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Bundled electronic journal packages which include all of a publisher's journal titles have been criticized for weakening collections with the inclusion of titles collection developers would not have otherwise selected. Others have claimed it is best to give patrons access to as much information as possible. This study compared the usage of titles to which the University of North Carolina (UNC) subscribes with non-subscribed titles included in the Springer Link electronic journal package. The Chemical Sciences and Medicine subsets of the Springer Link collection were also examined. The results indicated that titles to which UNC subscribes received over five times as much use and were more likely to receive any use at all than non-subscribed titles.

Headings:

Electronic journals

Use studies – College and university libraries

Use studies – Serial publications

A COMPARISON OF SUBSCRIBED AND NON-SUBSCRIBED TITLES IN THE  
SPRINGER LINK ELECTRONIC JOURNAL PACKAGE

by  
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## Introduction

The “serials crisis,” or exorbitant and rapidly rising journal prices, especially for scientific, technical, and medical (STM) publications, has been problematic for academic libraries for several decades now and has been described at length in the literature (Johnson, 2001; King & Tenopir, 1999; Kutz, 2002; Maxymuk, 1999; Van Orsdel & Born, 2003). With the advent of electronic journals, librarians had hoped that the new format, freed from the printing, distribution, processing and maintenance costs associated with paper journals, would help alleviate the strain serials have put on library budgets. However, electronic journals, or e-journals, have not turned out to be quite the bargain their early champions had claimed, and the costs of serials have continued to rise beyond the means of many libraries.

Academic librarians have attempted to stretch their serials budgets by forming consortia with other libraries in order to purchase large packages, or bundles, of electronic journals from publishers and other vendors. Many have resorted to large serials cancellation projects and cuts in purchases of monographs in order to free up funds for the purchase of these bundles, which would be beyond their means if not purchased cooperatively (Nabe, 2001). Libraries often already subscribe to the print version of many of the titles included in the e-journal packages. The packages of electronic journals made available by publishers often also include numerous other titles which make little sense for the curriculum of a particular university and are of marginal interest to researchers at

the university. The question is whether those other titles, the ones for which the library has no print subscription, are being used by their presumed audience. If they are being used, are the patterns of usage different for the subscribed and non-subscribed titles?

Collection managers instinctively believe that the needs of their patrons are not being served when they are not allowed to make decisions about what items to acquire. Much of the literature on electronic journal packages discusses the negative aspects of the inclusion of large numbers of titles which the librarians might not have chosen. Frazier claims that these packages will “weaken... [our] collection[s] with journals we neither need nor want” (Frazier, 2001). Are the reservations of collection development librarians about letting publishers choose the contents of electronic journal packages merely territoriality and a reluctance to build collections in a different way or are the needs of users better met by offering a larger number of journals? If patrons are not using non-subscribed journals, then the claim that collections are weakened by so many titles of nominally little use to users has greater credence.

In this study, usage statistics for subscribed and non-subscribed electronic journals from Springer-Verlag’s Springer Link package will be compared. Also, the usage of two smaller subsets of the statistics, subscribed and non-subscribed Chemical Sciences (Springer’s designation) and Medicine titles will be compared, and the titles will be examined on an individual basis to determine what might be underlying the level of usage of a particular title. The assessment of the usage of bundled electronic journal titles will help determine whether the concerns of critics of the “Big Deal” are merited or whether a new model of collection development for the electronic environment is in order.

## **Literature review**

### **The serials crisis**

What has come to be known as the “serials crisis” in academic libraries has been written about extensively in the library literature. Academic libraries have been struggling for decades now to pay rapidly rising journal costs. In the process, they have been forced to cancel large numbers of serials as well as monographs. Over the last ten years, prices for journals have risen about 7-10% annually (Van Orsdel & Born, 2003). The bulk of the increases are for scientific, technical, and medical (STM) journals. The cost of subscribing to an average STM journal rose 471% between 1970 and 1995 (European Science Foundation, 2003). Publishers have taken advantage of the fact that librarians have little choice but to continue subscribing to many journals as faculty need to publish and access the literature of their disciplines (Open Society Institute, 2003). Many have noted how the disproportionate costs of STM journals are hurting disciplines such as the humanities, which depend on monographs for their research, as STM serials consume increasing portions of library budgets (Deyrup, 2003).

Various theories as to the cause of the crisis have been advanced. Derk Haank of Elsevier, a Dutch STM publisher, attributes skyrocketing prices to increasing publication of research due to greater post-World War II funding for science while library budgets remained static in comparison (Poynder, 2002). Alison Buckholtz of the Scholarly Publication and Academic Resources Coalition (SPARC), an alliance working to reform scholarly communication and make it more accessible, cites research that “argues that publisher mergers and consolidations are directly correlated to journal price rises” (Buckholtz, 2001). Whatever is ultimately to blame (and it is doubtful that there is a

simple answer to that question), the current situation is an unsustainable spiral. Publishers raise prices in response to decreased circulation which in turn causes more libraries to cancel subscriptions in response to the higher prices and, frequently for state institutions these days, also due to budget cuts (King & Tenopir, 1999; Van Orsdel & Born, 2003).

### **Pros and cons of bundling**

Publishers began offering packages of electronic journals in the late '90s. The packages were eagerly embraced by academic libraries who were happy to give their users access to a broad array of e-journals. Kenneth Frazier was the first to refer to the practice of consortial purchases of bundled electronic journals as the "Big Deal" in his influential 2001 article in which he cautioned librarians against signing up for it (Frazier, 2001). A number of other authors subsequently adopted his phrase to describe the practice in their criticisms of it.

Bundled electronic journal packages are not without their advantages. They eliminate some of the work involved with dealing with individual titles for both publisher and library. Libraries are able to offer access to a wider range of journal titles for not that much more money, considering how much access is expanded (Rowse, 2003). Users, who presumably want access to as many titles as possible, are often pleased by the large numbers of journals available to them.

On the other hand, many publishers require libraries and consortia to accept all of the titles in the package, often their entire list, or not be able to buy it at all (Rowse, 2003). Additionally, many packages include non-cancellation clauses to ensure that libraries continued to subscribe to their "low use/high cost niche journals" (P. M. Davis, 2003). These issues are central among complaints lodged against the bundled journal

packages. Libraries' decreased ability to decide which titles are added to or removed from their collections would seem to be contrary to their mission of managing collections with the university's research and curricular needs in mind in order to provide an optimal collection to users (McGinnis, 2000). In response to those complaints, Thomas Peters questioned whether the model of collection development in which collections are built title by title carefully considering the needs of users is no longer feasible or desirable and that perhaps another model would be more appropriate in the current environment, although he offers little detail as to what that might be (Peters, 2001).

Other disadvantages of the "Big Deal" model relate to how the cost limits the purchasing power of libraries. Expensive electronic journal packages leave little money to purchase monographs, especially important to scholars in the humanities. Also, libraries are less able to subscribe to titles "from smaller or society publishers (who, for the most part, are not participating in consortial sales)" (Rowse, 2003).

For the number of titles to which libraries gain access, publisher packages can seem like quite a bargain on a per title basis. Margaret Landesman cautions librarians to keep in mind that "sometimes it is just a temptation to spend more money than you really planned to on something that you would not have otherwise bought" (Landesman, 2002). It is understandable that publishers would want to ensure that they keep making money in the new world of electronic journals where one site license gives access to an entire campus and individual subscriptions are decreasing every year. However, as Philip Davis notes, their response has been to "exploit... the academic library by pricing journals on what the market can bear" (P. M. Davis, 2003).

## **Patterns of e-journal usage**

Studies on e-journal usage have drawn conclusions that would tend to support traditional models of collection development. A study comparing usage of print and electronic journals found similar patterns to those found for print journals (Morse & Clintworth, 2000). That is, the bulk of the articles accessed or cited will be from a very small proportion of journals whereas the overwhelming majority of journals will receive very little use. In a study on usage of electronic journals by a consortium, Philip Davis found that different types of institutions have different usage patterns (P. M. Davis, 2002). This is consistent with the conventional wisdom of collection developers: collections must be managed with the unique needs of your users in mind. It is difficult to do this when your institution is part of a consortium which consists of very different types of institutions as frequently occurs with geographically based consortia (P. M. Davis, 2002).

## **Methods of assessment of journals and electronic resources**

The issue of quantifying journal usage in libraries has been problematic since the days when only print journals were available. Unlike print books, which can be checked out and leave a record of use in the form of circulation data, print journals generally do not circulate, and their usage must therefore be measured indirectly. Methods traditionally employed to determine how much print journals are being used include reshelving studies, citation analysis, survey research, and in-depth interviews of users; all of them have their drawbacks. Reshelving studies make the assumption that journals removed from shelves have been used by patrons. They have a tendency to underestimate usage as they depend upon user compliance in not reshelving journals. Citation analysis,

based on the premise that works cited by authors in published articles are important and useful to them, measures journal use by examining what authors choose to cite. One drawback to this approach is that it may overlook works that authors consulted but chose not to cite. Another is that less than relevant citations may be included for reasons unrelated to the actual research such as increasing the number of citations to one's own work or that of friends. It also ignores uses not for purposes of publication. Finally, surveys and interviews are not the most objective methods. Creation of surveys can be very subjective, and the results can be affected by the memories and biases of subjects (Philip M. Davis & Solla, 2003; Eason, Richardson, & Yu, 2000; Sylvia, 1998).

With the advent of electronic journals, studies assessing their usage continued to employ methods of assessment from the print world such as citation analysis, surveys, and interviews. The drawbacks are similar to those found in the print world. Additionally, for titles available both in print and electronically, often the case with the journals included in publisher packages, citation analysis gives no indication as to which version was accessed (P. Davis, 2002; De Groote & Dorsch, 2003; Harter, 1996; Herring, 2002; Parker & Bauer, 2003; Tomney & Burton, 1998).

Electronic journals offer tantalizing possibilities of being able to assess usage more accurately, directly, and objectively and track users' behavior electronically by means of publishers' transaction logs (Eason et al., 2000). For the most part, these statistics represent how often patrons are accessing a vendors' electronic resources and might include "a count of sessions in a specific database, the time per session in a specific database, the time per session in a specific database, the count of searches in a

specific database, and the count of full-text downloads per time period per database” (Shim & McClure, 2002).

Using vendor-provided electronic journal usage statistics is an imperfect method. Much of what is problematic is due to the current lack of standardization between electronic journal usage statistics for products from different vendors. The plethora of ways that vendors count usage statistics makes comparisons within a subject area, between databases, or across the larger collection difficult (Philip M. Davis & Solla, 2003). For instance, some statistics may be based on the number of search sessions whereas another publisher might count the number of log-ins to their website (Bauer, 2001).

Reporting varies widely as well. Statistics might be summarized and supplied on a monthly, quarterly, or annual basis or accessible on an as-needed basis from a publisher website (Philip M. Davis & Solla, 2003; Galbraith, 2002). The reports might represent the number of full-text articles accessed for each title in each format (*e.g.*, PDF (portable document format) and the total or one figure could combine the number of accesses to tables of contents, articles, and searches for each title combined. Some vendors report the number of articles accessed by IP (internet protocol) address rather than title (Galbraith, 2002). Comparisons are made more difficult because statistics are reported in a wide variety of formats and because vendors are not always forthcoming about their methods of data collection and the terminology they use (*e.g.*, What constitutes “full-text”?). Many libraries are unwilling to invest staff time in organizing the statistics in a uniform manner. (Shim & McClure, 2002).

Another aspect of electronic journal usage statistics with which librarians take issue is what the statistics actually reveal. They do not address user behavior as much as libraries would prefer nor do they say anything about what articles were actually downloaded or why they might have been downloaded (Philip M. Davis & Solla, 2003; Shim & McClure, 2002). Also, it is not clear from the data who was logging in or initiating a session or why they were doing so (P. Davis, 2002). Sessions could have been initiated by a librarian trying to determine why a patron was having access problems.

As in the print world, assessment of usage of electronic books tends to be less problematic. One of the most common models used by providers of electronic books such as NetLibrary is similar to the traditional library in that a book can only be used by one patron at a time. Although they receive access through their libraries, patrons must create an account before being able to access the electronic books. They are then able to browse or check out the electronic books for a period of time after which the book is automatically checked in. NetLibrary measures usage by counting how often an electronic book is browsed or checked out (Fernandez, 2003).

Admittedly, there is no perfect method that gives a complete picture of what e-journals are necessary or important to patrons or patrons' usage behavior. However, when electronic journal usage statistics are available, they can provide some useful information about usage patterns of the journals in general.

### **Standards in electronic resource usage statistics**

The current shortcomings of electronic journal usage statistics described in the previous section highlight the need for publishers to adopt standards for their data collection and reporting. Usable statistics that can be compared with confidence are

crucial for libraries because such large portions of library budgets are being devoted to electronic resources, and, in the current model, libraries are leasing rather than purchasing content (Hahn & Faulkner, 2002). Libraries must be able to justify the expenditures, especially if they are part of state-funded institutions. Standardized electronic resource usage statistics will also allow libraries to make comparisons with similar libraries around the country, also known as benchmarking (Goldberg, Laning, & Liu, 2003). Two sets of standards for electronic journal usage statistics have been vying for adoption as the standard of choice, the ICOLC (International Coalition of Library Consortia) Guidelines and the COUNTER (Counting Online Usage of NeTworked Electronic Resources) Code of Practice, developed by Project COUNTER (International Coalition of Library Consortia (ICOLC), 2001; Project COUNTER, 2002).

ICOLC began developing their standards in the mid '90s. The most recent guidelines were released in 2001. For librarians, the ICOLC standards have the advantage of having been developed by librarians and other people who know what kinds of information is most useful to libraries. Definitions of the types of statistics to be collected such as number of sessions, queries, and "full-content" units are the chief focus of the guidelines as well as statements on confidentiality and access (International Coalition of Library Consortia (ICOLC), 2001). Unfortunately, the ICOLC guidelines do not currently include information or standards for external validation of the reports (Shim & McClure, 2002).

Project COUNTER was begun by publishers. Experts and organizations from throughout the publishing and library communities were involved with creation of the COUNTER Code of Practice, first released in 2002 (Project COUNTER). Definitions for

types of statistics used in the Code of Practice are essentially the same as those put forth by the International Organization for Standardization (ISO) and the National Information Standards Organization (NISO). Participants adhering to the Code of Practice must have their usage reports audited by a third party for purposes of validation. One concern raised by John Carlo Bertot is the possibility that comparing COUNTER statistics from similar libraries will be like “apples and oranges” because of how data collection by vendors will be affected by differences in libraries’ systems and applications. He suggests that in order to be able to engage in benchmarking, libraries “will likely have to consider systems and application configuration compliance” (Bertot, 2003).

In an article on the Association for Research Libraries (ARL) E-Metrics study on vendor-reported electronic resource usage statistics, the authors doubted that “comprehensive standardization of usage statistics and data delivery methods” could be achieved quickly (Shim & McClure, 2002). As a result, they cautioned against comparing data from different vendors unless it is certain that the data has been “collected, defined, and reported similarly” (Shim & McClure, 2002).

A number of major STM publishers including Kluwer, Wiley, and Elsevier have recently announced that their statistics are now COUNTER compliant (Lamoureux, S. D., personal communication, March 24, 2004). While COUNTER might not be librarians’ first choice, having publishers adhere to a less-than-ideal standard is better than none at all. Perhaps it will not be much longer before librarians can compare statistics from different publishers with confidence.

## Methods

As described in the literature review, all the methods that have been used for getting at journal usage, electronic, print, or both, are problematic. However, imperfect as they are, it is possible to learn something useful from examining electronic usage statistics. Because the current lack of standardization makes it difficult to compare data from different publishers with any confidence, statistics provided by only one vendor, Springer Verlag, were included in this study.

Electronic journal usage statistics for the UNC libraries for Springer Link, an electronic journal package published by Springer Verlag, were examined. The statistics covered the period of July to December of 2003. Statistics before this period were unavailable from the publisher (Lamoureux, S. D., personal communication, March 5, 2004). Springer began recording their statistics according to COUNTER standards in July of 2003, and those figures would therefore not have been comparable to the pre-July statistics had they been available (Lamoureux, S. D., personal communication, February 18, 2004). The numbers provided by Springer represent how many hits each journal had in a given time period (a month or the entire six months). A hit, or Full-Text View, is defined as the first time a user accesses an article during a session, the length of time they have been using Springer Link continuously. If they access the same article again within the same two hour block of time, it will not be counted as another hit for that journal title (Lamoureux, S. D., personal communication, March 25, 2004).

Springer Link primarily includes STM journals and book series as that is Springer's primary focus. The package includes publications from publishers such as Urban and Vogel, Steinkopff, and Birkhäuser in addition to Springer-Verlag (Springer-

Verlag, 2003). There is some coverage of publications on economics and law in addition to STM subjects including chemical sciences, computer science, engineering, environmental sciences, geosciences, life sciences, mathematics, medicine, and physics and astronomy (University of North Carolina Libraries, 2004). In 2003, there were 519 journal and book series titles offered in Springer Link (Springer-Verlag, 2003).

Usage statistics for the entire Springer Link collection were examined. Titles from two subsets were examined more closely separately from the remainder of the collection. Springer Link groups their titles into eleven “libraries” by subject. Subscribed and non-subscribed chemistry and medical titles were examined in more detail. Titles that Springer Link grouped in their Chemical Sciences and Medicine libraries on their website were defined as chemistry and medical titles, respectively, for purposes of this study regardless of how the UNC libraries treat them.

The Springer Link package includes access to all titles regardless of whether the UNC Libraries subscribe to those titles or not. UNC, as a large research university, subscribes to many of the journals included within the Springer Link package. In comparing subscribed and non-subscribed titles, the first step was determining which titles UNC subscribed to during the period covered by the usage statistics. Non-subscribed titles were defined as those for which the UNC libraries did not have a print subscription in 2003 and to which UNC would not have had access without having purchased access to them through the Springer Link package. The journals for which UNC subscribes to the print version have bibliographic records in the OPAC (online public access catalog). Those for which UNC only has electronic access may or may not have a record in the OPAC. When it was unclear from the OPAC whether a book series

for which UNC owns some titles was part of a standing order or whether the titles were ordered separately as monographs, that information was verified in INNOPAC, the UNC Libraries' integrated library system (ILS).

The Springer Link data was obtained in the form of a Microsoft Excel spreadsheet. Excel was used to manipulate, calculate, and graph the data for analysis. The percentage of subscribed and non-subscribed titles required to account for 80 percent of usage and the percentage of titles which had received no hits during the period of data collection were determined for the entire collection and the Chemical Sciences and Medicine subsets. Additionally, subscribed Chemical Sciences titles which received no hits and non-subscribed Chemical Sciences which represented the greatest portion of use were examined to determine what might be underlying usage or lack thereof.

## **Results and Discussion**

There are 517 titles in the Springer Verlag's journal package, Springer Link (see Appendix A). Publishers use a variety of models for what subscribers receive when they subscribe to their package of journals. Springer Link's model is a bundled package which includes all of their titles. The University of North Carolina (UNC) Libraries subscribe to 227 of these titles and does not have a separate subscription for the remaining 290 titles.

### **Overall Usage Trends**

#### ***Entire Collection***

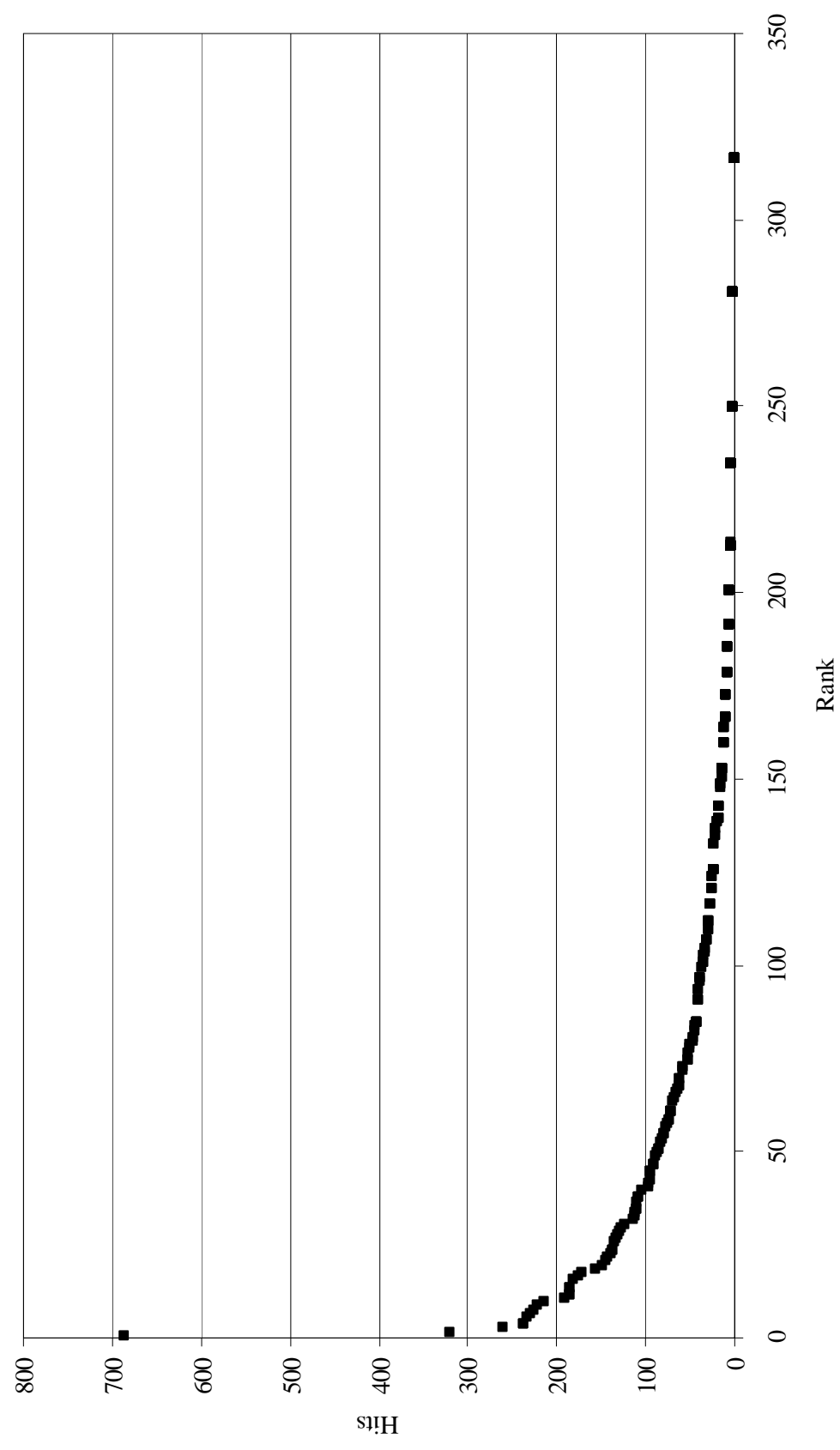
Figure 1 shows the usage of all Springer Link titles ranked by usage (see Appendix B). As other usage studies have found, the data show the number of hits

dropping off quickly after the first few titles and the remainder receiving relatively little use.

Of the articles accessed (*i.e.*, hits) during the period being examined, 86 percent were from titles to which UNC subscribes. Anecdotal reports from the University of Nevada at Reno indicated that for the Elsevier Science Direct package, which included the entire list of titles, 70 percent of the articles accessed were subscribed titles and the remaining 30 percent were non-subscribed (Landesman, 2002). An examination of usage of the Academic Press IDEAL package by the NorthEast Research Library (NERL) consortium found that “non-subscribed titles received about one-tenth of the use as subscribed titles” (P. M. Davis, 2002). With the caveat that it is not known what Academic Press and Elsevier counted as a use in comparison with Springer Link, these lopsided ratios echo what was observed in the UNC collection. On the other hand, the OhioLINK consortium found that usage for their non-subscribed titles to Elsevier’s Science Direct journal package comprised more than half of their usage of that package (Holleman, 2000). As OhioLINK reported that in the early days of gathering electronic journal usage statistics (1999), what constitutes a use is not known and may not be comparable.

Usage of the Springer Link e-journal collection was examined through the lens of the 80/20 rule, which states that approximately 20 percent of a collection will satisfy 80 percent of the users’ requests for information (Diodato, 1994). A number of studies of

Figure 1. Springer Link Titles Ranked by Usage



journal usage have tested how well it holds up for different collections, both print and electronic. Chrzastowski's study of the print chemistry collection at the University of Illinois at Urbana-Champaign determined that 80 percent of the usage was satisfied by 26 percent of the collection. The results of Veenstra's study of the print collection at an academic veterinary medicine library were very close to 80/20 with 80.1 percent of use satisfied by 19.8 percent of the titles examined. Blecic, Fiscella, and Wiberley found that 28 percent of titles in the American Chemical Society (ACS) electronic journal collection accounted for 80 percent of use (Blecic, Fiscella, & Wiberley, 2001). In the study of NERL's usage of the Academic Press IDEAL electronic journal package, 24.3 percent of the collection accounted for 80 percent of use (P. M. Davis, 2002).

**Table 1. Springer Link Titles Required to Satisfy 80 Percent of Use**

<b>Category</b>	<b>Percentage</b>
All Titles	16%
Subscribed Titles	27%
Non-Subscribed Titles	13%

Table 1 shows that the portion of the entire Springer Link e-journal package that accounts for 80 percent of the use of the collection is close to the expected 20 percent. What is of more interest is the difference in the percentage of titles required to satisfy 80 percent of usage within the subsets of subscribed and non-subscribed titles. A far smaller percentage of non-subscribed titles is necessary to meet 80 percent of usage than for subscribed titles. That is, more titles from the subscribed group are receiving use than for the non-subscribed group. This is true for the number of titles as well as percentages. For non-subscribed titles receiving the largest portion of use, there are 39 titles in comparison to 62 titles making up the same portion of usage for subscribed titles. This is interesting

given that there are 1.3 times as many non-subscribed titles included in the Springer Link package as subscribed titles.

### ***Chemical Sciences Titles***

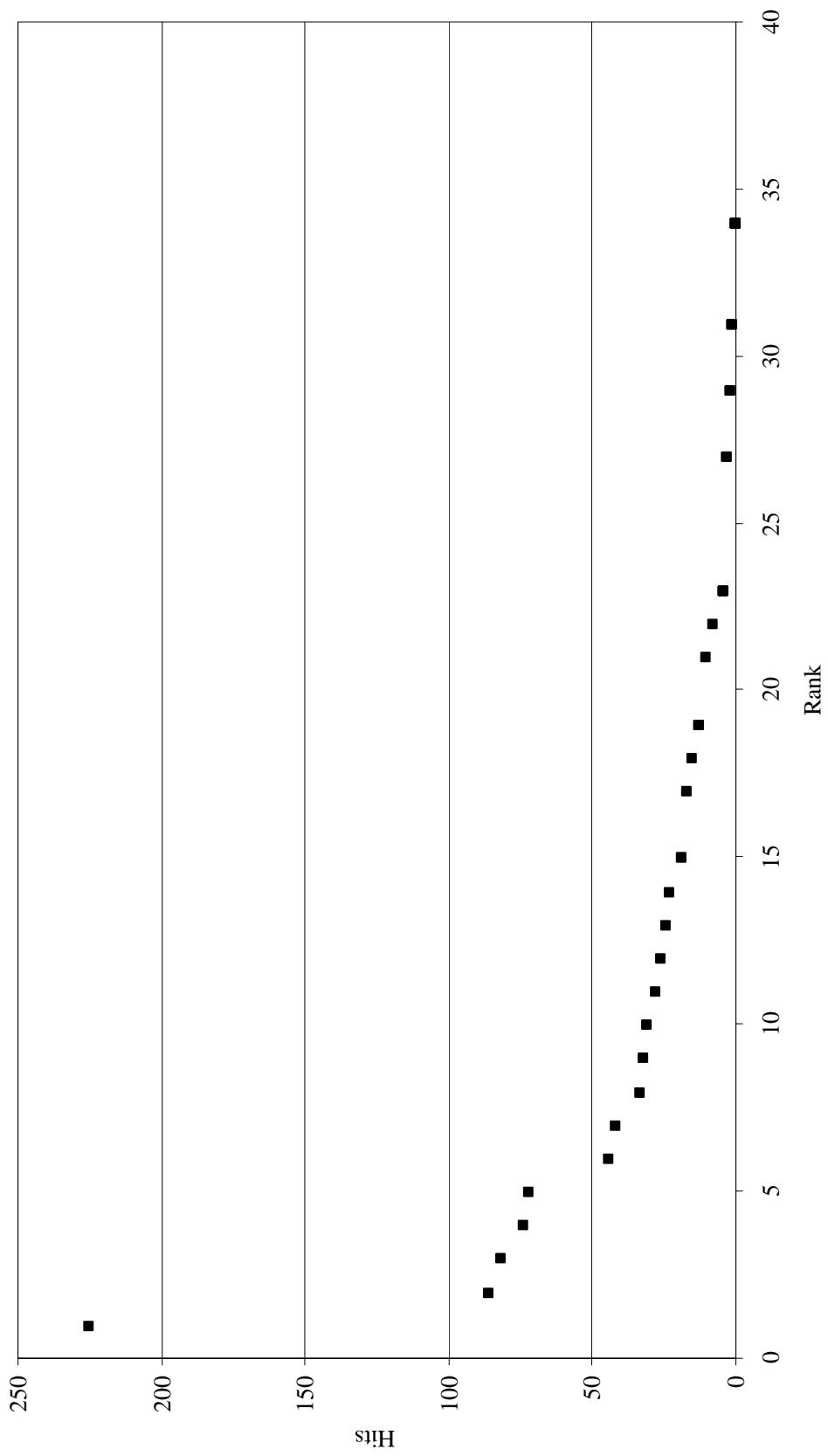
Of the 517 titles included in the Springer Link electronic journal package, 49 are included in their Chemical Sciences Online Library (see Appendix C). UNC has a print subscription to 26 of those 49 titles, and, for 23 titles, UNC has access only because of their inclusion in the Springer Link package of journals. Figure 2 illustrates that usage of the Chemical Sciences titles exhibits the expected pattern of skewed usage with few titles satisfying the majority of requests for articles. Observations about the Chemical Sciences collection must be tempered with the knowledge that the number of titles being examined is fairly small and that they might not hold true for a larger collection.

**Table 2. Chemical Sciences Titles Required to Satisfy 80 Percent of Use**

<b>Category</b>	<b>Percentage</b>
All Titles	24%
Subscribed Titles	31%
Non-Subscribed Titles	17%

The percentage of articles accessed from subscribed titles was the same as for the overall collection, 86 percent. As with the larger collection, the percentage of titles that accounted for 80 percent of use (see Table 2) was not very far from 20 percent. Once again, the more interesting observation is the difference between how much of the collection of subscribed titles is comprising the bulk of use in comparison to the bulk of use of the collection of non-subscribed titles. The percentage of use (and the number of titles that it represents) for subscribed titles is about twice that of the non-subscribed

**Figure 2. Springer Link Chemical Sciences Titles Ranked by Usage**



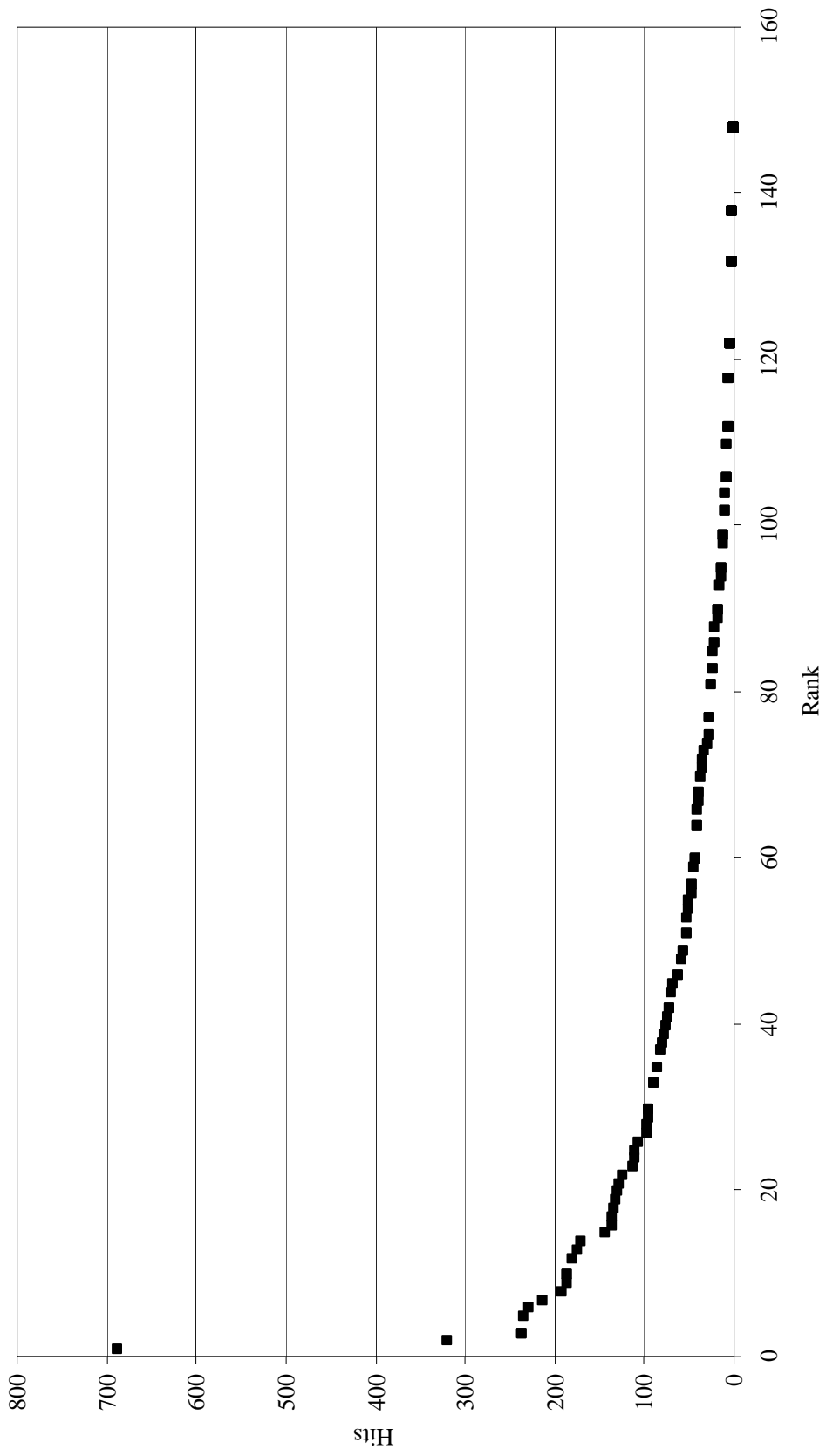
titles. The overall use and the use of subscribed titles more closely resembles what was found in the Chrzastowski and Blecic, Fiscella, and Wiberley studies of chemistry collections than the usage of the non-subscribed titles (Blecic et al., 2001).

### ***Medicine Titles***

Titles from the Medicine collection (see Appendix D) were examined separately from the rest of the collection because of differences in usage that have been reported for collections of health sciences journals in comparison to other types of collections. A study conducted at the University of Minnesota Biomedical Library found that 77 percent of usage of their (print) collection could be attributed to 47 percent of the titles in the collection (Tibbetts, 1974). Morse and Clintworth's comparison of usage patterns for 194 print and electronic titles in the medical library at the University of Southern California found that, for both the print and electronic collections, about 40 percent of titles were required to account for a little less than 80 percent of usage (Morse & Clintworth, 2000). Blecic, Fiscella, and Wiberley's examination of two different collections of health sciences electronic journals, Karger and Ovid, found similar ratios. For Ovid, 43 percent of titles accounted for 80 percent of usage, and 44 percent of the Karger titles accounted for 80 percent of usage in that collection (Blecic et al., 2001).

The Medicine collection in Springer Link is much larger than the Chemical Sciences collection with 192 titles of which 80 titles are subscribed and 112 are non-subscribed. Figure 3 shows the usage of Medicine titles ranked from highest to lowest; the plot shows the familiar pattern seen in Figures 1 and 2 of use dropping precipitously after the highest ranked titles. The percentage of articles accessed from subscribed titles,

**Figure 3. Springer Link Medicine Titles Ranked by Usage**



85 percent, was very similar to that for the entire collection and the chemical sciences subset.

**Table 3. Medicine Titles Required to Satisfy 80 Percent of Use**

<b>Category</b>	<b>Percentage</b>
All Titles	27%
Subscribed Titles	45%
Non-Subscribed Titles	20%

The figures shown in Table 3 for the Medicine collection show similar trends to those seen in the larger collection and the Chemical Sciences subset with more than double the percentage of subscribed titles accounting for 80 percent of use as compared to non-subscribed titles. It is interesting to note that the percentage of subscribed titles comprising that percentage of use is similar to what has been found for usage of other collections of health sciences journal titles. The study of the Academic Press IDEAL package usage by NERL observed that medical institutions had an even greater tendency to favor subscribed titles than the other types of institutions that comprise the consortium, and that appears to be the case for the Medicine collection in comparison with the Chemical Sciences collection as the entire collection (of which the Medicine titles are, admittedly, a large portion) (P. M. Davis, 2002).

## **Zero hits**

### ***Entire Collection***

It is difficult to say at what point an electronic journal is not being used enough to make it not worth paying for access to it. It is conceivable that the one time a patron accessed a particular journal led to an important connection and groundbreaking research.

However, it seems safe to say that a journal which is not being used at all in a six month period, or at least one which had zero hits, is not playing a big role in many discoveries.

**Table 4. Springer Link Titles with Zero Hits**

<b>Category</b>	<b>Number</b>	<b>Percentage</b>
All Titles	201	39%
Subscribed Titles	39	8%
Non-Subscribed Titles	162	31%

Of the 517 titles in Springer Link, a relatively large number, 201, had no hits at all during the six month period being examined. Titles for which UNC has no subscription were disproportionately represented among titles with no hits. Non-subscribed titles make up 56 percent of the titles included in Springer Link, but they comprised 80 percent of the titles which had zero hits. In contrast, relatively few titles to which UNC subscribes received no hits at all. Among those titles, only 18 percent had zero hits in comparison to 56 percent among the non-subscribed titles. Table 4 shows what percentage of the entire collection received no hits as well as the percentages of the entire collection that were either subscribed or non-subscribed titles with zero hits. Approximately four times as many non-subscribed titles as subscribed titles had no hits.

Incidentally, the non-subscribed titles without a record in the OPAC were disproportionately represented among zero hit titles. Out of the 106 titles without records in the OPAC, 82 had no hits. The number of titles without OPAC records make up 21 percent of all the titles in Springer Link, but they comprise 41 percent of titles which had no hits. Whether titles in electronic journal packages and aggregator databases have OPAC records relates to access and is a concern for catalogers. The issue is made more difficult because of the ever-changing nature of what is included in such packages and

databases. Is it worth catalogers' time to create an OPAC record for something that could be gone from the database or journal package next week? The benefits have to be weighed against the resources required.

### ***Chemical Sciences Titles***

Trends for chemical sciences titles which received zero hits mirrored those found in the larger Springer Link collection with non-subscribed titles being disproportionately represented among those that had no hits. In the Chemical Sciences collection, 47 percent are titles to which UNC does not subscribe, but 75 percent of the titles receiving no hits were non-subscribed titles. Again, as with the larger collection, among subscribed titles only a small portion, 15 percent, had no hits in comparison to 52 percent for non-subscribed titles. Table 5 shows that non-subscribed titles make up three times as much of the portion of zero hit titles as subscribed titles.

**Table 5. Chemical Sciences Titles with Zero Hits**

<b>Category</b>	<b>Number</b>	<b>Percentage</b>
All Titles	16	33%
Subscribed Titles	4	8%
Non-Subscribed Titles	12	24%

### ***Medicine Titles***

The difference between the percentage of subscribed and non-subscribed medicine titles with zero hits was even more dramatic than for the entire collection or the Chemical Sciences collection (see Table 6). While non-subscribed titles comprise 58 percent of all Medical Sciences titles, they make up nearly all titles with zero hits at 98 percent. Among non-subscribed titles, 39 percent had no hits in comparison with 1 percent of subscribed titles. However, it must be pointed out that the percentage of titles

which had no hits at all in the Medicine collection is smaller than was found in the Chemical Sciences collection or the collection as a whole. This seems unsurprising given that a greater portion of Medicine titles are required to account for 80 percent of usage.

**Table 6. Medicine Titles with Zero Hits**

<b>Category</b>	<b>Number</b>	<b>Percentage</b>
All Titles	45	23%
Subscribed Titles	1	1%
Non-Subscribed Titles	44	23%

### **Usage Patterns**

The comparison of subscribed and non-subscribed titles in the Springer Link collection and two of its subsets revealed a dramatic difference in usage between the two. Non-subscribed titles are receiving far less usage and are far more likely to have no use at all than subscribed titles. There was some difference between usage of the Medicine collection in comparison with the Chemical Sciences collection and the entire collection. It is uncertain why usage patterns seem to differ for health sciences titles, but what was observed in the UNC collection mirrored what has been found in studies of similar collections. At UNC, health sciences titles are of interest to faculty, researchers, and students in a number of schools including Dentistry, Medicine, Nursing, Pharmacy, and Public Health as well as those at UNC Hospitals who may not be affiliated with a department. Perhaps the differences in usage are related to the sheer numbers of people in health sciences as well as the fact that it is necessary for so many specializations to be represented in an academic health sciences community that serves the entire state. Most academic departments have areas of research on which they focus and others with little representation.

There are other factors to consider in examining usage data. For instance, not all journals publish the same number of articles in a given period of time. Fewer articles to access could mean fewer reasons to access a particular e-journal. It is conceivable (although unlikely) that the print versions of some journals are more likely to be used than the electronic versions. Shaw pointed out, regarding titles which receive no use, that “while zero must be considered a significant factor, it cannot serve as the exclusive justification for subscription cancellation or other access-limiting decisions[,]” and libraries need to consider other factors such as cost and faculty input (Shaw, 1978). This study of electronic journal usage does not intend to suggest that level of usage is the only criterion for selection. It must be balanced with cost and quality and the stated needs of users.

### **Individual Titles in the Chemical Sciences Collection**

Usage patterns for the Chemical Sciences subset are similar to those seen in the larger collection. The small size of the Chemical Sciences collection in Springer Link makes a closer examination of some titles included easier than for the entire collection. This provides an opportunity to explore what might be behind the usage or lack thereof for some titles. Of particular interest are subscribed publications which had no hits and the non-subscribed publications which accounted for 80 percent of use.

Of the four subscribed Chemical Sciences titles which received no hits, two were parts of *Landolt-Börnstein*, which consists of eight parts, or “groups,” listed as separate titles, and the other two were the journals *Chromatographia* and *Physics and Chemistry of Minerals*. Since most *Landolt-Börnstein* volumes did not receive any use, subscribed and non-subscribed titles will be discussed together. As for *Chromatographia*, according

to the website, it is one of the titles that Springer recently added to their collection (Springer-Verlag, 2003). It is not clear from the website when it was added, but it may have been added early enough to be included in the statistics for July-December 2003 but not in time for users to realize it was electronically available. There is still no link to the electronic version from the record in the OPAC. It is unclear why *Physics and Chemistry of Minerals*, a publication of the Mineralogical Society of America that is held by the Geology library, might have had no hits.

Interestingly, almost none of the volumes of *Landolt-Börnstein*, “a systematic and comprehensive collection of critically assessed data from all fields of physics, physical chemistry, biophysics, geophysics, astronomy, materials science, and technology,” received any use during the six month period for which data was collected (Flaxbart). One volume to which UNC subscribes, *Landolt-Börnstein - Group III Condensed Matter*, received one hit. The fact that it is included in the e-journals section of the libraries website although it is generally considered a reference work probably does not help lead people to it. As a source of data, it is also not something likely to show up in citation lists in papers or abstracts and indexes and thus lead people to it that way. Although *Landolt-Börnstein* is a venerable reference source for chemists and other scientists, its use is not intuitive. As a large multi-volume set, it includes massive amounts of information, and its indexing could be better.

Four non-subscribed titles in the Chemical Sciences collection accounted for 80 percent of the use. The four, all of which have records in the OPAC, are *Rheologica Acta*, *Journal of Biological Inorganic Chemistry*, *Amino Acids*, and *Journal of Industrial*

*Microbiology and Biotechnology*. All but *Amino Acids* are society publications. That affiliation may give them more prestige and thus more people using them.

The non-subscribed title which received most use, *Rheologica Acta*, covers the subject of rheology broadly. Rheology is the “study of the flow of materials that behave in an interesting or unusual manner” (e.g., molten plastics, chocolate, and paint), and it is not limited to one discipline. Scientists concerned with it are found in a variety of disciplines including biology, chemistry, engineering, food science, geology, physics, and mathematics (Morrison, 2004). The other three journals are also multidisciplinary as they touch on biochemistry, biology, and chemistry. *Amino Acids* and *Journal of Industrial Microbiology and Biotechnology* are also likely to appeal to users in health sciences.

## Conclusions

Rising costs of serials have been plaguing academic libraries for several decades, and the problem does not seem to be abating. Costs and issues involved with electronic journals are more troubling than ever to academic librarians. The issue has even made it into the news outside the library world with the highly publicized announcements by Harvard, Cornell, and schools in the University of California system about massive cuts to journal subscriptions and refusal to continue signing up for Elsevier’s “Big Deal” plan (Jordan, 2004). It has been an issue at UNC as well, and administrators announced early this year that the university would not be renewing its “Big Deal” plan with Elsevier either (Schwartz, 2004).

Bundles of electronic journals offer many titles to library patrons, but the lack of ability to select titles for inclusion has led to criticism of publishers. Some authors have

suggested that perhaps this is an outdated method for collection development (Peters, 2001). On the other hand, the director of Harvard's libraries, Sidney Verba, commented that "more often than not, 90% of the usage is in 10% of the journals, with a long tail of extremely low-use titles," which, in his opinion, "argues for a return to a more selective approach to collecting" (Jordan, 2004). One study of electronic journal usage indicated that it is not dissimilar from the usage of print journals as "library users are exhibiting the same sorts of journal preferences in the electronic domain as they have in print" (Morse & Clintworth, 2000). One study of the public's searching habits on the Web came to similar conclusions about people's information seeking habits and stated that,

"The Internet changes fast. In contrast, people, their information needs, and behavior do not. The amount of Web use and searching is growing explosively. This does not necessarily mean that the type of use is changing in similar ways."(Spink, Wolfram, Jansen, & Saracevic, 2001)

The use of electronic journals and the number of journals available electronically has grown dramatically as has Internet use, and electronic journals have certainly become the preferred method of access for many patrons in academic libraries (De Groote & Dorsch, 2003; King, Tenopir, & Montgomery, 2003; Morse & Clintworth, 2000; Vaughan, 2003).

A comparison of subscribed and non-subscribed titles in the Springer Link electronic journal package indicated that subscribed titles received more than five times as much usage as non-subscribed titles. This was true for the entire collection as well as the two subsets, Chemical Sciences and Medicine, that were examined. This finding does not support a whole new method of collection development, that is, selecting what journal packages and databases to purchase without concern for what titles are included.

Libraries need to favor those packages which allow them to have a say in what titles are included. For those publishers that do not currently offer that option, librarians

need to encourage publishers to include that option. Electronic resources are too expensive for libraries to spend money on resources that are unused or underutilized. In their study of electronic journal usage, Blecic, Fiscella, and Wiberley suggested that libraries need to determine the level of usage they are willing and able to support when they have the option of selecting titles for e-journal collections. Once that has been determined, they “can ascertain the least expensive mix of titles that meets its goal and cancel the others” (Blecic et al., 2001).

If libraries are going to spend massive amounts of money on electronic resources, it is in their best interest to encourage patrons to use those resources. In the case of a reference source like *Landolt-Börnstein* that is electronically available, users, especially new ones, need to be made aware of its existence and taught about why and how to use it. This points to a need for both better marketing of available resources on the part of the libraries and for increased instruction.

Catalog access may not continue to be as great an issue affecting how easily patrons are able to find whether journals are available electronically or at all. The UNC Libraries are on the verge of implementing a new Integrated Library System (ILS). The new ILS was chosen in part for its ability to help manage electronic resources and to obviate the need for separate databases such as the E-Journal Finder for providing access to electronic journals (Innovative Interfaces). Of course, it remains to be seen how well it will work out in practice, but it could make moot the question of whether usage is low for some titles because they are not included in the OPAC.

Speculation on why some journals received more use than others did not lead to any conclusive observations. Ultimately, of course, it is difficult to know why some

journals received more use than others without more information on the users. This is an important reason why librarians need to continue to encourage publishers and vendors to provide more information on users in their usage statistics. Standardization is not enough if it does not provide the information libraries need to help them effectively manage their collections.

Considering usage of electronic journals is only part of the equation of making collection decisions. It is important to heed Ann Okerson's warning that by

“bean-count[ing] usage, [libraries] could be tempted to take steps that effectively thwart the publication of material that does not show some immediate quantitative return on investment”

and hurt themselves in the long-run (Okerson, 2000). Knowing what bit of information might be truly useful to some future researcher is an ongoing dilemma for research libraries. They can only do their best to provide for the current needs of our users while weighing them against the constraints of budgets.

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**Appendix A. Springer Link Electronic Journal Usage Statistics,  
July-December 2003. (Subscribed titles in bold)**

Journal Name	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Calendar YTD
Abdominal Imaging	8	12	17	8	29	5	79
Accreditation and Quality Assurance	0	2	0	0	2	0	4
Acta Diabetologica	1	4	5	5	4	5	24
Acta Ethologica	0	0	0	0	0	0	0
Acta Informatica	0	0	0	0	0	0	0
Acta Mathematica Sinica	0	0	1	0	0	0	1
Acta Mathematicae Applicatae Sinica (English Series)	0	0	0	0	0	0	0
Acta Mechanica	0	0	0	0	0	0	0
Acta Mechanica Solida Sinica	0	0	0	0	0	0	0
Acta Neurochirurgica	8	4	10	7	16	8	53
Acta Neuropathologica	16	17	25	19	15	15	107
Advances in Biochemical Engineering/Biotechnology	0	1	0	0	0	0	1
Advances in Polymer Science	1	0	5	6	0	1	13
Advances in Solid State Physics	0	0	0	0	0	0	0
Aequationes Mathematicae	0	0	0	0	0	0	0
Aesthetic Plastic Surgery	2	4	3	3	15	1	28
AI & Society	0	0	0	0	0	0	0
Algebra Colloquium	0	0	0	0	0	0	0
Algebra Universalis	0	0	0	0	0	0	0
Algorithmica	1	2	2	0	2	0	7
Amino Acids	4	1	9	3	3	6	26
Der Anaesthesist	4	1	1	0	4	0	10
Analytical and Bioanalytical Chemistry	10	26	116	25	13	35	225
Anatomy and Embryology	11	5	8	24	6	8	62
Animal Cognition	0	0	0	11	13	0	24

Journal Name	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Calendar YTD
Annales Geophysicae	0	0	0	0	0	0	0
Annales Henri Poincare	0	0	0	0	0	0	0
<b>Annali di Matematica Pura ed Applicata</b>	0	0	0	0	0	0	0
<b>Annals of Combinatorics</b>	0	0	0	1	4	0	5
Annals of Diagnostic Paediatric Pathology	0	0	0	0	0	0	0
<b>Annals of Hematology</b>	22	30	40	32	19	28	171
<b>The Annals of Regional Science</b>	0	1	4	3	14	4	26
Annals of Vascular Surgery	16	6	5	6	10	14	57
Anzeiger für Schädlingkunde	0	0	0	0	0	0	0
Applicable Algebra in Engineering, Communication and Computing	0	0	0	0	0	0	0
<b>Applied Mathematics and Optimization</b>	1	0	0	0	3	0	4
<b>Applied Microbiology and Biotechnology</b>	9	9	14	18	13	11	74
<b>Applied Physics A: Materials Science &amp; Processing</b>	9	9	10	30	13	15	86
<b>Applied Physics B: Lasers and Optics</b>	1	2	4	2	1	3	13
Aquatic Sciences - Research Across Boundaries	1	0	0	0	4	1	6
<b>Archiv der Mathematik</b>	0	0	0	0	0	0	0
Archive for History of Exact Sciences	0	0	0	0	1	2	3
Archive for Mathematical Logic	1	0	0	0	0	2	3
<b>Archive for Rational Mechanics and Analysis</b>	0	1	6	5	9	4	25
Archive of Applied Mechanics (Ingenieur Archiv)	0	0	0	1	0	0	1
<b>Archives of Dermatological Research</b>	6	3	9	11	5	8	42
<b>Archives of Environmental Contamination and Toxicology</b>	3	0	8	1	2	3	17
<b>Archives of Gynecology and Obstetrics</b>	5	9	12	18	13	5	62
<b>Archives of Microbiology</b>	4	4	5	6	5	5	29
<b>Archives of Orthopaedic and Trauma Surgery</b>	2	1	8	3	6	7	27

Journal Name	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Calendar YTD
Archives of Toxicology	26	23	15	15	10	18	107
Archives of Virology	9	15	14	31	10	16	95
Archives of Women's Mental Health	6	2	10	17	6	4	45
ARI - An International Journal for Physical and Engineering Sciences	0	0	0	0	0	0	0
Arthroskopie	0	0	0	0	0	0	0
Asia Europe Journal	0	0	0	0	0	0	0
Astronomy and Astrophysics	0	0	0	0	0	0	0
Astronomy and Astrophysics Review	0	0	0	0	0	0	0
Basic Research in Cardiology	14	9	4	4	1	7	39
Behavioral Ecology and Sociobiology	21	21	26	36	29	3	136
Biological Cybernetics	12	2	2	5	1	16	38
Biology and Fertility of Soils	6	11	2	11	7	1	38
Biomechanics and Modeling in Mechanobiology	1	0	0	1	0	0	2
Bioprocess and Biosystems Engineering	0	0	1	0	0	1	2
Bulletin of Engineering Geology and the Environment	0	0	0	0	0	0	0
Bulletin of Environmental Contamination and Toxicology	10	2	6	6	8	1	33
Bulletin of the Brazilian Mathematical Society	0	0	0	0	0	0	0
Bulletin of Volcanology	0	1	0	0	0	0	1
Bundesgesundheitsblatt - Gesundheitsforschung - Gesundheitsschutz	0	0	0	0	0	0	0
Calcified Tissue International	11	8	27	29	17	13	105
Calcolo	0	0	0	0	0	0	0
Calculus of Variations and Partial Differential Equations	0	0	0	0	0	2	2
Cancer Chemotherapy and Pharmacology	32	27	29	35	20	32	175
Cancer Immunology, Immunotherapy	8	5	6	11	10	18	58

Journal Name	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Calendar YTD
Cancer Futures	0	0	0	0	0	0	0
CardioVascular and Interventional Radiology	5	3	8	10	1	8	35
Cell and Tissue Research	31	31	27	33	39	24	185
Cellular and Molecular Life Sciences (CMLS)	20	14	60	32	22	38	186
The Chemical Educator	0	0	0	0	0	0	0
Chemoecology	0	0	2	1	0	0	3
Child's Nervous System	7	35	14	13	20	5	94
Chinesische Medizin	0	0	0	0	0	0	0
Der Chirurg	1	2	5	6	4	4	22
Chromatographia	0	0	0	0	0	0	0
Chromosoma	8	27	19	7	10	8	79
Circuits, Systems, and Signal Processing	0	0	0	0	0	0	0
Clean Technologies and Environmental Policy	3	0	1	0	4	0	8
Climate Dynamics	0	1	1	16	5	1	24
Clinical and Experimental Medicine	0	0	2	0	0	0	2
Clinical and Experimental Nephrology	0	0	0	0	0	8	8
Clinical Autonomic Research	0	0	0	0	0	1	1
Clinical Oral Investigations	3	15	11	31	13	23	96
Clinical Rheumatology	3	3	7	11	2	8	34
Cognition, Technology & Work	0	0	0	0	2	0	2
Cognitive Processing	0	0	0	0	0	0	0
Colloid & Polymer Science	2	0	12	7	7	4	32
Colo-Proctology	0	0	0	0	0	0	0
Combinatorica	0	0	0	0	0	0	0
Commentarii Mathematici Helvetici	0	0	0	3	0	0	3
Communications in Mathematical Physics	1	0	8	5	7	4	25
Comparative Clinical Pathology	0	0	0	0	0	0	0

Journal Name	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Calendar YTD
Comparative Haematology International	0	0	0	0	0	0	0
Computational Complexity	0	0	0	0	0	0	0
Computational Mechanics	0	0	0	0	0	2	2
<b>Computing</b>	0	1	0	0	0	0	1
Computing and Visualization in Science	0	0	0	0	0	0	0
Constructive Approximation	1	0	0	1	0	0	2
Continuum Mechanics and Thermodynamics	0	0	2	2	1	0	5
<b>Contributions to Mineralogy and Petrology</b>	0	0	9	0	0	1	10
<b>Coral Reefs</b>	1	1	35	62	53	4	156
Critical Reviews in Neurosurgery	1	0	0	3	0	0	4
<b>Current Genetics</b>	11	4	14	23	18	19	89
<b>Current Microbiology</b>	4	4	8	3	9	3	31
Decisions in Economics and Finance	0	0	0	1	0	1	2
Deutsches und Europäisches Familienrecht	0	0	0	0	0	0	0
<b>Development Genes and Evolution</b>	8	8	12	15	10	12	65
<b>Diabetologia</b>	33	28	24	63	62	24	234
<b>Discrete and Computational Geometry</b>	0	0	0	0	7	5	12
Diseases of the Colon & Rectum	0	0	0	0	0	0	0
<b>Distributed Computing</b>	0	0	0	0	0	2	2
<b>Dysphagia</b>	7	1	3	5	3	2	21
EcoHealth	0	0	0	0	0	0	0
Economic Bulletin	0	0	0	0	0	0	0
<b>Economic Theory</b>	0	0	0	8	1	0	9
Economics of Governance	0	0	0	0	4	0	4
<b>Ecosystems</b>	20	7	10	2	8	17	64
Electrical Engineering (Archiv für Elektrotechnik)	0	0	0	0	0	0	0

Journal Name	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Calendar YTD
Elemente der Mathematik	0	0	0	0	0	0	0
<b>Emergency Radiology</b>	1	1	1	3	5	0	11
<b>Empirical Economics</b>	0	0	1	0	3	3	7
Engineering with Computers	0	0	0	0	0	1	1
Environmental Chemistry Letters	0	4	0	0	0	0	4
Environmental Engineering and Policy	0	0	0	2	5	0	7
<b>Environmental Geology</b>	0	0	2	5	3	0	10
<b>Environmental Management</b>	11	1	20	9	34	7	82
EPJ direct	0	0	0	0	0	0	0
Erwerbs-Obstbau	0	0	0	0	0	0	0
<b>ESO Astrophysics Symposia</b>	0	0	0	0	0	0	0
Esophagus	0	0	0	0	0	0	0
Ethik in der Medizin	0	0	0	0	0	0	0
<b>European Archives of Oto-Rhino-Laryngology</b>	1	4	2	10	18	6	41
<b>European Archives of Psychiatry and Clinical Neuroscience</b>	5	5	14	9	10	10	53
<b>European Biophysics Journal</b>	12	4	8	14	8	5	51
<b>European Child &amp; Adolescent Psychiatry</b>	5	9	10	15	23	12	74
European Food Research and Technology	0	0	0	0	0	0	0
<b>European Journal of Applied Physiology</b>	8	6	14	22	12	15	77
<b>European Journal of Applied Physiology and Occupational Physiology</b>	0	0	2	1	3	0	6
<b>European Journal of Clinical Microbiology &amp; Infectious Diseases</b>	11	33	17	31	21	23	136
<b>European Journal of Clinical Pharmacology</b>	18	15	33	25	33	9	133
European Journal of Forest Research	0	0	0	0	0	0	0
The European Journal of Health Economics	0	2	0	6	0	1	9
<b>European Journal of Nuclear Medicine and Molecular Imaging</b>	4	8	18	20	13	18	81

Journal Name	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Calendar YTD
<b>European Journal of Nutrition</b>	3	1	6	4	1	2	17
European Journal of Orthopaedic Surgery & Traumatology	0	0	0	0	0	0	0
<b>European Journal of Pediatrics</b>	21	21	39	44	28	38	191
European Journal of Plastic Surgery	0	0	0	0	0	0	0
European Journal of Trauma	0	0	0	0	0	0	0
European Journal of Wildlife Research	0	0	0	0	0	0	0
<b>The European Physical Journal A - Hadrons and Nuclei</b>	0	0	0	0	0	0	0
<b>The European Physical Journal B - Condensed Matter</b>	2	1	0	1	1	0	5
<b>The European Physical Journal C - Particles and Fields</b>	0	0	0	0	2	0	2
<b>The European Physical Journal D - Atomic, Molecular and Optical Physics</b>	4	6	1	5	2	5	23
<b>The European Physical Journal E - Soft Matter</b>	1	4	2	3	6	3	19
<b>European Radiology</b>	43	36	38	50	44	18	229
European Spine Journal	26	2	5	4	12	3	52
<b>Europhysics News</b>	0	0	0	0	0	0	0
Experimental Biology Online	0	0	0	0	0	0	0
<b>Experimental Brain Research</b>	11	14	29	28	18	24	124
Experiments in Fluids	0	0	0	0	0	0	0
<b>Extremophiles</b>	1	3	10	0	2	15	31
Facies	0	0	0	0	0	0	0
<b>Few-Body Systems</b>	0	0	0	0	0	0	0
<b>Finance and Stochastics</b>	0	2	0	2	0	0	4
Formal Aspects of Computing	0	0	0	0	0	0	0
Forschung im Ingenieurwesen	0	0	0	0	0	0	0
Forstwissenschaftliches Centralblatt	0	0	0	0	0	0	0
Forum der Psychoanalyse	0	0	0	2	0	3	5
Foundations of Computational Mathematics	0	0	0	0	0	0	0

Journal Name	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Calendar YTD
Fresenius' Journal of Analytical Chemistry	5	0	2	1	2	3	13
Functional & Integrative Genomics	1	6	4	2	4	4	21
Fuss & Sprunggelenk	0	0	0	0	0	0	0
G.O. Geowissenschaften Online	0	0	0	0	0	0	0
Gastric Cancer	8	0	0	0	0	1	9
Gefäßchirurgie	0	0	0	0	0	0	0
Geo-Marine Letters	1	2	0	0	0	0	3
Geologische Rundschau	0	0	0	0	0	0	0
Geometric And Functional Analysis	0	0	0	0	0	0	0
Gesunde Pflanzen	0	0	0	0	0	0	0
GPS Solutions	0	0	0	0	0	0	0
Graefe's Archive for Clinical and Experimental Ophthalmology	7	7	10	8	15	10	57
Granular Matter	0	0	0	0	0	0	0
Graphs and Combinatorics	0	0	0	0	0	0	0
Grundwasser	0	0	0	0	0	0	0
Gynäkologische Endokrinologie	0	0	0	0	0	0	0
Der Gynäkologe	0	0	0	0	0	0	0
Gynecological Surgery	0	0	0	0	0	0	0
The Handbook of Environmental Chemistry	0	0	0	0	0	0	0
Der Hautarzt	2	0	1	11	2	2	18
Heart and Vessels	0	0	0	0	2	0	2
Heat and Mass Transfer	0	0	0	0	0	0	0
Helgolander Marine Research	0	0	0	1	0	0	1
Hematology and Cell Therapy	0	0	0	0	0	0	0
HEPAC Health Economics in Prevention and Care	0	0	0	0	0	0	0
Hernia	6	3	3	7	7	12	38

Journal Name	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Calendar YTD
Herz	2	3	1	2	2	3	13
Herzschrittmachtherapie und Elektrophysiologie	0	0	0	0	0	0	0
<b>Histochemistry and Cell Biology</b>	22	14	11	40	23	18	128
HNO	0	1	0	5	1	0	7
Holz als Roh- und Werkstoff	0	0	0	0	0	0	0
<b>Human Genetics</b>	30	25	31	34	39	27	186
Hydrogeology Journal	0	0	0	0	0	5	5
<b>Ichthyological Research</b>	0	0	0	0	0	0	0
<b>Immunogenetics</b>	16	3	5	15	11	11	61
<b>Infektion</b>	7	5	7	5	9	8	41
<b>Inflammation Research</b>	14	3	20	10	10	19	76
Informatik - Forschung und Entwicklung	0	0	0	0	0	0	0
Informatik-Spektrum	0	0	0	0	0	0	0
Information Systems and E-Business Management	0	0	0	0	0	0	0
<b>Insectes Sociaux</b>	0	0	0	0	0	1	1
<b>Integral Equations and Operator Theory</b>	0	0	0	0	0	0	0
<b>Intensive Care Medicine</b>	33	52	65	47	82	41	320
Intensivmedizin und Notfallmedizin	0	0	0	0	0	0	0
<b>International Archives of Occupational and Environmental Health</b>	12	12	29	12	15	14	94
The International Journal of Advanced Manufacturing Technology	0	0	0	0	0	0	0
International Journal of Angiology	0	0	0	0	1	0	1
International Journal of Asian Management	0	0	0	0	0	0	0
<b>International Journal of Biometeorology</b>	0	2	0	0	1	1	4
International Journal of Clinical & Laboratory Research	2	0	0	0	0	2	4
International Journal of Clinical Oncology	0	1	3	0	1	2	7
International Journal of Colorectal Disease	4	5	6	5	5	2	27

Journal Name	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Calendar YTD
<b>International Journal of Earth Sciences</b>	0	0	1	1	0	0	2
International Journal of Game Theory	0	0	0	0	0	0	0
International Journal of Information Security	0	0	0	0	0	0	0
International Journal of Legal Medicine	5	1	10	5	3	0	24
<b>International Journal on Digital Libraries</b>	0	0	3	0	0	0	3
International Journal on Document Analysis and Recognition	0	0	0	0	1	0	1
International Journal on Software Tools for Technology Transfer (STTT)	0	0	0	0	0	0	0
International Microbiology	1	0	4	2	2	3	12
<b>International Orthopaedics</b>	2	0	7	3	6	5	23
International Urogynecology Journal and Pelvic Floor Dysfunction	4	19	23	6	8	9	69
Der Internist	0	0	1	0	1	0	2
<b>Inventiones Mathematicae</b>	3	5	0	2	0	0	10
<b>Invertebrate Neuroscience</b>	0	2	0	1	0	0	3
Irrigation Science	0	0	0	2	2	0	4
The Italian Journal of Neurological Sciences	0	0	0	2	0	0	2
J.UCS Journal of Universal Computer Science	0	0	0	0	0	0	0
<b>Japanese Journal of Ophthalmology</b>	0	0	0	0	0	0	0
JARO - Journal of the Association for Research in Otolaryngology	11	3	5	1	1	5	26
Journal of Anesthesia	0	1	0	0	4	0	5
Journal of Artificial Organs	0	0	0	0	0	0	0
Journal of Biological Inorganic Chemistry	3	5	4	10	3	3	28
Journal of Bone and Mineral Metabolism	3	4	7	23	3	7	47
<b>Journal of Cancer Research and Clinical Oncology</b>	19	19	9	14	12	12	85
<b>Journal of Classification</b>	0	0	0	0	0	1	1

Journal Name	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Calendar YTD
Journal of Comparative Physiology A: Sensory, Neural, and Behavioral Physiology	0	12	2	14	6	1	35
Journal of Comparative Physiology B: Biochemical, Systemic, and Environmental Physiology	0	0	0	0	5	0	5
Journal of Cryptology	1	0	0	6	0	0	7
Journal of Cutaneous Medicine and Surgery: Incorporating Medical and Surgical Dermatology	1	1	0	0	1	1	4
Journal of Digital Imaging	2	0	1	4	2	1	10
Journal of Economics	0	0	0	1	0	0	1
Journal of Ethology	0	0	0	2	1	0	3
Journal of Evolution Equations	0	0	0	3	0	0	3
Journal of Evolutionary Economics	1	0	2	1	0	0	4
Journal of Forest Research	0	0	0	0	0	0	0
Journal of Fourier Analysis and Applications	0	0	0	0	2	0	2
Journal of Gastroenterology	10	14	6	23	6	13	72
Journal of General Plant Pathology	0	0	0	0	0	0	0
Journal of Geodesy	0	0	0	0	0	0	0
Journal of Geographical Systems	2	0	1	6	0	0	9
Journal of Geometry	0	0	0	0	0	0	0
The Journal of Headache and Pain	0	0	0	0	1	0	1
Journal of Hepato-Biliary-Pancreatic Surgery	8	6	8	9	12	3	46
Journal of Human Genetics	8	6	5	10	10	1	40
Journal of Industrial Microbiology and Biotechnology	5	3	2	5	9	0	24
Journal of Infection and Chemotherapy	5	4	8	6	2	3	28
Journal of Marine Biotechnology	0	0	0	1	0	1	2
Journal of Marine Science and Technology	0	0	0	0	0	0	0
Journal of Material Cycles and Waste Management	0	0	0	0	0	0	0
Journal of Maternal-Fetal Investigation	0	0	0	1	0	0	1

Journal Name	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Calendar YTD
<b>Journal of Mathematical Biology</b>	5	1	2	10	10	0	28
Journal of Mathematical Fluid Mechanics	0	0	0	0	0	0	0
<b>Journal of Membrane Biology</b>	30	15	22	30	20	15	132
<b>Journal of Molecular Evolution</b>	5	13	25	26	29	11	109
<b>Journal of Molecular Medicine</b>	27	22	38	47	29	18	181
Journal of Molecular Modeling	8	2	1	3	1	0	15
<b>Journal of Neural Transmission</b>	3	19	31	12	13	7	85
<b>Journal of Neurology</b>	36	23	36	54	50	38	237
<b>Journal of Nonlinear Science</b>	0	0	0	0	0	0	0
Journal of Ornithology	0	0	0	0	0	0	0
Journal of Orofacial Orthopedics/Fortschritte der Kieferorthopädie	0	1	0	1	2	0	4
Journal of Orthopaedic Science	1	2	9	12	12	6	42
Journal of Orthopaedics and Traumatology	0	0	0	0	0	0	0
Journal of Pest. Science	0	0	0	0	0	0	0
<b>Journal of Plant Growth Regulation</b>	5	2	0	6	3	2	18
<b>Journal of Plant Research</b>	4	3	0	0	2	7	16
<b>Journal of Population Economics</b>	2	0	1	11	12	2	28
Journal of Public Health	0	0	0	0	0	0	0
Journal of Solid State Electrochemistry	0	0	1	0	1	2	4
Journal of the European Mathematical Society	0	0	0	0	0	0	0
Journal of Wood Science	0	0	0	0	0	0	0
Klinische Neuroradiologie	0	0	0	0	0	0	0
Knee Surgery, Sports Traumatology, Arthroscopy	4	2	4	14	8	5	37
Knowledge and Information Systems	0	0	0	0	0	0	0
Kognitionswissenschaft	0	0	0	0	0	0	0
Landolt Börnstein New Series	0	0	0	0	0	0	0

<b>Journal Name</b>	<b>Jul-03</b>	<b>Aug-03</b>	<b>Sep-03</b>	<b>Oct-03</b>	<b>Nov-03</b>	<b>Dec-03</b>	<b>Calendar YTD</b>
Landolt-Börnstein - Group I Elementary Particles, Nuclei and Atoms	0	0	0	0	0	0	0
<b>Landolt-Börnstein - Group II Molecules and Radicals</b>	0	0	0	0	0	0	0
<b>Landolt-Börnstein - Group III Condensed Matter</b>	1	0	0	0	0	0	1
<b>Landolt-Börnstein - Group IV Physical Chemistry</b>	0	0	0	0	0	0	0
Landolt-Börnstein - Group V Geophysics	0	0	0	0	0	0	0
Landolt-Börnstein - Group VI Astronomy and Astrophysics	0	0	0	0	0	0	0
Landolt-Börnstein - Group VII Biophysics	0	0	0	0	0	0	0
Landolt-Börnstein - Group VIII Advanced Materials and Technologies	0	0	0	0	0	0	0
Landslides	0	0	0	0	0	0	0
Langenbeck's Archives of Surgery	5	0	5	3	6	3	22
Lasers in Medical Science	1	0	2	3	0	0	6
<b>Lecture Notes in Computer Science</b>	7	7	133	54	26	34	261
<b>Lecture Notes in Control and Information Sciences</b>	0	0	0	0	0	0	0
<b>Lecture Notes in Earth Sciences</b>	0	0	0	0	0	0	0
<b>Lecture Notes in Mathematics</b>	1	3	0	0	0	1	5
Lecture Notes in Physics	1	1	0	1	0	0	3
<b>Lecture Notes in Physics monographs</b>	0	0	0	0	0	0	0
Les Houches	0	0	0	0	0	0	0
Limnology	0	0	1	0	0	0	1
<b>Lung</b>	0	1	2	2	5	2	12
Machine Vision and Applications	0	0	0	0	0	0	0
MAGMA Magnetic Resonance Materials in Physics, Biology and Medicine	0	0	0	0	1	0	1
<b>Mammalian Genome</b>	11	28	46	18	22	24	149
Manuelle Medizin	0	0	0	0	0	0	0
<b>Manuscripta Mathematica</b>	0	3	0	2	0	0	5

Journal Name	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Calendar YTD
<b>Marine Biology</b>	14	13	28	36	37	10	138
Marine Biotechnology	2	0	0	0	2	2	6
Materials Research Innovations	0	0	0	2	0	0	2
<b>Mathematical Methods of Operations Research (ZOR)</b>	0	0	0	4	4	2	10
<b>Mathematical Programming</b>	1	2	1	8	0	0	12
Mathematics of Control, Signals, and Systems (MCSS)	0	0	0	0	0	0	0
<b>Mathematische Annalen</b>	0	0	1	0	0	0	1
<b>Mathematische Semesterberichte</b>	0	0	0	0	0	0	0
<b>Mathematische Zeitschrift</b>	0	0	2	0	0	0	2
Medical Electron Microscopy	2	2	5	6	6	8	29
Medical Microbiology and Immunology	1	1	4	7	3	1	17
Mediterranean Journal of Mathematics	0	0	0	0	0	0	0
Medizinische Klinik	0	0	0	0	0	0	0
MedR Medizinrecht	0	0	0	0	0	0	0
Meteorology and Atmospheric Physics	0	4	0	0	0	0	4
<b>Metrika</b>	1	0	0	0	1	0	2
<b>Microbial Ecology</b>	2	6	3	4	8	1	24
Microchimica Acta	2	0	0	0	1	0	3
Microfluidics and Nanofluidics							
Microsystem Technologies	0	0	0	0	0	0	0
Milan Journal of Mathematics	0	0	0	0	0	0	0
Mine Water and the Environment	0	0	1	0	0	0	1
<b>Mineralium Deposita</b>	0	0	0	0	0	1	1
Mineralogy and Petrology	0	0	0	0	0	0	0
Mitteilungsblatt der Fachgruppe Analytische Chemie der Gesellschaft Deutscher Chemiker	0	0	0	0	0	0	0
Modern Rheumatology	0	0	0	0	0	0	0

Journal Name	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Calendar YTD
<b>Molecular and General Genetics MGG</b>	0	0	0	0	0	1	1
<b>Molecular Genetics and Genomics</b>	18	12	19	29	16	16	110
Molecular Marine Biology and Biotechnology	0	0	0	0	0	0	0
Molecular Sieves - Science and Technology	0	0	0	0	0	0	0
Molecules	0	0	0	0	0	0	0
Molecules and Cells	0	0	0	0	0	0	0
Molecules Online	0	0	0	0	0	0	0
<b>Monatshefte für Chemie / Chemical Monthly</b>	0	0	2	0	2	0	4
<b>Monatshefte für Mathematik</b>	0	0	0	0	1	0	1
Monatsschrift Kinderheilkunde	0	0	0	0	0	1	1
<b>Multimedia Systems</b>	2	0	0	0	0	1	3
Mund-, Kiefer- und Gesichtschirurgie	0	1	1	1	2	1	6
Mycorrhiza	0	0	0	0	0	0	0
<b>Mycoscience</b>	0	0	0	1	0	0	1
Natur und Recht	0	0	0	0	0	0	0
<b>Naturwissenschaften</b>	12	4	16	10	21	9	72
<b>Naunyn-Schmiedeberg's Archives of Pharmacology</b>	13	20	14	21	20	22	110
Der Nervenarzt	0	1	2	4	3	4	14
Neural Computing & Applications	0	0	0	0	0	0	0
Neurogenetics	0	8	3	5	5	3	24
<b>Neurological Sciences</b>	13	12	9	16	26	14	90
<b>Neuroradiology</b>	34	38	35	28	60	42	237
<b>Neurosurgical Review</b>	5	0	6	4	6	6	27
NoDEA : Nonlinear Differential Equations and Applications	0	0	1	1	3	0	5
Notfall & Rettungsmedizin	0	0	0	0	0	0	0
<b>Numerische Mathematik</b>	0	0	0	0	1	0	1

Journal Name	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Calendar YTD
Ocean Dynamics	0	0	3	0	1	0	4
Odontology	0	2	3	1	0	2	8
<b>Oecologia</b>	25	8	20	21	56	13	143
Der Onkologe	0	0	0	0	0	0	0
Operative Orthopädie und Traumatologie	0	0	0	0	0	0	0
Der Ophthalmologe	2	0	0	1	0	1	4
OR Spectrum	0	1	8	0	0	0	9
Der Orthopäde	1	0	1	1	1	1	5
Orthopaedics and Traumatology	3	0	1	0	0	0	4
<b>Osteoporosis International</b>	17	15	40	75	43	24	214
Paddy and Water Environment	0	0	0	0	0	0	0
<b>Papers in Regional Science</b>	0	0	2	3	3	0	8
<b>Parasitology Research</b>	6	6	6	5	6	3	32
Der Pathologe	2	1	1	0	0	0	4
Pathologica	0	0	0	0	0	0	0
Pattern Analysis & Applications	0	0	0	0	0	0	0
Pediatric and Developmental Pathology	6	8	3	11	6	8	42
<b>Pediatric Cardiology</b>	8	18	21	10	26	7	90
Pediatric Nephrology	28	26	19	28	21	22	144
<b>Pediatric Radiology</b>	8	10	35	34	32	16	135
Pediatric Surgery International	6	27	8	12	5	14	72
PerinatalMedizin	0	0	0	0	0	0	0
Personal and Ubiquitous Computing	2	0	0	0	0	0	2
Personal Technologies	0	0	0	0	0	0	0
<b>Pflügers Archiv European Journal of Physiology</b>	22	28	36	72	36	28	222
Physics and Chemistry of Minerals	0	0	0	0	0	0	0

Journal Name	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Calendar YTD
Physics in Perspective (PIP)	4	0	3	0	34	0	41
Plant Cell Reports	0	2	6	3	1	2	14
Plant Systematics and Evolution	0	0	0	1	1	0	2
Planta	20	25	14	16	12	25	112
Poiesis & Praxis: International Journal of Technology Assessment and Ethics of Science	0	0	0	0	0	0	0
Polar Biology	0	0	1	4	10	0	15
Polymer Bulletin	0	1	2	13	3	0	19
Population Ecology	0	0	1	1	0	0	2
Primates	0	0	0	1	0	1	2
Probability Theory and Related Fields	0	0	2	1	0	1	4
Progress in Colloid and Polymer Science	0	0	1	0	0	0	1
Prokaryotes	0	0	0	0	0	0	0
Protoplasma	0	4	1	5	3	0	13
Psychological Research	1	0	0	7	2	3	13
Psychopharmacology	113	93	157	135	117	72	687
Psychotherapeut	0	0	0	0	0	0	0
Publications Mathématiques de L'IHÉS	0	0	0	0	0	0	0
Pure and Applied Geophysics	0	0	1	0	0	0	1
Radiation and Environmental Biophysics	2	0	0	4	0	2	8
Der Radiologe	2	3	4	0	2	0	11
Rechtsmedizin	0	0	0	0	0	0	0
Regional Environmental Change	0	0	0	4	2	0	6
Reproduktionsmedizin	0	0	0	0	1	0	1
Requirements Engineering	0	0	1	0	0	0	1
Research in Engineering Design	0	0	0	0	0	0	0
Research in Experimental Medicine	0	0	0	0	1	0	1

Journal Name	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Calendar YTD
Research in Nondestructive Evaluation	0	0	0	0	0	0	0
Researches on Population Ecology	0	0	0	0	0	0	0
Review of Economic Design	0	0	0	2	0	0	2
Reviews of Physiology, Biochemistry	0	1	0	0	0	0	1
Rheologica Acta	5	7	13	6	9	4	44
Rheumatology International	5	7	8	4	7	9	40
Rock Mechanics and Rock Engineering	0	0	0	0	0	0	0
Der Schmerz	0	1	0	3	1	1	6
Sciences of Soils	0	0	0	0	0	0	0
Selecta Mathematica, New Series	0	0	0	0	0	0	0
Semigroup Forum	0	0	0	0	0	0	0
Sexual Plant Reproduction	0	0	1	0	1	0	2
Shock Waves	0	0	0	0	0	0	0
Skeletal Radiology	4	2	16	12	14	2	50
Social Choice and Welfare	0	0	0	1	1	0	2
Social Psychiatry and Psychiatric Epidemiology	7	9	16	23	43	15	113
Soft Computing - A Fusion of Foundations, Methodologies and Applications	0	0	0	0	0	0	0
Software - Concepts & Tools	0	0	0	0	0	0	0
Software and Systems Modeling	0	0	0	0	0	0	0
Southeast Asian Bulletin of Mathematics	0	0	0	0	0	0	0
Sozial- und Präventivmedizin/Social and Preventive Medicine	0	0	2	2	0	0	4
Spanish Economic Review	0	0	0	0	0	0	0
Springer Seminars in Immunopathology	5	4	6	2	0	0	17
Springer Tracts in Advanced Robotics	0	0	0	0	0	0	0
Springer Tracts in Modern Physics	0	0	0	0	1	0	1
Standort - Zeitschrift für angewandte Geographie	0	0	0	0	0	0	0

Journal Name	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Calendar YTD
Statistical Papers	0	0	0	0	0	0	0
Stochastic Environmental Research and Risk Assessment (SERRA)	1	2	6	8	14	11	42
Stochastic Hydrology and Hydraulics	0	0	0	0	0	0	0
Strahlentherapie und Onkologie	0	0	0	2	0	0	2
Structural and Multidisciplinary Optimization	0	0	0	0	0	0	0
Structure & Bonding	0	0	0	0	0	0	1
Supportive Care in Cancer	8	16	17	32	15	9	97
Surgery Today	6	12	9	7	2	6	42
Surgical and Radiologic Anatomy	1	1	0	4	0	0	6
Surgical Endoscopy	10	17	37	19	28	19	130
System Familie	0	0	0	0	0	0	0
Techniques in Coloproctology	0	0	0	1	2	2	5
Theoretical and Applied Climatology	1	1	0	2	0	0	4
TAG Theoretical and Applied Genetics	6	23	9	22	0	1	61
Theoretical and Computational Fluid Dynamics	0	3	0	0	0	0	3
Theoretical Chemistry Accounts: Theory, Computation, and Modeling (Theoretica Chimica Acta)	1	4	6	10	13	8	42
Theory of Computing Systems	0	0	0	0	0	0	0
Topics in Applied Physics	0	6	1	2	0	0	9
Topics in Current Chemistry	14	4	8	2	1	2	31
Topics in Current Genetics	0	0	0	0	0	0	0
Topics in Organometallic Chemistry	0	0	0	0	0	0	0
Transformation Groups	0	0	0	0	0	0	0
Transplant International	8	8	9	5	10	6	46
Trauma und Berufskrankheit	0	0	0	0	0	0	0
Trees - Structure and Function	0	0	0	0	0	0	2
Der Unfallchirurg	0	0	2	5	3	1	11

<b>Journal Name</b>	<b>Jul-03</b>	<b>Aug-03</b>	<b>Sep-03</b>	<b>Oct-03</b>	<b>Nov-03</b>	<b>Dec-03</b>	<b>Calendar YTD</b>
Universal Access in the Information Society	0	0	0	0	0	1	1
Der Urologe A	0	2	0	0	0	0	2
Der Urologe B	0	0	0	0	0	0	0
<b>Urological Research</b>	2	0	4	6	4	11	27
Vegetation History and Archaeobotany	0	0	0	0	0	0	0
<b>Virchows Archiv</b>	7	13	8	17	12	10	67
Virtual Reality	8	0	5	0	0	0	13
<b>The Visual Computer</b>	0	0	3	0	14	0	17
Visual Geosciences	0	0	0	0	0	0	0
The VLDB Journal The International Journal on Very Large Data Bases	0	0	2	0	0	0	2
Wood Science and Technology	0	0	0	0	0	0	0
<b>World Journal of Surgery</b>	21	24	38	38	38	26	185
<b>World Journal of Urology</b>	2	11	4	52	24	18	111
wt Werkstattstechnik	0	0	0	0	0	0	0
Zeitschrift für Epileptologie	0	0	0	0	0	0	0
<b>Zeitschrift für Angewandte Mathematik und Physik (ZAMP)</b>	0	1	0	1	0	0	2
Zeitschrift für Ernährungswissenschaft	0	0	0	0	0	0	0
Zeitschrift für Gerontologie und Geriatrie	0	0	1	3	1	1	6
Zeitschrift für Herz-, Thorax- und Gefäßchirurgie	0	0	0	0	0	0	0
Zeitschrift für IT in der Verwaltung	0	0	0	0	0	0	0
Zeitschrift für Jagdwissenschaft	0	0	0	0	0	0	0
Zeitschrift für Kardiologie	4	4	0	2	4	4	18
Zeitschrift für Lebensmitteluntersuchung und -Forschung A	0	0	0	0	0	0	0
<b>Zeitschrift für Physik A Hadrons and Nuclei</b>	0	0	3	0	0	0	3
<b>Zeitschrift für Physik B Condensed Matter</b>	0	0	0	0	0	0	0
<b>Zeitschrift für Physik C Particles and Fields</b>	0	0	0	0	0	0	0

Journal Name	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Calendar YTD
Zeitschrift für Physik D Atoms, Molecules and Clusters	4	1	0	1	2	0	8
Zeitschrift für Rheumatologie	0	0	1	1	1	5	8
Zoomorphology	2	0	1	0	0	0	3
Zphys-e.A	0	0	0	0	0	0	0
Zphys-e.B	0	0	0	0	0	0	0
Zphys-e.C	0	0	0	0	0	0	0
<b>Total for all journals</b>	<b>1615</b>	<b>1630</b>	<b>2491</b>	<b>2758</b>	<b>2491</b>	<b>1771</b>	<b>12756</b>

**Appendix B. Springer Link Electronic Journal Usage, July-December 2003, Ordered by Usage**

Journal Name	Calendar YTD
Psychopharmacology	687
Intensive Care Medicine	320
Lecture Notes in Computer Science	261
Journal of Neurology	237
Neuroradiology	237
Diabetologia	234
European Radiology	229
Analytical and Bioanalytical Chemistry	225
Pflügers Archiv European Journal of Physiology	222
Osteoporosis International	214
European Journal of Pediatrics	191
Cellular and Molecular Life Sciences (CMLS)	186
Human Genetics	186
Cell and Tissue Research	185
World Journal of Surgery	185
Journal of Molecular Medicine	181
Cancer Chemotherapy and Pharmacology	175
Annals of Hematology	171
Coral Reefs	156
Mammalian Genome	149
Pediatric Nephrology	144
Oecologia	143
Marine Biology	138

Journal Name	Calendar YTD
Behavioral Ecology and Sociobiology	136
European Journal of Clinical Microbiology & Infectious Diseases	136
Pediatric Radiology	135
European Journal of Clinical Pharmacology	133
Journal of Membrane Biology	132
Surgical Endoscopy	130
Histochemistry and Cell Biology	128
Experimental Brain Research	124
Social Psychiatry and Psychiatric Epidemiology	113
Planta	112
World Journal of Urology	111
Molecular Genetics and Genomics	110
Naunyn-Schmiedeberg's Archives of Pharmacology	110
Journal of Molecular Evolution	109
Acta Neuropathologica	107
Archives of Toxicology	107
Calcified Tissue International	105
Supportive Care in Cancer	97
Clinical Oral Investigations	96
Archives of Virology	95
Child's Nervous System	94
International Archives of Occupational and Environmental Health	94
Neurological Sciences	90

Journal Name	Calendar YTD
Pediatric Cardiology	90
Current Genetics	89
Applied Physics A: Materials Science & Processing	86
Journal of Cancer Research and Clinical Oncology	85
Journal of Neural Transmission	85
Environmental Management	82
European Journal of Nuclear Medicine and Molecular Imaging	81
Abdominal Imaging	79
Chromosoma	79
European Journal of Applied Physiology	77
Inflammation Research	76
Applied Microbiology and Biotechnology	74
European Child & Adolescent Psychiatry	74
Journal of Gastroenterology	72
Naturwissenschaften	72
Pediatric Surgery International	72
International Urogynecology Journal and Pelvic Floor Dysfunction	69
Virchows Archiv	67
Development Genes and Evolution	65
Ecosystems	64
Anatomy and Embryology	62
Archives of Gynecology and Obstetrics	62
Immunogenetics	61

Journal Name	Calendar YTD
TAG Theoretical and Applied Genetics	61
Cancer Immunology, Immunotherapy	58
Annals of Vascular Surgery	57
Graefe's Archive for Clinical and Experimental Ophthalmology	57
Acta Neurochirurgica	53
European Archives of Psychiatry and Clinical Neuroscience	53
European Spine Journal	52
European Biophysics Journal	51
Skeletal Radiology	50
Journal of Bone and Mineral Metabolism	47
Journal of Hepato-Biliary-Pancreatic Surgery	46
Transplant International	46
Archives of Women's Mental Health	45
Rheologica Acta	44
Archives of Dermatological Research	42
Journal of Orthopaedic Science	42
Pediatric and Developmental Pathology	42
Stochastic Environmental Research and Risk Assessment (SERRA)	42
Surgery Today	42
Theoretical Chemistry Accounts: Theory, Computation, and Modeling (Theoretica Chimica Acta)	42
European Archives of Oto-Rhino-Laryngology	41
Infection	41
Physics in Perspective (PIP)	41

Journal Name	Calendar YTD
Journal of Human Genetics	40
Rheumatology International	40
Basic Research in Cardiology	39
Biological Cybernetics	38
Biology and Fertility of Soils	38
Hernia	38
Knee Surgery, Sports Traumatology, Arthroscopy	37
CardioVascular and Interventional Radiology	35
Journal of Comparative Physiology A: Sensory, Neural, and Behavioral Physiology	35
Clinical Rheumatology	34
Bulletin of Environmental Contamination and Toxicology	33
Colloid & Polymer Science	32
Parasitology Research	32
Current Microbiology	31
Extremophiles	31
Topics in Current Chemistry	31
Archives of Microbiology	29
Medical Electron Microscopy	29
Aesthetic Plastic Surgery	28
Journal of Biological Inorganic Chemistry	28
Journal of Infection and Chemotherapy	28
Journal of Mathematical Biology	28
Journal of Population Economics	28
Archives of Orthopaedic and Trauma Surgery	27

Journal Name	Calendar YTD
International Journal of Colorectal Disease	27
Neurosurgical Review	27
Urological Research	27
Amino Acids	26
The Annals of Regional Science	26
JARO - Journal of the Association for Research in Otolaryngology	26
Archive for Rational Mechanics and Analysis	25
Communications in Mathematical Physics	25
Acta Diabetologica	24
Animal Cognition	24
Climate Dynamics	24
International Journal of Legal Medicine	24
Journal of Industrial Microbiology and Biotechnology	24
Microbial Ecology	24
Neurogenetics	24
The European Physical Journal D - Atomic, Molecular and Optical Physics	23
International Orthopaedics	23
Der Chirurg	22
Langenbeck's Archives of Surgery	22
Dysphagia	21
Functional & Integrative Genomics	21
The European Physical Journal E - Soft Matter	19
Polymer Bulletin	19
Der Hautarzt	18

Journal Name	Calendar YTD
Journal of Plant Growth Regulation	18
Zeitschrift für Kardiologie	18
Archives of Environmental Contamination and Toxicology	17
European Journal of Nutrition	17
Medical Microbiology and Immunology	17
Springer Seminars in Immunopathology	17
The Visual Computer	17
Journal of Plant Research	16
Journal of Molecular Modeling	15
Polar Biology	15
Der Nervenarzt	14
Plant Cell Reports	14
Advances in Polymer Science	13
Applied Physics B: Lasers and Optics	13
Fresenius' Journal of Analytical Chemistry	13
Herz	13
Protoplasma	13
Psychological Research	13
Virtual Reality	13
Discrete and Computational Geometry	12
International Microbiology	12
Lung	12
Mathematical Programming	12
Emergency Radiology	11
Der Radiologe	11
Der Unfallchirurg	11

Journal Name	Calendar YTD
Der Anaesthesist	10
Contributions to Mineralogy and Petrology	10
Environmental Geology	10
Inventiones Mathematicae	10
Journal of Digital Imaging	10
Mathematical Methods of Operations Research (ZOR)	10
Economic Theory	9
The European Journal of Health Economics	9
Gastric Cancer	9
Journal of Geographical Systems	9
OR Spectrum	9
Topics in Applied Physics	9
Clean Technologies and Environmental Policy	8
Clinical and Experimental Nephrology	8
Odontology	8
Papers in Regional Science	8
Radiation and Environmental Biophysics	8
Zeitschrift für Physik D Atoms, Molecules and Clusters	8
Zeitschrift für Rheumatologie	8
Algorithmica	7
Empirical Economics	7
Environmental Engineering and Policy	7
HNO	7
International Journal of Clinical Oncology	7
Journal of Cryptology	7
Aquatic Sciences - Research Across Boundaries	6

Journal Name	Calendar YTD
European Journal of Applied Physiology and Occupational Physiology	6
Lasers in Medical Science	6
Marine Biotechnology	6
Mund-, Kiefer- und Gesichtschirurgie	6
Regional Environmental Change	6
Der Schmerz	6
Surgical and Radiologic Anatomy	6
Zeitschrift für Gerontologie und Geriatrie	6
Annals of Combinatorics	5
Continuum Mechanics and Thermodynamics	5
The European Physical Journal B - Condensed Matter	5
Forum der Psychoanalyse	5
Hydrogeology Journal	5
Journal of Anesthesia	5
Journal of Comparative Physiology B: Biochemical, Systemic, and Environmental Physiology	5
Lecture Notes in Mathematics	5
manuscripta mathematica	5
NoDEA : Nonlinear Differential Equations and Applications	5
Der Orthopäde	5
Techniques in Coloproctology	5
Accreditation and Quality Assurance	4
Applied Mathematics and Optimization	4
Critical Reviews in Neurosurgery	4

Journal Name	Calendar YTD
Economics of Governance	4
Environmental Chemistry Letters	4
Finance and Stochastics	4
International Journal of Biometeorology	4
International Journal of Clinical & Laboratory Research	4
Irrigation Science	4
Journal of Cutaneous Medicine and Surgery: Incorporating Medical and Surgical Dermatology	4
Journal of Evolutionary Economics	4
Journal of Orofacial Orthopedics/Fortschritte der Kieferorthopädie	4
Journal of Solid State Electrochemistry	4
Meteorology and Atmospheric Physics	4
Monatshefte für Chemie / Chemical Monthly	4
Ocean Dynamics	4
Der Ophthalmologe	4
Orthopaedics and Traumatology	4
Der Pathologe	4
Probability Theory and Related Fields	4
Sozial- und Präventivmedizin/Social and Preventive Medicine	4
Theoretical and Applied Climatology	4
Archive for History of Exact Sciences	3
Archive for Mathematical Logic	3
Chemoecology	3
Commentarii Mathematici Helvetici	3

Journal Name	Calendar YTD
Geo-Marine Letters	3
International Journal on Digital Libraries	3
Invertebrate Neuroscience	3
Journal of Ethology	3
Journal of Evolution Equations	3
Lecture Notes in Physics	3
Microchimica Acta	3
Multimedia Systems	3
Theoretical and Computational Fluid Dynamics	3
Zeitschrift für Physik A Hadrons and Nuclei	3
Zoomorphology	3
Biomechanics and Modeling in Mechanobiology	2
Bioprocess and Biosystems Engineering	2
Calculus of Variations and Partial Differential Equations	2
Clinical and Experimental Medicine	2
Cognition, Technology & Work	2
Computational Mechanics	2
Constructive Approximation	2
Decisions in Economics and Finance	2
Distributed Computing	2
The European Physical Journal C - Particles and Fields	2
Heart and Vessels	2
International Journal of Earth Sciences	2
Der Internist	2
The Italian Journal of Neurological Sciences	2

Journal Name	Calendar YTD
Journal of Fourier Analysis and Applications	2
Journal of Marine Biotechnology	2
Materials Research Innovations	2
Mathematische Zeitschrift	2
Metrika	2
Personal and Ubiquitous Computing	2
Plant Systematics and Evolution	2
Population Ecology	2
Primates	2
Review of Economic Design	2
Sexual Plant Reproduction	2
Social Choice and Welfare	2
Strahlentherapie und Onkologie	2
Trees - Structure and Function	2
Der Urologe A	2
The VLDB Journal The International Journal on Very Large Data Bases	2
Zeitschrift für Angewandte Mathematik und Physik (ZAMP)	2
Acta Mathematica Sinica	1
Advances in Biochemical Engineering/Biotechnology	1
Archive of Applied Mechanics (Ingenieur Archiv)	1
Astronomy and Astrophysics Review	1
Bulletin of Volcanology	1
Clinical Autonomic Research	1
Computing	1
Engineering with Computers	1

Journal Name	Calendar YTD
Helgoland Marine Research	1
Insectes Sociaux	1
International Journal of Angiology	1
International Journal on Document Analysis and Recognition	1
Journal of Classification	1
Journal of Economics	1
The Journal of Headache and Pain	1
Journal of Maternal-Fetal Investigation	1
Landolt-Börnstein - Group III Condensed Matter	1
Limnology	1
MAGMA Magnetic Resonance Materials in Physics, Biology and Medicine	1
Mathematische Annalen	1
Mine Water and the Environment	1
Mineralium Deposita	1
Molecular and General Genetics MGG	1
Monatshefte für Mathematik	1
Monatsschrift Kinderheilkunde	1
Mycoscience	1
Numerische Mathematik	1
Progress in Colloid and Polymer Science	1
Pure and Applied Geophysics	1
Reproduktionsmedizin	1
Requirements Engineering	1
Research in Experimental Medicine	1

Journal Name	Calendar YTD
Reviews of Physiology, Biochemistry	1
Springer Tracts in Modern Physics	1
Structure & Bonding	1
Universal Access in the Information Society	1
Acta Ethologica	0
Acta Informatica	0
Acta Mathematicae Applicatae Sinica (English Series)	0
Acta Mechanica	0
Acta Mechanica Solida Sinica	0
Advances in Solid State Physics	0
Aequationes Mathematicae	0
AI & Society	0
Algebra Colloquium	0
Algebra Universalis	0
Annales Geophysicae	0
Annales Henri Poincaré	0
Annali di Matematica Pura ed Applicata	0
Annals of Diagnostic Paediatric Pathology	0
Anzeiger für Schädlingkunde	0
Applicable Algebra in Engineering, Communication and Computing	0
Archiv der Mathematik	0
ARI - An International Journal for Physical and Engineering Sciences	0
Arthroscopie	0
Asia Europe Journal	0

Journal Name	Calendar YTD
Astronomy and Astrophysics	0
Bulletin of Engineering Geology and the Environment	0
Bulletin of the Brazilian Mathematical Society	0
Bundesgesundheitsblatt - Gesundheitsforschung - Gesundheitsschutz	0
Calcolo	0
CancerFutures	0
The Chemical Educator	0
Chinesische Medizin	0
Chromatographia	0
Circuits, Systems, and Signal Processing	0
Cognitive Processing	0
Colo-Proctology	0
Combinatorica	0
Comparative Clinical Pathology	0
Comparative Haematology International	0
Computational Complexity	0
Computing and Visualization in Science	0
Deutsches und Europäisches Familienrecht	0
Diseases of the Colon & Rectum	0
EcoHealth	0
Economic Bulletin	0
Electrical Engineering (Archiv für Elektrotechnik)	0
Elemente der Mathematik	0
EPJ direct	0
Erwerbs-Obstbau	0

Journal Name	Calendar YTD
ESO Astrophysics Symposia	0
Esophagus	0
Ethik in der Medizin	0
European Food Research and Technology	0
European Journal of Forest Research	0
European Journal of Orthopaedic Surgery & Traumatology	0
European Journal of Plastic Surgery	0
European Journal of Trauma	0
European Journal of Wildlife Research	0
The European Physical Journal A - Hadrons and Nuclei	0
Europhysics News	0
Experimental Biology Online	0
Experiments in Fluids	0
Facies	0
Few-Body Systems	0
Formal Aspects of Computing	0
Forschung im Ingenieurwesen	0
Forstwissenschaftliches Centralblatt	0
Foundations of Computational Mathematics	0
Fuss & Sprunggelenk	0
G.O. Geowissenschaften Online	0
Gefäßchirurgie	0
Geologische Rundschau	0
Geometric And Functional Analysis	0
Gesunde Pflanzen	0

Journal Name	Calendar YTD
GPS Solutions	0
Granular Matter	0
Graphs and Combinatorics	0
Grundwasser	0
Gynäkologische Endokrinologie	0
Der Gynäkologe	0
Gynecological Surgery	0
The Handbook of Environmental Chemistry	0
Heat and Mass Transfer	0
Hematology and Cell Therapy	0
HEPAC Health Economics in Prevention and Care	0
Herzschrittmachtherapie und Elektrophysiologie	0
Holz als Roh- und Werkstoff	0
Ichthyological Research	0
Informatik - Forschung und Entwicklung	0
Informatik-Spektrum	0
Information Systems and E-Business Management	0
Integral Equations and Operator Theory	0
Intensivmedizin und Notfallmedizin	0
The International Journal of Advanced Manufacturing Technology	0
International Journal of Asian Management	0
International Journal of Game Theory	0
International Journal of Information Security	0
International Journal on Software Tools for Technology Transfer (STTT)	0

Journal Name	Calendar YTD
J.UCS Journal of Universal Computer Science	0
Japanese Journal of Ophthalmology	0
Journal of Artificial Organs	0
Journal of Forest Research	0
Journal of General Plant Pathology	0
Journal of Geodesy	0
Journal of Geometry	0
Journal of Marine Science and Technology	0
Journal of Material Cycles and Waste Management	0
Journal of Mathematical Fluid Mechanics	0
Journal of Nonlinear Science	0
Journal of Ornithology	0
Journal of Orthopaedics and Traumatology	0
Journal of Pest Science	0
Journal of Public Health	0
Journal of the European Mathematical Society	0
Journal of Wood Science	0
Klinische Neuroradiologie	0
Knowledge and Information Systems	0
Kognitionswissenschaft	0
Landolt-Börnstein New Series	0
Landolt-Börnstein - Group I Elementary Particles, Nuclei and Atoms	0
Landolt-Börnstein - Group II Molecules and Radicals	0
Landolt-Börnstein - Group IV Physical Chemistry	0

Journal Name	Calendar YTD
Landolt-Börnstein - Group V Geophysics	0
Landolt-Börnstein - Group VI Astronomy and Astrophysics	0
Landolt-Börnstein - Group VII Biophysics	0
Landolt-Börnstein - Group VIII Advanced Materials and Technologies	0
Landslides	0
Lecture Notes in Control and Information Sciences	0
Lecture Notes in Earth Sciences	0
Lecture Notes in Physics monographs	0
Les Houches	0
Machine Vision and Applications	0
Manuelle Medizin	0
Mathematics of Control, Signals, and Systems (MCSS)	0
Mathematische Semesterberichte	0
Mediterranean Journal of Mathematics	0
Medizinische Klinik	0
MedR Medizinrecht	0
Microsystem Technologies	0
Milan Journal of Mathematics	0
Mineralogy and Petrology	0
Mitteilungsblatt der Fachgruppe Analytische Chemie der Gesellschaft Deutscher Chemiker	0
Modern Rheumatology	0
Molecular Marine Biology and Biotechnology	0
Molecular Sieves - Science and Technology	0
Molecules	0

Journal Name	Calendar YTD
Molecules and Cells	0
Molecules Online	0
Mycorrhiza	0
Natur und Recht	0
Neural Computing & Applications	0
Notfall & Rettungsmedizin	0
Der Onkologe	0
Operative Orthopädie und Traumatologie	0
Paddy and Water Environment	0
Pathologica	0
Pattern Analysis & Applications	0
PerinatalMedizin	0
Personal Technologies	0
Physics and Chemistry of Minerals	0
Poiesis & Praxis: International Journal of Technology Assessment and Ethics of Science	0
Prokaryotes	0
Psychotherapeut	0
Publications Mathématiques de L'IHÉS	0
Rechtsmedizin	0
Research in Engineering Design	0
Research in Nondestructive Evaluation	0
Researches on Population Ecology	0
Rock Mechanics and Rock Engineering	0
Sciences of Soils	0

Journal Name	Calendar YTD
Selecta Mathematica, New Series	0
Semigroup Forum	0
Shock Waves	0
Soft Computing - A Fusion of Foundations, Methodologies and Applications	0
Software - Concepts & Tools	0
Software and Systems Modeling	0
Southeast Asian Bulletin of Mathematics	0
Spanish Economic Review	0
Springer Tracts in Advanced Robotics	0
Standort - Zeitschrift für angewandte Geographie	0
Statistical Papers	0
Stochastic Hydrology and Hydraulics	0
Structural and Multidisciplinary Optimization	0
System Familie	0
Theory of Computing Systems	0
Topics in Current Genetics	0
Topics in Organometallic Chemistry	0
Transformation Groups	0

Journal Name	Calendar YTD
Trauma und Berufskrankheit	0
Der Urologe B	0
Vegetation History and Archaeobotany	0
Visual Geosciences	0
Wood Science and Technology	0
wt Werkstattstechnik	0
Zeitschrift für Epileptologie	0
Zeitschrift für Ernährungswissenschaft	0
Zeitschrift für Herz-, Thorax- und Gefäßchirurgie	0
Zeitschrift für IT in der Verwaltung	0
Zeitschrift für Jagdwissenschaft	0
Zeitschrift für Lebensmitteluntersuchung und -Forschung A	0
Zeitschrift für Physik B Condensed Matter	0
Zeitschrift für Physik C Particles and Fields	0
Zphys-e.A	0
Zphys-e.B	0
Zphys-e.C	0

## Appendix C. Springer Link Chemical Sciences Titles

Accreditation and Quality Assurance	Landolt-Börnstein - Group III Condensed Matter
Advances in Polymer Science	Landolt-Börnstein - Group IV Physical Chemistry
Amino Acids	Landolt-Börnstein - Group V Geophysics
Analytical and Bioanalytical Chemistry	Landolt-Börnstein - Group VI Astronomy and Astrophysics
Applied Mathematics and Optimization	Landolt-Börnstein - Group VII Biophysics
Applied Microbiology and Biotechnology	Landolt-Börnstein - Group VIII Advanced Materials and Technologies
Applied Physics A: Materials Science & Processing	Materials Research Innovations
Applied Physics B: Lasers and Optics	Microchimica Acta
Archive for History of Exact Sciences	Mitteilungsblatt der Fachgruppe Analytische Chemie der Gesellschaft Deutscher Chemiker
Archives of Environmental Contamination and Toxicology	Molecules
Bioprocess and Biosystems Engineering	Molecules Online
Bulletin of Environmental Contamination and Toxicology	Monatshefte für Chemie / Chemical Monthly Naturwissenschaften
Chromatographia	Physics and Chemistry of Minerals
Colloid & Polymer Science	Poiesis & Praxis: International Journal of Technology Assessment and Ethics of Science
Computing and Visualization in Science	Polymer Bulletin
Contributions to Mineralogy and Petrology	Progress in Colloid and Polymer Science
Environmental Management	Rheologica Acta
European Food Research and Technology	Structure & Bonding
European Physical Journal D: Atomic, Molecular and Optical Physics	Theoretical Chemistry Accounts
European Physical Journal E: Soft Matter	Theoretical Chemistry Accounts: Theory, Computation, and Modeling (Theoretica Chimica Acta)
Journal of Biological Inorganic Chemistry	Zeitschrift für Lebensmitteluntersuchung und -Forschung A
Journal of Industrial Microbiology and Biotechnology	Zeitschrift für Physik D Atoms, Molecules and Clusters
Journal of Molecular Modeling	
Journal of Solid State Electrochemistry	
Landolt-Börnstein - Group I Elementary Particles, Nuclei and Atoms	
Landolt-Börnstein - Group II Molecules and Radicals	

## Appendix D. Springer Link Medicine Titles

Abdominal Imaging	European Biophysics Journal
Accreditation and Quality Assurance	European Child & Adolescent Psychiatry
Acta Diabetologica	European Journal of Applied Physiology
Acta Neurochirurgica	European Journal of Applied Physiology and Occupational Physiology
Acta Neurochirurgica	European Journal of Clinical Microbiology & Infectious Diseases
Aesthetic Plastic Surgery	European Journal of Clinical Pharmacology
Amino Acids	The European Journal of Health Economics
Anatomy and Embryology	European Journal of Nuclear Medicine and Molecular Imaging
Der Anaesthesist	European Journal of Nutrition
Annals of Diagnostic Paediatric Pathology	European Journal of Orthopaedic Surgery & Traumatology
Annals of Hematology	European Journal of Pediatrics
Annals of Vascular Surgery	European Journal of Plastic Surgery
Archives of Dermatological Research	European Journal of Trauma
Archives of Environmental Contamination and Toxicology	European Radiology
Archives of Gynecology and Obstetrics	European Spine Journal
Archives of Orthopaedic and Trauma Surgery	Experimental Brain Research
Archives of Virology	Forum der Psychoanalyse
Archives of Women's Mental Health	Fuss & Sprunggelenk
Arthroskopie	Gastric Cancer
Basic Research in Cardiology	Gefäßschirurgie
Biological Cybernetics	Graefe's Archive for Clinical and Experimental Ophthalmology
Bundesgesundheitsblatt - Gesundheitsforschung - Gesundheitsschutz	Der Gynäkologe
Calcified Tissue International	Gynäkologische Endokrinologie
Cancer Chemotherapy and Pharmacology	Gynecological Surgery
Cancer Immunology, Immunotherapy	Der Hautarzt
CancerFutures	Heart and Vessels
CardioVascular and Interventional Radiology	Hematology and Cell Therapy
Cell and Tissue Research	HEPAC Health Economics in Prevention and Care
Child's Nervous System	Hernia
Chinesische Medizin	Herz
Der Chirurg	Herzschrittmachertherapie und Elektrophysiologie
Clinical and Experimental Medicine	Histochemistry and Cell Biology
Clinical and Experimental Nephrology	HNO
Clinical Autonomic Research	Human Genetics
Clinical Oral Investigations	Infection
Clinical Rheumatology	Inflammation Research
Colo-Proctology	Intensive Care Medicine
Comparative Clinical Pathology	Intensivmedizin und Notfallmedizin
Comparative Haematology International	International Archives of Occupational and Environmental Health
Critical Reviews in Neurosurgery	International Journal of Angiology
Diabetologia	International Journal of Biometeorology
Diseases of the Colon & Rectum	International Journal of Clinical & Laboratory Research
Dysphagia	International Journal of Clinical Oncology
Emergency Radiology	International Journal of Colorectal Disease
Esophagus	
Ethik in der Medizin	
European Archives of Oto-Rhino-Laryngology	
European Archives of Psychiatry and Clinical Neuroscience	

International Journal of Legal Medicine	Operative Orthopädie und Traumatologie
International Orthopaedics	Der Ophthalmologe
International Urogynecology Journal and Pelvic Floor	Der Orthopäde
Der Internist	Orthopaedics and Traumatology
The Italian Journal of Neurological Sciences	Osteoporosis International
Japanese Journal of Ophthalmology	Parasitology Research
JARO - Journal of the Association for Research in Otolaryngology	Der Pathologe
Journal of Anesthesia	Pathologica
Journal of Artificial Organs	Pediatric and Developmental Pathology
Journal of Bone and Mineral Metabolism	Pediatric Cardiology
Journal of Cancer Research and Clinical Oncology	Pediatric Nephrology
Journal of Classification	Pediatric Radiology
Journal of Cutaneous Medicine and Surgery: Incorporating Medical and Surgical Dermatology	Pediatric Surgery International
Journal of Digital Imaging	PerinatalMedizin
Journal of Gastroenterology	Poiesis & Praxis: International Journal of Technology Assessment and Ethics of Science
The Journal of Headache and Pain	Protoplasma
Journal of Hepato-Biliary-Pancreatic Surgery	Psychological Research
Journal of Infection and Chemotherapy	Psychopharmacology
Journal of Maternal-Fetal Investigation	Psychotherapeut
Journal of Membrane Biology	Radiation and Environmental Biophysics
Journal of Molecular Medicine	Der Radiologe
Journal of Molecular Modeling	Rechtsmedizin
Journal of Neural Transmission	Reproduktionsmedizin
Journal of Neurology	Research in Experimental Medicine
Journal of Orofacial Orthopedics/Fortschritte der Kieferorthopädie	Reviews of Physiology, Biochemistry
Journal of Orthopaedic Science	Rheumatology International
Journal of Orthopaedics and Traumatology	Der Schmerz
Journal of Public Health	Skeletal Radiology
Klinische Neuroradiologie	Social Psychiatry and Psychiatric Epidemiology
Knee Surgery, Sports Traumatology, Arthroscopy	Sozial- und Präventivmedizin/Social and Preventive Medicine
Langenbeck's Archives of Surgery	Springer Seminars in Immunopathology
Lasers in Medical Science	Strahlentherapie und Onkologie
Lung	Supportive Care in Cancer
MAGMA Magnetic Resonance Materials in Physics, Biology and Medicine	Surgery Today
Manuelle Medizin	Surgical and Radiologic Anatomy
Medical Electron Microscopy	Surgical Endoscopy
Medizinische Klinik	System Familie
MedR Medizinrecht	Techniques in Coloproctology
Modern Rheumatology	Transplant International
Monatsschrift Kinderheilkunde	Trauma und Berufskrankheit
Mund-, Kiefer- und Gesichtschirurgie	Der Unfallchirurg
Naunyn-Schmiedeberg's Archives of Pharmacology	Der Urologe A
Der Nervenarzt	Der Urologe B
Neurological Sciences	Urological Research
Notfall & Rettungsmedizin	Virchows Archiv
Odontology	World Journal of Surgery
Der Onkologe	World Journal of Urology
	Zeitschrift für Epileptologie
	Zeitschrift für Gerontologie und Geriatrie
	Zeitschrift für Herz-, Thorax- und Gefäßchirurgie
	Zeitschrift für Rheumatologie