

# Homage to Helen Brownson: Information Science Pioneer

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## ABSTRACT

Helen Brownson (1917– ) was a federal government employee from 1941–1970 and was responsible for many scientific events, technologies, and foundational aspects which fostered the transformation of the field of documentation into the field of information science. As Program Director for Scientific Documentation at the National Science Foundation's Office of Scientific Information, Brownson published dozens of reports and articles pertaining to information-handling, scientific communication, and machine-translation problems. She presented at and reported on international conferences and would allocate federal grant money toward pioneering projects—all in order to develop better methods for access, storage, and retrieval of recorded scientific information. She was responsible for identifying and supporting the Cranfield Experiments and founded the *Annual Review of Information Science and Technology* (ARIST) as well as the two technical systems publications which precipitated the need for an annual review. This poster is a concise history of Brownson's career taken directly from the forthcoming article, *A Humble Servant: The Work of Helen L. Brownson and the Early Years of Information Science Research*. More specifically, it is an opportunity to showcase many of the personal, historical, visual images collected during personal interviews with, and through scholarly research on this influential pioneer.

## Keywords

Information science history, information science pioneer, information retrieval, ARIST, National Science Foundation, documentation.

## INTRODUCTION

In honor of the 75<sup>th</sup> anniversary of American Society for Information Science and Technology and the recent 95<sup>th</sup> birthday of Helen Louise Brownson, this poster presents, in a timeline format, historical events, personal stories and photos, and relevant images pertaining to the pioneer's

work. Brownson, a National Science Foundation (NSF) employee, was instrumental in delegating government funds during the NSF's formative years when the nation was grappling with post-war information-handling problems. At a time when scientific information was being created and dispersed at an accelerated pace, Brownson's work encompassed several decades' worth of immense national and international research and incessant reporting of new machine translation projects. She was an outspoken advocate and significant figure in many pivotal events which formed what is now known as information science. Her many achievements are summarized below and are based on scholarly literature as well as extensive personal communication with Brownson.

## BROWNSON IN THE 1940s



**1938–1941:** Works as a translator for several trading companies after graduating Phi Beta Kappa from the University of Kansas in 1938 where she majored in languages.

**1941:** Moves to Washington D.C. with her husband as the government recruits men for WWII. War is declared, her husband leaves with the Navy, and she applies for a job at the Committee on Medical Research (CMR). She is hired as secretary and later becomes a technical aide to the chairman. CMR reports to the Office of Scientific and Research Development headed by Dr. Vannevar Bush.



Courtesy MIT Museum

**1946–1948:** Bush heads the Joint Research and Development Board and created committees for each major field of science as well as a Special Committee on Technical Information (SCTI)—whose purpose was “to improve the flow of information among agencies” (Ball, 1949, p. 12). Brownson was appointed the committee secretary and begins her career-long work researching mechanized storage and retrieval systems.

**1947:** Bush requests that she work at his Carnegie Institution headquarters writing citations for presidential medals for distinguished scientists’ efforts during the war.

**1948:** SCTI becomes part of the Department of Defense’s Research and Development Board. Brownson eventually runs the office.

### BROWNSON IN THE 1950s

**1950:** President Truman signs legislation establishing the National Science Foundation. The Office of Scientific Information (OSI) is established within the Foundation. OSI’s purpose was to support cognitive and technical aspects of information use.




**1950–1956:** She sits on the Board for the *American Documentation Institute (ADI)* and is also the editor and principal contributor to *American Documentation*’s abstract section.

**ADI/ASIS Boards of Directors  
1949-1958**

The following people served on the ADI/ASIS Boards of Directors during the decade.

Scott Adams (President)  
Charles Bernier  
Madeline Berry (Henderson)  
Helen L. Brownson  
Verner W. Clapp



**1951:** Applies for a position at OSI and becomes the Assistant for Program Development.

**1954:** Becomes OSI’s Program Director for Scientific Documentation. Her job is to identify, invite, and recommend the most promising machine translation ventures for OSI to support. Her (program’s) budget starts

at \$1 million and eventually increases to more than \$1.5 million in 1966.



**1955:** Speaks at the Congress of Libraries and Documentation Centers conference in Brussels, Belgium.

**1955:** Meets Cyril Cleverdon at an SLA conference and encourages him to apply for a \$28,000 NSF grant.

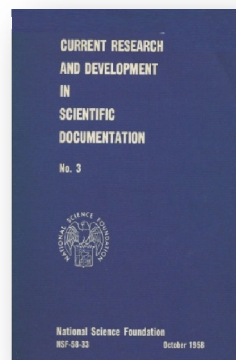
**1956–1969:** Allots \$500,000 to the Transformations and Discourse Analysis Project at the University of Pennsylvania which funded “computational modeling and actual processing of text” (A. K. Joshi, personal communication, August 18, 2011).

**1957:** The launch of Russian satellite *Sputnik 1* causes the U.S. government to establish OSI as an information service (OSIS) not unlike the Russians’ VINITI database and institute for managing scientific information.

**1957–1968:** Brings Cyril Cleverdon and other pioneers together. Funds the Cranfield Experiments—the result of which are *precision* and *recall* (Cleverdon, 1991).

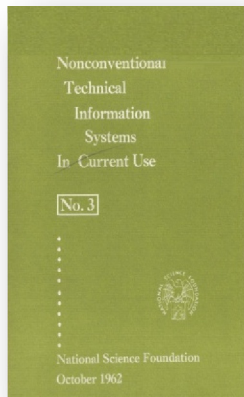
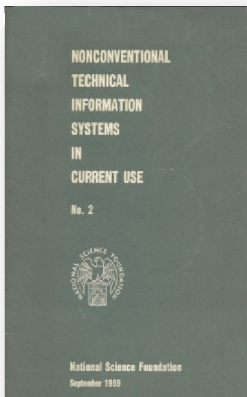


**1957–1969:** Publishes a series of 15 technical reports in booklet form entitled *Current Research and Development in Scientific Documentation* with her staff.



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**1958:** NSF, the National Academy of Sciences—National Research Council, and ADI hold an *International Conference on Scientific Information* which hosted dozens of pioneers and their papers which were geared toward thwarting “the ultimate failure” of information retrieval systems (NSF, NAS, & ADI, 1959, p. 6). Harold Borko calls this perhaps the first event where “information science” was considered a discipline (2005, p. 1). Brownson is in charge of Area 1 (out of 7): *Literature and Reference Needs of Scientists: Knowledge now available and methods of ascertaining requirements*.  
**1958–1966:** Publishes four volumes of *Nonconventional Scientific and Technical Systems in Current Use* with her staff.

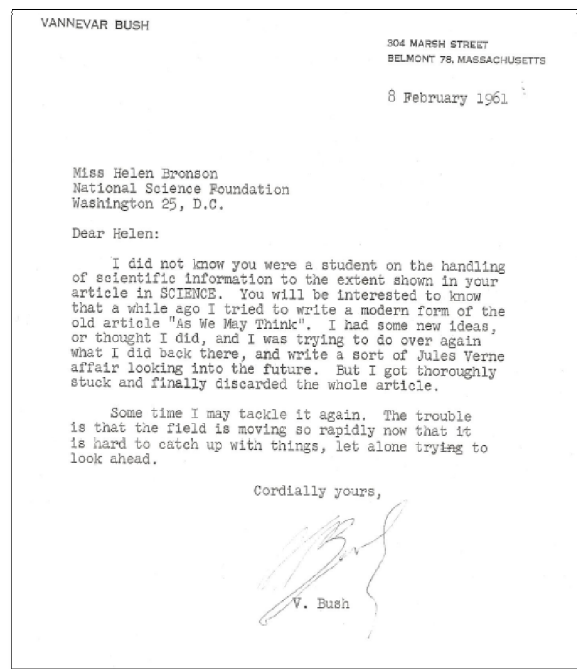


Some of Brownson’s publications during this decade can be found in: *Library Trends*, *Proceedings of the International Study Conference on Classification for Information Retrieval*, *American Documentation*, *Proceedings of the International Conference on Scientific Information*, *Science*.

**BROWNSON IN THE 1960s**



**1960:** Her most cited work, “Research on handling scientific information: Improvements in communication and information handling contribute to scientific progress” is published in *Science*.



**1961:** Speaks at the International Conference on Machine Translation of Languages and Applied Language Analysis, Teddington, England; the International Conference of Scientific Information in the fields of Crystallography and Solid State Physics, Nishinomiya, Japan; the Automatic Documentation in Action Conference, Frankfurt, Germany; and the Canadian Library Association (CLA).

**1962:** Speaks at the International Federation for Information Processing Congress Symposium, Munich, Germany.

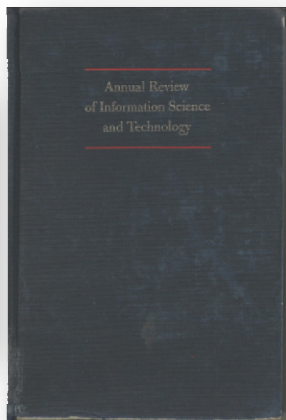
**1962:** Derek de Solla Price becomes a member of the Science Information Council which advises OSI’s programs. Price and Eugene Garfield publish works elucidating the exponential rate of scientific information.



Courtesy Dr. Eugene Garfield

**1964:** Arranges a meeting between the NSF and ADI in order to fund a review of the field. OSI subsequently allocates \$40k toward the first volume and chooses Carlos Cuadra from System Development Corporation as its editor.

**1966:** First volume of *Annual Review of Information Science and Technology* is published. Cuadra writes the first chapter, Brownson writes the Foreword.



**1966:** Transfers from OSI to a research division of the CIA.

**1968:** ADI becomes ASIS, in part because of Cuadra's influence on the nomenclature (Bjørner & Ardito, 2003, "The Annual Review").

Some of Brownson's publications during this decade can be found in: *Science*, *Journal of Documentation*, *Information Retrieval Management*, *Information Processing*, *Proceedings of the Conference on Automatic Documentation in Action*, *ARIST*.

#### **BROWNSON IN THE 1970s**



**1970:** Officially retires but continues to volunteer at the Smithsonian Institution indexing musical subject matter.

**1975:** Natural language processing turns out to be much harder than originally anticipated and no government funds are applied to machine translation projects again until the mid-1980s.

**1976:** Burt Adkinson, head of OSI 1957–1971, states the work and research conducted by OSI during these decades led to the development of the field of computational linguistics (1976, p. 175).

#### **BROWNSON TODAY**



*Helen Brownson on her 95<sup>th</sup> birthday May 2012*

Helen Brownson resides in Washington, D.C. where she keeps busy reading, organizing documents, and taking French classes in addition to other recreational activities.

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