



Smithsonian Institution Archives

History of the Ultracentrifuge
Videohistory Collection, 2007

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Collection Overview

Repository:	Smithsonian Institution Archives, Washington, D.C., osiaref@si.edu
Title:	History of the Ultracentrifuge Videohistory Collection
Identifier:	Record Unit 9625
Date:	2007
Extent:	1 cu. ft. (1 record storage box)
Creator::	
Language:	English

Administrative Information

Preferred Citation

Smithsonian Institution Archives, Record Unit 9625, , History of the Ultracentrifuge Videohistory Collection

Use Restriction

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Historical Note

The Ultracentrifuge has played an important role in modern biotechnology. The ultracentrifuge is a centrifuge optimized for spinning a rotor at very high speeds, capable of generating acceleration as high as 2,000,000 G (approx 19,600 km/s²). There are two kinds of ultracentrifuges, the preparative and the analytical ultracentrifuge. Both classes of instruments find important uses in molecular biology, biochemistry, and polymer science. The analytical ultracentrifuge was invented in 1925 by Theodor Svedberg, who was awarded the Nobel Prize in Chemistry for his research on colloids and proteins using the ultracentrifuge.

Edward Greydon Pickles developed the vacuum ultracentrifuge which allowed a reduction in friction generated at high speeds and enabled the maintenance of constant temperature. In 1946, Pickles cofounded Spinco (Specialized Instruments Corporation) and marketed a vacuum ultracentrifuge. The original machine design was complicated to operate, so he developed a more user-friendly version, but initial use of the technology remained low. Spinco almost went bankrupt, but Pickles persisted, and in 1947 Spinco was the first to commercially manufacture ultracentrifuges. In 1949, Spinco introduced the Model L, the first preparative ultracentrifuge to reach a maximum speed of 40,000 rpm. In 1954, Beckman Instruments (now Beckman Coulter) purchased the company, forming the basis of its Spinco centrifuge division, which has developed both preparative and analytical centrifuges.

Introduction

The Smithsonian Videohistory Program, funded by the Alfred P. Sloan Foundation from 1986 until 1992, used video in historical research. Additional collections have been added since the grant project ended. Videohistory uses the video camera as a historical research tool to record moving visual information. Video works best in historical research when recording people at work in environments, explaining artifacts, demonstrating process, or in group discussion. The experimental program recorded projects that reflected the Institution's concern with the conduct of contemporary science and technology.

Smithsonian historians participated in the program to document visual aspects of their on-going historical research. Projects covered topics in the physical and biological sciences as well as in technological design and manufacture. To capture site, process, and interaction most effectively, projects were taped in offices, factories, quarries, laboratories, observatories, and museums. Resulting footage was duplicated, transcribed, and deposited in the Smithsonian Institution Archives for scholarship, education, and exhibition. The collection is open to qualified researchers.

Descriptive Entry

Ramunas Kondratas, National Museum of American History, conducted videotaped interviews at Spinco to document the history of ultracentrifuge technology. Interviewees included Phyllis, M. Browning, Michael Cahn, Robert Stanley Carey, Robert E. Cunningham, Noli L. de la Cruz, James D. Duty, Giancarlo Ernoli, Jack Finney, Robert C. Franklin, Robert Frederito, Scott Gammon, Brian George, Dean Hanquist, Robert Indig, Kenneth C. Johnson, Eva T. Juhos, Benson Kwan, C. Richard McEwen, Frank Meze, Patrick O. Moore, James C. Osborne, Mehmet Pamukco, Fred J. Pisturino, Frank Richards, Ron Ridgeway, Louis T. Rosso, Howard K. Schachman, Karen F. Shore, Robert Slocum, Carol Smith, Paul Voelker, Eugene B. West, and James Woodall, at Beckman Coulter, Spinco Division, in Palo Alto and Fullerton, California. Participants discussed the history and development of ultracentrifuge technology, research and development, the commercial manufacture of the equipment, drive and heat-sink assembly, optics assembly, business and marketing. Visual documentation included tours of research and manufacturing facilities.

This collection is comprised of 24 interview sessions, totaling approximately 14 hours of recording and 247 pages of transcript.

Names and Subject Terms

This collection is indexed in the online catalog of the Smithsonian Institution under the following terms:

Subjects:

- Biotechnology
- Centrifuges
- Science -- History
- Scientific apparatus and instruments
- Technology -- History

Types of Materials:

- Transcripts
- Video recordings

Names:

Beckman Coulter (Firm)
Browning, Phyllis M.
Cahn, Michael
Carey, Robert Stanley
Cunningham, Robert E.
Duty, James D.
Ernoli, Giancarlo
Finney, Jack
Franklin, Robert C.
Frederito, Robert
Gammon, Scott
George, Brian
Hanquist, Dean
Indig, Robert
Johnson, Kenneth C.
Juhos, Eva Th.
Kondratas, Ramunas
Kwan, Benson
McEwen, C. Richard
Meze, Frank
Moore, Patrick O.
Osborne, James C.
Pamukcu, Mehmet
Pisturino, Fred J.
Richards, Frank
Ridgeway, Ron
Rosso, Louis T.
Schachman, Howard K.
Shore, Karen F.
Slocum, Robert
Smith, Carol
Voelker, Paul
West, Eugene B.
Woodall, James
de la Cruz, Noli L.

Geographic Names:

Fullerton (Calif.)
Palo Alto (Calif.)

Container Listing

Interviews

Interviews	Session 1: March 5, 2007
Interviews	Tour of the Spinco facility at Palo Alto, California, by Kenneth C. Johnson included demonstrations of equipment and processes by Noli L. de la Cruz, James D. Duty, Robert Frederito, Scott Gammon, Fred J. Pistorino, Ron Ridgeway, and Carol Smith.
Interviews	Transcript, pages 1-18, of videotape recording, 1 hour.
Interviews	Video Recordings of Interviews: Total Recording Time: 1 hour Note: <ul style="list-style-type: none">• Original Masters: 2 Beta videotapes• Reference Copies: 1 VOB digital file.
Interviews	Session 2: March 5, 2007
Interviews	Interview of Howard K. Schachman was recorded in the Schachman Room at Spinco in Palo Alto, California.
Interviews	Transcript, pages 19-52, of videotape recording, 1.5 hours.
Interviews	Video Recordings of Interviews: Total Recording Time: 1.5 hours Note: <ul style="list-style-type: none">• Original Masters: 3 Beta videotapes• Reference Copies: 1 VOB digital file.
Interviews	Session 3: March 5, 2007
Interviews	Interview of the Research and Development team, including Dean Hanquist, Robert Indig, Patrick O. Moore, Giancarlo Romoli, and Paul Voelker, was recorded at Spinco in Palo Alto, California.
Interviews	Transcript, pages 53-68, of videotape recording, 0.75 hour.
Interviews	Video Recordings of Interviews: Total Recording Time: 0.75 hour Note: <ul style="list-style-type: none">• Original Masters: 2 Beta videotapes• Reference Copies: 1 VOB digital file.
Interviews	Session 4: March 5, 2007
Interviews	Interview of Robert Stanley Carey was recorded at Spinco in Palo Alto, California.

- Interviews Transcript, pages 69-76, of videotape recording, 0.5 hour.
- Interviews Video Recordings of Interviews: Total Recording Time: 0.5 hour
Note:
 - Original Masters: 1 Beta videotapes
 - Reference Copies: 1 VOB digital file.
- Interviews **Session 5: March 5, 2007**
- Interviews Interview of Frank Meze was recorded at Spinco in Palo Alto, California.
- Interviews Transcript, pages 77-85, of videotape recording, 0.5 hour.
- Interviews Video Recordings of Interviews: Total Recording Time: 0.5 hour
Note:
 - Original Masters: 1 Beta videotapes
 - Reference Copies: 1 VOB digital file.
- Interviews **Session 6: March 5, 2007**
- Interviews Interview of Eugene B. West was recorded at Spinco in Palo Alto, California.
- Interviews Transcript, pages 86-91, of videotape recording, 0.5 hour.
- Interviews Video Recordings of Interviews: Total Recording Time: 0.5 hour
Note:
 - Original Masters: 1 Beta videotapes
 - Reference Copies: 1 VOB digital file.
- Interviews **Session 7: March 6, 2007**
- Interviews Interview of Eva T. Juhos was recorded at Spinco in Palo Alto, California.
- Interviews Transcript, pages 92-107, of videotape recording, 0.75 hour.
- Interviews Video Recordings of Interviews: Total Recording Time: 0.75 hour
Note:
 - Original Masters: 2 Beta videotapes
 - Reference Copies: 1 VOB digital file.
- Interviews **Session 8: March 6, 2007**
- Interviews Interview of J. Woodall was recorded at Spinco in Palo Alto, California.
- Interviews Transcript, pages 108-114, of videotape recording, 0.25 hour.

- Interviews Video Recordings of Interviews: Total Recording Time: 0.25 hour
Note:
 - Original Masters: 1 Beta videotapes
 - Reference Copies: 1 VOB digital file.
- Interviews **Session 9: March 6, 2007**
- Interviews Interview of Robert C. Franklin was recorded at Spinco in Palo Alto, California.
- Interviews Transcript, pages 115-123, of videotape recording, 0.75 hour.
- Interviews Video Recordings of Interviews: Total Recording Time: 0.75 hour
Note:
 - Original Masters: 2 Beta videotapes
 - Reference Copies: 1 VOB digital file.
- Interviews **Session 10: March 6, 2007**
- Interviews Interview of Frank Richards was recorded at Spinco in Palo Alto, California.
- Interviews Transcript, pages 124-133, of videotape recording, 0.5 hour.
- Interviews Video Recordings of Interviews: Total Recording Time: 0.5 hour
Note:
 - Original Masters: 1 Beta videotapes
 - Reference Copies: 1 VOB digital file.
- Interviews **Session 11: March 6, 2007**
- Interviews Interview of Robert E. Cunningham was recorded at Spinco in Palo Alto, California.
- Interviews Transcript, pages 134-141, of videotape recording, 0.25 hour.
- Interviews Video Recordings of Interviews: Total Recording Time: 0.25 hour
Note:
 - Original Masters: 1 Beta videotapes
 - Reference Copies: 1 VOB digital file.
- Interviews **Session 12: March 6, 2007**
- Interviews Interview of Michael Cahn was recorded at Spinco in Palo Alto, California.
- Interviews Transcript, pages 142-147, of videotape recording, 0.25 hour.
- Interviews Video Recordings of Interviews: Total Recording Time: 0.25 hour

- Note:
- Original Masters: 1 Beta videotapes
 - Reference Copies: 1 VOB digital file.

Interviews **Session 13: March 6, 2007**

Interviews Interview of Benson Kwan was recorded at Spinco in Palo Alto, California.

Interviews Transcript, pages 148-154, of videotape recording, 0.5 hour.

Interviews Video Recordings of Interviews: Total Recording Time: 0.5 hour

- Note:
- Original Masters: 1 Beta videotapes
 - Reference Copies: 1 VOB digital file.

Interviews **Session 14: March 6, 2007**

Interviews Interview of C. Richard McEwen was recorded at Spinco in Palo Alto, California.

Interviews Transcript, pages 155-161, of videotape recording, 0.25 hour.

Interviews Video Recordings of Interviews: Total Recording Time: 0.25 hour

- Note:
- Original Masters: 1 Beta videotapes
 - Reference Copies: 1 VOB digital file.

Interviews **Session 15: March 6, 2007**

Interviews Interview of Karen F. Shore was recorded at Spinco in Palo Alto, California.

Interviews Transcript, pages 162-168, of videotape recording, 0.5 hour.

Interviews Video Recordings of Interviews: Total Recording Time: 0.5 hour

- Note:
- Original Masters: 1 Beta videotapes
 - Reference Copies: 1 VOB digital file.

Interviews **Session 16: March 7, 2007**

Interviews Interview of Robert Slocum was recorded at Spinco in Palo Alto, California.

Interviews Transcript, pages 169-181, of videotape recording, 0.75 hour.

Interviews Video Recordings of Interviews: Total Recording Time: 0.75 hour

- Note:
- Original Masters: 2 Beta videotapes
 - Reference Copies: 1 VOB digital file.

- Interviews **Session 17: March 6, 2007**
- Interviews Interview of Brian George was recorded at Spinco in Palo Alto, California.
- Interviews Transcript, pages 182-187, of videotape recording, 0.25 hour.
- Interviews Video Recordings of Interviews: Total Recording Time: 0.25 hour
Note:
 - Original Masters: 1 Beta videotapes
 - Reference Copies: 1 VOB digital file.
- Interviews **Session 18: March 7, 2007**
- Interviews Interview of Mehmet. Pamukcu was recorded at Spinco in Palo Alto, California.
- Interviews Transcript, pages 188-198, of videotape recording, 0.5 hour.
- Interviews Video Recordings of Interviews: Total Recording Time: 0.5 hour
Note:
 - Original Masters: 1 Beta videotapes
 - Reference Copies: 1 VOB digital file.
- Interviews **Session 19: March 7, 2007**
- Interviews Interview of Robert Slocum was recorded at Spinco in Palo Alto, California.
- Interviews Transcript, pages 199-200, of videotape recording, 0.5 hour.
- Interviews Video Recordings of Interviews: Total Recording Time: 0.5 hour
Note:
 - Original Masters: 1 Beta videotapes
 - Reference Copies: 1 VOB digital file.
- Interviews **Session 20: March 6, 2007**
- Interviews Tour of the Spinco facility was recorded in Palo Alto, California.
- Interviews No transcript is available, of videotape recording, 0.5 hour.
- Interviews Video Recordings of Interviews: Total Recording Time: 0.5 hour
Note:
 - Original Masters: 1 Beta videotapes
 - Reference Copies: 1 VOB digital file.
- Interviews **Session 21: March 6, 2007**

Interviews Interview of Phyllis M. Browning was recorded at her home in Palo Alto, California.

Interviews Transcript, pages 201-215, of audiotape recording, 0.25 hour.

Interviews Video Recordings of Interviews: Total Recording Time: 0.25 hour
Note:

- Original Masters: 1 Beta videotapes
- Reference Copies: 1 VOB digital file.

Interviews **Session 22: March 8, 2007**

Interviews Interview of Louis T. Rosso was recorded at Spinco in Palo Alto, California.

Interviews Transcript, pages 216-226 of videotape recording, 0.5 hour.

Interviews Video Recordings of Interviews: Total Recording Time: 0.5 hour
Note:

- Original Masters: 1 Beta videotapes
- Reference Copies: 1 VOB digital file.

Interviews **Session 23: March 8, 2007**

Interviews Interview of Jack Finney was recorded at Spinco in Palo Alto, California.

Interviews Transcript, pages 227-238, of videotape recording, 0.5 hour.

Interviews Video Recordings of Interviews: Total Recording Time: 0.5 hour
Note:

- Original Masters: 1 Beta videotapes
- Reference Copies: 1 VOB digital file.

Interviews **Session 24: March 8, 2007**

Interviews Interview of James C. Osborne was recorded at Spinco in Palo Alto, California.

Interviews Transcript, pages 239-247, of videotape recording, 0.5 hour.

Interviews Video Recordings of Interviews: Total Recording Time: 0.5 hour
Note:

- Original Masters: 1 Beta videotapes
- Reference Copies: 1 VOB digital file.