

A Guide to the papers of Ruth Sager (1918-1997)
Marine Biological Laboratory
Woods Hole, MA 02543

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Archives of the Marine Biological Laboratory
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Woods Hole, MA 02543
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Manuscript Collection MC-MBL-Sager/Sci, AC-2004-17
(One 17" x 11" x 3" Box and Twenty-two 24" x 12" Boxes)

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BIOGRAPHICAL INFORMATION

Ruth Sager, one of three sisters, was born in Chicago on February 7, 1918, to Leon Sager and Deborah Borovik Sager. She was reared by her stepmother, Hannah, in a home honoring scholarship. After graduating from New Trier High School at the age of 16, Ruth entered the University of Chicago and received an S.B. in mammalian physiology in 1938. Her interest in science was sparked by Anton J. Carlson's lectures who she considered to be "...just a fantastic teacher." She continued her education at Rutgers University and received an M.S. in plant physiology in 1944. After World War II, during which she was a secretary and an apple farmer, she earned her Ph.D. in maize genetics under Marcus M. Rhoades at Columbia University. She was a Merck postdoctoral fellow with Sam Granick at the Rockefeller Institute from 1949 to 1951, working on chloroplast. Then she became a staff member at Rockefeller, choosing the alga *Chlamydomonas reinhardtii* as a model organism. Dr. Sager married Seymour Melman in 1944 and then Dr Arthur Pardee in 1977.

Dr. Sager was a research scientist at Columbia University from 1955 to 1965 and worked in Edinburgh for a year during that period. In 1966 she became a professor at Hunter College and finally, in 1995, she was appointed professor of cellular genetics at Harvard Medical School among the first women to gain a full professorship at Harvard. She was also Chief of the

Division of Cancer Genetics at the Dana-Farber Cancer Institute. Her other achievements include a Guggenheim Fellowship at the Imperial Cancer Research Fund, London, during 1972-73 and election to membership of the National Academy of Sciences in 1997.

Dr. Sager believed genetics was the core of biology, and she set out to prove it. During her final 25 years she transferred her efforts from organelle, non-nuclear genetics to the genetics of cancer. Her legacy is expressed in the quotation from M. D. Reynolds book, *American Women Scientists – Inspiring Biographies 1900-2001* “For more than half a century Ruth Sager has been a role model for women in health-related scientific research. She demonstrated vision, insight and determination to develop novel scientific concepts in the face of established dogmas. Her pioneering researches and original ideas continue to make contributions to biology.”

PROVENANCE

Dr. Ruth Sager’s papers were donated to the MBL Archives by her husband, Dr. Arthur Pardee. They were physically brought to the Archives by Ms. Gail Schmidt, a science historian who is preparing a biography about Dr. Sager. Ms. Schmidt had gone through the papers briefly and put some in groups.

ARRANGEMENT

The papers have been put into categories: biographical information with degrees, honors and bibliography; workbooks; lab notes; correspondence; culture files and one box of slides and discs.

SCOPE AND CONTENT

The Sager Collection includes one 17” x 11” x 3” box and twenty-two 12” x 24” boxes. They contain correspondence, lab notes, class notes, cultures, slides, discs and biographical information.

RELATED COLLECTIONS

There is a short biographical file regarding Dr. Arthur Pardee, Dr. Sager’s husband, in the Biographical Files in the Agassiz Room.

FOLDER LIST

Box	Folder	Title	
1		Degrees, Fellowships & Honorariums	
2		Slides- including breast cells, Hibsran, DNA grafts, DNA charts [Pardee]	
3		Slides – ICRF I & Protease M; Maspin, plus misc. slides and 3.5 floppy discs	
4		Zygote student workbooks – Columbia University	1963-71
5		Biological Science student workbooks	1968-71
6		Biological Science student workbooks (1971-75), Stock books 1 & 2 (1968-85), Calendar 1979	19768/85
7		Zoology student workbooks 1961-63, Biological Science student workbooks 1972-73	1961-73
8		Logbooks 17-27	1965-75
9		Logbooks 1-16, student workbooks 1974	1965-74
10		Lab notes including DNA gel lists	1979-85
11		Lab notes and calendar 1980	1978-89
12		Subject files	
	1	Sidney Farber Cancer Institute – General	1975-77
	2	Faculty – Sidney Farber	1976-77
	3	SFCC memo, general, grant applications	1974-78
	4	Harvard Univ. School Of Public Health Search committee, Prof. Of Cancer Biology	1987-89
	5	Harvard Univ. creation of Dept. of Genetics	1978-79
	6	National Academy of Sciences – Sager membership & Skalka nomination	1977-1988
	7	DNA fractionation & other Univ. solicitations for candidates in biology	1981-83
	8	NAS Gilbert Smith Award	1990-91
	9	Board of Scientific counselors, National Institut. Of Arthritis, Metabolism & Digestive Diseases (NIAMDD) (1 of 2)	1975-76
	10	NIAMDD (2 of 2)	1976-77
	11	International Union Against Cancer (IUC) Workshop in Switzerland (1 of 3)	1978-79
	12	IUC Financial Report (2 of 3)	1979
	13	IUC Finances & Report submitted to “Nature”	1978
	14	Maspen Patent	1996
	15	Publishers: “Cytoplasmic Genes & Organelles”	1974
	16	Publishers: “Cell Biology: a comprehensive treatise	1975
	17	Stuart Linn Liter, Royal Society & Genetical Society	1965
	18	Brussels lecture – notes	1972/73
	19	“Cell Heredity” correspondence & reviews	1960-62
	20	Publications	1967-71

	21	Science (draft) "Genetic systems in Chlamydomonas"	1969
	22	Chlor DNA Review – notes	1975
	23	Mutagenic Effects of streptomycin in chlamydomonas	
	24	Rework of "Genetic Evidence" <i>Cell Heredity</i>	1947-58
	25	Last chapter from <i>Cell Heredity</i>	1970
	26	<i>Cell Heredity</i> – Czech edition	1971-72
	27	<i>Cell Heredity</i> chapter?	1956-60
	28	Mito Gen CGO- chapt. 4 <i>Cell Heredity</i>	1966-68
	29	<i>Cell Heredity</i> Chapt. VIII	
	30	<i>Cell Heredity</i> Chapt. 9	
	31	Lectures	1989-94
	32	Mapping organelle genes in chlamydomonas	1970
13	1	Dana Farber Accounting (1 of 2)	1991-92
	2	Dana Farber Accounting (2 of 2)	1991-92
	3	Dana Farber Accounting (1 of 2)	1994
	4	Dana Farber Accounting (2 of 2)	1994
	5	Dana Farber Accounting (1 of 3)	1993-94
	6	Dana Farber Accounting (2 of 3)	1993-94
	7	Dana Farber Accounting (3 of 3)	1993-94
	8	Masters thesis, B.A. Thesis; Tetrad Analysis, Chapter: Cytoplasmic Genetics	1937-84
	9	Chloroplast genetics; Mouse Records, Sr. Stock, Gosselin	1976-89
	10	MS Hunter college	1975
	11	Correspondence; Lab notes	1976-90
	12	Correspondence; Lab notes	1989-91
	13	Lab notes	1978-79
	14	Lab notes	1978
	15	Lab notes	1978
	16	Lab notes	1978-80
	17	Lab notes	1978
	18	Lab notes	1978
14	1	New York Times "Letter to the Editor"	1977
	2	Grants, Medical World News Article 1964, honors	1956-64
	3	Correspondence C-E (1 of 2)	1978-84
	4	Correspondence C-E (2 of 2)	1978-84
	5	Correspondence F-G (1 of 2)	1978-84
	6	Correspondence F-G (2 of 2)	1978-84
	7	Correspondence H-J	1978-84
	8	Correspondence K-L (1 of 2)	1978-84
	9	Correspondence K-L (2 of 2)	1978-84
	10	Correspondence M-P (1 of 2)	1978-84
	11	Correspondence M-P (2 of 2)	1978-84
	12	Correspondence R	1978-87
	13	Correspondence S	1978-84
	14	Correspondence T-V	1978-84
	15	Correspondence W-Z	1978-84

	16	Correspondence A-B	1990-96
	17	Chlamydomonas Newsletter, the Genetics Society of America	1992-93
	18	Correspondence C-F	1990-96
	19	Correspondence	1992-96
	20	LXR Grant	1994-96
	21	Maspin Patent	1993-96
	22	Maspin Patent	1993-96
	23	Chiron Corp.	1996
	24	Annual Reports	1980-92
	25	Petrillo	1996
	26	Miles, Vincent J.	1996
15	1	Patent Cysteine M	
	2	David Nathan	1996
	3	Coulter	1995
	4	Cytostatin M	
	5	Protease 17 Patent	1996
	6	Maspin Patent	1993-97
	7	Maspin Patent	1993-97
	8	Maspin Patent	1993-95
	9	Correspondence/Notes	1991-96
	10	Ludwig Institute	1995-96
	11	Clone 32	1995c
	12	MBL Friday Evening Lecture & other talks	1984-94
	13	Lectures	1985
	14	Beckman and Coulter Symposia	1996
	15	Grant Applications, Misc. Correspondence & Papers	1968-1991
	16	Act D.; SDS Gels 1978 I & II	1978
	17	SDS Gels	1978
	18	Computer Plots	1978-79
	19	Experiments – CD10, caffeine (resistance of leukemia cells)	1952-78
	20	Plant Botany Project I Gadi; 5mC; Loose grafts& charts	1977-83
	21	Chlamydomonas III	1979-83
	22	Chlamydomonas II	1982-83
	23	Chlamydomonas I	1982-83
	24	Chlamydomonas IV	1983
16	1	DNA [Scharlotte]	1985
	2	DNA [Emily Lagace]	1983
	3	DNA	1983
	4	Cultures/Chromosomes Rearrangements Markers	
	5	Cultures/Chromosomes	1982-84
	6	Cultures/Chromosomes	1983
	7	Chromosomes/cultures	1983
	8	Chromosomes	1982-83c
	9	Cultures/Chromosomes	1981-84
	10	Cultures/Chromosomes	1983-84
	11	Cultures/Chromosomes	1983-84

	12	Cultures/Chromosomes	1983-84
	13	Correspondence & lab Notes	1984-86
17	1	List of Experiments & subject Index on Nucleic acids, ribosomes & chloroplasts of chlamydomonas	1961-63
	2	Experiments 26-29	
	3	Experiments 30-32	
	4	Experiments 33-36	
	5	Mat-1 expt. & Nearest neighbor analysis 1-7	1972-80
	6	Clilandomonas	1980
	7	D-822 [Conie Grabowy]	1980
	8`	Experiment 25	
	9	Active Gene – MQ – column	1981
	10	Base Analysis – Book III	1978
	11	Anti m ⁵ C – original X-Ray film, etc.	1980
	12	Base Analysis – Book II	1978
	13	Base Analysis – Book I	1978
	14	Hybrid 1 [Barb Smith]	1978-79
	15	Transfection Experiments [Barb Smith]	1980-81
	16	[Barb Smith]	1977
	17	[Barb Smith]	1978/79
	18	[Barb Smith] Hybrids II H200-285	1982-83
	19	[Barb Smith] II	1978-79
	20	[Barb Smith] Mutagenesis tumot	1980
	21	Cystic Fibrosis [Bob Curtin] [Dottie Milton] (1 of 2)	1986-87
	22	Cystic Fibrosis (2 of 2)	1986-87
18	1	[Evelyn D.] EE & SEE Lines	1984
	2	[Evelyn D.] Growth factors	1985
	3	[Evelyn D.] G.F. Chef-SIS Lines	1985-86
	4	[Wendy Sacks]	1982
	5	[Frann Bennett]	1979-80
	6	[Frann Bennett] II	1979-81
	7	Kijiyi Tanaka lab notes	1981-82
	8	Kijiyi Tanaka lab notes – transfection	1981-82
	9	Kijiyi Tanaka lab notes – transformed SF2 & CIS cells	1981-82
	10	Kijiyi Tanaka lab notes – PEJ6-6 probes	1982
	11	Kijiyi Tanaka lab notes – 257 SV series	1981
	12	Kijiyi Tanaka lab notes – Dot blots and probes	1982-83
	13	Kijiyi Tanaka lab notes – CIS cells and genomic rearrangements	1981-82
	14	Kijiyi Tanaka lab notes – mappings	1981-82
	15	Kijiyi Tanaka lab notes – subcultures	1981
	16	Kijiyi Tanaka lab notes – mapping	1981
	17	Kijiyi Tanaka lab notes – DHFR	1981-82
	18	Kijiyi Tanaka lab notes – mapping	1982
19	1	Kijiyi Tanaka lab notes – Index of DNA blots	1981-83
	2	Kijiyi Tanaka lab notes – clones from foci	1981
	3	Cold Spring Harbor growth factors	1981

	4	Correspondence and lab notes	1951-55
	5	Sager reprints and articles	1960-99
	6	Lab notes	1951-55
	7	Obit and bibliographic material	1998-99
	8	DNA preps and lab notes	1967
	9	DNA tracings	1968
	10	DNA	1970-71
	11	DNA	1972
	12	DNA	1963
	13	Gamete DNA	1970-71
	14	[William Burton]	1975
	15	Drug Paper	1978
	16	Colony	1989
	17	Flechtner “antibiotics in <i>Chlamydomonas reinhardi</i> ”	
	18	Lab notes	1957
	19	Lab notes	1950-53
	20	Correspondence re Dr. Franks work on aging & tumors	1972
	21	William J. Blechman Senior thesis	1979
	22	[Datta, Milton] – Cell Culture	1985-87
	23	[Datta, Milton] – Research notes I (1 of 2)	1985
	24	[Datta, Milton] – Research notes I (2 of 2)	1985
	25	A31 Cell ICycle Proteins V40	1978-79
20	1	SFCI accounting 1979; DFCI salary & compensation	1991-99
	2	Funding @DFCI	1981-92
	3	DFCI Program Review [Barry Benacerraf – President DFCI]	1990
	4	Proposal to establish Dept. of Genetics at Harvard Med. School	1978
	5	Microbiology faculty @DFCI & Biomed. Sci @ Harvard	1993-95
	6	Clark College Symposium	1960
	7	MS; RS Bibliography; CV; Misc. Reprints	1997
	8	Biology of the Cancer Cell – course	1987-92
	9	Photographs of chromosomes	
	10	Photos of chromosomes; lantern slides negs. & pos.	
	11	Van Niel lecture	1947
	12	Van Niel lectures	1949
	13	Review of studies on <i>chlamydomonas reinhardi</i> – “Rockefeller Institute for Medical Research	1951
	14	Botany 201	1946
	15	Meetings and talks	1951-65
	16	Meetings (1 of 3)	1967-79
	17	Meetings (2 of 3)	1967-79
	18	Meetings (3 of 3)	1967-79
	19	Genetics Course; notes and exams	1952-56
	20	Genetics Course lectures	1974
	21	Genetics Course; replication & recombination	1969-74
	22	Chlamydomonas lectures; tumox biol. Lectures; training grant	1967-84
	23	Tumox biology; genetics	1961-85

	24	Recombination; microbiology 210 & Cell Biology 211	1966-86
	25	Genetics – Biology 107	
	26	Genetics – Biology 700.3, 505 & 281	1970-74
21		Frann Bennett research calendars	1980-1981
	1	“Sporulation in <i>Bacillus Subtilis</i> ; Synthesis of Ribosomal RNA by Testa & Rudner; Barbara McClintock special course	1974
	2	Correspondence re dissertation	1947-51
	3	General Correspondence	1965-68
	4	General Correspondence	1968-72
	5	General Correspondence	1971-72
	6	1971 Lab report and General Correspondence	1971-72
	7	General Correspondence	1972
	8	General Correspondence	1972
	9	General Correspondence	1973-74
	10	General Correspondence	1974
	11	Hunter College Correspondence	1975
	12	General Correspondence	1975
	13	General Correspondence	1975
	14	General Correspondence	1974-76
	15	General Correspondence	1976-77
	16	General Correspondence	1976-77
	17	General Correspondence	1976-77
	18	General Correspondence	1978-84
	19	General Correspondence	1976-78
	20	General Correspondence	1976-78
	21	General Correspondence	1976-77
	22	Ruth Sager talks	1955-
	23	Newspaper clippings	1963-65
22	1	Cultures	
	2	[Duzza] 810B	1981
	3	[Bob Kitchen] Bob Kitchen’s Lab notes	1978-80
	4	Cultures #508	
	5	Cultures #806	
	6	Cultures	1980-82
	7	Cultures #46	1980-82
	8	Cultures #1086 +	1980-82
	9	Cultures #896	1980-82
	10	Cultures #590 +	1980-82
	11	Cultures #784 +	1980-82
	12	Cultures #1060 +	1980-82
	13	Cultures #615+	1980-82
	14	Cultures #587 +	1980-82
	15	Cultures #745 +	1980-82
23	1	Cultures #1611 +	1980-83
	2	Cultures #1555 +	1980-83
	3	Cultures #1014	1980-83

4	Cultures #756 +	1980-83
5	Cultures #680 +	1980-83
6	Cultures #1077 +	1980-83
7	Cultures #880 +	1980-83
8	Cultures #879 +	1980-83
9	Cultures #54 +	1980-83
10	Cultures #165 +	1980-83
11	Cultures #1336 +	1980-83
12	Cultures #1227 +	1980-83
13	GEF manuscript – cultures (1 of 2)	1980-83
14	GEF manuscript – cultures (2 of 2)	1980-83
15	Cultures #582 +	1980-83
16	Letters regarding Sager career	1955-1994
17	CV and Biographical Info.	
18	Bio for General audience	1991
19	Research ideas	
	Video tapes of Sager talks and Tribute to Sager	
	Audio tapes of Sager talks, Breast Cancer Research symposium 2 and misc.	