OUTREACH

CREATING A BRIGHT FUTURE:
A LIBRARY MOVES SCIENCE LEARNING FORWARD!

Anne K. Moser
Senior Special Librarian
UW-Madison, Wisconsin’s Water Library
1975 Willow Drive, 2nd floor
Madison, WI 53706

Abstract:
A key mission of Wisconsin’s Water Library at the University of Wisconsin-Madison is educational outreach to state residents of all ages to heighten awareness of the Great Lakes and of Wisconsin’s water resources. A successful project as part of this mission is outreach to children ages three through ten. Over the past five years, the Water Library has used award-winning literature and science-based activities to introduce marine and aquatic sciences concepts to preschoolers and students in the early elementary years. This paper provides background on the library’s experience in outreach and highlights two successful ongoing collaborations where educational outreach is offered to under-represented minority children.

Keywords: Science - study and teaching (early childhood); children - education (preschool); water - study and teaching - activity programs; children’s literature; libraries and minorities.

Introduction
In his book Last Child in the Woods (Louv 2005), journalist Richard Louv has written extensively about how the preschool and early elementary years offer a critical window to reach children with age-appropriate messages about ecosystems. This is especially important for children from disadvantaged households where the opportunity or means to explore the natural world is often limited. Libraries have a longstanding role in providing key services to this age group in support of literacy and kindergarten readiness (Diamant-Cohen, 2007). As an extension, the library could have a unique opportunity to also provide STEM (Science, Technology, Engineering and Math) literacy in a similar way. Libraries are seen as neutral brokers of information, which fits nicely with the tenets of science education. Children of this age group don’t necessarily differentiate between literature- and science-based learning, so inclusion of STEM activities would be fairly seamless.

A large part of the educational outreach mission of Wisconsin’s Water Library at UW-Madison is teaching about marine and aquatic sciences for children ages three through ten. This paper will introduce the library’s outreach program in general, will demonstrate the evolution of its STEM literacy story times and will highlight examples of successful collaborations that have resulted in ongoing work with two underserved communities – the Ho-Chunk Nation (Wisconsin Dells, Wisconsin) and the Allied Drive Neighborhood (Madison, Wisconsin).

About Wisconsin’s Water Library
Wisconsin’s Water Library at the University of Wisconsin-Madison was established in 1964 by the UW Water Resources Center. Its mission is to “collect, preserve and provide resources about the waters of
the Great Lakes and Wisconsin, in support of the UW Aquatic Sciences Center (ASC).” The ASC is headquarterd in the Graduate School of the University of Wisconsin-Madison. The ASC administers two institutes with complementary missions. Both the Sea Grant Institute, sponsored by NOAA, and the Water Resources Institute, sponsored by the U.S. Geological Survey, support multidisciplinary research, education and outreach for the protection and sustainable use of Wisconsin’s water resources.

The Water Library accomplishes its mission in three distinct ways. First and most importantly, the library participates in outreach to Wisconsin residents of all ages to heighten awareness of the Great Lakes and Wisconsin's water resources. Second, the library supports the educational and research activities of the Aquatic Sciences Center by providing traditional library collections and services as part of the Center’s mission. Third, the library has a preservation function - projects are completed that preserve its unique collections for future as well as historical value, whether in digital or in print.

**Library Outreach**

As an outreach library, most of the services the library provides fall under the umbrella of “educational outreach to Wisconsin residents.” These activities occur most often in informal educational settings such as in community centers or public libraries. Some of the events are held around the UW-Madison campus. The library does not generally work in formal educational settings such as elementary or high school classrooms. Some of these informal education outreach activities are initiated by the active UW-Madison Science Alliance ([http://www.science.wisc.edu/index.htm](http://www.science.wisc.edu/index.htm)), a group of researchers, outreach staff and volunteers who organize public science outreach events and programs for the University. The Alliance works with collaborators including scientists, university departments and centers, K-12 educators, to offer events via community venues throughout Wisconsin. The Alliance was launched in 2003 at the beginning of the Centennial of the Wisconsin Idea, the commitment that all the people of Wisconsin should benefit from the work of the University.

An example of this type of informal education event sponsored by the Science Alliance was an evening high school science fair where the library traveled with 50 or so other science entities from UW-Madison to Marinette, Wisconsin in the far northeast corner of the state. The library staffed its own booth with a theme of “Great Lakes Fish” in honor of this Lake Michigan port city. The library displayed children’s and adult books about Great Lakes fish and offered attendees the opportunity to use a dichotomous key to identify native species from the Great Lakes. The library participates in 5 to 10 events like this per year. Themes of past events have included hypothermia, remotely operated vehicles (ROVs), and aquatic invasive species, as well as the fauna and flora of the Great Lakes. This type of outreach event is a more passive activity, where attendees wander by and participate in the activity as interested. These events are busy, with library staff interacting with up to 100 people over the course of couple of hours.
Another example of informal outreach is the library’s participation in classroom-oriented events like “Expand Your Horizons” (EYH) (http://www.eyh.wisc.edu/) on the UW-Madison campus. EYH is a national program aimed at middle school girls, to encourage their interest and inspiration in STEM (Science, Technology, Engineering, and Math) careers. As part of the computer science track, the library offers a one-hour tutorial on the technology aspect of science librarianship while teaching how to research the safety of bottled water. The library is able to take advantage of educational outreach in a more structured environment of a classroom, typically working with up to about 50 people per event. The participants are often children or young adults, but some events may include programs with mixed ages, such as the Limnology Major of Grandparents’ University (http://www.uwalumni.com/home/gpu_majors.aspx#lim).

**Preschool Outreach – First Generation**

The library’s largest effort on outreach, however, is the work we have done in STEM literacy for preschoolers and early elementary aged children. This effort began in earnest in 2010. That summer the theme of the Collaborative Summer Library Program (CLSP) in public libraries across the country was “Make a Splash!” The CSLP is a reading program offered by a consortium of states working together to provide high-quality summer reading program materials for children at the lowest cost possible to their public libraries. Each summer a theme is chosen and programming and activities are offered centered on that theme. In late 2009 the Water Library was contacted by the Wisconsin Dept. of Public Instruction (DPI), the coordinating agency for the CSLP in Wisconsin. In response to their request, the library developed a roadshow of story times and activities for preschoolers on a variety of water-related themes, including frogs, fish, ponds and water science. During the summer of 2010, the library reached approximately 600 children at 20 events. The library structured story times much in the accepted practice for preschool story times in public libraries. The theme is presented, books are read, movement and song are included and a final craft is created, all centered on the theme. The library had great success during this period because the marketing of the events was handled by the built-in promotion of the CSLP. Because we used the tried and true method of story hours, the feedback from attendees was very positive.

**Second Generation Outreach – STEM Included**

As we continued to lead story times for children based on a literacy model, the library decided to expand what we were offering to include more direct instruction on marine and aquatic sciences. We accomplished this by adding interactivity and hands-on learning during the story time, focusing out presentations on science rather than on literature. We wanted to take advantage of children’s innate curiosity and enthusiasm for experimentation within the literacy model. Children naturally do science through play – they experiment and observe and question without prompting.

The transformation was fairly painless. The library took the existing outline for the story times, changed the language used and added more opportunity for interactivity. To start, the librarian would introduce the theme of the event with a focus on the science and an introduction to the relevant scientific terms. A good example that illustrates the integration...
of science and literacy is our first attempt at a STEM-based story time, “What sinks and what floats?”
When we introduced boats and boating as our theme, a spirited back and forth discussion followed with a debate about why a human being would sink and why a heavy boat would not. If the library was working with school aged children, a discussion of the concepts of buoyancy, displacement, density would follow. After the literacy piece, the group would proceed to tables and the children would have a chance to be scientists and test for buoyancy. The children would hypothesize, test and record an experiment trying to figure out what household objects sink and what float. The story time finished with the construction of a sponge boat the children could test and then take home from the event.

Outreach At Allied Drive
As Richard Louv wrote in his books, children from disadvantaged populations have fewer opportunities and reduced means to learn about the natural world around them. With this in mind, the Water Library began collaboration in 2004 to bring literacy story hours to the Allied Dunn’s Marsh Neighborhood, a geographically isolated in Madison, Wisconsin. With a collection of children’s books bought with a grant from the Friends of UW-Madison Libraries, special librarians from across the campus participated in story times at the Allied Drive Learning Center, the community center in the area that houses the Head Start program, after school activities and other student-focused activities. Not only is the Allied Dunn’s Marsh neighborhood geographically isolated, the children in this area attend a variety of school across the area and have no direct access to public library services. The Learning Center is now a de facto center for community building among the neighborhood youth as well as a learning center for children of all ages. The story hours are a welcome addition to the suite of educational outreach through the Center and the collaboration continues today. In fact the activities initiated at the Center are now codified into the library school curriculum at UW-Madison. Students interested in youth librarianship take a fall course that includes a service learning component at Allied Drive.

STEM Literacy With the Ho-Chunk
Building upon the success of the Allied Drive story times and the frequent visits to the public libraries in Wisconsin the library expanded its outreach offerings to a Native American community located about an hour from Madison. The Ho-Chunk Nation, found in parts of Wisconsin, Nebraska and Iowa, is known as the “People of the Sacred Language.” The library approached the tribe with an offer to work with the children of the Head Start program in Wisconsin Dells, which serves 21 children ages 3 to 5 each day. The purpose of Head Start is to serve children from low-income families, children with disabilities and families with other at risk situations to help children prepare for kindergarten. The Head Start education content areas address improving language skills, number and reading readiness skills, self-help skills, and fine and gross motor coordination.

The library wanted to work with a Native American community for several reasons. The library school at UW-Madison has a long-standing relationship with the Native peoples of Wisconsin and is considered an ally in library services and “culture keeping”; the library wanted to broaden its work with underrepresented communities; and finally the library wanted to
complement the tribe’s strong connection to the land. The library began its visits in 2010 and has visited the Neenk Chunkgra Head Start Center in the Dells bimonthly since then. The Water Library is hoping to expand on this collaboration in the coming year.

References