

## ◆ Keynote Address: Sharing Science with the Public

Speaker:

**Shirley M Malcom**  
American Association for the  
Advancement of Science  
Washington, DC

Reporter:

**Barbara Gastel**  
Texas A&M University  
College Station, Texas

In keeping with the annual-meeting theme, “Access Now and Into the Future”, keynote speaker Shirley M Malcom, head of education and human resources at the American Association for the Advancement of Science (AAAS), discussed the context for increasing public access to scientific information and described some AAAS activities to increase such access.

According to the 1992 National Adult Literacy Survey, Malcom noted, more than 20% of Americans are at the lowest of five literacy levels, and slightly more are at the second lowest. In total, only about 20% are at the top two levels, which appear necessary to comprehend most lay “translations” of scientific content.

It is false to assume, Malcom said, that low-literacy audiences aren’t interested in science, don’t like it, and can’t learn it and that such populations need not concern us. Strategies for reaching more audiences include providing information to journalists; working with “places of science”, such as museums; increasing roles of such institutions as libraries; and assisting teachers, whose students share information with their families.

Malcom briefly described the Healthy People Library Project ([www.healthlit.org](http://www.healthlit.org)), a AAAS endeavor designed to bring public libraries information about biomedical research. She also discussed a AAAS project to produce books at the grade 4-6 reading level on health topics highly relevant to users. Readers liked the books,

shared them, and wanted more. Those who prepared the books found that they could achieve both clarity and accuracy. They compiled a set of guidelines, including the following, for developing accessible science materials:

*Design:*

- Use at least 12-point type.
- Use serif typefaces.
- Allow ample space between lines of type.

***It is false to assume that low-literacy audiences aren’t interested in science, don’t like it, and can’t learn it.***

- Avoid hyphenation.
- Use illustrations and diagrams where appropriate.
- Avoid heavy blocks of type.
- Don’t use many type styles.
- Don’t right-justify text.

*Organization of Information:*

- Place the main ideas near the beginning of the text.
- Focus on what the reader needs to know.
- Avoid breaking pages in mid-paragraph.

*Language and Vocabulary:*

- Avoid jargon.
- Use scientific terms when necessary, but remember to define them.
- Avoid language that shows cultural, sex, or class bias.
- Don’t use complicated or long sentences.
- Use active verbs.
- Test materials for readability.

*Point of View:*

- Maintain an adult point of view.
- Assume lack of familiarity with science but not lack of interest.

- Use everyday analogies with adult connotations.

- Be sensitive to the audience’s culture.
- Consider the context in which the reader will encounter the material.

*Review Process:*

- Before starting, assess the need for the material.
- Include ample review for scientific accuracy and language appropriateness.
- Build in plenty of time for review and revision.
- Pretest materials with the target audience.

Malcom also discussed the AAAS book *Your Genes, Your Choices*, written at about a grade 8-10 reading level. This book was distributed widely in the United States—to schools, libraries, patient and advocacy groups, faith-based groups, all members of Congress, and others—and reached international audiences. Outreach associated with the book included use of videotapes and discussion with scientists and health professionals. A challenge regarding such a book, Malcom noted, is that the science keeps changing. In fact, a week after the book appeared, the cloning of Dolly the sheep was announced; therefore, a chapter was added.

Posting material on the Internet is necessary but not sufficient for public access, Malcom stated. Not everyone has ready access to the Internet, and users can have difficulty in finding trustworthy sites. Furthermore, the “human touch” can aid in effective access to information.

In closing, Malcom called for involving more people in providing public access to science. She also advocated developing additional approaches. “We’ve got to be more innovative”, she concluded. 🗣️