

CHEMICAL HERITAGE FOUNDATION

STEPHEN BURATOWSKI

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Helene L. Cohen

at

Harvard Medical School
Boston, Massachusetts

on

11, 12 and 13 June 2001

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



Stephen Buratowski

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.

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Interviewee agrees to participate in a series of University-conducted tape-recorded interviews, commencing on or about June 11, 2001, and tentatively entitled "Interview with Stephen Buratowski". This Agreement relates to any and all materials originating from the interviews, namely the tape recordings of the interviews and a written manuscript prepared from the tapes, hereinafter collectively called "the Work."

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Attention: Victoria Steele, Ph.D.

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University and Interviewee have executed this Agreement on the date first written above.

INTERVIEWEE

Stephen Buratowski
(Signature)

Stephen Buratowski
(Typed Name)

Harvard University
(Address)

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Boston, MA 02115

THE REGENTS OF THE UNIVERSITY

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Date June 11, 2001

Date 6/25/01

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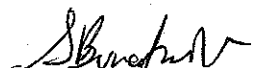
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STEPHEN BURATOWSKI

1962 Born in Glen Ridge, New Jersey on 2 November

Education

1984 A.B., summa cum laude, Princeton University
1990 Ph.D., Massachusetts Institute of Technology

Professional Experience

1984 National Cancer Institute, National Institutes of Health
Summer Internship, Laboratory of Molecular Virology

Harvard Medical School

1990 Visiting Senior Research Fellow, Department of Genetics
1994-1997 Assistant Professor, Department of Biological Chemistry
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1997-2001 Associate Professor
2002-present Professor

1990-1994 Whitehead Institute for Biomedical Research
Fellow

1994-present Harvard College Board of Tutors in Biochemical Sciences
Adjunct Professor, Department of Biology

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1984-1987 National Science Foundation Predoctoral Fellowship
1990-1994 Whitehead Institute Fellowship
1995-1999 Pew Scholar in the Biomedical Sciences
1996-1999 American Cancer Society Junior Faculty Research Award
1998 Harvard Medical School Biological and Biomedical Sciences (Ph.D.
program) Teaching Award
1999-2004 Leukemia and Lymphoma Society Scholar Award

Selected Publications

S. Buratowski et al., 1988. Function of a yeast TATA element binding-protein in a

- mammalian transcription system. *Nature* 334:37-42.
- S. Buratowski et al., 1989. Five intermediate complexes in transcription initiation by RNA polymerase II. *Cell* 56:549-61.
- S. Buratowski and H. Zhou, 1992. TFIID mutants defective for interactions with TFIIA. *Science* 255:1130-32.
- S. Buratowski and H. Zhou., 1992. A suppressor of TBP mutations encodes an RNA polymerase III transcription factor homologous to TFIIB. *Cell* 71:221-30.
- T. Takagi et al., 1997. An RNA 5'-triphosphatase related to the protein tyrosine phosphatases. *Cell* 89:867-73.
- E.J. Cho et al. , 1997. The mRNA capping enzyme is recruited to the transcription complex by phosphorylation of the RNA polymerase II carboxy-terminal domain. *Genes Dev.* 11:3319-26.
- E.J. Cho et al., 1998. Allosteric interactions between capping enzyme subunits and the RNA polymerase II carboxy-terminal domain. *Genes Dev.* 12:33 19-26.
- B. Michel et al., 1998. Histone-like TAFs are essential for transcription in vivo. *Molecular Cell* 2:663-73.
- P. Komarnitsky et al., 1999. TFIID-specific Taf40 is essential for RNA polymerase II mediated transcription in vivo. *Genes Dev.* 13:2484-89.
- O. Matangasombut et al., 2000. Bromodomain factor 1 corresponds to a missing piece of yeast TFIID. *Genes Dev.* 14:951-62.
- P. Komarnitsky et al., 2000. Different phosphorylated forms of RNA polymerase II and associated mRNA processing factors during transcription. *Genes Dev.* 14:2452-60.
- E.J. Cho et al., 2001. Opposing effects of Ctk1 kinase and Fcp1 phosphatase at serine 2 of the RNA polymerase II C-terminal domain. *Genes Dev.* 15:33 19-29.

ABSTRACT

Stephen Buratowski, the oldest of four boys, grew up in Iselin, New Jersey. Stephen's father was working as a programmer for a subsidiary of International Business Machines when he met Stephen's mother, who was doing data entry there. His father is an only child, but his mother is one of nine children, and the whole family is still close. In addition, his parents were devout Roman Catholics and brought their boys up in the church. Buratowski and his brothers played a lot of informal sports, went exploring in the "woods", etc. Stephen always liked to read a lot, especially science stories and mysteries (Jules Verne and Encyclopedia Brown), and knew from at least third grade that he wanted to be a scientist. When he visited relatives he loved to play their organ, so his parents bought him one, and he began his musical career. He and friends had a band throughout high school, and in college Buratowski continued with another group of friends.

Although he thought his public schools were fairly good, Buratowski did well without having to work much. His parents had not gone to college, and his school's guidance counselors were weak, so Stephen had little help with the idea of college. He followed his friends' lead in trying to score well on Scholastic Aptitude Tests and in applying to colleges. When he met a Princeton University recruiter, Buratowski decided Princeton University was his first choice. He was accepted there, and the financial aid enabled him to enter what he calls paradise. In his junior year he met guest lecturer George Khoury, who read Buratowski's thesis on enhancers. Encouraged, Stephen asked to go into Khoury's lab at the National Cancer Institute during the summer after his graduation. There he did recombinant DNA for the first time.

For graduate school Buratowski applied to many schools; everywhere he visited he was told that Massachusetts Institute of Technology (MIT) was the best, so he decided to go there. Also, Phillip Sharp was there and was doing gene expression, the kind of work in which Buratowski was interested. He spent the first year in classes, and in April he entered Sharp's lab. There he worked with Steven Hahn on TFIID, from which research they published their first paper in *Nature* and a second in *Cell*. He got a "spectacular" PhD thesis from his work; this allowed him to skip the usual postdoc and go across the street to the Fellows Program at the Whitehead Institute for Biomedical Research.

At about this time Buratowski married Robin Marlor, another MIT scientist, who found a postdoc at the Whitehead Institute. At the end of his fellowship he accepted an assistant professorship at Harvard University and continues to progress toward professorship and tenure. Buratowski teaches in the medical school; he serves on many committees, of which his favorite is the research computing department committee; he manages his lab of about ten people; he writes grant proposals; and he attempts to balance his work life with his life with wife and daughter, with whom he has resumed church attendance.

UCLA INTERVIEW HISTORY

INTERVIEWER:

Helene L. Cohen, Interviewer, UCLA Oral History Program. B.S., Nursing, UCLA; P.N.P., University of California, San Diego/UCLA; M.A., Theater, San Diego State University.

TIME AND SETTING OF INTERVIEW:

Place: Buratowski's office, Harvard Medical School.

Dates, length of sessions: June 11, 2001 (107 minutes); June 12, 2001 (119); June 13, 2001 (96).

Total number of recorded hours: 5.37

Persons present during interview: Buratowski and Cohen.

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 project consultants developed a topic outline. In preparing for this interview, Cohen held a telephone preinterview conversation with Buratowski to obtain written background information (curriculum vitae, copies of published articles, etc.) and agree on an interviewing schedule. She also reviewed prior Pew scholars' interviews and the documentation in Buratowski'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, Cohen consulted J.D. Watson et al., *Molecular Biology of the Gene*. 4th ed. Menlo Park, California: Benjamin/Cummings, 1987; Bruce Alberts et al., *Molecular Biology of the Cell*. 3rd ed. New York: Garland, 1994; and Horace F. Judson, *The Eighth Day of Creation*. New York: Simon and Schuster, 1979; and recent issues of *Science* and *Nature*.

The interview is organized chronologically, beginning with Buratowski's childhood and continuing on through his early education and later schooling at Princeton University and Massachusetts Institute of Technology and the establishment of his lab at Harvard University.

Major topics discussed include Buratowski's research and career, family life, and the current climate for conducting research in the biomedical sciences.

ORIGINAL EDITING:

Victoria Simmons, editorial assistant, edited the interview. She 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.

Buratowski reviewed the transcript. He verified proper names and made minor corrections and additions.

Carol Squires, independent contractor, prepared the table of contents. Victoria Simmons assembled the biographical summary and interview history. Romi Keerbs, editorial assistant, compiled the index.

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<p>Grows up in suburban New Jersey. One of four brothers. Large extended family. Parents in computing. Typical “boy” activities with neighborhood children. Early knowledge that he wanted to be scientist. Electric organ and beginning of musical avocation. Religious upbringing. Loved to read; needed glasses at very early age. Public schools not bad. Followed friends’ lead when deciding on college.</p>	
College Years	28
<p>Applies to number of schools. Accepted at first choice, Princeton University. Considers college “paradise”. Continued to play keyboard and drums in bands. Worked as disc jockey at college radio station. Went into Jacques Fresco’s lab in junior year; junior thesis led to meeting George Khoury. Was graduated summa cum laude.</p>	
Graduate School Years	37
<p>Considered California schools for the weather, but decided on Massachusetts Institute of Technology. Worked in Khoury’s lab during summer after college. First year devoted to classes, but entered Phillip Sharp’s lab in spring to work on gene expression. Working with Steven Hahn, was able to solve TFIID. Wrote “spectacular” PhD thesis. Published his first paper in <i>Nature</i>. Second paper in <i>Cell</i>.</p>	
Fellowship Years	45
<p>Offered fellowship at Whitehead Institute for Biomedical Research. Publishes a few papers. Marries Robin Marlor, fellow graduate at Massachusetts Institute of Technology. Birth of daughter. Begins to look for job.</p>	
Faculty Years	54
<p>Accepts assistant professorship at Harvard University. Wins several awards, including Pew Scholars in the Biomedical Sciences award. Writing grants. Teaching. Ethnic and gender makeup of his lab. Managing his lab. Awaiting tenure. Committee work. Research computing department committee. Too little bench work. Attempting to balance work with life with wife and daughter. Playing his baby grand piano.</p>	
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