School Public Special Academic

LIBRARY INSTRUCTION ROUND TABLE NEWS

The purpose of LIRT is to advocate library instruction as a means for developing competent library and information use as a part of life-long learning.

LIRT June 2005, volume 27, no.4 issn 0270-6792

From The President

Cynthia Akers (akerscyn@emporia.edu)
ALA-LIRT President, 2004-05

Hello from Kansas and I hope all of you have had a productive spring in library instruction! In our library, we have just completed a number of College Composition II instruction sessions. We are now witnessing the expected questions of, "How do I cite an Internet resource?" and "Help! I forgot to print out the citation for this article, and I need the article today!"

I enjoy these types of questions because it means that some research and critical thinking has already taken place. It's easy to assume that, because of the ubiquitous nature of the Internet, critical thinking has gone the way of 8-track tapes and black-and-white television!

Nevertheless, even well-organized search engines cannot take the place of librarians as instructional guides and facilitators. And, the purpose of LIRT is to provide that practical instruction assistance to all types of libraries.

We are getting ready for an exciting ALA Annual Conference in Chicago! I'm really looking forward to our LIRT Membership Fair and Conference Program on Sunday, June 26. The Membership Fair is from 8:30 to 10:00 a.m. in McCormick Place, N230. The Conference Program, "Seamless Transitions to College: Creating Successful Collaboration Programs," follows from 10:00 a.m. to 12:00 p.m., also in McCormick Place N230. Many thanks to Susan Sykes Berry, Conference Program Committee chair, and Linda Lambert, PR/Membership Committee chair, and their great committee members for their hard work.

My official time as President will be completed at the end of this ALA Annual Conference, and Carol Schuetz will become President for 2005-06. During the past year, I've greatly appreciated the opportunity to work with Carol as Vice President and with Stephanie Michel as Past President. I have learned much from them both. One of the most valuable experiences of LIRT involvement is the chance to work with wonderful colleagues, and I have been very lucky in that respect.

Safe travels to Chicago–– — and be sure to talk about LIRT whenever the occasion presents itself!

LIRT's Movers and Shakers!

We always knew that LIRT was on the cutting edge and now the world knows it! The March 15, 2005, issue of *Library Journal* included the profiles of 20 individuals who have been identified as "Movers and Shakers" in the library profession. It is always exciting to read the profiles and this year was especially exciting since two of these dynamic individuals are also active members of LIRT.

As an educator, Vibiana (Vib) Bowman excels in her enthusiasm to teach students to locate information and to use it appropriately. She always seeks ways to connect with her students including using her own children to critique lessons. She also eagerly shares her expertise with others, especially using technology to enhance instruction. The words "Personal Trainer" were used to describe Vib and they were right on target. Her infectious smile, boundless energy, and passion for her profession challenge each of us to just try to keep up!

Linda Golian-Lui is identified as a "Master Mentor." In her profile, Linda indicated that she felt a debt of gratitude to the individuals who encouraged her to pursue a career as a librarian. Linda calls mentoring a "cycle of love." Linda is passionate about her chosen career and shares that passion in numerous ways including career fairs. She tells students that "librarians know on a daily basis that they do make a difference."

Congratulations to Vib and Linda!

INSIDE

Time flies!

It only seems like yesterday that I took over as editor of *LIRT News* (January 2003). I'm not sure where the time has gone, but serving as chair of the Newsletter Committee and editor of *LIRT News* has been one of the most rewarding experiences of my professional life. I have had the pleasure of working with some very remarkable individuals who are not only energetic but also visionary in their leadership. One only has to look at the list of officers and committee chairs, past and present, to see that ALA-LIRT has a promising future.

ALA Annual in Chicago marks the culmination of another year of planning within ALA-LIRT. The Program Committee in collaboration with the Transitions to College Committee has planned an exciting program entitled "Seamless Transitions to College: Creating Successful Collaboration Programs." Prior to the program on Sunday (June 26), the Public Relations/Membership Committee with host a Membership Fair. What a wonderful opportunity to share the energy and vision of ALA-LIRT with others!

Once again the Continuing Education Committee has spent many hours reading and reviewing numerous articles related to library instruction and selecting the "LIRT Top 20 for 2004." This annotated bibliography reflects the diversity of issues that we face as librarians who teach. My reading list grows!

As we come to the end of another year, it seems appropriate to thank those who have contributed to the success of ALA-LIRT. There is not enough space in this column to thank everyone individually although I would love to put the name of each and every member of ALA-LIRT "up in lights." Where would we be without you?! So I'll simply say **THANK YOU!**

This is my last issue as editor of *LIRT News*. I will hand over the responsibilities of Newsletter Chair and editor at the end of ALA Annual. However, I will not be folding my tent and fading into the night! I look forward to my new position within ALA-LIRT, as treasurer.

See you in Chicago,
Caryl

We need your contributions!

The LIRT Newsletter is looking for articles.

If you have an idea for an article, Please contact our editor: Caryl Gray (cegray@vt.edu)

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URL: <http://www.baylor.edu/LIRT/lirtnews>

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Contributions to be considered for the September 2005 issue must be sent to the editor by July 15, 2005.
Send claims to Darlena Davis,HRDR, 800-545-2433, X4281, American Library Association, 50 E. Huron Street, Chicago, IL 60611.

By Tammy Bobrowsky* (tbobrowsky@bemidjistate.edu)

Seniors Increasingly Online:
Tips for helping seniors navigate the information highway

There is plenty of library literature dealing with learning styles and instruction practices of the younger generations, but not as much is available on older adult learners, specifically, seniors. Better medical care equals longevity; today's seniors are healthier and living longer. In 2010, according to the U.S. Census Bureau's projections, over 38% of the country's population will be made of people from 45-85+ in age.

Senior learners should not, however, be lumped into one group. "Generalization is dangerous," says Celia Hales Mabry, reference librarian and bibliographer at the University of Minnesota-Twin Cities Campus, "There is such great diversity in the senior population today." Mabry is also the author of *The World of the Aging* (1993), which outlines the information needs and choices of the senior population, and written specifically for libraries. Mabry went on to articulate that when the book was published, just over 10 ten years ago, the most important issue at that time was transportation. How can those without transportation get food, medicine, or information? The present is a quite different story. It was not foreseen at the time, but "computers have changed nearly everything in the book," comments Mabry.

While Millenials, those born in or after 1982, have grown up in a world where computers were widespread and not thing of novelty, seniors have not had this opportunity. Most Millenials and even Gen Xers have had access to computers in their schools, libraries, and for a large number, at home. Although slow to jump onto the information highway, seniors at present have been increasingly becoming "wired."

Who's online? Seniors!

- 22% of Americans aged 65+ use the internet
- In 2000, 60% of seniors (age 65+) online were men, 40% women. By 2004, this number had evened out 50/50.
- Once online, senior users are just as enthusiastic about the internet as younger users
- More and more seniors are turning to the Internet for health research. 70% of "wired seniors have searched for at least one health topic online. The most popular search was for information about a specific disease or medical problem.
  (2004 Pew report, "Older Americans and the Internet)

As more and more seniors are drawn to the internet, careful consideration needs to be made in terms of instructing seniors, and in terms of creation and usability of online resources aimed at them. The following sections include tips and an annotated bibliography of resources for further information.

Tips for instructing seniors online.

Watch the jargon. Avoid using computer and Web terms, or if you do, properly define them. For example, before asking your patrons to "login" and "scroll down" make sure they know what that means. There are some great tutorials listed below on using the web that explain all of the terminology.

Take time to let it marinate. An AARP study has shown that seniors tend to read everything on a webpage before moving on. If you've ever taught a class or workshop with both young and senior patrons you might notice that the younger ones may zip along and quickly find material (whether or not it's the best material) while senior users may need more time to navigate a site. Give the senior user some extra time to absorb the context. Adult users are likely to conceptualize the process and look for meaning, while younger users are more likely to take what you've just demonstrated at face value. The AARP study showed that seniors are more interested in how the resource works as well.

Consider physical limitations or barriers. Seniors may face physical limitations to learning and using online resources whether it is fading eyesight, weakening motor skills and coordination, arthritis, or short-term memory loss. These need to be observed and the classes or one-on-one sessions with them should be modified accordingly and tactfully.

Respect. Respect is something we strive to provide to all patrons. But with senior patrons, be careful to not displace respect by being over-solicitous. Seniors bring with them an abundance of life skills and experiences. Consider assignments or activities that focus on their needs as well as their strengths and experiences, rather than ones that exclude them.

Tips for designing senior-friendly resources.
If you're thinking of designing or revising your own tutorial or website for senior learners, consider these tips:

- Limit scrolling for those with arthritis problems
- Consider using larger fonts
- Images and graphics should have a purpose
- Be consistent. Senior users want to know "what's clickable and how it will behave."
- Senior users may tend to think that if something is difficult, it is a problem with them, not the site.
- Avoid technical terms

To get a better idea of how to construct online resources aimed a seniors, take a look at these popular sites.

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Join us for BITES with LIRT
Chicago, Illinois
June 25-26-27, 2005

Once again, LIRT is organizing groups for lunch at modestly priced restaurants during the ALA Annual Conference in Chicago. This is your opportunity to meet and eat with other librarians interested in library instruction.

LIRT welcomes anyone who has an interest in instruction from all types of libraries. You need not be a member of LIRT to participate. We hope you will join us in this opportunity to exchange ideas and experiences about library instruction in a relaxed setting. The local arrangements group will help us pick the restaurants and as soon as the selection is made we will post details and maps on the LIRT website <http://www3.baylor.edu/LIRT/>. Enjoy a stimulating and fun lunch with LIRT—good food, good company, and interesting conversation. We will make the arrangements; all you have to do is reserve your spot and show up! Deadline is June 16, 2005. Confirmations will be sent by e-mail.

Send requests for reservations to: ssc@lib-mail.humboldt.edu
Sharon Chadwick, Science Librarian
The Library, Humboldt State University, One Harpst St.
Arcata, CA 95521-8299 (707) 826-4955 (w) (707) 826-4900

_____

BITES REGISTRATION FORM

Name: _____
Institution: _____
Phone: _____
E-mail : _____
Join us as many times as you'd like. Please mark your preference(s) below:

Saturday, June 25, 2005, 12:30 p.m.

____ Mity Nice Grill - 835 N. Michigan (Map**:** http://tinyurl.com/4ff7m**)**
http://www.leye.com/restaurants/rest_home.jsp?id=12

____ Big Downtown -124 S. Wabash (Palmer House Hilton) Map: http://tinyurl.com/7yv5j
http://www.hilton.co.uk/property/1201_Restaurant.jsp?vid=11222288&hid=11218862

Sunday, June 26, 2005, 12:30 p.m.

____ South Loop Club - 701 S. State St. (Map: http://tinyurl.com/6of4e)
http://www.cityinsights.com/slc.htm

____ Big Downtown - 124 S. Wabash (Palmer House Hilton) Map: http://tinyurl.com/7yv5j
http://www.hilton.co.uk/property/1201_Restaurant.jsp?vid=11222288&hid=11218862

Monday June 27, 2005, 12:30 p.m.

____ Buddy Guy's Legends -754 S. Wabash (Map: http://tinyurl.com/5salv**)**
http://www.buddyguys.com/

Are you a LIRT member? yes _____ no _____
Would you like to join LIRT and become active in a committee? yes _____ no _____

By Susan L. Silver, ssilver@lib.usf.edu

Member A-LIRT

Eileen Stec

Meet Eileen Stec, who currently serves as co-chair of LIRT's Teaching, Learning and Technology Committee. Eileen is an Instruction and Outreach Librarian at the Douglass Library at Rutgers University. Prior to becoming a librarian, Eileen spent about a dozen years as a social worker. She worked mostly with psychiatric patients and also trained as a psychotherapist. She had a private practice in New York City for several years before changing careers. When speaking of her former career, she says, "It was very good training for any other career I might go into. I still use my skills every day".

As an instructor, Eileen finds the most rewarding times come when the undergraduates "get it." sometimes called the "aha" moment. She also finds great satisfaction working with Library School graduate students as part of a teaching practicum and as interns. "It is very gratifying to have future librarians catch on fire with the teaching bug; I stay in contact with many of them and continue to share teaching methods and professional support." In her teaching, she stresses two things: first, concepts, not just button pushing and second, that students shouldn't be afraid to ask a librarian for help. She advises other instruction librarians to never stop learning; it prevents burnout.

Eileen was drawn to LIRT two years ago after attending her first "Bites with LIRT" lunch. When asked to comment on the benefits of LIRT membership, she said, "Working with librarians from different settings, the cross-fertilization of ideas is very stimulating. There is a feeling that getting to know each other and having informal contact makes working together relaxing as well as collaborative".

Eileen recently published two book chapters on the topic of plagiarism and her latest work is a CD-ROM entitled "Plagiarism and Academic Integrity at Rutgers University" <http://www.scc.rutgers.edu/douglass/sal/plagiarism/intro.html>.
The CD-ROM is part of the larger work: *The plagiarism plague: A Resource guide and CD-ROM Tutorial for Educators*, published by Neal-Schuman.

Although she has many outside interests, including theater, movies, art, and photography, Eileen finds that she has little spare time to pursue them. She does, however, admit to being a Home and Garden Television (HGTV) addict.

Seamless Transitions to College: Creating Successful Collaboration Programs

Are you a high school librarian looking toward the future educational needs of your students? Perhaps you are a public librarian working with a college-bound population, or an academic librarian with first-year students. Be sure to join ALA-LIRT for an interactive panel discussion with a high school librarian/teacher team, Julie Hyde-Porter and Susan Roberts, a public librarian, Aaron Schmidt, and academic librarian, James Krusling to learn how we can help one another develop information literacy programs for our incoming students.

Julie Hyde-Porter and Susan Roberts are dynamic partners in instruction at Cherry Creek High School, a large suburban school in the Denver area. Julie has been a school librarian for 22 years, and is currently a teacher librarian. Susan teaches Social Studies and is the liaison between the library and the Social Studies Department. Her new role as liaison evolved out of her conviction that a successful college student learns to research efficiently in high school. Ninety-two percent of their students enroll in college.

James Krusling is a Cincinnati, Ohio native. He has an undergraduate degree in History from the University of Cincinnati, and his MLS from Kent State University. His career has found him working in public libraries, special libraries, and academic libraries. Presently he is the First Year Experience Librarian at the University of Cincinnati. In addition to teaching first year students, James is also a student taking night classes in law school.
Aaron Schmidt is from the Chicago area. He works with students of all ages as a Reference Librarian at the Thomas Ford Memorial Library in Western Springs, IL. Aaron is the author of Walking Paper <www.walkingpaper.org> and was named a 2005 Mover and Shaker by *Library Journal*.

Seniors Increasingly Online

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Generations on Line
Generations on Line is a national nonprofit corporation that provides specially programmed self-training software to senior centers, libraries, retirement homes, etc. The software is priced at $350 plus an annual maintenance fee. Generations on Line uses "familiar images and large type instructions" to guide users through email, discussion, Yahoo!, and other sites. "Memories: Generation to Generation," is a special feature of the software, linking school children to seniors.

American Association of Retired Persons (AARP) <www.aarp.org>
The site lists many topics ranging from health to money to travel, but the "Learning and Technology" link directs the user to a plethora of resources, including basic and intermediate web tutorials and life-long learning resources. The Older, Wiser & Wired section (www.aarp.org/olderwiserwired/) has many resources for online design for seniors. AARP also offers a Spanish version to the site.

SeniorNet <www.seniornet.org>
SeniorNet is a nonprofit organization of computer-using adults, age fifty and older. Their mission page states that they "provide older adults education for and access to computer technologies to enhance their lives and enable them to share their knowledge and wisdom." The site is clean, easy to read, with larger than average font. It has an option to increase the font even more with the "Enlarge Text" option, however, the feature did not seem to make any difference in appearance. Users would be better off increasing the text size via the View menu in their web browser. The Homepage is quite long though, and requires much scrolling.

Adult Learners Resource Center <http://www3.baylor.edu/LIRT/adultlearning.htm>
LIRT's very own Adult Learners Committee created this site full of resources for librarians. There is a specific page for older adult learners that provides tips, teaching methods and statistical information.

Annotated Bibliography

Chisnell, Dana and Janice C. Redish. "Who is the "older adult" in your audience?" *Intercom*. 52:1 (2005): 10-14.
This article was an interesting find. *Intercom* is the magazine for the Society of Technical Communication, yet the article fits so well with library services. It provides a clear view of who today's seniors are and how and why they use the web.

Einhorn, Catrin. "Digital Generations: More Seniors Logging On to the Web." *Morning Edition*. 3 December 2004. NPR. 10 April 2005. <http://www.npr.org/templates/story/story.php?storyId=4200943>.
As part of a weeklong series on "Digital Generations," the program discusses the growing number of seniors online and briefly mentions the Generations on Line software.

Fox, Susannah. "Older Americans and the Internet." 2004. Pew Internet and American Life Project. 10 April 2005. <http://www.pewinternet.org/pdfs/PIP_Seniors_Online_2004.pdf>.
This report is full of interesting findings on computer use among older Americans. It shows a growing trend of seniors using the internet and discusses the implications that will have in the future.

Hales-Mabry, Celia. *The World of Aging*. Chicago: American Library Association, 1993.
While the wide-spread use of computers has changed many aspects of the book, it does also discuss physical and sociological issues of the senior population, which is still very relevant today. This book is still very useful for libraries.

Mabry, Celia Hales. "Serving Seniors: Dos and Don'ts at the Desk. American Libraries 34.11(2003): 64-65.
Mabry discusses many practical tips to make sure that seniors coming into your library get the help they need.

Mazur, Beth and Amy Lee. "Older wiser and wired." *Intercom* 50:10 (2003): 12-14.
This article, again from *Intercom*, discusses senior reactions to and thoughts on using computers, based on focus groups and usability testing. The authors also list many good tips to consider when creating websites or online tools aimed at seniors. Despite its business-oriented theme, those who work with senior learners will find this extremely helpful.

** Tammy Bobrowsky is a librarian at Bemidji State University and a member of the ALA-LIRT Adult Learners Committee.*

LIRT Membership Fair

Come meet people and learn more about LIRT

When: Sunday, June 26
(before LIRT Program)

Where: McCormick Place N230

Sharon Ladenson (ladenson@mail.lib.msu.edu)

Check These Out!

As the "Check These Out" columnist, I am pleased to review recent literature on information literacy and library instruction. The resources listed in this column focus on collaborating with teachers and discipline faculty to provide effective instruction.

- *What are some ways in which librarians and teachers or university faculty have worked together to facilitate the learning process?*
- *How can librarians initiate positive working relationships with faculty and teachers?*
- *How have librarians and faculty assessed their cooperative efforts?*

Check these out, and enjoy!

Bordonaro, K. & Richardson, G. (2004). "Scaffolding and reflection in course-integrated library instruction." *The Journal of Academic Librarianship*, 30 (5), 391-401.

Bordonaro and Richardson (an academic librarian and an education professor) have not only worked cooperatively to provide instruction to undergraduate students, but also conducted a study to determine whether their collaborative efforts were effective. The cooperative teaching project involved incorporating a bibliographic instruction component into a course on teaching literacy in elementary schools. The students completed a "jigsaw activity," which involved working in groups to answer questions about library resources and search techniques, and sharing their responses with the rest of the class. The students were also required to describe in writing what they had learned from the jigsaw activity; the librarian graded this written exercise. Students also researched "hot topics" in literacy education using a variety of sources, such as (among others) print and electronic scholarly journals and popular magazines, books, and online discussion forums. While completing their research, students were required to record their search process in a journal (graded by the librarian). Bordonaro and Richardson not only shared the responsibility of presenting the material, but also the grading of the "hot topics" assignment. The students also submitted their source list for the "hot topics" paper as an annotated bibliography. Before the students completed the jigsaw activity and "hot topics" exercises, the authors distributed a survey to assess students' comfort level using library resources, and their confidence about their own search abilities. After completing the information literacy exercises, students answered additional assessment questions in a postsurvey. Although some students indicated a fairly high level of confidence with their search abilities in the presurvey, students nevertheless indicated that the information literacy instruction was helpful in the postsurvey (particularly in providing information about new resources, people to ask for assistance, and the physical layout of the library). Based on their findings, Bordonaro and Richardson conclude that "scaffolding" (i.e., support provided by instructors, peers, or technology) facilitates the research process, and reflection on the research process (through journal writing and completing surveys) facilitates learning.

Brady, A., & Estes, M. (2005). "The history research project: a social studies teacher and library media specialist reflect on the power of collaboration." *Library Media Connection*, 23 (4), 28-30.

Estes and Brady describe ways in which a teacher and a librarian can work together to meet the educational needs of secondary school students. In order to teach research skills, Estes (who works as a social studies teacher) requires his students to use library resources to investigate prominent leaders in world history. Estes also draws upon the expertise of Brady (the library media specialist) to teach students about research process. The teaching effort is collaborative. Estes provides instruction on developing a thesis and organizing the basic outline of a research paper, while Brady teaches students how to identify and evaluate resources. Students complete worksheets that facilitate the process of evaluating sources. Brady grades the worksheets, and, consequently, the students take her very seriously. Brady offers several suggestions to library media specialists for developing a successful partnership with teachers. Librarians need to learn the goals that teachers set for their students, and consider how teaching information literacy skills can help achieve such goals. Media specialists can offer their expertise not only by teaching and developing research exercises and assignments, but also by grading relevant exercises (and, consequently, lightening the teachers' workloads). Flexibility is key, for teachers often change project requirements each year. Library media specialists also need to work with teachers not only to teach about the research process, but also to regularly evaluate research project assignments and exercises, and make necessary changes.

Cheney, D. (2004). "Problem-based learning: librarians as collaborators and consultants." *portal: Libraries and the Academy*, 4 (4), 495-508.

"Problem-based learning" (PBL) involves teaching information seeking in context: providing a specific problem for students to solve, and requiring students to identify appropriate research tools for solving the problem. Cheney describes her collaborative instruction efforts with a faculty member from the Penn State University School of Information Sciences and Technology, which involved incorporating problem-based learning activities into a first year seminar. For the library sessions, the author and her faculty colleague developed and distributed questions for students to investigate in groups, as well as lists of subscription and free electronic resources for finding information to answer each question. Cheney notes that

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LIRT's TOP 20 for 2004

Selected and reviewed by the Continuing Education Committee:
Tiffany Anderson Hebb, Corliss Lee, Camille McCutcheon, Harry Meserve, Ericka Arvidson Raber (Chair), Leslie Sult, and Leanne VandeCreek.

Committee members reviewed over one hundred articles related to library instruction and information literacy. The committee worked to include articles from various library settings as well as a mix of both theoretical and practical articles.

Barone, Kathleen, and Glenda B. Weathers. "Launching a Learning Community in a Small Liberal Arts University." ***College & Undergraduate Libraries*** **11.1 (2004):1-9.**

Barone and Weathers discuss the value of building learning communities and describe the collaboration of their library and English department in creating one. They worked together to design a learning experience where the students would see the integrated nature of information and build new knowledge. Because of research showing that Gen Y students are visually oriented, they started by having the students look at several pieces of art and, in small groups, design their own research questions. The librarian then provided them self-guided pathfinders and let the students search for answers to their questions and create their own discoveries.

Brower, Stewart. "Millennials in Action: A Student-Guided Effort in Curriculum-Integration of Library Skills." ***Medical Reference Services Quarterly*** **23.2 (2004):81-88.**

This article details a project taken on by Pharmacy students at the University of Buffalo along with librarians and the school's curriculum committee, to help create their own training plan for information literacy skills. Their final plan involved integration of this training throughout the first three years of their program. Brower attributes their initiative largely to their being part of the millennial generation. Throughout the article, he also ties in other millennial characteristics and how they impacted this project and the role the students played in it.

Christenson, Beth. "Warp, Weft, and Waffle: Weaving Information Literacy into an Undergraduate Music Curriculum." ***Notes*** **60.3 (2004): 616-631.**

Christensen describes the program of sequential course-integrated library instruction for students in the music department at St. Olaf College. The article includes examples of the assignments, which continue to build on higher level skills throughout the major curriculum. The assignments are designed to take advantage of the four stages of epistemological development, as described by Ethelene Whitmire. Christensen also touches on the importance of assessment and faculty support in this type of program.

Donham, Jean, and Corey Williams Green. "Developing a Culture of Collaboration: Librarian as Consultant." ***The Journal of Academic Librarianship*** **30.4 (2004): 314-21.**

Cornell College Library restructured four of its five librarian positions as Consulting Librarians (for Arts and Humanities, for Social Sciences, etc.). This model is more meaningful for library users and enables true collaboration with faculty. Consulting librarians integrate collection development, instruction, and in-depth reference for their respective academic areas. They attend meetings, serve on faculty committees, and are active throughout the college. Consultation follows a model based on ACRL's Information Competency Standards for Higher Education, so the library and other support systems are available to students at each stage of the research process. The article briefly discusses the process of strategic planning and describes how librarians work collaboratively with faculty in planning and teaching courses. This model should be useful to all instruction librarians as we ponder how to truly integrate ourselves into the teaching of our institutions.

Drabenstott, Karen M. "Why I Still Teach Online Searching." ***Journal of Education for Library and Information Science*** **45.1 (2004): 75-80.**

In her online searching course, Drabenstott, a professor at the University of Michigan, Ann Arbor, School of Information, teaches her students the importance of facet analysis, which requires topics to be broken into several concept groups. Other aspects of the course include how to query information systems, the benefits of controlled vocabulary in information retrieval, and the value of information retrieval and web search strategies. Her rationale for teaching online searching is so that her former students will not only be able to incorporate their knowledge of facet analysis into their online searching, but they will also be able to train their library users to use these skills in their online searches.

Ellis, Lisa A. "Approaches to Teaching Through Digital Reference." ***Reference Services Review*** **32.2 (2004): 103-19.**

Ellis examines the growing acceptance of the importance of teaching as a part of reference, the rise in popularity of digital reference, and lessons learned from online education. She outlines how the ACRL Information Competency Standards for Higher Education can serve as a curricular framework for teaching in digital reference interactions. This well-written article addresses the confluence of instruction and digital reference, two major trends in the library field.

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LIRT's Top 20 *continued from page 8*

Eshet-Alkali, Yoram, and Yair Amichai-Hamburger. "Experiments in Digital Literacy." *Cyberpsychology & Behavior* 7.4 (2004): 421-429.

According to Eshet-Alkali and Amichai-Hamburger, digital literacy consists of five components: photo-visual skills, reproduction skills, branching skills, information skills, and socio-emotional skills. The authors discuss each component and then describe experiments they conducted with high school, college students, and college graduates to assess their competencies within each component. Their findings showed that younger users were more skilled with photo-visual literacy and branching skills; older users were more skilled at tasks requiring information and reproduction literacy skills. This article should serve to remind librarians that information and computer literacies are not just technical and text-based competencies. The discussion is mostly theoretical, but has interesting implications for educators.

Foster, Allen. "A Nonlinear Model of Information-Seeking Behavior." *Journal of the American Society for Information Science and Technology* 55.3 (2004): 228-237.

Foster's nonlinear model of information-seeking behavior is based on an interview of 45 academics engaged in interdisciplinary research. He proposes that information-seeking behavior does not unfold in three neat stages (initial, middle, and final), but rather non-sequentially, with any one behavior possibly leading to any other behavior. Foster writes about three core processes: Opening, Orientation, and Consolidation. His model also illustrates three contextual interactions: External (such as social), Internal (such as feelings), and Cognitive Approach (such as flexible and adaptable). The article is an interesting exploration of the research process with many implications for information literacy.

Heller-Ross, Holly. "Reinforcing Information and Technology Literacy: The Plattsburg Tip Sheet." *College & Research Libraries News* 65.6 (2004): 321-26.

The general education curriculum at SUNY Plattsburgh has recently been revised to include a new one-credit information and technology literacy requirement. As a result, the library offered a workshop to assist faculty in revising their courses to meet this new requirement. The tip sheet provides faculty with alternative methods to lectures, class activities and assignments, through the incorporation of technology and research sources. Heller-Ross also suggests ways that librarians can use the workshop and tip sheet at their own libraries.

Hensley, Randy Burke. "Curiosity and Creativity as Attributes of Information Literacy." *Reference & User Services Quarterly* 44.1 (2004): 31-36.

Hensley defines curiosity and creativity in an educational context and encourages readers to insert inquiry into their instruction. By building an environment that acknowledges the problems associated with the research process and encourages creative responses to the "why" questions, librarians can foster curiosity and creativity in their classes and other interactions with students. Hensley asks us to move beyond our efforts to teach students how to identify information needs, how to find information, and how to evaluate information. We should also focus our energies on getting students to ask the "whys" about information. This article offers a very thoughtful and refreshing perspective that will spark ideas and remind us why we enjoy teaching.

Hunt, Fiona, and Jane Birks. "Best Practices in Information Literacy." *Portal: Libraries and the Academy* 4.1 (2004): 27-39.

ACRL has recognized the library at Zayed University, United Arab Emirates, as being one of the top institutions in the world which has demonstrated best practices in information literacy. In the article, the authors discuss six of the ten categories of ACRL's "Characteristics of Programs of Information Literacy that Illustrate Best Practices: A Guideline." The categories explored include Goals and Objectives, Administrative and Institutional Support, Articulation with the Curriculum, Collaboration, Pedagogy and Evaluation/Assessment. These selected characteristics were considered by the authors to be important, and in some cases, problematic in the beginning phase and in the continual development of their information literacy program. The authors' hope is that their article, based on personal experiences and examples cited from the literature, will be of benefit to other librarians who are using the ACRL guidelines to develop information literacy programs at their institutions.

Kipnis, Daniel G., and Gary M. Childs. "Educating Generation X and Generation Y: Teaching Tips for Librarians." *Medical Services Quarterly* 23.4 (2004): 25-33.

Kipnis and Childs suggest ten tips for library instruction sessions with the specific generational qualities, attitudes, and learning styles of Generation X and Generation Y in mind. However, when followed, the suggestions would improve instruction with just about any population, and in a variety of settings. For example, it may seem obvious to introduce yourself and talk a little bit about your background at the start of each session, but this step is easy to overlook or forget. Additionally, librarians can get caught using the same examples or search strategies class after class, particularly for multiple sections of the same class. The authors remind us to provide relevant and real-life examples in our instruction sessions. They also remind us of the value of humor and relationship building, and that it is possible to establish authority while at the same time remaining amicable. Kipnis and Childs have written a very practical and straightforward yet thought-provoking article that instruction librarians can review any time they feel the need for a fresh approach to their classes.

Ladner, B., et. al. "Rethinking Online Instruction: From Content Transmission to Cognitive Immersion." Reference & User Services Quarterly 43.4 (2004): 329-37.

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Ladner et. al. take up some important pedagogical issues in the course of describing the development of a library-nursing collaboration in information literacy. They make the useful distinction between the old, bibliographic instruction model of IL, based on "transmission of content" and a more dynamic model, based on the interaction of student, faculty, and librarian in the creation and use of distance learning tools, course management systems and other forms of interactive, cognitive styles of learning and teaching. The description of how these new tools are applied in the course of information literacy instruction in Nursing illustrates how active learning is promoted in a context where course management systems and other online environments are utilized. The authors illustrate a few ways in which we can understand and implement instruction where students are not so much "taught" as they are "immersed" in the subject matter. The article is very engaging and raises many questions, both of pedagogy and of practical methodology that will be of general benefit to all interested in developing new, more effective instruction.

Lindauer, Bonnie Gratch. "The Three Arenas of Information Literacy Assessment." ***Reference & User Services Quarterly*** **44.2 (2004): 122-29.**

The author discusses the three arenas essential to information literacy assessment: the learning environment, information literacy program components, and student learning outcomes. She then provides a series of questions for each arena that would encourage assessment planning and practice. One of the most valuable aspects of the article is her discussion of organizations and resources which deal with information literacy assessment. Lindauer refers the reader to resources such as: workshops and online seminars: standards and guidelines; practical applications; research projects; and professional association web sites which link to publications and bibliographies of materials on information literacy assessment.

Macpherson, Karen. "An Information Processing Model of Undergraduate Electronic Database Information Retrieval." Journal of the American Society for Information Science and Technology 55.4 (2004): 333-47.

MacPherson introduces us to the application of some concepts from cognitive psychology that may help us to understand what we are doing when we plan and provide instruction in information literacy. She uses her insights from cognitive psychology, especially in the area of information processing, to underline the methodology of concept-based instruction and critical thinking. MacPherson then uses a literature survey to argue that, while we use different terms and different constructs, we all seem to have a similar understanding of what we are doing when we teach information literacy skills, especially given the focus on critical thinking, problem solving and knowledge formation. This is a useful article because it demonstrates the value of using the established discipline of psychology to provide us with a potentially common theoretical base for the pedagogy of information literacy. While we may not accept MacPherson's proposed theoretical base, we can still take note of its usefulness to improve communication and as a model for the future.

Owusu-Ansah, Edward K. "Information Literacy and Higher Education: Placing the Academic Library in the Center of a Comprehensive Solution." ***The Journal of Academic Librarianship*** **30.1 (2004): 3-16.**

Owusu-Ansah presents a comprehensive approach to information literacy instruction in which librarians embrace their teaching roles and develop campus-wide programs. Part of this approach involves the elevation of the library to a teaching department that would offer an independent, required information literacy course. The author also argues for the continuation of course-specific instruction to reinforce skills, and to allow opportunities for faculty-librarian collaboration. This article shows that the argument for the inclusion of an information literacy course in the required undergraduate curriculum is still alive.

Small, Ruth V., et. al. "Motivational Aspects of Information Literacy Skills Instruction in Community College Libraries." College & Research Libraries 65.2 (2004): 96-121.

Although this article focuses on information literacy skills instruction in community college libraries, the successful blending of theory and practice can be adapted to a wide variety of library settings. The article begins with an examination of the ACRL Information Literacy Competency Standards for Higher Education. After this brief introduction, the authors explore the interrelatedness of motivation and student learning, and introduce John M. Keller's ARCS Model of Motivational Design. The ACRL standards and the ARCS Model of Motivational Design form the basis for a research study that the authors conducted with students at seven community colleges. The authors use what they discovered in their study to offer practical tips that librarians in any setting can use to motivate students during in-class library sessions.

Swanson, Troy A. "A Radical Step: Implementing A Critical Information Literacy Model." Portal 4.2 (2004): 259-73.

The author argues that it is time to move away from the print-based bibliographic instruction model for teaching research techniques. This article presents a case study whereby a critical information literacy model is applied to the research paper component of a first-year composition course. Four six-class sessions devoted to gathering information are taught with the librarian acting as class leader. Though the sample in this study is small, the limitations are adequately addressed by the author, and it does not detract from the information and ideas presented. While the approach may be radically different, and implementing this type of program may be impossible on many campuses, Swanson presents a unique, interesting, and plausible approach to teaching students critical literacy skills.

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Tag, Sylvia G. "A Library Instruction Survey for Transfer Students: Implications for Library Services." The Journal of Academic Librarianship 30.2 (2004): 102-8.

The institution examined in this case study is fortunate to have a varied instruction program that includes orientations, course-integrated bibliographic instruction, course-linked credit instruction, and library credit courses. Tag presents a well-written article based on sound methodology and analysis that addresses the information needs and skills of a population that is frequently overlooked in library literature and on academic campuses: transfer students.

Walton, Marion and Arlene Archer. "The Web and Information Literacy: Scaffolding the Use of Web Sources in a Project-Based Curriculum." *British Journal of Educational Technology* 35.2 (2004): 173-86.

Walton and Archer make fine distinctions between academic literacy, information literacy, and web literacy. They argue that developing students' web literacy is a specialized activity because "the conceptual difficulty of evaluative tasks required of students using the Web for research is considerable." This paper describes a three-year case study of a curriculum-embedded web literacy course for first-year engineering students. Relying on qualitative data such as online discussions, in-depth interviews, and reviews of assignments and evaluations, the authors detail the problems their students encountered with web searching. Applying techniques such as educational scaffolding, the authors draw important connections between developing knowledge of academic discourses and successful academic use of the Web. They conclude that making these skills transferable requires sustained attention throughout the undergraduate curriculum. The theory and methodology employed by these authors provide a unique approach to teaching critical evaluation of Web resources and could be adapted in a variety of instruction environments.

ACRL/IS Program in Chicago

Maryellen Weimer, author of *Learner-Centered Teaching: Five Key Changes to Practice,* will present **Teaching, Learning, and Leading: Key Roles for Librarians in the Academic Community** on Sunday, June 26, from 1:30–3:30pm in Room S103, McCormick Place. Weimer, who is a professor of Speech Communications at Berks Lehigh Valley College of Pennsylvania State University, will lead an interactive "nuts-and-bolts" program on innovative teaching techniques at the 2005 ALA Annual Conference in Chicago. This session is sponsored by the Instruction Section of ACRL <http://www.ala.org/ala/acrlbucket/is/conferencesacrl/annual05/isprogram05.htm> and will be facilitated by the winner of the 2002 Miriam Dudley Instruction Librarian Award, Randy Burke Hensley of the University of Hawaii at Manoa.

Dr. Weimer's program will focus on five elements of the classroom environment: balance of power; responsibility for learning; role of the teacher as a facilitator; function of content; and class processes and the purposes of assessment. Dr. Weimer's experiences as both a classroom teacher and as a student in the undergraduate courses she regularly takes outside of her discipline inform her ideas about making education more learner-centered. In a recent interview, when asked about any new developments in her thoughts since the publication of *Learner-Centered Teaching*, Weimer said that if she were going to write the book again, "I'd take a billion classes and write it even more from the student angle." She's currently involved in a learning communities program which has her taking classes alongside students while simultaneously leading a one credit course in which she is the "master learner." In her book and in her classroom, Weimer stresses the importance of the development of lifelong learning skills. She has done workshops for LOEX and the Pennsylvania Library Association over the years and has found the librarians are sold on the importance of learner-centered education and on the value of lifelong learning.

ALA-LIRT Program and Meeting Schedule
ALA Annual in Chicago

Saturday, June 25
8:00 - 9:00 am: Executive Board I
Chicago Hilton and Towers — Williford C
9:30 - 11:00 am: Steering Committee I
Chicago Hilton and Towers — Williford C
11:00 am - 12:30 pm: All-Committee Meeting I
Chicago Hilton and Towers — Williford C

Sunday, June 26
8:30 - 10:00 am: LIRT Membership Fair
McCormick Place N230
10:00 am - 12:00 pm: LIRT Conference Program -
"Seamless Transitions to College: Creating Successful Collaboration Programs"
McCormick Place N230

Monday, June 27
8:30 - 9:30 am: All-Committee Meeting
Palmer House Hilton – State Ballroom
9:30 am - 12:00 pm: Steering Committee II
Palmer House Hilton —State Ballroom

Tuesday, June 28
9:00 — 11:00 am: Executive Board II,
Chicago Hilton and Towers - Conference Room 4G

Nadaleen Tempelman-Kluit* Ntk2@nyu.edu

Online Library Instruction: From print-based to Web-based

Formal programs of instruction for library users in higher education date from the 1970s, when the position of bibliographic instruction librarian became a necessity. These instruction programs included various modes of presentation, from traditional classroom teaching (lecture) to pre-programmed self-instructional materials. The latter were comprised originally of print --but this form of instruction is now almost exclusively web based. Much of the library instruction delivered via the Web is delivered in the style and hierarchical structure of print. In her article, *Web-based library instruction: what is good pedagogy*?, Nancy Dewald cautions "librarians may be tempted to place pages on the web simply because they can, but they need to determine what the pedagogical reasons are for doing so and how best to do it". (Dewald, `1999) Exploring cognitive learning theories and learner characteristics can guide the design and delivery of library instruction, and promote meaningful learning. By approaching online library instruction using certain cognitive learning theories, we can create instruction that mirrors how the brain works and increase learning opportunities.

Across disciplines, traditionally print based instruction has transitioned to the Web. Web- based information employs hyperlinks and differs from print in its self-directed navigational abilities. Depending on learner characteristics, the flexible and non-linear constructivist approach to learning is not always effective. Studies have shown that too much flexibility in the learning environment can hamper learning for some users. Those already familiar with a subject area can benefit more from self-directed learning than those unfamiliar with the subject being presented. Learners new to the material learn better when instruction provides a guided path and clear linear navigation to the content. Knowing your audience and their learning preferences can and should dictate the design and delivery of the instruction being created.

How people learn is an important factor to consider when designing online library instruction. Dual coding theorists approach instructional design in a way that utilizes the dual processing channels (verbal and visual) in working memory. By utilizing both modalities, dual coding theorists believe that cognitive overload is less likely to occur, because information is being processed through both processing channels, rather than just the visual or verbal channel. When tutorials utilize both text and images or animation, only the visual channel is being utilized, and the processing capabilities of the verbal channel are neglected. According the Paivio's dual coding theory and Mayers' cognitive theory of multimedia learning, utilizing both processing channels leads to connections being made between content delivered through separate channels. Creating online library instruction that couples narration with images or animation is an effective way of employing both processing channels in working memory, leading to connections being made between dual modes of information, leading to meaningful learning.

Library instruction has progressed from solely print based materials, to online materials that utilize benefits of the Web. The next step in online library instruction is exploring learner characteristics and providing and delivering instruction dictated by these theories. In this way, we can provide more meaningful learning environments to our users.

References

Clark, J. M., & Paivio, A. (1991). Dual coding theory and education. *Educational Psychology Review*, 3(3), 149.

Dewald, N. (1999). Web based library instruction: What is good pedagogy? *Information Technology and Libraries,* 18(1), 26. Retrieved March 18th, 2005, from the Library Literature database.

Mayer, R. E. (2001). *Multimedia learning*. Cambridge, United Kingdom: Cambridge University Press.

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ALA - LIRT Officers 2006/2007 Request for Nominations

The LIRT Elections Committee is seeking nominations for three offices:
Vice-President/President-Elect; Vice-Treasurer/Treasurer-Elect; and Secretary

Officers must be able to attend all ALA Midwinter and Annual Conferences for the duration of their commitments. Candidates must be current members of LIRT and have served for at least one year on a LIRT committee. The terms of these offices are:

Vice-President/President-Elect (three year commitment) serves on the Executive Board as Vice-President/ President-Elect, President, and Past President.

Vice-Treasurer/Treasurer-Elect (thee year commitment) serves a two-year term as part of the Executive Board as vice-Treasurer/Treasurer-Elect and Treasurer. A third year is served as chair of the 5-Year Financial Planning Subcommittee and member on the Long Range Planning Committee.

Secretary serves a one-year term and is a member of the Executive Board.

Please send the name of the prospective candidate, the office for which you are nominating, and the nominee's institution and/or contact information to:

Lori Critz, LIRT Elections Committee
Georgia Tech Library & Information Center
Georgia Institue of Technology
Atlanta, GA 30332-0900
Email: lori.critz@library.gatech.edu

Nomination forms are available at:
Electronic - http://www3.baylor.edu/LIRT/nominationform.htm
Word - http://www3.baylor.edu?LIRT/nominationform.doc

LPSS panel at ALA Annual: High stakes information literacy

"Making Sense of Public Affairs Research," the ACRL Law and Political Science Section's panel at the 2005 ALA Annual Conference, will reveal how intelligence analysts, investigative reporters, and lobbyists research and interpret public issues in a politically heated, changeable, and highly contested information environment.

The program will be held Saturday, June 25, 1:30-3:30 pm at a location to be announced in the conference program. The panel will include the following experts:

- Josh Farrelman, Assistant Director for the American Library Association's Office of Government Relations. Farrelman has represented ALA and its legislative and policy positions on a variety of issues before the US Congress.
- J. Robert Port, Senior Editor for Investigations at the Albany *Times Union*. Port's work has covered a variety of domestic and international subjects, including the No Gun Ri massacres in the Korean War.
- Peter Zeihan, Senior Analyst, Strategic Forecasting, Inc. (Stratfor), a leading private intelligence company. Zeihan is Stratfor's chief analyst for global economic issues.

For more information on LPSS, visit http://www.ala.org/ala/acrl/aboutacrl/acrlsections/lawpolisci/lpsshomepage.htm .

Bruce Pencek,
College Librarian for Social Sciences, Virginia Tech

Consider Joining a LIRT committee !

For online volunteer form and committee listing, see:

http://www3.baylor.edu/LIRT/volform.html

Check These Out

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carefully selecting a manageable number of recommended research tools is critical; if the list is too extensive, students become overwhelmed, and choose to use free Web search engines for conducting research instead of library resources. During the first library session, the students were not only required to find information to answer a specific question, but also to evaluate the tools they used for conducting research. For the second session, the instructors distributed a second research exercise, as well as a list of electronic sources for finding information. The second class met in the reference area of the Social Science Library, and the instructors hoped that students would use print reference tools, as well as the electronic sources. However, students had difficulty completing the second assignment (which was significantly more complex), and, consequently, they relied on Web resources and simple search strategies for conducting research. The author notes that the students needed more practice developing the skills required for completing the first assignment before they could successfully complete the second exercise. She also notes that careful structuring of a problem-based exercise is critical for achieving effective learning outcomes.

Lampert, L. D. (2004). "Integrating discipline-based anti-plagiarism instruction into the information literacy curriculum." *Reference Services Review*, 32 (4), 347-355.

Lampert describes how librarians work with faculty at California State University (CSU) Northridge not only to teach students information seeking skills, but also to provide instruction on the ethical use of information. The author focuses specifically on the collaborative efforts of librarians and faculty to teach journalism students about plagiarism and ethics of information usage. Librarians work with faculty to develop "process-based" activities and exercises, such as compiling and submitting "reporter's notes" of sources used when writing articles for journalism classes, and for the student newspaper. Lampert lists other exercises and activities developed collaboratively by librarians and faculty, such as (among others) selecting and providing examples of plagiarized text. Faculty and librarians also worked together to develop a survey to assess journalism students' understanding of plagiarism and information ethics. Responses to the survey generated further discussion among faculty and students about reporting ethics and plagiarism. CSU-Northridge journalism faculty and librarians plan to provide information about their collaborative work at a 2005 faculty retreat, and also intend to write a grant to support additional research in the area of anti-plagiarism instruction.

Lightman, H., & Reingold, R.N. (2005). "A collaborative model for teaching e-resources: Northwestern University's graduate training day." *portal: Libraries and the Academy*, 5 (1), 23-32.

The authors describe a collaborative instructional program organized by three campus units at Northwestern University: Office of the Dean of the Weinberg College of Arts and Sciences, the University Library, and the university's information technology (Academic Technologies) division. The original purpose of the full-day instructional program was to provide an introduction to electronic resources for new doctoral students in the humanities. The event was organized as a "mini-conference," and included large group meetings followed by smaller breakout sessions, a reception, and catered meals. Program topics included training sessions for using EndNote Bibliographic Software, introductory sessions on electronic bibliographic resources in the humanities, and general discussion sessions on the impact of technology on teaching and research, or a session on digital projects completed by faculty at Northwestern. Librarians and discipline faculty team-taught the sessions on bibliographic resources in the humanities. After completing the program, participants received follow-up e-mails to inform them about additional training opportunities and relevant resources. Students have provided positive feedback, and, consequently, Northwestern has continued to offer the program annually for three years.

Macklin, A., & Fosmire, M. (2003). "Real-world solutions for real-world collaboration problems." In R. Baier, R. Bullard, J. Nims, & E. Owen (Eds.), *Integrating Information Literacy into the College Experience* (pp. 169-174). Ann Arbor, MI: Pierian Press.

Macklin and Fosmire provide numerous suggestions for how librarians can initiate collaborative instruction efforts with discipline faculty, and how to effectively work with faculty to design and teach problem-based learning activities. The authors recommend finding potential faculty partners in a local "excellence in teaching" unit, if such a unit exists on campus. Other traditional methods, such as reviewing course syllabi, and networking with faculty, are also recommended. The authors also emphasize the importance of conducting a thorough needs assessment with faculty collaborators. This involves not only a careful review of course syllabi and materials, but also conducting extensive reference interviews to determine the curricular needs of each faculty member. After the needs assessment is conducted, faculty and librarians can work together to create common instructional goals and objectives, develop problem statements for students to examine, and implement and evaluate the instruction. The authors provide guidelines for planning, implementing, and evaluating the effectiveness of problem-based learning activities. The instructors should identify relevant current events that present a problem to investigate; develop learning objectives that students will accomplish as a result of solving the problem; write a specific "problem statement" for students to solve; identify experiences and skills that students already have for solving the problem; and test the problem statement to make sure that it requires critical thinking.

TECH TALK — LOCKSS

By Billie Peterson, Baylor University

Dear Tech Talk— From time to time, I come across references to LOCKSS. I know it has something to do with preserving access to online resources, but I don't really understand what its purpose is or how it might impact my work as a public services librarian. What do I need to know? —Lacking LOCKSS Lucidity

Dear LLL— LOCKSS (http://lockss.stanford.edu) – Lots of Copies Keeps Stuff Safe – is the result of collaboration between Stanford University Libraries, specifically Highwire Press, (Vicky Reich) and Sun Microsystems (David Rosenthal), with funding from the Andrew W. Mellon Foundation and the National Science Foundation. LOCKSS presents one solution to a significant issue many librarians have as more and more content is available online through e-journals.

Historically, libraries have collected, preserved, and provided access to journals in a tangible form (paper or microform) – for the long term. With the evolution of e-journals, libraries are providing online access to the journal content, but – even with perpetual access guaranteed in licensing agreements – the long-term preservation side of this equation is still an unknown quantity. There are too many "what ifs" – what if the publisher goes out of business; what if the publisher is bought by another publisher; what if the content of the journals is damaged or changed? Consequently, many libraries are hesitant to switch to e-only subscription models and continue to subscribe to print content – at a mounting cost; while more and more publishers prefer that libraries switch to e-only subscriptions.

As an added issue, the content of articles in e-journals may differ significantly from the print content. Within an online environment, graphs, charts, and tables can link to the detailed data that supports the results; video and sound clips can be included to illustrate important points; other multimedia tools can be incorporated to better demonstrate research results. Given these online enhancements, the print version of articles significantly pales in comparison, so maintaining **only** print subscriptions becomes a disservice to libraries' constituencies.

Through a conversation during a hike back in 1999, Vicky Reich expressed some of these frustrations to David Rosenthal, who then started to ask questions about the traditional preservation and access model for print journals. By the end of that hike, the kernel of the LOCKSS concept started to emerge – a relatively inexpensive way to provide lots of copies stored in lots of places, making it easy to find some copies (when needed to replace damaged copies) but difficult to find all copies (when wanted for nefarious purposes). After this hike, Vicky set up a meeting between Michael Keller (director of the Stanford University Library) and David Rosenthal, and the rest is history.

Libraries using LOCKSS install the LOCKSS open source program (http://www.lockss.org/publicdocs/install.html) on inexpensive, low-end computers ("preservation appliances"). Licensing agreements are modified to reflect the library's use of LOCKSS. The LOCKSS program is used to select specific journal titles for which the library has a **current** subscription and to which the library wants to preserve access. Consequently multiple libraries select some of the same titles, with these selections reflecting the local library's perceived long-term collection needs.

The LOCKSS program "crawls" publishers' web sites, either using a specific web page set up by a LOCKSS-compliant publisher (LOCKSS publisher manifest) where all the links and hierarchical file structure are easily discerned or by using a using a "plug-in" for a particular LOCKSS-compliant publisher. In either case, the LOCKSS program retrieves the "archival units" that match the library's subscriptions for selected titles and creates a cache of those archival units on the local computer. Periodically, the LOCKSS program returns to the publisher to pick up new issues and adds those to the cache. The publisher allows this process to take place because it has IP addresses for those libraries with subscriptions. Usually cache is a temporary storage area for frequently-used files and typically the data in cache changes; however, the cache on a LOCKSS "preservation appliance" is permanent. Archival units are not removed from the machine unless a decision is made by the library that the particular journal title no longer fits the local collection development needs.

So, now it becomes clear how lots of copies of e-journal content are stored in caches on computers scattered around the world, but where does preservation fit in? The LOCKSS program gives all of these distributed caches the ability to "poll" one another to see if the content in the cache is accurate, using Library Cache Auditing Protocol (LCAP). In essence, a cache will challenge other caches to prove that the content of their cache is accurate by using a computed value. If a cache finds itself on the "winning" side of that challenge, the content is accurate; if it finds itself on the "losing" side of the challenge, then the cache performs additional polls to identify the specific inaccurate content. "If a cache discovers a missing or damaged URL it can fetch a new copy via HTTP from the original publisher, or from one of the other caches. Care is taken not to subvert the publisher's access control mechanism; content is delivered only to sites that have rights to it." (Reich and Rosenthal 158)

Safeguards are built into the system to prevent a "bad guy" from deliberately changing all content in all caches:

- The polling process is deliberately slow, in human terms. The slowness of the polling process works against a "bad guy" trying to make rapid changes

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throughout the caches, and if a "bad guy" does succeed in making changes, those changes can be detected before much damage is done.
- The caches actually monitor the responses of other caches – taking note of responses that indicate a cache may be exhibiting "bad guy" behavior. Caches exhibiting "bad guy" behavior earn a bad reputation and are prevented from participating in polls until they start exhibiting a pattern of "good guy" behavior.
- There is an "expense" associated with participating in a poll, so not all caches choose to participate in all polls; consequently, it's highly unlikely that a "bad guy" will be able to find all copies of a document.

In many respects, LOCKSS is an online model analogous to the print model for the preservation of and access to journals. Librarians select titles for the collection; library staff bind the journals and shelve them so they are available for the long-term; they make decisions to remove them from the collection because they no longer meet collection development needs; they repair damaged issues by obtaining copies of the missing or damaged pages from other libraries; they help other libraries by providing them with copies of pages missing from or damaged in their issues; librarians network, are aware of those libraries with good reputations and those whose reputation is less good, and prefer to interact with those who have good reputations. For more than 100 years, libraries have spent money for staff, buildings, and shelving facilities to maintain access to print journal collections. LOCKSS provides an inexpensive method for individual libraries to maintain their own electronic copies of selected e-journals. "The LOCKSS program restores to libraries the ability to collect, to preserve and to provide access to web-based materials." (A Persistent Access Preservation Program: Answers for Library Directors)

Some of LOCKSS strong points are:

- "There is no central coordination point that can be attacked.
- It doesn't depend on the Domain Name System, or a Public Key Infrastructure.
- Provided enough other participants preserve the journal articles a participant can corrupt or lose any or all of its information. The lost content will be inaccessible to local readers for a while but will eventually re-appear.
- There are no passwords or encryption keys to be kept secret.
- The system makes it easier to detect an attacker and limits the rate at which he can damage preserved information." (Reich and Rosenthal 159)

Additionally, LOCKSS provides specific benefits to end-users, librarians, and publishers. Future end-users will click the link to the full text of an article preserved through LOCKSS. If the article is no longer available from the publisher, then – and only then – the article will be retrieved (seamlessly) from the local cache – the result – no unresolved URLs. For librarians, LOCKSS applies the concepts of collection development and management to e-journals, ensuring long-term access to those titles deemed important to individual libraries. And publishers, especially small publishers, are relieved of the sole responsibility to provide long-term access to content in e-journals. As long as the content exists at the publisher's site, end-users still retrieve the online content from the publisher.

The start-up phase of LOCKSS was from 1999-2000. During that time, the open source program was developed and 6 libraries – Columbia, Harvard, the Los Alamos National Laboratory, Stanford, the University of California at Berkeley, and the University of Tennessee – participated in the alpha test which used 4 months of *Science Online* distributed on 15 machines. The successful alpha test was followed by a worldwide beta test in mid 2001 with more than 40 libraries (many of them international), 60 widely distributed and varyingly configured caches, and 35 publishers who endorse the beta test. (Stanford Libraries: LOCKSS, A Distributed Digital Preservation System). LOCKSS was released for production use in April 2004. (Rosenthal, Transparent Format Migration of Preserved Web Content) Currently there are more than 80 library participants from the US, Africa/Middle East, Asia/Pacific, Europe, and Central and South America (http://lockss.stanford.edu/about/users.htm) and more than 60 publisher participants (http://lockss.stanford.edu/about/titles.htm). As of December 2004, 77 titles have been preserved through LOCKSS. (A Persistent Access Preservation Program: Answers for Publishers)

The founders of LOCKSS are the first to say that LOCKSS is not – and should not be – the **only** solution to this challenge of long-term preservation and access. It is **one** solution that can be used in conjunction with other solutions as they are developed and implemented. Meanwhile there are still significant issues associated with LOCKSS that need to be addressed; among them are:

- Funding for LOCKSS has been primarily through grants – not an ideal long-term funding solution.
- Some publishers have concerns about the technology used by LOCKSS and they don't want to "play" at this time. Related to this, licensing agreements have to be revised for those publishers that are willing to be LOCKSS participants.
- LOCKSS (as described above) does not address the issue of format obsolescence – the content is still available but may be in an un-useable format.
- Some titles are so specialized that only a few libraries may select them for LOCKSS, which means there won't be a sufficient number of caches with copies.

Now that the basic LOCKSS program is implemented, LOCKSS developers are starting to address some of these challenges:

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- The LOCKSS Alliance (http://lockss.stanford.edu/alliance/alliance.htm) has been formed so that participating libraries can contribute "funds to sustain the program, and [work] together to prioritize needs, refine software, disseminate knowledge and skills, and institutionalize best practices." (A Persistent Access Preservation Program: Answers for Publishers)
- The LOCKSS Alliance will also pursue additional publisher participants and LOCKSS provides language for licensing agreements (http://lockss.stanford.edu/librarians/licenses.htm)
- Recently, the "LOCKSS program has designed and tested an initial implementation of format migration for web content that is transparent to readers". (Rosenthal, et. al. 1)

Finally, the initial implementation of LOCKSS focused on e-journals. Because of the nature of the program, LOCKSS works best with stable web pages that have a clear hierarchical structure – e-journal titles with volumes, issues, and "pages" fit these criteria very nicely. However, there are other valuable digital resources that meet these criteria and could make use the LOCKSS program for long-term access. Some more recent uses of LOCKSS are identified in "A Persistent Access Preservation Program: Answers for Library Directors" and include:

- MetaArchive of Southern Digital Culture from Emory University (http://www.metaarchive.org/documentation.html)
- Utah Digital Newspapers from the University of Utah (http://www.lib.utah.edu/digital/unews/about.html)
- Electronic Theses and Dissertations from Virginia Tech (http://scholar.lib.vt.edu/theses/)
- A collection of web sites formed in response to 9/11 attacks from the New York Public Library
- Any and all US government documents

"The goal of the LOCKSS project is to enable libraries to take custody of the material to which they subscribe – in the same way they do for paper – and preserve it permanently." (LOCKSS: Protecting and Preserving Web Documents) What is the impact for public service librarians? Perhaps very little today, but for future generations of librarians and researchers, LOCKSS provides the beginning of the solution for the challenges of long-term access to information that is stored using 0s and 1s. Take a look at the LOCKSS demo available at http://lockss1.stanford.edu/uidemo/ and read more about LOCKSS to see if it meets your library's e-collection development needs.

Additional Resources:

"About LOCKSS: Background." Stanford University. <http://lockss.stanford.edu/about/background.htm>.

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"For Librarians." Stanford University. <http://lockss.stanford.edu/librarians/librarians.htm>.

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Hunt, Matthew. "Permanent Web Publishing." . July 2000. <http://www.daemonnews.org/200007/permanent-web.html>.

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Landesman, Margaret. "ATG Interview with Victoria Reich." Against the Grain 14.6 (2003): 64-6.

"LOCKSS News and Publications." Stanford University. <http://lockss.stanford.edu/news/news.htm>.

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Reich, Vicky. "Lots of Copies Keep Stuff Safe as A Cooperative Archiving Solution for E-Journals." Issues in Science and Technology Librarianship (2002)

Reich, Victoria. A Persistent Access Preservation Program: Answers for Library Directors. Palo Alto, CA: Stanford University, 2005. <http://lockss.stanford.edu/librarians/DirectorHandout.pdf>.

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Reich, Victoria, and David Rosenthal. "Preserving Today's Scientific Record for Tomorrow." BMJ: British Medical Journal 328.7431 (2004): 61-2.

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