



Smithsonian

*National Museum of American History Kenneth E. Behring Center*

## Roland C. Hawes Papers

NMAH.AC.0617

Jennifer Ulrich

1997

Archives Center, National Museum of American History

P.O. Box 37012

Suite 1100, MRC 601

Washington, D.C. 20013-7012

[archivescenter@si.edu](mailto:archivescenter@si.edu)

<https://americanhistory.si.edu/archives>

# Table of Contents

|   |    |
|---|----|
| Collection Overview .....                           | 1  |
| Administrative Information .....                    | 1  |
| Arrangement.....                                    | 2  |
| Biographical/Historical note.....                   | 2  |
| Scope and Contents.....                             | 2  |
| Names and Subjects .....                            | 2  |
| Container Listing .....                             | 4  |
| Series 1: Personal Files, 1938-1997.....            | 4  |
| Series 2: Research Files A-Z, 1913 (1927-1990)..... | 5  |
| Series 3: Piness Laboratories, 1920-1979.....       | 9  |
| Series 4: Beckman Instruments Inc., 1939-1974.....  | 10 |
| Series 5: Cary Instruments, 1937-1992.....          | 11 |
| Series 6: Consulting Work, 1908- (1939-1992).....   | 21 |
| Series 7: Professional Activities, 1949-1996.....   | 36 |

---

## Collection Overview

|                    |  |
|--------------------|--|
| <b>Repository:</b> | Archives Center, National Museum of American History   |
| <b>Title:</b>      | Roland C. Hawes Papers   |
| <b>Date:</b>       | 1908-1997<br>1908-1997   |
| <b>Identifier:</b> | NMAH.AC.0617   |
| <b>Creator:</b>    | Cary Instruments.<br>Hawes, Roland C., 1908-1999   |
| <b>Extent:</b>     | 14.5 Cubic feet<br>14.5 Cubic feet (44 boxes)  |
| <b>Language:</b>   | English .  |
| <b>Summary:</b>    | The papers document the career of Roland C. Hawes (1908-) who worked in the field of immunnassay, spectrophotometry, scientific apparatus and instruments industry, and administrative duties at Applied Physics Corporation/Cary Instruments. The papers include correspondence, handwritten notes and sketches, memorandum reports, catalogs, printed material, patent documents, drawings, blueprints (original and diazo copies), and photographs. |

---

## Administrative Information

### Acquisition Information

This collection was donated by Roland C. Hawes on September 9, 1997.

### Ownership and Custodial History

The collection was donated to the National Museum of American History by Roland C. Hawes, September 9, 1997.

### Related Archival Materials

#### **Materials at Other Organizations**

##### **Office Of History, National Institutes of Health**

Images of Applied Physics Corp. Vibrating Reed Electrometer, Model 31 (89.0001.206); Applied Physics Corp. Cary Vibrating Reed Electrometer, Model 31-V (89.0001.208); and Applied Physics Corp. Cary Recording UV-Vis Spectrophotometer, Model 14 (90.0010.001).

##### **California Institute of Technology Archives**

Arnold Orville Beckman: oral history, 1978

Papers of Arnold O. Beckman, 1919-1989

### Processing Information

Collection processed by Jennifer Ulrich, 1997.

## Preferred Citation

Roland C. Hawes Papers, 1908-1997, Archives Center, National Museum of American History.

## Restrictions

Collection is open for research.

## Terms Governing Use and Reproduction

Collection items available for reproduction, but the Archives Center makes no guarantees concerning copyright restrictions. Other intellectual property rights may apply. Archives Center cost-recovery and use fees may apply when requesting reproductions.

---

## Biographical Note

The career of Roland C. Hawes, born Oct. 4, 1908, Riverside, California, began in chemical analysis and led him into the scientific apparatus and instruments industry, where he worked in the field of spectrophotometry. B.S., chemistry, California Institute of Technology, 1930. He died in 1999.

---

## Scope and Contents

Correspondence, handwritten notes and sketches, memorandum reports, catalogs, printed material, patent documents, drawings, blueprints (original and diazo copies), and photographs document Hawes's work in the field of immunnassay, spectrophotometry, scientific apparatus and instruments industry, and administrative duties at Applied Physics Corporation/Cary Instruments.

---

## Arrangement

The collection is arranged into seven series.

Series 1, Personal files, 1938-1997

Series 2, Research files, A-Z, 1913 (1927-1990)

Series 3, Piness Laboratories, 1920-1979

Series 4, Beckman Instruments, Inc., 1939-1974

Series 5, Cary Instruments, 1937-1992

Series 6, Consulting work, 1908-(1939-1992)

Series 7, Professional activities, 1949-1996

---

## Names and Subject Terms

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

Subjects:

Engineers -- 20th century

Inventions -- 20th century

Inventors -- 20th century

Scientific apparatus and instruments industry

Scientific apparatus and instruments industry -- California  
Spectrophotometry  
Spectrum analysis

Types of Materials:

Blueprints  
Correspondence -- 1930-1950  
Diazo prints  
Drawings -- 20th century  
Pencil works  
Photographic prints  
Photographs -- Black-and-white negatives -- Glass -- 1890-1920

Names:

Applied Physics Corporation.  
Aviv & Associates, Inc.  
Beckman Instruments, Inc.  
Beckman, Arnold O.  
Cary, Howard  
Duffield, Jack J.  
George, Kenyon  
National Technical Laboratories.  
Varian Associates.

---

## Container Listing

### Series 1: Personal Files, 1938-1997

Box 1, Folder 1      Biographical information, 1943, 1952, 1961, 1967, 1971, 1973, 1978-1979, 1991, 1997

Box 1, Folder 2      Philosophy objectives, 1938, 1959, 1992

Box 1, Folder 3      Smithsonian Institution Correspondence, 1979-1980

Box 41, Folder 4      Address and phone book, circa 1964

Box 26, Folder 22      UNOCAL account, 1986, 1988, 1991, 1993

*[Return to Table of Contents](#)*

## Series 2: Research Files A-Z, 1913 (1927-1990)

|                 |  |
|-----------------|--|
| Box 1, Folder 4 | Analytical Methods, 1968, 1970   |
| Box 1, Folder 5 | Application Notes, 1964-1966, 1969-1970, 1972  |
| Box 1, Folder 6 | Application Reports, 1963-1966, 1968-1972  |
| Box 1, Folder 7 | Atomic Absorption, 1962-1968, 1972   |
| Box 1, Folder 8 | Circuits, 1944-1947, 1949-1953, 1956, 1958-1959, 1962, 1965, 1967, 1974-1975, 1977, 1980, 1983 |
| Box 2, Folder 1 | Circuits, 1944-1947, 1949-1953, 1956, 1958-1959, 1962, 1956, 1967, 1974-1975, 1977, 1980, 1983 |
| Box 2, Folder 2 | Circuits, 1942-1943, 1949, 1951-1952, 1954, 1957, 1959, 1964, 1967, 1969, 1975-1977            |
| Box 2, Folder 3 | [Circuits electrometer], 1949, 1951, 1953-1955, 1966, 1971-1972, 1990                          |
| Box 2, Folder 4 | Color and reflectance, 1950, 1952, 1961-1962, 1964-1965, 1967-1971, 1975                       |
| Box 2, Folder 5 | Color and reflectance, 1947, 1955, 1958-1960, 1962, 1964, 1966-1970, 1978                      |
| Box 3, Folder 1 | Correlation Spectroscopy, 1966-1967, 1969, 1971, 1977  |
| Box 3, Folder 2 | Dichroism Interferometer, 1967, 1969-1971  |
| Box 3, Folder 3 | Dichroism Linear and Circular, 1964-1968, 1970, 1985-1989                                      |
| Box 3, Folder 4 | Data file, 1959, 1961-1967, 1969-1970, 1972, 1986  |
| Box 3, Folder 5 | Electronics, 1944, 1946-1947, 1949, 1951-1962, 1965, 1967-1968, 1970, 1976, 1981, 1986         |
| Box 4, Folder 1 | Fluor Quenching-Resonance Raman, 1971-1972   |
| Box 4, Folder 2 | Fluorimeter Instructions-IDT, 1974 November  |
| Map-folder 3    | Fast Fluorimeter, drawings and calculations, 1976-09-17  |
| Box 4, Folder 3 | Glassin, 1987 November 16, 1988 January-March  |
| Box 4, Folder 4 | Gratings, 1941, 1946, 1952, 1953, 1956, 1960-1961, 1968-1969, 1976-1977                        |
| Box 4, Folder 5 | Induced Rotation-Detectors, 1946, 1948-1951, 1953, 1955, 1959, 1961, 1964-1968, 1970-1974      |

|                 |   |
|-----------------|---|
| Box 4, Folder 6 | Induced rotation-ellipsometry scatter, 1956, 1960, 1963-1967, 1969-1970, 1972                                     |
| Box 4, Folder 7 | Induced Rotation-Imaging, 1971  |
| Box 4, Folder 8 | Infrared Sources, 1946, 1949, 1958, 1960, 1967, 1975  |
| Box 4, Folder 9 | Interferometry, 1958, 1960, 1966-1969, 1972   |
| Box 5, Folder 1 | Interferometry, 1948, 1956, 1958, 1960, 1967-1968, 1971   |
| Box 5, Folder 2 | Interferometry, 1948, 1950, 1954, 1958-1960, 1964-1969, 1971, 1973-1974   |
| Box 5, Folder 3 | Lamps and Lasers, 1946, 1948, 1950, 1958, 1960, 1963-1972, 1974-1975  |
| Box 5, Folder 4 | LDV Electronics, 1975-1978, 1980  |
| Box 5, Folder 5 | LDV Electronics II, 1975-1979   |
| Box 5, Folder 6 | Mass Spectrometry, 1943, 1958, 1962-1963, 1966, 1973  |
| Box 6, Folder 1 | Mechanisms and Mathematics, 1934, 1944, 1946, 1948, 1951, 1953, 1955, 1959-1960, 1962-1967, 1970, 1974-1975, 1980 |
| Box 6, Folder 2 | Noise and Shot Noise (S/N), 1941, 1946, 1947, 1951-1953, 1956-1958, 1960, 1962-1968, 1970-1974, 1980              |
| Box 6, Folder 3 | Optical Crystals physical properties, 1952 October  |
| Box 6, Folder 4 | Optical Materials, 1936, 1942, 1944, 1946, 1948, 1952-1956, 1958-1959, 1961-1971, 1973, 1987-1989                 |
| Box 6, Folder 5 | Optics, 1939, 1946, 1951-1956, 1958-1961, 1964-1970, 1973-1976, 1978  |
| Box 7, Folder 1 | Optics, 1950-1959, 1961-1965, 1967-1969, 1976, 1987-1989  |
| Box 7, Folder 2 | Optics, 1941, 1945, 1949-1951, 1953-1955, 1961, 1964-1967, 1968, 1974, 1988, 1990                                 |
| Box 7, Folder 3 | Photometric Accuracy, 1913, 1947, 1949, 1950, 1952-1955, 1965-1966, 1968-1972                                     |
| Box 7, Folder 4 | Photometric Accuracy, 1947, 1949-1950, 1952-1955, 1960-1962, 1965-1966, 1968-1972                                 |
| Box 8, Folder 1 | Photometry, 1968-1969, 1972   |
| Box 8, Folder 2 | Photo tubes data, 1953, 1957, 1961-1965, 1968-1969  |



|                  |  |
|------------------|--|
| Box 8, Folder 3  | Polar notes, 1952, 1956-1961, 1963, 1970   |
| Box 8, Folder 4  | Polar notes, 1960-1967, 1970   |
| Box 8, Folder 5  | Polarimeter references A-B, 1930, 1939, 1948, 1955, 1958, 1960-1961, 1965-1968, 1970                       |
| Box 8, Folder 6  | Polarimeter references C-G, 1932, 1934, 1950, 1950, 1956-1959, 1961, 1964-1968                             |
| Box 9, Folder 1  | Polarimeter references H-M, 1935, 1937-1938, 1946, 1950, 1952, 1958-1959, 1961-1964, 1966, 1968-1970, 1976 |
| Box 9, Folder 2  | Polarimeter references P-Z, 1936, 1955, 1957-1959, 1961-1962, 1964-1967                                    |
| Box 9, Folder 3  | Radio activity, 1952-1955, 1957-1961, 1963-1966, 1968, 1971  |
| Box 9, Folder 4  | Raman Pre-laser, 1937, 1949-1951, 1955-1956, 1960-1966, 1968, 1970, 1972, 1976                             |
| Map-folder 1     | recorder/preamplifier, electronic schematic  |
| Box 9, Folder 5  | Resistors, 1941, 1951, 1956-1957, 1960, 1962, 1964-1966, 1968, 1980  |
| Box 10, Folder 1 | RSS, 1956, 1965, 1969, 1971-1975   |
| Box 10, Folder 2 | RSS, 1972-1974   |
| Box 10, Folder 3 | Semi conductor photodetectors, 1965-1968, 1972-1973, 1988  |
| Box 10, Folder 4 | Spectra, 1927, 1937, 1947, 1950-1951, 1953-1956, 1958-1967   |
| Box 10, Folder 5 | Spectra, 1943-1944, 1947, 1949-1950, 1952-1955, 1958, 1960-1963, 1966, 1971, 1976                          |
| Box 11, Folder 1 | Spectra ultraviolet and visual, 1979, 1981   |
| Box 11, Folder 2 | Spectrophoto fluorometry, 1961-1965, 1967, 1969-1972   |
| Box 11, Folder 3 | Spectrophoto fluorometry, 1957-1958, 1965, 1967, 1969-1973   |
| Box 11, Folder 4 | Spectrophotometer systems, 1946, 1950, 1956, 1958, 1961, 1964-1967, 1973                                   |
| Box 11, Folder 5 | Spectroscopy miscellaneous, 1933, 1935, 1946-1948, 1953, 1956-1959, 1961, 1964-1966, 1968, 1974, 1986      |
| Box 11, Folder 6 | Spectroscopy miscellaneous, 1938, 1952, 1956, 1958-1961, 1963-1964, 1966-1968                              |

|                  |   |
|------------------|---|
| Box 12, Folder 1 | Stray light, 1947, 1966, 1970-1971  |
| Box 12, Folder 2 | Systems design, 1942, 1946-1954, 1956-1957  |
| Box 12, Folder 3 | "Technical Memos", 1967-1971  |
| Box 12, Folder 4 | "Technical Memos", undated  |
| Box 12, Folder 5 | Thin films, 1966-1969   |
| Box 12, Folder 6 | Time resolved, 1951, 1956, 1960-1961, 1964-1966, 1968-1973  |
| Box 13, Folder 1 | Transistors data, 1964-1965   |
| Box 13, Folder 2 | Transistors I L, 1973-1975, 1977-1978, 1982-1983  |
| Box 13, Folder 3 | UltraViolet and visual miscellaneous, 1950-1952, 1954, 1957-1958, 1962, 1965-1968, 1978                                       |
| Box 13, Folder 4 | Ultraviolet and visual detectors and tubes, 1957, 1963-1965, 1967-1968, 1973  |
| Box 42, Folder 1 | Components, 1945-1946, 1948-1951, 1953-1956, 1959-1960, 1963-1964, 1966, 1968, 1970-1973, 1975                                |
| Box 42, Folder 2 | Laboratory equipment and methods, 1938, 1950, 1953-1954, 1956-1957, 1959, 1961, 1963, 1966, 1968, 1970, 1975-1977, 1979, 1988 |

*[Return to Table of Contents](#)*

## Series 3: Piness Laboratories, 1920-1979

Box 14, Folder 1      Laboratory and office reprints, 1920, 1922-1923, 1925-1929, 1931-1933, 1935, 1937, 1940-1942

Box 14, Folder 2      Laboratory and office reprints, 1924, 1926-1928, 1932-1933, 1939-1942

Box 14, Folder 3      Methods and apparatus, 1935, 1938, 1947, 1969-1970, 1979

*[Return to Table of Contents](#)*

## Series 4: Beckman Instruments Inc., 1939-1974

Box 14, Folder 4      Spectro IV model 10-12, 1939, 1947-1956

Box 14, Folder 5      Spectro IV model 10-12, 1939, 1947-1956

Box 14, Folder 6      Patents, 1971-1973

Box 15, Folder 1      Model IR-2 Spectrophotometer, 1949-1951, 1960, 1971-1974

Box 15, Folder 2      Beckman reprints, 1943, 1947-1950

*[Return to Table of Contents](#)*

## Series 5: Cary Instruments, 1937-1992

|                   |  |
|-------------------|--|
| Box 37, Folder 6  | American Society for Testing and Material (ASTM): Method of Test for Estimating Stray Radian Energy, 1968-1969 |
| Box 15, Folder 3  | Personnel files (Howard Cary): Correspondence, 1951, 1970, 1973, 1976, 1981, 1997                              |
| Box 15, Folder 4  | Personnel files (Howard Cary): Biography and awards, 1947, 1951, 1958, 1964                                    |
| Box 15, Folder 5  | Personnel files (Howard Cary): Obituary and supporting materials, 1955-1956, 1959, 1991-1992                   |
| Box 15, Folder 6  | Personnel files (Howard Cary): David C. Nelson re: Cary Obituary, 1992 January-March                           |
| Box 15, Folder 7  | Personnel files: Company history, 1966, 1970-1971  |
| Box 15, Folder 8  | Personnel files: Reports to officers, 1964-1966, 1968  |
| Box 15, Folder 9  | Personnel files: Development Department resumes, 1960, 1964, 1967, 1970-1971                                   |
| Box 15, Folder 10 | Personnel files: Staff related lists memoranda letters, 1952, 1961, 1970, 1985, 1995                           |
| Box 15, Folder 11 | Personnel files: Emil R. Schweitzer, 1963, 1972  |
| Box 15, Folder 12 | Correspondence and Memorandum: National Physical Laboratory, 1958, 1968-1972                                   |
| Box 15, Folder 13 | Correspondence and Memorandum: American Institute of Physics (AIP), 1963-1965, 1970                            |
| Box 15, Folder 14 | Correspondence and Memorandum: Coderg, 1970-1971   |
| Box 15, Folder 15 | Correspondence and Memorandum: Coderg, 1971, 1973  |
| Box 15, Folder 16 | Correspondence and Memorandum: Farbwerke Hoechst A.G., 1971 July-August  |
| Box 15, Folder 17 | Correspondence and Memorandum: Eastern Analytical Symposium (EAS), 1971 November-December                      |
| Box 16, Folder 1  | Correspondence and Memorandum (University Faculty): Dr. William D. Gregory Georgetown University, 1970 April 2 |

|                   |  |
|-------------------|--|
| Box 16, Folder 2  | Correspondence and Memorandum (University Faculty): Dr. Paul K. Brown Harvard University, 1969-1970                                |
| Box 16, Folder 3  | Correspondence and Memorandum (University Faculty): Dr. Han Chung Liu University of Hawaii, 1970-1971                              |
| Box 16, Folder 4  | Correspondence and Memorandum (University Faculty): G.M. Hieftje Indiana University and Dr. Alan Senzel, 1972 January              |
| Box 16, Folder 5  | Correspondence and Memorandum (University Faculty): Bruce Crawford and Rufus Lumry University of Minnesota, 1968-1969, 1972, 1981  |
| Box 16, Folder 6  | Correspondence and Memorandum (University Faculty): Dr. Roy N. rand formerly of Bausch & Lomb University of Pennsylvania 1967-1971 |
| Box 16, Folder 7  | Correspondence and Memorandum (University Faculty): Jon Amy Purdue University, 1970  |
| Box 16, Folder 8  | Correspondence and Memorandum (University Faculty): Dr. Patrick Hendra University of Southampton, 1967-1970, 1972, 1974            |
| Box 16, Folder 9  | Correspondence and Memorandum (Government Offices): United States Armed Services Electro-standards Agency, 1954 April 5            |
| Box 16, Folder 10 | Correspondence and Memorandum (Government Offices): United States Army Research Office Durham, 1971 September-October              |
| Box 16, Folder 11 | Correspondence and Memorandum (Government Offices): United States Department of Agriculture, 1971 January 11                       |
| Box 16, Folder 12 | Consultants: Dr. William Dreyer Varian Files, 1969-1971  |
| Box 16, Folder 13 | Consultants: Dr. B.M. Tolbert, 1958-1959, 1961, 1963, 1965-1970, 1973  |
| Box 16, Folder 14 | Consultants: Dr. Leroy Hood consultant Life Science Research (LSR), 1970-1971  |
| Box 16, Folder 15 | Trip files: Albuquerque New Mexico (and Midwest and Denver), undated   |
| Box 16, Folder 16 | Trip files: Asia and Australia, 1968 December 17   |
| Box 16, Folder 17 | Trip files: Boston Massachusetts area, undated   |
| Box 16, Folder 18 | Trip files: Chicago Illinois area, undated   |
| Box 16, Folder 19 | Trip files: Colorado area, undated   |
| Box 16, Folder 20 | Trip files: Europe, 1967, 1969-1970  |

|                   |  |
|-------------------|--|
| Box 16, Folder 21 | Trip files: New York area, 1966, 1968, 1970-1971   |
| Box 16, Folder 22 | Trip files: Northwest area, undated  |
| Box 16, Folder 23 | Trip files: Ohio area, 1965 December 29  |
| Box 16, Folder 24 | Trip files: San Francisco California, 1966-1968  |
| Box 16, Folder 25 | Trip files: South area undated   |
| Box 16, Folder 26 | Trip files: Southeast Coast area, 1966, 1968, 1970-1971  |
| Box 16, Folder 27 | Trip files: Southwest area, 1968, 1973   |
| Box 16, Folder 28 | Patent files: Index to docket undated and Cary Instruments patent status, 1974 August 27   |
| Box 16, Folder 29 | Patent files: Docket APC 6 and 7, Raman patents, 1954-1956, 1959   |
| Box 16, Folder 30 | Patent files: Docket APC 9a, H. Cary, Faraday modulation system, polarimeter reference, 1966 January 25  |
| Box 16, Folder 31 | Patent files: Docket CI 46, Jack Duffield, Xena lamp optics, 1965 August 3, 24   |
| Box 16, Folder 32 | Patent files: Docket CI 48, Peterlin and Stuart, partial translation of "Birefringence. In particular, Induced Birefringence", 1966 November 21          |
| Box 16, Folder 33 | Patent files: Docket CI 53, V. Chupp, Invariant monochromator, 1969, 1971  |
| Box 16, Folder 34 | Patent files: Docket CI 63, Kenyon George and Edouard Siegler, Grating drive, 1967-1968, 1971-1972   |
| Box 17, Folder 1  | Patent files: Docket CI 68, a, f, V. Chupp, multipass light cell, 1968, 1972-1973  |
| Box 17, Folder 2  | Patent files: Docket CI 71, E. Siegler, multireflection Raman cell, 1973   |
| Box 17, Folder 3  | Patent files: Docket CI 72, Kenyon George and Roland Hawes, Concentration Difference cell, 1971-1972   |
| Box 17, Folder 4  | Patent files: Docket CI 72a, K. George, R. Lumry, and D. Anderson, Dead Volume compensation in concentration difference cell, 1972-1974                  |
| Box 17, Folder 5  | Patent files: Docket CI 74: Dichroism Interferometer, 1971-1973, 1976  |
| Box 17, Folder 6  | Patent files: Docket 74 a-2, Varian 76-37, William Haefliger no. 7418-1, Polarization interferometer with beam polarizing and retarding means, 1975-1976 |

|                   |  |
|-------------------|--|
| Box 17, Folder 7  | Patent files: Docket CI 74a: Roland Hawes and Jack Duffield, Polarization interferometer with beam polarizing and retarding means, 1972-1976 |
| Box 17, Folder 8  | Patent files: Docket CI 74b, R. Hawes, polarization inferometer with beam polarizing compensator, 1972-1973                                  |
| Box 17, Folder 9  | Patent files: Docket 74c, A. Abu-Shumays, Interferometer, 1973   |
| Box 17, Folder 10 | Patent files: Docket CI 74f, British no. 28934/71, Australian no. 30297/71, 1971, 1973-1974  |
| Box 17, Folder 11 | Patent files: Docket CI 78, A. Abu-Shumays, and Jack Duffield, linear polarization devices and applications, 1971-1972                       |
| Box 17, Folder 12 | Patent files: Docket CI 79, Roland Hawes, high resolution/bandwidth monochromator, 1972-1973   |
| Box 17, Folder 13 | Patent files: Docket CI 83, Dreyer, flow cell for fluorescence and scattering, reference, 1954 November 16                                   |
| Box 17, Folder 14 | Patent files: Docket CI 86, Roland Hawes, false energy elimination in Fourier spectroscopy, 1972-1973, 1975-1976                             |
| Box 17, Folder 15 | Patent files: Docket CI 87a, V. Chupp and J. Duffield, monochromator, 1971-1975  |
| Box 17, Folder 16 | Patent files: Docket CI 87, V. Chupp and J. Duffield, Assymetric double pass grating monochromator, 1972-1975                                |
| Box 18, Folder 1  | Patent files: Docket CI 93, Wilbur Williams, corrected counter system, 1972  |
| Box 18, Folder 2  | Patent files: Docket CI 94, V. Chupp, modular monochromator, 1973  |
| Box 18, Folder 3  | Patent files: Docket 6497, Reference materials, 1936, 1942, 1946, 1955, 1967   |
| Box 18, Folder 4  | Patent files (Patents issued):, 1952 December 9 – 1970 May 5   |
| Box 18, Folder 5  | Patent files (Patents issued):, 1970, September 1 – 1974 April 9   |
| Box 18, Folder 6  | Patent files: Correspondence regarding invention ideas, 1964, 1969   |
| Box 13, Folder 5  | Product Development: Models 10, 11, and 12: comparison in design and performance, 1951-1959, 1962  |
| Box 13, Folder 6  | Product Development: Models 10, 11, and 12: comparison design and performance, 1951-1956, 1965   |
| Box 13, Folder 7  | Product Development: Model 11 Spectrophotometer: Drawings and parts lists, 1949-1951, 1953-1954, 1957, 1960                                  |



|                   |  |
|-------------------|--|
| Box 18, Folder 7  | Product Development: Model 14: Performance testing, 1953, 1955-1956  |
| Box 19, Folder 1  | Product Development: Model 10 and 11: Drawings, Mechanical design, 1948, 1954, 1958  |
| Box 19, Folder 2  | Product Development: Model 11, chart runs and autositives, 1953  |
| Box 19, Folder 3  | Product Development: Model 14, Drawings, electrical design, 1960 June  |
| Box 19, Folder 4  | Product Development: Model 14: Cell space, 1957, 1959, 1969  |
| Box 19, Folder 5  | Product Development: Model 14: Drawings, phototube optics schematic, 1957, 1969  |
| Box 19, Folder 6  | Product Development: Model 14: optics, 1952, 1954-1968, 1970-1971, 1988-1989   |
| Box 19, Folder 7  | Product Development: Model 14: Absorbivity, curve follower, fluorescence, 1953-1959  |
| Box 19, Folder 8  | Product Development: Model 14: performance for Eastman Kodak company customer, 1956-1959   |
| Box 19, Folder 9  | Product Development: Model 14: Recording Spectrophotometer: Reflectance, 1954-1956, 1959, 1962-1963, 1965-1966, 1969, 1987       |
| Box 19, Folder 10 | Product Development: Model 14 recording spectrophotometer: Diffuse reflectance accessory Model 1411, 1956, 1960, 1969            |
| Box 19, Folder 11 | Product Development: Models 13 and 14: Design comparisons, 1950-1954   |
| Box 20, Folder 1  | Product Development: Model 14 recording spectrophotometer: wavelength calibration background and performance, 1962               |
| Box 20, Folder 2  | Product Development: Model 14: (13-14 Optics), 1952-1957, 1959, 1964, 1969, 1971, (indexed in 1990 and notes for Aviv 1991       |
| Box 20, Folder 3  | Product Development: Model 15 spectrophotometer (1), 1959-1963 (indexed by Hawes at a later date)                                |
| Box 20, Folder 4  | Product Development: Model 15 Spectrophotometer (2), 1961, 1963-1965, 1968-1969, (indexed later with additional notes from 1989) |
| Box 20, Folder 5  | Model 15 Drawing of prism, 1960 October 27   |
| Box 20, Folder 6  | Product Development: Model 81 Laser excitation in Raman spectra, 1960 June   |

|                  |   |
|------------------|---|
| Box 20, Folder 7 | Product Development: Model 14 Cary Recording Spectrophotometer: Performance data summary, 1953-1954   |
| Box 21, Folder 1 | Product Development: Model 81, Raman Spectrophotometer: Laser excitation in Raman spectra, 1960 June  |
| Box 21, Folder 2 | Product Development: Model 81, Raman Spectrophotometer: Laser excitation in Raman spectra, 1964 June  |
| Box 21, Folder 3 | Product Development: Model 81 Raman Spectrophotometer, Laser excitation in Raman spectra, 1965-1969, 1971                                     |
| Box 21, Folder 4 | Product Development: Model 81 Raman Spectrophotometer: Laser excitation of Raman spectra and fluorescence, 1964-1965, 1967, 1972              |
| Box 21, Folder 5 | Product Development: Model 82 Raman Spectrophotometer, 1966-1968, 1970-1971   |
| Box 21, Folder 6 | Product Development: Model 82, Raman 280 project, 1968 September  |
| Box 21, Folder 7 | Product Development: Cary Lenses, undated   |
| Box 21, Folder 8 | Product Development: Dye lasers, Techtron, 1970-1972  |
| Box 22, Folder 1 | Product Development: Reference letters regarding Models 11-15, 30, 31, 36, and 60, 1955-1959, 1961-1964, 1966-1970                            |
| Box 22, Folder 2 | Product Development: Drawings, thermo and standard cell, rotary cell holder, and shield, 1961   |
| Box 22, Folder 3 | Product Development: EMI Electronics, photomultiplier tubes, 1962, 1966-1967  |
| Box 22, Folder 4 | Product Development: Report, "Linearity checks using Technometrics, Inc. Standard Transmission Unit with Cary Models 14 and 17", 1970 July 29 |
| Box 22, Folder 5 | Product Development: Specifications for resistors, parts, and supplies, 1961, 1963  |
| Box 22, Folder 6 | Product Development: SSR Instruments,, 1971   |
| Box 22, Folder 7 | Product Development: Interferometry, 1967, 1969, 1971, 1972   |
| Box 22, Folder 8 | Product Development: Chromatography, 1961-1963, 1967, 1971  |
| Box 22, Folder 9 | Product Development: Gas Chromatography, Spectrotherm Corporation, 1971 October 19  |

|                   |   |
|-------------------|---|
| Box 22, Folder 10 | Product Development: Corrosion testson Rosin core-mildly activated (RMA) and Rosin Core-activated (RA) solders, 1967 April 20   |
| Box 22, Folder 15 | Product Development: Heraeus, optical quartz glass types, circa 1959  |
| Box 22, Folder 11 | Instruction Manuals: Model 11 Recording spectrophotometer: Assembly and Test manuals, (1958?)   |
| Box 22, Folder 12 | Instruction Manuals: Model 11 suggestions for flushing, 1961  |
| Box 22, Folder 13 | Instruction Manuals: Model 11 spectrophotometry: Accessories description installation operation and parts lists, 1951, 1955, 1957, 1960                                 |
| Box 22, Folder 14 | Instruction Manuals: Model 11 spectrophotometer: expanded recorder scale, 1959  |
| Box 23, Folder 1  | Instruction Manuals: Model 11 general and test procedures indexed in 1979 by Hawes), 1960   |
| Box 23, Folder 2  | Instruction Manuals: Model 14 recording spectrophotometer, (1970?)  |
| Box 23, Folder 6  | Instruction Manuals: Model 31 Cary Vibrating Reed Electrometer Critically Damped Circuit Modification, 1956-1957, 1960  |
| Box 23, Folder 7  | Instruction Manuals: Model 31 Cary Vibrating Reed Electrometer, March 1963  |
| Box 24, Folder 1  | Instruction Manuals: Model 36 Cary Electrometer undated   |
| Box 24, Folder 3  | Instruction Manuals: Models 35-36 38-39 Cary Electrometers, 1957-1961   |
| Box 24, Folder 4  | Instruction Manuals: Neutral density screens, undated   |
| Box 24, Folder 5  | Instruction Manuals: Resolving power testing, 1958 February 14  |
| Box 24, Folder 6  | Instruction Manuals: Phototube hysteresis, 1962 August 2  |
| Box 24, Folder 7  | Instruction Manuals: Scattered light visible and ultraviolet regions, 1962 August 2   |
| Box 24, Folder 8  | Instruction Manuals: Model 32-33, 35, Cary Vibrating Reed Electrometers and Model 34 Cary Air Monitor, 1958, 1961   |
| Box 18, Folder 8  | Professional Activities: Southern California Society for Applied Spectroscopy (SCSAS): Third Annual SAS Lake Arrowhead Conference, 1987                                 |
| Box 18, Folder 9  | Professional Activities (Papers and talks, Hawes): "Theory and Practice in Photon Counting Compared with Phototube Current Measurement" Roland C. Hawes, 1973 September |

|                   |   |
|-------------------|---|
| Box 18, Folder 10 | Professional Activities (Papers and talks, Hawes): "Instrumental Bias" MEOAC talk, 1967 August 2  |
| Box 25, Folder 1  | Marketing: Catalog: Models 11, 14-16, 81, 90 and others, 1962-1963, 1966-1969   |
| Box 25, Folder 2  | Marketing: Coderg T800 Laser Raman spectrophotometer triple monochromator catalog, undated  |
| Box 25, Folder 3  | Marketing: Product data, 1961-1966, 1971  |
| Box 25, Folder 5  | Marketing: Competitive literature, sales department, 1968   |
| Box 25, Folder 6  | Marketing: Competitive literature, sales department, 1968   |
| Box 25, Folder 7  | Marketing: Literature for sales department, 1970 January 14   |
| Box 25, Folder 8  | Financial: Budget figures and correspondence, 1969, 1971-1972   |
| Box 25, Folder 9  | Financial: Letter to Dr. Peter Llewellyn re Cary profit picture, 1972 May 26  |
| Box 25, Folder 10 | Financial: Correspondence with Dr. Weston Anderson, director of Research in Varian Analytical Instrument Division, 1970, 1972                   |
| Box 25, Folder 11 | Newsletter Spectrum, 1971 May   |
| Box 25, Folder 14 | Marketing: Publicity on the 3710 Space Flight Vibrating Reed Electrometer, 1964 September   |
| Box 25, Folder 15 | Marketing: Electronic trends, 1971  |
| Box 41, Folder 1  | Product Development: Model 14: Cell optic requirements, 1954  |
| Box 41, Folder 2  | Product Development: Model 81: "Raman Spectrograph Design," Howard Cary, Ohio State University (See also APC file), 1953 June                   |
| Box 41, Folder 3  | Product Development: Idea lab, 3½" x 5" color photographs, 1970 April   |
| Box 41, Folder 5  | Papers and talks: "Absolute Calibration of Gas Chromatographic Apparatus from Ion-Chamber measurements" D.C. Nelson and D.L. Paul, 1963 October |
| Box 41, Folder 6  | Papers and talks: "Raman Spectra of Small Solid Samples including Lattice Vibrations," D.C. Nelson and W.N. Mitchell, 1964 March                |
| Box 41, Folder 7  | Papers and talks: "Circular Dichroism Theory and Instrumentation," A. Abu-Shumays and Jack Duffield, 1966                                       |
| Box 41, Folder 8  | Papers and talks: "Report on Maryland Raman Institute and Workshop," Howard Cary, 1957 (1967 June)  |

|                   |  |
|-------------------|--|
| Box 41, Folder 9  | Papers and talks: "A New Accessory for the Measurement of circular dichroism on the Cary Model 60 Recording Spectropolarimeter" J. Duffield, 1967                            |
| Box 41, Folder 10 | Papers and talks: PE 521: Photographs and data, 1967 Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy  |
| Box 41, Folder 11 | Papers and talks: "Differential Spectropolarimetry with the Cary Model 60 Spectropolarimeter," W.N. Mitchell and Jack Duffield, 1966 Pittsburgh Conference, 1968 March-April |
| Box 41, Folder 12 | Papers and talks: "Measurement of Circular Dichroism using Polarization Modulators," Jack Duffield and A. Abu-Shumays, 1968 Pacific Conference                               |
| Box 41, Folder 13 | Papers and talks: "Measurement of Magnetic Circular Dichroism on a Modified Cary 60 Spectropolarimeter," Jack Duffield, A. Abu-Shumays, and S. Hedelman, 1969                |
| Box 41, Folder 14 | Papers and talks: "The Technique of Raman Spectroscopy: A State of the Art Comparison to Infrared" Howard Sloane, 1969 Pacific Conference                                    |
| Box 41, Folder 15 | Papers and talks: "Testing the Performance of a circular Dichroism Instrumental," A. Abu-Shumays and Jack Duffield, 1970 Eastern Analytical Symposium                        |
| Box 41, Folder 16 | Papers and talks: "A Digital Scan Control Accessory," Russell Wolfe and Joe Marino, 1970 Pittsburgh Conference   |
| Box 41, Folder 17 | Papers and talks: "A Recording Circular Dichroism Spectropolarimere," Jack Duffield, A. Abu-Shumays, G. Hooper, and A.H. Hinds, 1970 Pittsburgh Conference                   |
| Box 41, Folder 18 | Papers and talks: "Analytical Raman Spectroscopy," Howard Sloane, Randall Cook, and Herbert Haber, 1970 Pittsburgh Conference  |
| Box 41, Folder 19 | Papers and talks: "Class: Conventional Language for Spectroscopy" Randall B. Cook and Russell W. Wolfe, 1970 Pittsburgh Conference   |
| Box 41, Folder 20 | Papers and talks: "Laser induced High Sensitivity Fluorimetry with the Cary 14" R. Bender, R. Jankow, and W. Renken, 1970 Pittsburgh Conference                              |
| Box 41, Folder 21 | Papers and talks: "Measurement of magnetic Circular Dichroism using Alternating Megnetic Field," A. Abu-Shumays, G. Hooper, and Jack Duffield, 1970 Pittsburgh Conference    |
| Box 41, Folder 22 | Papers and talks: "Spectrophotometer Designed for Digital Control and Data Collection," Kenyon P. George and Russell Wolfe, 1970 Pittsburgh Conference                       |
| Box 41, Folder 23 | Papers and talks: "The Development of Spectrometric Instruments" Charles D. Kochakian, 1988  |

|                   |  |
|-------------------|--|
| Box 41, Folder 24 | Papers and talks: Miscellaneous materials, 1955, 1961, 1962, 1965                      |
| Box 41, Folder 25 | Papers and talks: Miscellaneous slides, undated  |
| Box 41, Folder 26 | Papers and talks: Miscellaneous black and white 35 mm negatives, undated               |
| Box 41, Folder 27 | Papers and talks: style guides, 1963-1964, 1966  |
| Box 43, Folder 2  | Papers and talks: Photographs, 1971 Pacific Conference                                 |
| Box 43, Folder 3  | Papers and talks: Photographs Pacific Conference, 1971 October                         |
| Box 44, Folder 1  | Papers and talks: Columbus Slides black and white 35 mm negatives, 1967                |
| Box 44, Folder 2  | Papers and talks: Sloane Slides Cleveland black and white negatives, 1968 February     |
| Box 44, Folder 3  | Papers and talks: 8th Pacific Conference black and white 35 mm negatives, 1969 October |
| Box 44, Folder 4  | Papers and talks: Black and white negatives 1971 Pacific Conference                    |
| Box 44, Folder 5  | Papers and talks: Black and white negatives Pacific Conference, 1971 October           |
| Box 45            | Cary Instruments (empty binders)   |

*[Return to Table of Contents](#)*

## Series 6: Consulting Work, 1908- (1939-1992)

|                   |   |
|-------------------|---|
| Box 25, Folder 12 | Aviv & Associates Inc.: Correspondence, 1986-1987   |
| Box 25, Folder 13 | Aviv & Associates Inc.: Correspondence with James Laureno, 1963, 1988-1990  |
| Box 26, Folder 1  | Aviv & Associates Inc.: Correspondence, 1988-1989   |
| Box 26, Folder 2  | Aviv & Associates Inc.: Correspondence with James Laureno, 1988-1989, 1996  |
| Box 26, Folder 3  | Aviv & Associates Inc.: Correspondence with James Laureno, 1990-1991  |
| Box 26, Folder 4  | Aviv & Associates Inc.: Correspondence with Vernon Chupp, 1986-1987, 1992   |
| Box 26, Folder 5  | Aviv & Associates Inc.: "Review of Spectrophotometer Design" Report by Roland Hawes, 1986 December 13                                       |
| Box 26, Folder 6  | Aviv & Associates Inc.: Diffuse reflectance report, 1987-1988   |
| Box 26, Folder 7  | Aviv & Associates Inc.: Letter sent to Dr. Neville R. Kallenback Scientific Director Molecular Biophysics Technology Inc., 1986 February 16 |
| Box 26, Folder 8  | Aviv & Associates Inc.: Monochromator notes, 1962, 1987-1990  |
| Box 26, Folder 9  | Aviv & Associates Inc.: Monochromatic notes, 1989 August-November   |
| Box 26, Folder 10 | Aviv & Associates Inc.: Scatter T notes, 1987 August-September  |
| Box 26, Folder 11 | Aviv & Associates Inc.: Technical notes, 1990-1991  |
| Box 26, Folder 12 | Aviv & Associates Inc.: Model 60 polarimeter drawings, 1988 August 16   |
| Box 26, Folder 13 | Aviv & Associates Inc.: Contracts, 1986-1987  |
| Box 26, Folder 14 | Aviv & Associates Inc.: Expenses, 1986 December 12  |
| Box 26, Folder 15 | Aviv & Associates Inc.: Copied references on holograms for James Laurino, 1987 November   |
| Box 26, Folder 16 | Aviv & Associates Inc.: Names and address list for James Laureno, undated   |
| Box 26, Folder 17 | Beckman Instruments Inc.: Letters sent, 1972, 1974  |
| Box 26, Folder 18 | Beckman Instruments Inc.: D2 lamp notes, 1982-1983  |
| Box 26, Folder 19 | Beckman Instruments Inc.: Spectrophotometer catalogs, 1977 May 20   |

|                   |   |
|-------------------|---|
| Box 26, Folder 20 | Beckman Instruments Inc.: 50th Anniversary symposium, 1977, 1991                          |
| Box 26, Folder 21 | Beckman Instruments Inc.: Clippings, 1981   |
| Box 26, Folder 23 | Aviv & Associates Inc.: Duffield Jack. Model 60 polarimeter ellipsoid, 1987-1988          |
| Box 27, Folder 1  | City of Hope Medical Center letters sent and proposal, 1974-1977, 1992                    |
| Box 27, Folder 2  | City of Hope Medical Center letter sent, 1987 July 16                                     |
| Box 27, Folder 3  | City of Hope Medical Center Topcon Camera, 1974-1976, 1980                                |
| Box 27, Folder 4  | City of Hope Medical Center Analytical Research Laboratories Inc., 1979-1981              |
| Box 27, Folder 5  | City of Hope general: Hamamatsu TV Co. LTD, 1973, 1976, 1980                              |
| Box 27, Folder 6  | City of Hope general: Lexel Corp, October 1975  |
| Box 27, Folder 7  | City of Hope general: Nanometrics Corporation, 1976 January-April                         |
| Box 27, Folder 8  | City of Hope Medical Center personnel lists and resumes, 1976-1979, 1981-1982, 1984, 1986 |
| Box 27, Folder 9  | City of Hope Medical Center personnel, 1975-1978, 1980                                    |
| Box 27, Folder 10 | City of Hope Medical Center certificates, 1979-1981, 1986                                 |
| Box 27, Folder 11 | City of Hope Medical Center Telephone Directory, 1977 February                            |
| Map-folder 2      | City of Hope Medical Center, drawings, 1975   |
| Box 27, Folder 12 | ELISA Proposal 7382-F, 1979 August  |
| Box 27, Folder 13 | ELISA design notes, 1974, 1979-1982   |
| Box 27, Folder 14 | ELISA luminometer design, 1978-1979, 1985-1986  |
| Box 27, Folder 15 | ELISA cables, 1979  |
| Box 27, Folder 16 | ELISA filters, 1965 (1981-1982)   |
| Box 27, Folder 17 | ELISA filters and masks, 1982, 1984   |
| Box 27, Folder 18 | Masking notes, 1983-1984  |
| Box 27, Folder 19 | ELISA sketches and drawings, 1979   |



|                   |   |
|-------------------|---|
| Box 27, Folder 20 | ELISA luminometer drawings, 1985 July   |
| Box 27, Folder 21 | ELISA Circuit instructions, 1979-1982   |
| Box 27, Folder 22 | ELISA modifications, 1980-1985  |
| Box 28, Folder 1  | ELISA parts lists and drawings, 1979, 1981, 1984, 1985  |
| Box 28, Folder 2  | ELISA Obsolete parts or systems drawings, (1979) 1982   |
| Box 28, Folder 3  | ELISA purchase orders, 1976, (1979-1980, 1982)  |
| Box 28, Folder 4  | ELISA Itinerary, 1982 April 26-May 17   |
| Box 28, Folder 5  | ELISA references for immuno-assay, 1977-1980, 1982, 1984  |
| Box 28, Folder 6  | Day Glo Color Corp. notes, 1977-1979  |
| Box 28, Folder 7  | Day Glo Color Corporation correspondence with Sandra Murray and Glenn Nedwin, 1979, 1981                |
| Box 28, Folder 8  | Day Glo Color Corporation DIANO Corporation, 1976   |
| Box 28, Folder 9  | Day Glo Color Corporation Sinloih Co. Ltd., 1976-1977   |
| Box 28, Folder 10 | Varian Associates: Correspondence with Majorie Carpenter, 1992  |
| Box 28, Folder 11 | Varian Associates: Correspondence with John Helmer, 1972-1973   |
| Box 28, Folder 12 | Varian Associates: Correspondence with Dr. Peter Llewellyn, 1972-1973                                   |
| Box 28, Folder 13 | Varian Associates: General Correspondence, 1972-1973, 1975, 1977-1979                                   |
| Box 28, Folder 14 | Varian Associates: Clinitex letter received, 1976 September 14  |
| Box 28, Folder 15 | Varian Associates: Consulting agreements, 1972-1975   |
| Box 28, Folder 16 | Varian Associates personnel, 1968, 1970   |
| Box 28, Folder 17 | Varian Associates: Model 11 Cary Recording Spectrophotometer narrow beam in cell space notes, 1978-1980 |
| Box 28, Folder 18 | Varian Associates: Model 32 Vibrating Reed Electrometer Instruction Manual undated, undated             |
| Box 28, Folder 19 | Varian Associates catalogs, 1969 (1976)   |
| Box 28, Folder 20 | Varian Associates Varian LSE Catalog, 1973 February   |

|                   |   |
|-------------------|---|
| Box 28, Folder 21 | Varian Associates Vacuum equipment data sheets, 1967                                    |
| Box 28, Folder 22 | Varian Associates: Varian-Techtron price lists, 1968, 1976                              |
| Box 28, Folder 23 | Wilson Bradley, 1973 July   |
| Box 29, Folder 1  | Gamma Scientific Inc., 1974 (1977)  |
| Box 29, Folder 2  | Instrum, 1981 January-February  |
| Box 29, Folder 3  | International Diagnostic Technology Inc., 1985 February 26                              |
| Box 29, Folder 4  | Kimmel Edward L., 1976 May  |
| Box 29, Folder 5  | LKB The Incentive Group, 1976   |
| Box 29, Folder 6  | Medimetric Company, 1978 February-March   |
| Box 29, Folder 7  | Molelectron, 1973-1974  |
| Box 29, Folder 8  | Optical Research Associates, 1974, 1987   |
| Box 29, Folder 9  | Unitek Corporation, December 1974   |
| Box 29, Folder 10 | Wasserburg G.J., 1982   |
| Box 29, Folder 11 | Wilks Scientific Corporation, 1973, 1975, 1976  |
| Box 29, Folder 12 | W.R. Williams, 1980 January-February  |
| Box 29, Folder 13 | Product Development: (Model 36) Model 100 Electrometer notes, 1980-1984                 |
| Box 29, Folder 14 | Product Development: 36 Mark II, 1980-1981  |
| Box 29, Folder 15 | Product Development: Electrometer business prospects, 1951, 1956-1957, 1960, 1962, 1980 |
| Box 29, Folder 16 | Product Development: Optics ray tracing, 1971, 1978, 1980                               |
| Box 29, Folder 17 | Product Development: Kloehn Co. Inc., 1975  |
| Box 29, Folder 18 | Patents: Signed statements for RCH-1 and RCH-2, 1973 February 27                        |
| Box 29, Folder 19 | Patents: Letter regarding patent claims, 1976 January 16, May 6                         |
| Box 29, Folder 20 | Patents: Letter sent to United States Patent Office, 1979 March 30                      |
| Box 29, Folder 21 | Patents: Patent fees, 1971, 1973, 1978  |

|                   |  |
|-------------------|--|
| Box 29, Folder 22 | Patents: Patent infringement Polysciences Inc., 1975 July-September  |
| Box 29, Folder 23 | Patents: White vs. Perkin-Elmer, 1981 March-June   |
| Box 29, Folder 24 | Patents: Patent searches, 1979   |
| Box 29, Folder 25 | Invention notes: Invention notes Model 11, 1986 December 23  |
| Box 29, Folder 26 | General Correspondence: Letter sent to Anderson Dr. Weston, 1974 July 19   |
| Box 29, Folder 27 | General Correspondence: Letter received Carle instruments, 1977 December 30  |
| Box 29, Folder 28 | General Correspondence: Hunt Dr. Robert Diagnostic Information Technology, 1975-1976   |
| Box 29, Folder 29 | General Correspondence: Keller Roy, 1973 May 19 Letter sent  |
| Box 29, Folder 30 | General Correspondence: Kemp, Wesley J., 1974 January-February   |
| Box 29, Folder 31 | General Correspondence: Lagomarsini, George, 1982 July   |
| Box 29, Folder 32 | General Correspondence: Lumry, Rufus, 1963-1967 (19780   |
| Box 29, Folder 33 | General Correspondence: Correspondence with Dr. Radu Mavrodineanu, National Bureau of Standards, (Optical Radiation News, 1974-1978), 1972 |
| Box 29, Folder 34 | General Correspondence: Letter sent to Michelson Laboratory, Naval Weapons Center,, 1973 May 30  |
| Box 29, Folder 35 | General Correspondence: Letter sent to Minami, Dr. Shigeo, 1973 January 4  |
| Box 30, Folder 1  | General Correspondence: Paull Dennis, 1974, 1977   |
| Box 30, Folder 2  | General Correspondence: Richards Paul, 1973  |
| Box 30, Folder 3  | General Correspondence: Uthe Technology International (UTI), 1975-1978, 1980   |
| Box 30, Folder 4  | General Correspondence: Letter sent to Zavick William E., 1981 April 1   |
| Box 30, Folder 5  | Suppliers: Hewlett-Packard Company, 1973, 1976, 1978, 1981   |
| Box 30, Folder 6  | Suppliers: Hewlett-Packard catalogs, 1968, 1974, 1981  |
| Box 30, Folder 7  | Suppliers: Hewlett-Packard Company, 1977   |
| Box 30, Folder 8  | Suppliers: Polaroid Corporation, 1960, 1967, 1970-1971, 1981   |

|                   |   |
|-------------------|---|
| Box 30, Folder 9  | Suppliers: Spectra-Physics, 1963, 1965, 1968, 1971-1972, 1977-1978, 1980-1981               |
| Box 30, Folder 10 | Suppliers: Wilmad Glass Company Inc., 1975, 1980  |
| Box 30, Folder 11 | Information files: Biological assay, 1939-1941, 1973  |
| Box 30, Folder 12 | Information files: California Institute of Technology, 1980                                 |
| Box 30, Folder 13 | Information files: Cameca, 1973 January 17  |
| Box 30, Folder 14 | Information files: Cary Howard, 1948-1949   |
| Box 30, Folder 15 | Information files: Cary Instruments, 1941, 1960, 1962, 1964                                 |
| Box 30, Folder 16 | Information files: Casper Robert P., 1972 July 18   |
| Box 30, Folder 17 | Information files: Ceramic color standards, 1973 July                                       |
| Box 30, Folder 18 | Information files: Chance Britton, 1972 May 30  |
| Box 30, Folder 19 | Information files: Chemiluminescence literature, 1967, 1973, 1979, 1984-1985                |
| Box 30, Folder 20 | Information files: Chupp Vernon, 1969   |
| Box 30, Folder 21 | Information files: Chupp Vernon. Appendix 1976 July 28 and Aviv supplement, (1988?)         |
| Box 30, Folder 22 | Information files: Chupp Vernon. Holographic grating literature, 1969, 1975-1976, 1978-1981 |
| Box 31, Folder 1  | Information files: Circular dichroism, 1950-1951, 1954, 1960, 1969, 1971-1973               |
| Box 31, Folder 2  | Information files: Clarke Dr. F.J.J. National Physical Laboratory, 1972, 1975               |
| Box 31, Folder 3  | Information files: Clemens, Anton Hubert, 1973 January 9                                    |
| Box 31, Folder 4  | Information files: Collett, Edward, 1970-1971   |
| Box 31, Folder 5  | Information files: Comings, David E. Gel electrophoresis,, 1982 April                       |
| Box 31, Folder 6  | Information files: Corning glass covered filters,, 1965                                     |
| Box 31, Folder 7  | Information files: Coulter, Wallace H., 1971 November 23                                    |
| Box 31, Folder 8  | Information files: Da Silva, E., 1977 April   |

|                   |   |
|-------------------|---|
| Box 31, Folder 9  | Information files: Davis, Baruch J., 1964             |
| Box 31, Folder 10 | Information files: Decker, John A., 1972 October 24   |
| Box 31, Folder 11 | Information files: Delmas, Pierre, undated            |
| Box 31, Folder 12 | Information files: Dimmick, Glenn L., 1949 June 21    |
| Box 31, Folder 13 | Information files: Dolin, Stanley A., 1973 January 16 |
| Box 31, Folder 14 | Information files: Drabkin, David L., 1945 February   |
| Box 31, Folder 15 | Information files: Drabkin, David L., 1942 December   |
| Box 31, Folder 16 | Information files: Dreyer, William J., 1969, 1978     |
| Box 31, Folder 17 | Information files: Drinker, Philip, 1937              |
| Box 31, Folder 18 | Information files: Duncanson, A., 1958                |
| Box 31, Folder 19 | Information files: Eadic, G.S., 1941 April            |
| Box 31, Folder 20 | Information files: Edelman, Gerald M., 1968 (1988?)   |
| Box 31, Folder 21 | Information files: Edisbury, J.R., 1954 October       |
| Box 31, Folder 22 | Information files: Ehrlich, Margarete, 1955 February  |
| Box 31, Folder 23 | Information files: Electrophoresis, 1967-1970         |
| Box 31, Folder 24 | Information files: Ellis Emory L., 1939, 1944         |
| Box 31, Folder 25 | Information files: Evans W.R. report, 1948 November 1 |
| Box 31, Folder 26 | Information files: Fahrenfort J., 1961                |
| Box 31, Folder 27 | Information files: Fassel V.A., undated               |
| Box 31, Folder 28 | Information files: Fastie William G., 1960-1961       |
| Box 31, Folder 29 | Information files: Fellgett Peter., 1958 March        |
| Box 31, Folder 30 | Information files: Feigen George A., 1945             |
| Box 31, Folder 31 | Information files: Fenske Ellsworth R., 1967          |
| Box 31, Folder 32 | Information files: Fisk Roy T., 1963 May 7            |

|                   |  |
|-------------------|--|
| Box 31, Folder 33 | Information files: Fox G. Book review, 1989  |
| Box 31, Folder 34 | Information files: Fulwyler Mack J., 1964  |
| Box 31, Folder 35 | Information files: Gallaway William S., 1971 March 2                                     |
| Box 31, Folder 36 | Information files: Gas Chromatography, undated   |
| Box 31, Folder 37 | Information files: Gel Electrophoresis Annals of New York Academy of Sciences, 1964      |
| Box 32, Folder 1  | Information files: General Radio Experimenter, 1955, 1960-1961, 1963, 1966-1967          |
| Box 32, Folder 2  | Information files: Giaever Ivar patents, 1976-1977                                       |
| Box 32, Folder 3  | Information files: Golay Murcel J.E., 1947, 1953   |
| Box 32, Folder 4  | Information files: Griffith Peter A., 1974   |
| Box 32, Folder 5  | Information files: Granqvist C.G., 1981 August   |
| Box 32, Folder 6  | Information files: Grojean Richard E., 1970 November 17                                  |
| Box 32, Folder 7  | Information files: Hall Joseph F. Jr., 1975 January 21                                   |
| Box 32, Folder 8  | Information files: Hammond George S., 1968   |
| Box 32, Folder 9  | Information files: Hansen, G., 1965 December 6   |
| Box 32, Folder 10 | Information files: Hare, George H., 1973, April 3  |
| Box 32, Folder 11 | Information files: Harrick, Nicolas J., 1973 February 6                                  |
| Box 32, Folder 12 | Information files: Harrison, George R., 1949 June  |
| Box 32, Folder 13 | Information files: Hashimoto Hiroshi, 1972 September 26                                  |
| Box 32, Folder 14 | Information files: Hasler M.F., 1954 April 20  |
| Box 32, Folder 15 | Information files: Hass Georg, 1987  |
| Box 32, Folder 16 | Information files: Hawes Roland C. Photometer-electrometer notes, 1968 (1975-1976, 1979) |
| Box 32, Folder 17 | Information files: Hawes Roland C. Reprints, 1946, 1950-1951, 1953-1954, 1956-1959       |

|                   |  |
|-------------------|--|
| Box 32, Folder 18 | Information files: Hawes Roland C. Reprints, 1938-1942, 1946                               |
| Box 32, Folder 19 | Information files: Hawes Roland C. Reprints, 1960, 1963-1966, 1969, 1971, 1973, 1977, 1981 |
| Box 32, Folder 20 | Information files: Hechter Oscar., October 1942  |
| Box 32, Folder 21 | Information files: Helm Denis A., 1974 October 29  |
| Box 32, Folder 22 | Information files: Helmer John., 1972 June 1   |
| Box 32, Folder 23 | Information files: Herriott D.R., April 8, 1969  |
| Box 32, Folder 24 | Information files: Hill R.A., 1968 October 15  |
| Box 32, Folder 25 | Information files: Hirschfeld Thomas., 1966, 1971-1973, 1977                               |
| Box 32, Folder 26 | Information files: Hiskey C.F., 1949   |
| Box 32, Folder 27 | Information files: Holzwarth George, 1972-1973   |
| Box 32, Folder 28 | Information files: Howerton H.K., 1969 March 18  |
| Box 32, Folder 29 | Information files: Hunt Robert P., 1974, March 19  |
| Box 32, Folder 30 | Information files: Ibbett Roland Norman., 1972 February 8                                  |
| Box 33, Folder 1  | Information files: Immunologic Interference, 1956, 1967-1969                               |
| Box 33, Folder 2  | Information files: Immunological materials and methods, 1963, 1966, 1969, 1976-1978, 1982  |
| Box 33, Folder 3  | Information files: Immunology fluorescence bibliography, undated                           |
| Box 33, Folder 4  | Information files: Immunodiffusion, 1968-1969  |
| Box 33, Folder 5  | Information files: International Union of Pure and Applied Chemistry, 1978 December        |
| Box 33, Folder 6  | Information files: Isotachopheresis, 1974  |
| Box 33, Folder 7  | Information files: Isreeli, Jack, 1966 February 22   |
| Box 33, Folder 8  | Information files: Jacobs, Harold, 1973 February 27  |
| Box 33, Folder 9  | Information files: Jellum, Egil, undated   |
| Box 33, Folder 10 | Information files: Jones, R.N., 1951, 1975   |

|                   |  |
|-------------------|--|
| Box 33, Folder 11 | Information files: Kaye W. paper on Beckman history  |
| Box 33, Folder 12 | Information files: Kaye W. measurement of stry radiation, 1931, 1950-1951, 1972-1974, 1981, 1986 |
| Box 33, Folder 13 | Information files: Kaye W. reprints, 1961-1962, 1964, 1967, 1981, 1983, 1986-1987                |
| Box 33, Folder 14 | Information files: Lau, Albrecht, 1975   |
| Box 33, Folder 15 | Information files: Lawlor, Reed C., 1961   |
| Box 33, Folder 16 | Information files: Langmuir Irving., 1918 July 23  |
| Box 33, Folder 17 | Information files: Leopold L., 1969  |
| Box 33, Folder 18 | Information files: Lewis, G.N.   |
| Box 33, Folder 19 | Information files: Lineweaver Hans., 1934  |
| Box 33, Folder 20 | Information files: Leeds & Northrup Company, 1939  |
| Box 33, Folder 21 | Information files: Longsworth Lewis G., 1939   |
| Box 33, Folder 22 | Information files: Lord Joseph Samuel, 1972 February 29  |
| Box 33, Folder 23 | Information files: Lou Kingdon., 1966 September 20   |
| Box 33, Folder 24 | Information files: Luft Karl Friedrich., 1973  |
| Box 33, Folder 25 | Information files: Lumry Rufus., undated   |
| Box 33, Folder 26 | Information files: McClain, W.M., 1971 September 15  |
| Box 33, Folder 27 | Information files: McEwan, William S., 1951 March  |
| Box 33, Folder 28 | Information files: McLafferty, F.W., 1974  |
| Box 33, Folder 29 | Information files: Macleod, Hugh Angus McIntosh, 1972 October 24                                 |
| Box 33, Folder 30 | Information files: Madsen, Royal Glen, 1954 December 28  |
| Box 33, Folder 31 | Information files: Mandelberg, H.I., 1969 October 14   |
| Box 33, Folder 32 | Information files: Magnetic fields., 1988 January-March  |
| Box 33, Folder 33 | Information files: Martino, Joseph P., 1969 August 22  |



|                   |  |
|-------------------|--|
| Box 33, Folder 34 | Information files: Martin, James R., 1973 January 18   |
| Box 33, Folder 35 | Information files: Matsumoto, Koichi., 1973 February 13  |
| Box 33, Folder 36 | Information files: Maulhardt, Hans., 1981  |
| Box 34, Folder 1  | Information files: May, Donald L., 1972 September 26   |
| Box 34, Folder 2  | Information files: Mayer, P., 1970 February 3  |
| Box 34, Folder 3  | Information files: Mendel, Bruno., 1944 December 1   |
| Box 34, Folder 4  | Information files: Mertz, Lawrence N., 1966 November 22  |
| Box 34, Folder 5  | Information files: Migraine., 1971 September   |
| Box 34, Folder 6  | Information files: Mihalyi, Joseph., 1953 October 20   |
| Box 34, Folder 7  | Information files: Miscellaneous reprints., 1940-1942, 1950-1951, 1960, 1963-1964, 1966, 1968-1969, 1971 |
| Box 34, Folder 8  | Information files: Moody, Robert E., 1971 December 6   |
| Box 34, Folder 9  | Information files: Morland, Howard., 1979 November   |
| Box 34, Folder 10 | Information files: Morrow, Alan J., 1988 January   |
| Box 34, Folder 11 | Information files: Morse, P., 1968 January 9   |
| Box 34, Folder 12 | Information files: Nakamura, J.K., 1968 June   |
| Box 34, Folder 13 | Information files: Naono, T., 1972 January 25  |
| Box 34, Folder 14 | Information files: Nathanson, Morris H., 1943  |
| Box 34, Folder 15 | Information files: National Bureau of Standards., 1933, 1949-1950, 1965, 1981, 1982                      |
| Box 34, Folder 16 | Information files: Near infrared analysis., 1971 February  |
| Box 34, Folder 17 | Information files: Nelson, D.C., 1963  |
| Box 34, Folder 18 | Information files: Netzer, Yishay., 1981 June  |
| Box 34, Folder 19 | Information files: Noyes, Arthur A., 1928-1929   |
| Box 34, Folder 20 | Information files: Nyquist, H., 1932   |

|                   |   |
|-------------------|---|
| Box 34, Folder 21 | Information files: Oliva, William E., 1968 October 22               |
| Box 34, Folder 22 | Information files: Optical (see notes), 1948, 1958                  |
| Box 34, Folder 23 | Information files: Optics and ray trace,, 1973                      |
| Box 34, Folder 24 | Information files: Parfentjev, Ivan Alexandrovich,, 1936, 1938-1939 |
| Box 34, Folder 25 | Information files: Paul, D.L. and D.C. Nelson,, 1963                |
| Box 34, Folder 26 | Information files: Paul, Donald G., 1972 September 26               |
| Box 34, Folder 27 | Information files: Pauling, L., 1942                                |
| Box 34, Folder 28 | Information files: Peter, Laurence J. Dr.,, 1967 April 16           |
| Box 34, Folder 29 | Information files: Perkin-Elmer,, 1967, 1974-1976, 1979, 1984       |
| Box 34, Folder 30 | Information files: Petermann, M.L. and A.M. Pappenheimer,, 1941     |
| Box 34, Folder 31 | Information files: Pieuchard, Guy, 1976                             |
| Box 34, Folder 32 | Information files: Potts, W.J. Jr., 1967 February                   |
| Box 34, Folder 33 | Information files: Pulse analysers,, undated                        |
| Box 34, Folder 34 | Information files: Pyroelectric detectors,, 1971 September          |
| Box 34, Folder 35 | Information files: Rajchman, J.A., 1946 December 10                 |
| Box 34, Folder 36 | Information files: Raman laser,, 1972 March 3                       |
| Box 34, Folder 37 | Information files: Rasmussen, R.S., 1948                            |
| Box 34, Folder 38 | Information files: Rayleigh and Raman scattering,, 1934             |
| Box 34, Folder 39 | Information files: Rediker, Robert H., 1972 January 18              |
| Box 34, Folder 40 | Information files: Reisner, John H., 1954 May 18                    |
| Box 34, Folder 41 | Information files: Rembaum, Alan,, 1976                             |
| Box 34, Folder 42 | Information files: Rentzepis, Peter Michael, 1973 May 1             |
| Box 34, Folder 43 | Information files: Reule, A., 1962 August                           |
| Box 34, Folder 44 | Information files: Rice, S.O., 1944                                 |

|                   |   |
|-------------------|---|
| Box 34, Folder 45 | Information files: Richards, P.L., 1971 May 15                          |
| Box 34, Folder 46 | Information files: Riedl, Max J., 1977 September                        |
| Box 34, Folder 47 | Information files: Riley, Vernon,, 1971 March 2                         |
| Box 34, Folder 48 | Information files: Rondeau, Roger E., 1973 May 18                       |
| Box 34, Folder 49 | Information files: Rosin, S., 1967 October 10                           |
| Box 34, Folder 50 | Information files: SSR Tests, 1984, 1986, 1990, 1992                    |
| Box 34, Folder 51 | Information files: Saltman, Paul., 1965 December                        |
| Box 34, Folder 52 | Information files: Schulkind, Herbert,, 1972 April 11                   |
| Box 34, Folder 53 | Information files: Schwartzman, Gregory, 1936, 1939                     |
| Box 34, Folder 54 | Information files: Scott, H.H., 1938                                    |
| Box 34, Folder 55 | Information files: Serfass, Earl J., 1941                               |
| Box 35, Folder 1  | Information files: Shannon, C.E., 1949                                  |
| Box 35, Folder 2  | Information files: Shedlovsky, Theodore, 1930, 1932                     |
| Box 35, Folder 3  | Information files: Shibata, Kazuo, 1973 June 5                          |
| Box 35, Folder 4  | Information files: Shiller, John W., 1972 September 19                  |
| Box 35, Folder 5  | Information files: Shimomura Teiichi, undated                           |
| Box 35, Folder 6  | Information files: Shive, J.N., 1947                                    |
| Box 35, Folder 7  | Information files: Shurcliff, W.A., 1949                                |
| Box 35, Folder 8  | Information files: Signal to noise radio, 1968-1969, 1972-1973, 1986    |
| Box 35, Folder 9  | Information files: Silman, Israel H., 1966                              |
| Box 35, Folder 10 | Information files: Simmonds, James F., 1974 April 9                     |
| Box 35, Folder 11 | Information files: Solvents,, 1974-1975                                 |
| Box 35, Folder 12 | Information files: Spectral imaging,, 1972 January                      |
| Box 35, Folder 13 | Information files: Spectrophotometers, 1971, 1974, 1976-1977, 1980-1981 |

|                   |   |
|-------------------|---|
| Box 35, Folder 14 | Information files: Spex Industries,, 1969, 1978                   |
| Box 35, Folder 15 | Information files: Spooner, D.L., 1969-1970                       |
| Box 35, Folder 16 | Information files: Staunton, John J.J., 1968 April 9              |
| Box 35, Folder 17 | Information files: Stewart, James,, 1962, 1971, 1972              |
| Box 35, Folder 18 | Information files: Strong, John D., 1956 May 1                    |
| Box 35, Folder 19 | Information files: Synthesis, electrical networks, 1962           |
| Box 35, Folder 20 | Information files: Thomson, Craig, 1948 June 8                    |
| Box 35, Folder 21 | Information files: Todd, Marion N., 1973 April 17                 |
| Box 35, Folder 22 | Information files: Townes, Charles H., 1959 March 24              |
| Box 35, Folder 23 | Information files: Tunnicliff, D.D., 1960                         |
| Box 35, Folder 24 | Information files: Unconventional spectroscopy, 1976              |
| Box 35, Folder 25 | Information files: Urry, Dan, 1974 June                           |
| Box 35, Folder 26 | Information files: Van der Pauw, L.J., 1966 August 1              |
| Box 35, Folder 27 | Information files: Van SLooten, Nico, 1972 April 11               |
| Box 35, Folder 28 | Information files: Vector Graphics, 1982 March 22                 |
| Box 35, Folder 29 | Information files: Vicario, Guido, 1972 December 12               |
| Box 35, Folder 30 | Information files: Waggener, W.C., 1959                           |
| Box 35, Folder 31 | Information files: Wald, George, 1969 July 14                     |
| Box 35, Folder 32 | Information files: Walsh, Alan, 1953, 1959                        |
| Box 35, Folder 33 | Information files: White, John U., 1962, 1965-1966                |
| Box 35, Folder 34 | Information files: Williams, David T., 1968, 1972                 |
| Box 35, Folder 35 | Information files: Wiswesser (Chemical line-notation), 1972 April |
| Box 35, Folder 36 | Information files: Witte, Wolfgang, 1972 May 23                   |
| Box 35, Folder 37 | Information files: Wolber, William G., 1972                       |

|                   |   |
|-------------------|---|
| Box 35, Folder 38 | Information files: Wood, Willis A., 1967 October 3  |
| Box 35, Folder 39 | Information files: Woodroffe, Jalme A., 1974 July 30  |
| Box 35, Folder 40 | Information files: Yamaka, Eiso, 1972 December 26   |
| Box 35, Folder 41 | Information files: Yamamoto, Hiroshi, 1973 January 23   |
| Box 35, Folder 42 | Information files: Yariv, Amnon, 1981 February  |
| Box 35, Folder 43 | Information files: Zarem, A.M., 1950  |
| Box 35, Folder 44 | Information files: Carl Zeiss, Inc., 1974, 1976-1977  |
| Box 35, Folder 45 | Information files: Zwerdling, S., 1968  |
| Box 40, Folder 1  | Varian Associates, Memorandum, 1968, 1972   |
| Box 40, Folder 2  | Patents: Patent 3,897,154 "Sample background auto cancellation in fluid sample analyzers", 1975 July 29       |
| Box 40, Folder 3  | Patents: Patent 4,029,416 "Sample Background signal autocancellation in fluid sample analyzers", 1977 June 14 |
| Box 40, Folder 4  | Information files: Fluorescence sources,, 1947, 1957, 1960, 1976, 1977  |
| Box 40, Folder 5  | Information files: Optical circular dichroism, 1965   |
| Box 40, Folder 6  | Information files: Photon counting report (See SRR), 1969, 1973   |
| Box 40, Folder 7  | Information files: Todd, Marion N., 1973, 1975  |
| Box 40, Folder 8  | Spectrophotometer design bibliography, 1948, 1953, 1957, 1959, 1962, 1964-1965, 1967, 1969-1973, 1977, 1986   |
| Box 40, Folder 9  | Spectrophotometer design bibliography (II), 1952, 1961, 1962, 1964, 1969-1971, 1973-1974, 1981, 1983, 1986    |
| Box 42, Folder 3  | Information files: Standards, 1947, 1951-1952, 1961, 1968-1972, 1989  |
| Box 42, Folder 4  | Information files: Standards, 1952-1954, 1963, 1966   |
| Box 42, Folder 5  | Information files: Standards, 1975 April  |

*Return to Table of Contents*

## Series 7: Professional Activities, 1949-1996

|                   |   |
|-------------------|---|
| Box 36, Folder 4  | California Institute of Technology: PI Alpha Tau, 1966, 1970, 1973, 1980, 1982-1989, 1991, 1993-1996  |
| Box 36, Folder 5  | California Institute of Technology: Alum Chester F. Carlson, inventor of xerography, "The Billion No One Wanted," by Roland Hawes, (1985), 1986, 1988, 1993 |
| Box 37, Folder 1  | California Institute of Technology: Alumni including Chester F. Carlson, 1985-1987, 1989-1992, 1994-1996  |
| Box 37, Folder 2  | American Society for Testing Materials (ASTM): Committee E-13 on Absorption Spectroscopy, 1956-1960   |
| Box 37, Folder 3  | American Society for Testing and Materials (ASTM): Committee E-13 on Absorption Spectroscopy, 1964-1966   |
| Box 37, Folder 4  | American Society for Testing and Materials (ASTM): Committee E-13.1, 1968   |
| Box 37, Folder 5  | American Society for Testing Materials (ASTM): Committee E 13.01, 1973-1974   |
| Box 37, Folder 7  | Federation of Analytical Chemistry and Spectroscopy Societies an Pacific Conference on Chemistry and Spectroscopy 1991 Joint Meeting Program                |
| Box 37, Folder 8  | Pittsburgh Conference Programs, 1975-1977   |
| Box 37, Folder 9  | Pittsburgh Conference Programs, 1978, 1980-1981   |
| Box 37, Folder 10 | Pittsburgh Conference study, 1971   |
| Box 37, Folder 11 | Society for Applied Spectroscopy (SAS): National, 1982-1984   |
| Box 37, Folder 12 | Society for Applied Spectroscopy (SAS): Memorandum to Board Members, June 28, 1995  |
| Box 37, Folder 13 | Society for Applied Spectroscopy (SAS) Awards Committee, 1988-1989  |
| Box 37, Folder 14 | Society for Applied Spectroscopy (SAS) Newsletters and clippings, 1989-1990, 1992   |
| Box 37, Folder 15 | Southern California Society for Applied Spectroscopy (SCSAS), 1988-1992   |
| Box 37, Folder 16 | Southern California Society for Applied Spectroscopy (SCSAS), 1991-1993   |
| Box 37, Folder 17 | Southern California Society for Applied Spectroscopy (SCSAS): Meetings, 1993  |

|                   |   |
|-------------------|---|
| Box 37, Folder 18 | Southern California Society for Applied Spectroscopy (SCSAS): Meetings, 1994  |
| Box 37, Folder 19 | Southern California Society for Applied Spectroscopy (SCSAS): Meetings, 1995  |
| Box 37, Folder 20 | Southern California Society for Applied Spectroscopy (SCSAS): Awards Committee, 1987-1989   |
| Box 37, Folder 21 | Southern California Society for Applied Spectroscopy (SCSAS): Fourth Annual Lake Arrowhead Conference, 1989 April 21-23           |
| Box 37, Folder 22 | Southern California Society for Applied Spectroscopy (SCSAS): Articles of Incorporation bylaws and constitution, 1967, 1969, 1973 |
| Box 37, Folder 23 | Western Spectroscopy Association (WSA): 17th Annual Conference, 1970 January 29-30  |
| Box 37, Folder 24 | Western Spectroscopy Association (WSA): 18th Annual Conference, 1971 January 28-29  |
| Box 37, Folder 25 | Western Spectroscopy Association (WSA): 19th Annual Conference, 1972 January 26-28  |
| Box 37, Folder 26 | Western Spectroscopy Association (WSA): 20th Annual Conference, 1973 January 31- February 2                                       |
| Box 37, Folder 27 | Western Spectroscopy Association (WSA): 22nd Annual Conference, 1975 January 29-31  |
| Box 38, Folder 1  | Western Spectroscopy Association (WSA): 23rd Annual conference, 1976 January 28-30  |
| Box 38, Folder 2  | Western Spectroscopy Association (WSA): 24th Annual Conference, 1977 January 26-28  |
| Box 38, Folder 3  | Western Spectroscopy Association (WSA): 25th Annual Conference, 1978 January 25-27  |
| Box 38, Folder 4  | Western Spectroscopy Association (WSA): 26th Annual Conference, 1979 January 24-26  |
| Box 38, Folder 5  | Western Spectroscopy Association (WSA): 27th Annual Conference, 1980 January 30-February 1  |
| Box 38, Folder 6  | Western Spectroscopy Association (WSA): 28th Annual Conference, 1981 January 28-30  |
| Box 38, Folder 7  | Western Spectroscopy Association (WSA): 29th Annual Conference, 1982 January 27-29  |

|                   |   |
|-------------------|---|
| Box 38, Folder 8  | Western Spectroscopy Association (WSA): 32nd Annual Conference, 1985<br>January 30-February 1   |
| Box 38, Folder 9  | Miscellaneous Correspondence: Chuck Anderson, Upland, California, letters received, 1974 September 18   |
| Box 38, Folder 10 | Papers and talks: "Comments on 'Principles of Infrared Spectrophotometry,'" Roland Hawes and William S. Gallaway, 1951  |
| Box 38, Folder 11 | Papers and talks: "Anomalies in Extinction Coefficient Measurements," Lionel Goldring, Roland Hawes, George Hare, Arnold Beckman, Michael Stickney, 1952                        |
| Box 38, Folder 12 | Papers and talks: Model 13, Roaldn Hawes and Howard Cary, American Chemical Society, Los Angeles,, 1953 March 15-19   |
| Box 38, Folder 13 | Papers and talks: Testing paper, Model 13-14, 1955  |
| Box 38, Folder 14 | Papers and talks: Model 15 paper, "A New Recording Spectrophotometer," E.R. Schweitzer, W.R. Williams, R.E. Ellis, and R.C. Hawes, 1961-1962                                    |
| Box 38, Folder 15 | Papers and talks: "Photometer with Quantum Detectors" Eastern Analytical symposium, 1962 November 16  |
| Box 38, Folder 16 | Papers and talks: "Vibrating Reed Electrometers," W.R. Williams and R.C. Hawes, 1963 November   |
| Box 38, Folder 17 | Papers and talks: "Performance of an Instrument for Simultaneous Gas Chromatographic and Radioactivity Analysis," D.C. Nelson, P.C. Ressler, Jr. and Roland Hawes, 1963 October |
| Box 38, Folder 18 | Papers and talks: Model 14 RI paper, 1964 Pittsburgh Conference   |
| Box 38, Folder 19 | Papers and talks: "A Recording Spectropolarimeter" Howard Cary, Roland Hawes, Paige Hooper, Jack Duffield, and Kenyon George, 1964 March  |
| Box 38, Folder 20 | Papers and talks: "The Spectrophotometer: 'Blue Chip' Among Analytical Instruments" David C. Nelson, for laboratory Management, 1964 December 2                                 |
| Box 38, Folder 21 | Papers and talks: "A Technique for Measuring Photometric Precision and Linearity" D.C. Nelson and Roland Hawes, 1964  |
| Box 38, Folder 22 | Papers and talks: "Effects of Interference Fringes in Infrared Absorption Cells," John White and William Ward, 1965 February  |
| Box 38, Folder 23 | Papers and talks: "Photometric Accuracy, DCN file, 1949, 1952, 1958, 1960-1965  |



|                   |  |
|-------------------|--|
| Box 38, Folder 24 | Papers and talks: "Laser Excitation of Raman Spectrain the Cary Model 81 Spectrophotometer" Hawes, K. George, D. Nelson, and R. Beckwith, Pittsburgh, 1965 |
| Box 38, Folder 25 | Papers and talks: "Sample Techniques and Problems in Laser Excitation of Raman Spectra," Roland Hawes, D.C. Nelson, and K.P. George, 1965 August-September |
| Box 38, Folder 26 | Papers and talks: "Progress in Laser Raman Excitation," Eastern Analytical Symposium, 1966 November 17   |
| Box 39, Folder 1  | Papers and talks: "Laser Excitation of raman Spectra," Roland Hawes, Kenyon George, David Nelson, and Richard Beckwith, supplement, 1966                   |
| Box 39, Folder 2  | Papers and talks: Talk on Medac panel, 1967 July 24  |
| Box 39, Folder 3  | Papers and talks: "An Automatic Centrifuge Tube Scanner" S. Hedelman and Roland Hawes, 1967 March  |
| Box 39, Folder 4  | Papers and talks: "A Technique for Feedback Amplifier Stabilization", 1967 June 12   |
| Box 39, Folder 5  | Papers and talks: "Laser-Raman excitation Geometries compared for Efficiency and Utility," Roland Hawes, H.J. Sloane, and H.S. Haber, 1967                 |
| Box 39, Folder 6  | Papers and talks: "Polarization Measurements with the Cary Model 81 Raman Spectrometer," H.S. Haber, H.J. Sloane and Roland Hawes, 1967                    |
| Box 39, Folder 7  | Papers and talks: "Comparison of Photometric systems for Raman" Roland C. Hawes and Wilbur R. Williams, 1969 December 4                                    |
| Box 39, Folder 8  | Papers and talks: "Data Processing in a Spectro-Reflectometer," Roland Hawes, Russell Wolfe, and Sid Hedelman, Color, 1969                                 |
| Box 39, Folder 9  | Papers and talks: "Detection Limits of Photomultiplier Systems," Roland Hawes and Wilbur R. Williams, not submitted, 1969-1970                             |
| Box 39, Folder 10 | Papers and talks: "A Technique for Measuring Photometric Accuracy," submitted to Applied Optics, 1969-1970   |
| Box 39, Folder 11 | Papers and talks: "A Technique for Measuring Photometric Accuracy," editing notes, 1970-1971   |
| Box 39, Folder 12 | Papers and talks: "Techniques for Measuring Photometric Accuracy" reprint requests, 1969, 1971-1973  |
| Box 39, Folder 13 | Papers and talks: Photometric accuracy paper slides, 1969, 1970, 1974  |

|                   |   |
|-------------------|---|
| Box 39, Folder 14 | Papers and talks: "Technique for Measuring Photometric Linearity and Apparatus for use in spectrophotometers employing photomultipliers", 1969-1970 |
| Box 39, Folder 15 | Papers and talks: "XVII Colloquium Spectroscopicum Internationale, 1973   |
| Box 39, Folder 16 | Papers and talks: Photometry Comparison, Roland Hawes #202 SVII Colloquium Spectroscopicum International, 1973 September                            |
| Box 39, Folder 17 | Papers and talks: Applied Optics, paper review, 1972-1973, 1982   |
| Box 39, Folder 18 | Papers and talks: Hawes' slides, 4" x 5" black and white photographs, undated   |
| Box 39, Folder 19 | Correspondence: Dr. John Ferraro regarding paper and merger of museum projects, 1991-1992   |
| Box 39, Folder 20 | Communication Network Analysis and Synthesis class notes, University of California, 1950  |
| Box 39, Folder 21 | Editorial, " 'Homemade' vs. Commercial Apparatus", 1963 May 13  |
| Box 39, Folder 22 | Editorial, Pasadena Star News, 1994 February  |
| Box 43, Folder 1  | Papers and talks: "An Automatic Centrifuge Tube Scanner" S. Hedelman and Roland Hawes, 1967 March   |
| Box 44, Folder 6  | Papers and talks: "An Automatic Centrifuge Tube Scanner" S. Hedelman and Roland Hawes, Photographs, 1967 March                                      |

*[Return to Table of Contents](#)*