Archival Elements

Newsletter of the Science, Technology, and Healthcare Roundtable of the Society of American Archivists
Summer 2001

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Message from the Co-Chairs

Russell Johnson and Suzanna Long

All folks attending SAA (Society of American Archivists) in Washington, D.C. are invited to the Science, Technology, and Healthcare (STHC) Roundtable meeting on Saturday, 1 September 2001, 8:00-9:30 a.m.. The STHC roundtable provides a forum for archivists with similar interests or holdings in the natural, physical and social sciences, technology, and health care (including medicine), and provides an opportunity to exchange information, solve problems and share successes. We especially welcome STHC archivists from the D.C. area, as well as archivists who do not have a primary focus in these fields but may have questions to ask or collection news to share.

Agenda

1. Welcome and introductions

2. Council Representative--Dennis Harrison

3. Program

Janice Goldblum: "'Whenever Called Upon': The Archives of the National Academies of Sciences".

Janice Goldblum, NAS, will discuss the policies for preserving NAS and the National Research Council's documentation for the history of science. Rather than a specific discussion of the holdings of the archives, Ms. Goldblum will outline what the

archives is trying to do to identify and preserve the current records with historical importance and what problems it faces in achieving its goals. Records management at NAS from only an archival prespective will also be presented.

4. Business

-Review agenda
-Minutes from the 2000 meeting
-Report on 2000-2001 activities
-Archival Elements Newsletter (Liz Andrews and Tanya Zanish-Belcher)
-STHC-L Listserv (Russell Johnson)
-Election of officers--new co-chair
-Introduce continuing and new Steering Committee members
-STHC at SAA 2002 preview and local outreach--Tim Pennycuff (University of Alabama, Birmingham (UAB)
-Brainstorming program ideas for SAA 2002
-Roundtable Round Robin: "Hot Topics" from Membership

Yvonne Wilson, NARA:
Current news within NASA, EPA, and related science agencies, in addition to NARA's targeted assistance program

Kalpana Shankar:
STHC in the SAA Student Chapters--promoting research, poster sessions, and an appeal to program developers to consider inviting students onto their panels

-Update on flooded records at NASA and Houston (Texas Medical Center)

-Other new business

5. Adjournment

Our chief concern is to ensure that the STHC Roundtable reflects the interests of its participants. We welcome all suggestions relating to the above topics or concerning any other issues members might like to see addressed at our meetings. Please don't hesitate to get in touch with either of us:

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W: http://www.medsch.ucla.edu/som/bri/archives/nhahome.htm

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Around and About Archives

American Society of Clinical Pathologists:
www.ascp.org/general/about
This will get you to historical information about the ASCP and its members and the profession itself.

The Archives also has some additional information plus four audiovisual programs with sound at:
www.ascp.org/general/archive

The four programs include a two-part lecture by Israel Davidsohn, MD, on infectious mononucleosis, and a two-part lecture by Phil Levine, MD on blood donations. Both gentlemen, now deceased, were very important pioneers in the field of laboratory medicine, especially in hematology. Both had awards named after them. The programs are derived from educational programs developed by the ASCP in the early sixties. In their original format, they included a filmstrip, a record, and a manual or script for the program. Many of these programs were sold to medical schools for use in training pathologists. Indeed, people on the ASCP Archives Committee remember seeing them. We still are looking for part 2 of a program by the late Lemuel Diggs, MD, on sickle cell anemia, in which he was doing research back as early as the 1930's. We encourage everyone to try the ASCP website and see what you think. If anyone in the Roundtable has reference requests relating to pioneers in pathology and the history of laboratory procedures, please refer them to me at: johnz@ascp.org or 312/738-1336, extension 1145. I am there on Tuesdays and Thursdays.

As to the American Academy of Pediatrics, we do not have an awful lot of historical information on our website as yet. We do have a growing collection of pediatric textbooks and an extensive collection of infant feeders. So, if anyone in the Roundtable gets questions on such topics, please refer them to me at 847/434-7093. I am here on Mondays, Wednesdays and Fridays.

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Archives of Women in Science and Engineering (Iowa State University) has received a $25,000 grant from the Dreyfus Foundation, to conduct oral history interviews with women scientists in chemistry from the post-war period. For additional information, please contact Tanya Zanish-Belcher, tzanish@iastate.edu

The Computer Museum is now part of the Museum of Science. In 1999, The Computer Museum closed to the public at its 300 Congress Street, Boston, location and joined forces with the Museum of Science, Boston. With the integration of several Computer Museum exhibits and programs, the Museum of Science greatly accelerated the enhancement of computing and other new technologies throughout the institution, while expanding the reach of The Computer Museum's exhibits and programs. New England now has a single destination offering a broad understanding of science and technology.

The Computer Museum's collection of artifacts resides at The Computer Museum History Center in Moffett Field, California. For more information, please visit http://www.computerhistory.org

This fall the **Denver Museum of Nature and Science** will be hosting an exhibition entitled "Voyages of Discovery" designed by the Natural History Museum of London. (See their website: http://www.nhm.ac.uk/museum/tempexhib/voyages)

International Women's Air & Space Museum, Inc.
Burke Lakefront Airport, 1501 North Marginal Road
Cleveland, OH 44114
Call: 1.216.623.1111 or FAX: 1.216.623.1113

The International Women's Air and Space Museum, Inc., opened in
March 1986, in Centerville, a suburb of Dayton, Ohio. Since that time the Museum has grown and expanded and has now been welcomed by the City of Cleveland, Ohio, at the Burke Lakefront Airport. Exhibits are in the lobby at Burke, as well as the west concourse, and are accessible seven days a week. Museum admission is free!

The National Library of Medicine (U.S.) recently mounted a Web edition of its "Directory of History of Medicine Collections", which provides contact information and collection scope and highlight notes for several dozen libraries, archives, and museums:
http://nnlm.gov/

National Institutes of Health (NIH) To commemorate the 20th anniversary of the first publication about AIDS, The NIH History Office announces the launch of a website, "In Their Own Words: NIH Researchers Recall the Early Days of AIDS," at http://aidshistory.nih.gov . The website features some of the oral history interviews the NIH Historian,Victoria A. Harden, and her colleagues have done since 1988 with NIH physicians, scientists, nurses, and administrators whose work comprised the NIH's response to AIDS between 1981 and 1988.

On the topmost pages of five "chapters," voice clips from the interviews can be activated, and a "Transcripts" link leads the viewer to the complete texts of the interviews. A "Timeline" contains a month-by-month chronology of selected items related primarily to NIH's activities and those of other DHHS agencies. A "Document Archive" contains selected published articles, unpublished documents and ephemera, and institute press releases. An "Image Archive" contains selected images related to the epidemic.

Many more interviews, documents, and images will be added as time goes on with the goal of making this site an archival resource on the history of the biomedical response to AIDS. The website was a joint project of the NIH History Office, the National Institute of Allergy and Infectious Diseases, the National Cancer Institute, the NIH Clinical Center, and the NIH Center for Information Technology.

Please send feedback about the website to history@nih.gov.

National Library of Medicine

The Archives and Modern Manuscripts program converted all of its existing 107 finding aids to processed collections to EAD (Encoded Archival Description). Currently, HTML versions of the finding aids are available (www.nlm.nih.gov/hmd/manuscripts/alpha.html). A searchable database is in our near future plans. Other web projects include lists of all processed collections, as well as short accession record descriptions of all our unprocessed collections (www.nlm.nih.gov/hmd/manuscripts/msscoll.html)

We are also into the second year of a major processing project, that of the records of the Group Health Association of Washington, DC (1937-1998; ca. 800 cubic feet). The GHA was one of the nation's first prepaid medical plans. Started in 1937 for employees of the Home Owners Loan Association, its membership was soon opened to all federal employees. A landmark federal antitrust suit involving the GHA was settled in 1943, opening the door to the idea of third party health care financing, and thus the foundation for what we all take for granted in prepaid health insurance.

Three new sites were added to the Profiles in Science (www.profiles.nlm.nih.gov/) web site: the Julius Axelrod, Christian Anfinsen, and the Marshall Nirenberg Papers. The NLM also released several new additions to the Joshua Lederberg Papers. Profiles in Science is a digital manuscripts project at the NLM that makes the archival collections of prominent twentieth-century biomedical scientists available to the public via a searchable database of scanned documents from their personal papers collections.

Along with the digitized collection, the personal papers of Dr. Marshall Nirenberg is a recent acquisition of the NLM (ca. 375 linear feet). The collection includes laboratory notebooks, diaries, reprints, charts, transcripts of speeches, and photographs documenting Dr. Nirenberg's research from the 1960s to the 1980s. The Profiles in Science site features Dr. Nirenberg's research on the genetic code for which he won the 1968 Nobel Prize in Medicine or Physiology.

John P. Rees
Associate Curator, Modern Manuscripts
History of Medicine Division
NLM
www.nlm.nih.gov/hmd/hmd.html

Science and Technology Section: Association of College and Research Libraries/American Library Association

See *Issues in Science and Technology Librarianship* Electronic Journal: http://www.library.ucsb.edu/istl/

The staff of the **Woods Hole Oceanographic Institution** (WHOI) Data Library and Archives has processed the personal papers of seven leading figures in the history of oceanography: Nicholas Paul Fofonoff, John Brackett Hersey, Charles Davis Hollister, John Meacham Hunt, Columbus O'Donnell Iselin, Raymond B. Montgomery, and William Stelling von Arx. Consisting of approximately 66 linear feet, these collections document WHOI as an internationally recognized research institution from its beginning in 1930 through its post World War II growth and expansion. While several of these scientists were leaders in their fields and played significant administrative roles, the collections as a whole reflect the interdisciplinary aspects and range of ocean sciences. The rich source of materials reflects the scientists' work in physical oceanography, geophysics, geochemistry, and meteorology. Processing of these collections was partly supported by a grant from the Friends of the Center for History of Physics, American Institute of Physics. Copies of the finding aids may be found on the WHOI web site at http://dunkle.whoi.edu/dlaweb/.

Stuart Culy
Archivist
Woods Hole Oceanographic Institution

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Conferences, Meetings, and Workshops

SAA Washington, D.C.-- August 2001

Bring your breakfast to the yearly gathering of the Science, Technology, and Healthcare Roundtable which is meeting on Saturday morning September 1 at 8 a.m. We especially welcome Sci-Tech-Health Care archivists from the D.C. area -and archivists who do not have a primary focus on our subject area but have related collections and information to share in our roundtable round robin.

For the full SAA program, please see the following:
http://www.archivists.org/conference/dc2001/index.html

Tour: U.S. Naval Observatory
Wednesday, August 29, 2001--8:00 p.m. 10:00 p.m.

Come gaze at the stars! SAA has organized a special tour of the United States Naval Observatory (USNO). Observe stars through a more than 100-year-old telescope, learn about official time, and the history of the USNO on an evening tour conducting Geoff Chester, the public relations officer for the USNO. In addition to the tour, the library reading room will be open for viewing of rare celestial drawings. Please see the SAA program for additional information about attending.

SAA Sessions sponsored by the Roundtable or related sci/tech topics are:

Opening Plenary Session--Dr. Gene D. Cohen, director of the Center on Aging, Health, and Humanities at George Washington University.

Dr. Cohen will discuss, "When Biography is as Important as Biology in the Overall Approach to Alzheimer's Disease." Part of the double experiential tragedy of Alzheimer's disease is that patients lose touch with their own memories and, in the process, lose the ability to tell their own story. When individuals' histories are not known, knowledge and appreciation of them as persons in care settings are diminished. Two innovative studies designed to provide an Alzheimer patient's own story are being conducted through the Center on Aging, Health and Humanities at George Washington University. One approach uses video biographies and the other utilizes the first game (a personalized biography in the form of a game) developed for Alzheimer patients and their families. Both approaches are intergenerational, where young people are involved in helping families create the products. The effects are to improve the quality of life for the patient, enhance communication during visits with family and significant others, and increase staff knowledge of the unique histories of the people they care for. In the end, individuals with Alzheimer's disease who are no longer able to provide their own story, become catalysts for the development of these poignant exit gifts of family biographies for their loved ones. Both projects demonstrate how biography can be as important as biology in the overall approach to the treatment of Alzheimer's disease.

19. Ghosts in the Archival Closet: Controversial Data, Ethical Quandaries
3:30-5:00 p.m., Friday, August 31

Jonathan D. Moreno, Chair
University of Virginia

Martin L. Levitt
Temple University
"A Case Study in Ethics: Issues in Constructing a Eugenics Web Site"

Paul A. Lombardo
University of Virginia
"History's Dirty Words: Perils of Study in Eugenic Archives"

Practices such as coercive sterilization and racial segregation gained public acceptance due to the research of "eugenicists." While eugenics is now perceived as a field of dubious merit, the papers of the movement remain in archives. Given the morally troubling motives of eugenicists, how should archivists treat such material? This session features a historian, an archivist and a bioethicist who will explore the potential and the perils of the eugenical paper trail.

51. Extreme Science: Pushing the Archival Envelope on Land, on Sea, and in the Air
10-11:30, Saturday, June 1, 2001

Russell A. Johnson, Chair
University of California at Los Angeles

Deborah Day
University of California at San Diego
"Danger at Sea: Documentation of Oceanographic Expeditions"

Bradley D. Westbrook
University of California at San Diego
"High Life: High Altitude Medicine and Physiology Collections at UCSD"

Katharine E.S. Donahue
University of California at Los Angeles
"Life in the Field: How Do They Get That Data?"

What is special or not about the scientific records of harsh, inhospitable, and even life threatening environments and the expeditions of those who visit, explore, or routinely live and work there? Two archivists and a librarian/naturalist discuss the process of data collection, the risks and payoffs of fieldwork, and the archivist's role in collecting the field notes and documenting the activities of scientific expeditions.

The **History of Science Society** will be meeting 8-11 November, 2001 in Denver, Colorado. See the preliminary program: http://depts.washington.edu/hssexec/

What is the Science, Technology, and Health Care (STHC) Roundtable?

• STHC is the sole forum for archivists working at institutions in the natural and social sciences, technology, and the health sciences. STHC provides a means for its members to share problems, projects, and products that they have in common.

• STHC is a roundtable within the Society of American Archivists (SAA). As such, STHC serves as an advocate for its members interests, provides avenues of communication, and engages in special projects.

• Like all SAA roundtables, STHC is informally governed. STHC has two co-chairs and a Steering Committee, all of whom are listed on the back page of this issue.

• STHC membership is easy: just notify one of the co-chairs of your interest. Involvement is at the level you feel comfortable. Membership in SAA is not a requirement.

• STHC holds its annual two-hour meeting at the annual SAA meeting. These meetings consist of a brief business meeting, presentations on new and ongoing topics of interest, and an open forum for discussing relevant issues.

• In addition to its own program, STHC also proposes sessions for the overall SAA meeting. This helps assure STHC members that there will be sessions of interest to them.

• STHC also produces its newsletter *Archival Elements* , with sections on projects, institutions, special topics, and roundtable business.

If you are interested in becoming a member of STHC or increasing your level of involvement, please contact one of the co-chairs listed on the back page of this issue.

SAA Science, Technology Health Care Roundtable: Steering Committee Members (2000-2001)		
R. Joseph Anderson American Institute of Physics One Physics Ellipse College Park, MD 20740-3843 301/209-3183 rja@aip.org	Liz Andrews (Newsletter Co-Editor) Massachusetts Institute of Technology 77 Massachusetts Ave Cambridge, MA 02139 617/253-4323 landrews@mit.edu	John Bolcer Hanford Health Information Archives Gonzaga University Spokane, Washington 99258 509/323-5932 bolcer@foley.gonzaga.edu
Robin L. Chandler Robin.Chandler@ucop.edu	Jean Deken Stanford Linear Accelerator Center P.O. Box 4394, MS 82 Stanford, CA 94309 650/926-3091 650/926-5371 (fax) jmdeken@slac.stanford.edu	Russell Johnson Neuroscience History Archives Brain Research Institute University of California, Los Angeles Los Angeles, CA 90095-1761 310/206-2753 rjohnson@library.ucla.edu
Joan Echtenkamp Klein University of Virginia Health Sciences Library #234 Historical Collections UVA Health Sciences Center Charlottesville, VA 22908 804/924-0052 804/924-0379 (fax) jre@virginia.edu	Jodi Koste Archivist, MCV Campus Medical College of Virginia/Commonwealth University Tomkins-McCaw Library Box 980582 Richmond, VA 23298-0582 804/828-9898 804/828-6089 (fax) jkoste@hsc.vcu.edu	Suzanna Long (Co-Chair) Pittsburg State University 117-B Whitesitt Pittsburg, Kansas 66762-7526 slong@pittstate.edu
Lisa Mix Alan M. Chesney Medical Archives Johns Hopkins Medical Institutions 2024 E. Monument Street Baltimore, MD 21205 410/955-3043 410/955-0810 (fax) lmix@mail.jhmi.edu	Julie Reiz Jet Propulsion Laboratory 4800 Oak Grove Dr. M/S 301-365 Pasadena, CA 91109 818/354-1864 818/393-3111 (fax) julie.m.reiz@jpl.nasa.gov	Tanya Zanish-Belcher (Newsletter Co-Editor) Special Collections Iowa State University 403 Parks Library Ames, Iowa 50011-2140 515/294-6648 tzanish@iastate.edu

Science, Technology, and Healthcare Listserv (STHC-L)

PURPOSE: STHC-L provides a forum for archivists working at institutions in the natural, physical, and social sciences, technology, and the health sciences. It includes announcements, inquiries, and discussion on access to historical sources and their use and interpretation.

AUDIENCE: Membership is open to archivists and users of archives in the history of science, technology, and health care. The listserv is maintained for the benefit of the Science, Technology and Health Care Roundtable (STHC) of the Society of American Archivists (SAA), but it is open to all (anyone with an e-mail account can subscribe without restriction).

HOW TO SUBSCRIBE: To join the list (even though the term "subscribe" is used, there is not and will not be a fee), send a message to LISTPROC@library.ucla.edu with the following in the message area:

SUBSCRIBE STHC-L [yourfirstname yourlastname, institution]
example: SUBSCRIBE STHC-L Russell Johnson, UCLA
Be sure the message is contained in a single line in the message area; the subject line should be blank. You need not include the comma and the institutional affiliation, but the latter is helpful to the list moderator and other subscribers. Note that you do not include your e-mail address, only your full name. This is because ListProc, the listserv software, automatically reads the return address on your subscription message and uses that as your e-mail address. Because of this, be sure to be logged on and to send the subscription request from the account or address to which you want STHC-L messages sent!

TO POST MESSAGES: Once your are subscribed, send messages to:

STHC-L@library.ucla.edu
For more information (or if you have problems subscribing), please contact the list administrator:
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Notes: past messages are available on the web, indexed annually at:
http://www.medsch.ucla.edu/som/bri/archives/sthc/msgsthc.htm

Websites of Interest

American Institute of Physics: Center for History of Physics Newsletters

Archives of American Psychology at the University of Akron

Australian Science Archives Project, 1985-1999

Baker-Cederberg Museum and Archives, Rochester, New York

Book News: latest Books in Science, Technology and Medicine

Charles Babbage Institute: Center for the History of Information Processing

Commission on Professionals in Science & Technology

Computer Museum History Center

Cyber Museum of Neurosurgery

Cyberspace Museum of Natural History & Exploration Technology

Medical History on the Internet

NASA Library

National Science Foundation Image Library

The Why? Files: Science Behind the News

U.S. National Library of Medicine--Images from the History of Medicine

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Articles

From Crumbs to Cake—Making the Most of Opportunities Tossed Our Way
Myra O'Canna, Archivist, Sandia National Laboratories

As an archivist for a large research and development laboratory that is very project-oriented, it has been challenging to establish the Corporate Archives and History Program as a valued company resource. We have learned to capitalize on opportunities as they arise. In 1999, Sandia National Laboratories celebrated its 50th Anniversary, providing a rare opportunity for the Archives/History staff to become involved in a significant company celebration. Now that the dust has settled and my frazzled nerves have calmed, I can reflect on the events of a year ago.

Sandia National Laboratories is a government-owned, contractor-operated laboratory managed for the Department of Energy by Lockheed Martin Corporation. In 1945, Sandia began as Z Division, the ordnance design, testing, and assembly arm of Los Alamos Laboratory. In the fall of 1945, the Division relocated to Sandia Base in Albuquerque, New Mexico. In 1948, Z Division was renamed Sandia Laboratory, a separate branch of Los Alamos. On November 1, 1949, Sandia became an independent laboratory and, in 1979, a national laboratory. Today, Sandia employs 8500 people at the primary site in Albuquerque, New Mexico, and other sites in Livermore, California, Tonopah Test Range, Nevada, and Kauai Test Facility, Hawaii.

On November 1, 1999, Sandia National Laboratories would be celebrating its 50th Anniversary.

In 1997, a planning committee was formed to begin preparing for Sandia's 50th Anniversary. Initially, the planning committee didn't include members of Sandia's Corporate Archives and History Programs; our Media Relations department was running the show. Although the committee wanted access to historical photos and information, the committee chair only agreed to make me (the Corporate Archivist) a member of the planning committee after our manager sent an email plea requesting my inclusion. At first it appeared only crumbs of participation would be tossed our way, however, as time went on and events were planned for the year, it became possible for us to take a more active role. Top management directed that the main focus for the anniversary celebrations would be Sandia Day. Held every four or five years, Sandia Day is an opportunity for employees to escort family members into normally restricted areas to view their work sites. Although classified areas are not accessed, many unclassified areas present interesting demonstrations and exhibits for families to enjoy. It was also decided to give an anniversary spin to regularly scheduled annual events, such as the State of the Labs address to community leaders and the Retiree picnic. Other activities included partnering with the local Chamber of Commerce to produce a supplement about Sandia for the local newspaper and the production of a traveling exhibit to be placed at many venues inside and outside of the laboratories.

Initially, the planning committee had not planned to hold an event on Sandia's actual anniversary, November 1, 1999. Weather is questionable that time of year and there was also concern about the budget required to support this event. I felt strongly that Sandia needed to acknowledge the real anniversary date (after all, that's what makes it an anniversary!) and volunteered to lead this effort (the November 1 Team). I began to plan the event with the chairman of the planning team and a member of Sandia's protocol office, eventually gaining management support to proceed with the event. Protocol's

support was key to the event's success because this department routinely interacts with dignitaries and plans high-profile events. Facility support was also crucial to the event's design and logistics. The November 1 Team eventually grew to a group of fifteen employees with a variety of expertise.

A time capsule was one of the first things we decided to include as part of the 50th Anniversary event. Planning, collecting, and packaging items for the time capsule proved to be the most satisfying project I worked on for the anniversary. The capsule was meant to be a snapshot of Sandia's culture today to serve as a message to the future. For the time capsule, we used a large barrel (20" W X 28" H) designed by Sandia to store weapon parts. The time capsule gave me many opportunities to interact with Sandia's technical staff to collect the current technologies that were included in the capsule. Representatives were appointed from each of the fourteen vice presidencies and these folks helped to collect materials representative of work in their areas. In addition, we included the media of the day—cell phone, pager, diskette, CD-ROM, VHS tape. Over 200 items were finally collected and packaged in acid-free boxes for the time capsule. Items included documents describing many programs as well as artifacts. Miniaturization was a main theme with many technologies—micromachines, a navigational system, trajectory system, the world's smallest combination lock, and a ChemLab—carried on microchips. I commented to one engineer that clearly the story in 1999 is miniaturization and he pointed out to me that when the capsule is opened in 25 years, the staff will say, "Look how big those chips were back then!" We included other items typical of the day, such as an employee badge and business credit card. The time capsule was put on display at Sandia Day and in our administration building two weeks prior to its placement allowing many employees to view its contents. I was interviewed about the time capsule by a local radio personality who then played excerpts during the day of the event.

When the capsule is opened on November 1, 2024, the first item to be viewed will be a letter written by our Sandia president Paul Robinson to the future president. Our research historian, Rebecca Ullrich, drafted the president's letter, which opens this way,

"As I write this, Sandia is in the midst of its 50th anniversary celebration, honoring its past and acknowledging its achievements. We also stand at the edge of the millennium, looking forward to the future you are now creating…"

The capsule was placed inside a monument placed outside Sandia's administration building. It includes a marble cap inscribed with this quote,

"…historic preservation provides the basis for the future…"

United States Secretary of Energy Bill Richardson

I hope to be present at the capsule's reopening in 2024; I'll be 74 years old! It will be great fun to see how the materials have fared over the 25 years.

In addition to the time capsule, the 50th Anniversary planning included several other activities. We extended invitations to the nation's executive office, Secretary of Energy, New Mexico senators and representatives, DOE officials, former Sandia presidents, presidents of the other national laboratories, and foreign and local dignitaries. We had to plan for many security issues, depending on the level of the official attending. We didn't know which dignitaries were going to attend or speak until almost the last minute—so although our programs were completed well in advance, our agenda wasn't printed until the day before. At one point, we were asked to change the event date to accommodate official schedules. Because the event was scheduled for our actual anniversary date—and we were fortunate it was a week day—we were determined to leave the event as planned. Because of concerns about the weather, we developed a back-up plan in which a very scaled-down event would take place in a large auditorium on site. However, in spite of these challenges, we were favored with 70-degree weather on Monday morning, November 1, 1999.

The event proceeded as follows: A half-hour before the event, Highland High School band entertained employees with patriotic music. A flyover by the Air National Guard (especially appropriate because Sandia is located on Kirtland Air Force

Base) officially kicked off the celebration at 10:00 a.m. The Air Force Color Guard posted the colors and a Sandia retiree sang the national anthem. New Mexico Senator Pete Domenici was our highest-ranking government official to speak; other speeches were given by our Sandia president Paul Robinson and local DOE manager Rick Glass. The culmination of the event was the placement of the time capsule. A drum roll accentuated the lowering of the capsule by Sandia's current and retired presidents into a monument outside the administration building. There was a crescendo of cymbals when the capsule reached its destination! The event concluded at noon when refreshments were served to the 1500 attendees. Sandians and guests could browse through tents displaying exhibits while enjoying punch and cake (served from one enormous 15'X 2' cake).

We intended to present Sandians and retirees a small gift, but our plans were thwarted when we learned that we were unable to use government funding for personal gifts. I did not want to give up on the idea and, later on, when a manager of Sandia's credit union expressed the desire to contribute to Sandia's anniversary, it seemed the perfect opportunity to suggest the funding of a commemorative coin. The credit union's funding was later matched by Sandia's managing organization, Lockheed Martin. This allowed all employees and retirees to receive a specially minted commemorative coin on November 1, 1999.

We also obtained seed money from Lockheed Martin to fund the production of 400 Russian laser crystal commemorative decorations. These crystals had a striking design of an American eagle perched atop Sandia's thunderbird logo. It was great fun to work with the Russian supplier via email and with a translator, who helped us decipher the Russian contract. The production of the crystal gifts was a significant accomplishment—Sandia's work in nonproliferation encourages Russian companies to use technology formerly used in weapons work for other purposes. How amazing that the enmity of the cold war has given way to an atmosphere of friendly exchange. It was a thrill when the crystals arrived at Customs in Albuquerque, every single crystal intact. One hundred of the crystals served as gifts for dignitaries and the remaining three hundred crystals were sold in short order to employees along with other anniversary memorabilia at the National Atomic Museum store.

Well into our plans for the 50th Anniversary event, the planning committee determined that we would hold an international colloquium the following day, November 2, 1999, and a sub-committee was formed to plan the details. Foreign and local dignitaries and Sandia staff were invited to attend the meeting, "Nuclear Weapons: Keeping the Peace, Past, and Future." At the colloquium, our Sandia president was presented with several beautiful and interesting gifts, including a Russian lacquered punch bowl in the shape of a swan; a bottle of French Cognac, dated 1949; and a ceramic plate fabricated by the Atomic Weapons Establishment in England. These unique gifts are now preserved in Sandia's Corporate Archives.

As a result of my participation on the planning team and as the leader of the November 1 event, there were many opportunities for the Corporate Archives and History Program to become involved in the various events that occurred over the year. We were routinely called upon to provide historical photographs and text for the many publications, articles, and exhibits produced during the year. The Corporate Archives and History Program developed three separate exhibits that were on display in the main lobby of our administration building. Exhibits such as "Birth of a Laboratory"; "Putting Weapons to the Test" (featuring Sandia's test sites); and Spin-offs of Weapons Work (weapons technology transferred to industry) gave us an opportunity to display artifacts rarely seen by employees.

Initially, we were offered only crumbs in terms of participation in Sandia's 50th Anniversary. The crumbs grew into cake—providing many opportunities for the Corporate Archives and History Program to serve an active role. The defining moment for me, I believe, was in assuming leadership of the November 1 Anniversary event. This opened the door to the creation of a Sandia time capsule and the opportunity to interact with many Sandians at all levels. Although I am the Laboratories archivist, I had to assume many tasks—in sales, marketing, and purchasing. In an environment that is very focused on current projects, the 50th Anniversary provided an avenue for the Corporate Archives and History Program to offer historical resources as well as evaluation of today's work that was welcomed and appreciated by the Sandia employees and management. In acknowledgment of its accomplishments, the planning committee received an Employee Recognition Award (only about 120 individuals and teams receive this distinction out of a workforce of 8500).

Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy under Contract DE-AC04-94AL85000.

Gertrude Elion, "Woman of Valor"

Now in its fifth year, the Jewish Women's Archive's "Women of Valor" educational outreach program is designed to bring the lives and achievements of Jewish women into the mainstream of both Jewish education and American society. Notable women who have made tremendous contributions to Jewish and American society and culture have often been forgotten by the Jewish world, as well as by American and women's historians. Through innovative use of primary source material and of technology, JWA' s Women of Valor program aims not only to disseminate knowledge about a group of extraordinary women – scientists and community leaders actors and athletes, poets and politicians – but also to spark increased interest in the experience of doing history.

Every year, three new "Women of Valor" become the subjects of striking posters, which incorporate photographs, drawings, and documents, as well as text, a timeline, and quotations. An accompanying Resource Guide provides a biographical sketch, contextual information, additional primary sources, and questions and programming ideas; the Guide prompts users to think critically about the material and to work as a historian does, combining analysis of primary documents with information from secondary sources. An extensive web exhibit on each woman rounds out the project, located at www.jwa.org*, these multimedia exhibits include a wide range of primary sources and additional biographical and contextual information. The Internet opens up exciting new possibilities for bringing the raw materials of history – documents, images, interviews, videos, etc. – out of the traditional archival setting and into classrooms, libraries, and homes throughout the United States and abroad. In doing so, it can help Americans of all ages and backgrounds develop a more intimate and vibrant relationship with their own history.*

The following article is based on JWA's profile of Gertrude Elion, Woman of Valor for 2001. For more on Elion and selected primary sources, please see www.jwa.org/exhibits/elion*. For more information and copies of the poster and Resource Guide, contact JWA at 617-232-2258 or* webmaster@jwa.org.

"It's amazing how much you can accomplish when you don't care who gets the credit."

- Gertrude Elion, c. 1980s, from "Gertrude Elion: A Legacy of Excellence" (video)

The countless individuals whose lives have been saved or improved by the drugs developed by Gertude ("Trudy") Elion are lucky that the gifted chemist cared little about getting credit. Had accolades been Elion's goal, she might well have been discouraged by the enormous obstacles she faced as she battled longstanding prejudices against women in science. But Elion persevered in her work, driven by both a strong urge to understand the world around her and a deep-seated desire to help people suffering from painful diseases. With her research partner, George Hitchings, she revolutionized the way drugs are developed, and over the course of her long career, she produced the first chemotherapy for childhood leukemia; the immunosuppressant that made organ transplantation possible; the first effective anti-viral medication; and treatments for lupus, hepatitis, arthritis, gout, among other diseases. In 1988, Elion's achievements finally earned her one of the highest honors a scientist can receive: the Nobel Prize in Physiology or Medicine.

Elion was born in New York City on January 23, 1918, to Bertha (Cohen) and Robert Elion, immigrant Jews from Eastern Europe. From a very young age, she displayed the qualities that led her to the Nobel Prize. A voracious reader with "an insatiable thirst for knowledge," she was interested in everything around her. 1 "It didn't matter if it was history, languages, or science," she later recalled. "I was just like a sponge." 2 Skipping several grades, she graduated from high school in 1933, at the age of 15.

That summer, Elion settled on her lifelong ambition. Watching her beloved grandfather die painfully of stomach cancer and deciding " nobody should suffer that much," she dedicated herself to finding a cure for cancer. 3 Soon thereafter, she entered Hunter College. Unlike many people of their era, the Elions never thought twice about sending their daughter to college, and Trudy attributed this emphasis on education to her parents' Jewish background. "Among immigrant Jews," she said, "their one way to success was education, and they wanted all their children to be educated.... [I]t's a Jewish tradition. The person you admired most was the person with the most education. And particularly because I was the firstborn, and I loved school, and I was good in school, it was obvious that I should go on with my education. No one ever dreamt of not going to college." 4

To prepare herself for cancer research, Elion majored in chemistry. The all-female Hunter, like her all-girls Walton High School, provided a supportive environment for studying science, and Elion commented later that it did not occur to her that there was anything unusual about her choice of a subject. "There were seventy-five chemistry majors in that class," she remembered. "[W]omen in chemistry and physics? There's nothing strange about that." 5

Elion soon learned, however, that the rest of the world did not agree. Graduating summa cum laude and Phi Beta Kappa in 1937, she applied to 15 graduate programs in chemistry, but despite her impressive academic record, not one granted her the financial aid she needed. Undaunted, she looked for a job in a chemistry laboratory. When a potential employer told her, "You're qualified. But we've never had a woman in the laboratory before, and we think you'd be a distracting influence," Elion began to realize the true source of her difficulties. Working from the assumption that science was a man's business, hiring and admissions committees were unable to recognize Elion's brilliance . "I hadn't been aware that any doors were closed to me until I started knocking on them," she commented wryly. "Of course,...it was a very bad time to graduate. It was the Depression, and nobody was getting jobs. But I had taken that to mean that *nobody* was getting jobs," not just that women. 6

By the time Elion earned her Master's degree in 1941 (while holding a series of unpaid, temporary, and part-time jobs), World War II was in full swing. With many male scientists now involved in the war effort, chemical laboratories were finally willing to hire women. In 1944, she joined Burroughs Wellcome Company, a pharmaceutical firm, as assistant to Dr. George Hitchings. Hitchings encouraged his assistants to pursue their research independently, and for the first time, Elion had a job that offered true intellectual stimulation. She remained at Burroughs Wellcome (later Glaxo Wellcome) for the rest of her career.

Hitchings' and Elion's approach to their work was highly innovative. Contrary to most previous drug developers, who had depended largely on trial-and-error methods, they actively designed drugs based on knowledge of how cells worked. Although Watson and Crick had yet to discover the double-helix structure of DNA, scientists did know that cells need nucleic acids to reproduce. Hitchings theorized that by interfering with the DNA of cancer cells, bacteria, and viruses, they could prevent the unwanted cells from replicating and thus stop the spread of disease. The goal was to produce a drug that would disable disease cells without harming normal cells.

Hitchings assigned Elion to work on the purines, two of the four bases that make up DNA. Elion created slightly altered versions of the purines, hoping to make one that would fool the disease cell into incorporating it but that would prevent the cell from reproducing. After several years of painstaking research, she developed a compound that interfered with the replication of leukemia cells. Although it was too toxic to be truly effective, it showed that she was on the right track. She continued to experiment, eventually formulating and testing over 100 purine compounds.

Finally, in 1950, Elion synthesized 6-Mercaptopurine, or 6-MP. 6-MP caused complete remission in children with leukemia, but a relapse invariably followed. The excruciating highs and lows of watching children improve and then die drove Elion to work even harder to refine the drug. Discovering that much of the 6-MP was destroyed by the body, she was able to improve the drug's workings. Prior to 6-MP, half of all children with acute leukemia died within a few months; when 6-MP was combined with later medications, approximately 80% of child leukemia patients were cured. Elion was elated.

As Elion modified 6-MP, other researchers discovered that the drug suppressed the immune response in rabbits. Scientists had already experimented with organ transplantation, but the body's natural rejection of foreign substances had prevented success in all but identical twins, who have the same genetic structure. Then, in 1958, a young British surgeon used 6-MP to prevent temporarily the rejection of a transplanted kidney in a dog. Excited, Elion gave him several similar compounds. The following year, he used Elion's drug azathioprine (known as Imuran) to transplant a kidney into a dog. In 1961, doctors used Imuran to perform the first successful kidney transplant between two unrelated humans. Thanks in large part to Elion's work, organ transplantation has become routine today.

In 1968, Elion returned to an area she had first studied in the 1940s: antiviral medications. Scientists had long believed that any drug able to harm the DNA of a virus would be toxic to the surrounding healthy cells, too. Indeed, one of Elion's early compounds had shown some effectiveness against viruses but was so highly toxic that Elion put it aside in favor of other work. But when she heard that a similar compound had shown some antiviral properties, she returned to the subject. After several years of work, the Burroughs Wellcome team triumphantly unveiled acyclovir (Zovirax), the first medication effective against viruses. In 1984, the year after Elion retired, her lab developed AZT, until 1991 the only drug licensed to treat AIDS in the United States. Although Elion claimed to have had little to do with AZT, her methodology had laid the groundwork for its discovery.

Over the course of her career, Elion published over 225 papers. In the early 1950s, she was elected to the prestigious American Society of Biological Chemists; in 1962, she won the American Chemical Society's Garvan Medal. Eventually, she had a large department of assistants working for her, and she became the first woman to lead a major research group at Burroughs Wellcome when she was named Head of Experimental Therapy in 1967. In 1969, she received the first of 25 honorary doctorates, from George Washington University.

Elion retired from active research in 1983, but she continued to serve Burroughs Wellcome as Emerita Scientist and consultant, sit on committees and editorial boards for organizations from the World Health Organization to the National Cancer Advisory Board, lecture across the United States and abroad, serve as research professor at Duke University, and attend professional meetings. She also traveled widely; an adventurous globetrotter throughout her life, she had already seen most of the world. A few years before she died, a relative joked that she had been everywhere except Antarctica. The following year, Elion signed up for a cruise to Antarctica.

At 6:30 a.m. on October 17, 1988, Elion was getting dressed when a reporter called to congratulate her on winning the Nobel Prize. Startled, she retorted, "Quit your kidding. I don't think it's funny. Whoever put you up to it, I think it's a sick joke." 7 When reporters continued to call, reality finally sank in: Elion, Hitchings, and Sir James W. Black of the University of London had indeed been awarded the Prize in Physiology or Medicine, "for their discoveries of important principles for drug treatment."

With the main body of their work having been done decades earlier, the prize came as a surprise. Elion knew Hitchings had been nominated in the past, but she had no idea she herself had ever been nominated. In fact, when Hitchings and Elion were nominated as a pair, a Nobel Committee member asked why Elion was included, wondering if she had really contributed. Only when a professional friend of Elion's pointed out that Elion was first author on many of the early papers, and that her antiviral discoveries occurred after Hitchings retired, was the committee finally convinced. Elion's receipt of the Nobel Prize was particularly significant, given the hurdles she overcame. Few Nobels have gone to scientists working in the drug industry or those without Ph.Ds, even fewer to women; Elion was only the fifth female Nobel laureate in medicine, the ninth in science in general.

Following the Nobel Prize, additional honors and recognitions poured in. Elion was elected to the National Academy of Science in 1990 and received the National Medal of Science, the United States' highest scientific honor, in 1991. Also in 1991, she became the first woman inducted into the National Inventors Hall of Fame and was elected to the National Women's Hall of Fame.

Never very comfortable with scientific luminaries, however, Elion continued to prefer speaking to young people from elementary through medical school, communicating to them the fun and excitement of science and urging them not to be deterred from following their dreams. "I don't think I could have chosen anything that would have made me happier," she said. "I don't think people emphasize that enough – they think about the scientist as someone stuck away in the laboratory and oblivious to the rest of the world. That's the farthest thing from the truth. I feel as though I've made a contribution with my life." 8 An inspiring, approachable, down-to-earth mentor to students, assistants, and colleagues, Elion encouraged her staff to explore their own ideas and made it a point never to take credit for her assistants' work; unlike most scientists, she did not put her name on papers simply because the research had been done in her lab. Always a team player, she cared far more about the outcome of the lab's collective work than about her own reputation.

Although Elion herself never felt she needed female role models, she was acutely aware of the difficulties she had encountered because of her sex and recognized that the Nobel Prize put her in a unique position to smooth the way for other women. Encouraging girls to pursue scientific careers was a cause dear to her heart. When Burroughs Wellcome gave her $250,000 to contribute to a charity of her choice, she created a scholarship at Hunter College for female graduate students in chemistry, and she was a leader of a Glaxo Wellcome program that provided mentoring and scholarships for women studying science.

Elion was a true humanitarian as well as an outstanding scientist. Although she respected those who did science for science's own sake, she always kept in mind the patients whose diseases she aimed to cure and focused on the practical applications of her research. Far more than the Nobel Prize, Elion treasured the knowledge that her work had directly benefited the lives of countless individuals. "[Y]ou can't beat the feeling that you get from those children," she said. "[W]hen the Nobel Prize came in, everybody said, 'How does it feel to get the Nobel Prize?'.... I'm not belittling the prize. The prize has done a lot for me, but if it hadn't happened, it wouldn't have made that much difference.... When you meet someone who has lived for twenty-five years with a kidney graft, there's your reward." 9

Gertrude Elion was an enormously productive and successful chemist. At a time when biochemical knowledge was far more limited than it is today and when many of our current sophisticated scientific instruments had yet to be invented, she and Hitchings were able to create treatments for leukemia, the herpes virus, gout, and immunity disorders, as well as medications for arthritis, malaria, and bacterial infections, and other diseases. Elion and Hitchings' revolutionary approach to drug development, based on an understanding of the chemical composition of disease and healthy cells and the differences between them, has become standard in pharmaceutical research. In the drugs Elion developed, the scientists she influenced, and the young people she inspired, she left a legacy that will benefit humanity for years to come. As a former colleague remarked, "In fifty years, Trudy Elion will have done more cumulatively for the human condition than Mother Theresa." 10

Minutes

Science, Technology, and Healthcare Roundtable (August 2000)

No minutes were recorded at the 2000 meeting.

Archival Elements is produced annually. It is the official newsletter of the Science, Technology, and Health Care Roundtable of the Society of American Archivists. Please consider submitting an article to *Archival Elements*. For more information on submitting information or an article, please contact Liz Andrews (MIT) landrews@mit.edu or Tanya Zanish-Belcher (Iowa State) tzanish@iastate.edu.

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