



Atomic Heritage Foundation

presents

*70<sup>th</sup> Anniversary of the  
Manhattan Project*



June 2 and 3, 2015  
Carnegie Institution for Science  
1530 P Street, NW  
Washington, DC 20005

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## *Manhattan Project 70<sup>th</sup> Anniversary*



Manhattan Project veterans Lawrence S. O'Rourke (left) and William E. Tewes (right) with his future wife, Olive.

The Atomic Heritage Foundation is proud to host events commemorating the 70<sup>th</sup> Anniversary of the Manhattan Project. It took more than half a million people to build the world's first atomic bombs; we are honored to welcome more than a dozen men and women who participated in that astonishing effort.

The 70<sup>th</sup> Anniversary Reunion on June 2 will be an opportunity for veterans and family members to share their memories and catch up with old friends. Veterans from Los Alamos, Oak Ridge, Hanford, Chicago and other locations will discuss how each site contributed to the Manhattan Project in its own unique way.

The 70<sup>th</sup> Anniversary commemoration will continue on June 3 with a day-long symposium, which will feature a discussion of the new Manhattan Project National Historical Park. We have assembled a first-class roster of Manhattan Project veterans and experts who will discuss topics ranging from innovation to women in science to atomic spies and more. We hope you enjoy the events!

*Cynthia C. Kelly*

Cynthia C. Kelly  
President, Atomic Heritage Foundation

# *Atomic Heritage Foundation*

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The Atomic Heritage Foundation (AHF), founded by Cynthia C. Kelly in 2002, is a nonprofit organization in Washington, DC, dedicated to the preservation and interpretation of the Manhattan Project and its legacy.

The Foundation's goal is to provide the public not only a better understanding of the past but also a basis for addressing scientific, technical, political, social and ethical issues of the 21<sup>st</sup> century. AHF works with Congress, the Department of Energy, National Park Service, state and local governments, nonprofit organizations and the former Manhattan Project communities to preserve and interpret historic sites and develop educational materials for students and the general public.

AHF's current projects include:

- “Voices of the Manhattan Project” website with 280 oral histories, many from archival collections ([www.ManhattanProjectVoices.org](http://www.ManhattanProjectVoices.org))
- Atomic Heritage Foundation website with articles on the history and legacy of the Manhattan Project, thousands of profiles of Manhattan Project veterans, an interactive atomic timeline, and educational resources ([www.AtomicHeritage.org](http://www.AtomicHeritage.org))
- “Ranger in Your Pocket” online audio/visual tours of the Manhattan Project sites and cross-cutting topics, easily accessible on smartphones and tablets ([www.RangerInYourPocket.org](http://www.RangerInYourPocket.org))
- National traveling exhibit on the Manhattan Project under development for science centers and history museums.

# *Reunion Agenda*

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A reunion and reception for Manhattan Project veterans and their families will be held on Tuesday, June 2 beginning at 2:30 PM. This will be an opportunity for Manhattan Project veterans and their families to share their memories.

- 2:30 PM **Welcome**  
Cynthia C. Kelly, President, Atomic Heritage Foundation
- 2:40 PM **Los Alamos Veterans**  
Benjamin Bederson, Robert JS Brown, Norman Brown, Robert Carter, Hans Courant, and Rex Keller
- 3:40 PM **Oak Ridge and New York Veterans**  
James A. Forde, Dieter Gruen, Lawrence S. O'Rourke, and William E. Tewes
- 4:20 PM **Chicago and Hanford Veterans**  
Isabella Karle, Irene LaViolette, Harris Levee, William Lowe, and James A. Schoke
- 5:15 PM **Reception**

The Atomic Heritage Foundation would like to recognize Manhattan Project veteran **Barbara Dresner** and **Doris Czarnecki** and **Jane Yantis**, the widows of Manhattan Project Oak Ridge veterans **Leonard Czarniecki** and **Carl Yantis**. Thanks to all the veterans for participating!

# *Symposium Agenda*

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8:00 AM **Registration, Coffee, and Continental breakfast**

9:00 AM **Welcome and Introductory Remarks**

Welcome by Cynthia C. Kelly, President of AHF. Remarks by Richard Rhodes, author of *The Making of the Atomic Bomb*.

9:45 AM **Preview of the Manhattan Project National Historical Park**

Senator Martin Heinrich will talk about the significance of the newly enacted Manhattan Project National Historical Park.

Patrick Gregerson, Chief of Planning, National Park Service, and Jaime Shimek, Deputy Assistant Secretary for Senate Affairs, Department of Energy, will talk about implementing the new Manhattan Project National Historical Park with units at Los Alamos, NM, Oak Ridge, TN and Hanford, WA.

10:45 AM **Break**

11:15 AM **A Crucible for Innovation**

Historian Alex Wellerstein will lead a panel on the Manhattan Project as a crucible for innovation, with over 6,500 patented inventions in less than three years. Manhattan Project veterans James A. Schoke and Norman Brown will discuss their experiences.

12:15 PM **Lunch**

1:15 PM **Girls of the Manhattan Project**

Denise Kiernan, author of *The Girls of Atomic City*, will lead a panel with Manhattan Project veterans Isabella Karle and Rosemary Lane talking about their roles and reflecting on what the Manhattan Project has meant for their lives.

- 2:15 PM **Espionage and the Manhattan Project**  
Robert S. Norris will talk about how General Leslie R. Groves introduced an intelligence revolution that took security measures to unprecedented heights, with new intelligence, counterintelligence and surveillance programs. Manhattan Project veterans Ben Bederson and Jim Schoke will share their recollections of Klaus Fuchs, Ted Hall, David Greenglass and George Koval. How did these four spies escape detection?
- 3:15 PM **Break**
- 3:45 PM **Remembering Groves and Oppenheimer**  
General Leslie R. Groves and J. Robert Oppenheimer's biographers, Robert S. Norris and co-authors Kai Bird and Martin Sherwin, will be invited to talk about why each man was indispensable to the Manhattan Project's success. Charles Oppenheimer will add more personal comments about his grandfather.
- 4:45 PM **Closing Remarks**  
General Frank G. Klotz is the Department of Energy's Undersecretary for Nuclear Security and NNSA Administrator.





# *Participant Biographies*

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**Benjamin Bederson** (SED) worked on the ignition switches for the implosion bomb at Los Alamos, instructed the 509<sup>th</sup> Composite Group at Wendover, and helped wire the switches for the bomb on Tinian. He later became a Professor of Physics at NYU.

**Kai Bird** is a historian and journalist and the Pulitzer Prize-winning co-author of *American Prometheus: The Triumph and Tragedy of J. Robert Oppenheimer*.

**Norman Brown** (SED) purified plutonium for the Gadget and Fat Man bomb at Los Alamos. After the war, he received his PhD in physical chemistry from Brown and worked for several government agencies on food technology, renewable energy and international issues.

**Robert JS Brown** (SED) worked at Los Alamos on the Manhattan Project. Afterwards, he received a PhD from the University of Minnesota and worked for Chevron.

**Robert Carter** worked as a technical assistant at Los Alamos during the Manhattan Project, conducting research on explosion size and uranium. During his distinguished career as a physicist, he worked at Los Alamos National Laboratory, the Department of Defense, and the Nuclear Regulatory Commission.

**Hans Courant** (SED) worked in the electronics group at Los Alamos and witnessed the Trinity test. He is Professor of Physics Emeritus at the University of Minnesota.

**James A. Forde** was a laboratory assistant at the Nash Garage Building in New York City during the Manhattan Project. He later worked for CBS and became Director of Health Services for the county of San Diego.

**Patrick Gregerson** is Chief of Planning for the National Park Service.



**Dieter Gruen** conducted research on uranium chemistry at Oak Ridge during the Manhattan Project. He went on to become a Senior Scientist in Materials Science at Argonne National Laboratory.

**Senator Martin Heinrich** represents New Mexico in the Senate. He was instrumental in getting the Manhattan Project National Historical Park legislation passed in 2014.

**Isabella Karle** conducted experiments on plutonium chemistry at the Met Lab during the Manhattan Project. She became a pioneer in the field of X-ray crystallography.

**Rex Edward Keller** (SED) worked in the implosion group at Los Alamos during the Manhattan Project and witnessed the Trinity test. He went on to a career in farming.

**Denise Kiernan** is a journalist and producer and author of the bestselling *The Girls of Atomic City*.

**Cynthia C. Kelly** is founder and President of the Atomic Heritage Foundation. Before creating the Foundation, she served over twenty years as a senior executive with the Department of Energy and Environmental Protection Agency.

**General Frank G. Klotz** is the Department of Energy's Undersecretary for Nuclear Security and NNSA Administrator.

**Rosemary Lane** was the Head Nurse of the Emergency Room at the Oak Ridge Hospital. She continued to work as a nurse in Oak Ridge, and later moved with her family to the Washington, DC area. Her husband worked for the Atomic Energy Commission.

**Irene LaViolette** worked as a nurse during the Nazi invasion of Greece. She moved to America in 1942 and worked at Hanford analyzing the Columbia River's water and checking Geiger counters.

**Harris Harold Levee** (SED) helped with patents and ensuring secrecy was maintained at the Met Lab during the Manhattan Project. He later worked on construction of nuclear submarines.

**William Lowe** (SED) purified plutonium for the bombs at Los Alamos. He later worked in the nuclear power industry, including at Hanford, and was in the control room during the Three Mile Island incident.

**Robert S. Norris** is a senior fellow with the Federation of American Scientists. He is the author of the definitive biography of General Groves, *Racing for the Bomb: General Leslie R. Groves, the Manhattan Project's Indispensable Man*.

**Charles Oppenheimer** is the son of Peter and grandson of Robert Oppenheimer. He was born and raised in New Mexico. He now lives in San Francisco with his wife and two daughters, and is a Solutions Architect at Twilio, a communications software company

**Lawrence S. O'Rourke** worked on the gaseous diffusion process at Columbia University in New York, the Houdaille-Hershey Plant in Decatur, IL, and the K-25 Plant in Oak Ridge. After the war, he served as the production superintendent at the Paducah, KY gaseous diffusion plant and held other jobs in the private sector.

**Richard Rhodes** is the Pulitzer Prize-winning author of *The Making of the Atomic Bomb*, *The Twilight of the Bombs*, *Dark Sun* as well as more than twenty other books.

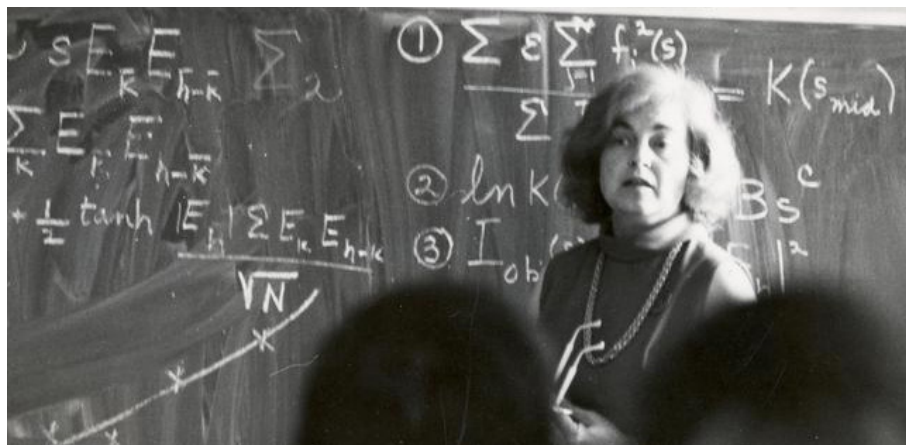
**James A. Schoke** (SED) worked in the instrument group at the Met Lab. He later pursued a successful career in nucleonics and instruments.

**Martin Sherwin** is a University Professor at George Mason University and the Pulitzer Prize-winning co-author of *American Prometheus: The Triumph and Tragedy of J. Robert Oppenheimer*.

**Jaime Shimek** is Deputy Assistant Secretary for Senate Affairs for the Department of Energy.

**William E. Tewes** worked on the gaseous diffusion process at Columbia University in New York and the K-25 Plant in Oak Ridge.

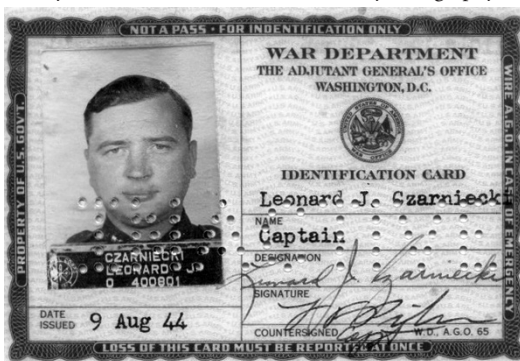
**Alex Wellerstein** is a Professor of the history of science at the Stevens Institute of Technology and the author of the popular *Restricted Data* blog.



Isabella Karle lecturing. Photo courtesy of the International Union of Crystallography.



Rosemary Lane at Oak Ridge.



Leonard Czarniecki's War Department ID card.



James Schoke (bottom right) with his Met Lab group.

# *Corporate Sponsors*

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David Wargowski  
Thomas Wieckowski

# *Manhattan Project Park*

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The Atomic Heritage Foundation and its partners worked for over a decade to establish a Manhattan Project National Historical Park. In December 2014, the Manhattan Project National Historical Park Act became law.

No national monument or park previously existed to preserve and interpret the historic properties of the Manhattan Project. The new Manhattan Project Park will be also one of the few that focuses on American science, technology and industry. The Manhattan Project offers a unique opportunity to engage the public in learning about innovations in science, engineering and technology. Interpretation of the park will also prompt reflection on the decision to drop the atomic bomb on Japan.

Over 30 sites in the United States and Canada contributed to designing and producing components for the atomic bomb in World War II. The new park will focus on three major sites: Los Alamos, NM, where the scientific laboratory that designed and tested the bomb was located; Oak Ridge, TN, where facilities were built to produce enriched uranium; and Hanford, WA, dedicated to the production of plutonium. For each of these sites, the legislation designates both properties associated with the research and production of the bomb and the social and cultural life of the “secret cities.”

Some of the sites proposed for the new park include:

- Hanford: the B Reactor, Hanford High School, White Bluffs Bank, and the Bruggemann Ranch House
- Los Alamos: the V-Site, the Gun Site, the Pond Cabin, and Bathtub Row cottages including the Oppenheimer and Bethe Houses
- Oak Ridge: the X-10 Graphite Reactor, the K-25 Plant site, and the Alexander Inn






From top: mannequins at the X-10 Graphite Reactor at Oak Ridge, a train and cask car outside the Hanford B Reactor, and the Oppenheimer House at Los Alamos





# THE MANHATTAN PROJECT NATIONAL HISTORICAL PARK

LOS ALAMOS, NEW MEXICO

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