Science and Conscience: Chicago’s Met Lab and the Manhattan Project

February 19, 2018 through April 13, 2018

Item List by Case

# Pedestal Case 1

**Nobel Prize in Physics, medal and certificate, 1938**

Enrico Fermi Papers

Enrico Fermi (1901-1954) won the Nobel Prize for Physics in 1938. He is best known for his leadership of the Manhattan Project team at the University of Chicago, which produced the first controlled self-sustaining nuclear chain reaction on December 2, 1942.

# Pedestal Case 2

**James Franck, "Franck Report," autograph manuscript, June 1945**

James Franck Papers

**James Franck, photograph, undated**

University of Chicago Photographic Archive

As World War II drew to a close, the scientists responsible for developing atomic energy became increasingly concerned about the possible use of nuclear weapons for military purposes. In June of 1945, Professor James Franck of the Manhattan Project's Metallurgical Laboratory at the University of Chicago chaired a committee that drafted the "Franck Report," which sought to prevent the United States from using the atomic bomb against Japan. Franck traveled to Washington, D.C., to present the final version of the report to Henry Stimson, the Secretary of War, but the scientists' concerns were not heeded.

# Pedestal Case 3

**Henry DeWolf Smyth**

***A General Account of the Development of Methods of Using Atomic Energy for Military Purposes under the Auspices of the United States Government, 1940-1945*. Princeton: Princeton University Press, 1945**

alc UF767.S67 c.12 Rare Book Collection

*Gift of Diana King*

The Smyth Report was the first public account providing details of nuclear research conducted by the United States during World War II. This copy of the book, from the library of Metallurgical Laboratory staff member Melvin Bengston includes signatures of James Franck, Harold Urey, Samuel K. Allison, Eugene P. Wigner, Edward Teller, Herbert L. Anderson, and many other scientists and staff who worked on the Manhattan Project in Chicago.

# Case 1

1

Enrico Fermi, "Alcune teorie fisiche," autograph notebook, 1919

Enrico Fermi Collection

2

Enrico Fermi and Laura Capon Fermi, Rome, photograph, ca. 1928

University of Chicago Photographic Archive

3

*I ragazzi di Via Panisperna,* Rome, photograph, 1934

Wikipedia Commons

4

Institute for Theoretical Physics, Copenhagen, photograph, 1935

James Franck Papers

Pictured from left front: Pauli, Jordan, Heisenberg, Born, Meitner, Stern, Franck, David, Oliphant, Saha, Weizsacker, Hund, Reiche, Opechowski, Jensen, London, Heitler, Frisch, Dunning, Bohr, Rosenfeld, Amaldi, Kopfermann, Richardson, Fano, Kahn, Waller, Peierls, Crowther, Teller, Weisskopf, Euler, Levi, Bhabha, Delbruck, Jehle, Fiertz, Thomas, Nordsieck, Arley, Kramers, McKay, Bjerge, Casimir, Kalckar, Plesset, Rabinowitch, Buch Andersen, Boggild, Wilck, von Hippel, Paul Ehrenfest, Koch, Ebbe Rasmussen, Placzek, Moller, Mannebak, Jacobsen, Brostrom, R. E. H. Rasmussen, Ambrosen, Hoffer Jensen, Strauss

5

Nobel Prize award ceremony program, December 12, 1938

Enrico Fermi Collection

6

Enrico Fermi, personal diary and Norwegian banker’s business card, December 1938

Enrico Fermi Collection

7

United States naturalization certificate, Enrico Fermi, July 11, 1944

Enrico Fermi Collection

# Case 2

1

Enrico Fermi to Harry M. Durning, letter, January 16, 1939

Enrico Fermi Collection

2

Department of Terrestrial Magnetism, Carnegie Institution, Washington, DC, photograph, January 28, 1939

Carnegie Institution of Washington

Pictured from left: Robert Meyer, Merle Tuve, Enrico Fermi, Richard Roberts, Leon Rosenfeld, Erik Bohr, Niels Bohr, Gregory Breit, John Fleming

3

Niels Bohr, signed portrait photograph, undated

Niels Bohr Collection

4

Herbert L. Anderson, photograph, ca. 1939

International Atomic Energy Agency

5

Herbert Anderson, notebook, 1938-1939

Herbert L. Anderson Papers

6

Herbert Anderson, notarized document, March 9, 1939

Herbert L. Anderson Papers

7

Enrico Fermi, personal diary, 1940

Enrico Fermi Collection

8

George B. Pegram to Admiral S. C. Hooper, letter, March 16, 1939

Enrico Fermi Papers

# Case 3

1

Leo Szilard, photograph, undated

University of California, San Diego

2

Vannevar Bush to Enrico Fermi, letter, August 19, 1941

Enrico Fermi Collection

3

Enrico Fermi, Notebook D15, November 1941

Enrico Fermi Collection

4

Exponential test pile, Columbia University, photograph, undated

Herbert L. Anderson Papers

5

Herbert Anderson, notebook, 1942

Herbert L. Anderson Papers

6

Enrico Fermi, “Neutron Reproduction in a Lattice of Uranium and Graphite,” paper, March 17, 1942

Enrico Fermi Collection

7

H. L. Anderson, B. Feld, E. Fermi, G. Weil, and W. Zinn, “Neutron Reproduction in a Lattice of Uranium Oxide and Graphite: Exponential Experiment,” paper, March 26, 1942

Enrico Fermi Collection

8

Enrico Fermi, personal diary, March 1942

Enrico Fermi Collection

# Case 4

1

Manhattan Engineer District, Procedures for Manhattan Project staff traveling to Los Alamos, New Mexico, document, undated

Lawrence A. Lanzl Papers

2

Ernest O. Lawrence, Enrico Fermi, and Isidor I. Rabi, Los Alamos, New Mexico, photograph, undated

University of Chicago Photographic Archive

3

Samuel K. Allison, notebook, Trinity test site, New Mexico, July 1945

Samuel K. Allison Papers

4

Camera bunker at 10,000 West, Trinity Site, New Mexico, photograph, undated

Library of Congress Prints and Photographs Division

5

Round camera bunker window pane, undated

Henry J. Frisch Collection

6

Ten seconds after explosion, Trinity test site, New Mexico, photograph, July 16, 1945

Los Alamos National Laboratory

7

“Atomsite 7-16-45,” fused sand fragments from Trinity test site, New Mexico, paperweight, 1945

Archives Artifact Collection

# Case 5

1

US Army Air Forces, “pumpkin” test bomb casing fragment, 1945

Henry J. Frisch Collection

2

*Santa Fe New Mexican*, front page, August 6, 1945

Lawrence A. Lanzl Papers

3

*New York Times*, front page, August 8, 1945

Lawrence A. Lanzl Papers

4

U.S. Army Corps of Engineers, Manhattan Engineer District. *Photographs of the Atomic Bombings of Hiroshima and Nagasaki.* US Army Corps of Engineers, Manhattan Engineer District, 1945

Archival Monographs Collection

5

Rev. John A. Siemes, “Atomic Bomb on Hiroshima,” document, 1945

Paul Henshaw Papers

6

President Harry S. Truman to James Lea Cate, letter, January 12, 1953

James Lea Cate Papers

# Case 6

1

Eugene Rabinowitch, photograph, undated

University of Chicago Photographic Archive

2

Eugene Rabinowitch, Metallurgical Laboratory staff meeting, manuscript notes, August 7, 1945

Eugene Rabinowitch Papers

3

*The ABCs of Radiation*

*Our Atomic World*

Atomic Scientists of Chicago

*The Atomic Bomb* (Chicago, 1946)

Federation of American Scientists Records

4

Leo Szilard, photograph, undated

University of Chicago Photographic Archive

5

Leo Szilard. “An Attempt to Define the Platform for Our Conversations with Members of the Senate and House of Representatives,” document, September 7, 1945

Bulletin of the Atomic Scientists Records

6

John A. Simpson to Atomic Scientists of Chicago, telegram, December 5, 1945

Atomic Scientists of Chicago Records

7

Harold Urey, photograph, undated

University of Chicago Photographic Archive

8

*Bulletin of the Atomic Scientists*, Vol I, No 1, issue, December 10, 1945

Bulletin of the Atomic Scientists Records

9

Item 3.8 – *Bulletin of the Atomic Scientists*, Volume 3, Number 6, June 1947

Bulletin of the Atomic Scientists Records

10

Federation of American Scientists, “Petition for Civilian Control of Atomic Energy,” February 20, 1946

Federation of American Scientists Records

11

U.S. Congress. Senate S. 1717, 1946

Atomic Scientists of Chicago Records

12

“To the House of Representatives: Pass the Atomic Energy Bill (S. 1717),” *Washington Post*, June 20, 1946

Federation of American Scientists Records

# Case 7

1

John L. Balderston, Jr., Dieter M. Gruen, W. J. McLean, and David B. Wehmeyer, letter, November-December 1945

John L. Balderston, Jr. Collection

2

John L Balderston, Jr., Dieter M. Gruen, W. J. McLean, and David B. Wehmeyer. “Report on World Government: A Collection of Opinion,” ca. 1946

John L. Balderston, Jr. Collection

3

Niels Bohr to John L. Balderston, Jr., et al., letter, October 27, 1945

John L. Balderston, Jr. Collection

4

Bing Crosby, photograph, undated

5

Bing Crosby to John L. Balderston, Jr., et al., letter, December 27, 1945

John L. Balderston, Jr. Collection

6

Helen Gahagan Douglas, photograph, undated

7

Helen Gahagan Douglas to John L. Balderston, Jr., et al., letter, December 18, 1945

John L. Balderston, Jr. Collection

8

Albert Einstein to John L. Balderston, Jr., et al., letter, December 3, 1945

John L. Balderston, Jr. Collection

9

Dorothy Canfield Fisher, photograph, undated

10

Dorothy Canfield Fisher to John L. Balderston, Jr., et al., letter, December 6, 1945

John L. Balderston, Jr. Collection

11

Thomas Mann to John L. Balderston, Jr., et al., letter, December 11, 1945

John L. Balderston, Jr. Collection

12

Herbert Hoover to John L. Balderston, Jr., et al., letter, December 9, 1945

John L. Balderston, Jr. Collection

13

Enrico Fermi to John L. Balderston, Jr., et al., letter, December 8, 1945

John L. Balderston, Jr. Collection

# Case 8

1

University of Chicago Research Institutes staff, Shoreland Hotel, Chicago, photograph, September 2, 1945

Acme News Pictures photograph

2

Research Institutes buildings and Stagg Field West Stand tower, 1953

University of Chicago Photographic Archive

3

Atom 10 pin, 1952

Albert M. Wattenberg Papers

4

Graphite from CP-1, December 2, 1942, paperweight

Robert S. Mulliken Papers

5

Herbert L Anderson to Robert S Mulliken, letter, January 4, 1968

Robert S. Mulliken Papers

6

Graphite from CP-1, December 2, 1942, paperweight

Archival Artifact Collection

7

CP-1 tenth anniversary reunion ceremony, Stagg Field West Stand, 1952

University of Chicago Photographic Archive

8

Arthur H. Compton, Crawford Greenewalt, Lawrence A. Kimpton, and Enrico Fermi, CP-1 tenth anniversary, photograph, December 2, 1952

University of Chicago Photographic Archive

9

Norman Hilberry and Leo Szilard at ceremony preceding demotion of Stagg Field West Stand, photograph, 1957

University of Chicago Photographic Archive

10

Stagg Field West Stand Site, Ellis Ave. 56th to 57th Street, Tennis Courts & Parking Lot, architectural drawing on tracing paper, April 3, 1958

University of Chicago Architectural Drawings Collection

11

Laura Fermi and Betty Compton at the Stagg Field West Stand site of CP-1, photograph, December 2, 1962

University of Chicago News Office Records

12

*To Fermi with Love*, album cover and interior, audio recording, Argonne National Laboratory, 1971

Archives Recording Collection

13

Herbert L. Anderson at the “Council Tree,” Eckhart Hall, photograph, 1976

University of Chicago Photographic Archive

# ANDO CASE -- Cluster 1

1

Arthur H. Compton, group photograph, undated

University of Chicago Photographic Archive

2

Enrico Fermi, photograph, undated

University of Chicago Photographic Archive

3

Herbert Anderson. “Origins of the Metallurgical Project,” manuscript, September 17, 1942

Herbert L. Anderson Papers

4

Exponential test pile, University of Chicago, photograph, 1942

University of Chicago News Office Records

5

Herbert Anderson, notebook, October 11, 1942

Herbert L. Anderson Papers

6

Stagg Field West Stand, photograph, undated

University of Chicago Photographic Archive

7

Stagg Field West Stand, First Floor Plan, blueprint, May 1, 1942

University of Chicago Architectural Drawings Collection

8

Stagg Field West Stand, squash court, photograph, undated

University of Chicago News Office Records

9

Stagg Field West Stand, brick from demolition, 1962

Henry J. Frisch Collection

# Ando Case -- Cluster 2

1

Augustus Knuth, demonstrating cutting wood for pile support frame, photograph, undated

U.S. Department of Energy

2

Albert M. Wattenberg, demonstrating pile construction, photograph, undated

Wikipedia Commons

3

CP-1 construction, layer 4, photograph, 1942

University of Chicago News Office Records

4

CP-1 construction, layer 17, photograph, 1942

University of Chicago News Office Records

5

CP-1 construction, layer 25, photograph, 1942

University of Chicago News Office Records

6

CP-1, Stagg Field West Stand, perspective drawing by Melvin Miller, 1946

University of Chicago Photographic Archive

# Ando Case -- Cluster 3

1

CP-1 scale model, photograph, undated

University of Chicago News Office Records

2

CP-1 scale model, photograph, undated

University of Chicago News Office Records

3

Siemens & Halske AG, Galvanometer für Gleichstrom, undated

James Franck Papers

4

CP-1 galvanometer graph, December 2, 1942

Herbert L. Anderson Papers

5

CP-1 Reactor, scale model, wood, undated

University of Chicago Department of Physics Records

6

Chianti bottle with CP-1 scientists’ signatures in hands of Albert M. Wattenberg, photograph, 1952

University of Chicago News Office Records

7

Manhattan Engineer District, Metallurgical Project, “Report for Month Ending December 15, 1942”

Herbert L. Anderson Papers

8

CP-1 scientists, Eckhart Hall, University of Chicago, photograph, December 2, 1946

University of Chicago Photographic Archive

Pictured from back row, left to right: Norman Hilberry, Samuel K. Allison, Thomas Brill, Robert G. Nobles, Warren Nyer, and Marvin Wilkening. Middle row: Harold Agnew, William Sturm, Harold Lichtenberger, Leona Woods Marshall, and Leo Szilard. Front row: Enrico Fermi, Walter H. Zinn, Albert M. Wattenberg, Herbert L. Anderson

9

Scientists present at the operation of CP-1, December 2, 1942

Argonne National Laboratory

# Ando Case -- Cluster 4

1

Herbert L. Anderson, CP-1 notebook, 1942-1943

Herbert L. Anderson Papers

2

Herbert L. Anderson, CP-1 and CP-2 operations notebook, 1943

Herbert L. Anderson Papers

3

Enrico Fermi, Metallurgical Laboratory driver’s permit, 1946

Enrico Fermi Collection

4

Enrico Fermi, "The Development of the First Chain Reacting Pile," Proceedings of the American Philosophical Society, Vol. 90, No. 1, January 1946

Enrico Fermi Collection

5

Herbert L. Anderson, Enrico Fermi, and Leona Marshall, "Production of Low Energy Neutrons by Filtering through Graphite," The Physical Review, Vol. 70, December 1946

Enrico Fermi Collection

6

Stagg Field West Stand, Second Floor – North Half, Alterations for Metallurgy, architectural drawing on linen, June 6, 1943

University of Chicago Architectural Drawings Collection

7

Samuel K. Allison, Director, Metallurgical Laboratory, data collection instructions, undated

Ralph Livingston Papers

8

Ralph Livingston, Metallurgical Laboratory notebook, 1944-1945

Ralph Livingston Papers

# Ando Case -- Cluster 5

1

Arthur H. Compton, New Year’s card to Metallurgical Laboratory staff, message, January 1, 1944

Robert L. Platzman Papers

2

Arthur H. Compton, New Year’s card to Metallurgical Laboratory staff, cover, January 1, 1945

RobertL. Platzman Papers

3

Metallurgical Laboratory, unrestricted pass issued to James Franck, November 19, 1942

James Franck Papers

4

Metallurgical Laboratory, security memorandum to staff, June 22, 1944

Lawrence Lanzl Papers

5

Metallurgical Laboratory, equipment identification plate, undated

Ralph Livingston Papers

6

Francis W. Test, application for US Naval Reserve warrant/commission, August 30, 1943

Francis W. Test Papers

7

Metallurgical Laboratory, Site B, photograph, undated

U.S. Department of Energy

8

Metallurgical Laboratory, New Chemistry Building standing behind construction, photograph, 1948

University of Chicago Photographic Archive

9

Stagg Field West Stand, modified for Metallurgical Laboratory use, photograph, undated

University of Chicago Photographic Archive

10

Metallurgical Laboratory, individual staff personnel records, 1943-1945

Samuel Schwartz Papers

11

Metallurgical Laboratory, lists of personnel by unit, August 15, 1944 and February 10, 1945

Samuel Schwartz Papers

12

Metallurgical Laboratory, Academic Personnel Directory, document, undated

Samuel Schwartz Papers

13

U.S. Army Air Forces and University of Chicago Department of Physics, Institute of Meteorology, meteorology instrument launch, Stagg Field, 1942

James W. Cronin Papers

# Ando Case -- Cluster 6

1

Albert M. Wattenberg. Certificate of Service, Manhattan Project, August 6, 1945

Albert M. Wattenberg Papers

2

Robert M. Hutchins receiving Manhattan Project award, photograph, October 10, 1945

Chicago Sun Photo, University of Chicago Photographic Archive

3

Enrico Fermi. Certificate for award of Medal of Merit, January 12, 1946

Enrico Fermi Collection

4

Enrico Fermi receiving Medal of Merit, photograph, March 20, 1946

University of Chicago Photographic Archive

5

Manhattan Engineer District, Manhattan Project A-Bomb bronze pin, 1945

Donald A. MacRae Papers

6

Manhattan Engineer District, Manhattan Project A-Bomb silver pin, 1945

Francis W. Test Papers