



Rosenfest 2011



Rosenfest Agenda

(All events take place at Fuller Lodge)

Wednesday, May 18

7:00–9:00 P.M. Private reception (by invitation only)

Thursday, May 19

7:30 A.M. Registration opens

Mahlon Wilson (LANL retired, *Chair*)

8:30–8:45 A.M. *Welcome* (Terry Wallace, LANL Principal Associate Director)

8:45–9:00 A.M. *Introduction of Special Guests; Logistics* (Alan Hurd, LANL)

9:00–9:35 A.M. *How Louis got LAMPF?* (John Hopkins, LANL retired)

9:45–10:15 A.M. Coffee

June Matthews (MIT, *Chair*)

10:15–10:50 A.M. *Development of LAMPF and the Science of this Nuclear Physics Flagship Facility* (Erich Vogt, TRIUMF)

11:00–11:20 A.M. *Impact of LAMPF on the U.S. University Community* (Bob Redwine, MIT)

11:30–12:05 P.M. *LANSCE and the Shift to Neutrons for Materials Science*
(John Browne, Former LANL Director)

12:15 –1:45 P.M. Lunch

Lew Agnew (LANL retired, *Chair*)

1:45–2:20 P.M. *Applications of LAMPF/LANSCE* (Paul Lisowski, LANL retired)

2:30–3:05 P.M. *Louis Rosen's Involvement in International Relations*
(Jim Bradbury, LANL retired)

3:15–3:45 P.M. Coffee

Thursday, May 19, continued on next page

Thursday, May 19, continued from previous page

Doug Fulton (LANL Physics Division Leader, *Chair*)
3:45–4:20 P.M. *Louis Rosen's Legacy to Beyond-the-Standard-Model Physics*
(William Louis, LANL)

4:45–5:30 P.M. *Unveiling of Statues of Dr. J. Robert Oppenheimer and Gen. Leslie Groves*
(Art in Public Places, Los Alamos County)

Terry Wallace (LANL Principal Associate Director, *Master of Ceremonies*)
7:00–9:00 P.M. Banquet at Fuller Lodge
Louis Rosen, the Family Man (Bernie Rosen, American University)

Friday, May 20

7:30–8:30 A.M. Registration for *LANSCE Tour*

Susan Seestrom (LANL Associate Director, *Chair*)
8:30–9:15 A.M. *LANSCE in the MaRIE Era* (Kurt Schoenberg, LANSCE Director)
9:25–10:00 A.M. *MaRIE* (John Sarrao, LANL Office of Science)

10:10–10:30 A.M. Coffee

Susan Seestrom (LANL Associate Director, *Chair*)
10:30–11:05 A.M. *Materials Test Station* (Eric Pitcher, LANL)
11:15–11:25 A.M. *Rosen Prize Award Ceremony*
11:25–11:55 A.M. *Rosen Prize Presentation: Understanding Atomic Disorder in Polar and
Magnetic Oxides* (Daniel Shoemaker, Argonne)

12:05–1:30 P.M. Lunch

1:30–5:30 P.M. *LANSCE Tour: Embarks from Fuller Lodge*

Adjourn



Contents

Event Speaker Bios

Terry Wallace	1
John Hopkins	2
Erich Vogt	3
Robert Redwine	4
John Browne	5
Paul Lisowski	6
Jim Bradbury	7
Bill Louis	8
Bernie Rosen	9
Kurt Schoenburg	10
John Sarrao	11
Eric Pitcher	12
Rosen Prize Winner - Daniel Shoemaker	13
Rosen's Origins	14
High School Trip to D.C.	15
College in Alabama	17
Move to Penn State	18

Contents

War Breaks Out	19
Wartime Work	20
Statue Unveiling- Oppenheimer and Groves	21
Post War/Cold War Era	22
LAMPF	
Concept and Development	23
Design and Construction	24
Breaking Ground	25
Milestones	26
Experiments Anyone?	27
Transition to LANSCE	28
The People of LAMPF and LANSCE	29
LANSCE Users	30
Future of LANSCE	31
Louis Rosen - Short Bio	32
Credits - and About the Author	33
Security Guidelines - LANSCE Tour	34

Terry Wallace



Terry was raised in Los Alamos but spent 20 years as a professor of geosciences, and was an associate in the applied mathematics program at the University of Arizona. He was also involved in research concerning global threat reduction, non-proliferation verification, and computational geophysics. During his career he also worked in conjunction with LANL on nuclear test monitoring.

He has an M.S. and Ph.D. in geophysics from California Institute of Technology, and a B.S. degree in both geophysics and mathematics from New Mexico Institute of Mining and Technology. He's written more than 80 peer-reviewed publications on seismology including ground based nuclear explosion monitoring and forensic seismology.

Wallace has served as president of the Seismological Society of America and as Chairman of the Incorporated Institution for Research in Seismology. He also wrote a position paper for the American Geophysical Union concerning verifiability of a comprehensive test ban treaty.

He was Associate Director of Strategic Research in 2005-06. He was also responsible for LAN's non National Security Administration Department of Energy programs. From 2000 to 2006 Wallace was the chair on the National Research Council's Committee on Seismology and Geodynamics.

John C. Hopkins

John C. Hopkins is a nuclear physicist with a 1960 Ph.D. from the University of Washington in Seattle. He retired in December 1993, after 34 years at the Los Alamos National Laboratory. The first third of his career was spent in nuclear physics research that resulted in over 40 technical publications and election to fellowship in the American Physical Society. The second third was spent in nuclear weapons testing, mostly as the leader of the program. The final third was spent as the leader of nuclear weapons development and finally as leader of the entire nuclear weapons program at Los Alamos.

Throughout most of this period Hopkins was involved in national security policy issues and was leader of the Center for National Security Studies at Los Alamos. Just prior to retirement he was a visiting scholar at the University of California's Institute on Global Conflict and Cooperation where he edited a 1994 book on the nuclear policies of Britain, France, and China.

For over 40 years Hopkins has served on governmental and international boards and panels and is a former member of the Chief of Naval Operations' (CNO) Executive Panel for the United States Navy. Hopkins served on senior review committees for the Los Alamos National Laboratory and has been a technical advisor to the Arms Control and Disarmament Agency in Washington and in Geneva. Hopkins has worked closely with the State, Energy, and Defense Departments and has participated in numerous special programs for the U.S. Government.



Erich W. Vogt



Dr. Vogt received his academic degrees at the University of Manitoba (B.Sc. 1951, M.Sc. 1952, D.Sc. hc 1982); at Princeton University (Ph.D. 1955); Queen's University (D.Sc. hc 1984); the University of Regina (LL.D. hc 1986); and Carleton University (D.Sc. hc 1988) Simon Fraser University (D.Sc. hc 1995) University of British Columbia (D.Sc. hc, 1998) From 1956-65,

Dr. Vogt was heavily involved in the creation of the first CANDU reactors for Canada. Dr. Vogt has been a professor at the University of British Columbia and was a founder of the TRIUMF project (Canada's National Meson Sciences Research Facility) at the University of British Columbia. Since 1981 he was the Director of TRIUMF until his retirement in March, 1994.

Dr. Vogt was President of the Canadian Association of Physicists (1970-71). He received the 1988 CAP Medal for Achievement in Physics. He was elected to fellowship in the Royal Society of Canada in 1970. A physics laboratory at Tel Aviv University was named in his honour.

Dr. Vogt has served as a member of the Physics Advisory Committee, Los Alamos Meson Physics Facility (LAMPF) 1976-79, the "Erich Vogt Laboratory for Data Analysis".

He is also co-editor, along with Professor John Negele of MIT, of the prestigious international series "Advances in Nuclear Physics" published by Plenum Publishing Co., in New York (first volume in 1968 continuing through the 27th volume in 2004).

He continues to teach first year physics and in 45 years has taught more than 5000 students.

Robert P. Redwine

Dr. Robert P. Redwine received his A.B. degree in Physics from Cornell University in 1969 and his Ph.D. in Nuclear Physics from Northwestern University in 1973. After postdoctoral research positions at the Los Alamos National Laboratory and at the University of Berne (Switzerland), he joined the permanent scientific staff at Los Alamos in 1977.

In 1979 he joined the Physics faculty at MIT. He served as Director of the Laboratory for Nuclear Science at MIT from 1992 to 2000. From 2000 to 2006 he served as Dean for Undergraduate Education at MIT, having responsibility for all aspects of the undergraduate program at the Institute. As Dean he promoted active learning in undergraduate courses and led a major effort to renew MIT's commitment to provide all students with an excellent foundation in science and technology.

Since 2006 he has taught and administered first-year courses in physics, making essential use of active learning. Professor Redwine also has served since 2006 as the Director of the Bates Linear Accelerator Center at MIT. He continues an active research program in experimental nuclear physics, focusing on the study of the detailed structures of protons and neutrons, including symmetry studies which are important tests of the Standard Model of nuclear and particle physics.



John C. Browne



John C. Browne received his BS in physics from Drexel University in 1965 and his Ph.D. in nuclear physics from Duke University in 1969. He was a research scientist at Lawrence Livermore National Laboratory from 1970 to 1979 where he worked at the Livermore 100 MeV electron linac and at LAMPF on basic and applied nuclear physics. He joined Los Alamos National Laboratory in 1979 where he continued his nuclear physics research at LAMPF and other facilities as head of the neutron physics group (P-3) in the Physics division.

He held a series of technical management positions at Los Alamos, including P-Division Leader (1981-84), Associate Director for Experimental Physics (1984-85), Associate Director for Research (1985), Associate Director for Defense Research and Applications (1986-91), Associate Director for Computational and Information Sciences (1991-93), LANSCE Director (1993-97), and Laboratory Director from 1997-2003.

He retired from LANL in 2003. Since that time he has done consulting for a variety of companies, universities, and national laboratories on technical management, national security and energy issues. He is a Fellow of the American Physical Society and a Fellow of the American Association for the Advancement of Science. He serves on a number of non-profit boards including the Hertz Foundation which provides graduate fellowships in science and engineering.

Paul Lisowski

Paul Lisowski lives in Los Alamos, New Mexico, and is a consultant to the Department of Energy, Office of Nuclear Energy, on fuel cycle and nuclear facility related issues. He is also a Guest Scientist at Los Alamos National Laboratory, and works with TechSource as a management consultant.

Lisowski served in Washington, DC from 2006 to 2009 at the Department of Energy, Office of Nuclear Energy as Deputy Assistant Secretary for Fuel Cycle Management. There he provided day-to-day direction and management of the U.S. Nuclear Fuel Cycle and Global Nuclear Energy Partnership (GNEP) Programs. Lisowski led development of the Office of Nuclear Energy's nuclear fuel recycling strategy. Lisowski provided input on the impact of civil nuclear power development in foreign countries on U.S. nonproliferation policies, and completed a GNEP Programmatic Environmental Impact Statement.

During his 29-year career at Los Alamos National Laboratory, Lisowski served in a wide variety of positions, including Director of LANSCE, Director of the Accelerator Production of Tritium Project, Neutron and Nuclear Sciences Group Leader, and Technical Staff Member.

Lisowski has a Ph.D. in physics from Duke University and is a member of the American Nuclear Society, the American Physical Society, and the Sigma Xi Scientific Research Society of North America. Lisowski has authored or coauthored over 200 journal articles, reports, and abstracts and has been awarded one patent for work on high T_c superconductivity.



James N. Bradubury



James Bradbury received a Ph.D. from Stanford University and subsequently spent a number of years at the Lockheed Palo Alto Research Laboratory performing experiments in atomic physics and satellite-based space physics. He joined the Los Alamos National Laboratory in 1974 and assumed management of applied research using the 800-MeV high-intensity accelerator at the Los Alamos Meson Physics Facility (LAMPF). This research included materials analysis, the development of hyperthermia instrumentation for the treatment of tumors, and an effort to evaluate the use of negative pi mesons for cancer radiotherapy. In 1990 Bradbury was named Deputy Director of LAMPF.

After retiring in 1993 Bradbury became a Laboratory guest scientist participating in projects to help redirect Russian weapons scientists into peaceful research with commercial potential. In 1999 he joined the University of New Mexico teaching courses on urgent global issues and new techniques for achieving consensus and action on these issues.

Bradbury is currently the Associate Director of the Oppenheimer Institute for Science and International Cooperation and a consultant for the University of New Mexico Center of Policy, Security, and Technology. Lately he has worked to improve regional water stewardship, considered new approaches to nuclear non-proliferation and obtained funding for sustainable agro-forestry projects in the South Sudan.

Bradbury is a Fellow of the American Physical Society and a member of Phi Beta Kappa and the American Association for the Advancement of Science. He has authored or co-authored more than 50 publications.

Bill Louis

Bill Louis received in B.S. in physics from Georgia Institute of Technology. His PH.D. in Physics was received in 1978 from University of Michigan.

He was a research associate at Rutherford University from 1978 to 1981, then an assistant professor at Princeton from 1981 to 1987. He was co-spokesperson for the BoONE Neutrino Experiment at Fermilab and spokesperson of the LSND Neutrino Experiment at Los Alamos.

Louis was LANL Program Manager for Nuclear Physics from 2004 to 2009, and is now a member of the Executive Committee of the LBNE Experiment.

He is a Los Alamos National Laboratory Fellow, a fellow of American Physical Society, a member of American Association for the Advancement of Science and a Department of Energy Outstanding Junior Investigator, 1984-1987.

He also served on review committees for a wide variety of experiments between 2004 and the present.



Bernie Rosen



Bernard Rosen, Distinguished Adjunct Professor in Residence, Emeritus, School of Public Affairs, American University, taught graduate courses in politics of administration, public personnel administration, public management, and ethics for public managers. Prior to this 25-year second career, which concluded in the spring of 2000, he was Executive Director of the United States Civil Service Commission.

While most of his 34 years in the federal government were with the Civil Service Commission, he was also Deputy Director and Director of Personnel in the Department of State, and Counselor for Administrative Affairs, U. S. Embassy, Athens. During both his government and academic years, he testified before congressional committees and wrote on personnel management issues. He was a Senior Fellow of the National Academy of Public Administration.

A Phi Beta Kappa, he did undergraduate work in Political Science at the University of Alabama and graduate work in Public Administration at the University of Alabama and the University of Illinois. During World War II he served in the United States Army.

The life of Adele Berman Rosen, his wife for 62 years, ended October 24, 2004.

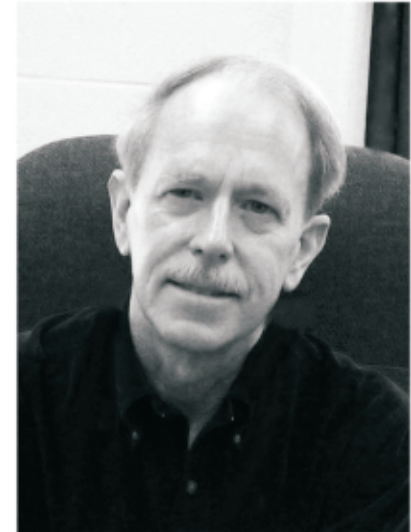
Bernard Rosen moved from Washington D.C. in August 2009 to San Francisco where his son Stephen, his wife and three sons have their home; his older son, Bernard, lives in Laguna Beach in Southern California.

Kurt Schoenberg

Kurt Schoenberg is the User Facility Director of the Los Alamos Neutron Science Center (LANSCE) and Deputy Associate Director of Experimental Physical Sciences at the Los Alamos National Laboratory. He oversees operations and the basic and applied research performed at LANSCE, including neutron scattering research at the Lujan Neutron Scattering Center, nuclear science and technology at the WNR facility, and oversight of the research program at the Proton Radiography facility.

He received his B.S. in engineering physics with high honors from the University of Illinois in 1972. In 1979, he was awarded a Ph.D. in Physics from the University of California, Berkeley and joined the Los Alamos National Laboratory's research staff.

Schoenberg's research expertise and accomplishments, as documented by over 90 publications, include the experimental and theoretical investigation of magnetically confined plasmas for controlled thermonuclear fusion, inertial fusion, intense particle accelerators, plasma accelerators, plasma-based space propulsion, missile interceptor systems, and high-energy-density-physics.



John Sarrao



John Sarrao is the Program Director for Los Alamos National Laboratory's Office of Science Programs, a \$100M/y portfolio, and for MaRIE (Matter-Radiation Interactions in Extremes), LANL's signature facility concept which will provide transformational materials solutions for national security challenges.

Since 2002, John has held leadership positions of increasing responsibility within LANL's materials community and served on a number of U.S. Department of Energy Basic Energy Sciences Advisory Committee (BESAC) Subcommittees that set strategic directions for materials research.

John received his Ph.D. in physics from the University of California, Los Angeles in 1993 based on thesis work performed at LANL. He returned to LANL as a technical staff member in 1997 following postdoctoral research at the University of California, San Diego and the National High Magnetic Field Laboratory in Tallahassee, Florida.

John's primary research interest is in the synthesis and characterization of correlated electron systems, especially actinide materials. He is the coauthor of over 520 publications, including 56 papers in Physical Review Letters, Nature, and Science. He won the 2004 LANL Fellows Prize for Research, in part for his discovery of the first plutonium superconductor. He is a Fellow of the American Association for the Advancement of Science (AAAS), the American Physical Society (APS), and Los Alamos National Laboratory.

Eric Pitcher

Eric Pitcher earned his Ph.D. in nuclear engineering from the University of Michigan in 1992. He has been employed at Los Alamos National Laboratory since 1982, having started with the Undergraduate Student Program.

His technical area of expertise is spallation neutron source design. In 2004 he was named the Deputy Group Leader (and later Acting Group Leader) of the Nuclear Physics group within the Lab's Theoretical Division, and in 2005 he assumed his current position as Manager of the Materials Test Station project.

He is an active member of the American Nuclear Society's Accelerator Applications Division, having served on its Executive Committee for five years, including one year as the Chair (2007–2008).

In 2004 he participated in an IAEA Specialist's Meeting on the technology and use of low-energy accelerator-driven neutron sources. He has served on a number of review committees, including a "Temple Review" of the Oak Ridge National Laboratory's Spallation Neutron Source target station in 1999 and Michigan State University's Facility for Radioactive Ion Beams target station in 2010. He has authored or co-authored over 20 journal articles and more than 80 papers in conference proceedings.





The Rosen Prize

The prize, established in honor of Louis Rosen, the Father of LANSCE, is awarded for the most outstanding Ph.D. or M.S. thesis based on experimental or theoretical research performed at LANSCE. Criteria include the originality and scientific impact of the research and the student's contribution to the research.

Daniel P. Shoemaker, a postdoctoral fellow at Argonne National Laboratory, is the winner of the 23rd Rosen Prize.

Shoemaker first came to the Lujan Center in 2007 as a user, then returned each year as a fellow of the University of California, Santa Barbara (UCSB)/Institute for Multiscale Materials Studies (IMMS). His research, directed by Ram Seshadri (UCSB), uses neutron total scattering to describe structure-property relations in disordered magnetic and functional oxides.

Shoemaker received his Ph.D. from the Materials Department at UCSB and was awarded a Graduate Student Gold Award by the Materials Research Society in 2010.

Shoemaker's Ph.D. winning thesis is titled, "Understanding atomic disorder in polar and magnetic oxides."

Louis' Origins

Louis' parents came to the U.S. from Bialystok, Poland. His father Jacob arrived at Ellis Island in 1911. He met his wife in New York, and in 1917 they were married. In 1918, Louis was born. In 1920 Louis' brother Bernard was born. Then, in 1992, they purchased the house seen at right.



Growing Up

As Louis and Bernie became old enough to enter school, their father Jacob operated a small business selling newspapers and ice cream. Both boys became involved in the business helping to earn money for the family. Their mother, Rose, also worked for a nearby hotel and a room of their house was rented to help earn enough money to make ends meet and save a little. Before they knew it, their boys were in high school.

The picture at left is of Jacob, Rose, and Louis' son Terry Leon.

Rosentfest 2011

High School-1935



High School senior class trip to the nation's capital

This picture hung in Ma n' Pa Rosen's kitchen for years afterward. Can you find Louis?



HURLEYVILLE SCHOOL =
NATIONAL CAPITOL - APRIL - 1935 -

WASHINGTON
APRIL 25 - 1935
HURLEYVILLE SCHOOL

Rosenfest 2011



University of Alabama

Louis and Bernie both attended the University of Alabama. Louis received both his Bachelors and Masters degrees there. Louis also taught physics while pursuing his Masters.

Louis is known for saying that he never took a course in nuclear physics, presumably because there was no such thing at Penn State.

Mary Rosen

Louis met Mary while he was at the University of Alabama. His parents were aware of their relationship and though they had concerns about her Christian upbringing, they refrained from ever saying anything, leaving the decision to their eldest son alone.

Louis later informed them that he and Mary would be married by the justice of the peace before driving to Penn State where he would pursue his doctorate.





Penn State

At Penn State, Louis taught physics, including courses in physics specific to students in the Army Air Corps. While teaching, he furthered his study of physics in pursuit of his doctorate. Once he finished his doctoral work, he attempted to enlist in the Navy. His urge to support the country during the war was denied because he was underweight.

Terry Leon is Born

While at Penn State, Mary and Louis had their only child. Terry later wrote a memoir of his experiences growing up in Los Alamos titled, "The Atomic City".



Rosenfest 2011



In Summer of 1944, Louis was recruited to join the Manhattan Project. They sent him to Los Alamos with almost no information about the project, only that he was needed for very important work.

Security was very tight. Mary and Terry would not go to Los Alamos for a few months and lived with family in Alabama as facilities were still being constructed.

The picture to left shows one of two entrances.

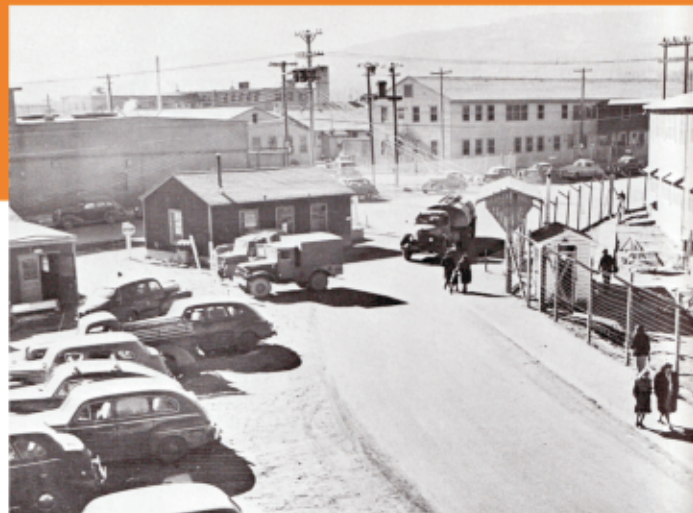


Louis' original security badge photo.

The town of Los Alamos was constructed quickly, and with utility in mind, not comfort.

This picture shows the military organization of facilities. It was tough to enter Los Alamos, and in many ways equally as difficult to leave.

Everyone knew everyone.





The blast and mushroom cloud of the Trinity test, first nuclear explosion, July 16, 1945 at 5:29 AM Almgordo, New Mexico



Louis was not present for the Trinity test, though the test was the culmination of so much effort with so much at stake.

Louis was in Los Alamos that morning, continuing to collate data critical to measurements that Edward Teller used to aid in resolving concerns that a smaller scale test's results were not adequate to ensure the larger scale device would function as expected.



Robert J. Oppenheimer

Two great Men

The success of the Manhattan Project was largely due to the contributions of two extraordinary men: J. Robert Oppenheimer and General Leslie R. Groves. Together they worked to bring to culmination the project that ended World War II. The Manhattan Project's legacy remains critical to our nation's security.

A memorial to these leaders in science and the military have just been erected at Fuller Lodge in Los Alamos.

The two statues evince each man's qualities; so different, yet committed to the same task-peace for all. The statues' dedication will be held Friday, May 20, 2010.



General Leslie R. Groves

After the end of World War II, Louis stayed in Los Alamos to continue his dedication to the security of the nation. His expertise, particularly in his understanding of neutron science, was crucial in verifying what kinds of reactions were taking place during weapons testing.

It was one of his experiments at the first H bomb test, Ivy Mike, that verified the presence of the thermonuclear reaction. While other test equipment had been electronic in nature, his test used a photographic technique. The other experiments did not function properly.

The certificate below shows his participation in 35 nuclear tests during Operation Hard Tack.



Here we see Louis' ID for operation Hard Tack and a certificate verifying his participation.

While he spent a lot of time in the Pacific studying data to verify the nature of the tests, he seldom spoke of his experiences to his family.





A PROPOSAL FOR A HIGH-FLUX MESON FACILITY AT LOS ALAMOS, NEW MEXICO

LOS ALAMOS SCIENTIFIC LABORATORY - LOS ALAMOS, N.M. - SEPTEMBER 1964

Contributors to this Report

This report was prepared by F-Division, T-Division, and the Engineering Department, with the services of S-Division. The following individuals made major contributions:

LAMPF Staff Members		Consultants
Lewis Agnew	E. A. Knapp	M. E. Roel
D. D. Armstrong	J. D. Knight	E. S. Fessler
J. P. Blagden	W. H. Latham	E. Fraunfelder
D. L. Rivins	G. Liberman	J. L. Gammel
W. L. Briscoe	G. Langmuir	R. L. Gluckstern
J. E. Brulley, Jr.	G. J. Jones	A. G. Gindler
J. F. Butten	A. R. Lyle	E. M. Henley
L. F. Burdge	J. H. Malley	G. J. Igo
R. D. Butler	J. D. McGuire	M. Johnson
T. R. Carraway	J. L. McBride, Jr.	A. K. Kerwin
L. G. Callison, Jr.	D. D. Meyer	L. Marshall
R. H. Claiborne	F. F. Moore	L. J. Rodberg
L. Glascock	D. W. Mueller	A. Turevich
D. S. F. Gochran	D. E. Nagle	H. G. Wall
G. A. Owen	J. R. Pevner	
C. L. Grinstead	R. R. Pezina	
D. G. Heller	J. M. Potter	
J. D. Hess	T. M. Putman	
C. H. High	M. Rich	
R. H. Hixson	L. Rosen	
R. W. Freyman	T. M. Schultze	
F. H. Gary	W. J. Shiner	
J. W. Gurdell	J. S. Simons	
W. H. Gilbo	R. S. Stokes	
J. J. Griffin	F. K. Thibodeau	
M. L. Gurley	R. F. Thacker	
D. G. Huperman	C. W. Traub	
W. H. Hall	T. F. Turner	
V. H. Hart	W. M. Vlaschler	
L. Heller	J. F. Wabozin	
R. I. Darsel	S. L. Wotstott	
R. A. Jameson	J. K. Wooten	
William Jarmie	E. C. Wortell	
B. C. Kemp	J. E. Young	

LAMPF is Conceived

In 1964, and in conjunction with 81 other staff members and consultants, Louis presented a proposal for a high-flux meson facility, the Los Alamos Meson Physics Facility (LAMPF), known today as the Los Alamos Neutron Science Center (LANSCE). This proposal contained over 500 pages of experts' analyses and designs for building the world's largest and most powerful linear accelerator to study nuclear structure and function. Other facilities could produce new knowledge of nuclear reactions, but a much more powerful and intense particle beam was required to explore the internal structure of the atom.

Building this facility would keep Los Alamos at the forefront of nuclear physics research. In addition, Louis' proposal was focused forward--new technologies could be added later to improve capacity. Such upgrades have proven hugely valuable.

In addition to studying nuclear structure, the strong interactive force, electromagnetic forces, and weak interactions, other possibilities included studies in radiation damage, biophysics, biomedicine, radiochemistry, and the radioactive nature of environments in outer space.

The proposal went into fine detail about every aspect of building and operating such a facility. One of Louis' personal hopes was that such a premier facility would help LANL attract and retain the world's most talented scientists and students.

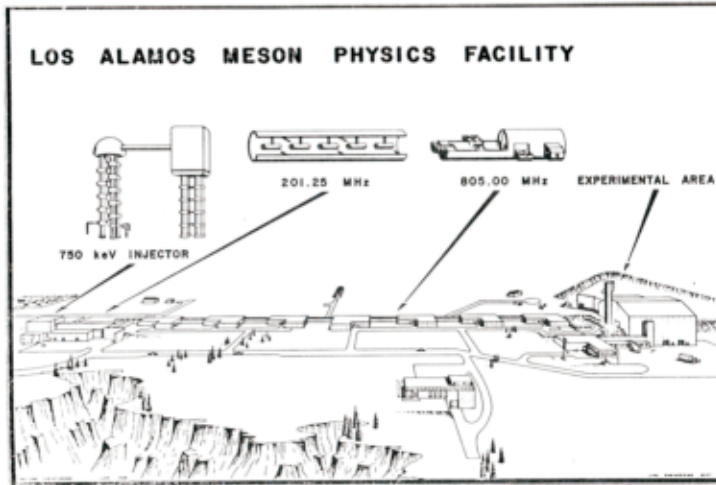


Figure 1. Schematic diagram of LAMPF accelerator.

LAMPF is Born

In 1968, New Mexico Senator Clinton P. Anderson announced that preliminary funding had been made available to begin construction of LAMPF. His tireless efforts in promoting the project in Washington drove the decision to include his name on the facility.

Senator Anderson's involvement in this project may have provided a strong example of good political navigation for Louis to use during his future visits to Washington in pursuit of support for science, non-proliferation of nuclear weapons, and an end to the Cold War. His trips to Washington, and their successful results, are legendary.

Concept to Construction

The 1964 proposal presented detailed photos and technical drawings as well as charts explaining the physics involved. But illustrations like those to the left present the facility in a more visual way. Many such illustrations were produced to help communicate the proposed facility prior to actual construction. Such illustrations continue to this day and add clarity to all those learning about the facility.

Below we see the chasm cut in the ground for the beam and the initial structure of the tunnel.



LAMPF construction is now underway. In foreground is the injector building foundation at the west end of the half-mile long beam channel.



"... start of a new and great venture."—Louis Rosen

LAMPF is Conceived

In February 1964, in the Administration building at LASL, Louis described the available funding in terms of a husband who committed to buy his wife a new wardrobe, but then only provided enough cash for a new hat.

Her choices were to return home to mother, or buy the hat, and on the next formal occasion wear it, and nothing else.

He then informed those present that enough money had just been released to purchase a new pair of shoes as well.

Groundbreaking

The original site for the groundbreaking ceremony had been outside up on the long narrow mesa where the beam facility now stands. But it had recently snowed and conditions would be treacherous, so the decision was made to move the ceremony inside and turn the sand in comfort. The shovel Louis used is still in the Administration building lobby.



Senator Clinton P. Anderson, Chairman Glenn T. Seaborg, and Louis Rosen

Milestones

As construction continued the beam was tested and brought online in stages. The beam first reached 5 MeV on June 10, 1970. Coincidentally, Louis' birthday is June 10.

Two years later, on June 21, 1971, the beam reached 100 MeV.

Then, in 1972, on June 9, the goal of 800 MeV was reached.

Louis and his team celebrate the first time the accelerator achieves its full energy of 800 MeV.



Testing Each Stage

Here we see Louis discussing test data confirming the beam had reached 100 MeV.

Every stage of the project was meticulously tested to verify they were on track and on schedule. In the end the project was completed on time and slightly under budget. This was particularly good news for Norris Bradbury, who had promised to sacrifice his blood into the accelerator's cooling system had the project been completed late.



Experiments Anyone?

By 1986 110 scientific papers had been published on research done at LAMPF and more than 100 doctoral theses were completed.

Experiments Anyone?

Within days of reaching 100 MeV in 1971, an advisory committee met for six days to discuss 68 different proposals for beam time. This represented how much in demand the facility was; the beam wouldn't be fully functional until 1973.

Between 1984 and 1986, many hundreds of scientists and students from 34 different countries came to Los Alamos to use the beam.



LAMPF to LANSCE

In 1995 the mission of LAMPF was changed from a focus on nuclear physics to study of neutron science. The name was thus changed to Los Alamos Neutron Science Center.

In 1996, DOE's Defense Programs assumed operational responsibility, from their Office of Energy Research, to support and administer defense-related programs. The DOE's Office of Basic Energy Sciences continues to support the Manuel Lujan Jr. Neutron Scattering Center in accordance with DOE's missions for scientific research.



Neutron Science and Defense Programs

Though Louis was retired during the last 20 years of the facility operations, he remained a constant fixture at LANSCE. His commitment was legendary and he continued to support the staff whenever asked and in every way he could. A few hours a day were spent just keeping up with new scientific and technological developments. Louis often providing moral support to colleagues inside and outside the Lab.

The shift from meson-based to neutron-based science was a reflection of the needs of the scientific community and national security.



Rosentfest 2011



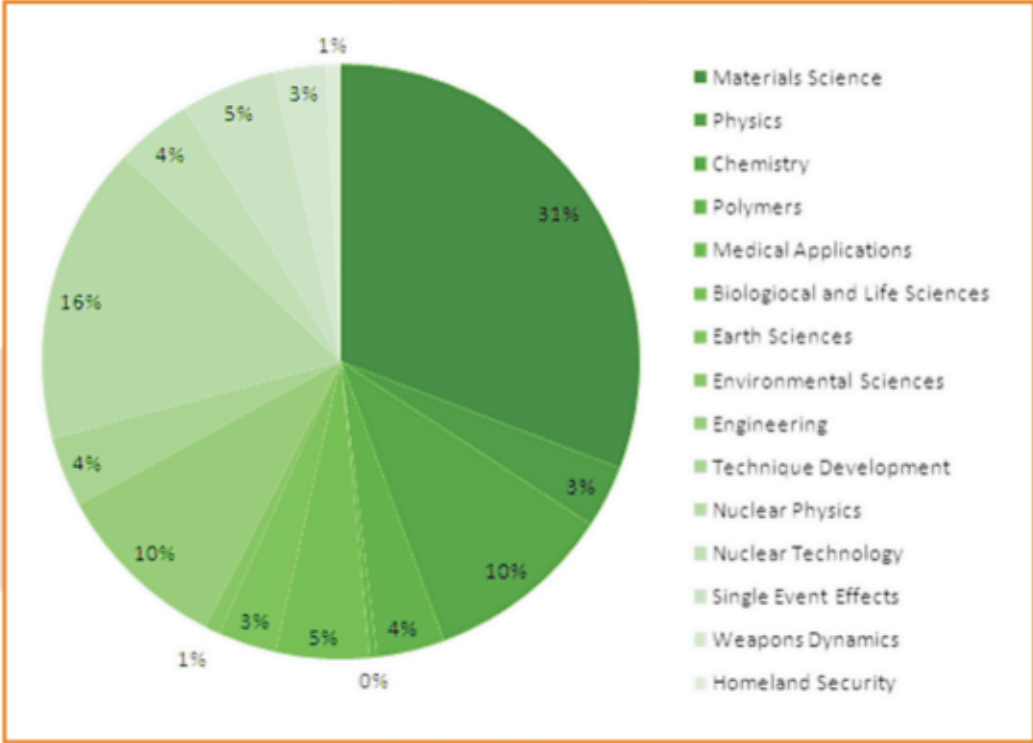
Louis always felt the people of Los Alamos represented a unique and powerful force for scientific study. Nowhere else in the world were so many great minds joined in such proximity. He felt this synergy was important to the laboratory, and to the nation, but he also felt a deep commitment to the spirit of scientific discovery available to all the people of the world.

First LAMPF, and then LANSCE provided a powerful draw on the scientific community. It attracted high level scientists from all over the world including Iran, Israel, Iraq, China, and the USSR. Despite differences in ideology, he felt that sharing, through science, might lead the way toward peace between nations.

One small part of his legacy is that hundreds of Ph.D. theses have been awarded based upon research done at LANSCE. In addition, because of the quality of the facility, LANSCE and the Laboratory are able attract and retain many of the great scientific minds from around the world. Working together, they drive the advancement of science much further than if all that talent remained dispersed.

The culmination of cooperative work toward advancing knowledge is the backbone of the work done at LANSCE then, and now.

LANSCE serves users from many countries and a wide variety of disciplines. It hosts 1100 user visits each year from all over the United States and 15 other countries. The facilities run experiments for academia, industry and basic research.



Future of LANSCE

Possible enhancements to LANSCE include MaRIE, or Matter-Radiation Interactions in Extremes. Planned upgrades will dramatically increase the capabilities of the facility in material science, nuclear weapons stewardship, and nuclear fuel disposal and recycling. These technologies form a critical base of knowledge for improving nuclear energy options now and in the future.

"Nuclear energy is the only available technology that can replace fossil fuels on a large scale." —Patrick Moore, founder of Greenpeace, keynote address to the American Nuclear Society, November 2005



(Image from report on High-Power Options for LANSCE, Garnett, Rybarczyk, Tajima, and Pitcher, March 31, 2011)

Dr. Louis Rosen

Born: June 10, 1918, New York City

Education: B.A. and M.S. degrees from University of Alabama, Ph.D. from Pennsylvania State University.

Married: Mary Terry Rosen, 1941 in Tuscaloosa, AL.

WWII: Was recruited to Los Alamos in 1944 to join the Manhattan Project.

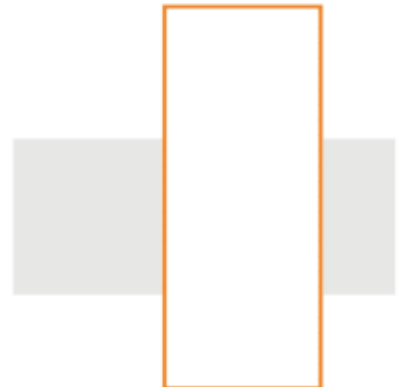
Post War: His focus was divided between basic nuclear physics and national defense.

LAMPF: He was instrumental in conceiving, developing, and then directing the operation of the Los Alamos Meson Physics Facility (LAMPF) circa 1968 to 1985.

LANSCE: Continued to work at LANSCE as a scientist and advisor to LANL until a week before his death.

Died: Los Alamos, August 20, 2009, age 91

'Papa Louis is survived by his two grandchildren Terry Lee Rosen and Ambyr Michelle Hardy, and four grandchildren, Tatsuo, Ivy, Dahlia and Waylon.



Rosenfest 2011



**Terry Rosen, grandson
of Louis Rosen.**

Layout and Design: Terry Rosen

Contributors: Lew Agnew, James Bradbury, Ambyr Hardy, Alan Hurd, Bernie Rosen, Terry Rose, and many others

Cover Design: Terry Rosen

Design Consultant: Dennis Mukai

Editorial Consultant: Clay Dillingham

Photographs: Historical and archive photos from Los Alamos National Laboratory, and Rosen family photos.

Publication: Printed by ARS Printing, Longmont Colorado
Printed in May, 2011.

Terry Lee Rosen is a Colorado native. He studied Criminal Justice at Metropolitan State College of Denver. He taught high school technology subjects including computer science and graphic design. He then earned his Masters in Education from University of Phoenix where he studied issues of quality improvement in education. His latest degree is in Game Art and Design, a subject he aims to teach in the near future.

LANSCE Tour Guidelines

Everyone will receive a badge to be worn at all times during the tour.

Escorts will be provided to answer questions during the tour.

Any cell phones, cameras, or other recording devices must be left on the bus during the tour.

No photography, videotaping or sound recording will be allowed while on lab property.

No electronic devices will be allowed, such as laptop computers, PDAs, Blackberries, thumb drives, Bluetooth capable devices or any devices with infra-red or radio frequency transmission.

No electronic storage devices will be allowed.

Visitors may not bring weapons of any kind, explosives, alcohol, drugs or associated paraphernalia or other prohibited articles.

