

## *Scholarly Returns: Patterns of Research in a Medical Archives*

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### *Résumé*

Afin de mieux connaître les chercheurs qui utilisent la documentation archivistique reliée au domaine de la santé ainsi que leurs travaux, nous avons dirigé une étude de la clientèle du *Alan Mason Chesney Medical Archives* du *Johns Hopkins Medical Institutions* du début du programme en 1978 jusqu'en 1994. **Les usagers:** Les dossiers des services de référence, à la fois sur place et à distance, démontrent que cinquante-cinq pour cent des usagers étaient affiliés à Johns Hopkins et que la majorité des autres quarante-cinq pour cent était affiliée à des institutions similaires (distribution de soins de santé et recherches universitaires). L'ensemble des usagers comprend à la fois des étudiants et des professionnels provenant d'un large éventail de disciplines connexes aux sciences de la santé, aux humanités, ainsi qu'aux sciences sociales. **Travaux réalisés:** Notre étude vise les travaux publiés (thèses, mémoires, articles, chapitres, et livres). Nous avons regroupé les travaux selon quatre types de recherche: les individus et leur influence; les professions dans le domaine de la santé, de la vie et de la biologie; les institutions reliées au domaine de la santé ainsi que leurs principales fonctions. Guidés par une liste de 789 clients qui ont indiqué leur intention de publier, nous avons repéré des citations dans 260 publications. De ce groupe, nous avons découpé un échantillon de 136 citations pour fins de discussion. **Signification des résultats:** L'échantillon bibliographique révèle les sujets de recherche communs dans un centre d'archives en sciences de la santé. Nous souhaitons que l'élucidation de ces thèmes de recherche intellectuelle s'avère utile pour l'évaluation, le traitement, et les services de référence. **L'avenir:** Qu'une majorité de clients soit affiliée à des institutions sans buts lucratifs et publie dans des revues également sans buts lucratifs soulève d'irrésistibles questions concernant l'avenir des services archivistiques. Comme les ressources des institutions sans buts lucratifs vont en diminuant il ya moins de ressources disponibles pour assumer les frais de voyage, la recherche, et les publications académiques. Afin d'accommoder une

clientèle qui dispose de moins en moins de temps pour la recherche et moins de possibilité de voyager, les programmes archivistiques seront contraints de développer une gamme plus vaste de services pour l'accès à distance. De plus, comme l'accès électronique à la littérature des sciences de la santé va en s'accroissant, il y a une augmentation des attentes concernant l'accès électronique à la documentation archivistique. Les programmes archivistiques doivent donc être prêts à jouer un rôle plus dynamique dans le domaine de la communication électronique. L'accès aux centres d'archives via Internet servira à la fois les usagers traditionnels et permettra de rendre les archives accessibles à une large et nouvelle catégorie d'utilisateurs.

### **Abstract**

To learn more about researchers who utilize archival documentation from the health fields and the works that they produce, we conducted a study of patrons of the Alan Mason Chesney Medical Archives of The Johns Hopkins Medical Institutions from the inception of the programme in 1978 through 1994. **User Population**--Records for both on-site and remote reference services show that fifty-five per cent of the user population was affiliated with Johns Hopkins and that most of the individuals in the remaining forty-five per cent of the population had affiliations to similar institutions--health care delivery facilities and research universities. The overall user population included both students and professionals from a broad range of disciplines within the health sciences, humanities, and social sciences. **Works Produced**--Our focus was on works in print (theses, dissertations, articles, chapters, and books). We classified works according to four common topics of research: individuals and their influences; professions in the health, life, and biological sciences; institutions in the health fields; and key functions of institutions in the health fields. Guided by a list of 789 users who had indicated an intention to publish, we located citations to 260 publications. From this group we selected a sample of 136 citations for discussion. **Significance of Findings**--The bibliographic sample provides insight into common topics of research at a health sciences archives. We hope that elucidation of intellectual themes will serve as a useful resource for appraisal, processing, and reference services. **Implications for the Future**--That a preponderance of users had affiliations with not-for-profit institutions and published with not-for-profit presses raises compelling issues for the future of archival services. As the funding base for not-for-profit organizations is shrinking, there are fewer resources for travel, research, and academic publishing. To accommodate an audience with less time for research and fewer options for travel, archival programmes will be pressed to develop a wider range of services for remote access. Moreover, as electronic access to literature of the health sciences expands, there are enhanced expectations for electronic access to archival documentation. Archival programmes must, therefore, be poised to assume a more dynamic role in electronic communication. Whereas Internet access to archives will serve largely as a convenience for traditional users, it also promises to introduce archives to a wide new audience of users.

### *Introduction: Assessing Patterns of Use Through Citation Studies*

The study of publications that utilize documentation from a single archival repository may help to illuminate the evidential and informational scope of the repository's holdings. Archivists should, therefore, keep abreast of the publishing activities of their patrons in order to gain a better understanding of not only the opportunities, but also the limitations for research in their respective repositories.

It is particularly important for archivists at repositories that concentrate in special disciplines to follow the publications of their patrons. The works of patrons who utilize a special-discipline repository are a major informational resource for archival planning and development in that discipline. Topical areas of research may be seen in this literature, as well as methodologies and the types of documentation utilized. An awareness of the range of research activities will contribute substantially to archival planning for collection development, processing, and preparation of finding aids.

Over the past two decades there have been several significant studies of the sources cited in the literatures of the history of science, history of medicine, and social history. In 1981 Clark A. Elliott examined citation patterns and documentation for the history of science.<sup>1</sup> Elliott's study demonstrated that social and intellectual historians of science relied on different kinds of records. He showed that the intellectual historians had mainly used personal paper collections, while the social historians had utilized a combination of corporate records and personal papers. Elliott, however, advised that his findings should be regarded as "contributions to the liberal education of the archivist, not tools of management."<sup>2</sup>

Following Elliott's precedent and borrowing from his methodology, Frederic Miller conducted a case study of citations in the literature of social history.<sup>3</sup> Miller's intensive analysis of 214 articles on social history which were published in 1986 revealed that social historians relied heavily upon archival sources in their research. However, he showed that they largely utilized personal paper collections in older, well established historical societies and seldom consulted state and local public archives.

In 1988 Catherine Hidalgo-Nunez-Wohlleben, of the Alan Mason Chesney Medical Archives staff, examined citation patterns in history of medicine literature and found that between 1977 and 1987 there was a twelve per cent increase in the use of primary source citations by journal contributors.<sup>4</sup> She found that changes in the methodologies of medical historians may in part explain the increase. In the decade studied (1977-1987), the training of historians of medicine emphasized the use of primary source materials in scholarly research. Also, during this period several new archival programmes in the health fields were established, thus making more source materials available for research.

Paul Anderson, in a departure from studies of citation patterns, examined archival sources in the health sciences and projected ways these materials may be used for research, teaching, and other purposes. In his 1985 article "Appraisal of the Papers of Biomedical Scientists and Physicians for a Medical Archives," he describes various types of records in the health sciences and their potential for use in research.<sup>5</sup> Thus, he suggests that the research value of records is an important criterion in appraisal. In his 1995 chapter, "Archives as Fundamental Resources for the Study and

Teaching of History," he discusses the historiographic value of particular types of records.<sup>6</sup>

Whereas the above mentioned citation studies have examined publications to assess the use of primary sources in research, we have taken another approach and followed researchers of primary source materials to assess the kinds of publications that they produce. By concentrating upon discipline-specific literature, Elliott, Hidalgo-Nunez-Wohlleben, and Miller, in their respective studies, were able to focus on citation patterns in particular disciplines. On the other hand, we follow the use of documentation from a special-discipline repository into the literature of numerous other disciplines.

With the availability of more archival resources, a wider segment of the scholarly community has been attracted to studies of the health fields. In addition to practitioners and historians, sociologists, economists, anthropologists, and specialists in a variety of other disciplines have utilized archival documentation from the health fields in their research. To examine a sample of the broadened pool of scholars and the topics of their research, we have limited our study of users to one archival repository in the health fields.

### *The Alan Mason Chesney Medical Archives*

To provide context for the discussion of users and their works, we shall first describe the archival programme at the Johns Hopkins Medical Institutions.

#### **Mission**

The mission of the archival programme is to support the mandated functions of the Johns Hopkins Health System and the health divisions of the Johns Hopkins University: health care delivery, research, and education. Guiding principles are to: build holdings that document the mandated functions of the parent institutions; make holdings accessible for use whenever legal and ethical conditions permit; make holdings accessible to the Johns Hopkins community and to the general public.

#### **Overview of Programme**

Established in 1978, the Alan Mason Chesney (AMC) Medical Archives is the official archival repository for The Johns Hopkins Health System and the health divisions of The Johns Hopkins University. The archival programme is divided into the following four components: contemporary records (1975- ); historical records (1889-1974); personal papers of faculty and staff (1889-1994); and fine arts and artifacts (1889-1994). Collecting is limited to documentation that pertains to the health institutions and to the individuals who have been associated with its various divisions (e.g., faculty, staff, students, and alumni).

#### **Holdings**

Because divisions of the Johns Hopkins Medical Institutions were founded in the late nineteenth century and early years of the twentieth century, the archival hold-

ings are predominantly twentieth-century. Having central administrative records, records of individual departments, and personal papers of faculty and staff in one repository facilitates studies of the complex organizational structure of the Medical Institutions and their interrelated functions of health care delivery, teaching, and research. The institutional record groups and related personal paper collections provide complementary sources of information and data. In addition, the collections of fine arts and artifacts augment study of the largely textual holdings of institutional records and personal papers. The main topical strengths of the repository are: nursing, public health, medicine, surgery, the sub-specialties in medicine and surgery, psychiatry, neurology, and the behavioural sciences. Because of the leadership of Johns Hopkins faculty and staff in the twentieth-century health professions, the institutional records and personal paper collections are also a rich resource for the study of other institutions and of individuals, not necessarily affiliated with Johns Hopkins, who are represented as correspondents in the repository's holdings. See **figure 1** for an overview of the holdings.

<b>The Alan Mason Chesney Medical Archives</b>	
<b>Overview of Holdings</b>	
Textual holdings	9,573 linear feet
*Historical records	
*Current records	
*Personal papers	
Visual holdings	71,509 items
* Still photographs	
* Architectural drawings and blueprints	
* Moving pictures	
Sound recordings	450 items
* Oral interviews	
* Speeches	
* Lectures	
Artifactual holdings	2,560 items
* Paintings	
* Sculpture	
* Antiques	
* Medical artifacts and instrumentation	

**Figure 1**

## Access

Because the Alan Mason Chesney Medical Archives is open to the public, users from other institutions and different professions (e.g., medicine, nursing, public health, the life and biological sciences, history, sociology, anthropology, psychology, architecture, engineering, fine arts, literature, political science, and philosophy) have had access to the repository for purposes of reference and extended research. From the beginning of the programme, the access and user-service policies of the AMC Medical Archives have encouraged and facilitated use of the repository's holdings whenever it has been legally and ethically possible. The reference division provides services for both on-site and remote access (mail, telephone, telefacsimile, and electronic mail).

Because many of the laws and regulations relevant to archival holdings are ambiguous, the Advisory Committee of the AMC Medical Archives has established a subcommittee to review applications for access to particular types of sensitive documentation (e.g., student records, patient records, records of research subjects, personnel records). Modeled on the peer-review process of the institutional review board (IRB), this subcommittee adjudicates requests to use documents that carry restrictions (legal, regulatory, ethical) that limit access. The objective of the committee is to grant access whenever legal and ethical conditions permit.

The purpose of the review process is to adjust terms of access to comply with applicable laws, regulations, and ethical codes. For example, it is often possible to permit access to certain types of records that are normally restricted (e.g., records of patients, students, and personnel) if the applicant's research protocol does not require the disclosure of personal identifiers and if the applicant will enter into a formal non-disclosure agreement. By negotiating non-disclosure agreements, researchers may then have access to restricted records for the purpose of quantitative research and other types of studies that do not require release of personal identifiers. If the applicants' research necessitates release of personal identity, they must obtain permission from the individuals, or from their estates or next of kin if they are deceased, before access requests will be considered.<sup>7</sup> By removing inflexible barriers to access, and by promoting broader use of the repository's holdings, the archives has allowed users from both inside and outside of the health fields opportunities to conduct different types of research within a common body of materials.

## Staffing

For the past ten years the archival programme has relied upon a combination of full-time and part-time personnel. Currently there are six full-time employees, two volunteers, and three part-time employees, who collaborate in staffing the four components of the archival programme: archives, manuscripts, fine arts and artifacts, and records management. Support for staffing comes from joint appropriations made by the Hospital and the health divisions of the University, as well as from outside funding from grants. Because of the breadth of programme services, full-time staff members must share responsibilities for several different job functions. However, one full-time position is devoted exclusively to user services. Other full-time staff members and volunteers also contribute portions of their job effort to assist in various aspects of user-service activities from reference and research assistance to outreach functions such as production of exhibits and finding aids.

## User Services

The Alan Mason Chesney Medical Archives maintains an active user services programme. Major activities include the following:

- provision of reference information;
- facilitation of research;
- production of exhibits (fine arts and archival);
- publication of finding aids and commemorative articles such as albums, brochures, and posters.

The level of these activities intensifies around institutional events, including regularly scheduled ones such as graduation, alumni reunions, and orientation of new students and Hospital house staff, as well as special occasions such as anniversaries. Internal users include faculty, staff, and students. Individuals from executive administrative offices, public affairs, development, and academic affairs are among the most frequent internal users. Planners for the centennials of the Hospital (1989) and the School of Medicine (1993) and the seventy-fifth anniversary of the School of Hygiene and Public Health (1990) drew heavily upon archival holdings. External users patronize the Alan Mason Chesney Medical Archives on a regular basis throughout the year. Since many of the external users are affiliated with academic institutions, their visits are scheduled more frequently around term breaks and summer recess.

Since the inception of the archival programme, registration logs and service requests have been employed to collect basic information about institutional affiliations of users, the materials that they studied and reproduced, and the subjects and intended products of their research. Although many users eventually provided copies of their published works, we had never made a concerted effort to follow the outcome of users' research.

### Citation Summary - Publishers of Books

#### Commercial Publishers

number of publishers represented	23
number of citations to commercial publishers	32

#### Non-profit publishers

number of publishers represented	20
number of citations to non-profit publishers	37

#### Categories of non-profit publishers

Academic presses	26 citations
Educational institutions	2 citations
Government agencies	1 citation
Libraries	2 citations
Professional associations	2 citations
Private publications	8 citations

**Figure 2**

## *Follow-Up Studies*

### **Design of Study**

Because it was not feasible for us to attempt an exhaustive study of every user from 1978 to 1994, our biggest challenge was to prepare a manageable yet effective research plan. Initially, we reviewed registration logs of patrons from 1978 through

1994 to observe the range of users and the nature of their reference and research requests. We then examined reference correspondence files from the same period for a more detailed look at users and their queries. Because individuals engaged in research for scholarly works had left the most extensive information trail in reference logs and correspondence files, we chose this group as the major focus of our study.

We set the following goals for our research:

- identify users from 1978 through 1994 who had utilized holdings for the purpose of scholarly studies, which we defined as research for publications (articles, chapters, and books) or student works (term papers, theses, dissertations);
- determine the institutional affiliation and professional discipline of the users and the types of studies that they conducted;
- trace the works of the users to the published literature and prepare a bibliography of their titles.

<b>Citation Summary - Fields Represented in Journal Articles</b>		
<b>Field</b>	<b><u>Journals Represented</u></b>	<b><u>Total citations</u></b>
Health Professions		
Medicine	8	9
Nursing	1	1
Public Health	4	5
Subspecialties	9	9
Surgery	4	5
History of the Health Sciences	7	20
History	3	3
Other fields	2	2
Total journals represented	38	
Total journal citations	54	

**Figure 3**



## Methodology

Our research methodology included the following steps:

- review user records (registration and correspondence files) from 1978 through 1994 to identify users who indicated that they were engaged in student projects or research for a proposed publication;
- compile a master list of names of individuals that we identified as scholarly users (789 names);
- arrange the master list of names into occupational sublists (students, practitioners in the health fields, and practitioners in other fields) in order to facilitate bibliographic searches;
- search the published literature by author names on the three sublists;
- analyze the bibliographic citations by discipline of author and topic of research.

<b>Citation Summary - Student works</b>	
<b><u>Dissertations</u></b>	
Havard University	
Johns Hopkins University	2
University of California	
University of Chicago	
University of Illinois	
University of Michigan	
University of Pennsylvania	
University of Virginia	
Washington University	
Total institutions	9
Total dissertations	10
<b><u>Theses</u></b>	
Johns Hopkins University	2
Stanford University	
Princeton University	
Total institutions	3
Total theses	4

**Figure 4**

We located citations for approximately one third (260) of the users on our list. (We consulted *Dissertation Abstracts* for student works; MEDLINE, CINAHL, HEALTH, PsychINFO, and Bioethics line for the works of practitioners in the health fields; HISTLINE, RLIN, and OCLC for works by authors in the other disciplines.) One of the problems in searching for citations is that the published works span many different fields of study. Since most bibliographic databases are discipline-specific, it is important to identify the disciplines by which publications might be classified. Because many of the users we had identified were involved in interdisciplinary studies, determining which database would most likely cite their publications was complex. For instance, some publications in the history of psychiatry may appear in MEDLINE, HISTLINE, or PsychINFO.

In examining the group of citations for commonalities, we noted that they fell essentially into the following four topical categories:

- individuals and their influences;
- professions in the health, life, and biological sciences;
- institutions in the health fields;
- functions of institutions in the health fields.

By using topics of study as an arrangement principle, we were able to classify all of the citations that we found. It took three of us (McCall, Mix, and Keenan) nearly three months to conduct the study on a sometimes erratic part-time basis. Since we had numerous other job responsibilities, we each tried to devote several hours per day to the project. Having located one third of the users' published works, we felt that we had a viable sample for discussion in this article. At some point, however, we hope to continue the study and to complete the bibliographic searches.

### Findings

Our preliminary review of registration logs and reference correspondence files indicated that the majority of external users from 1978 through 1994 were affiliated with non-profit institutions. While most of the users from the non-profit sphere were associated with educational institutions, a significant number came from other types of non-profit corporations. Professional associations, health care delivery facilities, academic presses, and public broadcasting stations were among the other non-profit entities that were represented. Commercial publishers, film companies, and television networks were among the for-profit institutions most frequently represented. Not surprisingly, approximately fifty-five per cent of the user population for this period was affiliated with Johns Hopkins.<sup>8</sup> Three basic patterns of user activity were readily apparent: reproduction of visual materials; provision of simple reference information; and facilitation of extended research.

#### *Reproduction of Visual Materials*

We found many requests for visual reproductions. Types of reproductions included slides, colour transparencies, negatives, photographic prints, photomicrographs, scanned images, video tapes, and movie film. The materials that users most frequently selected for visual reproductions were still photographs, moving pictures,

fine arts, artifacts, and architectural drawings. There were more requests for reproductions of still photographs than for any other type of documentation. Categories of photographs requested ranged from individual and group portraits to buildings (interiors and exteriors), diagnostic, surgical, and experimental procedures, laboratory and classroom activities, sporting events, military units, social activities, and commemorative events. Users indicated that they intended to utilize the photographic reproductions in class lectures, medical rounds, talks at professional meetings, student works, scholarly and popular publications, television broadcasts, documentary films, and as mementos or gifts to commemorate institutional anniversaries, retirements, fund-raising campaigns, the end of the academic year, and the annual shift of the Hospital's house staff.

#### *Provision of Basic Reference Information*

Provision of basic reference information is a difficult area of user service activities to document because so many simple requests are inevitably handled on an informal basis. However, it is still possible to follow patterns of reference requests through the telephone logs and correspondence files. We noted many letters from staff to users providing basic factual information or copies of documents. These requests usually came from individuals engaged in fact checking for administrative, teaching, and research purposes.

#### *Facilitation of Extensive Research*

The most extensive correspondence in the reference files deals with users who were engaged in long-term studies, a group comprising students, faculty, administrators, and health practitioners. It appears that some of these users had publishing contracts at the outset of their research and, therefore, a direct route to publication. Others took a longer, more indirect path. For example, students who originally had conducted research for doctoral dissertations eventually revised and transformed these works into books, and a large number of users who first engaged in research for papers to present at professional meetings later published these papers as articles in peer-reviewed journals.

Most of the studies of individuals focused on Johns Hopkins students, faculty, and staff, but some dealt with patients or with individuals who were represented in correspondence files. Studies involving institutions, professions, and functions focused on the Johns Hopkins health institutions in particular or in general as a model for comparative discussion.

Users engaged in long-term studies came from a variety of different disciplines. The health disciplines most frequently represented were medicine, nursing, and public health. Disciplines outside the health fields include anthropology; art and architectural history; literature; musicology; history of medicine, science, technology, and economics; sociology; political science; and philosophy. Users who conducted historical studies included trained historians as well as practitioners (primarily physicians and nurses) with an avocational interest in history; physicians and nurses with graduate degrees in history were also represented.

The bibliographic citations that we located include works which drew extensively upon the repository's holdings, as well as works which made only selective use of a few personal paper collections and record groups. Whereas some of the publications relied almost exclusively upon holdings from the AMC Medical Archives, others used selections of holdings from a number of different repositories, with documentation from Johns Hopkins playing a minor role. The bibliographic citations which follow do not constitute an exhaustive list of all the publications that have utilized documentation from the Alan Mason Chesney Medical Archives. However, they are representative of the kinds of research conducted at the Medical Archives and serve as examples of retrospective studies that have utilized documentation from the health fields.

### WORKS INVOLVING TEXTUAL DOCUMENTATION

Textual documentation refers to records that primarily contain verbal data and information. Examples include correspondence, reports, and minutes. The media of textual documentation include both hardcopy and machine-readable records. Most of the textual documentation in the AMC Archives is still in hardcopy media (with ink on paper being most prevalent). Many of the early records are holographic; typewritten documents begin to appear around the turn of the century.

#### *Studies of Individuals and their Influences*

Biography is a major literary genre of the health fields. Because the western health professions have evolved largely in the heroic tradition, the commemoration of individuals who advance the frontiers is a longstanding practice. Although idealized biography has predominated, more probing studies of character have begun to appear. Whereas most of the subjects of the biographical studies listed below were practitioners in the health fields, other subjects include family, friends, and patients of practitioners in the health fields. Authors of the following biographical studies include practitioners of the health professions as well as professionals from other disciplines.

#### **Biographical Anthology**

Biographical anthologies are usually produced to document the influence of key individuals in particular professions, genders, or racial and ethnic groups. In the health fields, biographical anthologies sometimes serve as a vehicle for documenting the history of professions and the advancement of minorities in the professions.

V.L. Bullough, O.M. Church, and A.P. Stein, *American Nursing: A Biographical Dictionary* (2 vols) (New York: Garland, 1988-92).

M. Kaufman, Editor-In-Chief, and J.W. Hawkins, L.P. Higgins, and A.H. Friedman, cont. eds., *Dictionary of American Nursing Biography* (New York: Greenwood Press, 1988).

S.B. Nuland, *Doctors: The Biography of Medicine* (New York: Alfred A. Knopf, 1988).

*African Americans: Voices of Triumph, Leadership* by the editors of Time-Life Books, with a foreword by Henry Louis Gates, Jr. (Alexandria: Time-Life Books, 1994).

## Biography

Accounts of the life of one individual range from brief journal articles to long memorial essays and full length books. Scholars often use an individual as a focal point in studying the history of a discipline or an institution. Biographical research usually draws on the resources of several repositories. Documentation pertaining to the lives and careers of individuals may be found in the institutions where they studied and worked, as well as the repositories where they deposited their papers. The following citations are arranged around the nature of the biographical subject's affiliation with Johns Hopkins. The designation of the subject's affiliation with Johns Hopkins is usually the aspect of the subject's life that biographers may have studied with documentation from the Alan Mason Chesney Medical Archives. The major categories of affiliation are faculty, staff, and students. Other categories include individuals who were patients of Johns Hopkins physicians, and correspondents whose letters are found in institutional records and personal paper collections.

### *Faculty and Staff*

This listing includes faculty and staff of the Johns Hopkins Hospital and of the health divisions of the Johns Hopkins University, who held long-term, part-time, and special one-time appointments.

John Shaw Billings

C.B. Chapman, *Order Out of Chaos: John Shaw Billings and America's Coming of Age* (Boston: Boston Medical Library in the Francis A. Countway Library of Medicine, 1994).

Alfred Blalock

W.P. Longmire, Jr., *Alfred Blalock: His Life and Times* (Privately published, 1991).

Max Brödel

R. Crosby, and J. Cody, *Max Brodel: The Man who put Art into Medicine* (New York: Springer-Verlag, 1991).

Janet Howell Clark

E. Fee and A.C. Rodman, "Janet Howell Clark: Physiologist and Biophysicist, 1889-1969," *Physiologist* 28 (1985), pp. 397-400.

Walter E. Dandy

W.L. Fox, *Dandy of Johns Hopkins* (Baltimore: Williams and Wilkins, 1984).

William Henry Howell

E. Fee, "William Henry Howell: Physiologist and Philosopher of Health," *American Journal of Epidemiology* 119 (1984), pp. 293-300.

H. Newell Martin

W.B. Fye, "H. Newell Martin - A Remarkable Career Destroyed by Neurasthenia and Alcoholism," *Journal of the History of Medicine and Allied Sciences* 40, no. 2 (April 1985), pp. 133-66.

### Adolf Meyer

R. Leys, and R.B. Evans, eds., *Defining American Psychology: The Correspondence Between Adolf Meyer and Edward Bradford Titchener* (Baltimore: Johns Hopkins University Press, 1990).

D.P. Lumsden, "Professional Godfather: The Role of Adolf Meyer and his Students in Canadian and Chinese Psychiatry," *Santé Culture, Culture Health* 9, no. 2 (1992-1993), pp. 217-52.

### Arthur Newsholme

J.M. Eyler, "The Sick Poor and the State: Arthur Newsholme on Poverty, Disease and Responsibility," *Clio Med* 23 (1993) pp. 188-211.

### Isabel Hampton Robb

N.L. Noel, "Isabel Hampton Robb: Architect of American Nursing," (Ed.D. dissertation, Columbia Teachers College, 1979).

### Helen B. Taussig

J. Baldwin, *To Heal the Heart of a Child, Helen Taussig, M.D.* (New York: Walker and Company, 1992).

### John B. Watson

K.W. Buckley, *Behaviorism and the Professionalization of American Psychology: A Study of John Broadus Watson, 1878-1958* (Boston, 1982).

K.W. Buckley, *Mechanical Man: John Broadus Watson and the Beginnings of Behaviorism* (New York: Guilford Press, 1989).

### *Heroic Figures*

In the health professions, certain heroic figures have become venerated as icons of their respective disciplines. Such figures who have made major contributions and pioneered new courses serve as a source of inspiration for future generations and as role models for particular disciplines. Their careers and personal lives have thus become subjects of ongoing scrutiny. In some disciplines special societies have even formed to honor professional forebearers and to perpetuate their ideals. The membership actively publishes accounts of these figures' lives and their contributions. The study of heroic figures and their influences, therefore, comprises a subset of biography in the health fields. Special societies exist for at least three former faculty of The Johns Hopkins University School of Medicine: Sir William Osler, William Stewart Halsted, and Henry Sigerist.

Sir William Osler, whose career embodied the triple-faceted ideals of physician, teacher, and clinical investigator, continues to serve as a major role model for the medical profession. Numerous clubs and societies which have been named in his honor are committed to furthering the Oslerian tradition in medicine. Chief among these organizations is the American Osler Society which is a constituent society of the American Association for the History of Medicine.

In 1923 a group of surgeons founded a new surgical travel club and named it in honour of William Halsted for his pioneering role in introducing a scientific approach to surgery. Organized as the Halsted Club, the name was later changed to the

Halsted Society. In addition to perpetuating the memory of Halsted, the society is dedicated to furthering "the scientific principles and ideals for which he stood."<sup>9</sup>

Henry Sigerist is considered a seminal figure in the professionalization of the history of medicine. In 1990 a group of medical historians formed an association to honor Sigerist and, in particular, his commitment to social reform. "The Sigerist Circle is a group of medical historians and others interested in the history of health care and biomedical science who approach the field from feminist, Marxist, or other left-critical points of view. Its purpose is to encourage scholarship using such methodologies and to encourage historical inquiry that relates health and medicine to issues of class, race, gender, imperialism, etc."<sup>10</sup>

Members of these various societies frequently consult the Medical Archives because personal papers and institutional records pertaining to the careers of Osler, Halsted, and Sigerist are among the repository's holdings. The citations listed below present a selection of studies about the lives and ideals of these three former faculty from Johns Hopkins who have achieved elevated status in the history of the health professions.

#### William Osler

W.B. Fye, "William Osler," *Clinical Cardiology* 11, no. 5 (May 1988), pp. 356-58.

W.B. Fye, "William Osler's Departure from North America: The Price of Success," *New England Journal of Medicine* 320, no. 21 (May 1989), pp. 1425-31.

G.T. Harrell, "The Osler Family," *Journal of the American Medical Association* 248, no. 2 (9 July 1982), pp. 203-9.

G.T. Harrell, "Grace Revere Osler: A Turn of the Century Professor's Wife," *Annals of Internal Medicine* 93, no. 3 (September 1980), pp. 504-5.

T.S. Huddle, "Osler's Clinical Clerkship: Origins and Interpretations," *Journal of the History of Medicine and Allied Sciences* 49, no. 4 (October 1994), pp. 483-503.

#### William Halsted

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This category includes biographical studies that focus on the experiences of subjects while they were enrolled as students at the School of Medicine, School of Nursing, or School of Hygiene and Public Health. To gain access to student records, researchers must undergo the peer-review process described earlier in this article.

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U.E. Dydo, "Stanzas in Meditation: The other Biography," *Chicago Review* 35 (Winter 1985), pp. 4-19.

E. Nakajima, "Gertrude Stein's Medical Education and her Evolving Feminism," (Runner-up for the Osler Medal Competition of the American Association of the History of Medicine, 1987).

## Patients

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### Robert Worth Bingham

D.L. Chandler, with M.V. Chandler *The Bingham of Louisville: The Dark History Behind One of America's Great Fortunes* (New York: Crown Publishing, Inc., 1987).

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D. Thomson, *Showman: The Life of David O. Selznick* (New York: Alfred A. Knopf, 1992).

### Correspondents

This category includes studies of individuals who are represented by correspondence in the holdings of the AMC Medical Archives. Correspondence files of faculty and staff include letters from many eminent figures in the health professions, as well as letters from patients and their families, students, house staff, personal friends, and, in some instances, their own family members. Those correspondence files which contain sensitive material (e.g., patient correspondence) carry restrictions on access; researchers wishing access to restricted records must submit a formal request to the Committee on Access.

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M. Carey Thomas

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### **Autobiography**

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G.W. Corner, *The Seven Ages of a Medical Scientist: An Autobiography* (Philadelphia: University of Pennsylvania Press, 1981).

V.T. Thomas, *Pioneering Research in Surgical Shock and Cardiovascular Surgery: Vivien Thomas and his Work with Alfred Blalock, An Autobiography by Vivien T. Thomas* (Philadelphia: University of Pennsylvania Press, 1985).

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### **Necrology**

Obituaries and memorial essays are a major subset of medical biography; they are regularly published in journals of professional and voluntary associations. These necrological notices are frequently the first biographical accounts of an individual to be published and, therefore, serve as a starting point for future biographers.

D.G. McNamara, J.A. Manning, M.A. Engle, R. Whittemore, C.A. Neill, and C. Ferencz, "Helen Brooke Taussig: 1898 to 1986," *Journal of the American College of Cardiology* 10, no. 3 (September 1987), pp. 662-71.

### **Studies of Institutions**

There has been a great deal of interaction between Johns Hopkins and other educational institutions and health care delivery facilities, as well as with professional associations and foundations. Many Johns Hopkins faculty members have gone on to head departments at other institutions and have been active in professional associations. Over the years, foundations such as the Rockefeller Foundation and the Commonwealth Fund, and federal agencies such as the National Institutes of Health, have supported numerous programmes at Johns Hopkins. Thus, a significant amount of correspondence from various institutions may be found in the holdings of the AMC Medical Archives. Studies of institutions include chronicles of corporate development, assessments of institutional functions and the contributions of individuals involved, and studies that use the history of an institution to illustrate issues in the history of a profession.

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J.M. Kingsdale, "The Growth of Hospitals: An Economic History in Baltimore," (Ph.D. Dissertation, University of Michigan, 1981).

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C.M. Rosenberg, *The Care of Strangers: The Rise of America's Hospital System* (New York: Basic Books, 1987).

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M.B. Bullock, "The Rockefeller Foundation in China: Philanthropy, Peking Union Medical College, and Public Health," (Thesis, Stanford University, 1973).

M.B. Bullock, *An American Transplant: The Rockefeller Foundation and Peking Union Medical College* (Berkeley: University of California Press, 1980).

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## *Studies of Professions in the Health, Life, and Biological Sciences*

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### *Studies of Functions*

Functions of institutions in the United States health care system broadly include health care delivery (patient care and health promotion), biomedical research, education, regulation and policy formulation, and provision of goods and services.<sup>11</sup> Some works focus on the role of Johns Hopkins in the larger scheme of health system functions while others concentrate on the performance of specific functions at Johns Hopkins and elsewhere.

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## WORKS INVOLVING VISUAL DOCUMENTATION

During the twentieth century, recorded documentation in the health fields has become increasingly visual. Beginning with applications of still photography at the turn of the century, the use of visual formats for the presentation of scientific and clinical evidence has grown considerably. On the other hand, portraiture, like biography, has long served as a form of commemoration for individuals who have advanced the health professions. From antiquity to modern times, portraiture has played a significant role in documenting key figures in the history of western medicine.

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## OTHER TYPES OF RESEARCH

Whereas the works previously cited are largely retrospective in scope, some users have also utilized repository holdings to design prospective studies. Several instances

of prospective research involve patient records. One investigator from the National Institutes of Health researched patient files of Helen Taussig, the eminent pediatric cardiologist, to prepare a follow-up study of patients who had been exposed to radiation when they underwent fluoroscope procedures. The purpose of his study was to monitor the patients and to look for early signs of cellular change. Other prospective studies have involved the use of surgical and pathological logbooks to observe epidemiological patterns and to locate former patients for follow-up clinical studies.

### WORKS IN PROGRESS

Although our study has concentrated mainly on completed works, we feel obliged to make note of several key works in progress. In the past two years there has been a discernable increase in research involving patient records and laboratory research data. Most of the researchers utilizing clinical and scientific documentation are medical students and graduate students in anthropology, history, and sociology who are writing dissertations or conducting other types of research projects.

Over the past few years institutional administrators have urged archival staff to accession collections of clinical and scientific documentation and to explore ways these collections may be made available for reference and research. In turn we and other colleagues have explored options for preserving clinical and scientific documentation so that it may be used for teaching and research in the health fields and other disciplines. Currently we are studying ways to make clinical and scientific documentation from the early twentieth century more accessible for archival reference and research. We are conducting two case studies to explore ways clinical and scientific data may be digitized for use in archival reference and research.<sup>12</sup>

### *Conclusion*

Our review of user activities at one repository concludes with the following observations:

- if archival documentation from the health fields is made accessible for research, it will be studied by investigators from various disciplines;
- the same topics may be studied from the perspectives of different disciplines;
- the same documentation may be examined by means of different methodologies and may be used in different disciplines;
- the study of archival documentation from the health fields may be used to advance the knowledge of numerous disciplines; however, it is more widely used to advance the knowledge of the health fields.

As we followed user activities from previous years, we naturally began to anticipate what the future will hold. Recognizing that the majority of the users and publishers cited represent non-profit institutions raised concerns. Throughout the United States and other countries the existence of non-profit institutions is being threatened with severe cutbacks and even the possibility of extinction. Academic health centres are in particular jeopardy because of projected loss of patients to managed care pro-

viders and reductions in funding for research. The compounded effect of these two critical reductions in support will have a major impact on the quality of teaching and research at academic health centres. Archival and library programmes at these centres will undoubtedly also be adversely affected.

Moreover, funding for support of the humanities and the social sciences is being curtailed. As a result, many academic programmes of faculty and students who conduct research at archival repositories in the health fields are now facing new financial constraints. Programmes in the history of science are among the first to suffer major cutbacks in grant funding. Much of the driving force for cutting funding for the National Endowment for the Humanities and the History of Science division of the National Science Foundation is ideological rather than economical. In a recent interview government administrators report that cuts in funding for the history of science are largely due to the political climate rather than a failure to compete. Many newly-elected members of Congress have publicly avowed a dislike for the humanities and the social sciences in particular. Arnold Thackray from the Chemical Heritage Foundation in Philadelphia expresses hope that this present crisis will stimulate the history of science discipline to wean itself from governmental support and to look for other sources of funding in science and industry. He and other historians of science are beginning to urge new Ph.D.s to find employment outside of academia in museums, journalism, and policy-making in science, technology, and industry.<sup>13</sup>

The prospect of reductions at teaching hospitals and professional schools in the health fields is compounded by rising costs of health care delivery and research. A particularly significant factor is the escalating cost of scientific publishing. Because new knowledge in the health fields is reported mainly through publications of journals, the annual costs of subscriptions is a major cost factor in the management of libraries. One increasingly common method of cost-cutting at health sciences libraries is cancellation of subscriptions. Whereas cancellations are based mainly on use studies, the least used journals are the most vulnerable. Unfortunately, in an era of pragmatic downsizing, journals devoted to the history and sociology of the health sciences are at particular risk. At the same time, as more journals go on-line, health sciences libraries are able to offer more comprehensive electronic access to the literature but not at significant cost-savings. In addition, more researchers in the health professions are beginning to bypass journals for more rapid dissemination of research findings in electronic databases on the Internet.

Administrators at academic health centres are especially frustrated by the longstanding fiscal imbalances in scientific publishing. In the current cycle of scientific publishing, faculty members must obtain outside funding to conduct their research and to pay the institutional overhead for their laboratory space. After completing research and publishing findings in professional journals, neither the faculty members nor their institutions are remunerated for their services by the publishing industry. However, the institutions--and the library in particular--must bear ongoing and rapidly rising costs of journal subscriptions. In the widespread restructuring of scientific communication that is beginning to occur, scientists, librarians, and other information specialists are considering ways that scientific investigators and their respective institutions may gain more autonomy and financial control for the publication of their research and other forms of intellectual property.

In Nina Matheson's prescient lecture to the Medical Library Association in 1994, "The Idea of the Library in the 21st Century," she states that "The fundamental idea of the library must change. The 19th-century idea of the library as the embalming of dead genius, and the 20th-century ideal of the library as the repository for second-hand knowledge, must give way to the idea of the library as the owner, and the librarian as the manager, of first-hand knowledge."<sup>14</sup> Some futurists such as Andrew Odlyzko of AT&T Bell Laboratories even predict the extinction of professional journals in the restructuring of scholarly communication that is beginning to occur. In his article "Tragic Loss or Good Riddance? The Impending Demise of Traditional Scholarly Journals," Odlyzko also forecasts the demise of traditional libraries.<sup>15</sup> However, in a more favourable view of the future of libraries, James O'Donnell predicts that we will enter "a world in which the library will cease to be a warehouse and become instead a software system...." In the world that he envisions, "the value of the institution will lie in the sophistication, versatility, and power of its indexing and searching capacities."<sup>16</sup>

Whereas archives in the health fields face constraints that are similar to those that health sciences libraries are encountering, they also share a pivotal role in the future of scholarly communication. As repositories for the raw materials of knowledge, they must be prepared to make their documentation more widely accessible through electronic means. Since researchers from non-profit institutions will have fewer funds for travel, they will need to have more expanded means of remote access to archival sources. Furthermore, as professional journals in print media begin to convert to electronic formats, authors and readers alike will become more reliant on electronic modes of communication.

An increased demand for remote use of archival sources, however, will place pressure on archivists to provide on-line finding guides with more comprehensive descriptions of documentation from their repositories and, in some instances, examples of the documentation itself. As archival repositories expand their user services functions to accommodate more remote use of their holdings, they will also have to be prepared to upgrade document delivery services with more options for transmission from electronic mail and telefacsimile to courier services and regular "snail mail."

In many instances archivists will have to reevaluate the evidential and informational content of repository holdings to provide more descriptive finding aids for users. By studying user activities--topics of their research, documents consulted, and works produced--archivists may augment their descriptions of documentation with greater awareness of evidential and informational content. Enhanced description and remote access to holdings will entail collaboration with both domain experts and information specialists. In the same way that users and managers of new databases on the Internet such as the Genome Data Base work closely together to develop new tools for the representation, analysis, and synthesis of knowledge, archivists in the health fields must begin to work more closely, not only with the users of their holdings, but also with the creators of documentation at their institutions. The role of the archivist must ultimately shift from the storage and preservation of documentation in original formats to the conversion of the intellectual content of documentation into digital formats, the preservation of the integrity of the original content, and the dissemination of content to a world-wide audience of users.

As more primary documentation in the health fields is generated in electronic formats, archives as well as libraries will have to assume the functions of large interactive systems of software. In the ongoing chain of knowledge, archives will continue to maintain the raw source materials, while the library will be the manager of synthesized knowledge. To both institutions, collaboration with the creators and users of documentation will be essential.

Whereas the traditional users of archives in the health fields have come from diverse disciplines, they have been essentially limited to an elite cadre of academics. Electronic access will most certainly broaden the user pool. The democratization of access will bring a wider use of archival holdings from the health fields and the corresponding evolution of new knowledge. Archivists at institutions in the health fields must be poised to face the opportunities as well as the new demands that the processes of democratization will spawn. One of the greatest opportunities will be the cross-disciplinary collaborations for the preservation and use of primary documentation. In the coming revolution of knowledge, archivists will have to define an expanded new role for their profession. Archivists in the health fields will have to re-define their vision for the future. In the spirit of Marshall McLuhan, they must begin to look through the windshield instead of the rear-view mirror.

Visit the Alan Mason Chesney Medical Archives in cyberspace:

<http://www.med.jhu.edu/medarchives/awelcome.htm>

### Notes

- \* In reviewing reference correspondence (1978-1994), we found documentation of dedicated and conscientious work on the part of the reference staff. Even during the upheaval of two moves, when the archives was closed for extended periods, the staff made every effort to provide ongoing reference services to researchers from remote storage. Gerard Shorb, who directs user services, deserves commendation for his generous help to users over the years. We are also most grateful to M. Crawford Keenan, former reference assistant, for his collaboration in the initial stages of our research.
- Special thanks go to Patricia Stephens, Director of the Welch Medical Library's scientific editing service, for her expert help in shaping this manuscript. In addition, we are grateful to Edward Morman, Director of the Historical Collections of the Institute of the History of Medicine, for guiding us to bibliographic citations and for the constructive editorial suggestions that he made.
- 1 Clark A. Elliott, "Citation Patterns and Documentation for the History of Science: Some Methodological Considerations," *American Archivist* 44 (1981), pp. 131-42.
- 2 *Ibid.*, p. 133.
- 3 Frederic Miller, "Use, Appraisal, and Research: A Case Study of Social History," *American Archivist* 49 (1986), pp. 371-92.
- 4 Catherine Hidalgo-Nunez-Wohlleben's study of the history of medicine literature included journal articles from 1977 and 1987; she examined articles from the *Bulletin of the History of Medicine*, the *Journal of the History of Medicine and the Allied Sciences*.
- 5 Paul Anderson, "Appraisal of the Papers of Biomedical Scientists and Physicians for a Medical Archives," *Bull. Med. Libr. Assoc.* 73, no. 4 (October, 1985).
- 6 Paul Anderson, "Archives as Fundamental Resources for the Study and Teaching of History," in Nancy McCall and Lisa A. Mix, eds., *Designing Archival Programs to Advance Knowledge in the Health Fields* (Baltimore, 1995).
- 7 Deborah McClellan and Nancy McCall, with Anne Slakey, "Promoting and Facilitating Wider Use of Holdings," in *Ibid.* (Includes an expanded discussion of access and use of archival holdings in the health fields.)
- 8 We consulted registration files and guest books for documentation of on-site use and telephone logs and correspondence files for documentation of remote use. Because the three divisions of the archival programme (historic records and personal papers, contemporary records, and fine arts and artifacts)

had employed different criteria for the collection of user data, it was not possible to obtain precise figures for the overall number of users. Other complications in the review of statistics were the skewing of data when the Medical Archives was closed for extended periods in 1988 and 1993 to accommodate moves to new locations and when use figures rose in 1989 for the centennial of The Johns Hopkins Hospital and in 1993 for the centennial of The Johns Hopkins University School of Medicine.

By selecting three periods outside the range of skewed statistics (1986: Jan.-Dec.; 1990: Mar.-Dec.; and 1994: Jan.-Dec.) and averaging user statistics from these periods, we were able to make the following estimates of archival use for historic records, personal papers, and contemporary records:

Average number of remote users per month.....	38.7
Average number of on-site users per month.....	13.4
Average of total number of users per month.....	52.1
Average number of users affiliated with Johns Hopkins per month (55%).....	28.7
Average number of users affiliated with external institutions per month (45%).....	23.4

- 9 *The Halsted Society : Constitution, Bylaws, and List of Members* (1981).
- 10 Personal communication from Edward Morman (20 March 1996).
- 11 Joan D. Krizack, *Documentation Planning for the U.S. Health Care System* (Baltimore, 1994) for a more expanded discussion and a definition of health system functions.
- 12 Nancy McCall, Lisa A. Mix, and Anne J. Gilliland-Swetland, investigators, "Digitizing Patient Information and Laboratory Research Data for Archival Reference and Research." Conducted as part of the Research Fellowship Program for the Study of Modern Archives, funded by the Andrew W. Mellon Foundation, the Division of Preservation and Access of the National Endowment for the Humanities, and the Bentley Historical Library, University of Michigan.
- 13 Peter Gwynne, "Historians of Science Face Up to Funding Crisis, Employment Crunch," *The Scientist* 10, nos. 3-5 (5 February 1996), p. 1.
- 14 This Janet Doe Lecture on the History or Philosophy of Medical Librarianship was presented 16 May 1994 at the Ninety-Fourth Annual Meeting of the Medical Library Association, San Antonio, Texas. It has been published in the *Bulletin of the Medical Library Association* 83, no. 1 (January 1995), pp. 1-7.
- 15 A.M. Odlyzko, "Tragic Loss or Good Riddance? The Impending Demise of Traditional Scholarly Journals," *International Journal of Human-Computer Studies* 42 (1995), pp. 71-122.
- 16 J.J. O'Donnell, "St. Augustine to NREN: the Tree of Knowledge and How it Grows, in M. Strangelove, *Directory of Electronic Journals, Newsletters and Academic Discussion Lists* 3rd ed. (Washington, D.C., 1993), pp. 1-11.