

Deafness 101

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Definitions and Communication Methods

No two people with a hearing loss experience the loss exactly the same way. There are several types of hearing loss and factors that determine the impact of the hearing loss. Language acquisition is affected (when deafness occurs prior to language development, roughly two years of age). Because the usual means of acquiring language through auditory means is affected by hearing loss, what needs to happen is 'visual' learning in place of 'auditory' learning. A student's ability to learn language is dependent on several factors:

- age of onset
- type of hearing loss
- residual hearing
- exposure to and ease of primary language acquisition
- absence of cognitive processing disorders

Deaf people vary widely in their hearing and language abilities. Understanding the nature and extent of the hearing loss and how it affects the student is imperative in providing appropriate accommodations. Often the best source of learning what accommodations are needed is to ask the student who needs the accommodation. Communication styles are determined by such variables as:

- age of onset of the loss
- type of hearing loss
- the age training began for any residual hearing
- type of training provided

Figure 1. Sign Language Modalities

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Most deaf people use one or more visual methods for communication. **American Sign Language** (ASL) is a language with its own grammatical structure and syntax. American Sign Language is the preferred language among deaf people. There are other sign systems such as manually coded English (MCE) which combine fingerspelling and sign language following the syntax of English. Other sign systems are L.O.V.E. and S.E.E.1 and S.E.E.2. See figure 1 for the continuum of various sign language modalities.

Some deaf people with little or no usable hearing communicate by speech and lipreading rather than sign language. Others who are deaf with some usable hearing have learned to benefit from both visual and auditory communication, with emphasis on auditory skill development, speechreading, and speech training. They may use oral-aural communication, which uses a combination of speechreading / lipreading, usually with amplification (personal hearing aids or Assistive Devices).

Another method of communication may be **Cued Speech**, a visual communication system with hand cues; or they may use Simultaneous Communication; which combines sign language and speechreading in English word order. Another approach is **Total Communication**, which utilizes every communication modality available to the person (speech, lipreading, sign language, fingerspelling, etc.). In some cases, profoundly deaf persons have had excellent speech training which gives them the appearance of being less deaf than they are.

A person who is hard of hearing perceives sound less well than the average person but has sufficient residual hearing to benefit from auditory-based methods of communication, sometimes with visual supplements. Some people who are severely hard of hearing have learned to use oral-visual communication, combining speech, speechreading, use of personal hearing aids, cochlear implants and other devices. Others with mild or moderate losses use minimal amplification, such as amplified telephones. Many others have hearing losses so mild that they do not seek accommodations. Most losses are present at birth, while others lose their hearing ability due to illness or accident.

The term **hearing impaired**, objectively, refers to anyone having some level of hearing impairment which results in receiving less sound, ranging from very slight loss to profound deafness. It is often used in this context to refer to any amount of hearing loss. Other terms frequently used in documenting hearing disability are:

- **Pre-lingual deafness**, incurred before spoken language has developed (usually before the age of two).
- **Post-lingual deafness**, incurred after early exposure to and use of the spoken language (usually after the age of two).

- **Pre-vocational deafness**, a severe and profound degree of hearing loss before the age of 19.

Age of onset refers to the actual age the hearing loss is determined and therefore, what communication modes are implemented.

There are three basic types of hearing loss: **sensorineural deafness** (nerve deafness), and **conductive** and **mixed loss**. With the sensorineural loss, the ability to understand speech is thwarted due to the breakdown of communication from the cochlea to the brain along the nerve. A person with this loss may be able to hear sounds, but has great difficulty discriminating speech sounds. Speech is garbled and muffled. Amplification does not make speech clearer for someone with a nerve loss. The brain will continue to receive garbled messages.

Conductive hearing loss means that the loss is attributed to faulty sound transmission within the middle ear. The bone, malleus, and incus are responsible for sending the sound waves to the inner ear. (See figure 2 below). An individual with a conductive hearing loss benefits well from amplification in most cases and has a varying range of hearing and speech discrimination ability. Hearing aids most often are helpful in assisting conductive hearing loss due to the need for amplification if the fault is in the middle ear mechanism.

Figure 2. The Ear

A mixed hearing loss indicates the presence of both sensorineural and conductive hearing losses. This individual would have a middle ear mechanical fault and nerve transmission damage from the cochlea to the brain.

Speechreading (or lipreading) may help to clarify speech sounds. It is not always the case, as deaf people vary in their ability to lipread. Approximately 30 percent of spoken speech is seen on the lips. Lipreading skills rely heavily on being able to fill in the remaining 70 percent of gaps using visual cues (nonverbal communication). Having a general idea of the subject matter being discussed and possessing adequate English language skills contribute to the success of lipreading. This is a skill and it is determined by many contributing and individual factors.

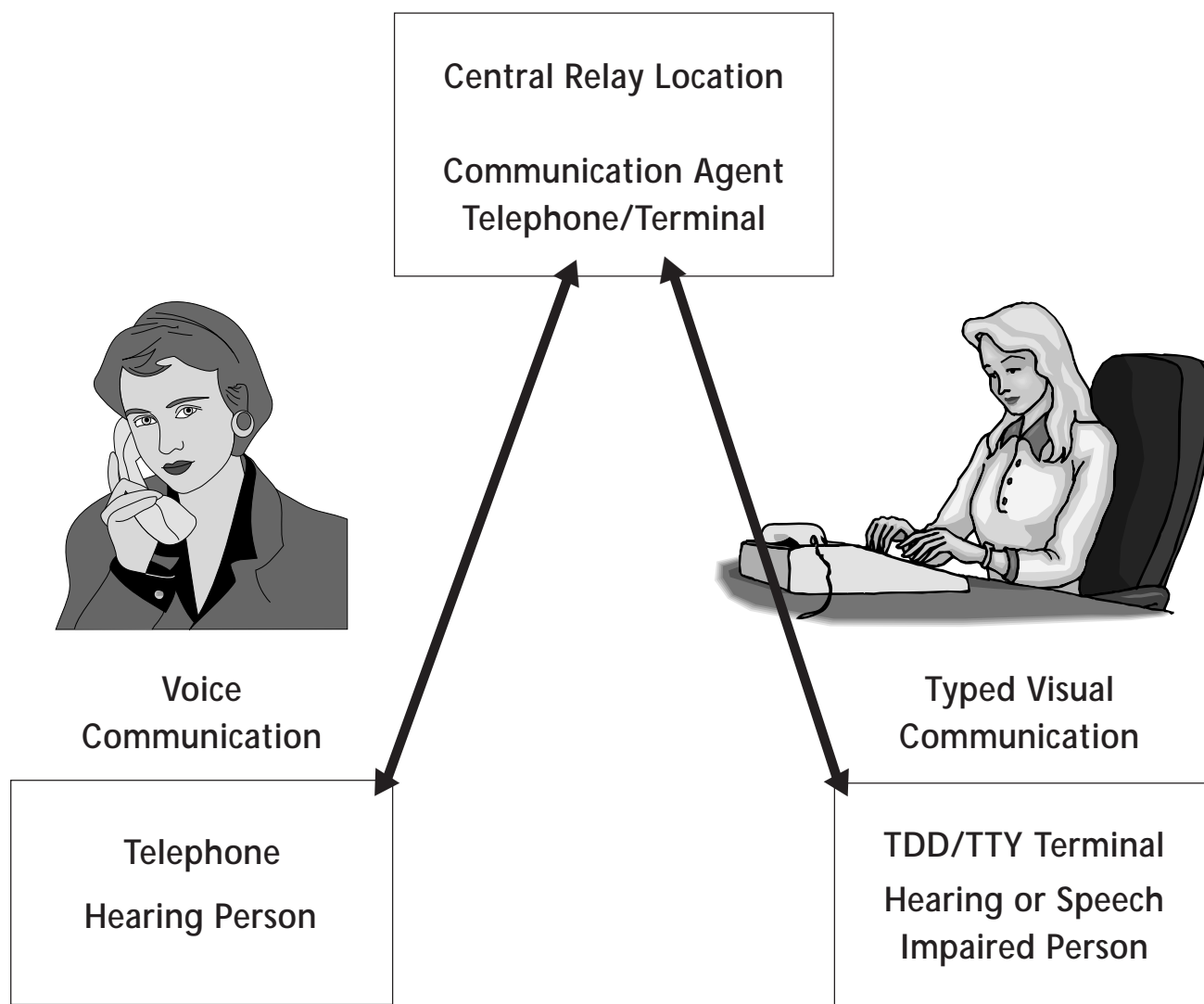
Most often, hard of hearing individuals who can benefit from amplification, find hearing aids to be helpful. Deaf people, with little or no hearing, usually do not. **Assistive Listening Devices** (ALD) are another method that work by amplification of sound which benefits someone who is able to hear and understand speech if it is loud enough and clear enough. The ALD works in the same way as a hearing aid, allowing speech sounds to be controlled by the user through volume control. (See glossary for definition of ALD).

The basics for its use are: The instructor or speaker wears a lapel mike with a transmitter and the student wears a receiver and magnetic coil along with the personal hearing aid that picks up the radio waves as the speaker speaks. Background noise is reduced, allowing the wearer to hear only the speech of the speaker, greatly enhancing the probability of understanding what is being said. Background noise is the main source of distraction for hard of hearing individuals. Personal hearing aids amplify all sounds, not just speech sounds. (Various types of ALD's can be found in the heading under ALD).

Another method of communication can be **real time captioning**. This is more often used in large audiences rather than for individuals. When the speaker talks, an individual with the necessary equipment very similar to a court room reporter steno machine, types into the machine which converts the typed message into words which are then projected onto a large screen. The audience can read the message of the speaker immediately after it is spoken. For an individual with good reading ability, this is a good communication tool. Also, it is a good alternative for someone who needs visual communication but does not possess sign language skills, and who thus cannot benefit from an interpreter.

Although real time captioning is primarily used in larger audiences and often seen in conjunction with simultaneous interpreting, a similar approach can be utilized in a classroom or meeting room. A smaller screen allows a single or few individual(s) to read what is being discussed. This works essentially the same way

Figure 3. How a TTY Relay System Works



as larger scale captioning. If a projected screen is not needed, a simple computer screen will work. The deaf or hard of hearing individual will sit alongside the captioner and read the message. In most cases, a laptop computer is used for easy proximity and portability.

Lastly, is the **National Dual Party Relay System**. Mandated by the ADA, each state is required to have a relay system whereby deaf, hard of hearing and speech impaired individuals can access the telephone system. This relay system allows communication between people who can hear and people who cannot hear or speak over the regular phone. Basically, it is a three-way communication system where the operator has access to both the phone and the typed messages from a TTY user. Whatever the TTY user types out is relayed by voice to the hearing individual on the other end and vice versa. Figure 3 shows how the system works.

Each state has a toll free (800) number accessible for both TTY callers and voice phone callers. The relay program is sponsored by phone customers in each state by a very small charge each billing statement. This in turn is a free service to all users, 24 hours a day, 365 days per year. (See appendix 1 for relay numbers in your area).

Institutional and Student Responsibility

Services for students with disabilities are made available to postsecondary students through a different process from secondary education. For secondary education, it is the responsibility of the schools to provide “free and appropriate education” in the least restrictive environment for each child regardless of the handicapping condition and to initiate proceedings where evaluation shows the student need. This responsibility is mandated in the **P.L. 94-142**, the Education of the Handicapped Act and Amendments of 1975. On the postsecondary level, the responsibility lies with the student to request support services.

When the student presents documentation identifying their needs, and ideally the recommended accommodation, it is then the responsibility of the college to provide what is needed. This is based on **Section 504** of the Rehabilitation Act of 1973 (P.L. 93-112), together with the implementing Regulations of 1977, which prohibit discrimination solely on the basis of handicap. The regulations apply to postsecondary education, training, and employment programs that receive fed-

eral funds in the form of student aid, research grants and other programs, and must not discriminate against students with a hearing or any other disability.

The **Americans with Disabilities Act** of 1990 has further strengthened the provision of support services to students with disabilities and the responsibility postsecondary institutions have in meeting the needs of students with disabilities who apply for admission and accommodation. In general, the ruling of the ADA specifies that students with disabilities are to receive same or equal services as their peers. Exactly how accommodations are provided vary widely with the individual's specific needs and with available resources.

Options in Academic Postsecondary Settings

Today there are an extensive number of programs nationwide that provide services and support for deaf and hard of hearing students. More programs being developed today as more and more students are exercising their right to the education of their choice. Deaf and hard of hearing students, as any other student without a disability, can choose between campuses which have smaller student populations or larger colleges and universities where students would find larger numbers of students with similar interests. Potential postsecondary deaf and hard of hearing students can choose from any of these settings:

Mainstreamed Programs are postsecondary colleges or universities which offer an array of support services for students with disabilities to equalize their access to all courses and college events. All colleges are mandated by law to provide support services for students that apply to their colleges. There may be minimal to maximum services provided without a formal program serving deaf and hard of hearing students. In a school that does not have a formal program, the enrollment of deaf and hard of hearing students is usually smaller than those facilities with formal programs.

Federally Funded Centers consist of programs where a sizeable community of deaf and hard of hearing students are enrolled. A specialized program for deaf and hard of hearing students is incorporated into the mainstream academic community. There are four (4) federally funded regional centers serving students who are deaf and hard of hearing. Each center serves a specific designated region of the country. Within each region are affiliated programs for deaf and hard of hearing students. They are as follows:

Postsecondary Education Consortium
(Southern region)

University of Tennessee-Knoxville
2229 Dunford Hall
Knoxville, TN 37996-4020
Phone: (865) 974-0607 v/t

Midwest Technical Assistance Center
(Midwest region)

Saint Paul Technical College
235 Marshall
St. Paul, MN 55102
Phone: (612) 221-1337 v/t

Northeast Technical Assistance Center
(Northeast region)

Rochester Institute of Technology
52 Lomb Memorial Drive
Rochester, NY 14623
Phone: (716) 475-6700 v/t

National Center on Deafness
(Western region)

California State University at Northridge
18111 Nordoff Street
Northridge, CA 91330-8267
Phone: (818) 885-2611 v/t

Federally Funded Colleges/Universities are those that receive direct financial sponsorship from the federal government. The two federally funded programs are; Gallaudet University in Washington, D.C., a liberal arts university, and the National Technical Institute for the Deaf (NTID) in Rochester, New York. These schools enroll both national and international deaf and hard of hearing students. Sign language is the preferred mode of communication by students and faculty. These programs are all-inclusive and designed specifically for deaf and hard of hearing students.

Support Services for Deaf and Hard of Hearing Students

Students who are deaf or hard of hearing most often need and utilize academic support services for college success. These accommodations vary from student to

student. Some resources and accommodations are more easily provided than others. Often it is a combination of both. This section will address the most commonly needed services for deaf and hard of hearing students. This section may not prioritize any needed service over any other, realizing each student needs and resources vary.

COUNSELING SERVICES

Each student who enrolls in college for the first time or after a long absence, needs the support and guidance of a counselor. Many colleges utilize interpreter services for students who are deaf and hard of hearing upon their visit to a counselor on campus who services all students. It is not mandatory that there be a program counselor for deaf and hard of hearing students and who can communicate with students in a comfortable communication mode. What is imperative, however, is effective communication. This means, in the spirit of the law, that the student's communication preferences are clear and understood by that individual student. Some students can communicate quite effectively by lipreading, still others cannot effectively follow communication without sign language. It may seem that faculty and staff very often make assumptions as to what constitutes effective communication. There may be a possibility of communication, although not necessarily effective.

Counseling plays a key role in helping students to develop a realistic educational plan. Guidance is provided for career decisions, academic challenges, independent living and personal needs. Counselors often serve as advocates for student and faculty matters and between funding sources, such as Vocational Rehabilitation. Career assessment and placement testing are initial tasks that counselors often find helpful in assessing a particular student prior to advisement. Counselors often coordinate the support services that a student needs in order to be academically successful.

From a pivotal point, the counselor oversees the entire academic program for the student. Sometimes, a student may present a need that requires intensive therapy or treatment and therefore requires outside assistance. For further guidance on mental health programs and services in your area, contact your statewide mental health office or your local deaf services. Students requiring interpreting services while receiving treatment are covered by federal and state laws. Most mental health professionals who work exclusively with deaf and hard of hearing people are required to be able to sign. However, mainstreamed treatment poses a separate challenge and thus, interpreting services will be needed. Contact your local mental health professional for guidance.

INTERPRETING SERVICES

One of the most critical components for any program for deaf and hard of hearing students is interpreting services. The success of a student's educational experience is greatly dependent on the quality and availability of interpreting services. Interpreters function as a means of enhancing communication between a deaf or hard of hearing student and a hearing person(s) who does not use sign language. As any interpreting role indicates, the importance is to bridge the communication gap between two or more people using a different language.

Some programs for deaf and hard of hearing individuals utilize part-time interpreters on a contract basis depending on the need for interpreting services. Other programs have full-time interpreters on staff. Still others utilize both full-time and part-time interpreters. This varies with the size of the program and the student enrollment. The extent and skill of interpreting services needed for each student is dependent on the enrollment and curriculum requirements. Often health related programs require long hours of lab and clinical practicum. Remedial programs where there may be several students together in class utilizing a single interpreter require less scheduling and frees up interpreters for other assignments.

There are several types of interpreting services that may be used in the academic setting. They are listed as:

- **Sign language interpreting** - ASL, signed English, or pidgin, the interpreter 'visually' relays the spoken word to the student in whatever sign system is agreed upon.
- **Oral interpreting** - the interpreter 'mouths' the words spoken for the deaf or hard of hearing student. Sign language may sometimes be used as a filler.
- **Tactile interpreting** - is used by deaf-blind students who need to "feel" the formation of signs that the interpreter is making. The student places their hands on the interpreter's hands while interpreting. On-the-palm printing can also be used by some students.
- **Low-vision interpreting** - is used by deaf / low-vision students who cannot see the interpreter from a distance. The interpreter and student face each other at a closer distance to enable the student to see the interpretation.

NOTETAKING SERVICES

Notetaking services are a vital service for students who are deaf and hard of hearing. Watching an interpreter or reading the lips of an instructor does not allow

the student time to take notes. Many students use notetakers on a regular basis to supplement interpreted class lectures and labs. For some classes that utilize “hands-on” instruction, notetaking may not be as important as in a class where a lecture is taking place.

Notetaking is a service that must be rendered when requested by a student with a documented disability, (see student responsibility, page 18). Some commonly used methods of notetaking are as follows:

- **Volunteer notetaker** - usually another classmate agrees to share notes with the cost of supplies and copies absorbed by the deaf or hard of hearing student.
- **Paid notetaker** - usually a notetaker that is hired by the disability services unit to take notes for a student. Often this is someone that is not a classmate.
- **Stipend notetaker** - another classmate agrees to take notes with compensation through the disability services unit. Compensation is determined by a fee per credit hour of the course. At the end of the semester, the notetaker is compensated for notetaking.
- **Recorded notetaking** - means that a lecture is recorded on tape and then brought to the disability service unit to be transcribed into printed format. This can be done on a daily basis. However, when it is not feasible to transcribe the recorded information efficiently, it may be best to use this method for a class that meets once or twice per week rather than daily.
- When there is no notetaker available, **instructor’s notes** can be obtained from an instructor if the instructor has agreed prior to the class.

Students are expected to supply their notetaker with paper and carbon paper as needed. The cost of copies are the responsibility of the student. Carbonless paper can also be purchased, although it is more expensive and, if subjected to sunlight, will eventually lose its capability as a carbon.

TUTORIAL SERVICES

All colleges understand the importance of academic success for their students. Tutorial services should be available to supplement classroom learning. Tutorial services at some colleges are offered through an open lab facility for all students regardless of subject. Still others have labs for a specified subject, such as English or writing. Some departments offer their own lab for their specific curricula. A tutorial lab for deaf and hard of hearing students or all students with disabilities can be another approach. The resources available at a given

institution along with the students needs, will determine the feasibility of any tutorial supplement.

Some suggested guidelines for providing and maximizing tutorial services on campus are:

- If there is a **campus-wide tutorial center**, encourage students to use this center. Accommodations such as interpreter services will need to be prearranged.
- **Peer Tutoring** utilizes a classmate as a tutor. The instructor can often assist in identifying a student who can function as a tutor for the student in need. Another student who may be deaf or hard of hearing can be an excellent tutor or study companion.
- **Instructors** are another resource where students can get tutoring. Both the student and the instructor will need to determine the specifics of the tutoring and request the accommodations needed.
- **Disability Services professional staff** can tutor students in a given subject, if knowledgeable. If there is a lab facilitator that can sign, that individual can be assisted by other staff such as interpreters and counseling staff when more tutors are needed.

Although, tutorial services are not mandated by any laws, it is an imperative supplement for many students, whether disabled or nondisabled. Keep in mind that the main goal is to ensure that students receive equal and quality services that will contribute to academic success.

ASSISTIVE LISTENING DEVICES (ALD)

Most students who use a hearing aid have difficulty understanding speech due to competing background noise. Hearing aids have a tendency to enhance all sounds at the same time, thereby drowning out the sounds of speech. Several amplification systems are available to improve hearing ability in large areas, such as lecture halls and auditoriums, as well as in interpersonal situations (group discussions, and instructor conferences). These systems work by delivering the speaker's voice directly to the ear (with or without personal hearing aids), thus overcoming the negative effects of noise, distance, and echo, thereby improving understanding ability.

There are four (4) types of assistive listening devices and systems (ALDS) available. They are listed below:

FM Devices

FM is an abbreviation for “**frequency modulated**” radio waves. FM systems consist of a transmitter and a receiver. With a microphone and transmitter, sound is converted to electrical energy. This energy is “modulated” on a specific FM radio frequency where it reaches the receiver which is tuned to the same frequency. The receiver, worn by the student, “demodulates” the radio signal and the electrical energy is then delivered to the ear of the listener. This can be accomplished in two ways; by using a earphone headset, or via a hearing aid with a “**T**” (**telephone**) **switch** and a magnetic neckloop. Using a neckloop requires the conversion of electromagnetic energy to electrical energy and then to acoustic energy. It sounds complicated when explained, however, it is a fairly easy system to use. An FM system provides good sound quality and is very effective for those with severe to profound hearing loss. Because the radio waves can penetrate walls, precaution must be taken to use separate frequencies in adjacent rooms.

Infrared Devices

An infrared listening system transmits sound via invisible lightwaves. An infrared transmitter can be directly connected from a sound source (e.g. microphone, T.V. jack). Speech enters the microphone where it is connected into the electrical energy, and then made louder at the amplifier. The electrical signal then enters the transmitter. At this point, the transmitter using lightwaves sends the electrical signal (speech) to the individual’s wireless receiver where it is again changed back to electrical energy and thus, into sound. A neckloop with an electromagnetic coil can also be used with this system, if one has a hearing aid with a “T” switch. Individuals with a mild to moderate hearing loss seem to benefit more from the use of an infrared amplification system than someone with a severe loss. Since lightwaves do not pass through walls, transmission is confined to the room containing the sound. Additionally, infrared systems are not affected by other nearby radio frequency signals, though clear transmission can be affected by a large amount of sunlight.

Induction Loop Devices

This system employs the use of a coil of wire that transmits electromagnetic energy. An audio loop transmits sounds via a loop of wire that surrounds a seating area. There are two types of loops; a room loop, or a neckloop. Both of these coils have wires through which electricity can flow and be converted into magnetic energy and picked up by the telecoil in a hearing aid. The user’s hearing aid must have a “T-switch” on it. The “T-switch” functions like an antenna, picking up the electromagnetic energy and transferring it to the hearing aid which converts it into sound. A loop can be coiled around a room, desk or a chair. The person needing the benefit of sound must be within this specific area in order to hear. Coils sometimes malfunction from damage to the coil. In these cases, sound will not be converted as needed. Additionally, the use of a large loop can be problematic in some settings where mobility and safety may be an issue.

Hard-Wired Devices

Unlike the other systems, hard-wired systems simply require a direct connection between the sound source and the listener. This is accomplished by a direct plug-in connection or through the use of a microphone. Basically, the listener is separated from the sound source by the length of a cord that is directly connected to their hearing aid. Not all hearing aids have the capability to be hard wired to a microphone. Without this feature, this system would not be workable. Hard-wired systems are not practical for large rooms, but in one-on-one situations they work well and are inexpensive. Like the wireless systems, hard-wired systems make it easier to understand speech when it is presented in a noise filled or large area. Sound is directly sent to the listener bypassing these obstacles to improved hearing. Sound is made louder through the volume control on the hearing aid. This system works very well for those with conductive types of hearing loss.

Tape Recorders

Tape recorders can be beneficial for some students with mild hearing loss. A student with this type of hearing loss is not likely to utilize a sign language interpreter and must focus intently on the speaker. Having a tape for backup to play later can enhance the acquisition of a lecture. Again, this type of benefit would only be helpful for a person who can hear and understand the recorded message. However, in some situations an interpreter can interpret the taped message or it may be transcribed by hand by another individual.

TESTING ACCOMMODATIONS

In general, not all students require testing accommodations. However, for those that do, there are several methods that are helpful. A student must make such a request based on their disability. This can be done through the use of a documentation of disability form. This request along with any other supporting evidence of the need for testing accommodations, such as psychological, medical or educational assessment may suffice for this purpose. See Appendix 2 for a sample documentation form. Still, there are situations where the counselor, the student, and the instructor must together decide that evidence shows a student needs testing accommodations. Each situation will need to be evaluated individually.

Some commonly requested testing accommodations:

Extended Time

Due to reading and language difficulties, some students who are deaf or hard of hearing may need more time to complete their tests. In the event that a student has a learning disability or a visual impairment, extended time is crucial for test completion. Time extension may be time and a half, double-time, or even unlim-

ited time. This is determined by the student, counselor, and instructor based on the specific academic needs of the student. Because some class periods would not allow for time extension, other arrangements are needed to ensure the student is given adequate time to complete the test. This can be accomplished by designating a room in the disability office for student testing monitored by the counselor or using a campus-wide testing center, if one is available. Some testing centers have separate testing rooms which are distraction-free. This is an excellent choice for a student who has an attention disorder. It is imperative that the instructor's specific instructions such as time allotment, and use of any supplements to the test, be clearly specified in writing for the testing monitor.

Interpreted Test

For some students who have difficulty with reading, the test can be interpreted from English into ASL. An interpreter can assist the student by first reading the test questions and signing it in ASL. The student then will reply in ASL. The interpreter will translate what the student has said in ASL into English. For some tests, this may be an ideal solution when a student is being tested on what he/she knows about the subject. When a student is weak in reading, the questions are often misunderstood and answers are not correctly given even though the student knows the answer. Discretion must be taken to ensure that the student is not penalized for lack of reading skills when that is not the objective of the test. However, when the test is a test of English comprehension and expression, interpreted tests are not utilized, except for instructions, if needed.

Distraction-Free Testing

Some students who are deaf or hard of hearing have additional disabilities such as an attention deficit disorder which can interfere with test taking. One key factor to assisting this student, is to eliminate any possible distraction for the student. In a typical classroom, distraction cannot be controlled as in a separate room. A distraction-free room can be designated anywhere on a campus where there is an opportunity for someone to monitor the test. A room in the disability services unit, testing center, instructor's office, etc. may be considered. In general, deaf people are sensitive to "visual noise" that goes on in a typical classroom environment. A student who is deaf or hard of hearing without a secondary attention disability, may find it much more comfortable to take a test in a private testing room. This should be determined by the student, counselor, and instructor, if a request is made for this accommodation.

CLASSROOM ACCOMMODATIONS

The key element for any classroom accommodation is to ensure that students who are deaf or hard of hearing have equal access to the classroom experience. A visual learning experience is a vital accommodation. This can be obtained in a

variety of means. Some of the more common means are discussed in the next few categories.

Priority Seating

Priority seating means that the student who is deaf or hard of hearing needs to determine the best seating arrangement depending on his/her individual needs. For the majority of students with hearing impairments, sitting in the front of the classroom allows the best opportunity for visual learning. If a student uses a sign language interpreter, then the front seating usually provides an ideal situation where both the instructor and the interpreter can be in view.

A student who is hard of hearing may choose the front seating as a means of being able to hear the instructor's voice and/or read the instructor's lips. Also, for taping the lecture with a tape recorder, sitting closer to the instructor is more effective. If a student uses an Assistive Listening Device, and does not need to lipread the instructor, there is more flexibility in seating as the ALD will enhance spoken speech regardless of distance.

Visual Aids

Visual aids are instrumental in enhancing learning for all students, especially for students who require a visual learning experience. Films, videos, slides, drawings and use of the chalkboard are all visual aids. Handouts from the instructor reinforce the information that is discussed in class. Syllabi, study guides, course overview and outline for lectures and tests are all important elements of reinforced learning. Not to be overlooked, is the key role of notetaking. Notes allow a student to replay the classroom experience as needed and to have it reinforced.

Films

Many films that are used in a college setting are not captioned. This poses a problem for students who cannot understand the film without some visual means. Where possible, films or videos should be purchased with captions. Often instructors are unaware of the issues that arise for a deaf or hard of hearing student when a film is shown in class without preparation. Most often instructors may be unaware of the captioned films as an alternative format.

Film substitutions can be made when a newer version of the film is made with captions. Films made since 1990, after the passage of the ADA, are more likely to be available in captioned format. Captions may be presented either in closed or open captioned formats. Closed captioned films require a decoder to acquire and decode the captions for on-screen display. Open captioned means that the film has captions that are always visible on the screen similar to foreign film subtitles.

When it is not possible to secure a captioned film format, using an interpreter to interpret the film is a reasonable option, provided that the interpreter can be seen by

the deaf or hard of hearing student. A small light, leaving on an overhead light, or allowing ambient light from a window or door are optional ways to ensure that the student can see the interpreter. The ideal situation is one in which the instructor notifies the interpreter ahead of time when a film is to be shown, thereby making it possible for the interpreter to come prepared with a light or to make adjustments in the room prior to the film being shown.

Field Trips

On occasion a class field trip is required. The classroom interpreter or a substitute interpreter should accompany the student(s). Every effort needs to be made to allow time for advance planning for an off-campus trip. Often there are regulations that must be followed before approval is granted for off-campus activities. If the student does not use an interpreter for communication, it will be necessary for that student to indicate to the instructor or speaker what type of assistance is needed. Students using an Assistive Listening Device can use this system for a field trip. For some types of trips, using a notetaker may be appropriate.

Lab

Often in conjunction with classroom learning is the laboratory experience. This is often an expected or required class supplement. Depending on the needs of the student and the type of lab work being done, the counselor can assist the student with identifying the best strategy. Some labs contain interaction with the instructor or assistant. Others require work groups of several students where communication would be a factor. Still other types of labs are solitary. Some labs may have a period of lecture at the beginning, midway, or toward the end of the period. Knowing the situation ahead of time is vital when trying to determine when and where an interpreter is needed.

For students that require the assistance of an Assistive Listening Device, this can be implemented the same way as in a classroom setting. When a lecture accompanies the lab, or the lab is intensive with lots of new information, a notetaker is a good option for the student. Keep in mind that it is difficult for anyone to do more than one thing at the same time (e.g., laboratory assignments, focus on the interpreter, etc.). It is more difficult for a student who is totally dependent on visual cues. By eliminating the stress of trying to accomplish several things at once, the deaf or hard of hearing student can focus on the assignments required.

ACCOMMODATING DEAF AND HARD OF HEARING STUDENTS IN COLLEGE

Deaf and hard of hearing students are just like any other students who come to college. There are some specific issues arising out of communication needs that become evident. Essential to getting started in college on the right track is the

cooperative teamwork of the student, counselor or coordinator for disability services, and the instructor. Other professional staff such as interpreters, notetakers and tutors are crucial in assisting the student to be successful. The key responsibilities of each are discussed below.

Student Responsibility

Class attendance is crucial for successful academic completion. When a student who uses an interpreter will be absent from class, notifying the designated interpreter is expected. This is crucial when part-time interpreters are being paid for their time in class. The interpreter can be notified ahead of time when any change is expected. However, there are times when things happen in a way that do not allow the interpreter to be notified. When at all possible, prior notification is expected by calling the office for disability services. The interpreter and/or notetaker is there as a supplement to the class room experience, not as a substitute. If a student misses class he or she needs to meet with the instructor for follow up. Notetakers and interpreters are not responsible for the student's absence and for their academic responsibilities.

Support teamwork is vital to the optimum classroom experience. By establishing a good working relationship with the classroom support team (notetaker and/or interpreter) the student can be sure that his/her needs are met for the particular class. It is the student's responsibility to advocate for themselves what they need in the classroom. Often it is a good idea for the student and notetaker to sit side by side in order that the student can monitor when and what notes are being made. If a problem arises, it can more easily be identified. If the interpreting situation is not working well for the student, it is the responsibility of the student to let the interpreter know how or what needs to be changed. When problems with the team cannot be worked out, the counselor and/or lead interpreter can intervene to find a workable solution.

Accommodation requests indicate specifically what a student requires for academic success. The Americans with Disabilities Act (ADA), clearly specifies the importance and liability that educational institutions have in complying with students with disabilities. An accommodation request simply indicates in writing what support services a specific student requires. This can involve such things as: classroom assistance (interpreter, notetaker, ALD, etc.), testing accommodations (time extensions, interpreted tests, distraction free room, etc.), and tutorial assistance. Although it is the responsibility of the student to indicate what support services are needed, students sometimes are not quite sure what they need or may need at the onset of the semester, flexibility is important.

The counselor can assist the student with determining the scope of services needed by requesting secondary school records and pertinent medical information, if

necessary. Copies of the accommodation request are signed and kept by the instructor, student and counselor, to show the unified agreement. Forms may be sent to the testing center if a student will be testing there and will need some specific accommodations. See Appendix 2 for a sample accommodation form.

Instructor Responsibility

Having a student who is deaf or hard of hearing in the classroom often is a new and challenging experience for an instructor. As an instructor, he/she is the 'head of the class', simply meaning, the one who sets the pace, tone and atmosphere for learning. It is no small feat, yet one that is easily overlooked. Aside from the usual classroom preparations, the instructor must enforce the disciplinary code that is expected in the classroom. Each student in the classroom falls under the jurisdiction of the instructor, each having individual responsibilities to ensure success. These responsibilities fall to every student, regardless of whether they have a disability. An instructor has a job to do in the classroom, as does the student. Some specific factors that may be evident in a classroom for students with hearing impairments are mentioned in the following paragraphs.

The Sign Language Interpreter most often is situated in the front of the classroom and near the instructor. This allows the student to have both the interpreter and instructor in their field of vision. Individuals with a hearing impairment rely more on visual cues for communication. Being able to watch the interpreter's translation into visual communication, and at the same time, periodically "read the body language" of the instructor, is an important factor. Also, seated in the front, the interpreter can face the student who is deaf or hard of hearing, who is most often seated in the front row.

An interpreter is there to translate what is spoken in the class into a form of visual communication. When a film is shown in class, the interpreter will interpret the film. It is very helpful to the interpreter to know ahead of time when a film might be shown in order to come prepared to class with a small light by which the deaf student can see the signed interpretation. Not being able to see the interpreter's translation is the equivalent of watching a film without sound. Adequate light in some form is necessary, such as window light, door left ajar, single overhead light left on, or portable pocket light.

The use of a notetaker by students who are deaf or hard of hearing functions as a supplement to classroom learning. Taking notes from a lecture is an important supplement to academic success. Students who are deaf or hard of hearing have difficulty taking their own notes. Students who must focus on an interpreter for the information cannot take notes simultaneously. Hard of hearing students who are focusing intently on understanding the instructor or are lipreading, have the same difficulty.

It is more effective when the notetaking task is provided through other means. This can be accomplished in a variety of ways: a) an instructor can identify a student in class to take notes for the student who is deaf or hard of hearing (instructors may know their students capability as a notetaker based on a prior class with the student); b) an instructor may announce in class that a notetaker is needed, thereby another student may volunteer; c) the student, themselves, may ask another classmate to take notes on a volunteer basis; d) a classmate taking notes may be reimbursed by the office of disability services; e) an instructor may choose to share his/her lecture notes with the student. Being creative in acquiring a notetaker in a timely manner is crucial. See Appendix 3 for a sample notetaking contract.

The use of an Assistive Listening Device (ALD) by students who are deaf or hard of hearing helps the student to hear the instructor more clearly. It is relatively simple to use. The instructor wears a transmitter that is attached to a small mike worn on the lapel. The transmitter can be placed in a shirt or skirt pocket or clipped over a belt. Moving around the classroom is not restricted at all and the unit has no hazardous wires. The student wears a receiver with individual volume control and a headphone. These systems are designed to enhance the hearing acuity for the wearer. No other person in class is distracted or affected, and the instructor is free to move around the classroom.

The only drawback to this system is that it cuts off all other sound in the classroom, e.g. discussions and questions by other students. Working around this may simply require the instructor to repeat the question of the classmate for the student who is using the ALD. For classroom instruction, the use of the personal ALD, such as the one described, is ideal. However, in a large auditorium setting, for example, other systems may be more appropriate. See the assistive listening device heading (page 12) for further details on these and other systems.

The use of a tape recorder by a hard of hearing student occasionally is the most workable solution for that student's need and given resources. For some instructors, this poses a particular difficulty. Instructors may sometimes feel uncomfortable having their lectures taped. This is understandable in a sense, where it is felt 'confidentiality' within a classroom is being taken 'outside' of the classroom. Needless to say, it is not the intent of the student to 'broadcast' what has occurred in a classroom. For some students, their preference is to try to follow the lecture on their own with the back up of a taped message. With this method, they can replay the lecture until they are clear on what was said in class.

A student may also elect to have the taped lecture transcribed into written format. Students who have an attention disorder or cognitive processing dis-

ability in addition to a hearing impairment, often find this method helpful in regaining what was lost during the lecture. A simple means of envisioning a process of cognitive processing disruptions that occur in some students is to think of a radio frequency that keeps going out at varying intervals, creating gaps in information.

DISABILITY SERVICE COUNSELOR/COORDINATOR RESPONSIBILITY

These responsibilities may vary at a given campus depending on the resources available. Usually the individual that is responsible for services to students who are deaf and hard of hearing will coordinate appropriate services. Some campuses may not have an individual who works exclusively with deaf and hard of hearing students, but does work with all students with disabilities. Regardless of the particular makeup of disability services, some important functions and responsibilities are inherent.

The documentation of a disability is the basis for providing accommodations. Understanding what the disability is, and determining how to work around it in the postsecondary setting, is the main focus of providing support services. Documentation of a hearing impairment is most often an audiological evaluation. This hearing examination will indicate the presence of a hearing loss and its scope. Being able to interpret an audiogram will provide essential information to understand the particular hearing loss and what it may mean for that particular student. See Sample Audiogram in Appendix 4. When a student has a disability that requires accommodation, there must be a clear medical record of the disability as mandated by the ADA.

A hearing test is not the only viable form of documentation. Sometimes a medical doctor's diagnosis can be acceptable. When there is a secondary disability such as a visual, cognitive processing disorder, psychological disorder, etc., specific evaluations need to be obtained to better understand the needs of the student. These may be medical, psychological or specialist examinations. Students may sometimes have copies of required documentation, but most often they do not. With the student's permission, a medical release form signed by the student can be used to obtain information from medical doctors, medical facilities, rehabilitation agencies, and prior secondary and postsecondary education programs.

Accommodation forms indicate in writing what specific support services a student requires. These accommodations are determined based on the required documentation(s) of disability and student request. The form is signed by the counselor, student and instructor to ensure that communication about what will take place is clear to each individual. Sometimes it is appropriate to

distribute a copy to the testing center or another academic support component of the college if a student will require accommodation provided by that program. Accommodations are based on student needs although those needs can change over a period of time from the initial request. It is important to continually work closely with each student to ensure that their needs are being met.

Coordination of support services involves the support of interpreter services, notetaking services, tutoring services, assistive listening devices, testing accommodations and tape recording assistance. For some students it will involve a combination of these support services. For others, a single accommodation is all that is required. The counselor/coordinator oversees the scope of support services needed by an individual student. Working in close proximity with the lead interpreter, notetaking/tutoring coordinator, or any other professional staff to ensure that effective accommodations are being provided, is the main focus of this support coordination.

Student advocacy creates an opportunity for adult students to learn the basics of self advocacy. Often students have not had ample opportunity to learn how to advocate for what they need and to express that need in an effective way. One of the roles of the counselor or coordinator involves teaching students how to begin to advocate. Ideally, using role models, the student can learn from others how, and what to do in given situations. Commonly, students and instructors have issues that arise which necessitate intervention.

Counselors/coordinators intervene when needed to mediate when there is conflict or misunderstanding that cannot be resolved by the student and the instructor. Students may know what they want or need, but cannot express it in a way that it is understood. Here, professional intervention can remedy the situation, and in that process the student and instructor both learn how to work better with each other. Advocacy is not limited to on-campus activities, as communication with sponsoring agencies, such as Vocational Rehabilitation counselors, may require intervention and advocacy on behalf of the student as well.

How to Hire an Interpreter

WHAT IS A QUALIFIED INTERPRETER AND HOW DO I LOCATE ONE?

The Americans with Disabilities Act of 1990 states, “When an interpreter is required, the public accommodation should provide a **qualified interpreter**, that is, an interpreter who is able to sign to the individual who is deaf what is being said by the hearing person and who can voice to the hearing person what is being signed by the individual who is deaf. This communication must be conveyed effectively, accurately, and impartially, through the use of any necessary specialized vocabulary.”

Being able to interpret effectively, accurately and impartially, both receptively and expressively determines whether one is qualified, not whether he or she is certified by an official licensing body. An individual does not have to be certified in order to meet this standard. A certified interpreter may not meet this standard in all situations, e.g., where the interpreter is not familiar with the specialized vocabulary involved in the communication at issue. Equally important, being able to sign does not mean that a person can process spoken communication into proper signs, nor does it mean that he or she possesses the proper skills to observe someone signing and change their signed or fingerspelled communication into spoken words. Signing and interpreting are not the same thing. A qualified interpreter must be able to interpret both receptively and expressively.

The most effective means of locating a qualified interpreter in any area is to contact the National Registry of Interpreters of the Deaf (RID). This organization certifies sign language interpreters with national certification. All states have an affiliated state organization, and within many states there are local chapters as well. By contacting the home office of the RID, the name of a state-wide contact person can be obtained. Contact this individual for assistance in locating qualified interpreters in your area.

The National Association of the Deaf also provides assistance in assessing and locating qualified interpreters. Their assessment of an interpreter’s skill is another avenue in ensuring that qualified interpreters are available. (Both the RID and NAD addresses follow).

Many states have a classification system for classifying interpreters. This is not the same thing as certification from RID. This means a state organization has assessed

and awarded a specific classification based on the interpreter's level of proficiency. The standards are dissimilar between the RID National Assessment and the state assessment systems.

To contact the **National Registry of Interpreters for the Deaf:**

8630 Fenton Street, Suite #324
Silver Spring, Maryland 20910
(301)-608-0050 v/t
(301)-608-0508 fax
72520.3143 @COMPUSERVE>COM (E-mail)

To contact the **National Association of the Deaf:**

814 Thayer Avenue
Silver Spring, MD 20910-4500
(301) 587-1788 v
(301) 587-1789 t
(301) 587-1791 fax
NADHQ@juno.com (E-mail)

Secondary Disabilities

Students who are deaf or hard of hearing present additional challenges when a secondary disability is evident. Having prior knowledge that a student has additional educational challenges is helpful in designing a program of support services that will enhance student success. Most often this becomes evident upon admission to college when a student requests accommodations and documentation is required. It is not usual to encounter students who experience academic difficulty unrelated to their hearing impairment. Although, it may not be obvious at the onset of college learning, it will often become apparent when the student's additional academic challenges begin to surface.

Quite often, secondary disabilities in deaf and hard of hearing students are not as easily recognized as the more obvious disability of having a hearing impairment. It is not always true, however, that the hearing impairment is the primary disability. One major reason for this oversight is the lack of proper diagnosis in secondary school. Often, no additional assessment is conducted. There may be many reasons for this; qualified professional staff is unavailable for evaluation, lack of facilities, lack of knowl-

edge among professional staff about 'hidden' disabilities, and lack of information about the behaviors associated with a specific disability. Chances are that if the professional staff at the secondary level have not evaluated and diagnosed the secondary disability, it has gone unaltered and unnamed. Unfortunately, these additional challenges do not simply go away when the student enters college.

Students with more than one disability require additional academic support. Although, they are adults, having never been diagnosed, or even misdiagnosed, they are at loss as to what they need at the postsecondary level. If a secondary 'hidden' disability, such as **Attention Deficit Disorder (ADD)**, **Attention Deficit Hyperactivity Disorder (ADHD)**, or a **learning disability**, seem likely, obtaining an assessment would be very wise. This can be achieved through psychological assessment tools that will evaluate cognitive processing skills. A licensed psychologist can provide this service. The important matter is to assess a deaf or hard of hearing student appropriately. This means locating, if at all possible, a psychologist trained to evaluate persons who are deaf or hard of hearing. Communication between the assessor and the assessee are important components to the overall evaluation. Equally important, the assessor would need to be familiar with the characteristics of cognitive functioning that are typical for an individual who is deaf or hard of hearing. This will enable the lines to be drawn more clearly in terms of which disability contributes to which academic difficulty.

Persons who are **deaf and blind** have a dual sensory impairment. The combined disability creates additional problems of communication and mobility. The needs and characteristics of each deaf-blind individual depends on the age of onset and the severity of the loss of hearing and sight. Nearly half of deaf-blind individual have **Usher's syndrome**, a combination of congenital deafness or hearing loss and retinitis pigmentosa, (a progressive eye condition).

Usher's syndrome begins with loss of the peripheral vision. In some cases, the condition worsens to the point where total loss of vision can occur. Most deaf-blind individuals can see some images, although not with accuracy or clarity. Therefore, some specialized accommodations are helpful in ensuring that a deaf-blind student is able to succeed academically. **Tactile interpreting**, which involves resting the student's hands on the interpreter's as he/she signs, helps some deaf-blind individuals to follow the interpretation. Sometimes spelling onto the palm of the deaf-blind student is a preferred and more workable solution. Some may require large print materials, while others prefer to utilize braille. Any of these options can be utilized for the students' benefit.

Other causes may be: inherited conditions, meningitis, trauma, chemical toxins, glaucoma and cataracts.

Financial Assistance Sources

Most students attending college require financial assistance in some form. There are some specific funding alternatives that may be helpful for students who are deaf or hard of hearing. Some helpful financial scholarships for deaf and hard of hearing students can be found on the internet. Avenues to search can be found in Deafscape or under generic headings such as disabilities, financial aid for college students with disabilities, etc. Some residential schools for deaf students offer scholarship assistance to their graduates who pursue postsecondary education. By checking with the state school(s) for the deaf in your area, or where the student has graduated, some financial assistance may be located. Students who attend a mainstream high school program should consult with their guidance counselor prior to graduation for scholarship applications. Many scholarships are based on specific populations or areas of intended study.

Finding a means to pay for a college education is a challenge for anyone. Making sure that every possible resource is explored is essential to success. Students who are financially needy and have a disability may qualify for various levels of assistance from **Vocational Rehabilitation**. This is a statewide resource that provides assistance to eligible applicants with employment and training based on financial need. Many services are not based on financial need. For further information, contact the state office of Vocational Rehabilitation for the nearest office serving the deaf and hard of hearing. (See Appendix 5 for Resource Information).

Postsecondary institutions have a variety of scholarships that are set up for eligible applicants to their colleges. Some are specifically connected to a program or area of training. Others are based on educational excellence and merit. The financial aid office on campus is the first stop in pursuit of financial scholarship. Here a student may apply for federal student aid. Based on financial need, if eligible, a student will receive financial assistance to attend college. This does not have to be repaid, as any scholarship. However, maintaining satisfactory academic progress is required for continued benefits of any kind, including any sponsorship.

It may sometimes be necessary for a student to seek employment to supplement financial aid benefits while attending college. **Work-study** programs on campus allow a student to work a designated number of hours per week in exchange for financial aid benefits. Still others may choose employment off campus, either part-time or full-time, depending on their needs. The student employment office on campus can assist students with finding off campus work.

Lastly, is the option of obtaining a **student loan**. Loans must be paid back when the student graduates. The interest rate is lower for taking out a student loan through the financial aid office on campus than for taking out a loan from an outside financial institution. While this is an option, it may be the least desirable. However, it is imperative to stress that the value of an education far exceeds its actual financial cost.

Institutional Responsibility

This section discusses the legal mandates of Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) applicable to colleges and universities. By briefly outlining the specifics of each ruling we can see the similarities and differences as well as the limitations and strengths of each mandate. Section 504 of the Rehabilitation Act of 1973 provides this very specific ruling:

No otherwise qualified individual with disabilities in the United States . . . shall, solely by reason of his/her disability, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance, (29 USC 794).

The Americans with Disabilities Act under Title III of the public accommodations ruling, provides that:

A public accommodation may not discriminate against a qualified person with a disability in the provision or receipt of goods and services provided by the public accommodations, unless to do so is an undue burden or would significantly alter the nature of the service.

Both Section 504 and the ADA require that colleges and universities ensure effective communication for individuals who are deaf or hard of hearing. Appropriate auxiliary aids and services may include services and devices such as qualified interpreters, assistive listening devices, notetakers and written materials.

The major difference between the section 504 ruling and the ADA is that section 504 only applies to organizations receiving federal funds, while the ADA mandate applies to all establishments, public or private, regardless of receiving any federal

subsidies. In addition, the ADA outlines more in depth requirements and broader ranges of liability for any public establishment in ensuring that the same services and goods are made accessible to all people.

While some schools may receive assistance toward the cost of interpreter services from their state Vocational Rehabilitation agency, ultimately the institution itself is financially responsible for providing the cost of the services. Vocational Rehabilitation is a resource, but not the only resource. Services cannot be denied or student needs ignored because of funding. Each institution is liable in terms of making their services accessible to all students. While students can be referred to an outside agency, such as Vocational Rehabilitation for assistance with the cost of services, this cannot be used as a basis to avoid liability, nor to deny the student admission or provision of services.

It is important that colleges and universities, as places of public accommodation, develop a working relationship with other agencies to promote effective and accessible services to students. Vocational Rehabilitation has long been involved in the provision of funding for students' needs while attending a postsecondary institution. However, the ADA ruling has made colleges and universities responsible for this component. What this means is that Vocational Rehabilitation is not responsible for the cost of services. The responsibility lies with the institution.

Colleges and universities must develop funding sources or identify appropriate funds for these needed services. Although having funds is only part of the responsibility, being able to provide effective services for deaf and hard of hearing students often is underestimated. When a qualified interpreter cannot be found, temporary substitutions are an option until the appropriate and requested service becomes available. Flexibility is important and open communication with the student is imperative for the student to understand that their needs have been addressed and the institution is actively working to remedy the problem.

Glossary of Terms

ALD	Assistive Listening Device for personal use.
ALS	Assistive Listening System for groups of people.
ALD and ALS	Technical tools to assist hard of hearing people with or without a hearing aid. They bring the speaker's voice directly to the ear and overcome the problems of distance and surrounding noise.
TTY formerly TDD	A Telecommunications Device for the Deaf, used by those who cannot communicate on the phone. A typewriter-like unit prints the conversation on a screen or paper so that it can be read. A TDD must connect with another TDD or a computer. The transmission is with a special coding called Baudot.
Age at onset	The age at which a person's hearing becomes impaired.
Amplification	The use of hearing aids or any other mechanics used by a person with a hearing impairment to amplify sound.
Audiogram	A graph used to record the results of a hearing evaluation.
Audiology	The science of hearing, including the evaluation of hearing impairments and the rehabilitation of people with hearing impairments.
Amplified Phone	Phones equipped with volume controls on the hand set.
Compatible Phone	A phone which generates an induction signal that can be picked up by a hearing aid telecoil. Federal law requires that all corded phones sold in the United States must be hearing aid compatible.
Conductive hearing loss	The loss of sound sensitivity produced by abnormalities of the outer and/or middle ear.

Deaf person	One whose hearing loss makes it impossible for him/her to understand speech and language with or without the use of hearing aids.
Decibel	A unit for expressing the intensity (loudness) of sounds.
Degree of hearing loss	The extent of a hearing impairment usually categorized as “slight”, “mild”, “moderate”, “severe”, or “profound”.
Dual Party Relay	Three-way telephone access system linking Deaf and Hard of Hearing callers using an middle agent who has access to both parties.
Etiology of hearing loss	The cause of a hearing loss.
Frequency	Frequency is the subjective impression of highness or lowness of a sound (pitch).
Hard of hearing person	One whose hearing loss makes it difficult, but not impossible, for him/her to understand speech and language with or without the use of hearing aids.
Hearing impairment	A generic term indicating a hearing disability which may range in severity from mild to profound.
Interpreter	A trained professional who is bound by a code of ethics to facilitate communication between deaf and hearing persons.
Sensorineural hearing loss	The loss of sound sensitivity produced by abnormalities of the inner ear or the eighth cranial nerve pathway beyond the inner ear to the brain.
Real Time Captioning	Captioning that is provided simultaneously as a spoken word using a computerized software program.
Residual Hearing	Any usable hearing that a person may have.
“T” Switch	A switch on a hearing aid that is compatible with telephone use, allowing the user to cut off all competing sounds.
Type of loss	The nature of a hearing impairment, usually classified as “conductive,” “sensorineural,” or “mixed.”

Appendices

Appendix 1. Telecommunications Relay Services

The following are relay services that are available 24 hours a day, 7 days a week, 365 days a year:

			INDIANA	Sprint	800-743-3333/C
			IOWA	Sprint	800-735-2942
ALABAMA	AT&T	800-548-2546			800 735-2943/V
		800-548-2547/V	KANSAS	GTE	800-735-2942/C
ALASKA	General Comm	800-770-8973	KENTUCKY	AT&T	800-766-3777*
		880-770-8255/V			800-648-6056
			LOUISIANA	Hamilton	800-648-6057/V
ARIZONA	MCI	800-367-8939			800 846-5277
		800-842-4681/V	MAINE	AT&T	800-947-5277/V
ARKANSAS	MCI	800-285-1131			800-955-3323/ME
		800-285-1121/V			800-955-3777/V/ME
CALIFORNIA	Sprint	888 877-5378			800-437-1220
	Sprint	888-877-5379/V	MARYLAND	Sprint	800-457-1220/V
	Sprint	888-877-5380/C	MASSACHUSETTS	MCI	800-735-2258/C*
	Sprint	888-877-5381/S			800-439-2370
	MCI	800-735-2929	MICHIGAN	Ameritech	800-439-0183/V
	MCI	800-735-2922/V			800 649 3777*
	MCI	800-735-0091/C	MINNESOTA	Sprint	248 647-3827*
	MCI	800-855-3000/S	MISSISSIPPI	AT&T	800-627-3529/C*
COLORADO	Sprint	800-559-2656			800-582-2233
		800-659-3656/V			800-855-1000/V
		800-659-4656/C	MISSOURI	Sprint	800-855-1234/C
CONNECTICUT	Sprint	800-842-9710			800-735 2966
		800-833-8134/V			800-735-2466/V
		800-842-9710/C	MONTANA	Sprint	800-735 2966/C
DELAWARE	AT&T	800-232-5460			800-253-4091
		800-232-5470/V	NEBRASKA	Hamilton	800-253-4093/V
					800-253-4091/C
DISTRICT OF COLUMBIA	AT&T	800-643-3768			800-833-7352
		800-643-3769/V	NEVADA	Sprint	800-833-0920/V
					800-326-6868
FLORIDA	MCI	800-955-8771			800-326-6888/V
		800-955-8770/V	NEW HAMPSHIRE	Sprint	800-326-6888/C
		800-955-1 339/C	NEW JERSEY	AT&T	800-735-2964/C*
GEORGIA	AT&T	800-255-0056			800-852-7899
		800-255-0135/V	NEW MEXICO	Sprint	800-852-7897/V
HAWAII	GTE	711			800-659-8331
		808-643-8833			800 659-1779/V
IDAHO	Hamilton	800-377-3529	NEW YORK	Sprint	800-659-8331/C
		800-377-1363/V			800-662-1220
ILLINOIS	AT&T	800-526-0844			800-421-1120/V
		800-526 0857/V			800-584-2849/C
		800-501 -0864/S			800-662-1220/B
		800-501-0865/S/V			

Appendix 1. Telecommunications Relay Services (continued)

NORTH CAROLINA	MCI	800-735-2962 800-735-8262/V 888-762-2724/C	WASHINGTON	AT&T	800-833-6388 800-833-6384/V 800-833-6385/B
NORTH DAKOTA	Sprint	800-366-6888 800-366-6889/V 800-366-6888/C	WEST VIRGINIA	AT&T	800-982-8771 800-982-8772/V
OHIO		800-325-2223*	WISCONSIN	MCI	800 947-3529* 800-272-1773/C
OKLAHOMA	Sprint	800-722 0353/C* 800-522-8506/C*	WYOMING	Sprint	800-877-9965 800-877-9975/V
OREGON	Sprint	800 735 2900 800 735-1232/V 800 735-0644/C 800-735-3896/S*	Nationwide Long Distance Relay Services		
PENNSYLVANIA	AT&T	800-654-5984 800-654-5988/V	AT&T		800-855-2880 800-855-2881/V 800-855-2882/C 800-588-2883/B 800-855-2884/S 800 855-2885/VS 800-855-2886/CS
PUERTO RICO	AT&T AT&T LEC LEC TLD TLD	800-855-2884 800-855-2885/V 800-240-2050 800-260-2050/V 800-208-2828/LD 800-290-2828/VLD	HAMILTON		800-833-5833 800-833-7833/V 800-688-4889 800-947-8642/V 800-877-8973/C/S*
RHODE ISLAND	AT&T	800-745-5555 800-745-6575/V 800-745-1570/C	MCI		
SOUTH CAROLINA	Sprint	800-735-2905/C*	SPRINT		
SOUTH DAKOTA	Sprint	800-877-1113/C*			
TENNESSEE	AT&T	800-848-0298 800-848-0299/V	KEY		
TEXAS	Sprint	800-735-2989 800-735-2988/V 800-735-2991/C	(Blank)	= TTY	
UTAH	UAD	800 346-4128*	*	= Volce & TTY	
VERMONT	AT&T	800-253-0191 800-253-0195/V	B	= Telebraile	
VIRGIN ISLANDS	AT&T	800-440-8477 800-809-8477/V	C	= Computer	
VIRGINIA	AT&T	800-828-1120 800-828-1140/V	LD	= Long Distance	
			S	= Spanish	
			V	= Voice Only	

Appendix 2. Sample Accommodations Form

To: Instructor Class
FROM: Services for Students with disABILITIES (S.S.D.)
 Pat Adams, Counsдор Learning Disabilities Ext. 6556
 Peggy Brooks, Counselor Deaf/Hard of Hearing Students Ext. 6421
 Alice L. Hugi Counselor Students with Disabilities Ext. 6621

Date:
SUBJECT: ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

STUDENT: S.S. #:

The purpose of this memo is to inform you of the needs of a student who has a documented disability. In post secondary education programs, it is the student's responsibility to advise the college of his/her disability and to request academic accommodations. S.S.D. is responsible for requesting documentation of disability and determining a student's eligibility for accommodations. All academic accommodations are in compliance with the American Disabilities Act.

The following assistance/accommodations are necessary for this student:

- Classroom Assistance**
 - notetaker tape recorder writer Sign language/oral interpreters
 - Assistive-listening device (ALD)
- Test Accommodadons**
 - Extended time Use special room at Testing Center (Video monitored)
 - Distraction Free Room in S.S.D. Office (All tests must be completed and turned in by 4:30 p.m.)
 - Reader Interpreter Audio Tape Scribe CCTV/Large Print/Braille
- S.S.D. wiU pick up test from Testing Center and administer the test.
- Instructor will deliver tests to S.S.D. (tests are secured).
- Tests will be delivered through campus mail to S.S.D.
- Enlarged or Braille material.
 - Class Syllabus Class Handouts Tests Other
- Reader Assistance
- Tutorial Assistance in the Academic Learning Lab

Please feel free to contact the counselor. We look forward to working with you.

Student Signature Date

Counselor Signature Date

Instructor Signature Date

White - Student copy Yellow - S.S.D. Pink - Instructor Goldenrod - Testing Center

NOTE:
Students will be responsible for distributing signed copies of forms to instructors and the Testing Center.

Appendix 3. Sample Notetaking Services Form

CENTRAL PIEDMONT COMMUNITY COLLEGE
Services for Students with disABILITIES
Notetaking Services Agreement

Central Piedmont Community College, hereinafter referred to as the Institution, and notetaker (first & last name) _____ hereinafter referred to as the Contractor, enter into this agreement for notetaking services as described below for the _____ semester.

I. The Contractor Agrees:

- A. To take notes in the Class (course #) _____ (section) _____ (contract hours) _____ and make these notes available to the student(s) with disabilities enrolled in this class.
- B. To receive training in refining the notetaking skills, if necessary.
- C. To provide and allow the institution to review notes taken in previous classes to determine the contractor's notetaking skills.
- D. To keep confidential all discussions concerning the students and staff of Services for Students with disABILITIES.
- E. To notify the Office of Services for Students with disABILITIES when unable to attend class.

NOTE: The institution does not withhold taxes for contractual services. It is the contractor's responsibility to report the above income as "other income" when filing taxes.

II. The Institution Agrees:

- A. To review, if necessary, the notes taken in previous classes to determine the quality of the contractor's notetaking skills.
- B. To reimburse the contractor with a stipend equal to the in-state tuition for the above class.
- C. To pay the contractor, on a prorated basis, when notetaking services are not provided through the end of the semester.
- D. To provide detailed instructions and guidelines.

Attest:

A. Contractor: Signature _____ Social Security Number _____

Address:

Street City/State Zip Phone Number

B. Institution:

Director: Signature _____ Date _____

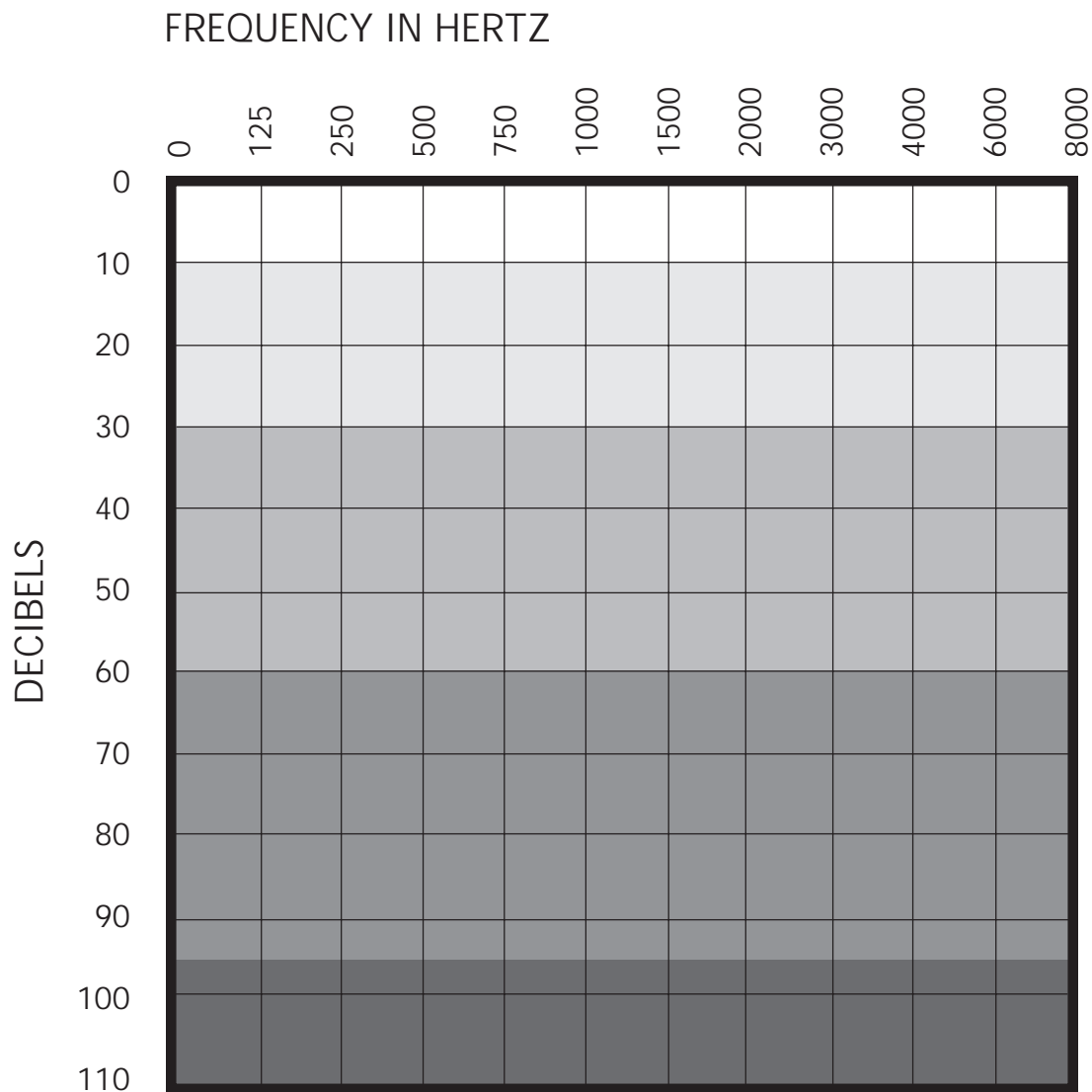
Dean: Signature _____ Date _____

White - Financial Svices

Yellow - S.S.D.

Pink - Notetaker

Appendix 4. Sample Audiogram



Normal hearing is between 1-10 db
Mild hearing loss is between 10-30 db
Moderate hearing loss is between 30-60 db
Severe hearing loss is between 60-95 db
Profound hearing loss is between 95-110 db

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HEATH: *National Clearing House on Postsecondary Education for Individuals with Disabilities*. American Council on Education, One Dupont Circle, Suite 800, Washington, DC 20036-1193, 800-544-3284 (Toll Free), 202-833-4760 (Fax).

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The Postsecondary Education Consortium (PEC) is one of four Regional Postsecondary Education Centers for Individuals who are Deaf and Hard of Hearing. The Centers strive to create effective technical assistance for educational institutions providing access and accommodation to these students. Funded through a contract with the U.S. Department of Education, Office of Special Education Programs, the PEC serves the southern region of the United States through eleven State Outreach and Technical Assistance Centers. For further information, for technical assistance with serving deaf and hard of hearing individuals, or for materials, please contact us at any of the State Centers, or at the PEC Central Office. See inside back cover for details.

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FOREWORD

This manual has been developed for college and other teaching personnel who strive to provide optimum support for students who are either deaf or hard of hearing. The affiliated colleges in the Postsecondary Education Consortium (PEC) and other PEPNet members have long been innovative leaders in providing services for students with disabilities. The program for the deaf and hard of hearing at Central Piedmont Community College has been in existence since 1972. Since that time, the program has undergone many challenges and growth that strengthened the program.

Based on our long history of providing support services to students who are deaf and hard of hearing, it is our hope to share our knowledge and expertise with other programs in their pursuit to provide quality support services for deaf and hard of hearing students. While new services and programs are being established throughout the state and the nation, the reality of providing for the needs of deaf and hard of hearing students are challenging. Hopefully, this manual will pave the way for a smoother journey.

No manual is ever complete. As much as we would like for this to be a comprehensive and entirely sufficient manual, we know that there are always new questions and new answers. This manual is a starting point. The basis for *Deafness 101* began over a period of time as a guideline for service provision for the new service provider. It is by no means a comprehensive manual, but it is a practical one.

There are many excellent resources that can be utilized for further reference. At the end of this manual there is a list of readings and references. The internet has opened up a mass of helpful information about deafness, services, resources, the Americans with Disabilities Act, and much more.

Any questions or concerns can be directed to the writer at the address below:

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