



IN THIS ISSUE...

A Web for All

The success of the party should be measured by who's been invited, not by who's been excluded.

When the World Wide Web began to achieve universality in the mid-1990s, Internet accessibility by individuals with disabilities was, at best, an afterthought. Website designers, perhaps necessarily, were too immersed in the new technology to consider potential obstacles to its use by those whose need for it was arguably most acute. However, as computer use came to rival telephone and TV use among consumers, advocates appeared whose dogged pursuit of a universal design concept has resulted in an ever-higher level of Web accessibility for individuals with disabilities. Today, thanks to these knowledgeable and persistent advocates around the world, the lives of those with disabilities, as well as others, have been incalculably enriched. The advocates' hard work has enabled the web-savvy and those who are not to plug in to an instantaneous electronic global communications network that hardly existed just a decade ago. This issue examines web accessibility and the resources currently available to help achieve it.

Judy Brewer Speaks

Years ago, as a student at Princeton University coping with a muscular disability, Judy Brewer, like millions of students with physical disabilities, found library research to be almost unbearable manual labor. For millions like her there was no alternative to reaching for, lifting, toting and lugging heavy tomes, or, in a classroom or dormitory room, writing with slow, unwieldy pen and pencil or with electric typewriters. Although her original academic specialty was applied linguistics, the acceleration of the information age, and the potential of access to electronic information resources, propelled her into

management, advocacy, technical writing and policy work dedicated to the expansion of Web accessibility so that it includes individuals like her.

Today Judy Brewer is Director of the Web Accessibility Initiative (WAI) at the World Wide Web Consortium (W3C). Since September 1997 she has coordinated five areas of work for W3C that focus on Web accessibility: ensuring that W3C techniques (HTML, CSS, SMIL, XML, etc.) support accessibility; developing accessibility guidelines for web content, browsers and multi-media players, authoring tools and XML applications; improving tools for evaluation and repair of websites; conducting education and outreach on Web accessibility; monitoring research and development that may impact future web accessibility.

Ms. Brewer is W3C's chief international liaison on accessibility policy and standardization, promoting web accessibility awareness and ensuring dialogue among industry, the disability community, accessibility researchers and government on consensus-based accessibility solutions. Before joining W3C, she worked on several U.S.-based initiatives aimed at increasing access to mainstream technology for people with disabilities, including Section 508 of the Rehabilitation Act and Section 255 of the Telecommunications Act. She holds a research appointment at MIT's Laboratory for Computer Science.

Supporting our interview with Ms. Brewer are resources to assist in furthering Web accessibility. We also feature members of our **Knowledge Network**. The members spotlighted this month focus on various aspects of Web accessibility. We invite you to contact these members for further information.

Please share this newsletter with other organizations, families and professionals who may benefit from it. We invite you to contact us at <http://www.fctd.info>. We welcome feedback, new members and all who contribute to our growing knowledge base.

Universal Design for Web Accessibility: Molding the Internet for All

An Interview with Judy Brewer, Web Accessibility Advocate

"It's been wonderful to work with the inventor of the Web [Tim Berners-Lee, founder of the World Wide Web Consortium (W3C), among the world's most visible Web accessibility advocate organizations] because his vision of the Web is of something that everyone can use, regardless of language or ability or other factors," declares Judy Brewer. What Berners-Lee envisions – and what Ms. Brewer strives to make a global reality – is "very much a universal design concept" applied to the Web.

"What we've discovered very happily is that almost all accessibility solutions enhance the ability of others as well as those with disabilities," notes Ms. Brewer.

"I wouldn't be working if I couldn't use computers," declares Judy Brewer, who suffers from a muscular disability and who has been an advocate for web accessibility for many years. "I have many close friends and colleagues whose lives would be confined by barriers if they could not use computers."

Sec. 508 Helps Equalize the Equalizer

Ms. Brewer recalls the difficulty she experienced as a student in the pre-computer era and the benefits that technology has bestowed upon her and others who suffer from disabilities. "When the Web became available it was an *amazing* breakthrough for me because information became available instantaneously. With the Web [individuals with disabilities] can go at the speed of thought. Technology is the great equalizer."

At the outset of the Web age, however, technology was anything but an equalizer, Ms. Brewer remembers. As far back as 1986 Section 508 of the Rehabilitation Act was crafted to assuage the fears of "some very prescient members of the blind community that there was a risk they would be left out" of technology more complicated than the original DOS-type operating system that had been helpful to blind computer users. The legislation was amended in 1992 and slightly strengthened in

1998. Although regarded as difficult to enforce, 508 has served as the foundation for additional Web accessibility initiatives like WAI.

Says Ms. Brewer, "The amendments in 1998 and, to a lesser extent, the release of the regs in 2000 caused a huge boost in awareness." Most people, she adds, "are unaware that there's another provision under U.S. law that is also interpreted as covering website accessibility: the Americans with Disabilities Act."

Section 508, she notes, increased awareness of the Web as an environment where "government, industry – all of us – need to think of it as a place where barriers and ways around those barriers have to be considered." At first, this was a stretch for the public whose "awareness of accessibility was associated with the built environment and very much in regard to physical access – if there's a flight of stairs to accommodate entrance to a facility a ramp is also required, for example." The public, however, "was unaccustomed to other kinds of accessibility, such as access to communication for people who are deaf, access to electronic versions or Braille versions of hard copy media for individuals with various kinds of visual disabilities, for instance."

Awareness Accelerates

The advent of the World Wide Web accelerated awareness and the push for accessibility. "The Web was born in 1989 or 90 and spread rapidly in the very early 1990s and then really started taking off." By 1994, Ms. Brewer explains, "the Web began spreading into areas where it began to have an impact on daily life in endeavors like education, distance learning or supplemental materials for in-person instruction, and workforce employment."

The Web's increase in utility made access to it a necessity in an information-obsessed world. To keep pace with news, information and the availability of government services, for example, everyone came to need Web access. As that need increased throughout the 1990s, concerns arose, Ms. Brewer recalls, that many were being shut out of the medium.

The 508 regs, she cautions, "are actually derived from the WAI's (Web Accessibility Initiative, of

which Judy Brewer is Director) lowest priority level; they're a subset of our most essential level, and not even the full set." In fact, she notes, "There's been some concern in the disability community, and even from people in industry, that the 508 regs, when we follow them, do not even provide enough access for some individuals to get onto the W3C website."

Bringing Access Requirements Together

One of the first accomplishments of WAI, she notes, "was to bring together the access requirements across *any* disability that might be affected by barriers." WAI investigated issues regarding "people with visual disabilities, hearing disabilities, physical disabilities in the sense that those disabilities might impact an individual's ability to use a keyboard, speech disabilities and cognitive disabilities which could include short-term memory, learning disabilities – as well as photo-sensitive epilepsy in which flashing on a screen can trigger seizures."

WAI, she explains, takes all the requirements associated with various disabilities and pools them together to create a set of guidelines "that comprehensively addresses the most essential things that have to be done, the important things that have to be done and then the extra things that need to be done" to make websites accessible. The guidelines, called web accessibility guidelines, are WAI's signature, but far from lone, contribution to the worldwide quest for Web accessibility.

The Quest for Convergence

Ms. Brewer emphasizes that WAI "is more than just guidelines." The organization, she explains, produces three sets of complimentary guidelines covering Web content, the authoring tool and the user agent for browsers and media players in their interoperability with assistive technology.

WAI website guidelines describe how website designers can make their sites more accessible. Authoring tool accessibility guidelines "are for software developers' what-you-see-is-what-you-get tools like Front Page or Dreamweaver" as well as for conversion tools ("If you do a slide set in PowerPoint and you want to hit 'save as html' or you do a spreadsheet or word processing document that you want to save as html, you want

to get valid html, not garbage."). WAI software guidelines also address database-generated websites, like content management systems. "One of our goals is to get developers to implement those in all of their products, but that is a very slow process," she admits.

A major obstacle on the march to Web accessibility, Ms. Brewer asserts, is the field's fragmented standards. "The fact that the U.S. developed a separate set of guidelines – the 508 regs – means that some designers are trying to build websites to match W3C guidelines while others build according to 508 stipulations." Overseas, she adds, governments are drawing up their own guidelines. Some nations, like Japan, are crafting hybrid sets of guidelines drawn from several sources. This dissonance, she declares, "is a huge disincentive for software developers, at least that is what the developers claim."

WAI's objective, she says, is "to promote as much convergence as possible into a unified set of guidelines." The organization, she adds, "is now working on a 2.0 version of our guidelines in which we are trying to make them easier to understand, easier to implement, easier to test, and better at addressing more advanced Web technologies."

The organization's immediate objective, she asserts "is to persuade those who are using divergent – or hybrid – guidelines to roll forward onto a common international set." Ms. Brewer is optimistic about accomplishing that objective "because there is a growing understanding of the disability community among government officials and because there's a huge demand from industry to harmonize international standards of Web accessibility so that there can be better accord in authoring software and evaluation tools."

Harmony within a Decade?

Despite the difficulties in achieving global Web accessibility convergence, Ms. Brewer is optimistic that harmony can be achieved in less than a decade. "My guess is that we'll achieve convergence in much less than 10 years. I'm very encouraged by the way the dialogue has gone over the past year. This is something we have been working on for several years, trying to get people to understand why standards harmonization on the

guidelines used for websites is actually the key to making the whole Web more accessible.” This sustained effort, she says, has triggered crucial support from software designers.

She and her WAI colleagues “talk to everyone we can.” WAI working groups, she notes, “have a mix of participation from industry, the disability community including, in several nations, accessibility research organizations that are often university-based.” Government representatives also participate in these groups, she adds.

Each WAI working group consists of a core unit of individuals that meets monthly by phone and face to face occasionally throughout the year. Using email and the Web, “these units work as hard and as fast as they can.” The “surrounding community,” Ms. Brewer adds, also contributes, “sometimes by adding comments to the mailing list for the group or by submitting formal comments, because our documents are always publicly available for comment.” In fact, she explains, WAI’s work “is done much more publicly than the work of W3C precisely because we want the broadest international buy-in we can get.” This approach, she says, “makes the work very challenging because we work by consensus, but it also means we have a pretty good shot at producing results that stick.”

Members of the working groups also take the initiative and “interview additional individuals from certain communities from which not enough is heard.” These groups, she explains “may be language groups, such as those from Arabic-speaking communities, for example.”

Looking for Expertise

The result of this outreach and consensus approach, she reveals, is that “we can get involved in issues of bi-directionality,” in which groups interviewed often take opposite positions on certain issues. “We often ask ourselves, for example, ‘What are the needs for Japan?’ or ‘What are the needs of the disability community?’ We would have liked to have had more participation in our 1.0 version but we feel we have some materials there and want to advance those materials in 2.0.”

Also, she says, “we’ll seek out missing viewpoints on, say, to what extent should we be considering sign language as an alternative format for some of the material? Do we need to get expertise on that?”

Above all, Ms. Brewer emphasizes, “we look for expertise.” The WAI working groups “talk to content developers and find out from them what developers need from us in terms of information. We ask [content developers] if they understand how content development fits in with the software side – and usually they don’t understand.”

As an example of that gap in understanding, Ms. Brewer cites confusion at the state level. “There have been surveys of accessibility guidelines at the state level, with roughly one-third of the states adopting W3C web content guidelines and one-third adopting 508. Another third is building hybrid guidelines combining characteristics of those from W3C and 508 and spending huge amounts of energy doing that.”

These various guidelines can be followed point by point, she declares, “but when you think of the enormous volume of implementation support materials that have already been developed for the W3C guidelines and those developed for 508, you have to envision the sheer complexity of implementation techniques, sample codes, training materials and evaluation software.” In addition, she explains, “there is such a range of support materials that these states that have adopted hybrids will be confronted with a situation where the implementation support materials don’t even match their own guidelines and new implementation support materials then must be created.”

Use an Existing Standard

States and other entities seeking the biggest bang for their Web accessibility bucks are advised by WAI to use an existing standard “and then devote all those resources toward training, implementation, evaluation and ongoing monitoring so that these organizations won’t have to maintain their own standard in the future.”

WAI has learned, Judy Brewer notes “that individuals and organizations need to be involved in dialogue with us for awhile before that message

really comes through.” The WAI education outreach unit, she reveals, “is working on a document called *Why Standards Harmonization is Essential for Web Accessibility*.” Currently in draft form, this document when finalized “will put the whole argument right there in black and white” for the field to assess.

In addition to its three sets of accessibility guidelines, WAI fulfills four additional missions related to Web accessibility:

1) Ensuring that all technology emerging from W3C, like its core technology, can support Web accessibility. In the mark-up language, these technologies can ‘carry’ needed accessibility, such as the ability to synchronize captions with audio files.

2) Developing techniques and tools to help with the retrofitting and evaluation of websites. According to Ms. Brewer, “one of the myths is that there is only one evaluation tool.” WAI recommends using a combination of several evaluation tools and “some manual evaluation.” Available on the W3C website is a resource entitled, *Evaluating Websites for Accessibility* that walks users through vital evaluation steps.

3) Education outreach, an effort aimed, in part, at making the W3C website design more user friendly.

4) Examining issues that may affect future Web accessibility and striving to bring together researchers from around the world at presentations. The research and development interest group created by WAI to oversee this effort seeks to synthesize research questions and possible topics for future examination.

Consensus Building is Her Driving Force

Consensus building is the driver that propels Ms. Brewer in her quest to achieve Web accessibility. “I’ve always been interested in trying to help foster a dialogue and forge a consensus between industry and the disability community because I’ve witnessed what happens when that dialogue is absent: Companies are unaware of and are unwilling to listen to people who need access to their technology.” Usually, she notes, “what’s needed is not that difficult to achieve so it’s fun to get people sitting down together and see them actually come up with things that work for everyone around the table.”

So far, she claims, her efforts and those of WAI have been well received by those they are attempting to help and from those whose help they need. “Everything has gone great, considering what the alternatives might have been.” She remembers, however, when things were not so great.

“Before I came to W3C I was involved in an embargo threat against Microsoft. The embargo produced results for us but with a huge amount of friction.” That memory, she declares, has made her a believer in the value of consensus building.

While there are always competing views, she explains, “there’s also always a process of learning about the needs of other communities that keeps things interesting. For the most part,” she adds, “people work together very well and many people from industry actually come to our working groups because that is one place where they can get a managed discussion with many different viewpoints.” These managed discussions, she says, “enable participants to build some consensus about what the requirements are instead of having to respond individually to scores of subsets of the disability community.”

She is pleased at the high level of support from that community. “We’ve had very good support from disability organizations nationally and internationally, and I try to make sure that we have strong participation and that we continue to listen to what the members of the community have to say.”

Although much progress has been made in the effort to achieve universal Web accessibility, much more remains to be accomplished, Ms. Brewer says, and her zeal to continue to push the process forward remains undiminished. “Seeing the impact on people’s lives when they have access to information and the ability to interact, not just being a passive recipient, but being able to engage the world through the information flow, is what keeps it exciting.”



Don't miss the FCTD online discussion focused on Web Accessibility.

January 12 - February 13, 2004

Mr. Earl Johnson, founder of the accessibility movement at Sun Microsystems and Dr. Cyndi Rowland of WebAIM (Web Accessibility in Mind) and the WebAIM staff will moderate the conversation.

The discussion is intended for both techies and non-techies alike and will cover subjects ranging from Section 508 compliance to the best tools children with disabilities can use to surf the web. We look forward to seeing you online.

<http://www.fctd.info/webboard/index.cfm>



RESOURCES

Accessibility Tools

WebAIM's WAVE 3.0

WAVE is a free accessibility validating tool available through WebAIM. This program offers a very user-friendly interface that identifies non-compliant accessibility issues within web pages.

<http://www.wave.webaim.org/index.jsp>

Cynthia Says Tester

Cynthia is a web content accessibility validation solution. It is designed to identify errors in design related to Section 508 standards and the WCAG guidelines. The main purpose of this portal is to educate web site developers in the development Web Based content that is accessible to all.

<http://www.cynthiasays.com/>

Bobby Online Portal

This free service will allow you to test web pages as well as entire web sites and help expose and repair barriers to accessibility and encourage compliance

with existing accessibility guidelines, such as Section 508 and the W3C's WCAG.

<http://bobby.watchfire.com/bobby/html/en/index.jsp>

A-Prompt (Accessibility Prompt) is a software tool designed to help Web authors improve the usability of Web pages created in HTML format. A-Prompt evaluates an HTML Web page to identify barriers to accessibility for individuals with disabilities and then provides the author with a way to efficiently make necessary repairs. The tool's evaluation and repair checklist is based on accessibility guidelines developed by the Web Accessibility Initiative (WAI) of the World Wide Web Consortium (W3C).

A-Prompt assists authors in including HTML features that widen the range of users who can access a website. The tool is available for Windows 98/98SE/2000/Me/XP. A-Prompt was created jointly by the University of Toronto's Adaptive Technology Resource Centre (ATRC) and the Trace Center at the University of Wisconsin. For more information, contact:

Adaptive Technology Resource Centre
J.P. Robarts Library, First Floor
University of Toronto
130 St. George St.
Toronto, ON, CA M5S 1A5
Phone: (416) 978-4360
Fax: (416) 971-2629

general.atrc@utoronto.ca

<http://aprompt.snow.utoronto.ca/index.html>

Articles

Visual vs. Cognitive Disabilities: Graphics for the Blind?

By Paul Bohman Web Accessibility in Mind (WebAIM) October 2003

Individuals who are blind access Web content by using software that converts text into synthesized speech. The software, known as a "screen reader," reads the text in the Web content out loud but cannot automatically interpret graphics. At most, writes the author, "[the screen reader] can read the text description of the graphic (alternative text, or 'alt' text) provided by the person who created the Web

content. With this in mind, some people advocate creating a text-only version of websites. These people often assume that 'text-only' and 'accessible' is the same thing. In the case of blind users, this may be true, but the problem with this assumption is that it ignores other types of disabilities." Those with motor disabilities or hearing impairments, he explains, "probably will not benefit much from a text-only version. In fact, a text-only version may decrease the content's usability for them since it removes the visual clues and illustrations that may enhance the content's understandability." However, he adds, "nearly everyone who has use of their eyes can benefit from visual enhancements. This is especially true in the case of people with cognitive disabilities." His conclusion: "[Website] developers should seek to enhance their content to the extent possible by adding appropriate visual elements. As long as alternative text is provided for these visual elements, there is no conflict [between the needs of blind users and those with cognitive disabilities]. Those with cognitive disabilities will be able to view the usual elements and those who are blind will be able to access the alternative text. The end result is a single document that, in a sense, has a built-in text-only version. There is no need to create a separate text-only version for the blind. Neither is there a need to create a separate visually-enhance version for those with cognitive disabilities. This is the appropriate approach to take for most Web content."

http://www.webaim.org/techniques/articles/vis_vs_cog

Accessible Web Design: A Definition

By Chuck Letourneau

Startling Access Services 1998, 2000, 2002, 2003

According to the author, web accessibility means "that anyone using any kind of Web browsing technology must be able to visit any site and get a full and complete understanding of the information contained there, as well as have the full and complete ability to interact with the site." He concedes that "there are circumstances under which meeting these conditions would be difficult and perhaps even (seemingly

impossible. But difficulty shouldn't preclude effort and a barrier that seems impassable when viewed from one perspective might be reduced or eliminated when seen from another."

<http://www.starlingweb.com/webac.htm>

How People with Disabilities Use the Web

Edited by Judy Brewer World Wide Web Consortium (W3C) 2001

This document, a working draft, is a general introduction to the ways that individuals with various disabilities use the Web. It provides background to assist in understanding how those with disabilities benefit from provisions described in several W3C documents, including Web Content Accessibility Guidelines 1.0, Authoring Tool Accessibility Guidelines 1.0 and User Agent Accessibility Guidelines 1.0. Specifically, this working draft describes: 1.) Scenarios of people with disabilities using accessibility features of websites and Web-based applications; 2.) General requirements for Web access by individuals with physical, visual, hearing and cognitive disabilities; 3.) Various types of assistive technologies and adaptive strategies used by individuals with disabilities when accessing the Web.

<http://www.w3.org/WAI/EO/Drafts/PWD-Use-Web/Overview.html>

Making Your Website Accessible to the Blind

By Curtis Chong

National Federation for the Blind 2003

Written by the NFB's Director of Technology, this article supplies guidance to website designers who want to ensure Web page accessibility and usability by the blind. The author focuses strictly on aspects of non-visual access. A highlight of the article is the author's description of the processes blind computer users go through as they negotiate their way around the Web.

<http://www.nfb.org/tech/webacc.htm>

Introduction to Web Accessibility

By Paul Bohman Web Accessibility in Mind (WebAIM) 2003

The author has written a primer covering the basic issues surrounding Web accessibility and

the disabled. Mr. Bohman writes: "The Web offers so many new opportunities to people with disabilities that are unavailable through any other medium." The Internet, he continues, "offers independence and freedom. But this independence and freedom is only partially a reality." Too many websites, he concludes, "are not created with Web accessibility in mind." Whether purposely or not, "they exclude the segment of the population that in many ways stands to gain the most from the Internet."
<http://www.webaim.org/intro/>

Books

Web Accessibility for People with Disabilities

by Michael Paciello

Make your Web site accessible to everyone!

This resource provides Internet and Web administrators and developers everything they need to understand current legal requirements and accessibility initiatives, evaluate Web site accessibility, locate hundreds of disability and Web accessibility resources, learn the fundamentals of programming for users with disabilities and learn how emerging technologies will affect access to the Web.

http://www.amazon.com/exec/obidos/ASIN/1929629087/ref=pd_sxp_elt_1/104-2696258-9959100

Constructing Accessible Websites

by Jim Thatcher

This book provides practical techniques for developing completely accessible web sites with a quick reference guide to accessible web site design.

http://www.amazon.com/exec/obidos/tg/detail/-/1590591488/gid=1073408584/sr=1-1/ref=sr_1_1/104-2696258-9959100?v=glance&s=books

Maximum Accessibility

by John M. Slatin and Sharron Rush

This text provides the practical tools, design techniques, and testing methods to implement web standards without losing any of the functionality of your web site.

http://www.amazon.com/exec/obidos/tg/detail/-/0201774224/ref=pd_sim_books_3/104-2696258-9959100?v=glance&s=books

Fact Sheets

Designing and Understanding World Wide Web Pages

This resource provides links for those who design and construct Web pages.

<http://www.ataccess.org/rresources/webaccess.html>

The Rehabilitation Act Amendments (Sec. 508)

On August 7, 1998, President Clinton signed into law the Rehabilitation Act amendments of 1998.

These amendments cover access to federally funded programs and services and formed the bedrock for many Web accessibility initiatives and guidelines that have emerged in the ensuing years.

<http://www.access-board.gov/sec508/guide/act.htm>

WAI Quick Tips reference Card

The Web Accessibility Initiative has produced a thumbnail guide to the concepts of accessible Web design. The editors caution that these tips "are not complete guidelines but only a memory prompt" for concepts from the W3C Recommendation Web Content Accessibility Guidelines 1.0 that include information vital to understanding and implementing the Quick Tips. This resource features an easy-to-use checklist, a detailed document describing techniques for implementing the guidelines and a curriculum that explains how to use the guidelines.

<http://www.w3.org/WAI/References/QuickTips/>

Web Accessibility Issues

This fact sheet stresses the Web usage characteristics of blind and deaf computer users and enumerates their difficulties in achieving Web accessibility and provides basic guidelines for designers to follow in order to meet the needs of users who are blind and deaf.

<http://www2.ucsc.edu/ada/accessibleweb.html>

Websites

Web Accessibility and Universal Design

This resource provides links to websites that emphasize Web accessibility design.

<http://template.bsd.uchicago.edu/accessibility.html>

Learning Modules

Rich Media Home

The Rich Media Accessibility Web Site is a collection of resources for website developers and users seeking ways to make rich media accessible to people with disabilities.

<http://ncam.wgbh.org/richmedia/index.php>

Designing More Usable Websites

A subset of the Trace Center's Designing a More Usable World site, this resource provides links to a range of reference materials that focus on Web accessibility design.

<http://trace.wisc.edu/world/web/>

WebAIM

Web Accessibility in Mind (WebAIM), is the website for the Web accessibility project at Utah State University's Center for Persons with Disabilities.

<http://www.webaim.org/>

Videos

Keeping Web Accessibility in Mind

This 11 ½-minute video provides a user perspective on Web accessibility. The video is an overview of the difficulties faced by users with disabilities.

<http://www.webaim.org/info/asdvideo/>

Introduction to the Screen Reader

Featuring instrumentation specialist Neal Ewers of the Trace Center, this video is a six-minute short demonstrating how screen readers assist the blind to navigate the Web and access electronic documents.

<http://www.doit.wisc.edu/accessibility/video/intro.asp>

Screen Magnification and the Web

Also featuring the Trace Center's Neal Ewers along with John Klatt, a University of Wisconsin grad student, this video illustrates how screen magnification software works and discusses ways that Web designers can increase Web access for a variety of users.

http://www.doit.wisc.edu/accessibility/video/screen_magnification.asp

Web Accessibility Learning Modules

California State University/ Fresno's Center for Distributed Learning has produced a series of teaching modules geared to provide training for university faculty and staff Web authors in the creation of accessible Web pages. Topics covered include the following: "What is Web Accessibility?" "Legislative and Legal Issues," "Assistive Technologies," "Tips and Techniques," and "Checkers and Validators."

<http://www.csufresno.edu/webaccess/learningmodules/>



KNOWLEDGE NETWORK MEMBERS

HTML Writers Guild AWARE Center



Maintained by the HTML Writers Guild (HWG), the AWARE (Accessible Web Authoring Resources and Education) Center serves as a central resource for Web authors for learning about Web accessibility. The Center was launched in 1999 with a special focus on the importance of designing for universal accessibility. Supported by the Guild's staff and volunteers, the Center is designed as a resource for all Web authors.

The Guild was formed in 1994 as the World Wide Web's training organization for the Web design community. It claims more than 150,000 members in more than 160 countries. In 2001, the HWG joined with the International Webmasters Association to form IWA-HWG, the professional organization for website design companies and individual professionals. The HWG is a virtual organization whose members can be located online worldwide.

The AWARE Center has assembled a comprehensive list of significant resources for Web authors creating accessible Web pages. These

resources are geared specifically for Web designers wishing to accumulate additional Web authoring knowledge. The Center's goal is to provide Web authors "with the information you need to make your site accessible to everyone."

The Center's Web design training program has provided training to more than 45,000 Web design professionals since 1998. Courses cover "a breadth of Web work, from html, top Flash, from Dreamweaver to Photoshop." Course instructors are Web design experts and working professionals in the field. Additional HWG programs include Discussion Mailing Lists, the AWARE Accessible Web Design Initiative for Web accessibility education and the Gutenberg at HWG-XML Initiative.

For further information about the AWARE Center, contact:
<http://aware.hwg.org/>

World Wide Web Consortium (W3C)



The World Wide Web Consortium was founded in 1994 by World Wide Web inventor Tim Berners-Lee to develop common protocols

that promote the Web's evolution and to ensure its interoperability. W3C develops technologies – specifications, guidelines, software and tools – aimed at creating a forum for information, commerce and collective understanding. W3C has 450 members and nearly 70 full time staffers worldwide who contribute to the development of W3C specifications and software.

W3C uses the following seven points to define its goals and operating principles:

- *Universal Access* – W3C defines the Web as "the universe of network-accessible information available through computer, phone, TV or networked refrigerator," which facilitate new forms of communication and knowledge sharing. W3C aims to make these new forms available to all people "whatever their hardware, software, network infrastructure, native language, culture, geographical location or physical or mental ability."

- *Semantic Web* – According to W3C, "People currently share knowledge on the Web in language intended for other people." On the "Semantic Web" ("semantic" is defined as "having to do with meaning"), W3C intends that individuals "will be able to express ourselves in terms that our computers can interpret and exchange." Achieving this level of expression, W3C believes, will enhance various forms of problem solving and information gathering. W3C languages RDF, XML, XML Schema and XML signatures are "the building blocks of the Web."

- *Trust* – W3C pledges to help build a "Web of Trust" offering confidentiality, instilling confidence and personal accountability for material published on the Web.

- *Interoperability* – W3C believes that software components ought to be interchangeable and that users should be able to view Web content with their preferred software – graphic desktop browser, speech synthesizer, Braille display, or car phone, for example. As a vendor-neutral organization, W3C promotes interoperability by designing and promoting non-proprietary computer languages and protocols "that avoid the market fragmentation of the past" via industry consensus and "open forum" discussion.

- *Evolvability* – W3C strives to improve the Web without disrupting aspects of the current Web that work. The organization's designs are determined by principles of simplicity, modularity, compatibility and extensibility.

- *Decentralization* – According to W3C, "decentralization is a principle of modern distributed systems." In a centralized system "every message or action has to pass through a central authority, causing bottlenecks when the traffic increases." In design, W3C limits the number of central Web facilities in order to reduce the vulnerability of the Web in its entirety. "Flexibility is the necessary companion of distributed systems and the life and breadth of the Internet, not just the Web."

- *"Cooler Multimedia!"* – In conjunction with its end-users, W3C seeks to provide a framework for the "Cooler Web" through languages such as the Scalable Vector Graphics (SVG) language and the Synchronized Multimedia Integration Language (SMIL).

For more information on W3C, contact the following W3C U.S. host organization:

Massachusetts Institute of Technology (MIT)
Computer Science and Artificial Intelligence
Laboratory (CSAIL)
200 Technology Square
Cambridge, MA 02139
Phone: (617) 253-2613
Fax: (617) 258-5999
Janet Daly, Director of Communications
<http://www.w3.org/>

Web Accessibility Initiative (WAI)

A unit of the World
Wide Web
Consortium



(W3C), the Web Accessibility Initiative (WAI) promotes the highest possible degree of Web usability for individuals with disabilities. In coordination with organizations worldwide, WAI strives for Web accessibility through five primary areas of work: technology, guidelines, tools, education and outreach and research and development.

WAI technical activity is generated by the following working groups:

The *Protocols and Formats* working group reviews all W3C technologies for accessibility
The *Web Content, Authoring Tool and User Agent* accessibility guidelines working groups produce guidelines for websites, Web authoring tools and browsers

The *Evaluation and Repair* working group develops tools and techniques for evaluating website accessibility and retrofitting websites to become more accessible

The WAI International Program Office facilitates partnering and coordination among organizations – disability groups, industry, government and research organizations -- around the world that have a stake in Web accessibility. WAI international working groups include:

The *WAI Interest Group* for general discussion on Web accessibility

The *Education and Outreach* working group that fosters awareness and develops training materials

The WAI Coordination Group that coordinates the activities among the organization's working and interest groups

For further information about WAI, contact:

Web Accessibility Initiative (WAI)
MIT/LCS Room NE43-355
200 Technology Square
Cambridge, MA 02139
Phone: (617) 253-2613
Judy Brewer, Director
<http://www.w3.org/WAI/>

Ohio State University Web Accessibility Center (WAC)

The Web Accessibility Center was created by Ohio State to help its Web authors create accessible media. OSU WAC ensures that all distance education and online courses at the university are fully accessible to students with disabilities. In addition, WAC:



- Aids in Web page design, captioning and validation checking
- Advises OSU instructors in the development of Web components for their courses
- Provides training and technical assistance for staff who host student sites, such as the Office of the Registrar and the OSU library
- Develops templates and add-ons that assist OSU instructors and staff in making accessible websites using authoring tools

WAC analyzes Web pages for their accessibility to people with disabilities, a service provided free to OSU faculty and staff. Web pages are analyzed for compatibility with various browsers. This analysis is based on documentation from browser vendors when available. The Center automatically checks sites for compatibility with HTML 4.0

The Center bases its analyses of accessibility on the World Wide Web Consortium's (W3C) *Web*

Content Accessibility Guidelines and the OSU *Minimum Standards for Web Accessibility* that adhere to Section 508 of the Rehabilitation Act.

For more information on OSU WAC, contact:

Web Accessibility Center (WAC)
1760 Neil Avenue
150 Pomerene Hall
The Ohio State University
Columbus, OH 43210-1297
Phone: (614) 292-3307
Joe Wheaton, Ph.D. and Sean Miller, M.A., C.R.C.,
Co-Directors
webaccess@osu.edu
<http://www.wac.ohio-state.edu>

Center for Persons with Disabilities (CPD)



The Center for Persons with Disabilities is one of the 61 University Centers for Excellence in Developmental Disabilities, Education, Research and Services located at universities throughout the U.S. These programs support individuals with developmental disabilities via interdisciplinary pre-service preparation and continuing education, as well as community service, research and dissemination. Although CPD has served sites across the nation for 25 years, the Center's major effort is focused on the needs of disabled persons in Utah as well as rural, minority and underserved populations.

CPD provides a range of community services, including training and technical assistance to families, consumers, professionals and paraprofessionals, policymakers and students. Model and demonstration services operate within communities, offering assessments, implementation of individualized service plans, family support services, neurotherapy and inclusionary transition services. Additional services include the prevention of developmental disabilities and delays.

The Center's staff conducts research projects in areas such as autism, attention-deficit hyperactivity disorder and dyslexia. Assistance is provided to

state education agencies in developing effective programs and services for children with disabilities.

CPD direct services to consumers include clinical interdisciplinary assessment, evaluation and treatment as well as medical specialty clinics provided through the Clinical Service Project. The "Up-to-3" program serves infants and toddlers with developmental disabilities or delays. Assistive technology services are available through the Utah Assistive Technology Program. The Center's Family Resource Library is a free lending library with 2,000 books and videos for children with disabilities and their families.

CPD Dissemination provides a print and online catalog of materials dealing with developmental disabilities. CPD Publications prints three periodicals aimed at professionals and at families of children with disabilities.

For further information on the Center, contact:

Center for Persons with Disabilities
6800 Old main Hill
Logan, UT 84322-6800
Phone: (435) 797-1981;
(toll free) 1-866-284-2821
Fax: (435) 797-3944
Sarah Rule, Ph.D., Director
<http://www.cpd.usu.edu/>

Newsletter Editor: Thomas H. Allen

Electronic Formatting
and Distribution: Ana-Maria Gutierrez