



Smithsonian

National Museum of American History Kenneth E. Behring Center

Guide to the Ronald J. Leonard Papers

NMAH.AC.1109

Adrienne Cain and Bryanna Bauer

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Archives Center, National Museum of American History
P.O. Box 37012
Suite 1100, MRC 601
Washington, D.C. 20013-7012
Business Number: Phone: 202-633-3270
Fax Number: Fax: 202-786-2453
archivescenter@si.edu
<https://americanhistory.si.edu/archives>

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Collection Overview

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|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Repository: | Archives Center, National Museum of American History |
| Title: | Ronald J. Leonard Papers |
| Date: | 1966-2000 |
| Identifier: | NMAH.AC.1109 |
| Creator: | Leonard, Ronald J. (Creator) |
| Source: | Leonard, Leona (Donor) |
| Extent: | 5 Cubic feet (12 boxes) |
| Language: | English . |
| Summary: | The collection documents Ronald J. Leonard's work at Travenol Laboratories and Sarns/3M, developing pumps and oxygenators used in cardiopulmonary bypass surgery. |

Administrative Information

Ownership and Custodial History

Donated to the Archives Center in 2007 by Leona Leonard.

Separated Materials

The Division of Medicine and Science holds artifacts related to this collection (Accession #: 2007.0106.01-13) documenting oxygenators, heat exchangers, an artificial heart valve, and vascular graft.

Processing Information

Collection processed by Bryanna Bauer and Catarina Hurtado, interns, 2018.

Preferred Citation

Ronald J. Leonard Papers, Archives Center, National Museum of American History

Restrictions

Collection is open for research but is stored off-site and special arrangements must be made to work with it. Contact the Archives Center for information at archivescenter@si.edu or 202-633-3270.

Conditions Governing Use

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 / Historical

Ronald James Leonard was a biomedical engineer and inventor, born on August 17, 1939, in Cuba, New York, a son of Margaret and Roy Leonard. He received a Bachelor of Science degree in Mechanical Engineering from Clarkson College of Technology in Potsdam, New York, in 1961. He continued his education at Northwestern University in 1962, receiving his Master's in Mechanical Engineering. However, the majority of his work experience was centered in the biomedical engineering field.

He worked for the Naval Ordnance Lab in 1961, Allis-Chambers Research Division from 1962 to 1966, Travenol Laboratories from 1967 to 1985, and the Sarns/3M Company from 1985 to 1997. His early work at Allis-Chambers dealt with fuel cell power supplies. When he worked at Travenol Laboratories, a part of Baxter International Inc., and at the Sarns/3M Company, he helped develop and manufacture several medical devices and products for people with specific disorders, diseases, and conditions. He also worked as an adjunct assistant professor for Northwestern Technological Institute. In his retirement years, he did consulting work. He was also a member of the American Society for Artificial Internal Organs and the International Society for Artificial Organs (now known as the International Federation for Artificial Organs).

Leonard designed and patented several devices, including blood oxygenators and heat exchangers, as well as the hollow fiber tubing within the oxygenator. He held more than thirty U.S. patents. Much of his work was dedicated to improving and perfecting these devices, which were widely used for bypass surgeries and aided the lives of many Americans. His dedication to his work, constant research, and developments is clear in the many devices, studies, and years of service he provided.

Ronald J. Leonard passed away, January 14, 2007, at INOVA Fairfax Hospital, when he was 67 years old.

Scope and Contents

The collection documents Ronald J. Leonard's work at Travenol Laboratories and Sarns/3M, developing pumps and oxygenators used in cardiopulmonary bypass surgery. The papers include diagrams and design drawings, reports, test data, patent applications, lecture notes, correspondence, photographs, and slides.

Arrangement

Materials are arranged in chronological order. The collections is arranged into 5 series:

Series 1: Personal Materials, 1966-1996

Series 2: Patent Materials, 1988-2000

Series 3: Project Files, 1969-1998

Series 4: Writings/Lectures/Presentations, 1985-1997

Series 5: Travenol Company Materials, 1967-1995

Names and Subject Terms

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

Subjects:

Cardiology

Heart -- Surgery
Medical Equipment
Medical innovations
Medical instruments and apparatus

Types of Materials:

Design drawings
Diagrams
Lecture notes
Notes
Reports
Slides (photographs)

Names:

Leonard, Leona

Container Listing

Series 1: Personal Materials, 1966-1996

Scope and Contents: This series contains Ronald J. Leonard's personal materials, including correspondence, notes, and photographs.

Box 1, Folder 1 Baxter Laboratories, Incorporated, 1966-1978

Box 1, Folder 2 Creativity Talk, 1988

Box 1, Folder 3 3M Correspondence, 1990-1996

Box 1, Folder 4 Photographs, undated

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Series 2: Patent Materials, 1988-2000

Scope and Contents: This series contains patent applications for inventions such as the Sarns SMO Turbocharger and the Maya Heat Exchange, among others.

| | |
|-------------------|-------------------------------------------|
| Box 1, Folder 5-6 | Sarns SMO Turbocharger, 1988 |
| Box 1, Folder 7 | SMO Turbocharger (Studies), 1989 |
| Box 1, Folder 8 | SMO Turbocharger (Studies), 1990 |
| Box 1, Folder 9 | SMO Turbocharger (Original Studies), 1990 |
| Box 2, Folder 1 | Sarns SMO Turbocharger, 1991-1992 |
| Box 2, Folder 2 | Maya Heat Exchange Patent, 1998 |
| Box 2, Folder 3 | 3M Record of Invention, 1999 |
| Box 2, Folder 4 | Caterpillar Patent, 2000 |
| Box 2, Folder 5 | Cancer Patent, 1996-2000 |
| Box 2, Folder 6 | Liquid Pot Patent, 2000 |

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Series 3: Project Files, 1969-1998

Scope and Contents: This series contains materials related to projects on which Leonard worked, including the Maya project, the Leonardo project, the Turbo project, the Enterprise project, etc.

| | |
|-------------------|----------------------------------------------|
| Box 3, Folder 1 | 3M Membrane Oxygenator, 1969-1998 |
| Box 3, Folder 2 | Artificial Lung 3M Genesis Program, 1987 |
| Box 3, Folder 3 | Microporous Fibers for Medical Devices, 1988 |
| Box 3, Folder 4 | Turbo Tester, 1990 |
| Box 3, Folder 5 | Maya Chaos, 1993 |
| Box 3, Folder 6 | ET Dualie, 1993-1994 |
| Box 4, Folder 1 | Enterprise Design Optimization, 1994 |
| Box 4, Folder 2 | Maya Data, 1995 |
| Box 4, Folder 3-4 | Maya Oxygenator, undated |
| Box 4, Folder 5 | Maya Blood Conditioner, undated |
| Box 4, Folder 6 | Maya Mules, 1995 |
| Box 5, Folder 1 | Maya Mules, 1995 |
| Box 5, Folder 2-4 | Maya Z Fold Final Design, 1995 |
| Box 5, Folder 5 | Enterprise Next Generation, 1995-07-10 |
| Box 5, Folder 6 | Maya Platform Approach, 1995 |
| Box 6, Folder 1 | Maya Platform Approach, 1995 |
| Box 6, Folder 2-3 | Maya, 1995 |
| Box 6, Folder 4 | Maya Mia, undated |
| Box 6, Folder 5 | Maya Mia Binder, undated |
| Box 6, Folder 6 | Support, 1996 |
| Box 7, Folder 1 | Maya Caterpillar, 1996 |

| | |
|-----------------|---------------------------------------------------------------------------|
| Box 7, Folder 2 | Maya, Additional, 1996 |
| Box 7, Folder 3 | 3M Product Literature, 1997 |
| Box 7, Folder 4 | Roll-up a Fully Integrated System, 1997 |
| Box 7, Folder 5 | Turbo 440, 1998 |
| Box 7, Folder 6 | Maya Infant and Pediatric, 1998 |
| Box 7, Folder 7 | Heart Matters and Great Moments in Heart Surgery VHS tapes, 1998, undated |
| Box 8, Folder 1 | Leonardo I, undated |
| Box 8, Folder 2 | Leonardo II, undated |
| Box 8, Folder 3 | Leonardo III, undated |
| Box 8, Folder 4 | Leonardo IV, undated |
| Box 8, Folder 5 | Leonardo V, undated |
| Box 8, Folder 6 | Leonardo VI, undated |
| Box 8, Folder 7 | Mailbox Signal, undated |
| Box 8, Folder 8 | The New Alternative, undated |
| Box 9, Folder 1 | The New Alternative Binder, undated |

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Series 4: Writings/Lectures/Presentations, 1985-1997

Scope and Contents: This series contains notes, printed materials, and slides related to a few lectures/presentations Leonard gave in regards to his research.

| | |
|-----------------|----------------------------------------------------|
| Box 9, Folder 2 | Managing the Corporate/University Connection, 1985 |
|-----------------|----------------------------------------------------|

| | |
|-----------------|--------------------------------------------|
| Box 9, Folder 3 | Comparative Analysis of Shear Stress, 1996 |
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| | |
|-----------------|--------------------------------------------|
| Box 9, Folder 4 | A Technology Path Probing the Future, 1997 |
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Series 5: Travenol Company Materials, 1967-1995

Scope and Contents: This series contains materials related to the Travenol Company, including evaluation records, notes, test data, programmed learning course materials, etc.

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|--------------------|---------------------------------------------------------------|
| Box 9, Folder 5 | Historic Artificial Organs Division, 1967 |
| Box 9, Folder 6 | Historic Artificial Organs Division Binder, 1967 |
| Box 12, Item 2 | Programmed Learning Course, 1971 |
| Box 9, Folder 7 | TMO Papers, 1974-1980 |
| Box 10, Folder 1 | Sarns Oxygenator Evaluation Records, 1985-1986 |
| Box 10, Folder 2 | Sarns Membrane Oxygenator, 1986-1987 |
| Box 10, Folder 3 | Bypass Perfusion Notes, 1987 |
| Box 10, Folder 4 | Oxygen Control Testing Data, 1987-1989 |
| Box 10, Folder 5-6 | Turbo Tech Audit, 1990 |
| Box 10, Folder 7 | Calypso, 1993 |
| Box 11, Folder 1 | Calypso, 1993 |
| Box 11, Folder 2 | Akzo Meeting, 1992-1993 |
| Box 12, Item 1 | Akzo Nobel: Technical Product Reference--Oxyphan/Oxyray, 1994 |
| Box 11, Folder 3 | HX Wind Test, 1995 |
| Box 11, Folder 4 | The New Modulung-Teflo Membrane Oxygenator System, undated |

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