



# The CONNector

CONNECTICUT STATE LIBRARY NEWSLETTER

November 2004

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## *The State Librarian's Column*

Kendall F. Wiggin  
Connecticut State Librarian



Throughout its 150-year history, the Connecticut State Library has applied new technologies to further its mission. While the Library hasn't always been a pioneer, it has been an early adopter.

In this issue we explore the many ways technology has affected our services and the broader library community at an ever-accelerating rate. Libraries are challenged to acquire and maintain new technologies and to train staff to use them. Selecting the right solution is proving more and more difficult. Analysis, planning, and implementation often occurs simultaneously.

And the new technologies always offer promise, though sometimes false promise). The State Library and libraries everywhere reach more users than ever before through the Internet. But some people avoid libraries, thinking that all the information they are looking for can be found searching the Internet. They "Google it" and are satisfied.

Indeed, the role of libraries is a far different question today than it was for my predecessors. Just as technology is providing great opportunities for libraries, it is also calling into question their reason for being. In *The 2003 OCLC Environmental Scan: Pattern Recognition*, (Online Computer Library Center) the observation is made that "Scarcity of information is the basis for the modern library. In countries where information continues to be scarce, a library's role is still unambiguous. In some countries where access to information is now akin to access to electricity or water, the reason to have freestanding storehouses of a subset of all information is harder to articulate."

The State Library's book, archival, and museum collections include many scarce, hard-to-find, and unique materials. Making these collections and other resources accessible online will be a major goal for the State Library as we move forward. The path to the future is not clear, but one thing is certain. The State Library must continue to be an early adopter of technology.



By Her Excellency M. Jodi Rell, Governor: an  
**Official Statement**

On behalf of the State of Connecticut  
 I, M. JODI REL, Governor,  
 take great pleasure in  
 acknowledging the  
*Connecticut State Library*  
 in recognition of its service to the  
 government and people of  
 Connecticut and its  
*150<sup>th</sup> Anniversary Celebration.*

Established by an act of the Connecticut  
 General Assembly in May 1854, the  
 Connecticut State Library has  
 grown in size and scope.

The Connecticut State Library  
 is now home to the state's principal law  
 library, the State Archives, the Office of Public  
 Records, the Museum of Connecticut History,  
 the Library for the Blind and Physically  
 Handicapped, the State and Regional  
 Federal Documents Library,  
 Government Information Services,  
 History and Genealogy, and services  
 in support of Connecticut's libraries through  
 the Division of Library Development and  
 iCONN, the Connecticut Digital Library.

Therefore, I, M. Jodi Rell, Governor of the State of Connecticut,  
 on the occasion of its 150<sup>th</sup> Anniversary,  
 do hereby officially commend and congratulate the  
**CONNECTICUT STATE LIBRARY**  
 and extend best wishes for continued success.




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**The CONNector Editorial Board**  
**Kendall F. Wiggin, State Librarian**

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## *Yesterday's Technology*

*Kendall F. Wiggin, State Librarian*

Today when we speak of technology it is generally assumed that we are talking about computers or all the everyday items with computer chips in them. But in the early days of the State Library technological improvements and innovations included the use of typewriters and printed catalog cards. In his 1908 annual report, State Librarian George Godard foresaw the preprocessed book. "It is to be hoped that at no distant day publishers will see their way clear to supply each publication of importance, the necessary cards to properly catalogue the same."

When the State Library's new quarters at 231 Capitol Avenue opened in 1910 a variety technological improvements were incorporated into its design. Quartz glass floors in the stacks improved the lighting in the stacks. A central vacuum system was included for "dusting and cleaning". Fire was a major concern and efforts were made to make the building as fire resistant as possible. In the main reading room metal painted to look like wood was used in place of wood. Offices and "centers of public use" were designed to be equipped with drinking fountains "supplied with specially filtered and refrigerated water by means of a cooling plant placed in the basement." One of the innovations planned for the new building never came into being. A "subway" was planned to connect the Capitol and the State Library to accommodate steam pipes, electric conduits and a book carrier. The subway was started and is visible today, but as it approach Capitol Avenue the high water table stopped the project and it was never completed.

The Mitchelson coin collection, one of the most complete American coin collections in the world, presented some challenges for the State Library when it was donated in 1913. Designed by the donor, Mr. Mitchelson, and the State Librarian, a special vault was constructed. It included the "latest electrical protection." The interior of the vault was "an innovation in method of storage and exhibition."

Mr. Godard, after learning of the Photostat camera that the Library of Congress had installed to furnish facsimiles of maps and documents to the public and to libraries, made certain that the State Library had such a machine and a photocopying division to provide the same service in Connecticut.

It would be many years before advances in telecommunications such as the Teletype and information technology began to play a role in State Library services and the development of library services statewide. But it was the adoption of the earlier technological innovations that paved the way for the use of the technologies we take for granted today.

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## ***WebJunction Comes to Connecticut***

*Tom Newman, Librarian II, Middletown Library Service Center*

The Internet has triggered profound changes in the way libraries provide services to the general public. So too, librarians are using the Internet to develop the skills and knowledge necessary to improve the service they provide patrons. It is in that spirit that WebJunction started as “an online community of libraries and other agencies sharing knowledge and experience to provide the broadest public access to information technology.” WebJunction is a means of supporting the work of the Gates Foundation by making online resources and a discussion forum available to libraries providing public access computing services.

In June of this year the Connecticut State Library’s Division of Library Development (DLD) joined with four other state libraries in a pilot project to expand WebJunction services. At that time, DLD staff transferred the State Library’s web content to a new section of the WebJunction site, <http://CT.WebJunction.org>. This provides one-stop-shopping combining national and state resources for library development information. The five state libraries and the national WebJunction will share the information they gather to assist libraries in providing services to library patrons, thereby stretching resources and avoiding unnecessary duplication.

Since June, DLD has begun to use the same Content Management System as the Online Computer Library Center (OCLC) to generate WebJunction’s pages. DLD uses the System over the Internet to make frequent updates to the CT.WebJunction web page, to examine new content from other states, and to organize WebJunction content so that it can be found alongside relevant Connecticut content. Using this sophisticated web technology made possible by OCLC, DLD is able to provide previously unavailable web services.

Thanks to WebJunction, Connecticut librarians now have a wide range of online learning opportunities. There are courses available in networking, Office applications, XML, Internet applications, and many others. Soon the online learning opportunities will expand to include courses available free only to Connecticut and the four partner states.

WebJunction is not only a source for online learning opportunities and information. It is also a community where librarians can discuss issues between themselves. Using Discussion Boards, librarians ask and answer questions and share thoughts with other librarians. Connecticut State Library welcomes you to <http://CT.WebJunction.org>.

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# The Gala



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*The 150th Anniversary Gala, held at the State Capitol, October 23 was hosted by the Connecticut Heritage Foundation and sponsored by BankNorth, Thompson/Gale, The Hartford, the McKellan Group, Foxon Park, Ron Sorensen, and Janus Computer Systems, Inc.*

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## *A Report on iCONN at the Durham Fair*

*William Sullivan, Administrator, Connecticut Digital Library*



*iCONN Exhibit*

Librarians from the State Library and three participating libraries staffed an iCONN exhibit at the Durham Fair for a total of 35 hours from Friday, September 24 through Sunday, September 26. The primary purpose was to promote public awareness of iCONN at an event with attendance of over 200,000 people. We also wanted to learn from the experience.

### ***What We Did***

The exhibit included two large posters mounted on panels. They provided information about:

- Top 10 Reasons To Use iCONN [www.iconn.org/documents/Top10ReasonsToUseiCONN.pdf](http://www.iconn.org/documents/Top10ReasonsToUseiCONN.pdf)
- Connecticut Has Questions ... iCONN Has Answers! [www.iconn.org/documents/ConnecticutHasQuestions.pdf](http://www.iconn.org/documents/ConnecticutHasQuestions.pdf)

Kitchen magnets, business cards, bookmarks, and one-page overviews were handed out. The words “Connecticut Digital Library” scrolled continuously across an electronic message sign above the display. A Powerpoint presentation ran continuously on a 17” flat panel monitor. There was no Internet access in this building, so we made available Powerpoint demos for each database. And there were desk copies of full-text title lists of the largest periodical database.

Last but not least, helium-filled balloons with the “iCONN.org” logo and the word “FREE!” were distributed to kids. The balloons performed their mission extremely well — they brought the kids to the booth, and the kids brought their parents. While the kids enjoyed the balloons, we talked to the parents about iCONN. The kids were delighted to receive the balloons, and the parents were delighted that their kids were delighted — plus they learned about iCONN. And more than a thousand balloons imprinted with the iCONN logo traveled throughout the Fair.

Attendance at this year’s Fair was over 230,000. There was a near-constant stream of people passing our exhibit continually until 11 PM. Approximately 1,500 people visited the exhibit, including a substantial number with whom we were able to share the “iCONN story” verbally along with the promotional materials.

*continued*

### ***What We Learned***

1. The vast majority of people we had conversations with had no knowledge of iCONN. Among the dozen or so who did were several appreciative librarians, and some K-12 students. But everyone else, library users and non-users indicated they had never heard of iCONN before.
2. Almost all were amazed and pleased that this service exists for all of Connecticut's residents. Comments included: "That's awesome. What a great idea!" "It's free? Just like the balloons? You guys are wonderful!" "The best deal of the fair!" We found that it really took only a brief conversation for people to "get it." This was a great in-person validation of the service, or the idea of the service.
3. With only a couple of exceptions, no one was fazed by the computer or Internet access requirements needed to access iCONN from home, and everyone seemed to understand what a "Web address" (as in [www.iconn.org](http://www.iconn.org)) is. This allowed us to focus more on the value of the service and less on the mechanics of access.
4. With a constant stream of people going by the booth, there was only a half second or so to present something compelling enough to get people to stop so that we could speak with them.
  - How many words can you read in a half-second?
  - How large do those words have to be if you are reading them from twenty feet away with a stream of people behind you?
  - To encapsulate your entire message in just a few words, what words would you choose?

These are some of the challenges we encountered when designing a booth. Our posters were large enough to catch people's attention once they got into the exhibit space, but not when they were streaming by in the aisle. The big bouquets of balloons were perhaps the biggest attention getters for those streaming past.

5. People wanted assurance that iCONN included full text, not just a citation or abstract or a message saying they had to become a "subscriber" in order to access the article. The idea that they could get articles from *The Hartford Courant* and *Consumer Reports* for free (through iCONN) versus for a fee (through a website) was very appealing. A few people inquired about e-books.

### ***Next Steps***

Our primary reason for exhibiting iCONN at the fair—to increase public awareness—was amply validated by the sheer number of people who professed no knowledge of iCONN but who were very appreciative to learn about it and how to access it.

If what we learned about public awareness of iCONN at the Durham Fair is representative of the state as a whole, the task of informing Connecticut residents about iCONN and what it can do for them is daunting. However, it is a task we must complete successfully. Awareness is the key to Connecticut and its residents realizing the full benefits of this service, that costs the state approximately \$2 million/year to

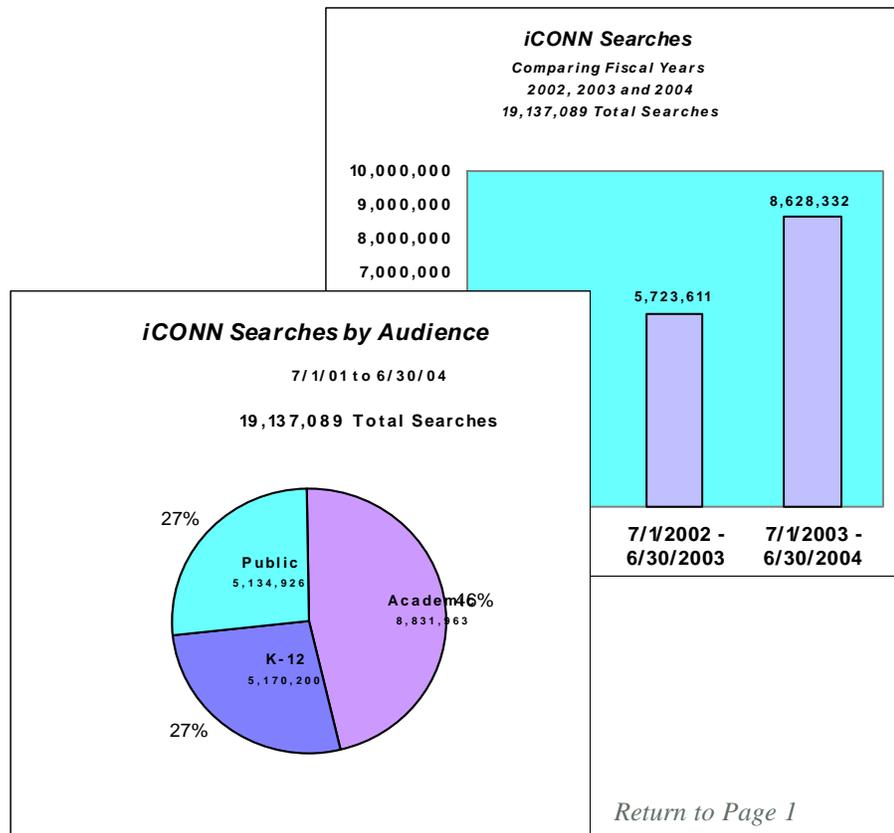
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provide. All Connecticut tax payers have a right to know about this service that they are funding and could be using (see *Top 10 Reasons To Use iCONN*, page 9).

**Thanks**

This exhibit was coordinated by iCONN staff members Bill Sullivan and Steve Cauffman. We are very grateful to all those who contributed part of their weekend to help with the exhibit:

- Sharon Brettschneider (Director, Division of Library Development)
- Patricia Daragan (U. S. Coast Guard Academy Library, New London)
- Jane Emerson (iCONN Electronic Resources Coordinator)
- Elizabeth Frechette (Naugatuck Valley Community College Library)
- Mary Louise Jensen (Division of Library Development)
- Alana Meloni (C. H. Booth Library, Newtown)



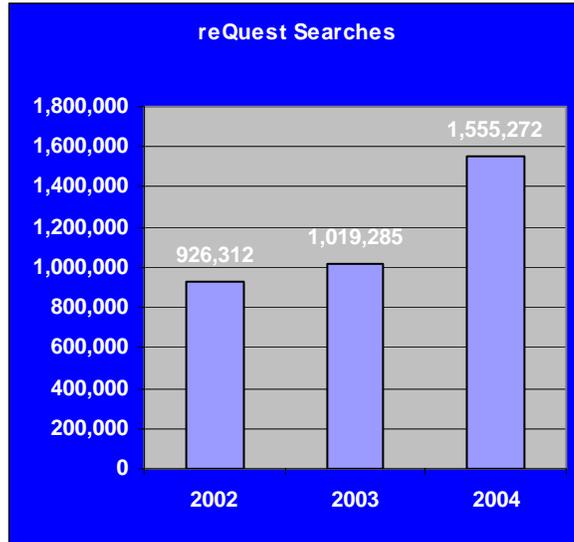
## ***Top 10 Reasons To Use iCONN (www.iconn.org)***

- 1. Access is FREE --- to all Connecticut residents !**
- 2. To be a smarter consumer !**
  - Thousands of magazine titles, including *Consumer Reports*
  - Authoritative information on consumer health topics in layman's terms
  - Business information on 450,000 companies
  - *The Hartford Courant, The New York Times*, and many other newspapers
  - Statewide library catalog – search over 300 libraries in Connecticut at once
  - Spanish-language articles and newspapers
- 3. To help your children succeed at school and at college !**
  - Databases for elementary, middle and high school, and college
  - Biographies of 120,000 individuals
  - 700,000 photos from the Associated Press Photo Archive
- 4. It's there when you need it --- 24 hours a day !**
  - It's where to go when your child just told you she needs information for a homework assignment that's due tomorrow!
- 5. Access it from home over the Internet or from any public library, school or college !**
- 6. To save money !**
  - Replace magazine subscriptions with an online database of over 2 million full-text articles that can be searched instantly
  - Find information on a company before you invest
- 7. To save space --- all of the information is on the Internet !**
- 8. You've already paid for it --- this is your tax dollars at work !**
- 9. To have an up-to-date resource for lifelong learning !**
  - Genealogical information to research your family history
- 10. You can't afford not to !**

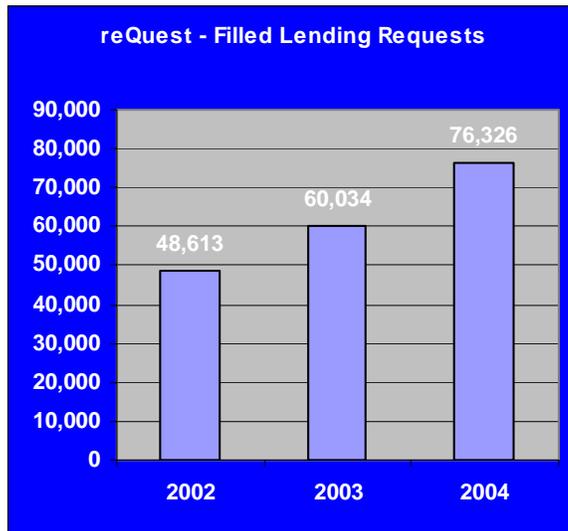
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## Three Years of reQuest

reQuest is the Statewide Library Catalog of Connecticut. In reQuest, you can search over four million titles in nearly four hundred Connecticut libraries at once. You can also place interlibrary loan orders for items in reQuest if your home library offers the service.



Usage increased 10% from FY02 to FY03, and 52% from FY03 to FY04.



Filled lending requests increased 23% from FY02 to FY03, and 27% from FY03 to FY04.

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## *New Technology Changes the Service Centers*

*Tom Newman, Middletown Library Service Center*



There was a time when the cutting-edge technology at the Middletown and Willimantic Library Services Centers meant using Gaylord punch machines for circulating library materials. Now the Centers are hoping soon to have all their circulation, catalog searching, and other collection services performed wholly over the Internet. No matter what the time period, however, it has always been the goal of the Centers to use technology to make it easier for libraries to borrow more library materials.

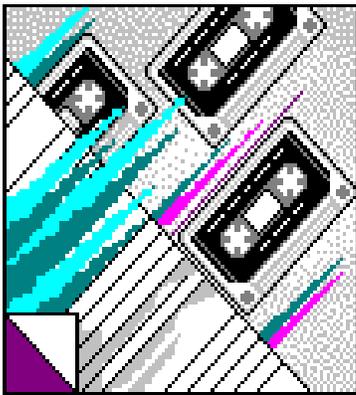
When the Service Centers first began service in the 1950's, they used a completely manual system of circulation. Books with cards were hand stamped and sorted, then "pulled" when the books were returned. The card catalog required much meticulous filing and general maintenance. The only modern technology used at the time were the automobiles used by librarians to transport materials to and from their libraries. In the early 1970's the Centers introduced the Gaylord punch machines which helped staff avoid the hand stamping but had no effect on the time-consuming, and very boring job of sorting and pulling cards. In practical terms the Service Centers ran much like any library of the early 1900's.

Computers and software specifically designed for libraries would bring an end to this lack of change. The first automation revolution at the Service Centers came with the CD-ROM version of reQuest in 1990. reQuest provided the first computerized catalog for searching and was made possible by a retrospective conversion project done on OCLC by the Connecticut State Library. This reQuest catalog made the card catalog less useful but did not lead to its immediate demise.

In 1992 the Centers purchased their first automated circulation systems. These DOS-based systems ran on peer-to-peer networked computers and required a huge amount of staff time to input patron information and barcode library materials. It was at this point that the Centers shut down their card catalogs and began relying on the online catalog for nearly all searches. Despite the very real anguish this caused staff and patrons alike, the online catalog proved to be far easier and more powerful to use than the space-consuming card catalog. It wouldn't be until the year 2000, however, that the last vestige of the card catalog, the shelf-list, would disappear.

Since those early days of automation, the Centers have replaced their circulation systems and they now rely on the Web-based reQuest database to allow library patrons to search Center holdings offsite. Plans are now being made to replace the current client-server automation system with an Integrated Library System provided by an Application Service Provider. With this new technology librarians will be able to search, reserve, renew, and make subject requests via the Web. New technology will allow Connecticut librarians to shop for Service Center library materials over the Internet. And with C-Car, librarians won't even need to use those automobiles anymore.

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## ***Library for the Blind and Physically Handicapped to Enter the 21st Century***

*Gordon Reddick, Deputy Director, LBPH*

The impact of new technology on the Library for the Blind and Physically Handicapped (LBPH) is really a story of two watershed events rather than the accumulation of small, incremental steps. As a brief review of our current operations, the LBPH presently has over 225,000 books in inventory, an annual circulation in excess of 222,000 books, and an active readership of nearly 8,500 patrons. We also manage a patron loan program of cassette playback machines with an inventory of over 10,300 machines. We receive about 2,000 new titles each year (multiple copies of individual titles amount to about 20,000 individual books). Our staff consists of 10 regular employees and 4 general workers. Without computer technology we could never operate the LBPH efficiently and could never achieve such a large circulation.

The first watershed event was the introduction of computer technology back in the 1980's. Until that time, all patron and machine records were maintained by hand which was very time consuming and cumbersome. The installation of LBPH software from Data Research Associates (now called SIRSI) which uses the Digital VMS operating system, changed how the LBPH functions. All areas of patron services, circulation, inventory control, and book processing became much more efficient. This greatly increased the potential daily volume. Some improvements in the software were made over the years but the system is essentially the same now as it was then — it still functions efficiently and reliably but is grotesquely obsolete. The major problem is that the vendor no longer supports the software and has shown no interest in upgrading the programs to the Windows platform. So the search is on for a suitable replacement program thus ensuring that another major overhaul of the internal LBPH computer system is forthcoming in the not too distant future.

The National Library Service for the Blind and Physically Handicapped (NLS), the Federal LBPH program manager, has made a number of major technological improvements in the last few years to patron, technical, and reference services. By employing the advantages of PC's and the Internet, patrons can review the entire NLS catalog online, download certain Braille books, order books, and use email. Administratively, we can now submit reports online, download MARC records, order supplies, and access the national database. Though these recent technological improvements made the LBPH system function more efficiently, they haven't in any

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true sense substantially changed our manner of operations. The second great watershed event that will dramatically alter the LBPH is now in the development stage and should be introduced by the year 2008. This is the conversion of all recorded books from analog to digital form. This conversion is more than just producing books in digital format; it will create another complete make-over of the LBPH inventory and circulation systems with far-reaching consequences. First, cassette books will be discontinued and all books will be produced on digital flash memory cards. Second, NLS will issue a completely new playback machine. Third, the digital format opens up incredible options for book distribution which could include direct patron downloads, a national distribution center, and other methods for electronically producing books on demand — in addition to the methods now employed. These new systems have the potential to significantly speed up patron service, reduce book storage needs, improve LBPH administration, and offer recorded books that have a much higher sound quality and navigation capabilities. This is a huge project where NLS is using the latest technology that conforms with international standards, that won't become obsolete tomorrow, and that is sufficiently robust to withstand rugged use by patrons, and that use can be very rugged. The future is bright for the LBPH program, and the march of technology doesn't skip a beat.

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## ***E-Resources and Digital Reference at CSL***

*Denise Jernigan, Law/Legislative Reference Unit Head*



*Connecticut State Library - 150 Years Old*

”Wow, how did you find that so fast? I’ve been on the Internet for a half-hour trying to get that information!”

Experienced reference librarians at the Connecticut State Library have heard this from their customers more frequently of late, as the sheer enormity of knowledge available either through the World Wide Web or subscription databases overwhelms the casual searcher. In the situation quoted, the caller was trying to find the interest rate on rental security deposits, but got bogged down in the huge numbers of responses to his Google inquiry.

At the State Library a newly designed entry page for reference resources [www.cslib.org/faq.htm](http://www.cslib.org/faq.htm) includes a link to all of the subscription databases available to researchers at the 231 Capitol Avenue facility [www.cslib.org/subscrindex.htm](http://www.cslib.org/subscrindex.htm), as well as to staff-made pathfinders, study guides, and finding aids [www.cslib.org/csllmade.htm](http://www.cslib.org/csllmade.htm). Reference librarians daily direct users to online legal, genealogical,

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statistical, or governmental sources as good beginning steps for broad-based research, or teach them about advanced searching techniques designed to retrieve one particular bit of data or desired language. For our caller a link under “security deposit” from the “Law and Legislation” box on the Resources for Research page led to the Connecticut Department of Banking Web page that answers questions on security deposits, including a chart of interest rates over time.

This is one example of how electronic resources influence the way librarians at the State Library find and retrieve information. Experienced reference staff constantly update their knowledge to keep up with the explosion of products and sources being released commercially and on the Web. Some subscription databases at the State Library are actually collections of other database pulled together (or “aggregated”) by a single vendor and offered as a package. The hundreds of included libraries can each have their own particular search protocols, advanced level field restrictions, and requirements for downloading or printing. The State Library has just passed the 10,000-title mark in terms of access to full-text electronic journals! Still another electronic source helps us keep track of all the titles we can provide and which sources or aggregators supply them.

With all of these resources available from our desktop and public computers, it is easy to forget that not everything is online. Librarians have always been good teachers, instructing library customers in the fine arts of using indexes, scanning tables of contents, or choosing an appropriate encyclopedia, treatise, statistical compilation, or local history to find what they are looking for. Electronic resources add another level to our bank of sources, increasing both the universe of information and the complexity of use. They provide us with another opportunity to teach efficient and effective use of the best resource, regardless of format.

Since we realize that diving into the Internet unaided can be as frustrating as trying to find something in a book without an index, our goal is always to optimize the results of a patron’s research by helping to choose the proper resource and finding tool, in paper or in hyperspace. CSL reference librarians have become quite nimble at leading researchers through the maze of the Connecticut General Assembly search page, the differences between AncestryPlus and HeritageQuest, and the specialized tables and data sets of the 2000 Census. When the information is only available in books, we know that too, and where to find those books.

The specialists at CSL (History and Genealogy, Law and Legislative Reference, and Government Information) are constantly adjusting to changes in the array of e-resources. We make the time to refine our own subject Web pages, incorporate upgrades to search procedures, update links from our online catalog and other Web pages, and communicate that knowledge to each other and to our patrons. Every person who makes the effort to come into our library can take advantage of an impressive selection of online reference resources chosen to complement our equally impressive book collection, and to consult with skilled and experienced librarians. We invite you to visit us soon and see how we can help you find the information you need.

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## ***Public Library Building Update***

*Mary Louise Jensen, Building Consultant*

Public libraries are using wireless and wired technology.

On August 11<sup>th</sup> Kendall Wiggin, State Librarian, spoke at the Bristol Public Library groundbreaking ceremony. By expanding from 30,952 square feet to 53,659 square feet, this library was able to enlarge all areas. They are considering wireless technology. This project received a \$500,000 State Public Library Construction grant.



*Bristol Public Library's groundbreaking*

Plainville Public Library was dedicated on September 19<sup>th</sup>. The building went from 13,394

square feet to 30,000 square feet. This expansion allowed them to increase their book collection, seating capacity, and number of public computers. The computers for adults are wireless, while the children's computers are still wired. The meeting room's seating capacity was increased from 50 to 125. This project received a \$500,000 State Public Library Construction grant.



*Plainville Public Library's restored original building*



*Plainville Public Library's children's area in the addition*



*Plainville Public Library's adult area*

On October 16<sup>th</sup> the Douglas Library in Canaan had a dedication for the new elevator, stairs, and handicapped bathrooms. The library also added wireless technology to enable people with personal laptops to access the Internet. This project received a \$54,945 State Public Library Construction Grant.



*Douglas Library's dedication*

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## *State Library establishes the Connecticut Digital Archive to preserve born-digital state publications*

*Julie Schwartz, Unit Head, Government Information Services and  
Stephen Slovasky, Unit Head, Cataloging*

The State Library has collected, organized and preserved Connecticut State agency publications for over 150 years. Everyone who has ever visited a library is familiar with how this is done: a call number is assigned to each book to distinguish it from all the others, cataloging is created to help the user find the book by author, title, or subject,



and the books are stored on shelves, in order, so that the user can easily find the book she needs. Perhaps a patron is looking for the *Digest of Administrative Reports to the Governor*, published annually since 1947. No problem. Several neatly bound sets are to be found in the temperature and humidity-controlled stacks, carefully preserved for future generations of researchers.

Until, that is, we come to 2002 or 2000 or 1998 or 1996. Suddenly the chronology ends. What happened?

The World Wide Web, of course. The sound-bites are so familiar: “Everything is accessible from the Web. All you need is a search engine. Libraries are on their way out.” That is, until the public discovered that much valuable content is located in the “Deep Web” and regularly undiscoverable through an Internet search engine. Public records, including state publications which are part of our national record, form a component of this Deep Web. Many born-digital items disappear every day as Web content changes, or as administrations come and go. These digital items must be purposefully preserved, just as paper records are.

Librarians employ well-developed methods to organize and preserve books, but those for accessing and preserving born-digital publications are as yet evolving. The Connecticut State Library has been involved in efforts to identify and digitally archive Connecticut’s born-digital state publications since 1999, working with the Online Computer Library Center, Inc. (OCLC) and many other research institutions. The OCLC Digital Archive provides the hardware and software support to describe and preserve born-digital publications for future users.

The same search benefits (advanced authority control, serials analysis, refined subject access, and multiple field searching) that make a library catalog a more appropriate search tool than a Web search engine are applied to both books and electronic resources. Thus the full historical range of publications can be accessed in the same search.

Another powerful advantage of this approach is the ability to share the work and research of Connecticut state government with governmental and public policy institutions and researchers throughout the world. The archived publications are added to statewide

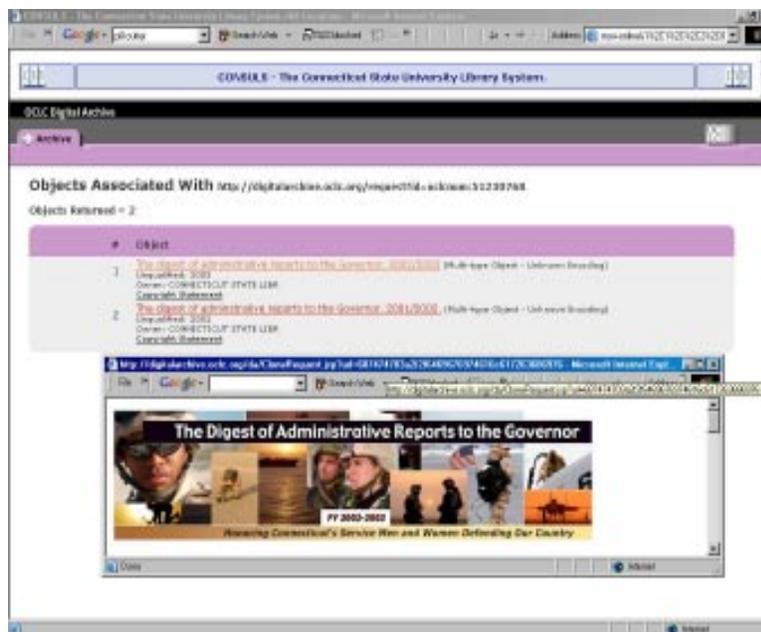
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and worldwide bibliographic databases, as well as to our local online catalog.

As of this writing, the Connecticut Digital Archive contains over 4,000 state publications that might easily have been lost. The “virtual shelf” is filling up. The good news is that this



and this



can be found in the same place...in a library catalog.

- CONSULS, (shared with the four Connecticut State Universities)
- reQuest (the statewide union catalog)
- Worldcat (a worldwide union catalog maintained by OCLC, the Online Library Computer Center, Inc.)

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# *Making the Wireless Connection*

## *1997 – 2010*

*William Sullivan, Administrator, Connecticut Digital Library*

We live between two worlds: our physical environment and digital space.  
– Hiroshi Ishii, Tangible Media Group, MIT Media Lab, June 2004

In 1997 the Connecticut State Library sent out a Request For Proposal for the Connecticut Library Network. Vendors were requested to propose an “*infrastructure to enable a patron to verify (without the need for mediation by the borrowing institution’s staff) the actual physical availability of any item in the statewide bibliographic database*”. By 2003, the State Library acknowledged in its proposal for the Connecticut Digital Library that verification of an item’s actual immediate physical availability *might be made using radio frequency identification (RFID) technology*.

In the October 2004 issue of *Scientific American* an article entitled “The Internet of Things” introduced the concept of a network be made up of everyday devices called the “Internet-0”. According to the article, Internet-0 would allow “myriad devices to intercommunicate and interoperate.” The article gave the examples of pill bottles that can order refills from the pharmacy; light switches and thermostats that can talk to light bulbs and heaters; or people that can check on their home from their offices. Each medicine bottle would have a tag that could be read by the medicine cabinet. The system would also automatically remind people to take their pills or refill the prescription. The tag on the bottle would encode an Internet protocol packet (IP)—one might call it an IPID tag versus RFID tag — and the tag reader would merely have to relay the packet to the network. The information would be carried by the pill bottle rather than programmed into the reader. Substituting books and bookshelves in the above example, you can quickly see the application potential for libraries.

The computer industry is making large investments to develop Radio Frequency Identification (RFID) technology [en.wikipedia.org/wiki/RFID](http://en.wikipedia.org/wiki/RFID) and its applications for commercial use, as evidenced by the Metro Group Future Store Initiative [www.future-store.org](http://www.future-store.org) and the corporate-sponsored research at the MIT Media Lab [www.media.mit.edu/sponsors/sponsors.html](http://www.media.mit.edu/sponsors/sponsors.html). To what extent will this technology affect libraries, when, and for what purpose(s)? Some possibilities that address the RFP requirement, and more are:

- Smart Books equipped with passive RFID or IPID tags can be queried over the network as to their identity, and possibly also their current geographic location within the library.
- In the library, using a Personal Digital Assistant (PDA) or cell phone equipped with a camera that can function as a scanner, the user can “read” any book tag to obtain book reviews, link to its e-book equivalent which can then be searched on the spot or link to relevant websites, book discussions, etc. The same PDA or cell phone could be used

to enlarge images on high-resolution displays in the library or project them onto a nearby wall. (see “**Connecting Paper and Online Worlds by Cellphone Camera,**” *The New York Times*, October 7, 2004 – available through iCONN at

[proquest.umi.com/pqdweb?index=0&did=000000708695261&SrchMode=1&sid=6&Fmt=3&VInst=PROD&VType=PQD&RQT=309&VName=PQD&TS=1097608329&clientId=20549](http://proquest.umi.com/pqdweb?index=0&did=000000708695261&SrchMode=1&sid=6&Fmt=3&VInst=PROD&VType=PQD&RQT=309&VName=PQD&TS=1097608329&clientId=20549)

- Smart shelves equipped with readers that read the tags know which books are on the shelf and which are not based on whether or not the book has left the shelf’s “radar screen.”
- Smart books communicate wirelessly with their shelves, which in turn are connected to networks that can be queried by any Web browser.
- Smart books answer queries from Web browsers concerning their availability at that moment:

If checked in but not at its call number location, an instant message is sent to library staff to query the location of the book within the library, possibly with the assistance of an in-building local positioning system (GPS doesn’t work well in-doors.)

- If checked in but not detected within the library, the system generates a “missing book” instant message to staff
  - If checked out, the circulation system will indicate that fact along with its due date, as it does today
  - The system might also be able to detect when it is on the correct shelf but not in the correct shelf location (sequence)
  - The system could also provide statistics on *in-library* usage of smart books
  - Question: Would smart books that have been checked out also be smart enough to remind the individual borrower when they are due back and, if the borrower chooses and the library allows, automatically renew themselves?
- Reference librarians and interlibrary loan librarians responding to online requests might use an ambient device such as an orb or a pinwheel that continuously receives updates over a wireless network to be visually alerted to the presence of new requests. This particular technology is available today at [www.ambientdevices.com](http://www.ambientdevices.com).

It is much too early to credibly predict how all this will play out, or whether the actual outcome will bear any resemblance to what seems likely or plausible today. Certainly, economics (in particular, the cost and size of tags and readers) will play a role. Our collective imaginations may play an even bigger role. But it is not too early to begin to ask or imagine:

- How can libraries use real-time information to make a positive difference for library users? Or, to put the question differently, if you already had it, what would you do with it?

*continued*

- How can libraries “animate” the physical infrastructure (e.g., through the use of signage and other objects that users can query with personal communications devices) so that it more directly and proactively supports the reasons library users come to the library and gives them more reasons to come? How can the same physical infrastructure be more infused with or better connected to the knowledge (beginning with its metadata) of what is in the library?
- What can’t we do for library users today that we would like to be able to do?

In the commercial sector developments are being driven as much (or more) by the benefits the technology confers on suppliers (the “future store” and its supply chain) as on the consumer. Privacy issues loom for all sectors including libraries.

One can only surmise where all this might lead and what might be achieved if libraries were to focus exclusively on what library users could gain from this technology and let that steer the identification and development of potential applications.

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