



Newsletter

Office of NIH History

NIH History Lives Here

Spring 2003

Office of NIH History Staff and Fellows:

Victoria Harden, Ph.D., Director
Marilyn Berman, Program Assistant
Michele Lyons, Curator
Sarah Leavitt, Ph.D., Associate Historian & Curator
Richard Myers, Photograph Cataloguer
Brooke Fox, Archivist and Records Manager
Caroline Hannaway, Ph.D., Historian & Editor
Jessie Saul, Stetten Fellow
Ingrid Farreras, Ph.D., Stetten Fellow
Buhm Soon Park, Ph.D., Stetten Fellow
Valerie Williams, Ph.D., Visiting Scholar



Toolbox of Dr. Robert Berger, used at the Laboratory of Technical Development, NHLBI.

In this issue...

Mystery photos

Dr. Berger's tools and papers

Patient Recruitment at the Clinical Center

Blood testing at NIH

The 1950s at NIMH/NINDB

The Office of NIH History is made up of the Historical Research Unit and the Stetten Museum. It is a component of the Office of Communications and Public Liaison, Office of the Director, NIH. Contact us at: Office of NIH History, Building 31, Room 5B38, MSC 2092, NIH, Bethesda, MD, 20892 Phone: (301) 496-6610, Fax: (301) 402-1434, web site: www.nih.gov/od/museum, email: history@nih.gov

Mystery Photos

Do you know who these people are? Or what they're doing? These are some of the many unidentified scientists, lab workers, and other NIH staff represented in the Office of NIH History photo collection.



Richard Myers is the Office of NIH History photo cataloguer. If you have photographs you would like to donate to the collection, or would like to see what we have on certain subjects, contact him at myersr@od.nih.gov.

Slowly But Surely: The Documentary Inventory

Michele Lyons, Curator

The Stetten Museum's mission is to collect, preserve, and interpret objects related to NIH history. To complete this mission, we need to have some idea of what objects have been collected, their physical condition, and their historical importance. To this end, I have spent much time on a documentary inventory of the museum's collections, both accessioned and unaccessioned. This means checking what each object is, where it is, who gave it to us, when it was made, how it works, and why it is important enough to be part of the collection. As the museum has three main storage areas—the curator's office, a storeroom in Building 13 at the NIH campus in Bethesda, and a large corner of the NIH's Gaithersburg warehouse—this task has seemed more than a little daunting. But there is light at the end of the tunnel.

This winter I completed the documentary inventory of Building 13, which houses about 700 objects. During this inventory, I found several interesting things including a string galvanometer from the 1930s and a doll resembling former chief Clinical Center nurse Vernice Ferguson, and also about 100 objects that I tagged with temporary numbers. These 100 objects are things that I cannot identify or that I do not think belong in the collection (they will have to be reviewed by the museum's Collections Committee). I am now working on our storage area in the Gaithersburg warehouse, which houses large instruments like the CRAY X-MP supercomputer along with a few hundred smaller instruments. Getting Gaithersburg into shape will include a total restructuring of the shelving system and, I hope, the installation of a climate control system.

As proof that one thing often leads to another, the documentary inventory has led to the beginning of a new web exhibit, tentatively titled "Dr. Berger's Toolbox." Dr. Robert Berger, the subject of archivist Brooke Fox's article (page 4), has been a major donor to the museum, both of the instruments that he and co-workers invented or improved, such as the Berger Ball Mixer, and of the biomedical research tools that they used to make the instruments, such as potentiometers, volt boxes, pH meters, etc. In addition, Dr. Berger's toolbox, which he donated in 1999, contains over 300 items relating to his

career and the careers of other notable NIH scientists. A comprehensive examination of this collection of objects will go a long way to developing a deeper appreciation of the entire museum collection. I expect that the exhibit will feature about 30 percent of the museum's collection, an astounding accomplishment for any exhibit. I look forward to working on it, and hope that you will look forward to visiting it when it appears on the office's web site.



This AMINCO-Morrow Stopped Flow Apparatus was found at the Gaithersburg storage area in March 2003.

The Robert L. Berger Papers: A Lesson in Preservation

Brooke Fox, Archivist

In late January 2003, I began processing the papers of Dr. Robert L. Berger, former Chief of the Section on Biophysical Instrumentation, National Heart, Lung, and Blood Institute (NHLBI), and Invention Development Coordinator, NHLBI. Dr. Berger donated his papers along with many instruments and other artifacts used in his laboratories at NIH to the Office of NIH History. The collection documents both Dr. Berger's professional and personal experiences as a graduate student, college professor, postdoctoral exchange fellow, and, most significantly for our collection, his years as an NIH employee. His papers offer insight into the work of a scientist who displayed great creativity at the NIH.

Dr. Berger began his career at the NIH in 1962 as a senior scientist in the Laboratory of Technical Development, NHLBI. However, his lifelong interest in instrumentation began during his earlier position as a professor at Utah State University. Over the course of 40 years, Dr. Berger developed a number of instruments used by scientists at the NIH and even received two patents from the U.S. Government Patent Office, the first in 1988 for the computer-controlled all tantalum stopped-flow micro calorimeter, and the second in 1992 for the high resolution digital thermometer. This thermometer could measure temperature differences to several micro-degrees centigrade and is a forerunner of the digital thermometers used today for cooking and taking temperatures.

In addition to providing records of scientific achievements, Dr. Berger's papers reflect his many years as a mentor to younger scientists, particularly those from his alma mater Pennsylvania State University. The papers also document unusual events: during his time at Utah State, he volunteered in a program near Cape Canaveral, Florida, to educate high school students in science. While there, Dr. Berger and the students had the opportunity to meet John Glenn and witness the launch of NASA rockets.

This rich collection is being processed by the Office of NIH History as part of our new pilot program. Designed to capture and preserve the papers of NIH intramural scientists, the pilot program will document the amount of time and space it will take for us to process and maintain such collections. As the office's archivist, I am processing Dr. Berger's papers according to archival standards endorsed by the Society of American Archivists.

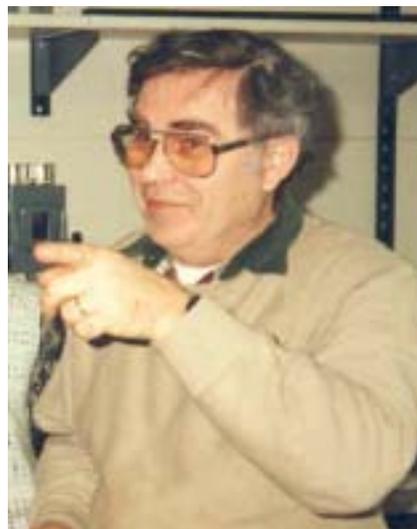
After Dr. Berger's papers were "rescued" and brought to the office, the first step was to arrange and describe them. This involves looking through many boxes of folders and papers to determine their original arrangement and scope, and also to determine the best way to proceed. The next step the archivist takes is to rearrange the collection into a logical order that will best serve researchers using the collection. Though archivists generally prefer to maintain the original order of the papers, i.e., keeping the filing system designed by the collection's creator, some rearrangement is usually necessary.

One of the most important groups of papers in Dr. Berger's collection is his Research Notes Series. This contains laboratory notebooks, binders of research notes and various other documents that Dr. Berger maintained to assist him in his laboratory work. Included in this series are the laboratory notes created during his work on the computer-controlled all tantalum stopped-flow micro calorimeter and the high resolution digital thermometer, the inventions for which he received his two patents. These types of papers will assist Michele Lyons in preparing her on-line exhibit about Dr. Berger's scientific inventions.

It will take many weeks, perhaps months, to go through the Research Notes Series. The bulk of many scientists' collections of documents consist of laboratory notebooks. Many scientists, and a few non-historians, believe that laboratory notebooks cannot be understood by anyone but themselves and their technicians. What they fail to realize is that there is a large population of historians of science who need access to lab notebooks in order to develop a full understanding of a scientist's work. When our museum curator comes across something called a "stopped flow apparatus" in the collection, imagine how helpful it will be to have folders of information and notes about the creation of such an instrument and how it was used in the laboratories. Our on-line exhibit will use both documents and instruments to explain how things work and how they were used in NIH laboratories.



This letter from Dr. Francis John Wesley Roughton is about Dr. Berger's work on the stopped-flow calorimeter



Dr. Robert Berger, c. 1980

For further information on the Office of NIH History's pilot program, or the papers of Dr. Robert L. Berger, please contact Brooke Fox, Archivist, at 301-451-4344 or foxb@od.nih.gov. I am eager to consult and advise NIH staff in deciding where to deposit their professional and personal papers.

Enhancing Patient Recruitment

Dorothy Cirelli, Chief, Patient Recruitment & Public Liaison Office
NIH Clinical Center

The Clinical Center established the Patient Recruitment and Public Liaison Office (PRPL) in the fall of 1996, as a component of the Clinical Center Office of the Director. The organizational location of the Clinical Center signaled the office's importance and increased its visibility to patients, physicians and the intra- and extramural scientific communities.

A subcommittee of the hospital's Medical Executive Committee recommended that a centralized patient recruitment office be established in order to assist institutes in recruiting patients for research studies conducted at the Clinical Center. The number of participants in some protocols had declined and the NIH needed to continue its outreach efforts to women and members of minority groups.

Initially, five institutes (NHLBI, NICHD, NIAMS, NIDR, NIDA) expressed interest in receiving services. PRPL staff collaborated with intramural investigators to identify specific protocol requirements and develop customized patient recruitment plans to address these needs. In addition, the PRPL collaborated with the Office of Clinical Center Communications to develop and implement an overall communications plan to heighten the public's overall awareness of the NIH Clinical Center and of opportunities to participate in clinical research.

Other initiatives like The Family Friend Program, which provides supervision for children of Clinical Center outpatients, and patient translation services were developed or expanded in order to increase customer service and access to the Clinical Center by a more diverse patient population. PRPL staff were also involved in the development of the Clinical Center's clinical studies website. Other projects such as the plan to create a family lodge close to the hospital will be integrated with the efforts of the Recruitment Office.

The PRPL now works with all institutes which admit patients to the Clinical Center. The office operates a call center staffed by nurses trained to provide protocol information, conduct preliminary screening for studies, and refer patients to protocols. Prospective patients and referring physicians can contact the PRPL by means of a toll-free phone number, e-mail, or fax. The program has grown from its somewhat modest beginnings. In Fiscal Year 2002 inquiries numbered 45,000 while the number of new patients enrolled in protocols increased 850 percent compared to year one. The Clinical Center is unique, since the NIH has some of the best and brightest minds in medical research today and our staff delivers compassionate, individualized, expert care to patients. People should know what we have to offer. For more information about clinical research studies, call 1-800-411-1222 or email PRPL@cc.nih.gov.

ADHD Genetics Study: Take part in a National Institutes of Health (Department of Health and Human Services) study seeking to identify the genes that contribute to ADHD. For more information call 1-800-411-1222 (TTY# 1-866-411-1010)

Blood testing at NIH

Jessie Saul

WARNING: Contents may be hazardous to your health.

We see labels like this every day: on cigarette packages, on household cleaners, on pesticide containers. But how many of us expect to see such a label on a unit of blood that is ready for transfusion? Today the blood supply is safer than it has ever been before, due in large part to research that has been done at the NIH.

The NIH has a long and varied involvement in the history of blood testing and screening, and is one of the leading centers of blood-safety-related research in the world. At present, all blood donations are tested for ABO group and, when appropriate, Rh type. In addition, all blood banks test for antibodies to HIV, hepatitis C virus (anti-HCV), human T-cell lymphotropic virus (anti-HTLF-I/II), and hepatitis B core antigen (anti-HBc). Each donation is also tested for hepatitis B surface antigen (HBsAg). Licensed nucleic acid tests (NAT) for HCV RNA and HIV-I RNA are performed. Finally, all donated blood is tested for syphilis.

While most of us are familiar with the 1984 discovery of HIV, the virus that causes AIDS, and many are familiar with the subsequent development of the first test for HIV antibodies by Dr. Robert Gallo, perhaps far fewer of us have been introduced to the history of hepatitis testing. Scientists have known of the dangers of hepatitis transmission through blood and plasma transfusions since World War II. While hepatitis A virus is commonly spread by ingesting the virus in contaminated food, hepatitis B virus is transmitted primarily through injection (blood transfusion or sharing needles). NIH scientist Dr. Harvey Alter discovered the Australia Antigen in the 1960s, which Dr. Baruch S. Blumberg later showed to be the surface coating of the hepatitis B virus. Using this new knowledge, Dr. Alter and others showed that prior to 1970, 33 percent of patients receiving open heart surgery at the NIH contracted hepatitis.

Shortly before this, Dr. John Walsh, Dr. Paul Holland, and Dr. Paul Schmidt had conducted studies showing that blood from paid donors had a 50 percent chance of transmitting hepatitis, while blood from volunteer donors had a 7 percent chance of doing the same. Reacting to such statistics, Drs. Alter, Schmidt and Holland set the goal of reducing the numbers of hepatitis infections through blood transfusions. In 1970 they made the decision to move to an all-volunteer blood supply at the NIH. While they were not the first blood bank to use an all-volunteer donor system, they were the first to use hepatitis B testing. These two actions reduced the incidence of hepatitis in open heart surgery patients from 33 percent to 11 percent. Partly as a result of these studies, the Division of Biologics Standards published a requirement in November 1971 that all blood collected under license must be tested for the hepatitis B surface antigen (HbsAg). Authority for regulating biologics was transferred from the NIH and the Division of Biologic Standards to the Food and Drug Administration in 1972. Later that year, the FDA mandated labeling of paid and volunteer blood. Today the FDA states that the risk of contracting hepatitis B from a pint of blood is about 1 in 200,000, while the risk of contracting hepatitis C is about 1 in 2,000,000.

Institutional Changes for Biologics Regulatory Authority

- 1887 Laboratory of Hygiene (Marine Hospital Service (MHS))
- 1891 renamed Hygienic Laboratory (MHS)
- 1902 Hygienic Laboratory (Public Health Service and MHS)
- 1930 renamed National Institute of Health (NIH)
- 1937 Division of Biologics Control formed within NIH
- 1944 renamed Laboratory of Biologics Control (LBC)
- 1948 LBC incorporated into National Microbiological Institute, NIH
- 1955 LBC became Division of Biologics Standards (DBS), an independent entity within the NIH
- 1972 DBS transferred from NIH to FDA and renamed Bureau of Biologics (BoB)
- 1982 BoB merged with Bureau of Drugs to form National Center for Drugs and Biologics
- 1983 Biologics component of NCDB renamed Office of Biologics Research and Review (OBRR) within Center for Drugs and Biologics (CDB)
- 1988 CDB separated into two centers: Center for Biologics Evaluation and Research and Center for Drug Evaluation and Research

Magnified picture of the hepatitis B virus. Research at the NIH has helped to reduce the risk of infection with this virus through a blood transfusion to nearly zero through the development and use of more effective tests.



NIH and NINDB Intramural Research in the 1950s

Ingrid Ferreras

A dearth of trained mental health providers to treat the large number of military discharges and casualties related to psychological problems during World War II spurred Robert Felix, Director of the Public Health Service's Division of Mental Hygiene, to propose a bill to create a National Neuropsychiatric Institute. The bill was introduced in 1945 and had three purposes: 1) to promote research relating to the cause, diagnosis, and treatment of neuropsychiatric disorders, 2) to grant individual fellowships and institutional grants to train mental health personnel, and 3) to provide financial aid to states for the formation or improvement of community mental health services, clinics and treatment centers.

When President Truman signed the act on 3 July 1946, the Institute had been renamed the National Institute of Mental Health (NIMH), to reflect a broader and more optimistic mission of promoting mental health and combating mental illness. While the act appropriated funds for the erection and equipment of hospital and laboratory facilities, it was not until three years later, on 15 April 1949, that funding was obtained to carry out the Institute's program, leading the PHS's Division of Mental Hygiene to be abolished in favor of a NIMH administratively joined to the National Institutes of Health (NIH).

Developed with the philosophy that the government should provide scientists the maximum amount of freedom and not hamper their progress by directing or regimenting their activities, the creation of NIMH marked the beginning of the federal government's large-scale support of research in mental health. The need to supplement and expand the PHS's existing research programs to tackle the country's major causes of crippling and disability led Congress to establish the National Institute of Neurological Diseases and Blindness (NINDB, the predecessor of today's National Institute of Neurological Disorders and Stroke, or NINDS) on 22 November 1950. Because no funds and staff were available for the new institute's operation during its first year, the Surgeon General designated the NIMH to administer the NINDB's Intramural Program. Dr. Seymour Kety was appointed Scientific Director of the joint institutes' basic research program and the neurological and blindness research that had, until then, been supported by the NIMH and the NIH's Division of Research Grants, was transferred to the NINDB's Intramural Program. Specifically, research projects in the areas of neurophysiology, neuropathology, neurochemistry, neurosurgery, neuroanatomy, experimental psychology, anthropology, and specific mental and neurological diseases such as schizophrenia, cerebral palsy, epilepsy, multiple sclerosis, glaucoma and cataracts, were supported during these preliminary years.

The mission of the Intramural Research program was broad and multidisciplinary:

...lacking definite clues to the etiology or best methods of treatment of mental illness, it is wisest to support the best research in any and all fields related to mental illness, whether clinical or non-clinical, basic or applied, empirical, methodological, or theoretical, in the medical, biological, social, or behavioral sciences.¹

The Intramural Research program was not fully operational until the NIH Clinical Center was established in 1953, when Kety, and his counterpart, Director of the Clinical Investigations Program, Robert A. Cohen, instituted laboratories and branches along disciplinary rather than disease-oriented lines. The thesis was that:

Progress in the diagnosis and treatment of nervous and mental diseases rests firmly upon a basic understanding of the nervous system through the biological and behavioral sciences.²

As space in the Center became available, the program focused on three kinds of research: biological, behavioral, and clinical. Felix announced in 1954 that,

Due attention is being given to keeping the broad areas of exploration – biological, behavioral and medical – in balance. With the existing state of knowledge, we cannot afford to push one area at the expense of another. Today, most scientists are agreed that whether the primary causes of the various types of mental illness are found to be biological or psychological, there will be a close relationship between them, and treatment and prevention will need to proceed in both areas.³

Kety was to reinforce this sentiment just two years later,

There is a danger in the overemphasis of the purely biological aspects of illness, especially psychiatric illness... These illnesses represent an interaction between experiential and environmental factors upon a constitutional, biological substrate, and a research program which emphasizes one of these approaches to the detriment of the other is not likely fully to exploit the potentialities of science in the understanding of disease.⁴

The Intramural Research program continued to emphasize a multidisciplinary approach to basic and clinical research throughout the 1950s and, in 1960, the joint NIMH-NINDB Basic Research program was divided and organized into two separate basic research programs.

Footnotes

¹ Jeanne L. Brand and Philip Sapiro, "An Historical Perspective on the National Institute of Mental Health (Prepared as sec. 1 of the NIMH Report to the Woolridge Committee of the President's Scientific Advisory Committee). Mimeograph," (1964), p. 27.

² NIH Report for the Period July 1, 1951-December 31, 1952.

³ Robert Felix, NIMH Annual Report, 1954.

⁴ Seymour Kety, NIMH Annual Report, 1956.

Symposium

The Office of NIH History, along with NIMH and NINDS, sponsored a special symposium called “NIMH and NINDB Intramural Research in the 1950s” on 11 April 2003. The purpose of the symposium was to open the door for historical research on how the basic and clinical investigations programs at both institutes emerged and changed over the first decade of their existence. The history office wanted to gather first-hand recollections about the broad scientific ideas and debates of the time, the organizational structures that existed at NIH and that supported or hindered research, the collaborations that took place with members of other labs and/or academic and governmental counterparts, and what caused lines of research to shift from one direction to another. Working with a scientific committee, we identified 100 scientists who were members of the NIMH and NINDB Intramural Research program throughout the 1950s and invited them to the symposium. The event was a great success, and many scientists brought personal historical photographs, unpublished documents, laboratory notebooks, artifacts, correspondence, memos, and other items from this time period to add to our collection. The symposium generated a substantial body of documentation for the work at NIMH and NINDB.

