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Creator: Ludwig, Martha
Title: Martha Ludwig papers
Inclusive dates: 1974-2006
Bulk dates: 1988-2002
Extent: 1.0 linear foot
Call number: 2008163 Aa 2

Language: Material is in English.
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Processed By: Emily M. Sanford, October 2008.

Abstract

Martha Ludwig (1931-2006), Professor of Biological Chemistry, joined the University of Michigan faculty in 1967. Ludwig was inducted into the National Academy of Science in 2003 and the Institute of Medicine in 2006. Ludwig specialized in x-ray crystallography, specifically addressing the area of protein structures and their biomedical implications. The collection includes correspondence and e-mails (print-outs), papers related to the Biophysics Research Division, papers on the Life Science Collaborative Access Team (LS-CAT) an interuniversity equipment sharing initiative, and reviews of programs in which Ludwig was involved.

Biography

Martha Ludwig was born August 16, 1931, in Pittsburgh, Pennsylvania. She received her B.A. from Cornell University in 1952, her M.A. in Biochemistry from the University of California in 1955, and her Ph.D. in Biochemistry from the Cornell Medical College in 1956. She held two post-doctoral positions, the first at Harvard University from 1956 until 1959 and again from 1962 to 1967, and the second at the Massachusetts Institute of Technology from 1959 to 1962.

Ludwig's time at the University of Chicago shaped her research concentration; specifically, her interactions with biophysicist Howard K. Schachman whose course in Biological Physics she took while a master's student. Biophysics became her area of focus and research. Early on, when studying the interactions of proteins, Ludwig used traditional methods of biochemistry involving protein purification and chromatography. When Ludwig returned to Harvard in 1962, she became interested in the new technology of x-ray crystallography which allowed three-dimensional modeling of structures. Her mentor at Harvard in 1962 was future Nobel laureate William Lipscomb. Ludwig was a part of Lipscomb's lab team that solved the structures of carboxypeptidase A. The characterization of the protein was among the earliest in the world to be identified using x-ray crystallography and the very first to be identified in the United States.

In 1967, Ludwig accepted a faculty position at the University of Michigan as an Assistant Professor in the Division of Biological Chemistry. Ludwig came to the University of Michigan to study flavodoxins under Vincent Massey. She also joined the interdisciplinary Biophysics Research Division as an Assistant Researcher. One year later, she obtained the titles of Associate Professor and Associate Researcher, respectively. Ludwig was made a full professor of Biochemistry and was granted tenure in 1975. She served as the chair of the Biophysics Research Division from 1986 to 1989.

Included among her many honors are appointments to the National Academy of Science in 2003 and to the Institute of Medicine in 2006. She received the Garvan Medal of the American Chemical Society in 1984, and the Distinguished Faculty Achievement Award in 1986. She was among the founding members of the Life Sciences Collaborative Access Team (LS-CAT) an academic and research collaborative effort to fund an advanced research facility for x-ray crystallography research in the state of Michigan. Ludwig's research centered on enzymes and their biomedical implications, specifically, dealing with those involving B12 and riboflavin.

Martha Ludwig passed away November 27, 2006, of complications from colon cancer. She was survived by her husband of 45 years Frederic Hoch a professor of Internal Medicine and Biological Chemistry.

Scope and Content Note

The Martha Ludwig papers encompass her career at the University of Michigan mostly dealing with the Biophysics Research Division. The papers cover the years from 1974 to 2007, but the majority of the materials fall within the years from 1988 to 2002. The Martha Ludwig collection includes four series: **Correspondence, Biophysics Research Division (BRD), Life Science Collaborative Access Team (LS-CAT), and Reviews and Evaluations.**

The **Correspondence** series (1983-1996) includes one folder of correspondence and e-mail (print-outs) to and from Ludwig.

The **Biophysics Research Division (BRD)** (1976-2004) series is arranged alphabetically. This series contains files of Ludwig's activities within the Biophysics Research Division, including classroom resources, history and general information on the BRD program, staff meeting minutes, lab regulations and graduate student funding. The earliest date, 1956, comes from a few historic materials held within the history and general information folder.

The **Life Science Collaborative Access Team (LS-CAT)** series (2000-2006) is arranged alphabetically. It contains files on the collaborative effort of several academic and research institutions to co-fund an advanced research facility for x-ray crystallography to be shared by all parties involved and rented out to other researchers wishing to use the advanced technology. Included are correspondence and e-mail (print-outs) between the members, detailing funding issues, meeting minutes and agendas, agreements, and progress reports.

The **Reviews and Evaluations** series (1974-2003) is arranged alphabetically. It contains reviews of the Biophysics Research Division as well as other organizations and divisions Martha Ludwig was associated with. This series also includes some division retreat and evaluation materials.

Box No. Description

Box 1 Correspondence**Box 1**

Correspondence, 1983-1996

Biophysics Research Division (BRD), 1976-2004

Budget and Funding, 1980-1996

Budget and Funding Presentation (1981-1989), circa 1989

Class Resources (Teaching material), 1986-1998

Executive Committee and Personnel, 1986-2003

Graduate Employees Organization, 1996

Graduate Student Funding Support, 1988-1998

History and General Information, 1976-2004

Michigan Life Science Corridor (MLSC), 2002

Program in Biomedical Science, 1998

Publications, 1997 and undated

Radiation Regulations, 1983-1985

Research Facilities and Space, 1987-1995, 1990

Staff Meetings-Minutes and Agendas, 1992-2002

Life Sciences Collaborative Access Team (LS-CAT) 2000-2006

Basic Information about the Life Sciences Collaborative Access Team,
2001-2005 and undated

Correspondence and e-mail (print-outs), 2000-2006

Funding, 2001-2006

Meeting Agendas and Minutes, 2001-2006

Meeting Power-point Slides, 2002-2004

Progress and Prospect Reports, 2000-2006

Reviews and Evaluations 1974-2003

Biological Chemistry Retreat, May 10, 2003

Biophysics Research Division Self-Evaluation, September 1995

Biophysics Research Division Strategic Retreat, April 27, 1989

Life Sciences Commission Report, February 10, 1999

Program in Protein Structure and Design Strategic Retreat, April 27,
1989

Reviews of the Biophysics Research Division (BRD), Miscellaneous
Undated

Review of the Biophysics Research Division (BRD), 1974

Review of the Biophysics Research Division (BRD), 1982-1994

Review of the Biophysics Research Division (BRD), 1996-2003