

FALL 2000

FOCUS

NTID

National Technical Institute for the Deaf • A College of Rochester Institute of Technology

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Riverdance NTID Performing Arts students and others enjoyed learning a few steps from the renowned Riverdance troupe, who visited NTID last May to perform and share their training and touring experiences.



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ABOUT THE COVER

The use of image manipulation to blend seemingly contrasting ideas is demonstrated in this image, part of a 12-month calendar project created by third-year digital imaging and publishing technology student Carolyn Yu of East Windsor, N.J. For more on this program, see the article on page 20. The entire calendar is displayed on the back cover of this issue.

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CORRECTION

In the Spring 2000 issue of *FOCUS*, we mistakenly noted that the father of Helen C. Dyer worked as a farmer. Although the family was from Iowa farm country, Helen's father was an accomplished corporate attorney with many high-level contacts across America. He was held in high regard by those who knew him and was also a lover of art, a trait he passed on to his daughter, Helen.

FOCUS

NTID

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RIT will admit and hire men and women, veterans, and persons with disabilities of any race, creed, religion, color, national or ethnic origin, sexual orientation, age, or marital status, in compliance with all appropriate legislation.

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Adapting with Technology

As a career-oriented technical college for deaf and hard-of-hearing people, the National Technical Institute for the Deaf continually seeks to incorporate the latest and most relevant technology in our educational efforts. One example is our Learning Center, which we constructed in 1997 and equipped with a variety of personal computers connected with high-speed Ethernet to the college network and printers. A feature of the Learning Center is a "smart classroom" designed by NTID technicians, where faculty members employ a variety of electronic media, including the Internet, to teach their courses.

Why is this emphasis on using technology to educate deaf and hard-of-hearing students so important? We believe that it helps "level the playing field" for these students as they prepare to enter the mainstream work force. It not only provides them with specific tools, but also offers them the opportunity to develop essential skills that enable them to adapt to the demands of the workplace by successfully applying basic knowledge and job-related skills.

In preparing my keynote speech for the International Congress on Education of the Deaf, held in Sydney, Australia, last July, I was struck by a few technology-related historical facts. The World Wide Web took only four years to reach 50 million users, whereas radio took 38 years to reach as many users, personal computers 16 years, and television 13 years. This rapid

growth in the Internet has dramatically benefited deaf and hard-of-hearing people because it is a medium that allows everyone to communicate through the typed word supported by graphics and a variety of other visual media. And it makes unlimited information available to everyone, unlike radio, which automatically excludes those who cannot hear or understand it.

This rapid growth in Internet use and development of technology does present certain challenges, most importantly the need for users to quickly adapt to changes. Such ability to adapt on the part of deaf and hard-of-hearing people is essential to their continued professional growth and advancement in the workplace.

The Internet is not limited to the World Wide Web. It enables more traditional technologies, such as interactive pagers and TTYs, to expand their functionality by allowing two-way communication with computers, other TTYs, fax machines, and voice telephones through relay services. Enhancement of these technologies and development of new ones continue rapidly apace.

Interestingly, some new technologies under development, particularly automatic speech recognition, potentially could cause a setback for deaf and hard-of-hearing people not unlike the one created by the invention and widespread use of the telephone. Ironically, Alexander Graham Bell, the inventor of the telephone, also was a teacher of the deaf, and yet his invention, which revolutionized

communication systems, excluded deaf and hard-of-hearing people for years until Robert Weitbrecht, a deaf scientist, developed an acoustic coupler that helped provide access to the telephone.

The incorporation of technologies like automatic speech recognition does present the potential to create a world of “talking computers,” but I am confident that exclusion of deaf and hard-of-hearing users will be prevented by our society’s awareness of access needs and our country’s disability legislation. This is the age of “universal design,” when access by both targeted and potential users of a new product is determined at the design stage of product development. Our responsibility as an institute and as individual advocates for deaf and hard-of-hearing people is to promote the application of universal design.

The need for access and shared responsibility for communication in our society has long been supported by interpreting services, which are among the most direct and effective means of shared communication between deaf and hearing people. No machine can duplicate the skills of an efficient interpreter, and there can never be enough interpreters to meet the needs of people who need their support.

However, once again, technology is helping to alleviate this challenge. Interpreter quality and efficiency is now being harnessed through video relay interpreting, a system that employs a remotely located interpreter who can be accessed through a regular

telephone line connected to video equipment. The equipment required to access this remote service becomes more cost effective when more than



one consumer shares it. The system is already in place in a number of rural locations in the United States, providing a shining example of how technology has helped address the problem of providing access in such locations, which often have few interpreters over very large areas.

The remote application feature of the video relay interpreting system is shared by many speech-to-text systems (not to be confused with automatic speech recognition). Such systems often employ a captionist located far away from the actual event being

captioned. The captionist is connected via audio equipment and telephone lines and simultaneously provides real-time transcription of the event, a system used by many network television news stations to provide captions of their newscasts. Here on the RIT campus, real-time captioning of large audience presentations is done remotely from locations in Chicago, Syracuse, and Toronto.

I could continue to describe a multitude of technologies that have enabled individuals and groups to come together on a common ground, such as continued improvements in cochlear implants and hearing aids to provide better hearing, but let me conclude by restating my thesis. Deaf and hard-of-hearing people today have almost unprecedented opportunities and access to those opportunities with the development and application of a variety of technologies. Even though technology can be our friend, we each have the

responsibility to become familiar and competent in the use of technology, and we also must always remain willing and able to adapt to changes in technology. We cannot be passive if we wish to shape our destiny, and I believe this to be especially true for my fellow deaf and hard-of-hearing colleagues and our students.

A handwritten signature in black ink that reads "Bob Dunkel". The signature is written in a cursive, flowing style.

Something Extra for Deaf and Hard-of-Hearing Students at RIT

by Frank A. Kruppenbacher



Nervous anticipation over NSC election results turns into a celebration for Daniel Millikin, left, and Alim Chandani, right, who learn of their victory as NSC vice president and president, respectively, for 2000-2001, over fellow NTID student competitors vying for the coveted student leadership opportunity.

The combination of college education, job skills, and employment, however vital to the human condition, accounts for only part of a well-rounded individual. To function effectively in this new century, individuals must integrate technical and professional expertise with well-developed interpersonal, social skills, and leadership abilities. At RIT, deaf students are offered numerous opportunities to enhance their personal development.

Range of options

To promote personal growth, RIT offers social interaction, leadership opportunities, recreation, and entertainment activities to college learners, including deaf and hard-of-hearing students. RIT structures its campus environs

around ample living and learning options so members of the community can broaden their experiences through a variety of programs and services.

RIT's Center for Campus Life is the hub for all student activities on campus. The center seamlessly blends programs, activities, and services from inside academic learning environments with extracurricular activities outside of classes towards creation of co-curricular experiences for students. Seven major student organizations under RIT Student Government (SG) radiate from the Center for Campus Life across the campus, touching every aspect of student awareness. These organizations include Black Awareness Coordinating Committee (BACC), College Activities Board (CAB), Global

Union, Greek Council, Off-Campus and Apartment Student Association (OCASA), Residence Hall Association (RHA), and NTID Student Congress (NSC).

In consort with RIT SG, the center represents some 125 student organizations related to careers, hobbies and special interests, music, Greek, club sports, ethnic groups, and religion. Aside from NSC-directed activities, deaf and hard-of-hearing students at RIT participate equally with hearing students in any aspect of campus life experiences with NTID-provided educational access and support services, including sign language interpreting, as requested.

"Extracurricular activities are a very important part of students' overall development," says Karey Tompkins Pine, manager of

NTID's Student Life Team. "Granted, students are expected to do well academically. However, students need and expect peer-to-peer interaction, leadership opportunities, clubs, and other activities to broaden and hold their interest beyond the classes they are taking."

Student self rule

NTID enjoys its own student governance with NSC under RIT SG. NSC leadership provides services and programs and reviews issues for the 1,100 NTID-supported students enrolled at RIT.

NTID Student Assembly (NSA) is the body of student organizations represented by NSC. NSA is an open forum where students share announcements, reports, opinions, and grievances.

NSA organizations include Asian Deaf Club (ADC),

Hispanic Deaf Club, Ebony Club representing African American students, Student Interpreting Club, Wolk Center for Deaf Jewish Culture, Student Development Educators, RITSign (students teaching hearing peers sign language), Leadership Development Educators, EFFECT (Educators Fostering

Ben Clothier, NSC Parliamentarian and member of the NSC President's Special Restructuring Committee for academic year 1999-2000. "When NSC was founded, it was just a small club. As the number of deaf students at RIT increased, it became difficult to hold meetings and keep everyone informed. Through

basement office and meeting spaces into new multi-room headquarters located on the first floor of NTID's Shumway Dining Commons. NSC's new location includes a large group meeting room, a computer lab, and spacious offices.

According to Sullivan, this new visibility for NSC has allowed the greater NTID/RIT

Contest. We have certainly 'flown' to great lengths this past year to enhance the NTID community, making it a place that we can all take pride in."

Newly elected leaders of NSC for academic year 2000-2001 are Alim Chandani, president, and Daniel Millikin, vice president.

"We want to help the NTID/RIT community grow, expand, and become more unified," says Millikin. "Excitement is our key emotion right now, and we can say that we are headed for a year of significant changes where we see more student spirit, positive actions, and total involvement within and outside of the community."

Joining Chandani and Millikin is NTID Senator Frank Folino, the elected representative liaison between NSC, NTID/RIT, and RIT SG.

"I am really thrilled and looking forward to working with Alim and Daniel to strengthen the relationship between NSC and RIT SG," says Folino.

Choices at NTID

Finding momentum to achieve desired results can be a tricky task among many student organizations. Most student

"These achievements truly underscore how well-run student organizations prepare individuals to take on important work-related tasks and leadership roles in the community and succeed at them," says Kelly Kim, president of ADC.

community to be a better place.

"NSC's mascot is the eagle, and we are flying in many positive directions now," says Sullivan. "We are doing a number of things—in depth community service projects, club activities and events, sports, and NSC sponsored events like Star Search, RIT/Gallaudet Weekend, and the Art/Photo /Literature

our restructuring, we hope to create a new NSC with all the flexibility and functionality of a student government that provides effective leadership and student activity opportunities."

Under the leadership of Mark Sullivan, NSC President for the 1999-2000 academic year, NSC and NSA soared to new heights. The organization relocated from dormitory

Friends, Ethnicity, Cultures, & Teamwork), *THE VIEW* student newspaper, PIERS (Peers Informing Educating RIT Students), DeafGlo (Deaf Gay and Lesbian Organization), and all deaf Greek organizations at RIT.

"NSC had a great year last year, and we are now discussing ways to optimize the performance of NSC," says



Serving the community Brothers of Kappa Phi Theta fraternity at RIT perform a community service project providing final meal preparation, serving, and clean up for less-fortunate individuals at the Open Door Mission located in downtown Rochester.



"I joined the club because I love trains," says Robert Graham, NTID applied computer technology student and member of RIT's Model Railroad Club, left. Professional staff interpreter David McCloskey, right, provides interpreting services for Graham and club members not fluent in American Sign Language.

clubs and organizations have no formal activities during the summer academic quarter. Clubs and activities hit their stride anywhere from the middle of RIT's fall quarter through fall/winter quarter break. With winter quarter roughly broken in half due to the holiday break, many of the major extracurricular activities

of RIT's deaf and hard-of-hearing students represent perhaps the epitome of personal pride and group spirit that extracurricular activities foster. Groups such as ADC, Hispanic Deaf Club (HDC), Ebony Club, Wolk Center for Deaf Jewish Culture, and DeafGlo bring positive and creative opportunities to individuals

mainstream and deaf groups they represent. Last academic year, members of HDC attended the Northeastern Latino Collegiate Conference, marking the first time ever that deaf individuals

clubs and organizations have no formal activities during the summer academic quarter. Clubs and activities hit their stride anywhere from the middle of RIT's fall quarter through fall/winter quarter break. With winter quarter roughly broken in half due to the holiday break, many of the major extracurricular activities



What's next? Multicultural Student Program Coordinator John Reid, NTID alumni and graduate of RIT's social work program, left, leads a discussion related to planning events during a weekly NTID Ebony Club meeting.



Balloting for RIT Student Government officers occurs over several days at various locations across the RIT campus.

were represented at the conference. During the same year, members of ADC attended the National Asian Deaf Congress Conference in Arlington, Va. Christine Kim, a second-year new media/design and imaging student from Buena Park, Calif., won the Miss National Asian Deaf Congress pageant, an event that was part of the conference.

"These achievements truly underscore how well-run student organizations prepare individuals to take on important work-related tasks and leadership roles in the community and succeed at them," says Kelly Kim, president of ADC.

"We want to continue to develop healthy relationships among every NSC/NSA club and organization equally," adds Sullivan. "All student clubs and organizations at RIT are valuable jewels in the community. It is this diversity and variety that makes NTID/RIT a special place and our graduates highly-valued contributors to society."



A big hit among RIT's deaf and hard-of-hearing students is the annual NSC Star Search talent showcase, held this past year on the stage of the Robert F. Panara Theatre at NTID. Student performances included poetry, short dramatic skits, and storytelling.

for students tend to occur during the 11-week spring quarter. Virtual gathering of student groups via e-mail and Web sites has helped move activity agendas along despite the challenges that an academic quarter system imposes on the overall timeframe for student activities at RIT.

The academic calendar is not the only challenge faced by

and opinions. Although there's plenty of room for improvement, *THE VIEW* is NTID's official student newspaper, and it needs to continue to provide a place for everyone to feed in and off the new ideas and opinions it expresses."

Ethnic, cultural, religious, and lifestyle clubs and organizations of diverse groups

who want to learn about their heritage while sharing activities and raising their awareness about current issues. They also offer social support for students who dually exist in deaf and ethnic, minority, or lifestyle cultures.

Two of NTID's ethnic clubs, ADC and HDC, are making many important and positive leadership inroads among



PAULA J. DOANE

by Karen E. Black

It's no surprise that Paula Doane is a product designer for New Venture Gear, Inc., a Syracuse, N.Y.-based auto parts manufacturing firm. It's simply in her blood. But even though the 33-year-old credits her penchant for mechanics partly to genetics, the other part is her passion and love for working with her hands and understanding how things operate.

"Most of my father's side of the family are in an engineering area, such as tool and die or harness assembly," says Doane. "I always loved to hang around with my dad in the garage to watch him fix our cars or the lawn mower."

Doane's father taught her many different things relating to science as she was growing up in their Middletown, Conn., home.

"He helped me make a few projects for science class at school," she explains. "We had so much fun together! One time we built an electrical circuit project, and another time my dad cut a battery in half to see all of the acid inside to show me how it works."

As the only deaf person in her family, she attended the American School for the Deaf for a short time before her parents placed her into a mainstream school when she

entered fourth grade. As the only deaf person in her school, Doane used an interpreter and notetaker as well as a speech teacher and a language teacher through high school.

"Young deaf professionals should never avoid approaching hearing people or feel afraid. You need to speak up and show your own skills to prove that you can do it!"

These support services helped immensely, and she was able to finish high school in just three years.

NTID/RIT was an easy, natural choice for Doane. Aside from offering the mainstream environment that she was used to, Doane says that the college's selection of many technical majors was a perfect fit for her career interests.

In 1991, she earned her associate degree in industrial drafting technology from NTID. Shortly after, she was hired as a drafting technician at MDT/Castle, manufacturers of hospital and physicians' office products.

Two years later, she was promoted, and Doane spent the next five years working in various positions at the

company, which later became Getinge/Castle. She worked on a variety of computer-based designs and drawings, both converting manual drawings into electronic drawings and

"Most of the time, we write or communicate with body language, or I read lips," Doane, the second deaf person hired, says. "I am an excellent lip reader. Everyone here has really welcomed me into the group – and 19 people have already signed up for the sign language class...it's great!"

Doane's goal is to secure an engineering position in the near future. Always looking for more challenges, she is pleased to be at New Venture, where opportunities exist for increased responsibilities and promotion.

"I work hard and am very proud of my skills," she says. "I am eager to show people I can do anything, like produce a three-dimensional model in drafting."

"Never say you can't get a job or promotion because you're deaf," advises Doane, who spent four years teaching industrial drafting technology in the evenings at NTID. "Young deaf professionals should never avoid approaching hearing people or feel afraid. You need to speak up and show your skills to prove that you can do it!"

making engineer-requested changes. At the same time, she went to RIT in the evenings to earn her bachelor's degree in mechanical engineering technology, which she completed in 1999.

Earlier this year, she left Getinge/Castle to take a product designer position at New Venture Gear, where she enjoys the challenge of creating new designs and drawings for transaxles, transmissions, and 4 x 4 wheels, among other similar products.

Two years earlier, New Venture Gear hired their first deaf employee and has since encouraged all its employees to learn sign language by making the opportunity available at work.

Campus Support Network Assists Cochlear Implant Users

by Pamela L. Carmichael



Since their approval by the Food and Drug Administration 15 years ago, cochlear implants have received increasing media attention because of both implant technology itself and the controversy surrounding it. Some people view cochlear implants as a technological breakthrough for deaf people. Others see them as a challenge to deaf culture.

"NTID has a diverse student population with diverse views on the cochlear implant issue," says Catherine Clark, audiologist and assistant professor in NTID's Department of Audiology, "but the reality is that we have students on campus who have implants. NTID's goal is to provide assistance and support to those students so they can maximize the benefits of their implant and succeed in college."

Every fall, Clark, who serves as NTID's cochlear implant specialist, holds a kick-off event to bring together new and returning students with implants so they can meet one another and learn about the services available to them at NTID and in the Rochester

community. Last year, there were 29 students and one faculty member at NTID/RIT with cochlear implants, compared to only nine identified in 1994. Some of these individuals, but not all, opt to take advantage of the services and participate in group activities specifically for implant users.

"We try to identify incoming students with cochlear implants early so that we can let them know about the services at NTID," Clark explains. "We want students to be aware of the resources that are available to them."

"After the fall kick-off, we may not see some of the students again, and that's OK," she continues. "We don't want anyone to feel that they must participate; the decision to use the services is up to them. We just want students to know that if they have an implant, we're here to support them if they want us to."

For some students, having services available is a priority.

"The first question I asked when I visited the college during open house was 'What services do you have for students with cochlear implants?'"



Genevieve Bresett



Sharing experiences Roberley Bell, associate professor in the RIT School of Art and Foundation Studies program, left, learns more about cochlear implants from students Lisa Herbert and Richard Waters at an NTID cochlear implant network meeting.

says 22-year-old electrical engineering technology student Genevieve Bresett, from Belleville, Ontario, Canada, who received an implant in 1995 when she was 16 years old. “It was a primary concern for me because I didn’t want to lose the progress I had made with my implant.”

NTID offers educational and clinical support services for implant recipients. NTID audiologists provide implant checks, conduct audiological assessments, recommend and provide communication training, and disseminate implant information to the NTID/RIT community. Clark has also set up a cochlear implant group that meets for activities and support.

Networking opportunities

The NTID cochlear implant network gives implant users a chance to associate with other users and receive updated information on equipment. Sometimes manufacturers’ representatives come to NTID to present information on the latest implant technology. Frequently, Clark invites other guest speakers to join the group—often community members with implants who offer students new perspectives and experiences. At one group event, Clark presented a videotape of NTID Alumni Association President Sharaine Rawlinson, who shared her experiences as an implant user.

“Some students like the opportunity

to network with others who have implants,” says Clark. “Sometimes it’s helpful for freshmen to see upper class students who’ve been using cochlear implants in this environment. Students are trying to blend in, and this group can help give them a sense of belonging.”

Richard Waters, 21, who has used an implant for two years, is one of the students who regularly attends group meetings and presentations.

“When I came to NTID, I was concerned about what the reaction to my implant would be,” says the digital imaging and publishing technology student from Mississauga, Ontario, Canada. “Some people have reacted negatively, but my friends have been very supportive and accept me for who I am.”

Fourth-year psychology major Lisa Herbert, who received her first implant in 1985 when she was 5 years old, found the group meetings especially helpful to her as she prepared to receive a new implant.

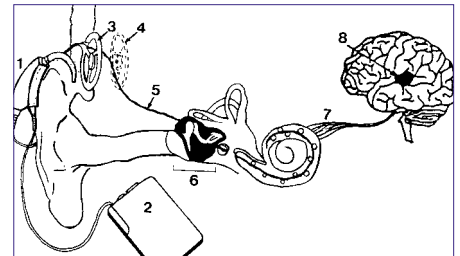
“I was the only student in the group with an older-style implant,” explains the 20-year-old from Miami, Fla. “I liked going to the meetings to learn from other students who have newer implants. That helped prepare me for what to expect when I received my new implant.”

Ron Wrobel, 36, of Rochester, N.Y., who became deaf at age 30 after he was struck by a car is another student who takes advantage of the services for

What is a cochlear implant, and how does it work?

A cochlear implant is an electronic device that helps provide a sense of sound for some deaf people. Unlike a hearing aid, a cochlear implant does not amplify sound; it allows a user to perceive sound by directly stimulating the auditory nerve.

A cochlear implant consists of components surgically inserted into the ear and components worn externally. There are several different types of cochlear implants, but in general, an implant works like this:



A microphone worn behind the ear picks up sound and converts it to an electrical signal (#1).

The signal is sent through a cord to the speech processor, which converts the electrical signal into an electrical code and sends it to the external coil (#2).

The external coil is placed on the skin behind the ear, usually held in place by a magnet or headset (#3).

The external coil sends the electrical code through the skin to the internal coil (#4).

The internal coil sends the code to electrode(s) located in the cochlea (#5 & 6).

Nerve fibers near the electrodes pick up the electrical code and send it to the brain (#7).

The brain processes and interprets the code, and the implant user becomes aware of the sound (#8).

This entire process occurs in a split second, allowing implant users to perceive sounds as they occur.

According to the National Institute of Health’s National Institute on Deafness and Other Communication Disorders, approximately 25,000 people worldwide have received cochlear implants, including more than 14,000 adults and children in the United States.



Ron Wrobel

cochlear implant users at NTID. He received his implant three years ago.

“When I had my implant surgery here in Rochester, my doctor told me about NTID,” explains the computer integrated machining technology student. “I checked it out and liked what they offer here—the programs meet my interest, and the services are outstanding.”

Besides offering support and keeping students updated on the latest technology, the NTID cochlear implant network sometimes serves as a forum for individuals without implants who want to learn more about them.

Roberley Bell, associate professor in the RIT School of Art and Foundation Studies program, found that the group was a valuable resource when she began exploring cochlear implants as an option to help her declining hearing.

“I have always been hard of hearing,” explains Bell, “but my hearing really started to deteriorate about two years ago. Working with Karen Snell and Catherine Clark in the

NTID Audiology Department and participating in the NTID cochlear implant network has been a real benefit for me. In one two-hour meeting, I was able to get a wealth of information about other people’s experiences with implants. It’s comforting to share experiences and knowledge. I can’t imagine being in a better, more supportive environment.

“This group will be an important part of my future as I go through the implant process and come out on the other side,” she adds. “Then, I’ll be the one with the experience to share with the next person.”

Members of the NTID cochlear implant network are often invited to present to groups of faculty, staff, and students at NTID.

“I’m really pleased that our students are willing to share their experiences with others,” says Clark. “It’s been very empowering for them.”

Third-year business technology student Julia Bohl, 23, from Otsego, Mich., is among the students at NTID who have participated in panel discussions about cochlear implants.



Julia Bohl

“People ask a lot of questions,” says Bohl, who received her implant 10 years ago. “Some people react negatively to implants, but I explain that getting the implant was my decision. I don’t criticize other people’s choices, and I don’t want them to criticize mine.”

NTID’s cochlear implant network has been so successful that several implant users in the Rochester community are looking at NTID’s group as a model for starting a Rochester chapter of the Cochlear Implant Club International.

Sharing information

The NTID Department of Audiology has developed a cochlear implant brochure to answer many of the questions commonly asked by students. The department also maintains an archival collection on cochlear implants that includes books, articles, journals, manufacturers’ information, pictures, and videotapes. They routinely provide cochlear implant seminars, workshops, and in-service presentations to NTID/RIT, the Rochester community, and at state and national conventions.

For individuals considering an implant, NTID audiologists offer assistance by evaluating current audiological information and sharing with them details about the surgery and implant use to determine if the individual is a candidate or if a hearing aid would help as much as or more than a cochlear implant.

“We hold meetings with individuals interested in obtaining an implant to understand their motivation, expectations, and feelings toward rehabilitation services,” says Clark. “We try to help them understand the benefits and risks involved with a cochlear implant. If the implant is to be pursued, we provide information on how to initiate candidacy with a cochlear implant team.”

Therapy and equipment

For students with implants, NTID offers a number of communication training options, including use of speechreading and communication



On-site training RIT graduate Svetlana Kouznetsova, seated, plugs her cochlear implant into a computer in NTID's Self-Instruction Lab for auditory training with audiologist Catherine Clark.

speech production, multimedia recording and playback of language samples, automatic speech recognition, and split screen videotaping to facilitate conversational practice.

Svetlana Kouznetsova, 22, of New York City, who graduated from RIT last May with a bachelor's degree in graphic design, worked with Clark on auditory training and received speech therapy from Brenda Whitehead, associate professor in NTID's Speech/Language Department.

"It was really a benefit to have therapy available right at NTID and not to have to go someplace else for it," says Kouznetsova, who has used an implant for two years. "Understanding speech is very complex. I still have a lot of work to do, but the training and therapy I received at NTID has been very helpful."

Students who have problems with their cochlear implant can visit the NTID Audiology Clinic, which troubleshoots equipment and assists students with implant repairs.

"It was really a benefit to have therapy available right at NTID and not to have to go someplace else for it."

strategies, listening skills, telephone communication, and speech/language instruction to help students improve clarity, pronunciation, and grammatical accuracy and appropriateness. Both NTID's Department of Audiology and Speech/Language Department are involved in communication training and therapy for students.

Students who want one-on-one assistance can meet individually with NTID audiologists or speech/language instructors. For those who prefer to work independently, the NTID Self-Instruction Lab offers numerous auditory and speech practice activities.

Another option available to students is the Spoken Language Learning and Practice Lab, which opened at NTID last spring. The new facility, part of NTID's Integrated Communication Center, offers equipment and software that provides visual feedback for

The clinic recently added equipment for programming implants in collaboration with students' home cochlear implant teams. The clinic also assists students' home implant teams with follow-up audiological services, provides cochlear implant testing, and assists students in contacting the local cochlear implant team at the University of Rochester for assistance with their equipment, if necessary.

NTID's Hearing Aid Shop stocks some equipment, such as cochlear implant cords and headset components, for purchase by implant users. The shop also loans FM systems for classroom communication; special cables for connecting cochlear implants to televisions, CD players, or personal stereos; and audio input selectors for telephone and assistive listening devices.



Wired for sound The external components of a cochlear implant include a microphone worn behind the ear, speech processor, and a coil placed on the skin behind the ear to send signals to the implanted components.

As the number of people using cochlear implants continues to grow, NTID will continue to expand the services it offers for users. Clark has recently developed a Web site for students to provide an easy way for them to get information about cochlear implant support services at NTID. The site (www.rit.edu/~ccnca/cochlear_implants) contains links to implant manufacturers' Web sites and other cochlear implant support group sites.

Future plans include new computer programs and aural rehabilitation activities for implant users.

"Our mission is to provide the services and educational programs that help all of our students improve their communication skills," says Clark. "As part of that mission, we will continue to update and expand our services for students with cochlear implants."



Brian Shaw

Brian Shaw

NTID second-year applied computer technology student Brian Shaw is a tiger of a different stripe. As the first deaf men's basketball player for the RIT Tigers in several seasons, he joined the team as a walk-on during pre-season try-outs last fall.

"I have enjoyed playing basketball since I was 12 years old," says Brian. "People said that it might be really hard for me to get on the RIT team because of my deafness. I ignored them because I knew my coach was looking for skilled players who play smart. I knew I could do it."

The 6-foot 4-inch, 21-year-old forward arrived at RIT from Edison, N.J. He split time in high school between the Marie H. Katzenbach School for the Deaf for two years and Governor Livingston, a mainstream high school where he played basketball for two years before graduating.

"I decided to come to NTID/RIT because I want the social mix of both deaf and hearing people," says Brian. "I think this school is a great fit for me. I am interested in computer technology because a career in that field will give me fantastic opportunities in the future. The chance to play basketball for RIT is an added bonus."

Last season the RIT Tigers ranked No. 1 in the NCAA East region, capturing the Empire Eight conference title with 20 wins and five losses, earning the team an automatic bid to the NCAA Division III Tournament.



Selene Marie Alverio

Selene Marie Alverio

Selene Marie Alverio, a 21-year-old social work student born and raised in the Bronx, N.Y., exudes confidence, but she didn't always feel this way.

"I was so shy," says the president of NTID's Hispanic Deaf Club, who currently resides in Newburgh, N.Y. "I didn't have much confidence or many friends growing up."

Selene, whose first language was Spanish, received support services in elementary grades, but not in high school.

"I hoped that college life would be better," she says. "I regretted not having the typical teenage social experiences."

At NTID, surrounded by those who could communicate with her, Selene's confidence soared. She became involved



William Gonzalez

with the college's Hispanic Deaf Club, NTID/RIT Dance Company, NTID Performing Arts, Multicultural Student Peer Program, Summer Vestibule Program, and Explore Your Future. Last March she led the first-ever group of deaf students to the Northeastern Latino Collegiate Conference.

Selene plans to graduate with a bachelor's degree in social work and hopes to earn a master of social work degree, then become either a teacher or possibly an actress.

William Gonzalez

William Gonzalez, 21, was determined to go to college after high school even though he wasn't quite ready. He graduated from the Florida School for the Deaf and Blind in 1998, but had not organized his application materials for NTID that fall.

"I wasn't ready for college," he explains. "I wasn't thinking about my future, so I just played a lot in high school."

As a result, he attended a Florida community college for one semester and studied printing, which he found unchallenging. Motivated even more to attend NTID, he enrolled in the college's ophthalmic optical finishing technology program in fall 1999.

The example set by William's older deaf brothers also inspired him to come to NTID. His oldest brother, Herminio, was the family's first college graduate after earning a degree from Gallaudet University. Ramon, the third oldest boy, completed an imaging technology associate degree at NTID and now works in Rochester.

William, a very social and friendly student, is involved with the NTID/RIT Dance Company and enjoys teaching American Sign Language to anyone who wishes to learn.

Shane Feldman

Shane Feldman of Rockville, Md., embraces language and communication. The 22-year-old student is nearing completion of his fourth year in RIT's professional and technical communication program. He hopes to graduate later this year with a bachelor of science degree.

"The field of communication is something I really enjoy," says Shane. "RIT has prepared me well for a career after I graduate."

Shane is a writer for NTID's bi-weekly student newspaper *THE VIEW* and RIT's weekly student publication *Reporter*.

Last academic year he focused his cooperative work experience (co-op) with the departments of marketing communications and media relations for NTID. An earlier co-op brought him to Lake Placid, N.Y., where Shane helped coordinate the public affairs of the Olympic sporting venues. He also did some work for the first-ever 2000 Winter Goodwill Games held in the winter Olympic village.

Employing resources available on the Internet, Shane utilized various search engines, job search pages, and the NTID/RIT co-op search home page to find the co-op opportunities that he has been involved in.

"Without the resources made available to me through NTID/RIT and the Internet, I don't think I would have been able to find the co-op work experiences that best fit my future employment needs in the field of communications," says Shane.

Alesia Howard

Alesia Howard attended NTID's Explore Your Future (EYF) program before she entered her senior year in high school. Based on her EYF experience, she knew she wanted her future to include RIT.

"RIT represented the best of all worlds for me," explains the 19-year old, who was the first hard-of-hearing student to be inducted into the National Honor Society at Champion High School in Warren, Ohio. "By coming here, I had an opportunity to attend a college with a great reputation, learn about deaf culture, and take advantage of the wonderful support services."

Alesia is studying psychology because it combines her love of working with people and her interest in science.

"Psychology fits me well," explains the second-year student. "And the field offers me an opportunity to make good money. I want to support myself and be successful in life."

Even though she has her eye on the future, Alesia finds time to enjoy the present. She has worked with NTID's Student Congress, is a member of Ebony Club, and works as a peer educator for NTID's EFFECT (Educators Fostering Friends, Ethnicity, Cultures, and Teamwork).

"College is a wonderful experience," she says. "It's a big adjustment at first, and it's lots of work, but if you stick with it and find what you enjoy the most, you can make college what you want it to be."



Shane Feldman

Matt Huray

Remember waiting in line to climb up on Santa's lap and tell him your Christmas wishes? Matthew Huray, a fourth-year environmental management student, remembers that Santa didn't understand American Sign Language.

Determined to make the Christmas experience open to young deaf children, the Binghamton, N.Y., native dresses each holiday season as "Silent Santa" for deaf preschool children at Rehabilitation Services Inc. in Vestal, N.Y. Matt attended the preschool in the 1980s.

"All kids should be able to tell Santa what they want for Christmas," he says. "I'm just giving them the opportunity to do it. Most had never seen a deaf Santa. One year, I had to show my hearing aid to prove that I was deaf to one of the kids."

Matt, also a member of the RIT Crew team, plans to continue making preschool appearances as Silent Santa. "After all," he explains, "that's what makes Christmas such a special time of year."



Alesia Howard



Matt Huray



Tara Nesbitt



Amber Stone



Minoru Yoshida

Tara Nesbitt

Several Canadian universities wanted her, and the reason is as clear as the water in RIT's Edith Woodward Memorial Pool.

Tara Nesbitt, 19, in her debut season as a member of the RIT women's swim team, has already set new school records for the 200-meter individual medley and the 50-, 100-, and 200-meter backstroke. She was unbeaten in all 26 races she competed in for RIT last season.

"All my life, I've just loved being in the water," says Tara, a second-year social work student from Oakville, Ontario, Canada. "It just feels so natural, so right for me. When I am swimming and focused, it is as if I am one with the water."

Tara's winning swimming propelled her to two top 20 finishes for RIT at the 2000 NCAA Division III Women's Swimming Championships in Atlanta, Ga. In the 200-meter backstroke, she placed 18th in the nation, setting an RIT school mark with a time of 2:10.22. In the 100-meter backstroke, she placed 19th with a time of 1:00.50. For her accomplishments, she was named RIT Athlete of the Week.

"It was not easy to leave Canada," says Tara, "but I've had fun so far, joining RIT's women's swim team and immersing myself into the great deaf community here at NTID."

Amber Stone

For Amber Stone, who is deaf with cerebral palsy, the world is a delightful place.

The 21-year old has been to Space Camp, challenged New York's governor when funding for residential schools for the deaf was threatened, and participated in the Miss New York Teen All American Pageant, earning the Miss Amity award.

"I enjoy life," the Horseheads, N.Y., native says. "I don't let anything stand in my way. I show the world that no one is perfect – we all need to make the most of what we have."

This second-year student in NTID's career exploration program plans to earn her associate degree, transfer to RIT's social work program, then work in a hospital.

"I've spent a lot of time in hospitals," she says, referring to the numerous surgeries she's endured throughout her life. "I want to help families of kids with physical challenges to see their way through."

Minoru Yoshida

Minoru Yoshida, 20, from Kyoto City, Japan, loves to travel. He has visited Australia, Canada, the Philippines, Singapore, South Korea, and the United States, and now is a first-year travel management student at RIT.

"I want to learn how to manage and sell travel experiences," he says. "Deaf and hard-of-hearing travelers have unique challenges in traveling, and I want to learn how to manage their travel experiences better."

Minoru also enjoys languages. In addition to his spoken, written, and signed Japanese, he has learned American Sign Language, English, and some written Korean. He hopes to learn Spanish while at RIT.

Although NTID has a sister institute relationship with Tsukuba College of Technology (TCT) in Japan, Minoru decided to come to the United States for his college education. One reason was his program of study, travel management, which is not offered by TCT. Another was his interest in continuing to improve his English skills. Primarily, however, he was interested in all the access and support services offered by NTID to deaf RIT students.

"I think RIT has the best support for deaf students," he says. "Deaf students here can use different technology and are able to access opportunities in a way they can't yet in Japan."

Carmen “Caya” Consunji

Carmen Consunji’s family discovered that she is deaf when she was 2 years old, and her older brother, T.J., immediately nicknamed her “Caya,” which means in Filipino, “You can do it.”

At NTID, where she’s a pre-baccalaureate student planning to enter RIT’s Information Technology program, Caya has taken her nickname to heart and is involved in a number of activities, including Sigma Sigma Sigma sorority. She has worked with NTID Student Congress and was named all-star of the Deaf Women of Rochester basketball team, which won the Eastern Athletic Association of the Deaf championship last spring.

“My brother and my parents graduated from college,” says 22-year-old Caya, of Palo Alto, Calif. “I look up to them and want to follow in their footsteps and be successful.

“My father told me I should select a college that makes me happy,” continues the second-year student who transferred to NTID from another college. “I came to NTID because of the wonderful support services and because I like the mix of deaf and hearing students. There’s such diversity at NTID. I’m very happy here. It feels like home.”

Caya plans to complete a bachelor’s degree in information technology and possibly a master’s degree. She hopes someday to work in California’s Silicon Valley. If her nickname holds true, she’ll turn that hope into a reality.

Joe Neely

For Joe Neely, a lazy summer day made all the difference in the world.

“My grandfather invited me to play a game of tennis,” says the 19-year old from Virginia Beach, Va. “I was bored so I said ‘sure.’ I fell in love with the game and have been playing ever since.”

Deaf since birth, Joe is believed to be the first deaf player to compete in a U.S. Tennis Association (USTA) national tournament. In his first year of playing, he moved from sixth on his high school team, where he was the only deaf student, to first, where he remained for the next four years, playing in local, regional, and national tournaments and earning his first USTA Sportsmanship award.

As a second-year criminal justice student, he excels in the classroom as well as on the court and hopes to work for the FBI. His current plans include maintaining his high academic standing, playing tennis, and enjoying the social side of college life.

“When I came to NTID, I couldn’t believe all the people here who use sign language,” he says. “It was so cool—I knew exactly what people were talking about.”

Queen Elizabeth Ekoh

Believing that life is what you make it, Queen Elizabeth Ekoh left her home in Ibadan in the Oyo State of Nigeria and traveled to Rochester, N.Y., to attend NTID. She chose NTID because she wanted to study with other deaf students.

“I really like the academic and social environments here,” says Queen Elizabeth. “Everyone is friendly, and I don’t feel lost. I enjoy the diversity and the deaf culture.

“Students who come to NTID for college have nothing to worry about,” she adds. “The educational environment is good. Students here get all the necessary experience for their future career.”

The first-year career exploration student has not yet decided on a major, but would like to enter RIT’s College of Business or Liberal Arts. Someday, she hopes to earn her Ph.D. in educational psychology or special education.

“I want to be successful, and I want to be an advocate for deaf people in Africa,” she explains. “I want to champion the idea that disability is not inability, as many people in Africa believe.”



Caya Consunji

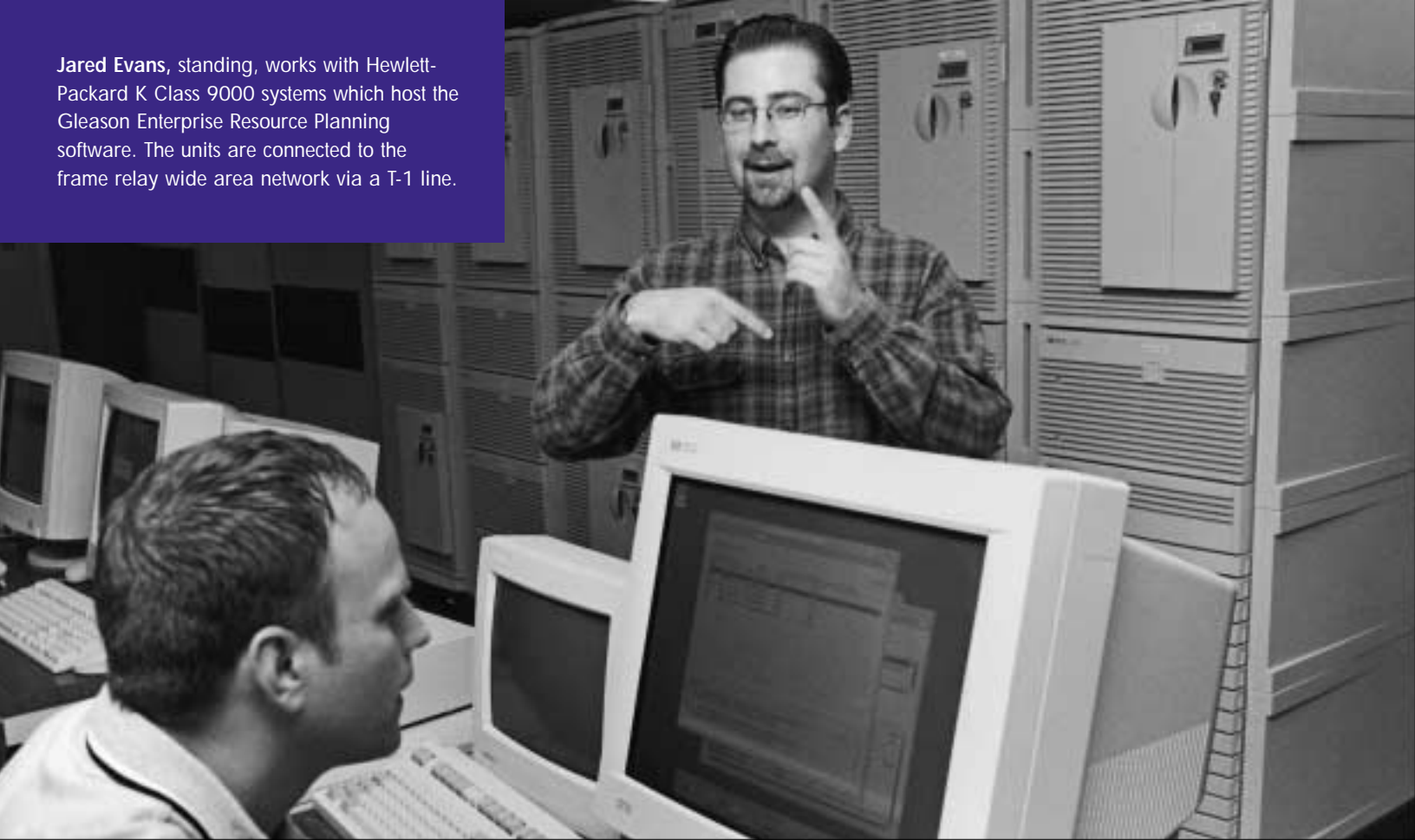


Joe Neely



Queen Elizabeth Ekoh

Jared Evans, standing, works with Hewlett-Packard K Class 9000 systems which host the Gleason Enterprise Resource Planning software. The units are connected to the frame relay wide area network via a T-1 line.



Field of Opportunity: Information Technology

by Kathryn L. Schmitz

One of the fastest-growing fields of employment today is information technology (IT). The Information Technology Association of America estimates the IT workforce to be 10 million strong, not including jobs in government, non-profit organizations, or small entrepreneurial firms. According to an April 2000 report by the association, 1.6 million new workers over the next year will be required, but 850,000 information technology positions will not be filled because of an acute shortage of workers in this field.

Colleges and universities will not be able to graduate enough professionals to keep up with the

projected demand, according to various workforce analysts. The provost of RIT sees this circumstance as an opportunity for the university to take the lead in offering programs that will lead to jobs for RIT graduates, however.

"Information technology is the fastest growing area at RIT," says Dr. Stanley McKenzie, provost of RIT. "Information technology permeates all of our degree programs from the arts to the hard sciences.

"The field is so huge now that we have to specify what we're talking about," he adds. "We're talking about data processing, software engineering, computer science, new media, networks, Web development, software,

middleware, content areas, everything with the management of information. All of this is under information technology now."

Riding the wave

When Jared Evans entered RIT with the support of NTID in the fall of 1992, he chose information technology as his program of study.

"I could see that the field was just about to ripen, and it was the perfect time to get on the wave and ride it," he says. "I saw that in a few years, all the major companies would need an army of information technologists if they wanted to survive in the future."

Evans, who graduated with his bachelor of science degree in

information technology from RIT in 1997, now is a systems analyst with The Gleason Works in Rochester, N.Y., and also is enrolled in RIT's MBA program with full support from his employer.

"It is amazing to see the changes RIT went through from 1992 when I first entered to 1999 when I started my graduate studies," says Evans. "I remember the days of 2,400 bps (bits per second) modems and walking in the snow to the labs to use the vt100 (text-only) terminals. Today, I see students communicating at 10 million bps in the comfort of their dorm rooms!

"This only emphasizes the great need for information technologists to be able to accommodate a rapid pace of change to keep current with the field. It is heartening to see that RIT is able to keep up with all the changes."

Programmatic offerings

In all, RIT offers more than 10 different computer-related baccalaureate programs of study, including the popular information technology program. Other programs include computer science, computer engineering, and software engineering.

Students in NTID's applied computer technology (ACT) program (which grants diplomas and associate degrees) receive a foundation in computer hardware, networking and applications. Students also have the option of choosing to concentrate in computer support or industrial computer electronics. In addition, the department continues to add courses related to the Internet, such as creating and managing Web sites.

The ACT program also helps prepare those students who want to apply for admission into RIT's related baccalaureate degree programs. The Applied Computer Technology Department developed an articulation agreement with RIT's Information Technology Department to enable NTID students who complete the associate degree program to transfer certain ACT credits into the IT program, if they meet the admissions requirements for the bachelor's degree program.

Enrollment of deaf students in information-technology-related programs is concentrated primarily within the information technology program itself, says Myra Pelz, associate professor in NTID's Business and Computing Technology Support Department. In the fall of 1999, 70 deaf students were enrolled in the program, the most within any baccalaureate program at RIT, with 5-10 enrolled in the pre-baccalaureate program in preparation for eventual admission.

"Students like information technology because they have a lot of choices in what they can do within the program," says Pelz. "The program is flexible and can be quite fun, with lots of opportunity to be creative, particularly in the areas of multimedia and Web page development. It also gives students the chance to interact more with people than some of the more traditional engineering- and computer science-based programs."

In RIT's information technology program, students may choose two of the following concentrations: data communication and networking, database, interactive multimedia and Web design, learning and performance technology, system administration, Windows application development, and special topics.

Familiarity and comfort with the field

Many students arrive at RIT well versed in computers, as Craig Flannagan, who graduated with his bachelor of science degree in information technology from RIT in 1999 after completing an associate degree in electromechanical technology in 1996 from NTID, can attest.

"I had just bought a new computer in 1994," he explains, "and my interest in computers was growing more than ever before. I grew up with computers

and game consoles, such as the original Pong machine, Atari 2600, Commodore 64, to name a few. I had my first taste when I programmed some simple text adventure and graphical games for Commodore 64. I knew then that I wanted to do something with computers."

Within the computing field, many deaf and hard-of-hearing students choose information technology because they feel that the field is level in terms of opportunities.

"I believe that this field provides the best opportunities for deaf graduates," says Evans. "The information technology field, more than any other, does more to eliminate the communication barriers that have traditionally held deaf people back.



Facilitating instruction Myra Pelz (top) works with deaf students in a Web site development course.

I feel I am on an equal footing with my hearing counterparts."

Like Evans, Flannagan felt that he gained significant experience with the IT program at RIT.

"The interaction among fellow classmates is especially helpful in keeping ourselves updated with the rapidly changing IT world," he says. "By working together with classmates, we stay sharp with the IT program, and I would say I've learned as much from my classmates as from my professors."

For Melinda Failing, a 2000 IT graduate, the program has been accessible with support and access

services and with faculty members who are familiar with working with deaf and hard-of-hearing students.

"Most faculty and staff members have been educated about deaf culture," she says. "Not all hearing students are, but working with them has helped me to prepare for the real world since I will be working with hearing people, many of whom may never have worked with a deaf person before."



Understanding networks Melinda Failing spends some time in RIT's telecommunications lab during her IT studies.

Preparation for employment

A feature of RIT programs is the cooperative education program, and the information technology program requires three quarters of full-time co-op work before granting baccalaureate degrees. NTID's ACT department requires two co-op experiences for associate degrees. Since the official inception of the information technology program in 1992, 35 deaf students have graduated and attained full-time employment within the field, and 177 students have gone on various co-op assignments. Employment opportunities are quite varied for information technology students and graduates.

Sensitive to the need for NTID's programs to produce employable graduates who possess skills demanded by business and industry, Donald Beil, professor in NTID's ACT department,

visits students at their cooperative work experiences, most recently at IBM and Lawrence Livermore Labs in California.

"I left my co-op visits with a good feeling that our students are meeting the expectations of outside industry," he says. "They're using Internet and programming skills, and they are also using software applications to create visual reports with graphics, among other things."

Working together to help students find jobs are advisors in RIT's Office of Cooperative Education and Career Services and NTID's Center on Employment (NCE). In addition to student placement support, NCE offers employer training workshops to help prospective employers better understand how to work effectively with deaf and hard-of-hearing employees.

"We draw employment opportunities from everywhere," says Laura Watts, program coordinator in RIT's Office of Cooperative Education and Career Services. "Big companies like to hire our graduates, and alumni are relocating and then returning to RIT to recruit our students and graduates."

Within information technology, the skills required are highly transferable and not limited strictly to technical training. Successful information technologists are able to work with people, particularly on teams, and are capable of effective communication, according to Watts. Such communication and teamwork ability are essential to help users successfully exploit the wide range of technologies available for the rapidly changing world of work.

Flannagan, now doing Web programming and coding for TCN in Rochester, N.Y., while pursuing his master of science degree in information technology part time at RIT, attests to the importance of communication at work.

"I felt that working with computers, in general, would allow me to bridge

the gap between myself and the hearing world," he explains. "That was important to me because I didn't have strong speech skills. I felt that by being computer literate, I would be able to communicate with peers at work via e-mail and instant messaging. That much is true where I work today."

Some information technology graduates have very sophisticated jobs, like Evans, who is working with a team of developers to assist with the implementation of a global electronic business system to replace an older system.

"I am gaining invaluable experience by seeing firsthand the process of how a company can detach from an older system to take on a new system that will be accessed by over 800 people daily from all over the world and across the entire spectrum of the company, such as finance, planning, production, shipping, and warranty service," he says.

Failing feels that her job opportunities are almost unlimited, especially in the data communications and networking area.

"I would like to work in computer administration or as a senior programmer for networking," she says. "I am a little surprised that I have so many options, but I'm pleased. I've already had several job offers from companies I didn't even send my resume to."

To Provost McKenzie, completing a college degree in the information technology field is important even in light of the high employment rates and salaries, which often lure people away from college before finishing their studies.

"We are providing more than just training, we are providing an education," says McKenzie. "We believe that even if the starting salaries are the same for non-graduates as for graduates, our graduates will move up the ladder and receive more opportunities because of their college preparation than those who drop out. An RIT education helps students develop the intellectual base to be able to continue to grow and learn as the field changes so rapidly."



PHILIP JACOB

by Frank A. Kruppenbacher

Appplied Computer Technology graduate Philip J. (Phil) Jacob, SVP '77, '81, says that as a kid fresh out of high school he was starved for knowledge, looking for new challenges and adventures when he arrived at RIT in 1977.

"Although I contemplated an accounting career in college," says Jacob, "I elected to major in computer programming. I have never regretted my choice, nor have I looked back. I am part of an exciting industry that is constantly expanding, developing, and redefining everyday life."

While at RIT, Jacob was involved in many activities, including Hillel, NTID Student Congress, National Association of College Hearing-Impaired Students, RIT/Gallaudet Weekend, NTID Life (the college's former yearbook), Zeta Pi Mu fraternity (now called Delta Sigma Phi), and various athletics.

"What impressed me as a student was that NTID faculty believed in our capabilities and trusted our judgment," says Jacob. "During my time, they worked with us, helping to fulfill our dreams of working in the computer field. They guided me on the road of life while building a strong foundation that has led to a solid career in the computer industry."

Following graduation, Jacob joined Data Life, a full-function life insurance software provider business that his family owns and operates in Verona, N.J.

Jacob is vice president/systems administrator for Data Life, which offers innovative software solutions to meet the

"Students must aggressively approach their calling. Fear is a natural reaction, but it can and must be conquered. NTID helped me to reach my goals and achieve my fullest potential."

needs of life insurance providers. Data Life's illustration, proposal, and administration software packages help to generate record-setting new business premiums for some of the world's largest insurers.

As the computer field has grown at an astounding pace since he left NTID, Jacob has kept his knowledge and expertise current using the most important skill he acquired during college—learning to learn.

"Technical innovation in this information age requires individuals to innovate themselves and integrate basic skills they have towards quickly understanding and applying new technologies as they come along," says Jacob. "Professionals in the field who

learn to function this way become effective team players on the job."

Jacob's typical day at Data Life covers a spectrum of tasks from complex software programming to changing hard drives and motherboards, maintaining the company

past member of NTID's Alumni Campaign Leadership Committee; a member of the Congregation Ahawas Achim B'nai; and a member of N.J./N.Y. PC Connection.

"Phil is a loving, generous, gregarious, and bright man," says Michael Schwartz, NJDAW board member and visiting professor at NTID. "Phil's love for his work, family, and community shines through. He is one of the most popular and effective leaders in the deaf community of New Jersey."

For his career success and community involvement, Jacob was honored as RIT Distinguished Alumni for the college of NTID in 1999.

Jacob is married to Lynne E. (Goltz) Jacob, SVP '79, 1982 graduate of NTID's Medical Laboratory Technology program (which has since evolved into NTID's Healthcare Billing and Coding Technology program). The Jacobs have three children: Alan, 15; Mark, 13; and Rachel, 11.

"My NTID education was the most important aspect of my professional career," says Jacob. "NTID is perfectly aligned to provide students with the tools for a successful career. Students must aggressively approach their calling. Fear is a natural reaction, but it can and must be conquered. NTID helped me to reach my goals and achieve my fullest potential."



A high-tech collaboration Associate Professor Frank Argento, left, works on a project using streaming video with a student.



Imagine that DI & PT student Chris Allison, left, reviews images with his instructor, David Cohn.

High-Tech Merger Mirrors Industry and Benefits Students

by Susan L. Murad

The genesis of NTID's Digital Imaging and Publishing Technology (DI&PT) program, a merger of the former Electronic Publishing and Printing Technology and Imaging Technology programs in the college's Center for Technical Studies (CTS), grew out of an inventory of computer-based courses offered by the two programs.

"We wanted to see how the courses from the two departments could serve each other's needs," says Kenneth Hoffmann, associate professor and former chairperson of the Electronic Publishing and Printing Technology department. "After completing the inventory we saw a vast overlap of courses due to the evolution of computer technology, particularly with regard to the World Wide Web. Our original goal, to share courses between programs, suddenly became a new one – to actually merge the programs. We then asked ourselves 'how can we best serve our students?' The answers to that question became

the framework of the merger."

Faculty members from both programs began to chart their areas of specialties and interests and look at how they could best enhance one another's teaching experiences.

"(NTID Professor) Michael Kleper collected all the skills that we were teaching in both programs and assembled them into a database that we used to guide ourselves in developing the merged program," says Jean-Guy Naud, professor and former chairperson of the Imaging Technology department. "It was a significant milestone in deciding to go ahead with the merger."

"This was a situation where one plus one added up to more than two," says Hoffmann. "This group of faculty was so willing and eager to share and exchange ideas and materials.

"Our faculty actively stays ahead of the learning curve in new technological advances – not always an easy task since change happens so quickly in this industry. They are not afraid to learn new technologies to

help our students in the classroom.

We often have very intense discussions about meeting curriculum needs, but there is such a spirit of mutual respect that the program has been nurtured as a result."

Empowered faculty as 'change agents'

After deciding that a merger of the two programs would be beneficial to the students and the college, Hoffmann and Naud met with CTS director Dr. Thomas Raco to lay out the concept and get his feedback.

"When Ken and Jean-Guy came to me with this concept, my first thought was that this was the perfect model of how academic change should happen," says Raco. "This was a very organic process, not a 'top-down' edict. These professionals have a real pride in the work they do and feel ownership of their curriculum. The empowerment they feel and the confidence they have in their disciplines meant they had no problem crossing over to see what others were doing."

In his role as academic administrator, Raco listened to the proposal to make sure it lived up to the strengths and mission of the college – to enhance student learning.

“It was important for the faculty to hear me say ‘I support you in this effort,’” he says. “Then I asked ‘What do you need, and how can I help you along the way?’ My job was not to meddle and micromanage, but rather

students need from an education in this discipline?”

“This can be a challenge,” Naud says. “The best way to make sure our curriculum keeps pace is to offer skills in the first year of study that can be applied to a variety of career areas such as Web site set up, presentation graphics, image manipulation, and developing a CD-ROM to send as a portfolio. Students build on these

of the Campos Group, a company that provides imaging and communications solutions as well as custom printing and a photography gallery and workshops. Headquartered in Buffalo, N.Y., with a site in Rochester, the Campos Group is the winner of two Telly Awards for their video work with Fisher-Price and the Boy Scouts of America.

Campos’ first connection with NTID came when a trusted colleague and

“It was exciting to witness the development of this merger,” says Raco. “There was a trust and mutual willingness among the faculty to be agents for change.”

to be part of the progress or a reality check.”

As the proposal began to gel, Raco took the lead in the university’s adoption of the new program, ensuring it followed NTID and RIT curriculum guidelines.

“It was exciting to witness the development of this merger,” says Raco. “There was a trust and mutual willingness among the faculty to be agents for change.”

Responding to a new hybrid industry

According to Hoffmann, the two biggest concerns of industry professionals are keeping up with technology and finding skilled and qualified employees to work in this growing field.

“What we are doing, in fact, is responding to an internal need that coincides exactly with where the industry is going as well,” says Naud, now chairperson of the DI&PT department. The publishing and imaging industries themselves have been merging over the past few years.

“What has continued to emerge is a new hybrid of business and industry that has integrated what the computer can do from the beginning of a project all the way to the end.”

With the phenomenal amount of material available in this growing industry, staying ahead of the curve can feel more like keeping one’s head above water. How does the faculty ensure that they are offering what



That’s a winner Krizzy award winner Jennifer Friede, left, discusses her work with George Campos at a recent student exhibition.

skills in the following years, always adding new technology as it becomes available.

“These early skills are never wasted. Students will find a use for all of this, whether they move into the world of work after graduation or go on for additional education.”

A value-added education

A hallmark of an NTID/RIT education, cooperative work experiences (co-ops) provide openings for students who will be competing for positions in this growing industry. The DI&PT faculty recognizes the competitive advantage co-ops can provide for their students, and they work diligently with members of the industry to create those opportunities. One such connection yielding positive results is with George Campos, president

employee came to the college. Ed Mineck – now NTID’s Associate Professor Ed Mineck – was involved in Campos’ custom printing business more than 14 years ago.

“My first encounter with the college was sending a letter of recommendation for Ed to Jean-Guy,” says Campos. “Ed and his wife Patti (Russotti, NTID associate professor of digital imaging and publishing technology) have been good friends of mine for a long time. I hired Ed as a consultant to help with changes to my local business, and through the years we’ve kept in touch.”

The Campos Group has hired a number of NTID co-op students to work in their nearby Rochester location over the past 14 years with positive results. So positive, in fact,

that Campos has expanded his commitment and connections with the college by establishing The Campos Group's Janet Kriz Cucinotta Memorial Award, recognizing personal and technological achievement. The award is named in memory of the 1987 NTID graduate, known by faculty and students as "Krizzy," who died of cancer in 1997. Jennifer Friede of Lincoln, Neb., a former DI&PT

discussions with Jean-Guy, Ed, and Patti, we have talked about the challenges deaf students face in what may be thought of as 'traditional' communication, but in this emerging Internet world, the focus is on being very clear with the message and transmitting it in a very visual way. Deaf students have experienced this and have skills in making their message visually clear. They have a competitive

imaging and desktop publishing, which will help me to get a better job."

Mendonsa points to the use of the latest technology and software applications as her favorite elements of the program.

"I really enjoy studying desktop publishing and layout using QuarkXPress and PageMaker," she says. "We use a system called 'Blackboard' that is a Web site for homework assignments, lecture notes, and even has a drop box for completed projects. It's very exciting to work with such new technology!"

Carolyn Yu, winner of the first David T. Kearns Technical Excellence Scholarship, has discovered the benefits of concentrating on the digital imaging portion of the program.

"Our teachers are so great – they really want to help us learn so much," says the 19-year-old from East Windsor, N.J. "I am very interested in image manipulation, and I get a lot of hands-on experience in this program. Hopefully, I'll get to work at a co-op that will help me to explore exactly where I'd like to work in this field. I have a lot of samples from my classes that will help me to build a portfolio when I go to look for a job."



It's a knockout! DI&PT students Tracy Kaplan, left, and Charmaine Mendonsa review a project with customer Tony Luicione of the Rochester Boxing Hall of Fame.

student now in her first year in RIT's New Media bachelor's degree program, won the award last spring.

"The DI&PT program is unique," Campos says. "Instead of fixating on old processes, faculty members do what is needed to teach students ways to add value to themselves as potential employees.

"I recently met with Jean-Guy to explore more formal opportunities between my company and the college. I have a great deal of respect for what he and the other faculty are doing. I've learned so much more from them than they have from me."

One of the advantages of this emerging technology that Campos sees is the leveling of the playing field for deaf students in an Internet world.

"My business is about communication," he says. "In my

advantage that they may never have thought of in quite that way."

Exciting opportunities

For Charmaine Mendonsa, the emergence of the DI&PT program provides an opportunity to build on the skills she has learned as a business technology student by focusing on desktop publishing applications.

"I am very interested in desktop publishing and learned about it when I was in the business technology program and worked on program books for the NTID Public Speaking Contest and Student Congress banquet," says the 23-year-old from Queens, N.Y. "I liked it so much that I decided to begin a second major last year! Now that I have graduated from the business technology program, I will concentrate fully on digital

A recipe for success

According to Naud, the success of this merger can be likened to a recipe that students consume with gusto.

"First, the faculty needed to be hungry for change," he says. "They were ready to move to another level – to 'kick it up a notch' as they say on the television cooking shows. Then they needed to decide what it was they wanted to cook, what the ingredients were and who was going to help with what steps in the process. We feel the recipe will continue to be a success, since all the cooks are committed to continually keeping it fresh."

To learn more about NTID's Digital Imaging and Publishing Technology program: <http://www.rit.edu/~441www/dipt.shtml>
To learn more about the Campos Group: www.camposgroup.com

Competitive Edge: Innovation wins grants for NTID

by Frank A. Kruppenbacher

"NTID is being propelled by external forces into a new period of operation in terms of financial resources."

Strategic Planning Committee, Strategic Plan: An Agenda for Action, 1992.

When NTID's 22-month strategic planning process concluded during June 1992, the college's future faced some formidable challenges. Competitive educational programs for deaf and hard-of-hearing individuals at the postsecondary level were expanding throughout the United States, and the demographic characteristics of students historically served by NTID were changing. These major shifts placed increasing pressures on the federal government. All at once, the college's need to redefine and refocus its purpose and programs met a balance sheet that read "zero sum" growth.

In order to achieve forward momentum, NTID's action plan moved its strategic vision from paper into place. The college significantly altered its organization, facilities, and human resources. On the academic side, selected programs would be allowed to expand and accept more students. Other programs would be discontinued and new programs created to help

aggressively maintain an enrollment of 1,100 deaf and hard-of-hearing students at RIT.

Fiscally, NTID energized efforts to attract new federal and, more importantly, non-federal revenue sources. College leadership strengthened its commitment to private fund raising and brought new, capable representatives of business and industry into the NTID family. Fiscal realities also dictated that a greater emphasis be placed on attracting and using publicly available competitive grant and other external monies to support outreach, research, and instructional technology initiatives. The intent was to achieve a healthy balance between new fiscal demands and new sources of funding in order to keep the foundations of NTID's mission strong.



Gail Kovalik

Over the last five years, NTID has been awarded more than \$9 million in the form of publicly available competitive grants. This figure accounts for 27 percent of all grant-funded activities across RIT's seven

colleges, the Center for Integrated Manufacturing Studies, and other university-wide units. This fiscal support comes from federal government agencies, followed by New York State, and public and private corporations and foundations.

As grants coordinator for NTID, Gail Kovalik seeks such support for NTID. Her responsibilities include finding competitive public funding opportunities appropriate for NTID academic and research faculty, distributing information about these opportunities to interested faculty and staff, and supporting grant proposal development and writing. She also serves as liaison to RIT's Grants, Contracts, and Intellectual Property office.

"NTID's success in the public grantsmanship arena comes from proactive leadership and greater participation by NTID faculty and staff," says Kovalik. "Grant awards, public or private, bring important recognition to the college and enhance the credibility of successful people and programs."

A few of the significant projects funded by publicly available competitive grant awards to NTID shortly after implementation of the strategic plan include: development, evaluation, and implementation of C-Print™, a computer-aided speech-to-print transcription system as a support service for deaf and hard-of-hearing students;

personal captioning for students with similar language-related special learning needs; Access to English and Science Outreach Project (AESOP); and the establishment of the Northeast Technical Assistance Center (NETAC) at NTID.



Dr. Michael Stinson

"For the past 10 years a research and development group at NTID has been working to develop a speech-to-text support system that we call C-Print," says Dr. Michael Stinson, NTID research faculty and principle-investigator of grant-supported C-Print projects.

"NTID's C-Print has emerged from an idea to a system that hundreds of deaf and hard-of-hearing students depend on every day, all across the country, for communication access and learning. Work supported by federal and private grants has been critical to this development. Grants have supported the technical development, evaluation, and training work that has been essential for bringing C-Print to the point where it is today."

Over the last two years, competitive grant awards to NTID have funded such projects as Project Inclusion: Prototype Curriculum for the Inclusion of Deaf People in Society, Test of Variables of Attention (TOVA) Normative Database for Deaf College Students, Meeting the State and National Need to Increase the Number and Quality of Dually-Certified Secondary Teachers of Students who are Deaf or Hard of Hearing, New York State Community Interpreter Training Project, and New York State Preparation of Educational Interpreters Grant Project (PEIP).

"There is no other state outside of New York involved in such extensive projects for sign



Marilyn Mitchell

language interpreters," says Marilyn Mitchell, CSC, NTID assistant professor and PEIP grant director. "NTID has proven interpreter training expertise through its educational interpreting degree program. Now with support from the state, NTID and grant partners are able to share knowledge and help others to fill gaps in training and skills of community and educational interpreters so that deaf, hard-of-hearing, and deaf-blind individuals are better served."

One of NTID's newest public grant-awarded projects is called Deaf Initiative in Information Technology (DIIT), an initiative of the Applied Computer Technology (ACT) Department at NTID.

The \$526,332 three-year project is supported by the National Science Foundation (NSF), an independent U.S. government agency responsible for promoting research and education projects in science and engineering.

DIIT will provide retraining workshops to deaf and hard-of-hearing adults in the information technology (IT) field. Funding will support release time for one academic quarter for ACT faculty members to upgrade their technical skills. During this leave, faculty will develop curricula and offer IT workshops at NTID to deaf and hard-of-hearing adults already in the national IT workforce or preparing for employment. The project will establish a new computer laboratory for IT teaching and learning activities and allow faculty to incorporate new IT material into ACT's full-time undergraduate curriculum to benefit NTID students. The return on investment fills a void in continuing education opportunities for educators and individuals who are deaf or hard of hearing.

"This is a win-win-win situation," says Donald Beil, professor in NTID's ACT Department and co-investigator of the DIIT grant. "First, deaf adults working in IT will have the opportunity to engage in continued learning regarding their technical skills and their communication needs. Second, our own ACT faculty will be able to develop new skills in areas of IT. And third, deaf and hard-of-hearing students at RIT will directly benefit from a fresh infusion of skills and knowledge into their learning environments. We are grateful that NSF is supporting us in this multi-benefit IT learning initiative."

NTID and RIT also offer several funding opportunities for faculty and staff

development and special projects that support teaching and learning activities. These grants and awards include: NTID Faculty Evaluation and Development (FEAD) grant; NTID Learning Center/Center for Research, Teaching, and Learning Fellowships; RIT Provost's Cultural Diversity and



Donald Beil

Learning Innovations Grants; Ronald D. Dodge Memorial Endowment Fund Faculty Grant; and First-Year Experiences/NTID Extra-curricular Opportunity Grant.

"There are monies out there, and many worthy projects looking for support as well," says Kovalik. "Unfortunately, the amount of money available is smaller than the number of projects seeking funding, and not all projects can be funded. Such is the nature of competitive grant awards."

Last fiscal year NTID submitted 23 proposals valued at nearly \$12 million. Seven projects were eventually funded for nearly \$3.4 million. For the same period, RIT including NTID, submitted 211 project proposals valued at more than \$50 million. Less than half the proposals were funded, sharing nearly \$10 million. Currently NTID has 13 research projects competing for public grant monies.

Receiving sponsored competitive funding reflects RIT's, including NTID's, technical prowess and expertise. It also demonstrates the university's ability to

compete nationally for limited and highly sought-after funds, according to Marjorie Zack of RIT's Department of Grants, Contracts, and Intellectual Properties.

"RIT competes for grant funding because that important activity raises our profile as an institution of higher education," says Zack, "and propels us forward into areas where we are determined to excel and enhance the educational experiences of our students."

NTID's success in the area of competitive grants over the last five years complements the successful conclusion last year of Fulfilling the Promise: The Campaign for NTID, a comprehensive fundraising effort for the college that raised \$11.5 million. The campaign was the first such effort to attract private gifts supporting endowed scholarships for students, high technology facilities, academic instruction innovation, outreach opportunities, and groundbreaking research.

NTID's trend is toward continued success related to all phases of fundraising. Closer collaboration and sharing of expertise has begun among those seeking funding from public sector competitive grants and private sector corporations and foundations.

"Success comes when credibility and quality are clearly articulated," says Kovalik. "Every time we do what we say we will do through grant- or gift-supported projects, such as C-Print, AESOP, or NETAC for example, we build confidence among our funders. And as long as we funnel support back into teaching and learning objectives, NTID grows smarter and stronger, moving us and those we serve ahead of the rest."



Recognizing role models Dean for NTID Dr. T. Alan Hurwitz, right, addresses NTID Student Congress (NSC) members and NSC faculty and staff advisors during the year-end reception in their honor. "I commend you for being excellent role models, not only for other students, but for all of us," Hurwitz said. "Each of you did an outstanding job in balancing your hard work in school and your contributions to the campus as community leaders. You were effective at dreaming what is good for NTID and in believing in yourselves."

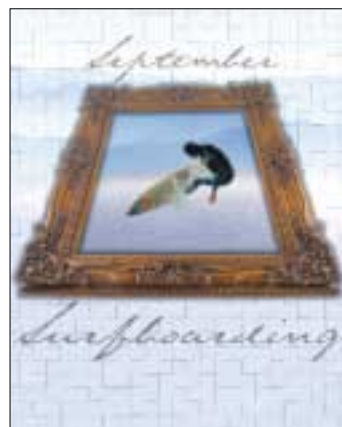


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CHANGE SERVICE REQUESTED



Third-year digital imaging and publishing technology student Carolyn Yu digitally merged colorful elements to create this 12-month calendar for a class in image manipulation.