

WEBINAR MATERIALS

"Assistive Technology (AT) & Accessible Instructional Materials (AIM): Advocacy Strategies for Student Success"

January 11, 2012

Presenters:

Pam Cook, M.Ed. and Joanne Karger, J.D., Ed.D.

ABOUT THE PRESENTERS:



Pam Cook, M.Ed., a consultant with ABC Consulting Services since 1999, has worked as an advocate for students with disabilities in Western Pennsylvania public schools for over 20 years. Pam also currently assists students, their families and teachers in obtaining and using Assistive Technology (AT) and Accessible Instructional Materials (AIM) to enable struggling readers to access the general education curriculum and build independence as they transition to postsecondary education and careers. Pam has been employed as an Education Advocate at the Mental Health Association of Allegheny County, as a member of a special education research team at the University of Pittsburgh and as a consultant to the Duquesne University Charter School Project. She has served on her local school board and the Board of the Education Law Center of Pennsylvania (1998-2008). She is a former member of the National Board of CHADD (Children and Adults with Attention Deficit Disorders) and the Pittsburgh Regional Board of the International Dyslexia Association. As co-chair of the PA Department of Education's Response to Intervention (RtI) Parent Engagement Committee, Pam participated in the creation of RtI resource materials provided to parents across Pennsylvania. Pam is a former teacher with a B.S.Ed. in elementary education from Ohio University and a M.Ed. in special education from the University of Pittsburgh.



Joanne Karger, J.D., Ed.D., is a 2011-2012 Postdoctoral Fellow in "Universal Design for Learning" (UDL) at CAST and Boston College Lynch School of Education. She has worked for the past four years as an attorney at the Center for Law and Education (CLE), where she has represented low-income families and provided technical assistance to legal services and pro bono attorneys in cases involving education issues, including the rights of students with disabilities under IDEA, Section 504, and Title I/NCLB. Dr. Karger has also served as a consultant for the National Center on Accessible Instructional Materials at CAST, analyzing legal and policy issues associated with the provision of accessible instructional materials and access to the general education curriculum for students with disabilities. Prior to joining CLE, Dr. Karger served on a team of consultants that evaluated the special education programs of New York City, the District of Columbia, and several low-income school districts in Massachusetts. She has a law degree from Boston College Law School and a doctorate in education from the Harvard Graduate School of Education in Administration, Planning, and Social Policy.

The Advocate Academy® is a project of

The
Advocacy
INSTITUTE

www.AdvocacyInstitute.org

AIM to Achieve!



**Assistive Technology (AT) &
Accessible Instructional Materials (AIM):
Advocacy Strategies for Student Success**

Pam Cook, M.Ed. and Joanne Karger, J.D., Ed.D.

Overview

- What is assistive technology (AT)?
- What are Accessible Instructional Materials (AIM)?
- How can struggling readers benefit from AT and AIM?
- How do students qualify for and obtain AT and AIM?
- What are schools' legal obligations regarding AT and AIM?

Overview (cont' d.)

- What does the research say about AT and AIM?
- What negotiation strategies can parents and advocates use to obtain AT and AIM?
- Meet Heather and learn how can parents and advocates can use the state complaint process to obtain AT and AIM for struggling readers.

Did You Know?

Students need to learn to read by the end of 3rd grade so they can then read to learn.

"Teaching students to read by the end of 3rd grade is the single most important task assigned to elementary schools."

(American Federation of Teachers)

"Reading disability affects approximately one child in five."

Shaywitz, S. (2003) *Overcoming Dyslexia & The Science of Reading and Dyslexia* (2008)



Questions for Parents and Advocates

❖ Does this student depend on a teacher, aide, or you to read aloud or scribe for him or her?

❖ Does the student read or write so slowly that homework requires many hours and much support to complete?

❖ Do you know the student's instructional reading level?

❖ Is the student's listening comprehension better than his/her reading comprehension?



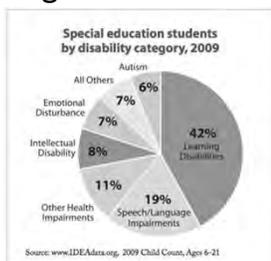
More Questions for Parents and Advocates

❖ Did the student score at a "Proficient" level in reading and writing on your state's NCLB (No Child Left Behind) accountability testing?

❖ If the student has an IEP or Section 504 Plan, has the team discussed Assistive Technology to access grade level instructional materials?

❖ Does this student use computers to independently access, read, understand, and complete assignments from grade level curriculum?

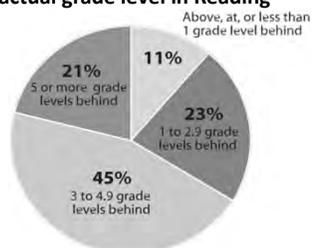
LD: A High Incidence Disability



Approximately 80% of students with learning disabilities have reading disabilities.

National Center for Learning Disabilities(2011) *Accessible Instructional Materials: Ensuring Access for Students with Learning Disabilities*

Secondary Students with LD: Discrepancy between tested and actual grade level in Reading



National Center for Learning Disabilities(2011)
The State of Learning Disabilities

The Debilitating Impact of Print Disabilities

“Guessing from context allows for only 1 of 8 words to be identified after 4th grade.”

Identifying SLD Students, Janna Osman, M.Ed., 3/9/10

“On IEPs & 504 plans, 41% of students with LD had tests read to them as an accommodation. 65% required additional time to complete assignments.”

“Clearly, reliance on print materials has a profound and compromising impact on students with LD.”

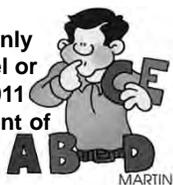
Pisha, B. and Stahl, S. (2005) *The Promise of New Learning Environments for Students With Disabilities, Intervention in School and Clinic, 41(2), p.67-75*



“New NAEP, Same Results:...Reading Mostly Flat”

Education Week, November 1, 2011

Achieving proficiency in reading remains an elusive goal for the majority of American students. Only about one-third reached that level or higher in reading according to 2011 data from the National Assessment of Educational Progress (NAEP).



Widening Achievement Gap

“It can be years before parents realize that their child is not making progress – or that the achievement gap between their child and his peers



has actually widened while receiving special education services.”

Great Schools (2010) “How to Know If Your Child’s Making Progress Toward IEP Goals.”

Edyburn, D. (2006) Failure is NOT an Option, *Leading and Learning with Technology*, 34(1), p.20-23.

Dropout Epidemic

Researchers report that “many states use inflated graduation rates to meet NCLB (No Child Left Behind) requirements. These federal figures have hidden a dropout epidemic so severe that about 30 percent of the million American students who start ninth grade each year fail to graduate four years later. Prior to this report, the drop-out rate was believed to be between 10 and 15%.”



Dillon, S. (2008) States’ Data Obscure How Few Finish High School, *New York Times*, 20th Mar, p.3.

“While inclusion has facilitated physical access to the general education classroom, the general education curriculum remains largely inaccessible to most students with learning or cognitive disabilities. How long do we allow students to fail at a given task before we provide them with appropriate performance support tools?”



Edyburn, D. (2006) *Failure is NOT an Option, Leading and Learning with Technology*, 34(1), p.20-23.

An Urgent Need for Assistive Technology

“... an estimated 75% of students with disabilities read below proficiency levels; yet only 1-3% have access to technologies to help them accommodate or overcome their reading barriers.”

Chernek, V. (2009) *Text Readers Make Universal Access to Core Curriculum Possible, Special Education Technology Practice*, 11(4), p.15-19.





While schools should continue teaching research-based literacy skills and strategies through high school, students who struggle in the general curriculum (e.g., social studies, science) will need assistive technology and accessible instructional materials to succeed in these classes.

What is an Assistive Technology (AT) device?

“any item, piece of equipment, or product system, whether acquired commercially of the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of a child with a disability.” (20 U.S.C. § 1401)



What are Accessible Instructional Materials (AIM)?

Textbooks and related core instructional materials that have been converted into specialized or accessible formats – i.e., Braille, audio, digital text, or large print formats.

National Center on Accessible Instructional Materials (2011) *AIM Basics for Families*

What Are Common Sources of AIM?

- ❖ Bookshare is the world’s largest online library of accessible books for individuals with print disabilities.
- ❖ Learning Ally (formerly “Recording for the Blind & Dyslexic”) provides library of accessible audio books for students with print disabilities.
- ❖ American Printing House for the Blind for visual impairments.
- ❖ National Instructional Materials Access Center (NIMAC) is central repository for NIMAS electronic source files.
- ❖ Textbook Publishers

National Center on Accessible Instructional Materials (2011) *Accessible Instructional Materials (AIM) A Technical Guide for Families and Advocates*

What does the research say about AT & AIM?

- “The findings of this review strongly support the efficacy of technology-based interventions across treatment types, educational settings, and disability categories in the improvement of academic achievement.”

National Post-School Outcomes Center (2006) *The Effects of Technology-Based Interventions on Academic Outcomes for Youth with Disabilities*

- “Results suggest that relative to other interventions, AT provided by a multidisciplinary team may have a significant effect on IEP academic and communication goal improvement for students in special education.”

Watson, A. et al. (2010) Effect of Assistive Technology in a Public School Setting, *American Journal of Occupational Therapy*, 64(1), p.18-29.

Benefits of Text-to-Speech (TTS) Software

- ❖ **SPEED** “The most consistent benefit of TTS text-reading Technology is that it enables slow readers to read faster.” According to Dr. Sally Shaywitz, Co-Director of the Yale Center for Dyslexia and Creativity, “Fluency forms the bridge between decoding and comprehension.”
- ❖ **COMPREHENSION** Student’s comprehension increased using a text reader even though the difficulty of the text increased.
- ❖ **ENDURANCE** 93% of students with learning disabilities reported that reading was easier, less stressful, and less tiring with text readers. 91% of students said they were able to increase the time they could sustain attention to reading.
Text-to-Speech Software for Reading, Elkind, International Dyslexia Assn, 2007



The Importance of Fluency

“Let’s say two eighth-graders have identical class schedules. Marcus reads 180 correct oral words per minute, whereas James reads only 60 correct words per minute to complete his work.”

“One particular evening, Marcus’ homework assignments required two hours of reading.”

“If James were able to stay on task, it would take him six hours to accomplish the same reading assignments. It is unlikely that James will be tenacious enough to complete his work.” (Archer, A. (2003).
Decoding and Fluency: Foundation Skills for Struggling Older Readers

According to Dr. Sally Shaywitz, “although dyslexic children will improve their accuracy, lack of fluency (slow, effortful reading) continues to be a concern at all grade levels, increasingly so as children move up into middle and high school and then into postsecondary education”.

Shaywitz, S. The Science of Reading and Dyslexia

AT and AIM are not quick fixes or silver bullets. There is a “learning curve” involved in becoming proficient with AT/AIM. Learning any new skill (whether keyboarding or snowboarding) requires time and effort. However, time invested early with AT and AIM will yield huge savings in time later.

With AT and AIM, struggling readers can participate and make progress in the general curriculum using text-to-speech software that allow them to hear  text spoken out loud, displayed in custom color combinations, in different fonts, in larger sizes, at a faster speed, or in any of these combinations.



“Could Technology be the Key To a Struggling Reader’s Success?”

“Technology can make or break a child’s ability to keep up with the class and the general curriculum.” according to the Director of the National Center for Technology Innovation.



Great Schools (2010) *Could Technology be the Key to Your Child's Success?*

PORTABLE TECHNOLOGY

Students with disabilities must also function at home, in the workplace, at social gatherings, and in leisure activities.



The availability of easily portable technology allows the student to transport compensatory tools from one setting to another (iPad, Netbook).

Many of them are pocket sized such as smartphones, Ipods, USB flash drives and MP3 players.

Assistive Technology Evaluations

While comprehensive assistive technology evaluations are important and needed, the wait involved often does not allow the student to obtain instructional materials in a “timely manner” (“at the same time as other children receive instructional materials”).

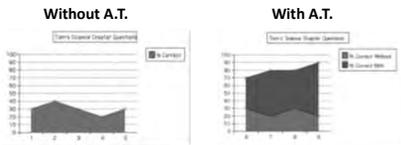
Trials of existing in-house AT (e.g., Kurzweil) and AIM (e.g., via Bookshare) by the student’s team can provide valuable pre-post test data for the AT consultant who conducts the formal AT evaluation.



An AT/AIM assessment should include pre-post test data without and with Assistive Technology

DeCoste, D. (2010) *Reading Accommodations. Closing the Gap, 1(10), p. 30-34.*

Assessment of student’s reading comprehension without & with A.T.



Edyburn, D. (2006) *Evaluate Academic Performance With and Without Technology, The MACUL Journal, 3(1), p.36-37,48.*

ABC Consulting Services AIM Data Collection

Student: David .S.

Groups Individuals Interventions

Group Name	Student Count	Data Export
5th Grade	3	Export CSV

Passage Reading Fluency

CBM Name	Status	Submission	Score
1 Passage Reading Fluency 5_3	Complete	View	97.0 CWPM
2 Passage Reading Fluency 5_1	Complete	View	87.0 CWPM
3 Passage Reading Fluency 5_2	Complete	View	104.0 CWPM

Assessment: www.EasyCBM.com

Student Name	View Test	Score
Median fluency score: 97 cwpm (correct words per minute)		

Instructional Reading Level: 3rd grade

Multiple Choice Reading Comprehension in Grade Level Text

CBM Name	Status	Submission	Score
1 Buzkashi (no assistive technology)	Complete	View	8/20 (40%)
2 The Champion (with text-to-speech software)	Complete	View	19/20 (95%)

**Legal Requirements for
AT and AIM**

IDEA Definition of AT Device

- Any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a child with a disability.
- Does not include a medical device that is surgically implanted, or the replacement of such device.

20 U.S.C. § 1401(1); 34 C.F.R. § 300.5

IDEA Definition of AT Service

- Any service that directly assists a child with a disability in the selection, acquisition, or use of an assistive technology device.

20 U.S.C. § 1401(2); 34 C.F.R. § 300.6

Examples of AT Services:

- Evaluating a child's AT needs;
- Purchasing, leasing, or obtaining an AT device;
- Training or technical assistance for a child, or, where appropriate, the child's family;
- Training or technical assistance for individuals substantially involved in the child's major life functions.

20 U.S.C. § 1401(2); 34 C.F.R. § 300.6

Inclusion of AT in the IEP

- In developing each child's IEP, the IEP Team must consider, among other factors, whether the child needs AT devices and services.

20 U.S.C. § 1414(d)(3)(B)(v); 34 C.F.R. § 300.324(a)(2)(v)

AT Devices and Services

- Each public agency must ensure that AT devices and services are made available if required as part of the child's special education, related services, or supplementary aids and services.
- On a case-by-case basis, use of school-purchased AT devices in a child's home or other settings is required if the IEP Team determines that the child needs access to those services in order to receive FAPE.

34 C.F.R. § 300.105(a), (b)

OSEP Policy Letters and Due Process Hearings: AT and FAPE

- Districts must provide AT when the IEP Team determines that AT is necessary for FAPE. Letter to Naon, 22 IDELR 888 (OSEP 1995).
- If an IEP Team determines that a student requires AT in order to receive FAPE, the AT must be identified in the IEP. Letter to Anonymous, 24 IDELR 854 (OSEP 1996).

AT and FAPE (cont'd)

- Student denied FAPE when AT device was not provided in a timely manner. Miami-Dade County Sch. Bd., 110 LRP 38102 (FL SEA 2010).
- District was not obligated to provide a specific computer program, absent evidence of denial of FAPE. In re: Student with a Disability, 56 IDELR 120 (NY SEA 2011); Fort Bend Indep. Sch. Dist., 34 IDELR 246 (TX SEA 2001).

AT Devices for Use at Home

- If an IEP Team determines that a child needs access to an AT device at home as a matter of FAPE, then the district must provide the device for home use in order to implement the IEP. Letter to Anonymous, 18 IDELR 627 (OSEP 1991).
- *But see* Jefferson County Sch. Dist. R-1, 34 IDELR 212 (CO SEA 2001): Although a home computer could have been helpful to the student, he did not require the computer to make educational progress.

Cost Considerations

- While cost may be a consideration in deciding what AT devices and services to provide, cost cannot be the determining factor. Greenwood County Sch. Dist. 52, 19 IDELR 3555 (CA SEA 1992).
- AT must be provided at no cost to the parent. When providing AT, SEAs and LEAs may access funding sources such as Medicaid, Maternal and Child Health, and private insurance proceeds. Letter to Cohen, 19 IDELR 278 (OSEP 1992).

AT Evaluations

- SWD must be evaluated in all areas of suspected disability, including the need for AT. Letter to Fisher, 23 IDELR 565 (OSEP 1995); Maynard Sch. Dist., 20 IDELR 394 (AR SEA 1993).
- Failure to evaluate a student in the area of AT constituted a denial of FAPE. Glendora Unified Sch. Dist., 49 IDELR 172 (CA SEA 2007).
- Parent's right to seek an independent evaluation includes AT. Letter to Fisher, 23 IDELR 565 (OSEP 1995).

Decisions on State Complaints

- Baltimore City Pub. Schls., 110 LRP 72182 (MD SEA 2010): State ED required district to review IEP and reconsider student's need for a word processor when IEP team failed to explain why it disagreed with recommendation for AT in evaluation.
- Lyon County Sch. Dist., 110 LRP 73249 (NV SEA 2010): State ED found that district's failure to have a system for promptly replacing blind student's computerized Braille notebook resulted in denial of FAPE.

Decisions on State Complaints (cont'd)

- Monroe County Comm. Sch. Corp., 50 IDELR 178 (IN SEA 2008): State ED determined that district failed to implement AT provisions of student's IEP, which were ambiguous as written.
- Ada-Borup Indep. Sch. Dist. #2854, 49 IDELR 55 (MN SEA 2007): State ED found that district violated IDEA by failing to train student in use of augmentative communication device.

Accessible Instructional Materials (AIM)

- Textbooks and related core instructional materials that have been converted into specialized formats – i.e., Braille, audio, digital text, or large print formats.
- IDEA requires SEAs and LEAs to ensure that all students who need AIM receive these materials in a timely manner.

34 C.F.R. § 300.172(b)(2), (3); 34 C.F.R. § 300.210(b)(2), (3)

Legal Basis for Right to AIM in IDEA

- Part of the right to receive FAPE and to be involved and progress in the gen. curriculum.
 - OSEP - "Timely access to appropriate and accessible instructional materials is an inherent component of [an LEA's or SEA's] obligation under [IDEA] to ensure that FAPE is available for children with disabilities and that children with disabilities participate in the general education curriculum as specified in their IEPs." (71 Fed Reg. 46618).

Section 504 and ADA

- Prohibit discriminatory actions that deny qualified students with disabilities comparable aids, benefits, and services (deny them “an equal opportunity” to gain the same benefit or reach the same level of achievement as their peers).
- Prohibit discriminatory criteria (written policies) or methods of administration (actual practices).
- Sec. 504 requires the provision of FAPE; Title II of ADA requires the provision of auxiliary aids and services and effective communications.

AIM Provisions in IDEA 2004: NIMAS

- NIMAS stands for the National Instructional Materials Accessibility Standard.
- Used to prepare electronic files for converting instructional materials into specialized formats.
- All states must adopt NIMAS.
- No curriculum content area is exempt.

20 U.S.C. § 1412(a)(23)(A); 34 C.F.R. § 300.172(a)(1)
20 U.S.C. § 1474(e)(3)(B)

NIMAC

- NIMAC stands for the National Instructional Materials Access Center, a national repository of electronic files based on NIMAS.
- SEAs and LEAs may choose whether to coordinate with NIMAC. All 50 SEAs have done so.
- SEAs and LEAs that coordinate with NIMAC direct publishers to provide NIMAS files to NIMAC.

20 U.S.C. § 1412(a)(23)(B), (C); 34 C.F.R. § 300.172(b)(1), (c)
20 U.S.C. § 1413(a)(6); 34 C.F.R. § 300.210
20 U.S.C. § 1474(e)(1), (2)

“Timely Manner”

- All SEAs and LEAs must provide AIM in a timely manner.
- Each State must establish its own definition of “timely manner.”
- Each SEA must ensure that all LEAs take all reasonable steps to provide accessible instructional materials at the same time that other students receive their materials.

34 C.F.R. § 300.172(a)(2), (b)(4)

Students Eligible for NIMAS/NIMAC

• Those who fall under the definition of “blind or other persons with print disabilities”:

- Students served under IDEA and
- Who may qualify under “An Act to provide books for the adult blind.”

20 U.S.C. § 1474(e)(3)(A)

Qualifying under “An Act to Provide Books for the Adult Blind”

Those certified by a “competent authority” as falling under one of four qualifying disabilities:

- 1) Blindness
- 2) Visual disability
- 3) Physical limitations
- 4) Reading disability resulting from organic dysfunction

36 C.F.R. § 701.6(b)(1)

Competent Authority

Blindness, Visual Disability, Physical Limitations:

- Competent authority may be any number of individuals, including school officials such as a social worker or a teacher.

36 C.F.R. § 701.6(b)(2)

Reading Disability Resulting from Organic Dysfunction:

- Competent authority must be a medical doctor who may consult with colleagues in associated disciplines.

Bookshare and Learning Ally

- Have taken the position that learning/reading disabilities have a physical basis.
- Allow various school professionals, including special education teachers and school psychologists, to serve as competent authority to certify LD/RD.

Students Who Need AIM but Are Not Eligible for NIMAS/NIMAC

- SEAs and LEAs are not relieved of their responsibility to ensure that all students:
 - who need AIM, but are not eligible for NIMAS/NIMAC, receive AIM in a timely manner;
 - who need materials that cannot be developed from NIMAS files are delivered in a timely manner.

34 C.F.R. § 300.172(b)(3); 34 C.F.R. § 300.210(b)(3)

Determination of Need for AIM

The student's IEP Team decides if the student needs AIM.
Some questions to ask:

- Can the student see the material well enough to read the information on a level comparable to other classmates?
- Can the student physically manipulate the material without strenuous effort?
- Does the student have the necessary stamina to read standard materials for extended periods of time?
- Does the student have the decoding, fluency, and processing skills needed to gain information from grade-level printed materials?

National Center on Accessible Instructional Materials (2011) [Accessible Instructional Materials \(AIM\) A Technical Guide for Families and Advocates](#)

Options for Parents to Challenge Denial of AT or AIM

- File due process complaint
- File request for mediation
- File complaint with State under IDEA's State Complaint System
- File complaint with U.S. Office for Civil Rights for a violation of Section 504/ADA

Meet Heather



- ❖ 12th grade student – highly motivated, hard worker and Dyslexic
- ❖ Standard Score (SS) of 74 in Basic Reading; Reading Fluency “very low”. Spent up to 4 hours each night on homework
- ❖ Average ability ; average reading comprehension (SS 102); above average listening comprehension (SS 112)
- ❖ Not identified for special education until 7th grade

Heather's Story

- ❖ No baseline data, measurable goals or research-based reading program in her IEPs
- ❖ She regressed in reading between 7th & 12th grades.
- ❖ An AT evaluation requested in November 2010 was never provided.
- ❖ State complaint was filed in March 2011; District requested a proposal from parents to resolve complaint.

Proposed Resolution

Parents' proposed resolution included the following compensatory education:

- Laptop computer and accessories
- Software (text-to-speech, voice recognition and Smartpen)
- AT & AIM Training (6 two-hour sessions)
- Cost of 3 remedial courses at a community college

Total Costs : \$4,216.90

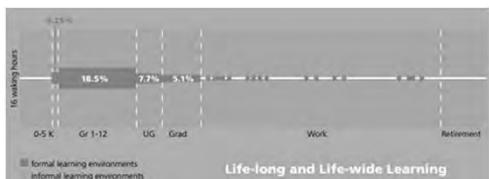
The District agreed to proposed resolution and the complaint was withdrawn.

A Happy Ending!



- ❖ According to May 20, 2011 PA Dept of Education letter, "the complaint issue with the M School District has been addressed and resolved in a satisfactory manner, and the Bureau requires no further action at this time."
- ❖ Heather graduated from high school in June and began attending college in August, 2011.
- ❖ She is "loving" college, uses AT & AIM, & earned 3.6 in her first term. She hopes to become a special ed teacher & teach struggling readers to use AT & AIM.

Transforming American Education: Learning Powered by Technology



When looking at a typical lifespan, technology will play a critical role in the home & workplace for many years after the end of formal education. In addition to formal learning environments (dark teal), technology skills will be needed throughout the lifespan in informal learning environments (light teal).

Center for Applied Special Technology (2010) Transforming American Education: Learning Powered by Technology



What Parents Can Do

- ❖ Read & discuss stories and books daily with your child to build vocabulary & background knowledge.
- ❖ Talk with your child's IEP or 504 team about your child's need for AIM in order to participate in the general education curriculum. Ask for fluency data & data with & without Assistive Technology for comprehension of grade level text.
- ❖ Ask your child's principal to obtain a free organizational membership in Bookshare.

What Parents & Advocates Can Do

- ❖ Ask a "competent authority" to sign a "proof of print disability" form to verify child's eligibility for membership. (Signed Bookshare forms will also be honored by Learning Ally.)
- ❖ If you experience problems with obtaining proof of disability or AT/AIM, refer to Wrightslaw's "Strategies for AT Negotiations" at: <http://www.wrightslaw.com/info/at.strat.edyburn.htm>
- ❖ Obtain free individual memberships in AIM repositories for student. However, digital textbooks from Bookshare can be ordered only by an organizational member. If student's school is not a member, ask the principal to obtain a membership.



Contact Information

Pam Cook, M.Ed.
Accessible Books & Computers Consulting Services
www.AIMtoAchieve.info
ABCconsult@verizon.net

Joanne Karger, J.D., Ed.D.
Center for Applied Special Technology (CAST)
www.cast.org
Center for Law and Education
www.cleweb.org
jkarger@cast.org
