

**The Information Needs and Information-Seeking Behavior of Musicians:  
An Annotated Bibliography**

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## **Introduction and Scope**

The following bibliography covers the information-seeking behavior and information needs of musicians of many styles and disciplines. It's an overview of scholarly research in a broad field with a focus on breadth over depth in an attempt to show the variety of the art and the specialized needs that each variant brings. The articles listed were published from 1978 to 2007 in various scholarly journals and on the Internet. While more recent articles are stressed, a few older ones are included to show the immense changes that have occurred in the past ten years thanks to digital information access.

This bibliography may well be used by a library to raise questions as to whether or not they are addressing the needs of these various subsets of musicians, some of which may not readily come to mind when thinking of musicians in general. Also included later will be suggestions for resources for music lovers and students designed to enhance their learning and appreciation.

## **Definition of User Group**

While there is a general lack of research on musicians in general, much of the existing papers focus on academic musicians, a group that is actually a small percentage of the overall picture. Musicians perform and record in a huge variety of styles, from classical to jazz to rock to ethnic musics of every imaginable type. They pursue a wide variety of career choices, some of which will be reflected in this bibliography.

For the purposes of this paper, I have also chosen to think of a musician as not being limited by his actual profession. There are many young musicians who cannot make a living by playing the music they know and love. They wait on tables, take factory jobs, and cobble together a living anyway they can, trying to spare enough free time to play in an ensemble on weekends. Can we say they're not musicians because they don't have a job description that says they are, even though they may have more dedication and true passion for the art than a burned-out professional may have? Is a musician defined by the number of hours he plays an instrument or vocalizes? If so, there are a lot of academics teaching the art of music

who are not musicians themselves, since they spend their days in research, teaching, preparing classes, and dealing with the myriad details their careers demand in lieu of physically performing. Trying to define who is or is not a musician becomes a slippery slope, and is beyond the scope of this bibliography.

So for these reasons this paper will give an overview of the informational habits of anyone who needs musical knowledge to add to their appreciation and understanding of music in all its forms.

### **Summary of Findings**

Academic research, papers, and articles tend to focus strongly on musicians who work in academic circles such as teachers, music librarians, and music historians. One might suspect that it's easier to access these people in an academic environment, so they become subjects of the studies involved. After all, it's easier to check interview points with a colleague in a university rather than having to check with an ethnomusicologist in Athens studying ancient Greek modes in the libraries of museums there, or to check with a rock musician who lives on the road, keeps impossible hours, and doesn't return your e-mails or calls! But it's possible that the reason for this focus on academic musicians is the result of a more subtle reality.

Musicians are an unusual group of intellectuals in that their "research" and "thesis writing" can take the form of listening to other people's music for many hours, practicing for even more hours, and releasing a CD of new original music every other year or so. Even within the halls of education I have found that relatively few teachers do serious research with the goal of an academic paper, compared to their peers in other fields. Professional success in this field is measured by live performance ability and the audio releases into the commercial market that the artist is able to realize. The release of an independent CD requires as much if not more work as a major thesis paper, and the artist knows that the audience for his work will cross many cultural boundaries and appeal to more people than the average masters or doctoral thesis. So there is a kind of "bowing to the inevitable" and a pervasive disinterest in major written research within the field. When research occurs, most of the time it's done for the purpose of improving one's own

understanding and knowledge of a type of music not yet mastered. The attitude seems to be that the fruits of the research come out filtered through one's own sensibility in live performance.

One other characteristic of musicians' research is that a lot of it is less focused on a goal and much more instinctual than traditional research. If a jazz musician is looking for information on the life of Charlie Parker, chances are that he or she has a pre-existing interest in Parker and is looking for anecdotes and perhaps a clue about where his inspiration sprang from. A classical musician comparing piano performances of a Beethoven sonata is mining the field for promising performance decisions concerning phrasing, balance, and timing. Much of his discovery through research can even be said to be noncommunicable through any other means than actually playing music and demonstrating his discoveries through context. Most music theory occurs after the fact, explaining logically what it is that the musician did. Most of the time a searching musician doesn't even know exactly what he or she is looking for, but they have the certainty that they'll know it when they hear or see it. Their information behavior is more akin to browsing in a promising area than a focused attack on one particular concept.

For the reasons above, and probably more, musicians' research habits do not lend themselves well to analysis and study. Throughout the articles cited, the authors decry a lack of material on the subject and more than once claim their paper is written to fill a need or address a deficiency in the literature. Almost all of the research is done through interviews and questionnaires and not through direct observance.

Another finding that comes from the articles cited is that the digital information revolution is greatly impacting the information habits of music lovers. When music is as omnipresent as in our society, the problem becomes not how to find information but rather how to filter out the data overload. Most researchers in all the different fields have their favorite sources of information and need guidance in how to narrow the range down to what they want.

When musicians are looking for information, the great majority of the time they will be looking for actual music, that is, recorded performances and musical

scores. Music is a very abstract art consisting of creating vibrating air molecules organized into patterns and occurring in real time. It took a thousand years to come up with a notational system that gets close to describing the art itself, and any performing musician will tell you that even with that history it falls sadly short of communicating anything but a basic recipe of what to do to recreate a musical piece, necessitating a long apprenticeship of performance to understand the subtle intuitive gestures that makes the recipe come alive into vibrant music. Writing about music takes an even further step away from the essence. Therefore, musicians tend to look for what corresponds to a primary source in their research, the music in some form itself.

With all these characteristics of musical research in mind, the tremendous challenge for libraries, and one that is brought up in several of the articles, is to provide a new type of search interface to deal with this reality. Some solutions suggested include computer-enhanced audio analysis that can recognize musical meaning in an audio source, enabling someone to get an answer to the usually frustrating question, "What's the name of that tune that goes da-dee-da-dum?" This problem of an adequate search interface for music is not limited to libraries, but has enormous economic consequences for the merchants of music and licensors of intellectual property rights as well.

One other research tool that holds great importance in musical research is the journal or magazine. Musical styles and tastes are in a state of constant flux and there's a huge range of publications in this format covering everything from electronic music production to country and western fanzines. Some topics are so ephemeral that books are outdated by the time they are published and only a monthly release can keep current with the changing trends. So periodicals have a greater importance in this field since a lot of the material is covered in only this way.

The last thing that becomes obvious in these findings is the shift away in music scholarship from the traditional western art music which dominated academic discourse throughout the 19<sup>th</sup> and 20<sup>th</sup> Centuries. It has moved into a wider stylistic inclusion encompassing popular commercial music (including jazz, rock, rhythm and blues, and popular vocal styles), electronic music, and world

ethnic musics of every imaginable description (as well as the hybrid popular forms springing up from their inclusion). Most of this shift has occurred in the past twenty-five years. Part of this shift comes from a sense that western art music has already been well documented and analyzed, and part of it comes from a sense of excitement that there are new topics to work with, born from the huge growth of the media industry of the 20<sup>th</sup> Century which allowed previously obscure musics to find a larger audience and a larger acceptance. While there is still resistance to including these musics in scholarly discourse by the classical academics, time and again these articles made the argument that they are valid expressions of art and worthy of serious study. The newer generation of researchers seem to have much less stylistic snobbery, the sense that one's favorite music is the only valid music out there.

We grow as a society by encompassing and understanding more as time goes on. I hope this list reflects that growth in music scholarship and provides material for consideration as librarians assess their holdings and ask whether their collections are encompassing the wide net being thrown out in musical research today.

## Bibliography

### Entry 1:

Baker, D. (1978). Characteristics of the literature used by English musicologists. *Journal of Librarianship and Information Science*, 10, 182-200.

**Abstract:** “A total of 7433 footnote references from articles in three English musicological journals...were analyzed according to form of publication (manuscript or printed), bibliographical form, place and date of publication and, where appropriate, language...References to periodical articles were also analysed separately according to frequency of citation within the three journals. To complement the footnote analysis, a questionnaire was sent to a representative selection of English musicologists asking them to specify which materials they used in the preparation of their periodical articles.

The result of the two surveys are discussed in the context of bibliometric research in other areas as well as present-day musical scholarship itself. Attention is drawn to those bibliographical forms which, for no apparent reason, appear to be under used. Suggestions are made as to the practical uses the results of the study could have for librarians and musicologists.” [from the published abstract]

**Annotation:** A far-reaching analysis of the musical research habits of the mid-1970's, and from the vantage point of the 21<sup>st</sup> Century, an interesting snapshot of how scholarly research was, compared to what it has become. One is struck by the assumptions that all the research material will be about western European classical composers, and the analysis points out the lack of interest in modern classical music in two of the three journals and the preponderance of the 18<sup>th</sup> Century composers in the pages of them. Despite its age, this article is valuable, serving as a model of how scientific methods can be used to analyze research behavior as evidenced in the results of that research. The work is thorough and comprehensive within the limits of its assumptions, and is written clearly with tables showing the statistics generated by the analysis. Judging by the number of times this article has been cited elsewhere, Mr. Baker (1978) did have his wish as stated in his conclusions come true: “It is to be hoped that the present study will be followed by further surveys of the literature of musicology...and that librarians and scholars may be able to exploit the research literature of their subject more effectively because of them.”

### Search Strategy:

I first noted this article in the bibliography of the 2002 Christine Brown article cited below, and it showed up throughout various Dialog searches which made me feel it was a classic that was referred to over the years in research. The ILLiad service from Drexel tracked down a copy and forwarded it to me.

**Database:** N/A

**Method of searching:** Footnote chasing

**Search String:** *Referenced in:* Brown, C. (2002). Straddling the humanities and social sciences: the research process of music scholars. *Library and Information Science Research*, 24(1), 73-94.

Entry 2:

Brown, C. (2002). Straddling the humanities and social sciences: the research process of music scholars. *Library and Information Science Research*, 24(1), 73-94.

**Abstract:** “Few research projects have focused on the information needs of the music scholar. What is known about the information needs of the music scholar has been gathered through large-scale studies of various humanistic disciplines. This article describes a six-stage model of the music scholar’s research process. The model was constructed contextually through interviews with 30 music scholars who were asked to describe a recently completed research project. Research activities pertaining to specific stages in the research process are identified and described. This study compares existing models of the research process of other humanities scholars and explores the implications for library and information science professionals.” [published abstract.]

**Annotation:** Extremely thorough and wide-ranging study of information behavior of music scholars. Accomplishes the establishment of a five-stage model and compares it to scholars in other humanities. Diagrams and tables organize the material thoroughly and clearly. The bibliography is a treasure trove of related studies and overviews of the field.

**Search Strategy:** I tried various search strings in DialogClassic, allowing for British variant in spelling. Once discovered, I obtained it (as with most others in this paper) from Drexel Library’s online journal link.

**Database:** Dialog, File 439: Arts & Humanities Search

**Method of Searching:** Keyword search with proximity and truncation

**Search String:** s music? and info?()(seeking or need? or behavior or behaviour)



### Entry 3:

Brown, C. (2001, January). The role of computer-mediated communication in the research process of music scholars: an exploratory investigation. *Information Research*, 6(2). Retrieved May 22, 2009, from <http://informationr.net/ir/6-2/infres62.html>

**Abstract:** “Music scholars' use and perceptions of the helpfulness of e-mail and electronic discussion groups are described. Diffusion of innovations theory is used to describe and assess the music scholars level of agreement with statements concerning the relative advantages and compatibility of e-mail and electronic discussion group use within the context of the research process. Data were collected via interviews and a survey administered to music scholars in Canada and the United States. Music scholars rated e-mail as consistently more helpful than discussion groups for selected activities in the research process. Scholars who found discussion groups not helpful in their research reacted by periodically unsubscribing, a pattern of intermittent discontinuance consistent with diffusion theory. These modes of computer-mediated communication were found to play marginal roles in the music scholar's research process.” [published abstract]

**Annotation:** For researchers in information behavior with a more scientific focus, this is a scholarly treatise that zeroes in on e-mail and discussion groups and their use by music scholars conducting research. While containing charts, it's difficult to draw out information readily from these overly technical aids. In the end, electronic networking doesn't play much of a role in musical research, but for those people wondering why this is so, this is a authoritative if dry resource.

**Search Strategy:** Looking through the references for the previous Christine Brown article, I saw this promising title. In her citation, she provided the link as above.

**Database:** N/A

**Method of Searching:** Footnote chasing

**Search String:** *Referenced in:* Brown, C. (2002). Straddling the humanities and social sciences: the research process of music scholars. *Library and Information Science Research*, 24(1), 73-94.

#### Entry 4:

Byrd, D. & Crawford, T. (2002). Problems of music information retrieval in the real world. *Information Processing and Management*, 38(2), 249-272.

**Abstract:** “Although a substantial number of research projects have addressed music information retrieval over the past three decades, the field is still very immature. Few of these projects involve complex polyphonic music; methods for evaluation are at a very primitive stage of development; none of the projects tackles the problem of realistically large-scale databases. Many problems to be faced are due to the nature of music itself. Among these are issues in human perception and cognition of music, especially as they concern the recognizability of a musical phrase. This paper considers some of the most fundamental problems in music information retrieval, challenging the common assumption that searching on pitch or pitch-contour alone is likely to be satisfactory for all purposes...Almost all text-IR methods rely on identifying approximate units of meaning, that is, words. A fundamental problem in music IR is that locating such units is extremely difficult, perhaps impossible.” (from the published abstract]

**Annotation:** Probably the most frustrating information need a musician has is the retrieval of musical information from an aural source, a piece of music. This is a need that cuts across all boundaries and specialties in the field of music, and its workings in our minds one of the least understood. This scholarly paper, addressing this information-mining procedure, is not recommended for the musically uninitiated as it is very technical in its vocabulary and assumes a great familiarity with reading musical notation and with the aural concepts involved. However, it is a well-considered summation of an esoteric but quickly growing field of both brain and musical research. It considers many facets of musical sound (including rhythm patterns, duration, range of frequency, and polyphony among other topics) and their perception to the musician. It also offers suggestions for topics for further research and calls for a system of categorization similar to text-based systems. In all, a very impressive and thorough overview of a poorly understood area of knowledge.

<b>Search Strategy:</b>	Wanting to check out the Web of Science, I searched in Dialog in File 7, trying a title search as well. Full text was received through Drexel Library's online journal link.
<b>Database:</b>	Dialog File 7: Social SciSearch
<b>Method of searching:</b>	Title search
<b>Search String:</b>	s music()info?/TI

### Entry 5:

Carlisle, J. (2007). Digital music and Generation Y: discourse analysis of the online music information behaviour talk of five young Australians. *Information Research*, 12(4), 25-35.

**Abstract:** “This paper presents a research study into competing discourses in digital music; highlights discourse analysis as a research methodology; and social constructionism as a conceptual basis for library and information science research...The research found that music digital library users are potentially coming from vastly different perspectives. Recognising that more than one perspective exists is necessary for developing systems that are usable by more people. Future research is needed into how the various stakeholders are using these discourses to further their own ends. Discourse analysis provides a strong research-based description of context for user information behaviour; and is shown to be a highly relevant theory and methodology in library and information science research.”  
[from the published abstract]

**Annotation:** The most interesting part of this paper concerns attitudes of music downloaders in a young (18-22) group, dividing the attitudes into three parts: the Romantic (people who see the artists as having a special gift and will support them for this talent), the Consumer (the mass media market’s offerings as product, and the resultant resistance of some users against this), and the Multicultural (people who see all music as having value to someone, and thus are nonjudgmental about selection). However, this intriguing premise is compromised by the very small sample group used and their relative inarticulateness, all wrapped up in academic lingo in what seems to be an attempt to bring respect to what the author seems to fear is shaky scholarly ground. If he protested less, the excellent questions and points raised would carry even more weight.

**Search Strategy:** Wanting to check out the Web of Science, I searched in Dialog in File 7, trying a title search as well. Full text was received through Drexel Library’s online journal link.

**Database:** Dialog File 7: Social SciSearch

**Method of searching:** Title search

**Search String:** s music()info?/TI

### Entry 6:

Casey, J. and Taylor, K. (1995). Music library users: who are these people and what do they want from us?”. *Music Reference Services Quarterly*, 3(3), 3-14.

**Abstract:** “What are the true needs of music library patrons? In the almost complete absence of patron surveys, the authors question whether libraries are making valid assumptions regarding patrons’ needs. An informal survey of public and academic music libraries revealed three major changes that have recently affected music libraries and the expectations of their users: the proliferation of the compact disc, computer technology, and the types of music studied and listened to, that being popular and non-western music rather than western art music. “ [from the published abstract]

**Annotation:** This paper is useful as a baseline reading for changing needs in our user group. In the fifteen years that have passed since its publication, the three trends identified have increased exponentially and have become the main concern of many music librarians. Computer use and changing tastes encompassing more than the traditional western classic music have redefined libraries in this field. Only the focus on compact discs seems a bit antiquated in our mp3 world today, but the points they make concerning them remain valid; if one substitutes “mp3” into their statements concerning “CD”s, the statements could be made today without error. One curious note: the authors feel the most profound change was the swing away from Classical music, which is a change that has become so profound that most public libraries assume the current state as the norm, leaving only older academic music librarians to wonder where things went wrong. Overall, this is a clear-minded and prescient examination of music library users’ needs at the end of the 20<sup>th</sup> Century.

**Search Strategy:** I found references in Dialog File 438 to a master’s theses (which I couldn’t use in this paper), but I noticed a few promising references in the notes. The full text copy came from Drexel’s ILLiad service.

**Database:** N/A

**Method of searching:** Footnote chasing

**Search String:** *Referenced in:* Narveson, L. (1999). The information needs and seeking behaviors of amateur musicians: a qualitative study. *A Master’s paper for the M.S. in I.S. degree, University of North Carolina at Chapel Hill.*

#### Entry 7:

Caw, T. (2004). Popular music studies information needs: you just might find.... *Popular Music and Society*, 27(1), 49-54.

**Abstract:** “Popular music has long been derided as frivolous and ephemeral, but it has proved to have a lasting cultural impact worthy of scholarly work. Just as rock and roll is here to stay, so are the academics devoted to studying it and all the other sounds contained under the ‘popular music’ rubric.” [Published abstract.]

**Annotation:** Noting that the study of popular music in an academic setting has been breaking down barriers for three decades, Caw points out the lack of written scores and dominance of performance over composition in this field, suggesting that emphasis be placed on aural rather than written material. He makes an argument that just as ethnomusicology gained academic acceptance via anthropology, so popular music is making inroads via media studies, sociology, English and communication studies. Also pointed out is the predominance of journals rather than books in the field.

**Search Strategy:** I tried various search strings in DialogClassic, allowing for British variant in spelling. Once discovered, I obtained it from Drexel Library’s online journal link.

**Database:** Dialog, File 439: Arts & Humanities Search

**Method of Searching:** Keyword search with proximity and truncation

**Search String:** s music? and info?()(seeking or need? or behavior or behaviour)

#### Entry 8:

Gottlieb, Jane (1994). Reference service for performing musicians: understanding and meeting their needs. *The Reference Librarian*, 47, 47-59.

**Abstract:** “Describes the provision of library services to performing musicians in a music conservatory and focuses on their need for information in three main categories: (1) access to collections through library catalogs and other sources, (2) sources for the study of musical scores, and (3) research using sources for contextual and background research.” [from the published abstract]

**Annotation:** This article is not a scientific study, but is an anecdotal account of questions and inquiries made by conservatory music students at the Julliard school in New York City. Drawing from her experience, Gottlieb uses the students’ questions as evidence of what their information needs are and finds that the majority of demands center on acquiring recordings and scores. This is material that has been covered in more scientific depth in other articles, but this paper gives

us an indication of how the information needs of regular performing musicians was a new topic in the mid-90's and how much this concern has grown in the years since. One omission that could have helped broaden our perspective on this: only the conservatory students were considered and there is no contrast with other students' requests, an inclusion that most contemporary studies have.

**Search Strategy:** I found references in Dialog File 438 to a master's theses (which I couldn't use in this paper), but I noticed a few promising references in the notes. The full text copy came from Drexel's ILLiad service.

**Database:** N/A

**Method of searching:** Footnote chasing

**Search String:** *Referenced in:* Narveson, L. (1999). The information needs and seeking behaviors of amateur musicians: a qualitative study. *A Master's paper for the M.S. in I.S. degree, University of North Carolina at Chapel Hill.*

#### Entry 9:

Haus, G., Longari, M., & Pollastri, E. (2004). A score-driven approach to music information retrieval. *Journal of the American Society for Information Science and Technology*, 55(12), 1045-1052.

**Abstract:** "As the dimension and number of digital music archives grow, the problem of storing and accessing multimedia data is no longer confined to the database area. Specific approaches for music information retrieval are necessary to establish a connection between textual and content-based metadata. This article addresses such issues with the intent of surveying our perspective on music information retrieval. In particular, we stress the use of symbolic information as a central element in a complex musical environment. Musical themes, harmonies, and styles are automatically extracted from electronic music scores and employed as access keys to data. The database schema is extended to handle audio recordings. A score/audio matching module provides a temporal relationship between a music performance and the score played. Besides standard free-text search capabilities, three levels of retrieval strategies are employed. Moreover, the introduction of a hierarchy of input modalities assures meeting the needs and matching the expertise of a wide group of users. Singing, playing, and notating melodic excerpts is combined with more advanced musicological queries, such as querying by a sequence of chords. Finally, we present some experimental results and our future research directions." [published abstract]

**Annotation:** One of the ongoing themes running through these articles cited is the fact that modern musicians' information retrieval has a strong emphasis on audio sources and musical scores. These are data resources that are poorly served by the traditional search interface. This article is revolutionary in its proposals for updating that interface and making the information musicians seek much more accessible. Clearly laid out and supported with proposed diagrams, these ideas, if implemented, would make any music library user think, "Of course! Why didn't they do this before?" as they, for example, play a melodic passage into a search engine from a piano keyboard and retrieve the data on the composition in which it appears. Authoritatively stated and ingenious in its approach, this article is a must-read for anyone who has ever wondered why it's so hard to find musical information in a meaningful context.

**Search Strategy:** Wanting to check out the Web of Science, I searched in Dialog in File 7, trying a title search as well. Full text was received through Drexel Library's online journal link.

**Database:** Dialog File 7: Social SciSearch

**Method of searching:** Title search

**Search String:** s music()info?/TI

#### Entry 10:

Hunter, B. (2006). A new breed of musicians: the information-seeking needs and behaviors of composers of electroacoustic music. *Music Reference Services Quarterly*, 10(1), 1-15.

**Abstract:** "The musical potential of computers has increased exponentially in recent decades, and music composition programs have seen drastic shifts in their landscape as a result. Composers of electroacoustic music are an idiosyncratic group of library patrons, their creative endeavors serving as a model of interdisciplinarity. Drawing from fields including computer science, engineering, and mathematics, these composers present a unique challenge for librarians charged with meeting their information needs. This article discusses some of the innovative ways in which composers of electroacoustic music seek and use information as well as recommendations for librarians to help better serve this diverse group." [published abstract].

**Annotation:** An up-to-date and esoteric look at how composers have information needs very different from research scholars. In a changing field for which the participants can't even agree on a common name, the research needs evolve rapidly.

Hunter examines several questions: what information and in what categories do these composers seek data? Where do they go for it, what factors affect their search, what barriers hinder them and how can information professionals better serve them? Despite a small sample of participants (five graduate students), their responses illuminate a much more technically-based information need than their more academic counterparts in addition to more traditional needs in the fields of orchestration and acoustics. Trade-based journals, audio CDs, computer manuals, and electronic resources play a much more important role, and libraries are urged to reassess these holdings as well as develop an awareness of local performance venues to better serve this group. Hunter's essay is a much-needed and thought-provoking consideration of an evolving sector of musical scholars.

<b>Search Strategy:</b>	After expanding on "information" to find the database's controlled vocabulary, I applied it with musicians in truncated form to my search terms. Full text article came from the ILLiad service in Drexel Library.
<b>Database:</b>	Dialog, File 438: Library Lit. & Info Science
<b>Method of Searching:</b>	Controlled vocabulary and keyword search with proximity and truncation
<b>Search String:</b>	s information()needs and music?

#### Entry 11:

Kuyper-Rushing, L. (1999). Identifying uniform core journal titles for music libraries: a dissertation citation study. *College & Research Libraries*, 60(2), 153-163.

**Abstract:** "A study examined journal use by doctoral students in music in an attempt to provide music bibliographers with a tool for evaluating an institution's current journal collection. A total of 118 dissertation bibliographies was analyzed. It was found that these dissertation bibliographies produced 13,111 citations, of which books and serials were the most common formats used. The journal lists from this study differed from those derived from a study of journals used at a single institution, supporting the contention that a core list of journals developed by studying a single institution's dissertation citations may not reflect the needs of the user at either institutional or national level. Discussion of the results is provided." [published abstract]

**Annotation:** This study with its data laid out in tables provides a music scholar, particularly a doctoral candidate, a comprehensive list of the most-used journals



one could start with in hopes of an immediately fruitful search. The information needs of music scholars is one of the better documented areas of musicianship and this study compiles much in the field into one convenient place. The passage of a decade since its release doesn't diminish the value of the information included here, especially for music scholars researching western art music. Kuyper-Rushing also notes the large increase in music journals since the 1970's and urges libraries to set aside more money in the budget to include these.

**Search Strategy:** Knowing that this file was a good place to start searching, I used the following convoluted string search to cast a wide net, and then narrowed it down with the follow-up strings. Full text copy was provided via Drexel's e-journal access.

**Database:** Dialog, File 438: Library Lit. & Info Science

**Method of searching:** Keyword search with truncation and proximity, and with descriptor field search

**Search String:** ss user()behavior or user()need? or seeking()behavior or end()user?()searching or info?()retrieval or info?()need? or music? Followed by s22 and music(5n)student? Followed by s24 and music/de

#### Entry 12:

Lee, J. & Downie, J.S. (2004). *Survey of music information needs, uses, and seeking behaviors: preliminary findings*. Retrieved May 28, 2009, from [http://people.lis.illinois.edu/~jdownie/ismir2004\\_survey\\_downie\\_draft.pdf](http://people.lis.illinois.edu/~jdownie/ismir2004_survey_downie_draft.pdf)

**Abstract:** "User studies focusing upon real-life music information needs, uses and seeking behaviours are still very scarce in the music information retrieval (MIR) and music digital library (MDL) fields. We are conducting a multi-group survey in an attempt to acquire information that can help eradicate false assumptions in designing MIR systems. Our goal is to provide an empirical basis for MIR/MDL system development. In this paper, we present our preliminary findings and analyses based on the 427 user responses we have received to date. Two major themes have been uncovered thus far that could have a significant influence the future development of successful MIR/MDL systems. First, people display "public information seeking" behaviours by making use of collective knowledge and/or opinions of others about music such as reviews, ratings, recommendations, etc. in their music information seeking. Second, respondents expressed needs for contextual metadata in addition to traditional bibliographic metadata." [Published abstract]

**Annotation:** The value of this paper is twofold: it uses a comparatively large sample group for its findings, and its sample group is a multifaceted one. Despite the technically based nature of the paper (reflecting the conference in which it was given), it does a great job at breaking down the user group members by various factors and goes into great detail on what kinds of information-seeking behavior they engage in. Clear and detailed graphs lay the data out well. Its conclusions are also intriguing, finding that the music-seeking process is much more group-oriented than traditional research and depends a lot on personal interaction, and that a metadata that reflects the contextual setting of the music is needed in libraries.

**Search Strategy:** I tried different combinations of phrases in Google Scholar, which led to a direct download link.

**Database:** Google Scholar

**Method of searching:** Keyword search with truncation

**Search String:** information needs, music\*

### Entry 13:

Li, T. & Ogihara, M. (2006). Toward intelligent music information retrieval. *IEEE Transactions on Multimedia*, 8(3), 564-574.

**Abstract:** “Efficient and intelligent music information retrieval is a very important topic of the 21st century. With the ultimate goal of building personal music information retrieval systems, this paper studies the problem of intelligent music information retrieval. Huron points out that since the preeminent functions of music are social and psychological, the most useful characterization would be based on four types of information: genre, emotion, style, and similarity...

The paper also studies the issue of detecting emotion in music... The accuracy of around 70% was achieved in predicting emotional labeling in these adjective pairs. The paper also studies the problem of identifying groups of artists based on their lyrics and sound using a semi-supervised classification algorithm. Identification of artist groups based on the Similar Artist lists at All Music Guide is attempted... Finally, the paper conducts a proof-of-concept experiment on similarity search using the feature set.” [from the published abstract]

**Annotation:** This is a highly scientific approach towards breaking popular audio musical content down into proponent parts such as beat, lyric meaning, phrasing, pitch, and emotion. The reader would be well advised to brush up on their calculus before plunging into the formulae provided by the authors to explain their results which includes considerations of blues, classical, country, disco, jazz, metal, pop,

hiphop, reggae, and rock. Filled with tables, graphs, and a lot of scientific analysis, this essay, while rigorously academic, does have a popular appeal in that the goal of all this is to increase accuracy and intuitiveness in user interfaces for searching for music. This has repercussions not only for the users, but for the providers of music as well. The growth of buyer recommendations on websites such as Amazon.com is based on this type of stylistic analysis and projection of a user's predilection towards certain styles which hopefully can be identified using the studies in this work. As such, studies such as this can have a large financial payoff for the music provider if one implements their findings, and this paper serves as an example of the cutting edge in this kind of marketing. Demanding, but fascinating.

**Search Strategy:** I checked in Dialog 's File 7 since I knew this was strong in library science topics, and decided to use a title search rather than a keyword search to cut down on false hits. The full text copy was obtained from Drexel Library's journal link.

**Database:** Dialog, File 7: Social SciSearch

**Method of searching:** Title field search

**Search String:** s music()info?/TI

#### Entry 14:

Liew, C. and Ng, S. (2005). Beyond the notes: a qualitative study of the information-seeking behavior of ethnomusicologists. *The Journal of Academic Librarianship*, 32(1), 60-68.

**Abstract:** "This study investigates the information-seeking behavior of fourteen ethnomusicologists in New Zealand via interviews. The findings shed light on what information ethnomusicologists seek, the sources and services they use, and the barriers they face in information seeking and use. A number of ways in which libraries can create collections and design services that will meet the information needs of ethnomusicologists are proposed" [published abstract.]

**Annotation:** I include this article because it sheds light on a rarer group of musicians, but one that is growing in influence as classical orchestras commission works from non-Western composers and jazz and film composers adopt more influences from world musics. The main weakness is the small sample of ethnomusicologists used, but because they are affiliated with academic institutions they represent those musicians most likely to be involved in research and having informational needs that go beyond the average performer's limited scope. The interview questions reflected the special concerns of ethnomusicologists, such as their concern for safety while working in the field. The study was well-balanced and

extensive, and had well-considered suggestions for improving a library's resources for this group.

<b>Search Strategy:</b>	After expanding on "information" to find the database's controlled vocabulary, I applied it with musicians in truncated form to my search terms. Full text article came from online journals in Drexel Library.
<b>Database:</b>	Dialog, File 438: Library Lit. & Info Science
<b>Method of Searching:</b>	Controlled vocabulary and keyword search with proximity and truncation
<b>Search String:</b>	s information()needs and music?

#### Entry 15:

Richardson, A. and Giustini, D. (2004). The information needs of music therapists: challenges of assessment in the clinical setting. *Journal of Canadian Health Libraries Association*, 25, 107-110.

**Abstract:** "This paper explores various methods that librarians can use to evaluate and meet the information needs of clinical music therapists (MTs)... As a means of assessing their information needs, we first examine the basic features of MT practice and then compare MTs' information needs with the well-documented needs of nurses... We believe that MTs and nurses exhibit similar basic information needs, such as access to (i) colleagues and experts; (ii) current information in print, electronic, and alternate formats; (iii) reference and ILL assistance from librarians; and (iv) library training to search databases and catalogues." [from the published abstract.]

**Annotation:** This article attempted to fill in the gap that existed in professional knowledge concerning music therapists' informational needs. It draws the conclusion that a systematized questionnaire was needed throughout Canada to access the use and needs these professionals had and to draw attention to the dearth of materials available for their special concerns. This group is one of the few in the music field not directly concerned with performance or academic pursuits, and this paper highlights how such a unique group can fall through the cracks with information professionals.

<b>Search Strategy:</b>	I tried different strings in Cuil. This article came up with a link to the Journal of the Canadian Health Libraries Association. This led to a home page for the association which provided a search
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tool. Inputting what I had for the title led to a download of the article in pdf format (although I've cited it in its published format as requested).

**Database:**

Cuil

**Method of Searching:**

Keyword searching

**Search String:**

information needs, music

## Recommended Resources

The following is a list of resources for musicians and music lovers who are seeking information for various reasons. They are primarily online resources since this provides the most current content and because music has been a resource that has become a model of commerce on the Internet and is readily available. With the financial impetus of a young generation with disposable income and elevated computer skills, popular music became one of the first major kinds of data to be traded commercially online; with the model in place, other styles have easily followed down a well-trodden path to find accessibility to anyone with a computer and a modem.

Armed with the following resources, a researcher will find the answers to most any musical question, and hubs of information that will lead him or her to many entertaining hours of exploration. Serious academic research will need more specialized tools, but for the vast majority of our user group most of their needs will be met with the following.

iTunes, v. 8.1 (2009). Cupertino, CA. Apple Incorporated. Retrieved on June 1, 2009, from <http://www.itunes.com>.

This is the application (available for Mac OSX and Windows) that changed how the world purchases music. Why is it here? Because, like the proverbial 800-pound gorilla in the room, it is a force to be reckoned with. If one accepts the indications apparent in the previous bibliography, music itself is the information most needed by musical scholars and researchers. Before Apple's model of merchandising, illegal downloads of music through sites like Napster flourished. Researchers looking for a certain kind of music were dependent on hardware copies that could be hard to find, making special orders and delays inevitable. iTunes solved these concerns and provided a business model that has proven so successful that the major compact disc retailers and record labels have been shaken to their roots and many may not survive. This is the paradigm shifter in the commercial music

business. iTunes provides an easy-to-use way to legally purchase music, provide music producers with a reasonable income flow to ensure the continuation of the art, and give access to an incredible array of music and styles (and recently, to video content and iPhone-type applications).

Available as a free download, iTunes allows the user to set up a credit account and download individual selections or full albums. The software also allows organization of selections into playlists that are extremely user-definable and convenient. While a novice may believe this is strictly for commercial music, time spent with the search engine built into the application will reward anyone with a dazzling variety of styles. Algorithms provide suggested downloads for return customers and the visual interface invites further exploration. In short, this is a vital component in any modern musician's tool chest and highly recommended for most audio musical needs.

*Sheet Music Plus – World's Largest Selection of Sheet Music* (n.d.) Retrieved on June 1, 2009, from <http://www.sheetmusicplus.com>

Just as iTunes makes the online purchase of audio information easy, this website gives you access to the products of over one thousand music publishers, including all the major European publishers. If audio is the main information need of a musician, musical scores are probably the next item needed for study, and this website will lead one to an array of styles, arrangements, and orchestrations that is sure to meet one's needs. Customer service staff are knowledgeable musicians and user reviews of items help guide your selection. Many scores are available in a range of difficulty levels. It should be noted that full orchestral scores with individual parts for the players (mostly controlled by licensing agencies that charge very high rental fees) are the weakness here, but offsetting that is the availability of miniature scores, making it easy to study most of the major orchestral repertoire at a cheap price. Prices are reasonable, selection is vast, and most written musical score needs will be met with this company.

Sadie, S. & Tyrrell, J. (2000). *The New Grove Dictionary of Music and Musicians* (2<sup>nd</sup> ed.). USA: Oxford University Press

If it's about music, it's in this dictionary/ encyclopedia. The latest edition is 29 volumes, selling in print for over \$2,000 and available in a cheaper (\$500) paperback version and online as a subscription. Starting with four volumes released from 1878 – 1899, it's had a long history of updates and editions through the years, growing to include 29,499 articles in its latest incarnation. Quite simply, it's the main reference source one starts with for anything musical and has been throughout the 20<sup>th</sup> Century and beyond; if a music library was restricted to one title, this would probably be that one.

*All Music Guide*. (n.d.) Retrieved June 2, 2009, from <http://www.allmusic.com>

A huge database covering recorded music releases, All Music Guide (AMG) has become one of the premiere resources for musicians making a quick check on facts concerning releases, artists, individual works, and composers. While its strengths lie in popular, jazz, and world music, beginners will find its classical reviews adequate for a starting point for further exploration. Well-considered and well-written reviews by professional music critics contain hyperlinks that invite the visitor to explore intuitively, always resulting in pleasant discoveries. Metadata for albums include album art where available, full personnel for most listings, and credits for everything from production to photography. Artist listings include full biographies, musical critiques, and photo galleries. It may not be the music scholar's first choice, but for all music consumers this website is invaluable.

*Classical Archives: Home*. (n.d.) Retrieved June 4, 2009, from <http://www.classicalarchives.com/>

For the Western Classical music lover, this is a subscription service website that will provide more music than one person can possibly hear. The



cost is \$9.95 a month or \$99.50 a year. For that, you can listen to anything recorded for all the major classical labels, including Deutsche Gramophone, Angel, EMI, Sony, and many others; and you can get a 10% on purchased downloads that are DRM-free and freely transportable. There's some other hidden things in here, though, that will bring a music information seeker back again and again. Even nonsubscribers can use the database information and search for biographical information about composers (over 7,800) and artists (over 27,000), facts about recording labels (over 110), and much more. A limited selection of pieces are available for free audio streaming without a subscription, and the more esoteric MIDI files are here for free by the hundreds, even for more obscure composers. (MIDI files are the .txt-file equivalents in musical software, making printouts of scores possible as well as triggering synthesizers to play the compositions.) These files are limited to five downloads a day for nonsubscribers, but even with this modest limit this site is a valuable source of material for musicians and a must-bookmark for anyone with a love of western art music.

*Electronic Musical Instrument 1870-1990*. (n.d.) Retrieved June 1, 2009, from <http://120years.net/>

For the last resource, we have an obscure little web page with 116 links to other pages about historic electronic musical instruments. It's an esoteric topic on a digital backwater, but this site has been a guilty pleasure of mine for years. Filled with pictures and detailed histories of each instrument (some even have audio examples as well), this is a modest yet detailed history about a field that languishes, awaiting serious study. When some scholar begins that study, he could do worse than to start here and marvel at the variety and scope of the achievements of the men and women who labored to make music from an entirely new source and present it to an uncomprehending world.

## Conclusion and Personal Statement

This paper really did serve its role as a summation of the course for me. It gave me the chance to really try out the different search options we discussed over the ten weeks. I had a couple of surprises while doing it: I found my comfort level with Dialog such that the majority of my citations came from this, and I enjoyed the level of precision it afforded me. I also was surprised that Lexis/Nexis went unused in the final paper (although not unexplored). I know I'll be using it in the future (and I may even find that I can throw out the hundreds of issues of Electronic Musician I've got at home since they seem to be archived there in Lexis/Nexis databases), but the focus on magazines didn't lend itself to this project.

I also found the Drexel libraries to be very responsive to requests for articles, and the whole library structure to be easy to negotiate. I have to admit that I had absolutely no experience with this kind of research, it never being required of me as a professional and avoided as a student. But with a guided structure in place, I really didn't find it difficult to negotiate. Research is a vastly different process than it was in the hardcopy world of the '70's. I'm sure there's flaws in the previous pages but as far as completing this assignment goes, I have a personal satisfaction despite whatever grade may be generated by the work. I'm reminded of Woody Allen in Zelig, finally conquering Moby Dick.

One other thing I learned about music research in general was the acceptance that non-classical styles of music are receiving as topics for serious research. This is a very major change that has occurred in my professional lifetime. I got my bachelor's degree in 1975 and had several professors at my school resistant to letting me graduate because I included several of Scott Joplin's ragtime compositions in my senior concert, the feeling being that this was not serious music and I wasn't demonstrating an appreciation of quality. Any professor raising such an objection today would be regarded as hopelessly old-fashioned. Researching this topic showed to me a new attitude is at work in academia, one that is less focused on a racially-based value judgment of musical styles, for which I am thankful.