



Smithsonian
National Museum of American History
Kenneth E. Behring Center

Guide to the Ronald J. Leonard Papers

NMAH.AC.1109

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2007, 2018

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Collection Overview

Repository:	Archives Center, National Museum of American History
Title:	Ronald J. Leonard Papers
Identifier:	NMAH.AC.1109
Date:	1966-2000
Extent:	5 Cubic feet (12 boxes)
Creator:	Leonard, Ronald J. Leonard, Leona
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.

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

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

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

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

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

Box 9, Folder 4 A Technology Path Probing the Future, 1997

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Series 5: Travenol Company Materials , 1967-1995

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

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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