CHEMICAL HERITAGE FOUNDATION

NATHANIEL HEINTZ

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Robert Kohler and Naomi Morrissette

at

The Rockefeller University
New York, New York

on

29 August 1989

(With Subsequent Corrections and Additions)

ACKNOWLEDGEMENT

This oral history is part of a series supported by a grant from the Pew Charitable Trusts based on the Pew Scholars Program in the Biomedical Sciences. This collection is an important resource for the history of biomedicine, recording the life and careers of young, distinguished biomedical scientists and of Pew Biomedical Scholar Advisory Committee members.

Chemical Heritage Foundation
Center for Oral History
315 Chestnut Street
Philadelphia, Pennsylvania 19106

The Chemical Heritage Foundation (CHF) serves the community of the chemical and molecular sciences, and the wider public, by treasuring the past, educating the present, and inspiring the future. CHF maintains a world-class collection of materials that document the history and heritage of the chemical and molecular sciences, technologies, and industries; encourages research in CHF collections; and carries out a program of outreach and interpretation in order to advance an understanding of the role of the chemical and molecular sciences, technologies, and industries in shaping society.

THE BECKMAN CENTER FOR THE HISTORY OF CHEMISTRY

Oral History Program

RELEASE FORM

This document contains my understanding and agreement with the Center for History of Chemistry with respect to my participation in a tape-recorded interview conducted by Robert Kohler and Naomi Morrissette on August 30, 1989. I have read the transcript supplied by the Center and returned it with my corrections and emendations.

1. The tapes and corrected transcript (collectively called the "Work") will be maintained by the Center and made available in accordance with general policies for research and other scholarly purposes.

2. I hereby grant, assign, and transfer to the Center all right, title, and interest in the Work, including the literary rights and the copyright, except that I shall retain the right to copy, use and publish the Work in part or in full until my death.

3. The manuscript may be read and the tape(s) heard by scholars approved by the Center subject to the restrictions listed below. The scholar pledges not to quote from, cite, or reproduce by any means this material except with the written permission of the Center.

4. I wish to place the following conditions that I have checked below upon the use of this interview. I understand that the Center will enforce my wishes until the time of my death, when any restrictions will be removed.

→ a. X No restrictions for access.

b. _____ My permission required to quote, cite, or reproduce.

c. _____ My permission required for access to the entire document and all tapes.

This constitutes our entire and complete understanding.

(Signature) [signature]

(Date) 1/16/96

(Revised 24 February 1988)

NATHANIEL HEINTZ

1951 Born in Utica, NY on December 10

Education

1974 B.A., Biology, Williams College
1979 Ph.D., Biology, S.U.N.Y. at Albany

Professional Experience

Washington University Medical School, St. Louis, MO
1982 Post-Doctorate, Molecular Biology

1982-Present The Rockefeller University, New York, NY
Assistant Professor

Honors

1979-1981 Damon Runyon-Walter Winchell Cancer Fund Postdoctoral Fellow
1981-1982 National Institutes of Health Postdoctoral Fellow
1985 Pew Scholar in the Biomedical Sciences

ABSTRACT

Nathaniel Heintz grew up on a dairy farm near Clinton, New York. He is the tenth of twelve children whose father was an oral surgeon and whose mother was a housewife and career counselor. One of his older brothers is also a scientist, and the two collaborate a bit. Always interested in science, Heintz says that his high school was less intellectually stimulating than his home environment. Heintz chose Williams College in order to play hockey; he says he worked hard only in his science classes, especially genetics and biochemistry. He did his honors thesis in electron microscopy with George Vankin.

After breaking a contract to play professional hockey in Europe, Heintz entered State University of New York at Albany to study molecular biology, an exciting new field. His experience with his advisor, David Shub, taught him to be self-reliant and gave him a good foundation for a postdoc. Rapidly developing equipment and techniques made him want to move from prokaryote systems to eukaryote.

At Washington University in St. Louis, Heintz combined genetics with gene expression in Robert Roeder's lab, which he found stimulating, exciting, and competitive. He found Roeder intelligent, driven, and accomplished. Wanting to express mammalian histone, Heintz concentrated on cell-cycle regulation to learn about basic growth control in cells. He remains interested not so much in the mechanistic what happens, but rather in the biological why and how.

When he accepted a job at Rockefeller University Heintz acquired a much larger lab space and more people and so could more easily return to neurobiology, which he has always fascinated him. He says that cell populations are not homogeneous; they have internal genetic programs, but they are also influenced by their environment and by interactions with other cells. By working in the cerebellum, Heintz hopes to find how a particular cell in complex tissue knows what genes to express and when. The cerebellum has only five different cell types, each type organized and developed in a particular way. Since the cerebellum, which is dormant until birth, controls movement, experiments are not lethal. His resumption of neurobiology also gives his lab members infinite amounts of material to take to their own labs. Heintz values the personal aspects of science and likes to be colleagues with his former lab members.

Heintz describes the changes in Rockefeller's organization and his own lab composition and management. He says a good scientist needs to have a strong work ethic, critical design capability, imagination in experimentation, and intellectual aggressiveness. He believes experiments are crucial and that few scientists are exceptional experimentalists. He talks about his own funding and funding in general; he expresses dissatisfaction with the National Institutes of Health and peer review systems; and he decries "flash" science, which often leads to premature conclusions and publications that later have to be retracted.

TABLE OF CONTENTS

INDEX