

CHEMICAL HERITAGE FOUNDATION

PHILIPPE M. SORIANO

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview
Conducted by

Neil D. Hathaway

at

Baylor College of Medicine
Houston, Texas

on

8, 9, 10, and 11 October 1992

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

ACKNOWLEDGEMENT

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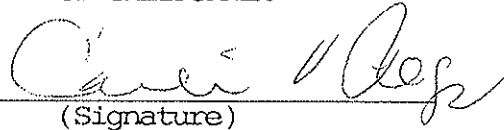
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INTERVIEWEE

THE REGENTS OF THE UNIVERSITY
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Date October 22, 1993

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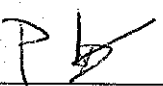
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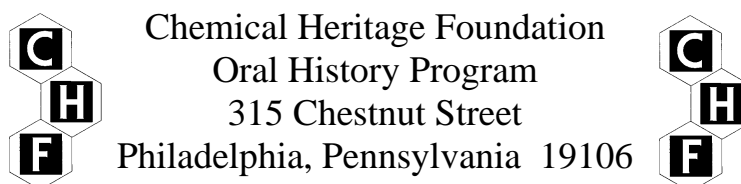
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PHILIPPE M. SORIANO

1953 Born in New Rochelle, New Jersey, on 10 June

Education

1971 Baccalauréat, Lycée Français, New York City
1975 Maîtrise ès-sciences, University of Paris
1978 Doctorat de 3ème cycle, University of Paris
1982 Doctorat d'état ès-sciences, University of Paris

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1981-1982 Centre National de la Recherche Scientifique, Paris, France
Attaché de recherche
1982-1984 Chargé de recherche

1982-1984 Centre de Biophysique Moléculaire, Orléans, France
Postdoctoral Fellow, Groupe de Biophysique Cellulaire

1984 Heinrich Pette Institute for Experimental Virology and Immunology,
Hamburg, Germany
Postdoctoral Fellow, Department of Tumor Virology

1984-1987 Massachusetts Institute of Technology
Postdoctoral Fellow, Whitehead Institute for Biomedical Research

1987-1993 Baylor College of Medicine, Houston, Texas
Assistant Professor

1993-present Fred Hutchinson Cancer Research Center, Seattle, Washington
Associate Member

Honors

1976-1978 Fellowship, Délégation Générale à la Recherche Scientifique
et Technique
1978 Fellowship, Fondation pour la Recherche Médicale
1978-1980 Fellowship, Ligue Nationale Française contre le Cancer
1984-1985 Fellowship, North Atlantic Treaty Organization

1988 Biomedical Research Support Grant, Baylor College of Medicine
1988 Joseph P. Kennedy Foundation Award
1988-1992 Scholar, Pew Scholars Program in the Biomedical Sciences
1988-1993 Assistant investigator, Howard Hughes Medical Institute

Selected Publications

- Soriano, P. et al., 1981. The major components of the mouse and human genomes. *European Journal of Biochemistry*, 115:235-39.
- Soriano, P. et al., 1982. The scattered distribution of actin genes in the mouse and human genome. *EMBO Journal*, 1:579-83.
- Soriano, P. et al., 1983. The distribution of interspersed repeats is non-uniform and conserved in the mouse and human genomes. *Proceedings of the National Academy of Sciences*, 80:1816-20.
- Soriano, P. et al., 1983. Targeted and nontargeted liposomes for *in vivo* transfer to rat liver cells. *Proceedings of the National Academy of Sciences*, 80:7128-31.
- Soriano, P. and R. Jaenisch, 1986. Retroviruses as probes for mammalian development: Allocation of cells to the somatic and germ cell lineages. *Cell*, 46:19-29.
- Soriano, P. et al., 1986. Tissue specific and ectopic expression of genes introduced into transgenic mice by retroviruses. *Science*, 234:1409-13.
- Soriano, P. et al., 1987. Retroviruses and insertional mutagenesis: Proviral integration at the *Mov 34* locus leads to early embryonic death. *Genes and Development*, 1:366-75.
- Soriano, P. et al., 1987. High rate of recombination and double crossovers in the mouse pseudoautosomal region during male meiosis. *Proceedings of the National Academy of Sciences*, 84:7218-20.
- Soriano, P. et al., 1991. Targeted disruption of the *c-src* proto-oncogene leads to osteopetrosis in mice. *Cell*, 64:693-702.
- Soriano, P. et al., 1991. Promoter interactions in retroviral vectors introduced into fibroblasts and embryonic stem cells. *Journal of Virology*, 65:2314-19.

ABSTRACT

Philippe M. Soriano grew up in New York City, the younger of two children. His parents are of French descent: his mother was born in Algiers, Algeria, and his father in Cairo, Egypt. He attended the Lycée Français, which had a typical French curriculum with the addition of some usual American classes. No one else in his family was involved in science, but Soriano showed an early interest, especially in a number of fields of biology.

Soriano's several childhood trips to France helped him decide to attend the University of Paris. It was also the case that French science, especially genetics, was outstanding at the time. Although he found that there was a great culture shock involved in being in France, he did not regret his college years there, as they gave him a very different perspective on his work. During the summers Soriano worked at the Bayer labs in Germany and the Weizmann Institute of Science in Israel. He pursued his doctorate at the University of Paris, working with DNA sequences in higher mammals in the lab of Giorgio Bernardi; Soriano reflected on higher education in France and the strengths of Bernardi's lab.

His work on DNA cloning and fractionation techniques earned Soriano two doctorates, after which he was offered a *chargé de recherche* position by the Centre National de la Recherche Scientifique (CNRS). Soriano used gene delivery techniques at the Centre de Biophysique Moléculaire in Orléans, France and sought to make transgenic mice, though he also discussed Rudolf Jaenisch's first gene knockout experiment that resulted in a lethal mutation and his own attempts to clone a histocompatibility gene. At Bernardi's request he taught cDNA cloning in South Africa and Tunisia, a topic Soriano used to speak about science in Third World countries, his own international perspective, and the danger of scientific inbreeding.

Soriano began a postdoc in the Jaenisch lab in Hamburg. After about six months Jaenisch moved his lab (people, mice, and some equipment) to the Massachusetts Institute of Technology. Soriano explains the setup of the lab in Hamburg, the complicated move, and the state of science in Germany. For his work, Soriano infected embryos with retroviruses to create transgenic mice, determined at what stage cells are allocated to somatic or germ cell lineage, implemented noninvasive means of tracking cells, conducted loss-of-function studies, and used retrovirus probes instead of electroporation.

Deciding not to return to France Soriano left the Jaenisch lab for a position at Baylor College of Medicine. He received Howard Hughes Medical Institute funding and compared it to other types of funding, in the context of which he talked about the cost of running a mouse lab and big labs versus small labs.

Soriano's interest in the *src* gene continues, and he explains more about cell lineages; functional redundancy; interpreting gene knockout results; licensing and selling mutant mice; cooperating with biotechnology companies; and ethical issues involved in working for biotechnology companies and surrounding gene therapy. He concludes his interview by discussing his planned move to the Fred Hutchinson Cancer Research Center in Seattle, Washington. And he describes some of his future research plans and compares and contrasts basic science research and applied research.

UCLA INTERVIEW HISTORY

INTERVIEWER:

Neil D. Hathaway, Interviewer, UCLA Oral History Program. B.A., English and History, Georgetown University; M.A. and C. Phil., History, UCLA.

TIME AND SETTING OF INTERVIEW:

Place: Soriano's office, Baylor College of Medicine, Houston, Texas.

Dates, length of sessions: October 8, 1992 (41 minutes); October 9, 1992 (82) ; October 10, 1992 (85) ; October 11, 1992 (74).

Total number of recorded hours: 4.7

Persons present during interview: Soriano and Hathaway.

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, from 1988 through 1992.

In preparing for this interview, Hathaway, in consultation with the director of the UCLA Oral History Program and three UCLA faculty project consultants, developed a topic outline to provide an overall interview framework. Hathaway then held a telephone preinterview conversation with Soriano to obtain extensive written background information (curriculum vitae, copies of published articles, etc.) and agree on a research and interviewing timetable. Hathaway further reviewed the documentation in Soriano'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 general background on the recent history of the biological sciences, Hathaway consulted such works as: J.D. Watson et al., *The Molecular Biology of the Gene*. 4th ed. 2 vols. Menlo Park, CA: Benjamin/Cummings, 1987; Lubert Stryer, *Biochemistry*. 3d ed. New York: W.H. Freeman, 1988; *The Journal of the History of Biology*; and H.F. Judson, *The Eighth Day of Creation: Makers of the Revolution in Biology*. New York: Simon and Schuster, 1979.

The interview is organized chronologically, beginning with Soriano's childhood and education in New York City, and continuing on through his higher education at the University of Paris, his postdoc in the Rudolf Jaenisch lab, and his career at Baylor College of Medicine. Major topics discussed include DNA cloning, genetics research on mice, the international science community, and ethical issues involved in gene research.

ORIGINAL EDITING:

Steven J. Novak, senior editor, 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.

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

Novak also prepared the table of contents, biographical summary, interview history, and index.

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