

HELPING STUDENTS WITH VISUAL IMPAIRMENTS

RESOURCES, TOOLS AND TECHNOLOGY TO FOSTER SCHOOL SUCCESS



Meet the Experts



Gregory Sullivan, Metropolitan State University of Denver

Since 2003, Greg Sullivan has served as Director of the Access Center at Metropolitan State University of Denver and oversees a dedicated staff of professionals that provide an environment of inclusive excellence for students with disabilities. Greg has served on the Board of the Learning Disabilities Association of Colorado and as co-chair of the Colorado Department of Education's Special Education Advisory Committee.



Joe Strechay, American Federation for the Blind

Joe Strechay is the Program Manager for CareerConnect at the American Federation for the Blind. He has years of experience in working with individuals with visual disabilities across higher education and serves as a postsecondary consultant for visually impaired and blind adults and teens.



Cyral Miller, Texas School for the Blind

Cyral Miller has more than 35 years of experience working with students who are visually impaired and has served with the Texas School of the Blind since 1987, coordinating the statewide technical assistance program that serves students with visual impairments and their families.



Dr. Chester Goad, Former university administrator

Dr. Chester Goad is a former K-12 principal and university administrator and current sits on the Editorial Review Board for the Journal of Postsecondary Education and Disability and the Board of Directors for the Association on Higher Education and Disability.

Tracy Bettencourt, Graduate student at Vanderbilt University

Tracy Bettencourt is a graduate student at Vanderbilt University and lost her eyesight in her early 30s as a result of Retinitis Pigmentosa. She's an advocate for individuals with disabilities, teacher and motivational speaker.

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Introduction

The U.S. Census Bureau estimates that more than 650,000 students have visual disabilities in the United States. “These students,” says Joe Strechay, “face unique barriers in the current postsecondary arena.” Academic barriers include a lack of faculty training and the pace of a traditional college classroom, to physical access to a college campus and the ability to navigate an online class.

Addressing each need of students with visual impairments and improving overall accessibility are vital to their academic success. This guide explains how colleges are creating more welcoming and inclusive learning environments, with a sharp focus on assistive technology, campus resources that provide assistive services and tools, information about scholarships for students with visual impairments, and online resources they can access to facilitate academic and career success.

The Visual Disability Spectrum

The National Eye Institute defines visual impairment as corrected vision of 20/40 or worse. However, students with visual disabilities fall into three different impairment categories based on visual acuity, the clinical measure of the eye's ability to distinguish details (such as a letter or number):

Low Vision/Visually Impaired

Low vision is defined as having corrected visual acuity between 20/70 and 20/160 or having a visual field of 20 degrees or less.

Legally Blind

Legal blindness is defined as having corrected visual acuity between 20/100 and 20/200 or having a visual field of 20 degrees or less.

Totally Blind

Total blindness is referred to a lack of light perception and the individual's inability to see anything.

Assistive Technology: Top Tools by Impairment Level

Students with visual impairments may require special tools to access information both inside and outside of the classroom. This assistive technology ranges from low-tech devices such as reading magnifiers to complex high-tech Braille printers. "No matter the terms that may be used to describe a student's visual disability," notes Chester Goad, "there are tools to meet the needs of a variety of levels of vision impairment." The table below outlines example assistive technology by level:

| Impairment Type | Tool | What It Does | Where to Get It | How Much Does It Cost? |
|--------------------------|-----------------------|---|--|--|
| Basic Visual Impairments | Accessible calculator | Accessible calculators offer features from larger buttons and Braille displays to adjustable displays and speech output functions. Different types of accessible calculators are available including standard function, scientific, and graphing. | Accessible calculators can be found in office supply stores and online through specialty suppliers such as Radio Shack, Amazon.com, Blazie Engineering, Orbit Research, and Casio. | Prices vary from \$6.95 for a large button calculator to upwards of \$600 for a talking graphing calculator. |

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|------------------------|-------------------------------------|---|---|--|
| | Pocket magnifier | Pocket magnifiers are compact, handheld lenses that allow individuals to magnify reading materials. Some are illuminated, while others can be converted from handheld to a stand magnifier. | Pocket magnifiers are available online through Amazon.com and specialty suppliers such as IndependentLiving.com. | Prices range from under \$2 to \$200, depending on the features of the device. |
| Legally Blind | CCTV magnification systems | A closed-circuit TV (CCTV) magnification system allows visually impaired individuals to project magnified images of any print material onto a video monitor or television screen using a hand-held or stand-mounted camera. | CCTV magnification systems are typically available directly from the manufacturer, medical equipment distributors, or online from suppliers such as Enhanced Vision, Amazon.com, or The Chicago Lighthouse. | Prices vary from approximately \$150 to \$600 for a hand-held CCTV to \$3,000 or more for color, stand-mounted CCTV systems. |
| | Braille translation software | Braille translation software is used to convert any document into a Braille file that can then be sent to a personal reading device or Braille display. | Braille translation software is generally available from the manufacturers and their distributors such as Duxbury Systems, Optek Systems, Robotron Group, and SensAbility. | Prices typically range between \$200 and \$500, but can reach upwards of \$1,000, depending on the software. |
| Total Blindness | Braille printer | Braille printers connect to computers and allow users to print information in Braille via embossing pins onto heavyweight paper. | Braille printers are available from manufacturers, such as Enabling Technologies Company, via online distributors such as EnableMart.com, | Prices vary and are dependent on the type of Braille printer with prices ranging from \$1,800 to more than \$80,000 for a high-volume printer. |

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|--|-----------------------|--|---|--|
| | | | and some refurbished models can be found on EBay. | |
| | Screen readers | Screen readers are a form of software that allow visually impaired or blind individuals to read the text on a computer screen through a braille display or speech synthesizer. | Screen readers are sold by medical supply companies, online through Amazon.com, vision loss organizations such as The Chicago Lighthouse, through Amazon, EBay and other retailers, and directly from software companies, such as Freedom Scientific--creators of the popular JAWS program. | Prices range from under \$100 to more than \$1,000, depending on the software. |

How Schools Accommodate Visual Impairments

Many schools are taking a number of steps to create more accommodating learning environments for students with visual impairments. Accommodations generally center on increasing accessibility and contributing to a more welcoming campus culture and community in general. According to Greg Sullivan, Director of the Access Center at Metropolitan State University of Denver, colleges and universities often focus their efforts on seven key things:



Staff and Instructor Training

Students with visual impairment succeed educationally when instruction and services are provided appropriately and are tailored to each student's unique needs. Training staff and instructors in inclusive teaching strategies geared toward students with visual disabilities contributes to a better learning experience.



Incorporating Assistive Technology

There is a gap when looking at the depth of technology training around the use of access technology for youth who are blind or visually impaired. Many youth go on to postsecondary with inadequate access technology skills, and this can often create issues to their ultimate success and the number of years toward completion.

✓ **Tape Recording of Lectures**

Visually impaired students can tape record lectures and, if necessary, transcribe the lecture into Braille. Access to lecture information is a reasonable accommodation that disability offices can support and students should work with that office and faculty members on a policy for tape-recorded lectures.

✓ **Additional Time to Complete Work and Exams**

The process of reading, studying, and completing assignments requires more time for students with visual impairments than a sighted student. Students can arrange accommodations that allows for additional time to complete assignments, extended time to complete in-class examinations, or opportunities to take tests in separate settings.

✓ **Free use of Notetakers and Readers**

Taking notes during class lectures is an important part of being able to study and learn the required material. Students can secure the services of an assigned notetaker through their college's disability office. Notetakers are other students who take notes during each class, which can then be converted to Braille or large print for reading. Some institutions may also provide free access to a laptop computer or Braille notetaking device that allows students to take their own notes during class.

✓ **Listening Enhancers and Computer-Aided Transcription Devices**

Students with visual impairments have different levels of hearing ability and may request specialized services that fit their needs. Some students may require speech amplification services in class, while others may need computer assisted real-time transcription (CART). Speech amplification uses an FM transmitter and receiver unit that wirelessly amplifies speech through a microphone worn by the speaker in the class and a listening device worn by the student.

CART is a service where trained professionals attend class and use a steno machine and specialized software to create a word-by-word script of the class proceedings. Those materials are then transcribed into a document a student can use as notes.

✓ **Moving Curriculum Online**

Online learning can create new access opportunities for students, but remain a barrier for students with visual disabilities. "Accessibility of instructional materials, particular online content, can be a major challenge for students," says Sullivan. According to Sullivan, online learning components, such as a learning management system and textbooks, are usually visually based and rely on the student's ability to see the screen and navigate the system using the mouse. Universities are making efforts to improve the accessibility of online learning labs and learning management systems (such as Blackboard) for students with visual impairments.

"Establishing a campus culture of accessibility for students with disabilities shows the institution's commitment to creating a welcoming environment for all students."

Greg Sullivan



INTERVIEW

with Expert **CYRAL MILLER**, Texas School for the Blind and Visually Impaired

What should students with visual impairments consider when selecting a college?

Students researching their college options should do all the same things that sighted students do: determine what they want to study; understand their financial options and limitations; make sure they take the required tests and stay on top of the many deadlines; and also explore what disability access services each college offers. A college with a commitment to diversity and support for alternative instructional strategies can help smooth some of the inevitable bumps in the road, although ultimately it will be up to each student to use their self-advocacy skills to make their needs known.

What are the most important skills students with visual impairments should possess before enrolling in college?

Students who enter college must be self-advocates. They must be able to talk with their professors about their needed accommodation. They must be good problem solvers to ensure that they get the classes they need, overcome barriers that may come up, make friends, and succeed. They must be ready to navigate college life with considerably less support. In addition, they must have skills directly impacted by a visual impairment, including:

- Mobility skills to be able to travel independently or find travel assistance
- Skills for independent living to eat, dress, and groom appropriately
- Good social and communication skills

What are the biggest challenges students with visual impairment face in the classroom?

Access to information is the first hurdle. Once accessible materials are made available, management of information can take more time for a student with visual impairment. It can take longer to use alternative access techniques to, for example, do research online, write a paper and then create the proper final format. Many students in academically challenging programs find themselves studying long hours to keep up.

What steps can students with visual impairments take to find success in the classroom?

Staying organized, being proactive about dialoguing with teachers to be clear on the expectations of the class, not procrastinating on assignments and working hard are recipes for success. Time management is a hugely important skill, not just for school but very critical to get through classes successfully. Students often have to learn how to work with teachers who may be less flexible in providing instruction in their preferred alternate formats.

Finding the Right College

For students with visual impairments, it's important to vet a college thoroughly before making a decision. According to Chester Goad, students should shop around and find a university or college that provides the type of support they need. "Many colleges have a variety of services available to students with disabilities," says Goad, "but every college is different." Goad notes that, while most colleges offer similar disability accommodations, the approach, process and documentation requirements may vary at each university. It's paramount that students familiarize themselves with the campus, staff and disability resources office, and gain an understanding of what services are available, how to request those services, and avenues for recourse if their learning needs are not being met. Sullivan recommends students set information appointments with disability resources officers prior to applying, asking about assistive technology available on campus and exploring the campus to evaluate its physical layout and overall accessibility.



Eligibility & documentation.

Students should contact the disability student services department to learn about the university's documentation requirements to prove disability eligibility. In most cases, students must submit current documentation of their visual disability from a medical professional that outlines the visual impairment, its functional limitations, and a description of treatment before being eligible for services or learning accommodations. These elements are important because universities determine eligibility for disability accommodations on a case-by-case basis and the process of securing those accommodations varies from college to college.



Do they have the proper accommodations for you?

Under federal disability law, universities are only required to provide reasonable accommodations to students, which could differ at each institution. Students should review the list of accommodations for blind and low vision students and ensure they match their learning needs. For example, some universities may offer to convert course materials into accessible formats (e.g. Braille texts, audio recordings), provide Braille signs on campus, or offer free assistive technology devices, such as screen readers.



Easy to request?

As noted, the process for requesting disability accommodations is different at each college. The ease of that process could influence the decision of whether or not to attend a particular institution. Most colleges require students to register with the disability services officer, meet with a department representative on an individual basis to determine the appropriate accommodations, and provide a written request for services. Students should understand it is typically their responsibility to discuss and arrange approved accommodations with faculty and staff.



Committed to accessibility?

Students with disabilities are protected by Section 504 of the Rehabilitation Act and the Americans Disability Act of 1990. Under these policies, all postsecondary institutions must provide equal access both to academic and extracurricular activities and programs. Under Section 508 of the Rehabilitation Act, universities must make their electronic and information technology systems—including online learning materials—accessible to students with disabilities. Sullivan suggests that students review the colleges' websites for accessibility and usability. Doing so gives them insight into the institution's commitment to accessibility.



Grievance policy?

As a student it is important to understand your rights as a college student with a disability. If students qualify for academic accommodations, they should review the college's policies and regulations regarding those accommodations. Before selecting an institution, become familiar with the complaint filing process. Speak with disability rights coordinators and disability service representatives at the campus to learn about student rights and the university's grievance policy.

Quick Tips:

Be proactive. Sullivan says “students should be proactive in seeking out accommodations, beginning the process of registering for accommodations as soon as they are admitted so that their specific needs can be arranged prior to the start of classes. Students may need to consider mobility training to learn to navigate the physical campus.”

Get to know your teachers. Once registered, students should contact their instructors as soon as possible to introduce themselves, discuss potential learning accommodations and get a copy of the syllabus. Receiving class information in advance affords students the time to get accessible formats of the learning material, have time to arrange for note takers, secure other classroom accommodations, and establish a relationship with instructors.

Get connected. Students with visual impairments may feel like it is difficult to gain acceptance on campus or become part of the student community. Students should seek out similar students on campus through the various aspects of college life including social clubs, student government, special interest groups, and campus-based divisions of national organizations, such as the National Federation of the Blind.

“Start early. Do your research on schools, connect with the disability resources office, ask questions about the institution's' commitment to electronic and information technology accessibility and develop self-advocacy and technology skills.”

Greg Sullivan



INTERVIEW: STUDENT WITH A VISUAL IMPAIRMENT

TRACY BETTENCOURT, Graduate student at Vanderbilt University

What's the most challenging part of attending college and dealing with a visual impairment?

The most challenging thing is meeting the deadlines for assignments because of my assistive technology and the length of time it takes to complete a task. It can be very frustrating at times, but it's something we have to deal with on a daily basis and put the time in for it. Constant communication is key and very important especially for a person with a disability and when communication is not there between the student and professor, and then things can be misconstrued.

What types of assistive technology and resources do you use on-campus?

I do the best to use all the resources that I have and with the ones the university lets me have. I use the screen reader called Job Access (JAWS) with speech for my desktop and laptop as well as voiceover on my iPhone and iPad. I also use resources in college such as a scribe, a proctor for exams, notetakers, recorders, and others assistive technology the school makes available, such as a scanner to read technology documents.

What words of advice or support would you want to share with other students with visual impairments preparing to pursue a college education?

My advice to those that will be attending college is to become a self-advocate for themselves and advocate for others. Seek out the resources you will need in order to succeed in your college education.

What are the biggest misconceptions about students with visual impairments?

The biggest misconception that many people have is the blind and visually impaired are not self-sufficient or independent. In reality, we work very hard for what we want to achieve in life. Every blind and visually impaired person has a variety of goals and objectives—just like a sighted person.

Scholarships for Students with Visual Impairments

Scholarships can help defray the total cost of attending college. There are thousands of different scholarships available to student, including those specially designed to support students who are legally blind or have visual impairments. The list below includes a range of scholarship options open only to college students or soon-to-be college students with visual disabilities.

American Council for the Blind:

ACB Scholarship – Between \$1,000 and \$3,500

Requirements:

Applicants must be college students (vocational, entering freshman undergraduate, graduate) who are legally blind, have a 3.3 GPA, and demonstrate community or school volunteer efforts.

Description:

Each year, the American Council for the Blind awards approximately 20 scholarships to college students to financially support their postsecondary education.



Blinded Veterans Association

Kathern F. Gruber Scholarship and Thomas H. Miller

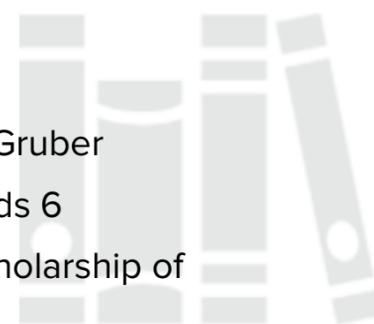
Awards Between \$1,000 and \$2,000

Requirements:

Applicants must be a spouse, dependent child, or grandchild of either a blinded veteran or Active Duty servicemember of the US Armed Forces. At the time of application, the candidate must be accepted to or attending an accredited postsecondary institution (including vocational, business, and secretarial school) as a full-time student.

Description:

The Blinded Veterans Association sponsors two scholarship programs, The Kathern F. Gruber Scholarship and the Thomas H. Miller Awards. The Kathern F. Gruber Scholarship awards 6 scholarships for \$2,000 each, while the Thomas H. Miller Awards dispenses a single scholarship of \$1,000.



Christian Record Services for the Blind

CSRB Scholarships – Amount Varies

Requirements:

Applicants must be legally blind (20/200) with correction and be planning to attend a postsecondary institution as a full-time undergraduate student.

Description:

The Christian Record Services for the Blind offers partial academic scholarships to financially support college students who are blind, with the funding level determined proportionally by the total amount of funding available.



Council of Citizens with Low Vision International

Fred Scheigert Scholarship - \$3,000

Requirements:

Candidates must be a student attending a college, vocational or trade program full-time, be registered either for 12 undergraduate or 9 graduate credits, maintain a 3.2 GPA, and demonstrate low vision (no greater than 20/70 in the better eye).

Description:

The Fred Scheigert Scholarship program awards 3 scholarships of \$3,000 each to full-time college students with low vision to support their educational endeavors at both technical and four-year universities.



Foundation for Sight and Sound

Help America See Low Vision Scholarship - \$500

Requirements:

The scholarship is open nationally to high school students who are visually impaired, have low vision or are legally blind. Candidates must submit an essay, application, and supporting documents in order to be eligible for selection.

Description:

The scholarship is designed to defray the cost of a student's college or vocational education and the recipient is selected by a group of independent judges selected by the Foundation for Sight and Sound.



Georgia Council of the Blind

Al Camp Memorial Scholarship - \$1,000

Requirements:

Students must be legally blind or sighted students who are financially dependent on parent(s) who are legally blind. They must be accepted to an accredited program of study at a vocational or technical school, community college, or four-year university. Applicants must be residents of Georgia and must submit an application and supporting documents to be eligible.

Description:

The Al Camp Memorial Scholarship is designed to support the postsecondary academic endeavors of students with visual impairments or those with parents who are legally blind.



Lavelle Fund for the Blind

Brother James Kearney Scholarship Program for the Blind – Up to \$15,000

Requirements:

To be eligible, candidates must be a legal resident of the US, be legally blind or have a recognized visual impairment, demonstrate financial need, and be a full-time student in good standing at one of the 11 approved and participating colleges.

Description:

The Brother James Kearney Scholarship Program was designed to help students who are legally blind attend an approved private college in Northeastern New Jersey and New York.



Lighthouse Guild

Lighthouse Bound Scholarship - \$10,000

Requirements:

Applicants must be a US citizen, provide proof of blindness, submit transcripts and standardized test scores, provide three letters or recommendations and write two personal statements.

Description:

The Lighthouse Guild supports 20 annual scholarships up to \$10,000 each to support the college education of legally blind students, regardless of financial need. One additional \$10,000 scholarship is made available to a legally blind student attending or applying to graduate school.



National Federation of the Blind

NFB Scholarship Program – Between \$3,000 and \$12,000

Requirements:

Applicants must be legally blind (20/200 less) corrected, a legal resident of the United States or Puerto Rico, must participate in the National Federation for the Blind national convention, must be enrolled as or planning to be a full-time student in a postsecondary institution in the United States, and attend all NFB scholarship activities.

Description:

The National Federation of the Blind offers 30 competitive, merit-based scholarships for legally blind college students. The scholarships include the following:

- Kenneth Jernigan Scholarship: 1 scholarship - \$12,000
- Charles and Melva T. Owen Scholarship: 1 scholarship - \$10,000

- The Oracle Scholarship for Excellence in Computer Science: 1 scholarship - \$8,000
- The Oracle Scholarship for Excellence in a STEM Field: 1 scholarship - \$8,000
- Larry Streeter Memorial Scholarship: 4 scholarships - \$5,000
- National Federation of the Blind Scholarships: 3 scholarships - \$5,000
- Charles and Melva T. Owen Memorial Scholarship: 1 scholarship - \$3,000
- Pearson Scholarship: 1 scholarship - \$3,000
- Adrienne Asch Memorial Scholarship: 1 scholarship - \$3,000
- E.U. and Gene Parker Scholarship: 1 scholarship - \$3,000
- National Federation of the Blind Scholarship: 18 scholarships - \$3,000



United States Association of Blind Athletes

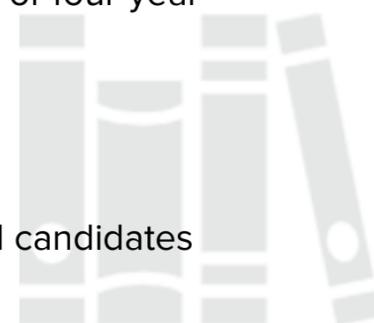
ICU Foundation Valor Achievement Award - \$500

Requirements:

Applicants must be legally blind, a current member of the USABA, be enrolled in a two- or four-year college program, and maintain a cumulative GPA of at least 2.5.

Description:

The ICU Foundation Valor Achievement Award is awarded to a legally blind athlete and candidates must submit a short cover letter and personal essay along with their application.



Resources for Students with Visual Disabilities

There are numerous resources available to students with visual disabilities outside of the student services office at their university. The list below includes nonprofit organizations, university-sponsored agencies, and other groups that provide a range of services to students with visual impairments.

American Council for the Blind

The American Council for the Blind is a membership organization that advances legislative policy—at the state and national levels—to help those with visual impairments.

American Foundation for the Blind

The American Foundation for the Blind is a national nonprofit organization that offers a variety of service and support to individuals with visual impairments, such as online learning programs, product evaluations, and family and community resources.

American Printing House for the Blind

The American Printing House for the Blind is a nonprofit organization that produces and prints educational and workplace support materials for people that are visually impaired.

Associated Services for the Blind and Visually Impaired

The Associated Services for the Blind and Visually Impaired is a nonprofit organization located in Philadelphia, Pennsylvania and offers services such as training and education materials to support those with visual impairments.

Association for Higher Education and Disability (AHEAD)

AHEAD is a professional organization with 2,800 members throughout the world that supports individuals in higher education through training, workshops and consultations.

Blinded Veterans Association

The Blinded Veterans Association connects blinded veterans to local services, including employment training and job placement services, to help them overcome the challenges of living with sight loss.

CANnect

CANnect is an online learning consortium created by the Carroll Center for the Blind, The Gibney Family Foundation, and the Washington State School for the Blind and offers online learning courses, help with accessibility and professional training opportunities.

Center for Parent Information and Resources

The Center for Parent Information and Resources is an online hub of information and resources for parents of children with disabilities, including visual impairments.

HEATH Resource Center at the National Youth Transitions Center

At George Washington University, HEATH is an online resource hub about postsecondary education for individuals with disabilities.

Learn Ally

Learning Ally is a nonprofit organization that supports students with visual impairments to succeed in education and offers a range of services, such as one of the largest collections of audio textbooks and literature.

National Association of Blind Students

Developed by the National Federation of the Blind, the National Association of Blind Students has state offices throughout the country, offers networking opportunities, and advocates on the behalf of students with visual impairments.

National Center for Blind Youth in Science

Created by the National Federation of the Blind, the National Center for Blind Youth in Science provides opportunities for students with visual impairments to participate in science through programs, access to learning materials and curriculum, and a national mentoring program.

National Federation of the Blind

The National Federation of the Blind has over 50,000 members and works to integrate those with visual impairments into society on an equal basis through scholarship programs, public education efforts, referral service, and employment assistance.

National Science Teachers Association

The NSTA offers a range of resources to make science learning more accessible to students with disabilities, including those with visual impairments.

Perkins Scout

Developed by the Perkins School for the Blind, Perkins Scout is an online clearinghouse with information about a variety of items related to visual impairments, including assistive technology, independent living, and literacy and braille.

The Carroll Center for the Blind

The Carroll Center for the Blind was founded in 1936 and offers a variety of programs, including workplace development, assistive technology training, and vocational programs to support individuals with visual impairments.

The Hadley School for the Blind

Founded nearly 100 years ago, The Hadley School for the Blind is a nonprofit organization that provides tuition-free courses, including online classes, to individuals with visual impairments.