CHEMICAL HERITAGE FOUNDATION

JAMES A. MCCLOSKEY, JR.

Transcript of Interviews
Conducted by

Michael A. Grayson

at

the McCloskeys' Home
Helotes, Texas

on

19 and 20 March 2012

(With Subsequent Corrections and Additions)

CHEMICAL HERITAGE FOUNDATION
Center for Oral History
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James A. McCloskey

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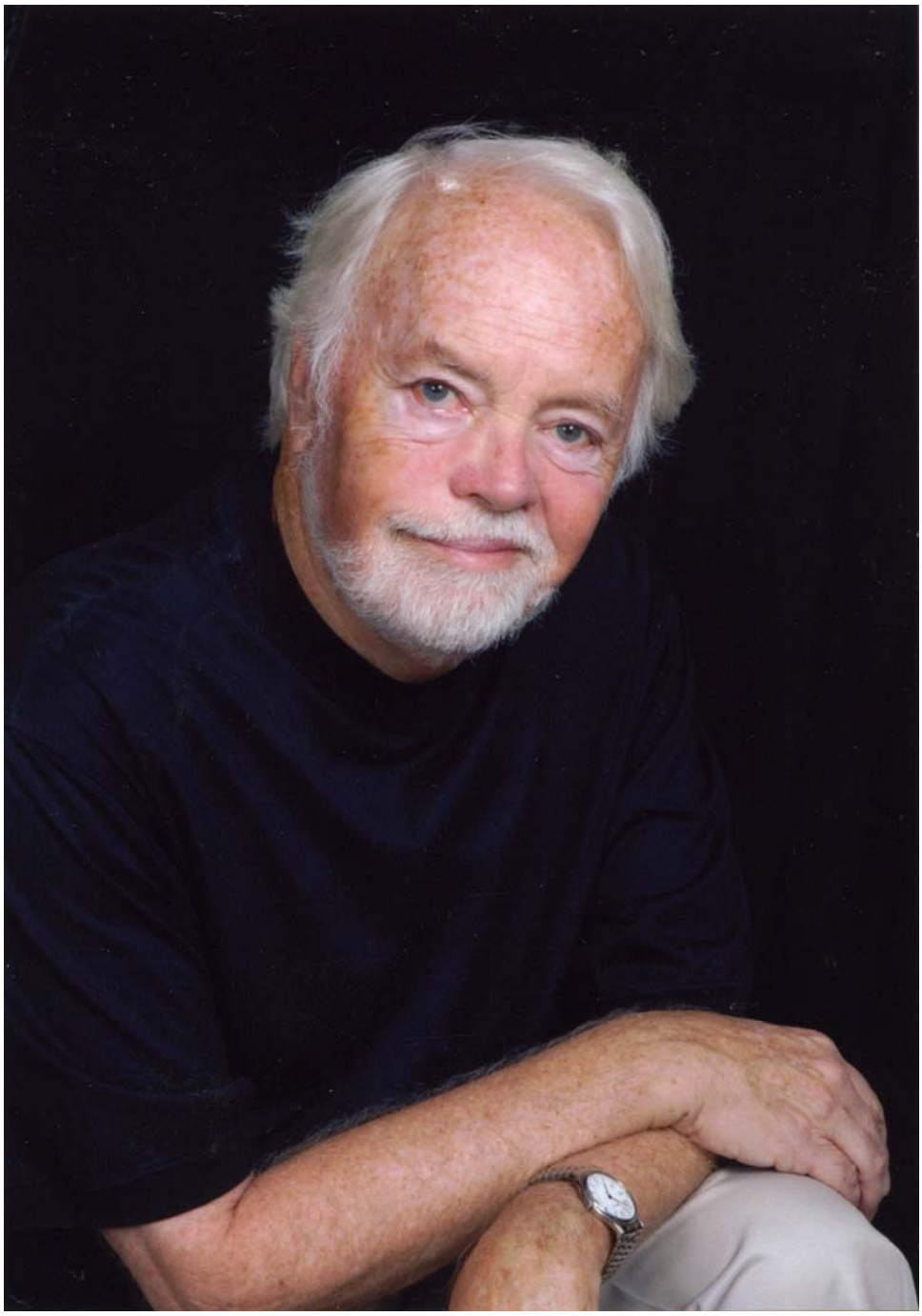

James A. McCloskey, Jr.

ACKNOWLEDGMENT

This oral history is one in a series initiated by the Chemical Heritage Foundation on behalf of the American Society for Mass Spectrometry. The series documents the personal perspectives of individuals related to the advancement of mass spectrometric instrumentation, and records the human dimensions of the growth of mass spectrometry in academic, industrial, and governmental laboratories during the twentieth century.

This project is made possible through the generous support of the
American Society for Mass Spectrometry.

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> James A. McCloskey, Jr., interview by Michael A. Grayson at the McCloskeys' home, Helotes, Texas, 19-20 March 2012 (Philadelphia: Chemical Heritage Foundation, Oral History Transcript # 0702).

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JAMES A. MCCLOSKEY, JR.

1936 Born in San Antonio, Texas, on 25 June

Education

1957 B. S., Chemistry, Trinity University
1963 Ph.D., Chemistry, Massachusetts Institute of Technology

Professional Experience

United States Army Biological Laboratories, Fort Detrick, Maryland
1959-1961 Chemist, United States Army Chemical Corps

Institut de Chimie des Substances Naturelles, Gif-sur-Yvette, France
1963-1964 Postdoctoral Fellow (National Institutes of Health)

Baylor College of Medicine, Houston, Texas
1964-1967 Assistant Professor of Chemistry
1967-1971 Associate Professor of Chemistry
1971-1974 Professor of Chemistry and Professor of Biochemistry in the Institute for Lipid Research and the Department of Biochemistry

Tokyo University, Tokyo, Japan
1971-1972 Visiting Professor

National Cancer Center Research Institute, Tokyo, Japan.
1971-1992 Visiting Investigator

University of Utah, Salt Lake City, Utah
1972 Visiting Professor, Departments of Chemistry and Biopharmaceutical Sciences
1976-2003 Director, Mass Spectrometry Facility
1976-2007 Professor of Biomedical Chemistry, Medicinal Chemistry, Department of Medicinal Chemistry
1976-2007 Adjunct Professor of Chemistry, Department of Chemistry
1993-1995 Director, Interdepartmental Biological Chemistry Program
2007-present Professor Emeritus, Departments of Medicinal Chemistry, Chemistry and Biochemistry

Honors

1972	National Institutes of Health Special Fellow, University of Utah
1989	Distinguished Research Award, University of Utah
2005	Award for Distinguished Contribution in Mass Spectrometry, American Society for Mass Spectrometry
2009	Fellow, Section on Chemistry, American Association for the Advancement of Science

ABSTRACT

James A. McCloskey, Jr., grew up in San Antonio, Texas, an only child. His father, a doctor in the US Army Medical Corps, was the first regular army medical doctor killed in World War II, at which time James's name was changed from Robert. He attended public high school, where he was also in Reserve Officers' Training Corps (ROTC). It was always expected that he would attend college, and he entered Trinity University in San Antonio, where he majored in chemistry and continued in ROTC, paying his way with scholarships and with money he earned in summers.

McCloskey realized that he would go nowhere with just a bachelor's degree, so he earned a PhD in analytical chemistry from Massachusetts Institute of Technology. He fulfilled his ROTC commitment by working for the US Army Chemical Corps; he published his first paper there. He also married while in the Army and fathered a daughter while still at MIT. He returned to Klaus Biemann's lab at MIT, where he began his lifelong interest in and study of nucleosides/nucleotides, necessitating different types of mass spectrometers. After finishing his PhD, McCloskey persuaded the National Institutes of Health (NIH) to send him to Paris, France, for a year. He turned down the Karolinska Institutet for a job at Baylor College of Medicine in Houston, Texas. At Baylor he continued his funding relationship with the NIH, getting a number of spectrometers for the College. He began a twenty-year collaboration with Susumu Nishimura in Tokyo, Japan, and made his first of many trips there. He learned the biology of tRNA; Pamela Crain began working for him; his lab discovered the nucleoside Q. He began his part of the search for the roots of the tree of life, which consists of bacteria, eukaryotes, and archaea.

McCloskey spent six months of a sabbatical at the National Cancer Research Institute in Tokyo before going to the University of Utah as a visiting professor. He decided to accept a full professorship there, citing common interests, funding, and research freedom. Pamela Crain moved with him, continuing to collaborate on many papers. In addition to running his lab, heading the mass spec facility, and teaching, McCloskey became secretary, vice president, then president of the American Society for Mass Spectrometry (ASMS). He continued collaborating with mostly scientists outside the United States, especially from Japan; his work was primarily with ribonuclease T1 and T2; he studied how organisms modify in reaction to increase in temperature and found that they also modify below freezing.

McCloskey talks about his grants, all of which were approved by NIH and which remained constant; the different types of spectrometers and their uses; collision-induced dissociation (CID); polarity; importance of mass accuracy; his funding and funding in general; Carl Woese and the tree of life; synthesis of a new molecule he named archaeosine or G+; closing down his grants and lab when he retired and moved back to Texas; changes in the field of chemistry, in mass spec, and in students. He explains his editorship of *Methods in Enzymology* and his collaboration or lack thereof with several scientists the interviewer asks about. He laughs over the Prochaska scam. He modestly claims that his contribution to mass spectrometry was "not that great," meaning that he answered difficult questions in a narrow area. He has retired completely but remains interested in the field of chemistry, marveling at its sudden and rapid expansion.

INTERVIEWER

Michael A. Grayson retired from the Mass Spectrometry Research Resource at Washington University in St Louis in 2006. He received his B.S. degree in physics from St. Louis University in 1963 and his M.S. in physics from the University of Missouri at Rolla in 1965. He is the author of over forty-five papers in the scientific literature dealing with mass spectrometry. Before joining the Research Resource, he was a staff scientist at McDonnell Douglas Research Laboratory. While completing his undergraduate and graduate education, he worked at Monsanto Company in St. Louis, where he learned the art and science of mass spectrometry under O. P. Tanner. Grayson is a member of the American Society for Mass Spectrometry (ASMS), and currently is the Archivist for that Society. He has served many different positions within ASMS. He has served on the Board of Trustees of CHF and is currently a member of CHF's Heritage Council. He continues to pursue his interest in the history of mass spectrometry by recording oral histories, assisting in the collection of papers, researching the early history of the field, and preparing posters recounting historic developments in the field.

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