners in Science, 1988-1996 [Includes Brian Andreen of *Research Corporation*; Bryant Bannister of *University of Arizona*; Tom and Carol Cech; Ralph Cicerone of *University of California, Irvine*; Arthur Ellis of *University of Wisconsin*, Mary Lynn Grayeski of *Research Corporation*; Paul Handler of *University of Illinois Urbana-Champaign*; Lawrence Kaplan of *Williams College*; George Lisensky of *Beloit College*; Timothy McNeese of *Research Corporation*; George D. Nelson of *University of Washington*; John S. Rigden, *AIP*; Paul Saltman of *UCSD*]

F. 1051d Grants, Kennell and Klaus, Williams-Waterman Fund, 1973

F. 1051e Grants, Partners in Science, 1988-1994 [Includes 1988: Victor Hruby of *University of Arizona* and Amanda Walton of *Tucson High School*; Donald McCarthy of *University of Arizona* and Jeffrey Lockwood of *Sahuaro High School*; Herbert Silber of *San Jose State University* and Robert Montoya of *Yerba Buena High School*. 1990: Douglas Donahue of *University of Arizona* and Edwin Pierce of *Tucson High School*; Henry Hill of *University of Arizona* and Mark Nelson of *Santa Rita High School*. 1993: Roy Okuda of *San Jose State University* and Mark Okuda of *Silver Creek High School*. 1994: Stephen Ducharme of *University of Nebraska, Lincoln*, and Robert McClelland of *Beatrice Senior High School*; Alfred Duffy Jr. of *Boise State University* and Annette Hanson of *Boise High School*; Clint Duncan of *Central Washington University* and David Hodges of *Ellensburg High School*; Stephen Garoff of *Carnegie Mellon University* and J. Michael Shore of *Taylor Allerdice High School*; Daniel Garrity of *Reed College* and Lori Lancaster of *Centennial High School*; Bill Geesey of *Montana State University* and Elinor de Lancey Pulcini of *Bigfork High School*; Margaret Geselbracht of *Reed College* and Dale Ingram of *Gladstone High School*; Fred Wagner of *University of Nebraska, Lincoln*, and Randall Emry, *Southeast High School*]

F. 1051f Grants, Cottrell Scholar Awards, 1994-1995 [Includes 1994: Warren Beck, *Chemistry, Vanderbilt*; Robert Bowman, *Chemistry, University of Kansas*; David Collard, *Chemistry & Biochemistry, Georgia Institute of Technology*; Peter Dorhout, *Chemistry, Colorado State University*; Herbert Fertig, *Physics & Astronomy, University of Kentucky*; L. Michael Hayden, *Physics, University of Maryland, Baltimore County*; Heinrich Jaeger, *Physics, University of Chicago*; Nancy Makri, *Chemistry, University of Illinois*; Ann McDermott, *Chemistry, Columbia*; Lyman Page Jr., *Physics, Princeton*; Lynmarie Posey, *Chemistry, Vanderbilt*; Roger Romani, *Physics, Stanford*; Bradley Smith, *Chemistry, Notre Dame*; Lynmarie Thompson, *Chemistry, University of Massachusetts*; Reinirus Walterbos, *Astronomy, New Mexico State University*. 1995: Eberhard Bodenschatz, *Physics, Cornell*; David Bohle, *Chemistry, University of Wyoming*; Thomas Curtiss, *Chemistry, University of Utah*; Andrew Ellington, *Chemistry, Indiana University*; Thomas Gramila, *Physics, Pennsylvania State University*; Kim Griest, *Physics, University of California, San Diego*; Martin Gruebele, *Chemistry, University of Illinois, Urbana-Champaign*; James Heflin, *Physics, Virginia Polytechnic*; Selman Herschfield, *Physics, University of Florida*; William Jenks, *Chemistry, Iowa State*; James Leahy, *Chemistry, University of California, Berkeley*; Bruce Morimoto, *Chemistry, Purdue*; David Schultz, *Chemistry, North Carolina State University*; Xi-Cheng Zhang, *Physics, Rensselaer Polytechnic*]

## Places

F. 1052 Colleges and Universities, Miscellaneous [*Includes Berea College; Hope College; and California State University at Fullerton; Brookhaven National Laboratory, Upton, New York. Collected largely from Research Corporation publications research*]

## Subjects

F. 1053 Scientists and students at work [*Includes V. Ara Apkarian, Chemistry, University of California, Irvine; Daniel Armstrong of Bowdoin College, 1979; Blaine Byers of Holy Cross College; David Domozych of Skidmore College, 1985; Earl Doomes of Macalester College; Michael Doyle of Hope College; Christina Goode, Chemistry and Biochemistry, Cal State Fullerton; Peter Gruber of Mount Holyoke, ca. 1984; Gary Ibas of University of Florida, 2002; Susan Jackels of Wake Forest University, 1981; Brian Johnson, University of Nevada, Las Vegas; Marguerite Kay of Texas A&M University, 1985; Roger Kirby, University of Nebraska, Lincoln, 1990; Karen Kwitter of Williams College, 1984; Antonio Lasaga of Pennsylvania State University; Diana Linden of Occidental College, 1985; Mary Lowe of Loyola College in Maryland, 1991; Glenn McGarvey of University of Virginia, 1979; I.F. Mirabel of University of Puerto Rico, 1984; David Nitz and James Cederberg of St. Olaf College; Max Oeschger, Anne Hooke and Joseph Bell of Georgetown University, 1984; Jill Pasteris of Washington University; John Soderquist, University of San Francisco, 1981; Seth Stein of Northwestern University, 1984; Charles Tatum of Middlebury College, 1978; William Titus of Carleton College, 1971; Tom Wenzel of Bates College, 1990*]

F. 1054 Five College Radio Astronomy Observatory, Massachusetts [*The FCRAO was founded in 1969 by the University of Massachusetts, together with Amherst College, Hampshire College, Mount Holyoke College and Smith College, with partial funding from Research Corporation. From its inception, the Observatory has emphasized pioneering research, the development of state-of-the-art technology and the training of both graduate and undergraduate students. The initial telescope of FCRAO was a customized low frequency antenna to search for pulsars in the Galaxy. The development of instrumentation within the FCRAO labs contributed to the discovery of the binary pulsar system PSR 1913+16 by Joe Taylor (an RCSA grantee) and Russel Hulse and for which they received the 1993 Nobel Prize in Physics. The original low frequency telescope was superseded in 1976 by a 14-m diameter radome-enclosed antenna for use at high radio frequencies (mm wavelengths), built primarily to study the physics and chemistry of interstellar clouds, circumstellar envelopes, planetary atmospheres, and comets.*] [See also Box 72, Folder 993, Joseph Taylor]

**Box 77** Oversize Photographs [*Includes portraits of Research Corporation presidents: Joseph Barker (one drawing and two photographs), James Coles, Arthur Hamerschlag, J. William Hinkley, Howard Poillon, John Schaefer, Charles Schauer. Also includes charcoal drawing of Frederick Gardner Cottrell and 1986 calendar featuring photography by John P. Schaefer. Also includes poster "Research Corporation for Science Advancement/RCSA provides catalytic funding for grants, conferences and advocacy to support: Early career faculty; innovative ideas for transformative research; integration of research and science teaching; interdisciplinary research; and building tomorrow's academic cultures/Founded in 1912: America's first foundation dedicated solely to science."*]

**Box 78** Oversize Photographs [*Includes portraits of Research Corporation directors: Arthur Adams, Boris Bakhmeteff, Edwin Burdell, Carlyle Caldwell, William Carey, Leonard Carmichael, Paul Collins, Karl Compton, Howard Coonley, Harvey Davis, Burt Dorsett, Joseph C. Elgin, Conrad Elvehjem, John Garrison, Roger Gay, Frederick Goetze, Henry Heald, Carl Hedberg, William Hendrickson, Harold Hoffman, Elon Hooker, James Jacobson, James Killian Jr., William McClellan, Colin Mackay, Dave Morris, Robert Morse, Harold Osborne, S. Dillon Ripley, Frederick Seitz, George Shinn, Smith (2), Whitney Stone, Byron Trippet, Calvin Vanderwerf, Robert Waterman, Alexander Wetmore*]

## Box 79, F. 1055-1067

**Record series X: Special Archives** A few individuals who have had enormous impact on the foundation are highlighted in these special archives.

F. 1055 *Rachel Brown and Elizabeth Lee Hazen* [*Royalties from Nystatin patents (the first antifungal antibiotic), were donated to Research Corporation by Elizabeth Lee Hazen and Rachel Brown. Royalties received totaled over \$13 million. From 1957 to 1978 the Brown-Hazen Fund supported research and other programs in the biomedical sciences, especially in*]



*microbiology, immunology, biochemistry, and mycology; beginning in 1973, grants were restricted to work in mycology. The Fund made grants for fundamental investigations in the biomedical sciences, the strengthening of science programs of educational institutions, travel grants to attend medical conferences abroad, training programs, the preparation of scientific papers or articles for publication, and sponsorship of science symposiums*], Agreements

F. 1056 Annual Reports, 1957-1976

F. 1057 Biographical, Rachel Fuller Brown [*Rachel Fuller Brown was born on November 23, 1898 in Springfield, Massachusetts to George Hamilton Brown and Annie Fuller Brown. After her father left the family when Brown was twelve, her mother worked as a secretary and director of religious education at various churches. Brown entered Mount Holyoke College in 1916 and graduated with a B.A. degree in history and chemistry in 1920. In 1921 she received an M.S. degree in organic chemistry from the University of Chicago. For the next three years Brown taught at the Frances Shimer School in Chicago, Illinois before returning to the University of Chicago to study for her Ph.D. She completed her doctoral research in 1926 and received her Ph.D. in organic chemistry and bacteriology in 1933. In 1926 Brown began her career as a research chemist at the New York State Division of Laboratories and Research in Albany, New York. In 1948 she began collaborating with Dr. Elizabeth Lee Hazen, a microbiologist, to isolate the first antifungal antibiotic for human use. In 1950 they announced the discovery of Nystatin, an antibiotic named for the New York State Laboratory where they worked. The patent process was completed in 1957 and handled by Research Corporation, a private foundation that worked closely with Brown and Hazen to distribute about \$13 million in royalties over the following decades to fund scientific research. Among its other projects, the Brown-Hazen Fund financed grants and fellowships at Mount Holyoke College. Brown retired from the Division of Laboratories and Research in 1968. She was the recipient of many awards and honors, including the Squibb Award in Chemotherapy, honorary degrees from Hobart and William Smith Colleges and Mount Holyoke College, and the Chemical Pioneer Award. She also taught Sunday school for many years at St. Peter's Episcopal Church in Albany. Brown died on January 14, 1980 at the age of 81 in Albany.—from finding aid to Brown papers at Mt. Holyoke*]

F. 1058 Biographical, Elizabeth L. Hazen Dr. [*Elizabeth Hazen received a doctorate in microbiology from Columbia University in 1926. From 1931 to 1960, she was a staff member of the Division of Laboratories and Research.*]

F. 1059-1061 Correspondence, Rachel Brown, 1958-1979

F. 1062 Correspondence, Elizabeth Hazen, 1958-1977

F. 1063 Correspondence, Hollis S. Ingraham [*Ingraham was New York State Health Commissioner during the 1960s.*], 1963-1975

F. 1064 Correspondence, Currier McEwen [*Osceola Currier McEwen M.D. was Dean of the School of Medicine and a distinguished member of the faculty at NYU School of Medicine. Dr. McEwen graduated from the School of Medicine in 1926, completed his internship at Bellevue Hospital and joined the faculty in 1932. Before retiring as Dean in 1955, Dr. McEwen's many accomplishments included the establishment of what is now NYU Medical Center. He was one of the nation's leading authorities on rheumatic diseases. He was also a master gardener who "started gardening almost by accident in 1956 and spent the next forty-five years developing spectacular new iris hybrids." Dr. McEwen retired in 1970; he died in 2003 at age 101.*], 1957-1976

F. 1065-1066 Correspondence, miscellaneous, 1958-1982

F. 1067 Correspondence, Program Advisory Committee, 1967-1978

### **Box 80, F. 1068-1080**

F. 1068 Financial, reports

F. 1069-1070 Financial, secretary's reports, 1957-1978

F. 1071-1072 Grants, 1957-1979

F. 1073a Grants, Special Programs, Brown-Hazen Lecture Series

F. 1073b Grants, Special Programs, Rachel Brown Scholarship Fund, Mount Holyoke College

F. 1074 Grants, Special Programs, Explorer Science Camp

F. 1075 Grants, Special Programs, Elizabeth Hazen Scholarship Fund, Mississippi University for Women

F. 1076 Grants, Special Programs, Monmouth College

F. 1077 Grants, Special Programs, Summer Fellowships, Applications

F. 1078-1080 Grants, Special Programs, Summer Fellowships, Reports, 1969-1972

### **Box 81, F. 1081-1090**

F. 1081 Grants, Special Programs, Summer Fellowships, Reports, 1972

- F. 1082 Grants, Travel
- F. 1083 Manuscripts
- F. 1084 Miscellaneous
- F. 1085 Nystatin
- F. 1086 Patents [Nystatin patents in India, England, Argentina and Cuba]
- F. 1087-1088 Program Advisory Committee, Meetings and Board Ratifications, 1967-1978
- F. 1089 *A Chronicle of the Division of Laboratories and Research, New York Department of Health: The First Fifty Years 1914-1964* by Anna M. Sexton. Published by the Brown Hazen Fund and Research Corporation, 1967, Publications
- F. 1090 Publications about Brown-Hazen, Miscellaneous

**Box 82, F. 1091-1103**

- F. 1091 Publications about Brown-Hazen, *The Fungus Fighters* by Richard S. Baldwin, with a foreword by Gilbert Dalldorf. Published by Cornell University Press, Ithaca, New York, 1981
- F. 1092 Publications by Brown-Hazen, *Laboratory Identification of Pathogenic Fungi Simplified* by Elizabeth L. Hazen and Frank Curtis Reed. Published by Charles C. Thomas, Springfield, Illinois, 1955. Also "The Future Role of Women in Science and the World" by Rachel F. Brown. Published in *The Chemist*, January 1980.
- F. 1093 Photographs, Miscellaneous
- F. 1094 Photographs, Portraits
- F. 1095 *Frederick Gardner Cottrell* [*Frederick Gardner Cottrell (1877-1948) was born in Oakland, California. He received a B.S. in chemistry from the University of California at Berkeley in 1896 and a Ph.D. from the University of Leipzig in 1902. He was an instructor of chemistry at the University of California, a chief physical chemist of the U.S. Bureau of Mines, chairman of the division of chemistry and chemical technology of the National Research Council and director of the Fixed Nitrogen Research Laboratory. In 1912 he founded the Research Corporation, a nonprofit foundation. Although best known to electrochemists for the "Cottrell equation" his primary source of fame was as the inventor of the electrostatic precipitator for removal of suspended particles from gases. The device is still widely used for abatement of pollution by smoke from power plants and dust from cement kilns and other industrial sources. Cottrell played a part in the development of a process for the separation of helium from natural gas. He was also instrumental in establishing the synthetic ammonia industry in the United States during attempts to perfect a process for formation of nitric oxide.*], Biographical Information
- F. 1096 Early Correspondence
- F. 1097 Correspondence, [*Cottrell was a prolific letter-writer; Howard Poillon sometimes received 2 or 3 letters from him in a day, with the usual salutation "My dear Poillon."* Cottrell had awful handwriting and his writing style was stream of consciousness, both of which became worse with age. One letter (dated June 26, 1938) contains this sentence: "This is such a rambling letter that for your convenience of reference, I'll underline with red those parts that call for any answer."], 1928
- F. 1098 Correspondence, 1929
- F. 1099 Correspondence, 1930
- F. 1100-1101 Correspondence, 1931 [*Includes discussion of E.O. Lawrence's work*]
- F. 1102-1103 Correspondence, 1932

**Box 83, F. 1103-1121**

- F. 1104-1105 Correspondence, 1933
- F. 1106-1107 Correspondence, 1934 [*Includes correspondence relating to the formation of Research Associates*]
- F. 1108 Correspondence, 1935 [*Includes letters from E.O. Lawrence to Cottrell and a letter written by Cottrell to Charles Lindbergh*]
- F. 1109 Correspondence, 1936
- F. 1110 Correspondence, 1937
- F. 1111 Correspondence, 1938
- F. 1112 Correspondence, 1939 [*Includes correspondence pertaining to World War II, especially to scientists Cottrell knew from his studies in Germany who were in jeopardy*]
- F. 1113 Correspondence, 1940

- F. 1114 Correspondence, 1941 [Includes letter from Cottrell to Herbert Hoover recommending Dr. Caryl F. Haskins for the position of president of Stanford University (Haskins was not selected).]
- F. 1115 Correspondence, 1942
- F. 1116 Correspondence, 1943
- F. 1117 Correspondence, 1944-1945 [*At the end of 1944, Howard Poillon suffered a stroke. Prior to Poillon's stroke, Cottrell had consistently addressed his letters to "My dear Poillon." Interestingly, during Poillon's recovery, Cottrell addressed his letters to "Dear Howard" and Poillon to "Dear Fred." After Poillon had recuperated a few months, they returned to their previous more-formal greetings.*]
- F. 1118 Correspondence, 1946
- F. 1119 Correspondence, 1947
- F. 1120 Correspondence, 1948 [*Includes correspondence relating to Jesse Cottrell's death and obituaries and correspondence relating to Frederick Gardner Cottrell's death with condolence notes from various people including chemist Milton C. Whitaker; A. Wetmore, secretary of the Smithsonian Institution; Giacomo Fauser of Italy who developed a nitrogen fixation process that made it a leader in producing nitrates and fertilizers.*]
- F. 1121 Correspondence [Includes discussion in 1964 among J.W. Hinkley (then-president), Wallace Fulton (Cottrell's nephew) and the Library of Congress about Cottrell's diaries and papers], 1949-1964

#### **Box 84, F. 1122-1140**

- F. 1122 Cottrell Memorial Grove, Correspondence [*This redwood grove in northern California was named in memory of Cottrell. A plaque at the grove acknowledges Cottrell's contributions to science.*], 1949-1957
- F. 1123 Cottrell Memorial Grove, Miscellaneous
- F. 1124 Cottrell Memorial Grove, Photographs
- F. 1125 Fixed Nitrogen Process, Correspondence
- F. 1126 Medals
- F. 1127 Patents (patents dated 1907, 1908, 1910, 1912, 1913)
- F. 1128 Photographs, Electrostatic precipitators
- F. 1129 Photographs, Portraits
- F. 1130 Photographs, Portraits, Groups
- F. 1131 Photographs, Miscellaneous
- F. 1132 Publications about Cottrell, "He lived a thousand lives" published in *Cenco News Chats*, published by Central Scientific Co., reprinted through the courtesy of *Argosy* and *The Reader's Digest*, condensed by Harland Manchester, 1952; Calendar titled *Environment* 1970, published by Westinghouse Electric Corporation. Cottrell is featured on December 1970 calendar; biographical information also included; *Fifty years of thermodynamics and thermochemistry* by Frederick D. Rossini, delivered at the Fourth International Conference on Chemical Thermodynamics, Montpellier, France, August 26, 1975; "Cottrell and Clean Air" by James S. Coles. Published in *Chemical and Engineering News*, October 4, 1976; *Retorts to Lasers* by William L. Jolly. Chapter 6, "Frederick G. Cottrell." Published by University of California Press, 1987]
- F. 1133 Publications by Cottrell [Bibliography of publications written by Cottrell; "Patent experience of the Research Corporation," published in *Transactions of the American Institute of Chemical Engineers*, 1932]
- F. 1134 Smithsonian Institution [Donation of Cottrell's papers]
- F. 1135 *Grote Reber* [*Grote Reber designed and built the world's first radio telescope in 1937, and established radio astronomy as a key subdiscipline of astronomy.*], Biographical
- F. 1136-1138 Correspondence, 1951-1999
- F. 1139 Film, *Grote Reber-Wildcat Astronomer* [TV program about Reber and his work, the first episode in an Australian Broadcasting Company series of documentaries on the lives and work of important scientists. Recorded 26 August 1979.]
- F. 1140 Financial Documents

#### **Box 85, F. 1141-1155**

- F. 1141 Photographs
- F. 1142 Publications by Reber

- F. 1143-1144 Publications related to Reber's work [*Includes "Grote Reber: (1911-2002)" by K.I. Kellermann, published in Publications of the Astronomical Society of the Pacific, 116, 703-711, 2004.*]
- F. 1145 *Charles Hard Townes* [*See also Box 68, F. 940 for information about the Templeton Foundation award to Townes; and Research Corporation Patent Papers, Boxes 24-30, F. 318-409*] [*The patent on Townes' invention of the maser was held to be valid and royalties began to accrue in 1970. Unfortunately, since commercial development of the laser was in its infancy, and the patent was in its twilight years, the royalties that were available for charitable purposes totaled only \$220,000. Eleven awards were made, mostly to support the infrastructure of physics and promising scientific research.*], Awards
- F. 1146 Biographical
- F. 1147-1148 Correspondence, 1955-1979
- F. 1149 Manuscripts
- F. 1150 Miscellaneous
- F. 1151 Press releases
- F. 1152 Notebook
- F. 1153 Patents
- F. 1154 Publications about Townes [*Includes articles pertaining to the Townes/Gould patent infringement case*]
- F. 1155 Publications by Townes

### **Box 86, F. 1156-1174**

- F. 1156 Photographs
- F. 1157 Townes Fund
- F. 1158-1159 *Robert R. Williams Jr. and Robert E. Waterman* [*Robert R. Williams Jr. was a telephone company researcher who, in his spare time, developed ways to synthesize vitamins that helped fight malnutrition and vitamin-deficiency diseases. Working with his son-in-law Robert E. Waterman, the men isolated thiamine in crystalline form in 1933 and synthesized vitamin B two years later. The Williams-Waterman Fund for the Combat of Dietary Diseases was established with the patent monies earned by Williams and Waterman and managed by Research Corporation. Grants program focused on prevention and therapy of recognized deficiency diseases (Pellagra [Niacin], Beriberi [Vitamin B1] and Kwashiorkor [Protein deficiency])*], Annual Reports, 1961-1962
- F. 1160 Audit Reports, 1946-1950
- F. 1161 Awards/Dinners-Dinner to commemorate the occasion of Dr. Robert R. Williams handing over of the Chairmanship of the Williams-Waterman Fund to Dr. W.H. Sebrell Jr., March 16, 1956
- F. 1162 Awards/Dinners-Dinner in honor of R.R. Williams, awarded by The American Institute of Baking at Mayflower Hotel, Washington D.C., April 23, 1956
- F. 1163 Awards/Dinners-Annual meeting and 25<sup>th</sup> anniversary dinner of the American Institute of Nutrition, R.R. Williams toastmaster, Hotel Sheraton, Philadelphia, Pennsylvania, April 16, 1958
- F. 1164 Awards/Dinners-Dinner in honor of the establishment of the R.R. Williams Distinguished Professorship of Nutrition Sciences at Columbia University, May 9, 1961, Correspondence
- F. 1165 Awards/Dinners-Dinner in honor of the establishment of the R.R. Williams Distinguished Professorship of Nutrition Sciences at Columbia University, May 9, 1961, Miscellaneous
- F. 1166 Awards/Dinners-Induction of Robert R. Williams into the National Inventors Hall of Fame, 1991
- F. 1167 Bataan, Philippines, Miscellaneous
- F. 1168 Bataan, Philippines, Photographs
- F. 1169 Biographical, Robert E. Waterman
- F. 1170 Biographical, Robert R. Williams
- F. 1171 Brochures and Flyers
- F. 1172-1173 Conferences & Symposia-"Vitamin B<sub>1</sub> Assay Conference," The Commodore Hotel, New York, New York, December 13, 1940, Correspondence, 1940-1942
- F. 1174A Conferences & Symposia-"Vitamin B<sub>1</sub> Assay Conference," The Commodore Hotel, New York, New York, December 13, 1940, Miscellaneous
- F. 1174B Conferences & Symposia: "Vitamin Assay Conference," St. Louis, Missouri, April 8, 1941]

### **Box 87, F. 1175-1186**

- F. 1175 Conferences & Symposia-Fourth International Congress of Nutrition, Paris, France, July 26-August 1, 1957
- F. 1176 Conferences & Symposia-"Nutritional Appraisal of Haiti, Alaska and Ethiopia," Federation of American Societies for Experimental Biology annual meetings, Atlantic City, New Jersey, April 1959
- F. 1177 Conferences & Symposia-"Conference on Unsolved Problems of Thiamine, Commemorating the 25<sup>th</sup> Anniversary of the Thiamine Synthesis by Robert R. Williams and Collaborators," New York Academy of Sciences, New York, New York, September 21-22, 1961
- F. 1178 Conferences & Symposia-"Meeting of the Scientific Group on Research in Protein-Calorie Malnutrition," Bogota, Colombia, March 16-20, 1964, Correspondence
- F. 1179 Conferences & Symposia-"Meeting of the Scientific Group on Research in Protein-Calorie Malnutrition," Bogota, Colombia, March 16-20, 1964, Miscellaneous
- F. 1180 Conferences & Symposia-"*Seminaire de Nutrition pour Assistants Sociaux*," Recife, Brazil, April 20-24, 1964
- F. 1181 Conference & Symposia-"Third Far-East Symposium on Nutrition," Manila, Philippines, February 1967
- F. 1182 Conferences & Symposia-"Symposium: Malabsorption and Malnutrition in the Tropics," Port-au-Prince, Haiti, March 6-8, 1968
- F. 1183 Conferences & Symposia-"First Congress of the Latin American Nutrition Society," Caracas, Venezuela, September 1968
- F. 1184 Conferences & Symposia-Miscellaneous
- F. 1185-1186 Robert E. Waterman, Correspondence, General, 1941

**Box 88, F. 1187-1197**

- F. 1187-1190 Robert E. Waterman, Correspondence, General, 1942-1943
- F. 1191-1197 Robert R. Williams, Correspondence, General, 1938 to 1942

**Box 89, F. 1198-1217**

- F. 1198-1217 Robert R. Williams, Correspondence, General, 1943 to 1975, 2010

**Box 90, F. 1218-1232**

- F. 1218 Correspondence, Merck & Co., 1948-1957
- F. 1219 Correspondence, Public Law 480 [*"Title I of the Agricultural Trade Development and Assistance Act of 1954, as amended, (Public Law 480, 83rd Congress) provides for U.S. government financing of sales of U.S. agricultural commodities to developing countries and private entities (hereafter called "participants") on concessional credit terms. Sales are made by private business firms on a bid basis in response to Invitations for Bids or "IFBs" issued in the United States by the participant. Sales are made at competitive U.S. market prices. The agreement's concessional nature results from its extended credit periods and low rates of interest charged for the financing."*], 1955-1956
- F. 1220-1221 Correspondence, Travel, 1950-1952 [Includes "travel letters" from Robert, Augusta and Jean Williams' 1950 trip around the world.]
- F. 1222-1223 Films, "Rice and Health," Correspondence, 1952-1972
- F. 1224 Films, "Rice and Health," Film
- F. 1225 Films, "Rice and Health," Miscellaneous
- F. 1226-1227 Films, "Making a Good Food Better," Correspondence, 1949-1963
- F. 1228 Films, "Making a Good Food Better," Film
- F. 1229 Films, "Making a Good Food Better," Miscellaneous
- F. 1230 Films, "Flour Enrichment and Better Health," Correspondence, 1953-1954
- F. 1231 Films, "Flour Enrichment and Better Health," Film
- F. 1232 Films, "Flour Enrichment and Better Health," Miscellaneous

**Box 91, F. 1233-1244**

- F. 1233-1235 Finances, Annual Reports
- F. 1236 Finances, Miscellaneous



- F. 1237 Williams-Waterman Fund for the Combat of Dietary Diseases, Applications
- F. 1238 Williams-Waterman Fund for the Combat of Dietary Diseases, Correspondence, 1939-1969
- F. 1239a Williams-Waterman Fund for the Combat of Dietary Diseases, Lists
- F. 1239b Williams-Waterman Fund for the Combat of Dietary Diseases, Miscellaneous
- F. 1240 Williams-Waterman Fund for the Combat of Dietary Diseases s, Reports
- F. 1241 Williams-Waterman Fund for the Combat of Dietary Diseases -Josefina Gonzales
- F. 1242 Williams-Waterman Fund for the Combat of Dietary Diseases -Thomas D. Spies
- F. 1243 Kwashiorkor, Correspondence, 1955-1957
- F. 1244 Kwashiorkor, Miscellaneous

**Box 92, F. 1245-1261**

- F. 1245 Legal Documents
- F. 1246 Library of Congress [Donation of Williams-Waterman papers]
- F. 1247-1248 Manuscripts
- F. 1249-1253 Meetings, 1939-1943, 1944, 1953-1955, 1958-1959, 1973
- F. 1254 Membership
- F. 1255 Memoranda
- F. 1256 Miscellaneous
- F. 1257 Mothercraft, Miscellaneous
- F. 1258-1259 Mothercraft, Photographs
- F. 1260-1261 Mothercraft, Publications, 1938-1985

**Box 93, F. 1262-1275**

- F. 1262 Notes, Miscellaneous
- F. 1263 Patents
- F. 1264 Photographs, R.R. Williams
- F. 1265 Photographs, R.E. Waterman
- F. 1266 Photographs, Miscellaneous
- F. 1267 Press
- F. 1268 Professorship- R.R. Williams Distinguished Professorship of Nutrition Sciences at Columbia University
- F. 1269 Projects, Friends of Sarah Tucker Schools, 1956-1960 [Sarah Tucker College was the first college for women in South India. Its logo is "So run that ye may obtain the incorruptible crown."]
- F. 1270 Projects, *I Congreso de la Sociedad Latinoamericana de Nutricion*, Caracas, Venezuela, 1968
- F. 1271-1275 Projects, Reports on Projects, 1940-1944

**Box 94, F. 1262-1292**

- F. 1276-1290 Projects, Reports on Projects, 1945-1960
- F. 1291 Publications by Waterman
- F. 1292 Publications by Williams, Bibliography

**Box 95, F. 1293-1301**

- F. 1293 Publications by Williams, Miscellaneous, 1915-1929 [Includes (in chronological order): "Miscellaneous Notes and Comments on Beriberi," with John A. Johnston, *The Philippine Journal of Science*, September 1915; "Vitamines (sic) from the Standpoint of Structural Chemistry," reprint from *Journal of Industrial and Engineering Chemistry*, December 1921; "The Solubility of Vitamin B in Benzene," with R.E. Waterman, reprint from *The Journal of Biological Chemistry*, June 1926]
- F. 1294 Publications by Williams, Miscellaneous, 1930-1939 [Includes (in chronological order): "The Jansen and Donath Procedure for the Isolation of Antineuritic Vitamin," with Robert E. Waterman and Samuel Gurin, reprint from the *Journal of Biological Chemistry*, July 1930; "Physiological Properties of the Vitamins," with Walter H. Eddy, reprint from *Carnegie Institution of Washington Year Book* No. 29, 1930; "Physiological Properties of the Vitamins," with Walter H. Eddy, reprint from *Carnegie Institution of Washington Year Book* No.

31, 1932; "Physiological Properties of the Vitamins," with Walter H. Eddy, reprint from *Carnegie Institution of Washington Year Book* No. 32, 1933; "Physiological Properties of the Vitamins," with Walter H. Eddy, reprint from *Carnegie Institution of Washington Year Book* No. 33, 1934; "Studies of Crystalline Vitamin B<sub>1</sub>. VII. Its Relation to Pathological States," reprint from *Science*, May 31, 1935; "Physiological Properties of the Vitamins," with Walter H. Eddy, reprint from *Carnegie Institution of Washington Year Book* No. 34, 1935; "Studies of Crystalline Vitamin B<sub>1</sub>. II. Elementary Composition and Ultraviolet Absorption," with Oskar Wintersteiner and A.E. Ruehle, reprint from the *Journal of the American Chemical Society*, 57, 517, 1935; "Studies of Crystalline Vitamin B<sub>1</sub>. VIII. Sulfite Cleavage. II. Chemistry of the Acidic Product," with Edwin R. Buchman and A.E. Ruehle, reprint from the *Journal of the American Chemical Society*, 57, 1093, 1935; "Studies of Crystalline Vitamin B<sub>1</sub>. X. Sulfite Cleavage. III. Chemistry of the Basic Product," with Edwin R. Buchman and John C. Keresztesy, reprint from the *Journal of the American Chemical Society*, 57, 1849, 1935; "Structure of Vitamin B<sub>1</sub>," reprint of letter to the editor, from the *Journal of the American Chemical Society*, 58, 1063, 1936; "Synthesis of Vitamin B<sub>1</sub>," reprint of letter to the editor, from the *Journal of the American Chemical Society*, 58, 1504, 1936; "Studies of Crystalline Vitamin B<sub>1</sub>. Identification of the Pyrimidine Portion," with Joseph K. Cline, A.E. Ruehle and Robert E. Waterman, reprint from the *Journal of the American Chemical Society*, 59, 530, 1937; "The Beriberi Vitamin," reprint from *Industrial and Engineering Chemistry*, September 1937; "Studies of Crystalline Vitamin B<sub>1</sub>. XVII. Synthesis of Vitamin B<sub>1</sub>," with Joseph K. Cline and Jacob Finkelstein, reprint from the *Journal of the American Chemical Society*, 59, 1052, 1937; "The Quest of Vitamin B<sub>1</sub>," reprint from the *Journal of the Franklin Institute*, 1937; "The Chemistry and Biological Significance of Thiamin," *Science*, June 24, 1938; "The Chemistry of Thiamin (Vitamin B<sub>1</sub>)," 1939; "Vitamin B<sub>1</sub> Deficiencies in American and Asiatic Diets," reprinted from the proceedings of the Sixth Pacific Science Congress, held at Berkeley, Stanford and San Francisco, 1939]

F. 1295 Publications by Williams, Miscellaneous, 1940-1949 [Includes (in chronological order): "Inefficacy of Pantothenic Acid against the Graying of Fur," reprint of a letter to the editor from *Science*, December 1940; "Ube rein antineuritisch wirksames Oxydationsprodukt des Aneurins," with O. Zima, 1940; "The Cereals in Relation to the Human Vitamin B<sub>1</sub> Supply," reprint of paper read at the 26<sup>th</sup> annual convention of the American Association of Cereal Chemists, September 1940; "The Evolution of Man's Dietary Requirements," reprint from *Journal of the American Dietetic Association*, May 1941; "Application of the Sulfite Cleavage of Thiamin to the Yeast Fermentation Method," reprint of letter to the editor from *Journal of the American Chemical Society*, 1941; "Fortification and Restoration of Processed Foods," reprint from *Industrial and Engineering Chemistry*, June 1941; "Social Implications of Vitamins," reprint from *Science*, November 1941; "Destruction of Riboflavin by Light," reprint from *Science*, July 1942; "Progress of Flour and Bread Enrichment," *Newsletter of the American Association of Cereal Chemists*, September 1942; "Refined Foods and Nutritional Deficiency," reprint from *The Medical Woman's Journal*, April 1942; "Extraction and Assay of Nicotinic Acid from Animal and Plant Tissues, with Vernon H. Cheldelin, reprint from *Industrial and Engineering Chemistry*, August 1942; "Vitamins in the Future—A Joint Discussion," with Roger J. Williams, Columbia University, 1942; "Studies of the Average American Diet," with Vernon H. Cheldelin, reprint from *The Journal of Nutrition*, October 1943; "Nutritive Values of Rice in its Natural Form and Retention and Restoration of These Values in the Products as Marketed," *The Rice Journal*, June 1943; "The Applied Science of Nutrition," reprint from the *Journal of the Franklin Institute*, January 1944; "Enrichment in the Postwar Period," reprint from *American Miller & Processor*, January 1944; "The Golden Age of Biochemistry," a radio talk with Roger John Williams, 1945; "Bread 'Enrichment,'" letter to the editor reprint from *Science*, August 1945; "Chemistry of Thiamine," reprint from the *Journal of the Philippine Pharmaceutical Association*, November 1946; "Note on the Rapid Test for Fortified Rice" reprint from the *Journal of the Philippine Pharmaceutical Association*, November 1946; "What Progress in Nutrition?" reprint from *Nutrition Reviews*, September 1947; "Progress of Bread and Flour Enrichment," reprinted from the editorial department of *The Journal of the American Medical Association*, September 1947; "Synthetic Vitamins and Human Nutrition," *Industrial and Engineering Chemistry*, April 1947; "Prospects of Improving the Food Supply of the Orient," reprint from *American Journal of Public Health*, January 1948; "Cereal Grains and the World Food Shortage," reprint from *Journal of the American Dietetic Association*, 1948; "Some Gaps in Our Knowledge of Nutrition," *Interne: Journal of the Association of Internes and Medical Students*, December 1949; "Progress in Cereal Enrichment," reprint from *Transactions, American Association of Cereal Chemists*, August 1949; "Thiamin or Thiamine?" reprint from *Science*, May 1949]

F. 1296 Publications by Williams, Miscellaneous, 1950-1959 [Includes (in chronological order): "Progress in Cereal Enrichment," reprint of *International Review of Vitamin-Research*, 1950; "Science and Civilization," reprint from *Chemical and Engineering News*, August 1951; "Nutritional Diseases of Rice Eaters as a World Problem," reprint of *International Review of Vitamin-Research*, 1952; "Standards of Identity for Foods," *Food Drug Cosmetic Law Journal*, September 1952; "Rice in Asiatic Diets," reprint from *Journal of the American Dietetic Association*, March 1952; "*Algunos Capítulos de la Historia de las Vitaminas y Sus Usos*," *Dietologia*, 1952; "*En Pro de un Mundo Mejor Alimentado*," Research Corporation, August 1952; "The World Beriberi Problem Today," reprint from *The Journal of Clinical Nutrition*, November-December 1953; "*Enriquecimiento de Cereales desde el Punto de Vista de las Necesidades en Cuba. I. Su Origen y Base en los Estados Unidos*," reprint from *Boletín del Colegio Médico de la Habana*, June 1953; "*Enriquecimiento de Cereales desde el Punto de Vista de las Necesidades en Cuba. III. Enriquecimiento de la Harina de Maíz*," reprint from *Boletín del Colegio Médico de la Habana*, August 1953; "*Enriquecimiento de Cereales desde el Punto de Vista de las Necesidades en Cuba. V. Enriquecimiento del Arroz*," reprint from *Boletín del Colegio Médico de la Habana*, October 1953; "Recollections of the 'Beriberi-Preventing Substance,'" reprint from *Nutrition Reviews*, September 1953; "Food Fortification in the Orient," reprint from *Nutrition Reviews*, October 1954; "Purity and Adequacy of Foods," reprint from *Science*, September 1954; "Better Rice for the World," reprint from *Food Engineering*, February 1954; "Food Enrichment: Progress and Controversial Issues," reprint from *Agricultural and Food Chemistry*, July 1954; "*Los Cereales en la Alimentación Latinoamericana*," reprint from *Archivos Venezolanos de Nutrición*, December 1954; "The Relationship of the Work of the Food and Nutrition Board, National Research Council, to Food-Law Enforcement," *Food Drug Cosmetic Law Journal*, April 1955; "Rice and Health in Asia," *Foreign Agriculture*, February 1955; "Chemistry as a Supplement to Agriculture in Meeting World Food Needs," *American Scientist*, July 1956; "Cereal Enrichment Practices and Possibilities in the Light of American Experience," with W.H. Sebrell Jr., *Overdruk uit 'Voeding'*, 1957]

F. 1297 Publications by Williams, Miscellaneous, 1960-1976 [Includes (in chronological order): "Can We Eradicate the Classical Deficiency Diseases?" reprint from *Journal of the American Dietetic Association*, January 1960; "The Classical Deficiency Diseases," reprint from *Federation Proceedings*, March 1961; "What Has Enrichment Accomplished?" the 1964 Babcock-Hart Award address, reprint from *Food Technology*, 1964; "The Beriberi Vitamin," *Chemtech*, May 1976]

F. 1298 Publications by Williams, *Williams-Waterman Fund for the Combat of Dietary Diseases-A History of the Period 1935 through 1955*, published by Research Corporation, 1956

F. 1299 Publications written by Williams, *Toward the Conquest of Beriberi*, published by Harvard University Press, Cambridge, 1961

F. 1300-1301 Publications about Williams, 1930-1945

### **Box 96, F. 1302-1311**

F. 1302-1305 Publications about Williams, 1946-1976

F. 1306 Publications about Williams, *Beriberi, White Rice and Vitamin B: A Disease, A Cause, and a Cure* by Kenneth J. Carpenter, University of California Press, Berkeley and Los Angeles, 2000

F. 1307 Publications about research funded by Williams-Waterman Fund, "Appraisal of Human Diets by Animal Experiment," conference at the Hotel Roosevelt, New York, March 13, 1947

F. 1308 Publications about research funded by Williams-Waterman Fund, *Better Health through Better Rice*, published by Research Corporation, 1950

F. 1309a Publications about research funded by Williams-Waterman Fund, "Appraisal of Nutrition in Haiti," by W.H. Sebrell et. al., *The American Journal of Medicine Inc.*, 1959

F. 1309b Publications about research funded by Williams-Waterman Fund, "Introduction," by Sam C. Smith, *The American Journal of Clinical Nutrition*, Vol. 21, No. 9, September 1968, pp. 942-943; "Malnutrition in the Caribbean," by Kendall W. King, printed in "The State of the Species," a special supplement of *Natural History* magazine, January, 1970.

F. 1310 Rare Chemicals Company, Correspondence, 1942

F. 1311 Speeches, 1942-1961

### **Box 97, F. 1312-1315**

F. 1312-1313 Thiamine Assay Method, Correspondence, 1941-1942

F. 1314 Thiamine Assay Method, Miscellaneous

F. 1315 Vellore, India, Photographs

**Box 98** Portrait of Mr. and Mrs. R.R. Williams. [*This portrait, by Frank Bensing, is a study for a larger portrait which hangs in the Williams Laboratories, dedicated February 12, 1966 in Vellore, India*]