



National Technical Institute for the Deaf
Center on Access Technology in Deaf Education:
For Students Who Are Deaf or Hard-of-Hearing

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The Challenge

Despite recent improvements in the ability of deaf and hard-of-hearing individuals to access information through the use or adaptation of technologies—the Internet, instant messaging, cellular phones, text messaging, video phones—these individuals still do not yet enjoy full ‘access to information’ in postsecondary education that is equal to that of their hearing peers. As a result, graduation rates of deaf individuals from postsecondary educational programs are significantly lower than that of hearing students nationwide. This low graduation rate has life-long implications for students who do not complete their degree programs and who find themselves faced with limited job opportunities in the most underpaid industries.

Many existing and developing technologies have significant potential to serve as effective “access technologies” for the deaf. Access technologies refer to technologies or devices that can be utilized by deaf or hard-of-hearing individuals to assist them in acquiring or sharing information, communicating, or otherwise participating in educational opportunities including classroom, online learning, laboratory experiences, as well as educational experiences taking place outside of the classroom. Examples of existing access technologies include hearing aids, captioning, and instant messaging devices. A center to address the unique challenges of utilizing or adapting new technologies for use in postsecondary educational settings is needed. To meet this need, Rochester Institute of Technology (RIT) through its National Technical Institute for the Deaf (NTID) are establishing the *Center on Access Technology for Students who are Deaf or Hard-of-Hearing*.

RIT/NTID

Established by an act of Congress in 1965 and awarded to RIT in 1967, NTID is an internationally recognized leader in providing postsecondary education to individuals who are deaf or hard-of-hearing. Located in Rochester NY, NTID is one of the eight colleges of Rochester Institute of Technology. Its mission is to provide students with outstanding state-of-the-art technical and professional education programs, complemented by a strong liberal arts and sciences curriculum, to prepare them to live and work in the mainstream of a rapidly changing global community and enhance their lifelong learning. Ninety-two percent of NTID graduates secure positions commensurate with their training immediately upon graduation, becoming active, contributing members of their communities.

Founded in 1829, Rochester Institute of Technology is the 11th largest private university in the nation. RIT has a 40-year history of providing students and graduates with the skills to excel in a variety of career fields including business, engineering, science, technology, education, and government. At RIT, more than 1,100 deaf and hard-of-hearing students study, live, work and socialize daily with over 14,000 hearing peers. Students have the opportunity to participate in over 30 accredited degree programs at RIT and earn bachelor’s or master’s degrees in more than 200 programs offered in RIT’s colleges.

The RIT campus is the logical location for the *Center on Access Technology*. Here, the Center will be in close proximity to more than 1,100 mainstreamed deaf students, and over 100 deaf faculty and staff. This places the

Center in a unique position to study first-hand the access technology uses, challenges, and needs of deaf students, both in and out of the classroom. Further, RIT is a world-class institute of technology. Its students, faculty, and staff are technology savvy and the campus has the infrastructure to easily adopt new technologies, making RIT an ideal location to pilot new technologies. At RIT there is a wealth of faculty expertise in providing deaf students with solid technical and professional educational experiences. Faculty members at RIT have a 40-year history in this area and are keenly aware of the role technology plays in contributing to the educational success of deaf and hard-of-hearing students, as well as the challenges that adapting to and learning new technologies present to both students and faculty.

About the Center

The Center will investigate, evaluate, and report on the most effective and efficient use of access technologies and train individuals in their use in order to accelerate the widespread implementation of best practices within deaf education at the postsecondary level. This Center will create a collaborative network of individuals from RIT and other universities, as well as from industry and professional organizations to promote research and development of access technologies that will positively impact postsecondary educational experiences for deaf and hard-of-hearing individuals.

Once fully operational, this center will be the first and only organization in the world dedicated to advancing access technologies for the deaf and hard of hearing, and will bring together worldwide expertise and work in this area. Until now the expertise, research, and development regarding such technologies has been fragmented and difficult to focus. This collaborative network will result in more efficient development of access technologies that effectively improve the postsecondary experiences of young deaf and hard-of-hearing people.

As access technology needs and preferences change rapidly, the Center will focus its efforts on technologies that have a high likelihood of improving access to postsecondary educational opportunities for deaf students within the next several years. The time frame for the Center's projects—from project launch to completion— will be 18-36 months. Upon project completion, the Center will report and disseminate project findings, developments, and any resulting instruction and training issues to appropriate organizations and individuals including instructional technology specialists, technology and deafness specialists, corporate and foundation partners, and deaf advocacy groups in order to accelerate the widespread implementation of the access technology within deaf education at the postsecondary level.

The Center will be led by James J. DeCaro (director) and E. William Clymer (associate director). James J. DeCaro is currently the director of the Postsecondary Education Network -International (PEN-International) at the National Technical Institute for the Deaf (NTID) at Rochester Institute of Technology (RIT). PEN-International is a multinational collaborative network of colleges and universities serving deaf students that is funded by The Nippon Foundation of Japan. Prior to holding this post he served as dean for NTID for 14 academic years; two of those years as interim director and CEO. He holds B.S. and M.S. degrees in civil engineering and a Ph.D. in instructional technology. He has been a Rotary International Scholar in England and a Fulbright Senior Scholar in Sweden. He is an honorary professor at Tianjin University of Technology (China) and is a recipient of the HaiHe Award of Honour for outstanding service to the people of Tianjin, China. Dr. DeCaro holds an honorary doctoral degree from Bauman Moscow State Technical University.

E. William Clymer is an Associate Professor at the National Technical Institute for the Deaf at Rochester Institute of Technology, serving as the Coordinator of the Postsecondary Educational Network – International. He holds an MBA and a BS and MS in technology. His primary professional focus is on the application of technology in deaf education. He has served as the chair of the NTID International Symposium on Technology and Education of the Deaf in 1994, 2001, 2003 and 2005. Additionally he served (1998-2001) as the Coordinator of NTID's Instructional Technology Consortium (ITC), a collaborative, faculty-driven initiative for enhancing teaching and learning with deaf students through the use of technology and related innovative teaching strategies.

In addition, a new position has been funded by NTID to support the work of the Center. A full-time Senior Research and Development Associate will be hired prior to the end of the summer of 2006. The funds for this post come from NTID’s operating budget.

Center Activities

While developing the mission of the Center, Dr. DeCaro and Professor Clymer led five focus groups involving instructional technology specialists, technology and deafness specialists, corporate partners and deaf students. The groups identified four strands of work where there exists a need and opportunity to improve access technology for the deaf. Accordingly, the Center will focus its efforts on the following strands of work:

Strand 1	Strand 2
<p align="center">Classroom access technologies</p> <p>Note taking, captioning, text display systems, online and distance access technologies, establishment of flexible state of the art classroom “laboratory” for experimentation, user interface and options for services</p>	<p align="center">Training and evaluation services</p> <p>adaptation/adoption/assessment of access and assistive technologies in development, product evaluations on existing technologies, assessment tools/success measurement, assessment of teaching and learning with technologies, processes for moving access technology to marketplace</p>
Strand 3	Strand 4
<p align="center">Mobile technologies</p> <p>Wireless, cellular, messaging, personal digital assistants</p>	<p align="center">Audio and sound technologies of interest to hard-of-hearing persons</p> <p>advanced audio technologies that can be incorporated into academic, employment and social environments</p>

So that projects may be completed in the 18-36 month time frame, the Center will seek projects that fall into one of three categories:

- First, the Center will seek projects to adapt/adopt existing technologies that have strong potential for improving access to postsecondary educational experiences for deaf students. For example, hypersonic sound systems have the potential of creating ‘hot zones’ of sound that can be focused upon deaf participants in a lecture, while leaving normally hearing persons unaffected. Basic, formative research and development of such solutions will be left to others.
- Second, the Center will also seek projects that use its network of experts in deaf education, and in the access technology needs of the deaf, to advise corporate partners on how to refine developing technologies so that they may best serve the access technologies needs of deaf individuals. Corporate partners will benefit by broadening the potential market for their technology. For example, NTID already partners with Sprint Corporation, IBM, Xerox and other large multinational corporations as regards employment. The Center will expand those partnerships to include working with each of these corporations to utilize various technologies developed (or being developed) by them to use with deaf students.

- Finally, the Center will seek projects that accelerate the widespread use of new access technologies by educating the deaf population of the benefits of the technology, and by providing training and education to teachers of the deaf regarding best practices in using the technology. For example, students in postsecondary education with cochlear implants receive very little training in how the technology can be utilized to optimize 'access to information' in postsecondary education.

During the first three years of operation, the Center's focus will be on increasing its visibility among experts in access technology needs of the deaf, deaf educators, and corporate partners. Attention will also be focused on selecting, executing, and disseminating the results of the Center's initial projects. The Center's objectives in the initial phase of operation include:

- Hire one full-time Senior Research Associate
- Attend 1-2 national conferences per year on access technology in order to remain current in the field and to disseminate the operating expectations of the Center
- Prepare a web page and related explanatory documentation of the Center for dissemination to all appropriate individuals and organizations
- Execute 4-5 funded projects per year that relate to the strands of work identified above and execute those funded
- Begin dissemination of results of projects executed to appropriate organizations
- Support all on-going projects that received funding through the Center
- Expand number of ongoing projects and the dissemination and reporting process.

It is anticipated that after the third year, the *Center on Access Technology for Students who are Deaf or Hard-of-Hearing* will be self-sufficient. Operating and specific project funds will be obtained through grants and contributions from various industry and foundation partners.

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