University of Toronto Archives and Records Management Services

James Nairn Patterson Hume Fonds

Prepared by: Marnee Gamble
February 2008

University of Toronto Archives

J. N. Patterson Hume Fonds

Table of Contents

BIOGRAPHICAL SKETCH

Professor James Nairn Patterson (Pat) Hume is recognized as a pioneer in the field of computer science. Born in 1923 in Brooklyn N.Y., his family moved to Goderich, Ontario when he was seven which is where he received his early education. In 1941, he entered Math and Physics at the University of Toronto and graduated with his B.A. in 1945. He went on to earn both a M.A. (1946) and Ph.D. (1949) in Physics from the University of Toronto. After graduating he spent a year teaching at Rutgers University before returning to the University of Toronto to become an Assistant Professor of Physics and in 1963 Professor of Computer Science with a cross appointment to Physics. Throughout his career, he also held various administrative positions in the Department of Computer Science including Chairman from 1975-1980. He was also Associate Dean (Physical Sciences) for the School of Graduate Studies and from 1981-1988 was Master of Massey College.

Prof. Hume was one of the first faculty members at the University of Toronto to work with the FERUT computer (Canada's 1st electronic computer). This work led to the development of some of the earliest software world wide including TRANSCODE, a forerunner to modern computer programming language. Prof. Hume co-authored with R.C. Holt nine textbooks on programming language used by high school and university students throughout Canada. Other areas on which he has written papers include, batch scheduling, data security, software engineering, and computer systems analysis. Throughout his career, he has played an active role in professional organizations that promote computer research such as the Canadian Information Processing Society (CIPS), the Association of Computing Machinery (ACM) and the International Federation of Information Processing (IFIP).

Prof. Hume is equally well known for his role in physics education through his partnership with Prof. Donald Ivey of the Department of Physics. Together they were pioneers in Canadian educational television, writing and performing in over 70 television programmes and four films on physics between 1958 and 1966. Many of these programmes were for the CBC's programme "The Nature of Things" and both men have been internationally recognized for their work. Awards include two Ohio State Awards each for best television program in Natural and Physical Sciences (1962), a silver medal for the film *Random Events* from the Scientific Institute in Rome and the prestigious Edison Award for best science education film of 1962 for *Frames of Reference*, now considered a classic in its genre.

Aside from his, professional work, Prof. Hume has been an active member of the Arts and Letters Club of Toronto where he helped produce the Spring Review. He enjoys painting and lives with his wife of 54 years in Toronto. He is currently Professor Emeritus of the Department of Computer Science and Master Emeritus of Massey College.

SCOPE AND CONTENT

1941 – 1997 3.68 m multi media

Records in this fonds document to varying degrees the dual aspects of Prof. Hume's career – as a computer scientist and as a teacher of physics. This fonds does not, in any substantial way, document his many administrative roles within the University of Toronto or within professional associations.

For a good overview of his career, researchers should consult **Series 1 Biographical** for summary information on his achievements and career highlights. **Series 2 Professional Correspondence** also gives a good overview of what Prof. Hume was working on at a given period of time because it is varied in content and is arranged chronologically. Additional correspondence documenting these activities specifically can be found in **Series 3 Publishing**, **Series 5 Professional Activities** and **Series 7 Broadcasting and Film.** His research in computer science and the many ways he disseminated that knowledge through articles, talks, published works and teaching is documented in **Series 3 Publishing, Series 4 Talks and Addresses and Series 6 Teaching**. Researchers should note however that manuscripts do not exist for any of the computer science textbooks for which he was so well known nor are there extensive notes, memos or correspondence that discuss writing projects except some correspondence with publishers. There is, however, a good representation of his talks and lectures as well a manuscript and typescript of his textbook *Physics in Two Volumes*, co-authored with Donald Ivey.

His work in educational television and film is very well documented and is contained in **Series 7 Broadcasting and Film**. Records in this series will be of interest to researchers studying early Canadian broadcasting, educational television, and the teaching of science – in particular physics for general consumption. Several reports found in this series discuss the themes and goals of many of the programmes.

Finally, a lighter side of Prof. Hume can be found in **Series 8 Arts and Letters Club**, as it relates to his involvement in the Spring Review. Records in this series would be of interest to anyone researching amateur musical theatre and arts clubs generally.

Access: Open

Accessions: B2007-0007

Related Accession: Donald G. Ivey Fonds B2001-0011

SERIES 1 BIOGRAPHICAL

ca. 1969-1987 0.58 m textual; graphic

This series gives researchers a good overview of Prof. Hume's career and highlights. It includes biographical sketches, C.V., clippings, awards and correspondence regarding his various appointments. Photographs of Prof. Hume and relating to his career have also been placed in this series including portraits, a photo of Prof. Hume at a 1969 IFIP meeting and early computer installations in the Computer Centre. Finally, there is one framed painting of the Sanford Fleming building that hung in his office.

B2007-0007/001 (01)-(09)
B2007-0007/022 – oversized awards and framed painting.
B2007-0007/001P (01) – (03) - photographs

SERIES 2 EDUCATION

1941-1949 0.07 m textual

Prof. Hume was a University of Toronto graduate of Math and Physics (B.A. 1945) and subsequently did both his M.A. (1946) and Ph.D. (1949) in Physics at the University of Toronto. This small series contains a notebook from his undergraduate years as well as a copy of his M.A. and Ph.D. thesis.

B2007-0007/001(10) – (12)

SERIES 2 PROFESSIONAL CORRESPONDENCE

1950-1997 0.13 m textual

Professional correspondence in this series is arranged chronologically. It documents Prof. Hume's varied activities but, noting the volume (1 box), it is clear that it is by no means complete. Early correspondence files contain job offers, discussions for contract work, invitations to talks and to attend meetings, as well as memoranda on faculty salaries. Correspondence during the 1960s, reflect his work on television and film productions and the development of the taped FORTRAN lectures for university use. There is also some correspondence on the establishment of the graduate program in Computer Science. This time period as well as the following decade is also characterized by Prof. Hume's role as a peer reviewer and referee. Included are comments and reviews for several editorial boards, letters of recommendations for graduate students as well as recommendations given to peers for awards and appointments. Correspondence also document's Prof. Hume's many invitations and responses to speak or participate in seminars and meetings.

SERIES 2 PROFESSIONAL CORRESPONDENCE (CONT'D)

There is only a small amount of correspondence after 1980 and most of this relates to his appointment as Master of Massey College. Absent is any correspondence documenting his many administrative roles other than congratulatory notes. Correspondence with publishers have been kept with the related manuscripts in Series 3 and there is additional correspondence regarding his broadcasting endeavors in Series 5.

B2007-0007/002

SERIES 3 PUBLISHING

1955 – 1984 0.78 m textual

This series documents a number of Prof. Hume's published works. Included are typescripts, drafts and related documentation on several papers including an early 1955 paper on the FERUT computer language TRANSCODE: A System of Automatic Coding for FERUT. There are several other papers on scheduling jobs and as well as a report on data security written with Prof. Calvin (Kelly) Gotlieb. There are also a few papers on quantum mechanics that seem to be unpublished.

Several versions of manuscripts for two of Prof. Hume's books are found in this series:

> *Physics in Two Volumes: Vol. 2 Relativity Electromagnetism and Quantum Physics*: Co-authored with Donald Ivey (who wrote Vol. 1) this university textbook was inspired by their many years collaborating on educational television and film. Apart from a manuscript and typescript, there is also related correspondence with publishers, marketing plans, and referee reports.
>
> *On Beyond Darwin - By Chance or by Design*, first published in 1983 and republished in 2006, this unorthodox view of physics discusses physical theory and the general laws within the context of the properties of electrons, protons and neutrons. "It builds on Darwin's view of the natural world and starts by showing that there are no general laws of physics." [1] Included are several versions dating from 1979 to 1983, correspondence and comments from various readers.

Also included in this series is correspondence, agreements and reviewer reports that document other books including *High Speed Data Processing, Introduction to Computer Science, Programming with Pascal, Structured Programming, Microsoft Basics for Microsoft* and several other works. Unfortunately, these do not have any manuscripts, only supporting documentation.

[1] Web site: On Beyond Darwin - By Chance or by Design, "AView of Physics that will make you think."

SERIES 3 PUBLISHING (CONT'D)

B2007-0007/003	Papers
B2007-0007/004 - /006	*Physics in Two Volumes* – mss
B2007-0007/007-/008	*Beyond Darwin - By Chance or By Design* - mss
B2007-0007/008 (04)-(12)	Correspondence with publishers

SERIES 4 TALKS AND ADDRESSES

1959-1996 0.68 m multimedia

This series documents Prof. Hume's talks and addresses on various subjects. General interest topics often discussed the growth of computers in society, changes in technology, and the development of computer languages. These were written for general public consumption at invited lectures. There are also a few talks on physics.

More technical talks and addresses focused on computer programming, computer graphics, and computer languages such as TRANSCODE, FORTRAN and Turing. These were most often delivered at professional meetings and symposiums. Prof. Hume recorded a series of lectures with accompanying slides on FORTRAN and another computer language called LISP. These were recorded as a type of tutorial on how to use the University's computer and were designed to teach computer programming to a wide range of academic users at the University of Toronto. This series contains a copy of the tapes on reel to reel as well as some of the accompanying slides - although it is not clear exactly how they originally matched up. Of particular note are the very early views of the Computer Center and its computers that were included in the slide lecture showing the IBM 650, the IBM 7090 and the IBM 7094.

Files are arranged chronologically with undated talks placed at the end. They contain notes, copies of the talks, overhead transparencies, related event programs and correspondence. In addition, there is a card index of talks that essentially gives outlines and notes. Some of these are related to files in this series while others are unique talks. Apart from the FORTRAN lectures, there is one taped lecture of Prof. Hume giving a key note address at the New College Honours Students dinner.

B2007-0007/009 - /010 – Textual files
B2007-0007/011 – Index cards
B2007-0007/001S, /002S and /006S – Taped Lectures
B2007-0007/001P (04)-(17) – Slides to taped lectures

SERIES 5 PROFESSIONAL ACTIVITIES

1956-1987 0.13 m textual

This series has some documentation on various activities and groups that Prof. Hume was involved with including the Royal Society of Canada, Massey College, and the Department of Computer Science. There are a few files on professional association such as the Canadian Information Processing Society (CIPS) and reviews done for the Association of Computing Machinery's (ACM) journal *Computing Reviews*. Finally some files document contract work or agreements with private companies.

Arrangement is alphabetical by department, group or association.

B2007-0007/015

SERIES 6 TEACHING

1952-1994 0.13 m textual; sound recordings

This series includes lectures, notes, course outlines, assignments for courses taught by Prof Hume, mainly through the 1970s and 1980s: CSC 108, CSC 201, CSC 280, CSC 354, CSC 2205. There is also documentation on early Physics courses he taught in the 1950s and one course for the Department of Extension on Programming Digital Computers 1957-63. They are arranged by course with Physics and Extension courses files first followed by Computer Science courses.

There are also two taped class lectures: Mikowski Diagrams or the K Calculus and Relativity and Electromagnetism.

B2007-0007/016
B2007-0007/004S - /005S Taped class lectures

SERIES 7 BROADCASTING AND FILM

1958-1982 0.33 m multimedia

Prof. Hume and Prof. Donald Ivey of the Department of Physics were pioneers in educational television, having developed their first 12 part program "Focus on Physics" in 1958. This was co-sponsored by CBC and the University of Toronto. The success of this series was followed up the next year by "Two for Physics". Both series eventually aired on the National Educational Television (N.E.T.) in the United States. Other programs that followed include:

1960 – 15 short programs on Physics for children produced by CBC in cooperation with N.E.T. for joint use in Canada and United States

1962 – "The Ideas of Physics" – 4 programmes
1963 – "The Nature of Physics" – 5 programmes
1966 – "The Constant of Physics" – 4 programmes
All of these were for in-school broadcasts to Canadian high schools produced by CBC with the National Advisory Council on School Broadcasts

1960-1965 – 18 programmes for "The Nature of Things", produced by CBC.
The program "The Nature of Things" is still today a staple of Canadian educational television. Hume and Ivey helped lay the foundation for such a successful broadcast run.

By 1960, their success in educational television spilled over into film where they were commissioned by the Physical Science Study Committee (PSSC) in the United States to do four films: "Frames of Reference", "Periodic Motion", "Universal Gravitation" and "Random Events". All of these were created for distribution in high schools. In 1962, "Frames of Reference" won Edison Foundation award for the best science film and "Random Events" received a silver medal from the Scientific Institute in Rome.

This series contains a fairly complete set of scripts for all the titles noted above. Moreover, there is a 16 mm release print for each of the four films and one sound recording of one program from "The Constant of Physics" series. There are also still images from "Frame of Reference" and a file on the Edison Award.

For a good overview, researchers should begin by consulting reports written by Hume and Ivey for most of the television series. They detail the development of each theme. In addition, there is correspondence and contracts with CBC, correspondence with Educational Services Incorporated and the PSSC as well as program guides, clippings, published reviews, correspondence from viewers, and one 1962 audience response report for a "Nature of Things" programme.

SERIES 7 BROADCASTING AND FILM (CONT'D)

B2007-0007/012-/013 – scripts
B2007-0007/014 – supporting documentation
B2007-0007/001M – 004M 16 mm films
B2007-0007/007S - sound recording of broadcast
B2007-0007/001P (18) – photographs

SERIES 8 ART AND LETTERS CLUB

1965- 1992 0.65 m textual; sound recordings

Since the 1960s, Prof. Hume has been an active member of the Arts and Letters Club of Toronto, serving as its President from 1976-1978. This series documents his participation especially in the Annual Spring Review which he often helped to write, direct and produce.

General documents on the Arts and Letters Club include some correspondence, memorabilia and one file on applications for membership. Most records however relate to the Annual Spring Review. Included are notes detailing concepts and organizational matters, scripts, music scores, programs and correspondence.

Many shows are well documented beginnings in 1965 to 1992, with only a few gaps. Also included in this series is an audio recording of Prof. Hume playing the piano and singing various pieces he composed for Spring Reviews.

B2007-0007/017 (01)-(05) General files, correspondence, show lists and programs
B2007-0007/017 (06)-(09) Spring Review files 1965 – 1971
B2007-0007/018 Spring Review files 1972-1976
B2007-0007/019 Spring Review files 1977-1980
B2007-0007/020 Spring Review files 1981-1985
B2007-0007/021 Spring Review files 1986-1993
B2007-0007/008S Sound Recording

SERIES 9 ARTIFACTS

196- 0.2 m artifact

Acquired with this fonds are two artifacts from early computers. A vacuum tube from FERUT and a tape spool winder.

B2007-0007/001Art