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## Descriptive Summary

**Title:** William J. Dreyer Papers,

**Date (inclusive):** 1955-2006

**Collection number:** 10247-MS

**Creator:** Dreyer, William J. 1928-2004

**Extent:** 15.25 linear feet

**Repository:** California Institute of Technology. Caltech Archives  
Pasadena, California 91125

**Abstract:** The consulting files, patent files and correspondence, and a selection of working papers, general correspondence, and biographical papers of the biochemist William J. Dreyer, known as the William J. Dreyer Papers in the California Institute of Technology Archives. A specialist in molecular immunology, Dreyer was professor of biology at Caltech from 1963 until his death in 2004. At Caltech he was involved in the creation of a series of automated instruments for high-sensitivity protein sequencing. He held over 20 patents and was influential in the creation of the biotechnology industry.

**Physical location:** Archives, California Institute of Technology.

**Languages represented in the collection:** English

## Access

The collection is open for research. Researchers must apply in writing for access. One file within general correspondence is closed for privacy reasons.

## Publication Rights

Copyright may not have been assigned to the California Institute of Technology Archives. All requests for permission to publish or quote from manuscripts must be submitted in writing to the Caltech Archivist. Permission for publication is given on behalf of the California Institute of Technology Archives as the owner of the physical items and, unless explicitly stated otherwise, is not intended to include or imply permission of the copyright holder, which must also be obtained by the reader.

## Preferred Citation

[Identification of item], William J. Dreyer Papers, 10247-MS, Caltech Archives, California Institute of Technology.

## Acquisition Information

The William J. Dreyer papers were donated to the Caltech Archives in 2008 by Janet Roman Dreyer, the creator's widow.

## Biography

William Jakob Dreyer was born in Michigan and raised in Wisconsin and Oregon, with extended periods of visiting in Norway, his father's homeland. He attended Reed College (BA 1952) and the University of Washington (PhD in biochemistry, 1956). Early in his career he became interested in the molecular basis of development and heredity, and he also pioneered instruments that automated chemical analyses. After a period at the National Institutes of Health (NIH), where he worked with C. Anfinsen, G. Streisinger, and M. Nirenberg, he took a professorial appointment at Caltech in the biology division in 1963. His early work at Caltech centered on investigations of genetic coding for protein structure using immunological techniques. He proposed that genes could be reshuffled to provide additional information for the formation of proteins. With Leroy Hood and later Michael Hunkapillar he worked on the design of an automated protein sequencer and was associated with the founding of the company Applied Biosystems. Dreyer also consulted with many other biotech companies and held upwards of 20 patents on biochemical apparatus and processes. He maintained a life-long interest in the human brain and how genes program behavior. Dreyer was an early member of Caltech's innovative Beckman Institute and an enthusiastic promoter of computer imaging for biological investigations.

## Scope and Content

The decision was made to do minimal processing on the papers of William Dreyer in order to make the collection available for research in a timely fashion. As a result, minimal sorting has been undertaken, and folders will often overlap or be redundant in their contents. Many original folders have been retained, and the series order follows loosely the original order created by Professor Dreyer. Discarding has been

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limited to obvious duplicate material (especially reprints) and some printed and xerographic matter. The papers contain extensive material on Professor Dreyer's activities outside of Caltech, specifically, his consulting work for biotechnology companies beginning in the early 1970s and continuing throughout his career. During his consulting work, Dreyer invented and tested many instruments and methods for microchemical analysis for which he later acquired patents. The patent files form the largest series in the papers and should be used in conjunction with the consulting files, with which they overlap. Information on Dreyer's inventions, including the protein sequencer, may be found here. The Caltech material in the collection is limited and incomplete but it gives some picture of his campus activities. The most important files are those on his grants and on the Caltech Biology Division. A small set of biographical materials, a set of reprints, and a small amount of visual material complete the collection.

The collection is organized into the following series:

- Series 1. Companies and consulting, ca 1970-2000. 9 boxes
- Series 2. Patents, ca. 1970-2006. 10 boxes
- Series 3. Professional activities miscellany, 1968-2003. 4 boxes
- Series 4. Biographical. One-half box
- Series 5. Reprints, 1955-2000. 5 boxes
- Series 6. Films and slides, 1973-1976. 1 storage box

#### **Related Material**

[Oral history 1999](#). This 129-page interview with Shirley K. Cohen covers Dreyer's personal life and scientific career. He recalls especially his struggles to convince others of the validity of his ideas about image-thinking (per Roger Sperry's studies of the split brain) and his novel approaches to the study of proteins. He also elaborates on conflicts with colleagues Hood and Hunkapiller over invention of the protein sequencer.

#### **Indexing Terms**

The following terms have been used to index the description of this collection in the library's online public access catalog.

#### **Subjects**

California Institute of Technology

Biochemistry

Biotechnology

Immunology

#### **Occupations**

Biochemists

Series 1. **Companies and consulting ca 1970-2000**

**Physical Description:** 9 boxes

**Scope and Content Note**

Files are roughly sorted and many are undated.

**Arrangement**

Files arranged in alphabetical order by company, with exception of subseries 2.

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Subseries 1. **Companies ca. 1970-2000**

**Physical Description:** 7 boxes

**Arrangement**

Alphabetical order by company.

**Scope and Content Note**

Files are roughly sorted and many are undated.

Box 1	<b>Companies A-Ca ca. 1970-2000</b>
Box 2	<b>Companies Ca-D ca. 1970-2000</b>
Box 3	<b>Companies E-G ca. 1970-2000</b>
Box 4	<b>Companies H-Hy ca. 1970-2000</b>
Box 5	<b>Companies Hy-I ca. 1970-2000</b>
Box 6	<b>Companies I-N ca. 1970-2000</b>
Box 7	<b>Companies O-Z ca. 1970-2000</b>

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Subseries 2. **Research data, Cary Instruments 1970-1972**

**Physical Description:** 2 boxes

**Scope and Content Note**

Contains unfiled data notebooks and some files, along with data on multiple rolls of graph paper.

Box 8	<b>Data notebooks, Cary Instruments 1970-1972</b>
Box 9	<b>Data sheets, Cary Instruments ca. 1970</b>

**Physical Description:** Rolls.

Series 2. **Patents ca. 1970-2006**

**Physical Description:** 10 boxes

**Scope and Content Note**

Files contain correspondence with patent lawyers and other patent specialists; general patent correspondence, including some of Janet Roman Dreyer; and patent documents of various types.

**Arrangement**

Varies according to subseries.

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Subseries 1. **Patent correspondence and documents ca. 1970-2000**

**Physical Description:** 2 boxes

**Arrangement**

Alphabetical order by name.

**Scope and Content Note**

Predominantly correspondence with lawyers and patent experts.

Box 10                   **Patent correspondence and documents, A- H ca. 1970-2000**  
Box 11                   **Patents correspondence and documents, I-Z ca. 1970-2000**

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Subseries 2. **Roland Hawes's files 1970s**

**Physical Description:** 1 box

**Arrangement**

Labeled folders.

**Scope and Content Note**

Set of files apparently turned over to William Dreyer by Roland Hawes. Other material concerning Roland Hawes throughout collection.

Box 12                   **Roland Hawes's files 1970s**

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Subseries 3. **Patent documents 1972-1990s**

**Physical Description:** 4 boxes

**Arrangement**

Chronological order.

**Scope and Content Note**

First two boxes in chronological order, 1971-1990s. Second two boxes specifically concern "Red Bombs," fluorescent beads invented by William Dreyer for immunological reagent studies, 1972 through 1980s.

Box 13                   **Patent documents 1972-1976**  
Box 14                   **Patent documents 1976-1990s**

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Subseries 3. **Patent documents 1972-1990s**

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Box 15	<b>Red Bombs 1970s</b>
Box 16	<b>Red Bombs 1980s</b>

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Subseries 4. **Patent correspondence 1970s-2006**

**Physical Description:** 3 boxes

**Arrangement**

Chronological.

**Scope and Content Note**

Overlaps with other patent correspondence; contains some correspondence of Janet Roman Dreyer between 2001 and 2006.

Box 17	<b>Patent correspondence 1970s-1998</b>
Box 18	<b>Patent correspondence 1999-2000</b>
Box 19	<b>Patent correspondence 2001-2006</b>

**Note**

Includes correspondence of Janet Roman Dreyer

Series 3. Professional activities miscellany 1968-2003

**Physical Description:** 4 boxes

**Scope and Content Note**

First two boxes contain grant applications to both federal agencies and private foundations, beginning 1974. There is a small general correspondence section in rough chronological order (one file closed for privacy reasons). The remaining files relate to work done at Caltech and with JPL and include files on the Caltech Biology Division; the joint project on the clinical mass spectrometer for JPL; a few student-related files; incomplete files on teaching (especially developmental biology); manuscripts (especially the "Area Code" manuscript); miscellaneous notes; a few files on meetings and conferences.

**Arrangement**

Files by subject.

Box 20	<b>Grants 1974-1979</b>
Box 21	<b>Grants 1976-1990s</b>
Box 22	<b>General correspondence; Caltech and JPL 1968-2003</b>
Box 23	<b>Caltech ca. 1970-2003</b>

Series 4. **Biographical**

**Physical Description:** One-half box

**Scope and Content Note**

Includes CVs and biographies, publications and patents lists, articles about William J. Dreyer, other personal material.

**Arrangement**

Files by subject.

Box 24

**Biographical ca. 1970-2003**

Series 5. **Reprints 1955-2000**

**Physical Description:** 5 boxes

**Scope and Content Note**

Articles authored by William J. Dreyer and by Dreyer with co-authors. A few miscellaneous reprints authored by others.

**Arrangement**

Original folders and labeling preserved. Multiples discarded.

Box 25	<b>Reprints 1955-1961</b>
Box 26	<b>Reprints 1962-1966</b>
Box 27	<b>Reprints 1967-1973</b>
Box 28	<b>Reprints 1974-1983</b>
Box 29	<b>Reprints 1984-2000</b>

Series 6. **Films and slides 1973-1976**

**Physical Description:** 1 storage box

**Scope and Content Note**

3 reels of 7-inch and 24 reels of 3.5-inch film; small set of slides. Subject unknown.

**Arrangement**

Unsorted. Mostly boxed.

Box 30

**Films and slides 1973-1976**