

11/10/25
Engineering
Physics
Albert Wattenberg Papers, 1941-2003

Box 1:

Technical Biography Prepared for American Institute of Physics, 2003

Papers collected by Wattenberg, for Fermi's Collected Papers, Volume II, United States 1939-1954 (Chicago: University of Chicago Press, 1965). See contents for authors of specific papers. (Those not included in the Collected Papers are designated with an asterisk):

- 114 CPA-6, "Production of Neutrons in Uranium," Jan. 17, 1941
- 115 A-12, "A Preliminary Report to the National Defense Research Committee," June 1, 1944
- 116 A-2, "Standards in Slow Neutron Measurements," June 5, 1941
- 117 A-14, "Some Remarks on the Production of Energy by a Chain Reaction in Uranium," June 30, 1941
- 118 A-1, "The Absorption of Thermal Neutrons by a Uranium Sphere Imbedded in Graphite," July 3, 1941
- 119 A-46, "Remarks on Fast Neutron Reactions," Oct. 6, 1941
- 120 C-83, "Fission Cross Section for Fast Radon Plus Beryllium Neutrons," Nov. 1941
- 121 C-5, "A Table for Calculating the Percentage Loss due to the Presence of Impurities in Alloys," Feb. 10, 1942
- 122 C-8, "The Temperature Effect on a Chain Reaction Unit," Feb. 25, 1942
- 123 C-29, "Slowing Down and Diffusion of Neutrons," March 10, 1942
- 124 C-11, "The Use of Reflectors and Seeds in a Power Plant," March 9, 1942
- 125 C-31, "Determination of Albedo; Measurement of Neutron Density," March 17, 1942
- 126 C-12, "Neutron Reproduction in a Lattice of Uranium and Graphite," March 17, 1942
- 127 C-21, "The Number of Neutrons Emitted by a Ra plus Be Source," March 21, 1942
- 128 C-20 "Neutron Reproduction in a Lattice of Uranium Oxide and Graphite," March 26, 1942 129 CP-26, "Preliminary Report of the Exponential Experiment at Columbia University," April 1942
- 130 C-72, "Absorption Cross Sections for Rn Plus Be Fast Neutrons," c. 1942
- 131 C-74, "The Absorption Cross Section of Boron for Thermal Neutrons," c. 1942
- 132 C-84, "The Determination of the Ratio Between Absorption Cross Sections of Uranium and Carbon for Thermal Neutrons," May 15, 1942
- 133 C-85, "Effect of Atmospheric Nitrogen and of Changes of Temp. on the Reproduction Factor," May 19, 1942
- 134 C-154, "The Absorption of Graphite for Thermal Neutrons," June 30, 1942
- 136 C-190, "Number of Neutrons Emitted by Uranium per Thermal Neutron Absorbed," July 16, 1942
- 137 CP-25, "Effect of Temperature Changes on the Reproduction Factor," Sept. 14, 1942
- 138 CP-283, "Notes on Fermi's Lectures of September 23, 1942"
- 139 CP-289, "Notes on Fermi's Lecture September 30, 1942"
- 140 CP-291, "Notes on Fermi's Lectures Oct. 7, 1942"
- 141 CP-314, "Notes on Fermi's Lectures Oct. 20, 1942"
- 142 CP-337, "Notes on Fermi's Lectures Oct. 27 and Nov. 3, 1942"
- 143 CP-358, "Notes on Fermi's Lectures Nov. 10, 1942"
- 144 LA-1492, "Los Alamos Scientific Laboratory Numerical Solution of a Minimum Problem," Nov. 19, 1952
- 145 CP-383, "Possibility of a Chain Reaction," Nov. 26, 1942
- 147 CP-530, "The Slowing Down of Neutrons in Heavy Water," March 1943

- 148 CP-1084, "Metallurgical Project- Slowing Down of Fission Neutrons in Graphite," Nov. 25, 1943
- *149 CP-1098, "Measurements of the Cross Section of Boron for Thermal Neutrons," Jan. 11, 1944
- 150 C-87, "The Effect of Chemical Binding in the Scattering and Moderation of Neutrons by Graphite," c. 1947
- 151 MDDC-74, "Elementary Theory of the Pile," c. 1947
- 153 MDDC-1438, "Neutrons Emitted by a Radium-Beryllium Photosource," Nov. 5, 1948
- 154 MDDC-56, "Reflection of Neutrons on Mirrors," 1947 (Fermi and Zinn)
- 156 MDDC-55, "Phase of Neutrons Scattering," 1946 (Fermi and L. Marshall)
- *157 MDDC-1, "The Future of Atomic Energy," May 27, 1946
- *158b MDDC-54, "Production of Low Energy Neutrons by Filtering Through Graphite," 1946
- 161b MDDC-1184, "The Transmission of Slow Neutrons Through Microcrystalline Materials," 1946
- 162b MDDC-843, "Phase of Scattering of Thermal Neutrons by Aluminum & Strontium," 1947
- 163 MDDC-713, "Interference Phenomena of Slow Neutrons," Jan. 27, 1947
- *165b MDDC-771, "A Thermal Neutron Velocity Selector & its Application to the Measurements," 1947
- 166b MDDC-844, "Spin Dependence of Scattering of Slow Neutrons by Be, Al, & Bi," 1947
- 168b MDDC-1183, "On the Interaction Between Neutrons and Electrons," June 1947
- 169 AECD-2343, "Spin Dependence of Slow Neutron Scattering by Deuterons," July 14, 1948
- 512b MDDC-320/LADC-255, "Neutron Physics,"
- 1001 C-133, "Metallurgical Project - Report for Wk. ending June 6, 1942"
- 1002 C-207, "Metallurgical Project - Report for Wk. ending July 25, 1942"
- 1003 CP-235, "Metallurgical Project - Report for Month ending August 15, 1942"
- 1004 C-247, "Metallurgical Project - Bulletin for Wk. ending August 29, 1942"
- 1005 CP-257, "Metallurgical Project - Report for Month ending September 15, 1942"
- *1006 CS-267, "Discussion of Helium Cooled Power Plant," Sept. 16, 1942
- 1007 Memo #10, "To: S.K.Allison From: E. Fermi," October 5, 1942
- *1008 Memo #15, "Conference on Lattice Spacing," Oct. 21, 1942
- 1009 CP-297, "Metallurgical Project - Report ending Oct. 15, 1942"
- 1010 CA-329, "The Effect of Bismuth and Paraffin on K.," Oct. 31, 1942
- 1011 CP-341, "Metallurgical Project - Report ending Nov. 15, 1942"
- 1013 CP-416, "Metallurgical Project - Report ending Jan. 15, 1943"
- 1014 CP-455, "Metallurgical Project - Report ending Feb. 6, 1943"
- 1015 A-554, "Memo on Conference between Profs. E. Fermi and H.C. Urey," March 6-8, 1943
- *1016 CP-510, "Metallurgical Project - Report ending March 8, 1943"
- 1017 CP-570, "Metallurgical Laboratory Report for Month ending April 17, 1943"
- 1018 CP-641, "Metallurgical Project Report for Month ending May 10, 1943"
- 1020 CP-718, "Metallurgical Project Report for Month ending June 12, 1943"
- 1021 CP-781, "Metallurgical Project Report for Month ending July 10, 1943"
- 1022 CP-871, "Metallurgical Project Report for Month ending August 14, 1943"
- *1023 CP-964, "Metallurgical Project Report for Month ending September 25, 1943"
- 1024 CP-1016, "Metallurgical Project Report for Month ending October 23, 1943"
- 1025 CP-1088, "Metallurgical Project Report for Month ending November 23, 1943"

- 1026 CP-1175, "Nuclear Phys. Res. Report for Dec. 25, 1943"
 *1027 CN-1190, "Part II Nuclear Phys. Res. Report for Dec. 25, 1943"
 1028 CP-1186, "Fission Cross-Section and Value for 25.," Dec. 31, 1943
 1029 CP-1255, "Nuclear Physics Division Report for Jan. 24, 1944"
 1030 CP-138989 "Metallurgical Project - Nuclear Phys. Res. Report for Month ending Feb. 24, 1944"
 1031 CP-1531, "Nuclear Physics Research Report for Month, Mar. 25, 1944"
 1032 CP-1592, "Nuclear Physics Research Report for Month, April 24, 1944"
 1033 CP-1729, "Nuclear Phys. Div. Part I Report for Month, May 25, 1944"
 1034 CK-1761, "Nuclear Phys. Div. Report for Month ending May 25, 1944"
 1035 CP-1827, "Nuclear Phys. Div. Report for Month ending June 25, 1944"
 1036 CP-1965, "Metallurgical Project Report for Month ending July 29, 1944"
 *1037 CP-2081, "Argonne Laboratory Report for Month, August 26, 1944"
 1038 CF-2161, 61, "Metallurgical Project Report for Month ending September 23, 1944"
 *1039 CP-2301, "Argonne Laboratory Report for Month, Oct. 28, 1944"
 *1040 CP-2436, "Argonne Laboratory Report for Month, Nov. 25, 1944"
 1041 CF-3199, "Breeder Pile Discussion, Chicago, June 19-20, 1945"
 1042 CK-1788, "Report on Recent Values of Constants of 25 and 49," May 29, 1944
 *1043 CE-324, "Report of the Committee for the Examination of the Moore-," c. 1942
 *C-102, "The Fourth Intermediate Pile Metallurgical Project, University of Chicago,"
 *CS-112, CS-185, "Meetings of the Planning Board," June 6, 1942
 *CE-106, "Meeting of Engineering Council," May 28, 1942
 CP-3750, "Experimental Physics Div. Report for Oct., Nov., & Dec. 1946"
 CP-3801, "Experimental Nuclear Physics Div. Report for Jan., Feb., & March 1947"
 "Technical Council Reports" 1942

Including:

- CS-184, July 14, 1942 (Fermi, Compton, Allison, Moore, Szilard, Wigner, Wheeler)
 CS-251, Sept. 4, 1942 (Nichols, Hilberry, Spedding, Doan, Fermi, Steinback, Grafton, Boyd, Moore, Wheeler)
 CS-202, July 25, 1942 (Fermi, Szilard, Wigner, Compton, Whitaker, Allison, Moore, Wheeler, Doan)
 CS-294, Oct. 12, 1942 (Allison, Szilard, Wigner, Moore, Wheeler, Fermi)
 CS-281, Sept. 29, 1942 (Allison, Fermi, Moore, Wigner, Compton, Wheeler, Oppenheimer)
 CS-284, Oct. 1, 1942 (Allison, Fermi, Wigner, Compton, Whitaker, Moore, Cooper, Szilard, Manley, McMillan, Wheeler, Doan)
 CS-286, Oct. 5, 1942 (Allison, Fermi, Szilard, Moore, Wigner, Whitaker, Wheeler, Steinback, Compton, Graves)
 CS-290, Oct. 7, 1942 (Allison, Wigner, Compton, Whitaker, Szilard, Wheeler, Fermi, Moore, Cooper, Steinback, Kirkpatrick)
 CS-274, Sept. 18, 1942 (Compton, Wheeler, Moore, Allison, Spedding)
 CS-306, Oct. 13, 1942 (Allison, Szilard, Wigner, Moore, Cooper, Wheeler, Fermi)
 CS-356, Nov. 19, 1942 (Allison, Compton, Fermi, Moore, Spedding, Szilard, Wigner)

"Meetings of the Engineering Council (Fermi Present at all meetings)," 1942

Including:

- CS-131, June 11, 1942 (Moore, Wilson, Seaberg, Wheeler, Leverett, Fermi, Hilberry, Compton, Spedding, Allison)

CS-135, June 18, 1942 (Moore, Leverett, Fermi, Wheeler, Seaberg, Doan, Wilson, Spedding)
 CS-147, June 25, 1942 (Moore, Leverett, Doan, Szilard, Allison, Teller, Seaberg, Wheeler, Fermi, Wilson)
 CS-163, July 2, 1942 (Fermi, Allison, Seaberg, Whitaker, Doan, Wilson, Moore, Leverett, Wheeler, Szilard, Compton, Spedding, Hilberry, Wollan)
 CS-174, July 9, 1942 (Moore, Leverett, Fermi, Wigner, Allison, Wollan, Wheeler, Seaberg, Spedding, Szilard, Steams, Wilson)
 CE-194, July 21, 1942 (Moore, Leverett, Lewis, Fermi, Wollan, Hilberry, Whitaker, Wilson, Wheeler, Allison, Wigner, Seaberg, Doan)
 CS-213, Aug. 1, 1942 (Spedding, Fermi, Szilard, Wigner, Doan, Moore, Wheeler, Compton, Hilberry)
 CE-229, Aug. 8, 1942 (Moore, Leverett, Steinback, Fermi, Spedding, Wheeler, Wigner, Seaberg, Wilson)

ECK-209, Notes on Meeting of April 26, 1944

Notes on Meeting of April 28, 1944

N-1729 (Fermi, Allison, Wigner, Synth, Szilard, Morrison, Watson, Feld, Hogress, Young, Weinberg, Creutz, Cooper, Vernon, Ohlinger)

"Memo to E. Fermi from L. Szilard - Re: Committee on Helium Cooled Power Plant," October 29, 1942

Box 2:

Progress Report on Research in Nuclear Physics, June 1 - Nov. 30, 1957

Proposal to U.S. Atomic Energy Commission, June 1959

Quarterly Progress Report in Research in Nuclear Physics, June 1 - Aug. 31, 1959

Sept. 1 - Nov. 30, 1959

Dec. 1, 1959 - Feb. 29, 1960

Proposal for Research in Nuclear Physics: ONR Proposal, Jan. 1960

Quarterly Status Report of Research in Nuclear Physics, June 1 - Oct. 31, 1960

Annual Summary Report of Research in Nuclear Physics, Aug. 1, 1960 - July 31, 1961

Quarterly Status Report of Research in Nuclear Physics, Nov. 1, 1960 - Jan. 31, 1961

Feb. 1 - April 30, 1961

Aug. 1 - Oct. 31, 1961

Annual Summary Report of Research in Nuclear Physics, Aug. 1, 1961 - July 31, 1962

Proposal of Extension for Contract NONR 1834(05) for 10/61 thru 9/63: ONR Proposal, 1961

Annual Budget for ONR Contract 1834(05) for Dec. 1961 thru Nov. 1962: ONR Proposal, 1961

Quarterly Status Report of Research in Nuclear Physics, Aug. 1 - Oct. 31, 1962

Proposal to U.S. Atomic Energy Commission Research on Elementary Particle Physics, Oct. 1, 1962 - Sept. 30, 1963

Revised Proposal for Extension of NONR 1834(05), Financial Information Only, Oct. 1, 1962 - Sept. 30, 1963

Proposal to U.S. Atomic Energy Commission Research on Elementary Particle Physics, Oct. 1, 1963 - Sept. 30, 1964

Oct. 1, 1964 - Sept. 30, 1966

Oct. 1, 1966 - Sept. 30, 1967

Annual Progress Report to U.S. Atomic Energy Commission, April 1966 (submitted)

April 1967 (submitted)

April 1968 (submitted)
Proposal to U.S. Atomic Energy Commission Research on Elementary Particle Physics, Oct. 1, 1968 - Sept. 30, 1970
Annual Progress Report to U.S. Atomic Energy Commission, April 1969 (submitted)
Elementary Particle Physics Contract #AT(11-1)1195: Progress Report for 1969, April 1970 (submitted)
Annual Progress Report to U.S. Atomic Energy Commission, April 1970 (submitted)
Proposal to U.S. Atomic Energy Commission Research on Elementary Particle Physics, Oct. 1, 1970 - Sept. 30, 1972
Elementary Particle Physics Contract #AT(11-1)1195: Progress Report for 1970, April 1971 (submitted)
Annual Progress Report to U.S. Atomic Energy Commission, April 1972 (submitted)
Elementary Particle Physics Contract #AT(11-1)1195: Progress Report for 1971, April 1972 (submitted)
Progress Report for 1972, April 1973 (submitted)
Proposal to U.S. Atomic Energy Commission Research on Elementary Particle Physics, July 1, 1973 - June 30, 1974
Elementary Particle Physics Contract #AT(11-1)1195: Progress Report for 1973, April 1974 (submitted)
Progress Report for 1974, April 1975 (submitted)
Progress Report for 1975, April 1976 (submitted)
Proposal to U.S. Energy Research and Development Administration, Research on Elementary Particle Physics, Oct. 1, 1976 - Sept. 30, 1977
Elementary Particle Physics Contract #EY-76-C-02-1195: Progress Report for 1976, April 1977 (submitted)
Progress Report for 1977, April 1978 (submitted)
Progress Report for 1978, April 1979 (submitted)
"Annual Progress Report to United States Department of Energy, Contract No. DE-AC02-76ER01195," June 1980 (submitted)
"A Proposal to U.S. Department of Energy for Renewal of Contract No. DE-AC02-76ER01195 for Research on Elementary Particle Physics," March 1, 1981 (submitted)
March 1, 1982 (submitted)
April 1, 1983 (submitted)
"A Proposal to U.S. Department of Energy for Renewal of Contract No. DE-AC02-76ER01195, Task P, for Research on Elementary Particle Physics," April 1, 1983 (submitted)
"A Proposal to U.S. Department of Energy for Renewal of Contract No. DE-AC02-76ER01195 for Research on Elementary Particle Physics," April 1, 1984 (submitted)
"A Proposal to U.S. Department of Energy for Renewal of Contract No. DE-AC02-76ER01195, Task P, for Research on Elementary Particle Physics," April 1, 1984 (submitted)
"A Proposal to U.S. Department of Energy for Renewal of Contract No. DE-AC02-76ER01195 for Research on Elementary Particle Physics," April 1, 1985 (submitted)
"A Proposal to U.S. Department of Energy for Renewal of Contract No. DE-AC02-76ER01195, Task P, for Research on Elementary Particle Physics," April 1, 1985 (submitted)
"A Proposal to U.S. Department of Energy for Renewal of Contract No. DE-AC02-76ER01195 for Research on Elementary Particle Physics," April 1, 1986 (submitted)
"A Proposal to U.S. Department of Energy for Renewal of Contract No. DE-AC02-76ER01195, Task P, for Research on Elementary Particle Physics," April 1, 1986

- (submitted)
- "A Proposal to U.S. Department of Energy for Renewal of Contract No. DE-AC02-76ER01195 for Research on Elementary Particle Physics," April 1, 1987 (submitted)
- "A Proposal to U.S. Department of Energy for Renewal of Contract No. DE-AC02-76ER01195, Task P, for Research on Elementary Particle Physics," April 1, 1987 (submitted)
- "A Proposal to U.S. Department of Energy for Renewal of Contract No. DE-AC02-76ER01195 for Research on Elementary Particle Physics," April 1, 1988 (submitted)
- "A Proposal to U.S. Department of Energy for Renewal of Contract No. DE-AC02-76ER01195 for Research on Elementary Particle Physics," April 1, 1989 (submitted)
- "A Proposal to U.S. Department of Energy for Renewal of Contract No. DE-AC02-76ER01195 for Research on Elementary Particle Physics," April 1, 1990 (submitted)
- "A Proposal to U.S. Department of Energy for Renewal of Contract No. DE-AC02-76ER01195, Task P, for Research on Elementary Particle Physics," April 1, 1990 (submitted)

Box 3:

- "A Proposal to the U.S. Department of Energy for Research Entitled Studies in the Theory and Phenomenology of Elementary Particles," June 1991 (submitted)
- "A Proposal to U.S. Department of Energy for Renewal of Contract No. DE-AC02-76ER01195 for Research on Elementary Particle Physics," April 1, 1991 (submitted)
- Proposal to the U.S. Department of Energy for Research on Elementary Particle Physics, Jan. 1, 1992 - Dec. 31, 1995
- "Research on Elementary Particle Physics - Annual Progress Report for Period Nov. 1, 1993 - Oct. 31, 1994," May 1994
- Proposal to the U.S. Department of Energy for Research on Elementary Particle Physics, Nov. 1, 1993 - Oct. 31, 1994
- Annual Progress Report on Research on Elementary Particle Physics, Task P, Nov. 1, 1993 - Oct. 31, 1994
- Proposal to U.S. Department of Energy for Research on Elementary Particle Physics, Nov. 1, 1994 - Oct. 31, 1995
- Annual Progress Report to U.S. Department of Energy for Research on Elementary Particle Physics, Nov. 1, 1995 - Oct. 31, 1996
- Proposal to U.S. Department of Energy for Research on High Energy Particle Physics, Nov. 1, 1995 - Oct. 31, 2000

(Note: The following documents were accessioned to archives in October 2002 and added to the existing collection. The order of the files is chronological, and includes correspondence, newsclippings, speeches, photos, and other documents relating to the history of Dr. Wattenberg's involvement with the group of physicists that developed atomic energy and the atomic bomb.)

- Birth Certificates of the Nuclear Age and the Key for the Padlock on Layer 19, December 1942
- The Historic Chianti Bottle, December 1942
- Record from CP 1 Instrumentation (Volney Wilson), 1942
- CP-3195 May/June 1945, Summary and Key Xerox Copies, 1945
- Petition to the President of the United States, July 17, 1945
- War Department Certificate Manhattan District, August 6, 1945

Bulletin of the Atomic Scientists of Chicago, Vol.1, No. 1, December 10, 1945
The First Pile: 1947, Corbin Allardice and Edward R. Trapnell, 1947
Press Release and Photograph of Personnel (First Reactor), 1947
Atoms for Peace - Trip to Tokyo, 1955
Anniversary of Chain Reaction, Accademia Nazionale Dei Lincei - Trip to Rome, 1962

Box 4:

Correspondence with Emilio, Segre, and Laura Fermi, 1962
Report of Experiment Performed at the Frascati Accelerator Lab/ Italy, 1963
"Release Names of Participants in First A-Project", Chicago Sun-Times, January 1, 1967
First Operation of 200 BeV Accelerator, March 1972
Society of Nuclear Medicine Award, 1977
Japanese High Energy Accelerator Lab - Trip to Japan, 1981
After Dinner Speech at Fortieth Anniversary of First Atomic Pile, December 1982
China Trip Report, 1984
Smithsonian-Sloan Video History Project, March 1987
Argonne National Laboratory History Project Interview, April 24, 1992
B.T. Feld in Memorium, May 1993
Authentication for Los Alamos Museum, December 1993
National Archives Radioactivity, January 1994
Fermi Article for Macmillan Encyclopedia of Physics, June 6, 1994
Hiroshima Talk at ACDIS: "The Decision to Bomb Hiroshima," 1995
H.G. Wells Nuclear Bombs: Correspondence with Wells' Society, June 1995
Fiftieth Anniversary Newspaper Clippings, 1995
Commercial Stamp of Fermi, September 29, 2001
Fermi as My Chauffeur, Talk at University of Chicago, September 29, 2001
Fermi's Historic Experiment of December 2, 1942 - Talk at Columbia, November 16, 2001
Correspondence regarding Studs Terkel Interview/Chicago Historical Society, July 2002
UI Physics Department Colloquium: "Centennial of the Birth of Enrico Fermi," History of Neutron Optics, February 28, 2002