

CHEMICAL HERITAGE FOUNDATION

THOMAS S. HAYS

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Steven J. Novak

at

University of Minnesota at Minneapolis-Saint Paul
Minneapolis-Saint Paul, Minnesota

on

19, 20, and 21 August 1996

From the Original Collection of the University of California, Los Angeles

ACKNOWLEDGEMENT

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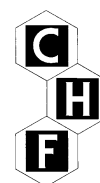
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THOMAS S. HAYS

1954 Born in Winter Haven, Florida on 20 December.

Education

1976 B.S., University of North Carolina at Chapel Hill
1985 Ph.D., University of North Carolina at Chapel Hill

Professional Experience

University of Colorado, Boulder, Department of Molecular, Cellular, and
Developmental Biology
1985-1989 Postdoctoral Fellow

University of Minnesota, Department of Genetics and Cell Biology
1989-1995 Assistant Professor
1995-present Associate Professor

Honors

1980 Founders Scholarship, Woods Hole Marine Biological Laboratory
1980 National Research Service Award
1991-1993 ACS Junior Faculty Research Award
1991-1995 Pew Scholar in the Biomedical Sciences
1993-1995 March of Dimes Basil O'Connor Scholar Award
1996-2001 American Heart Foundation Established Investigator Award

Selected Publications

Hays, T.S. et al., 1982. Traction force on a kinetochore at metaphase acts as a linear function of kinetochore fibre length. *Journal of Cell Biology* 93:374-82.
Hays, T.S. and E.D. Salmon, 1986. The stabilization of microtubules in isolated spindles by tubulin-colchicine complex. *Cell Motility and the Cytoskeleton* 6:282-90.
Hays, T.S. et al., 1989. Interacting proteins identified by genetic interactions: A missense mutation in α -tubulin fails to complement alleles of the testis-specific β -tubulin gene of *Drosophila melanogaster*. *Molecular and Cellular Biology* 9:875-84.
Hays, T.S. and E.D. Salmon, 1990. Poleward force at the kinetochore in metaphase depends on the number of kinetochore microtubules. *Journal of Cell Biology* 110:391-404.

- Gepner, J. and T.S. Hays, 1993. A dynein-related gene on the Y chromosome of *Drosophila melanogaster*. *Proceedings of the National Academy of Sciences USA* 90:11132-36.
- Gibbons, B.H. et al., 1993. Expression of axonemal and cytoplasmic dynein genes in sea urchin embryos. *Molecular and Cellular Biology* 5:57-70.
- Hays, T.S. et al., 1994. A cytoplasmic isoform of dynein in *Drosophila melanogaster*: Identification and localization during embryogenesis. *Journal of Cell Science* 107:1557-69.
- Li, M.G. et al., 1994. The molecular cloning of *Drosophila* cytoplasmic dynein, a microtubule motor that differentially accumulates in the developing oocyte. *Journal of Cell Biology* 126:1475-94.
- McGrail, M. et al., 1995. Regulation of cytoplasmic dynein function in vivo by the *Drosophila* Glued complex. *Journal of Cell Biology* 131:411-25.
- Gepner, J. et al., 1996. Cytoplasmic dynein is an essential gene in *Drosophila melanogaster*. *Genetics* (in press).

ABSTRACT

Thomas S. Hays was born in Winter Haven, a citrus-growing area in central Florida. His father was a physical education teacher and then principal of an elementary school, his mother also a physical education teacher. He has one brother and three sisters. His father loved tennis and forced the children out to the courts every Saturday morning. Thomas was a competitive player on the state level all through high school; when he was in college he helped his father teach tennis.

His parents wanted him to attend college not too far from home, so all his applications were to southern schools. He was accepted at University of North Carolina, but it was not until his junior year that he realized he wanted to be a scientist. He did an independent study with Albert Harris, from whom he learned a great deal about what science is. After graduation he immersed himself in science to prepare for graduate school; this he did by spending three years as a technician in Bruce Niklas's lab at Duke University, where he became fascinated by mitosis. He continued his research into spindle poles and microtubules when he was accepted into the PhD program at the University of North Carolina to work in Edward Salmon's lab. He spent summers with Salmon at Woods Hole Marine Biology Laboratory, where he met his future wife, Mary Porter. Toward the end of his graduate career he decided he needed to switch to a genetics approach, so he took a postdoc with Margaret Fuller at the University of Colorado in Boulder. His wife also found a postdoc there. Hays then began his genetics work in *Drosophila*, studying dinein and kinesin motors.

His postdoc finished with great success, and he and his wife both accepted job offers at the University of Minnesota. Their careers have progressed well, both achieving tenure and being happy with their labs and their current research. They also have a young daughter who adds color and adventure to their lives. Hays continues to publish, to write grants, to teach, to ponder the place of science in society. He loves to design and implement experiments, and he loves to be with his family; balancing these two aspects of his life is an ongoing struggle.

UCLA INTERVIEW HISTORY

INTERVIEWER:

Steven J. Novak, Senior Editor, UCLA Oral History Program. B.A., History, University of Colorado; Ph.D., History, University of California, Berkeley; M.B.A., UCLA Graduate School of Management.

TIME AND SETTING OF INTERVIEW:

Place: Hays's office, University of Minnesota at Minneapolis-Saint Paul

Dates, length of sessions: August 19, 1996 (159 minutes); August 20, 1996 (153); August 21, 1996 (61).

Total number of recorded hours: 6.2

Persons present during interview: Hays and Novak.

CONDUCT OF INTERVIEW:

This interview is one in a series with Pew scholars in the biomedical sciences conducted by the UCLA Oral History Program in conjunction with the Pew Charitable Trusts's Pew Scholars in the Biomedical Sciences Oral History and Archives Project. The project has been designed to document the backgrounds, education, and research of biomedical scientists awarded four-year Pew scholarships since 1988.

To provide an overall framework for project interviews, the director of the UCLA Oral History Program and three UCLA faculty consultants developed a topic outline. In preparing for this interview, Novak held a preinterview conversation with Hays to obtain written background information (curriculum vitae, copies of published articles, etc.) and to agree on an interviewing schedule. He also reviewed prior Pew scholars' interviews and the documentation in Hays's file at the Pew Scholars Program office in San Francisco, including his proposal application, letters of recommendation, and reviews by Pew Scholars Program national advisory committee members. For technical background, Novak consulted J.D. Watson et al., *Molecular Biology of the Gene*. 4th ed. Menlo Park, CA: Benjamin/Cummings, 1987 and Bruce Alberts et al., *Molecular Biology of the Cell*. 3d ed. New York: Garland, 1994.

The interview is organized chronologically, beginning with Hays's childhood in Winter Haven, Florida, and continuing through his education at the University of North Carolina at Chapel Hill and the establishment of his lab at the University of Minnesota. Major topics discussed include the dynein motor's function in developmental processes, the role of microtubules in mitosis, funding in the sciences, and the problems facing two-career couples.

ORIGINAL EDITING:

Gregory M.D. Beyrer, editorial assistant, edited the interview. He checked the verbatim transcript of the interview against the original tape recordings, edited for punctuation, paragraphing, and spelling, and verified proper names. Words and phrases inserted by the editor have been bracketed.

Hays did not review the transcript and therefore some names have not been verified.

Jane Collings, senior editor, prepared the table of contents. Beyrer compiled the biographical summary, interview history, and index.

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