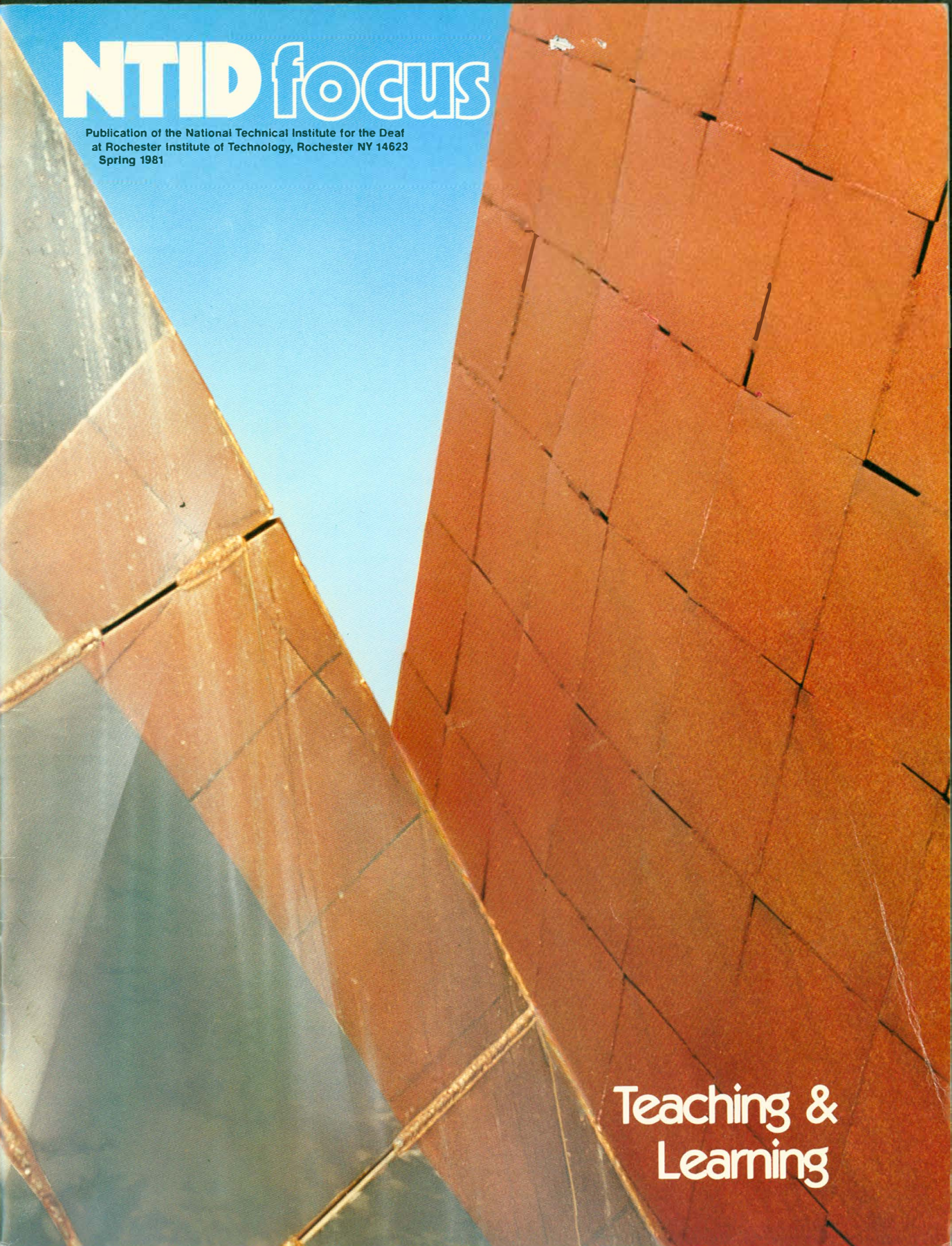
NTID focus

Publication of the National Technical Institute for the Deaf
at Rochester Institute of Technology, Rochester NY 14623
Spring 1981



Teaching & Learning

National Technical Institute for the Deaf at Rochester Institute of Technology

In modern day educational theories, a great deal of lip service is paid to the concept of individual differences. Each student is unique; each has his own set of needs, wants, interests, capabilities, and energies; and each should be given a great deal of individualized attention.

On the other hand, modern day educational practices pay little heed to the theories. Students, more often than not, get locked into a curriculum mode which expects all of them to learn the same things, at the same time in their lives, within the same unit of time. Teachers, more often than not, are inclined to present the same unit of material, using the same approach, under the same conditions. Institutions, more often than not, outline their curricula for six-week periods, quarters, semesters, or trimesters, and the passing or failing of students becomes time-prescribed and time-circumscribed.

In the real world of education, it is not so much a matter of matching instruction to student needs, to student wants, to student interests, to student capabilities, and to student energies. It is more a matter of matching instruction to faculty perceptions of what all students should have, of what all students should be interested in, of what all students must be capable of doing (within a common unit of time), and on what all students should expend their energies. And in so many colleges and universities it has become, more often than not, a matter of matching instruction to what the faculty needs, to what the faculty wants, to what the faculty is interested in doing, and to the amount of energy the faculty is willing to expend; and that, I regret to say, is, too often, very little.

At the National Technical Institute for the Deaf at Rochester Institute of Technology, we continue to design an instructional system which gives maximum recognition to the individual differences among students. We do not as yet have the complete design, nor can we claim that all of our personnel are ready to identify with such a design and help to make it work. We seek the perfect design, though we may never attain it; and we intend to continue to change so that we come closer and closer to the perfect design as our experiences accrue.

This issue of **Focus** *describes for you some features of the design which have already been implemented by NTID and RIT and which are constantly undergoing refinement.*

William E. Castle

Dr. William E. Castle
Vice President of Rochester Institute of Technology
Director of the National Technical Institute for the Deaf

A wise man once said that the skills necessary to maintain oneself in a life-long learning experience are found in the mutual interaction and relative dominance of four basic learning units: learning to learn, learning to do, learning to care, and learning to be.

The philosophy regarding teaching, learning, and assessment which permeates RIT is very much in tune with this statement, though the language that we use may not be so simplistic.

When we at RIT recite our interest in helping students become self-generated learners, we are talking about "learning to learn" and an interest in developing inquisitiveness, curiosity, and creativity among our students.

When we say our primary purpose is to provide technical and professional education to students which will lead to their successful employment, we are talking about "learning to do" and an interest in preparing our students for a gainful and productive future which will lead to their sense of self-worth and self-respect.

When we declare a secondary purpose for ourselves of facilitating and encouraging students to achieve a high degree of personal, social, and cultural development, we are talking about "learning to care" and "learning to be" and an interest in providing our students with experiences which aid them in the processes of interacting with other people and self-discovery.

All of these efforts in learning are the heart of the RIT mission; and, in my opinion, it is for this reason that RIT serves well as the host institution for the National Technical Institute for the Deaf, which we are very pleased to have on our campus.

Dr. M. Richard Rose
President of Rochester Institute of Technology

NTID focus

Publication of the National Technical Institute for the Deaf at Rochester Institute of Technology, Rochester NY 14623

Spring 1981

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About the cover...
Carl Zollo's "Split Cube" sculpture, at the main entrance of the Lyndon Baines Johnson Building, represents the artist's concept of education as a continual process which teaches students the art of analyzing knowledge in new and creative ways. Photograph by RIT Communications.

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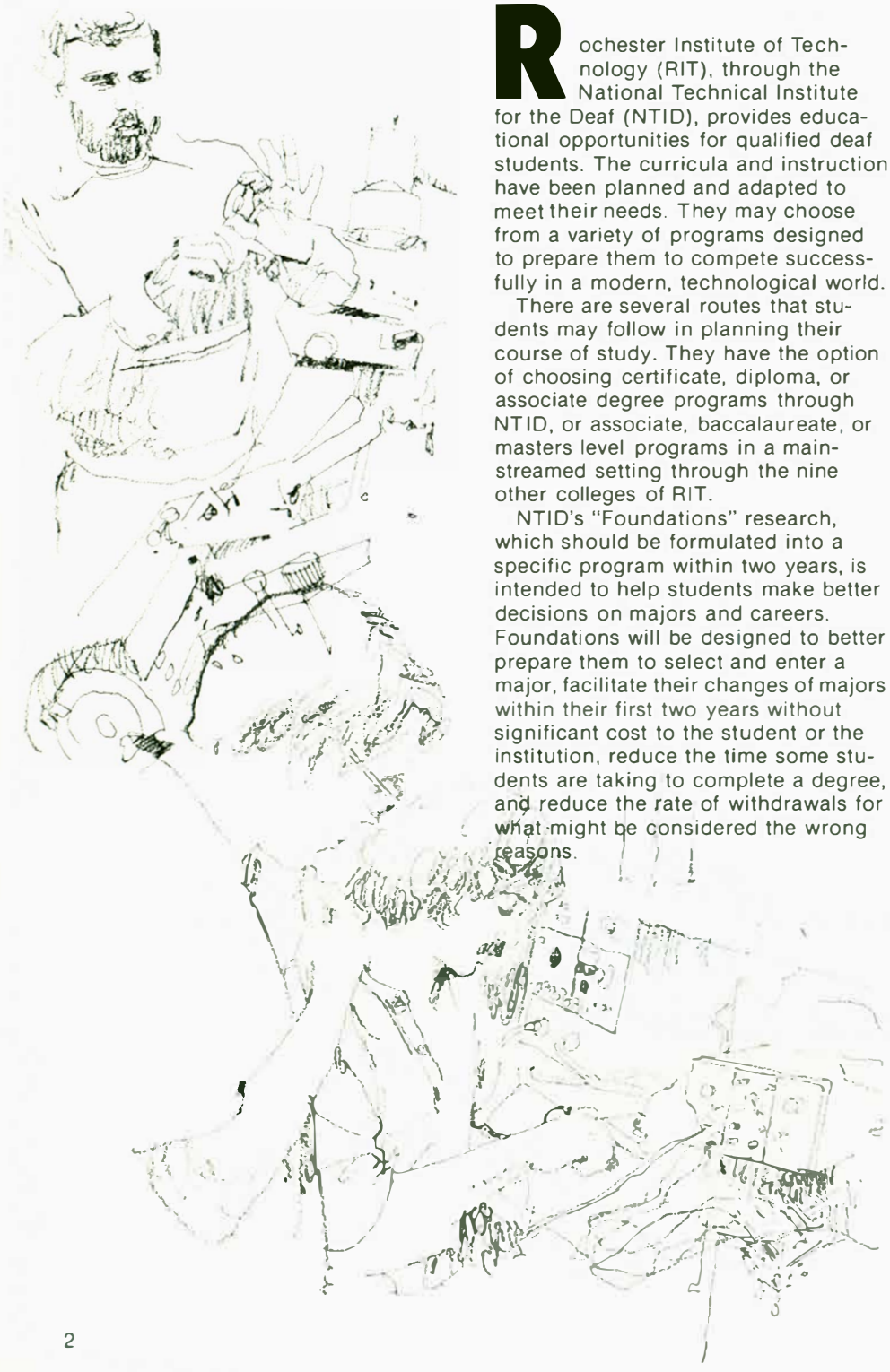
The RIT Experience



Rochester Institute of Technology (RIT), through the National Technical Institute for the Deaf (NTID), provides educational opportunities for qualified deaf students. The curricula and instruction have been planned and adapted to meet their needs. They may choose from a variety of programs designed to prepare them to compete successfully in a modern, technological world.

There are several routes that students may follow in planning their course of study. They have the option of choosing certificate, diploma, or associate degree programs through NTID, or associate, baccalaureate, or masters level programs in a mainstreamed setting through the nine other colleges of RIT.

NTID's "Foundations" research, which should be formulated into a specific program within two years, is intended to help students make better decisions on majors and careers. Foundations will be designed to better prepare them to select and enter a major, facilitate their changes of majors within their first two years without significant cost to the student or the institution, reduce the time some students are taking to complete a degree, and reduce the rate of withdrawals for what might be considered the wrong reasons.

RIT is committed to providing educational experiences aimed at professional competence and career preparation, and at the same time, encourages students to accept responsibility as world citizens by providing them with skills for functioning at school, at home, at work, and in the community.

A special program of creative arts in complementary learning for both deaf and hearing students, faculty, and staff was initiated in 1980 and will add a new dimension to education at the Institute.

NTID at RIT recognizes the need for good communication in college, on the job, and in the community, and provides instruction in communication skills to deaf young adults based on an "individualized instruction" model which is multi-disciplinary and based on student goals. Four departments provide communication instruction in audition (the development, remediation, or refinement of listening), speechreading, speaking, and manual/simultaneous skills geared to students' current needs, as well as specific instruction in reading and writing skills.

An important part of the curricula are the support services for deaf RIT students. They fall into two broad categories: direct classroom assistance and indirect classroom services such as career development counseling, job placement assistance, and communication evaluation and training.

Direct classroom assistance comes in the form of interpreters, tutor-notetakers, and support team members. Through Interpreting Services, more than 50 student and professional interpreters provided students with about 14,000 interpreting hours each academic quarter of 1980. About 70 percent of that time was spent in classroom interpreting—the rest in helping with phone calls, student meetings and club activities, and emergency situations.

for Deaf Students

In this era of rapidly changing technology. it is estimated that the "half-life" of knowledge in major industry is eight years. In others words, if a large corporation has accumulated a certain amount of scientific data, half of that information will no longer be up-to-date in eight years' time. It thus becomes imperative that the curricula keep up with the "state of the art" in each field, preparing the students to fulfill the needs of industry.

How does NTID at RIT keep the curricula current?

First, through the faculty—"an incredibly creative, talented, and hard-working group," according to Dr. William E. Castle, RIT vice president and director of NTID. Technical faculty usually are hired from either business or industry. Most were practitioners before they became educators.

They come to RIT with the background and knowledge of what life is like in industry and what industry needs from employees. They often return to business and industry to participate in workshops and research experiences and to keep their skills sharpened.

Second, there are curriculum advisory committees. These volunteer committees with representatives from business and industry, currently working in the field, meet several times a year and advise the faculty and administration regarding technical programs.

In addition, each of the colleges of RIT has curriculum committees comprised of faculty representatives who review and recommend all curriculum modifications.

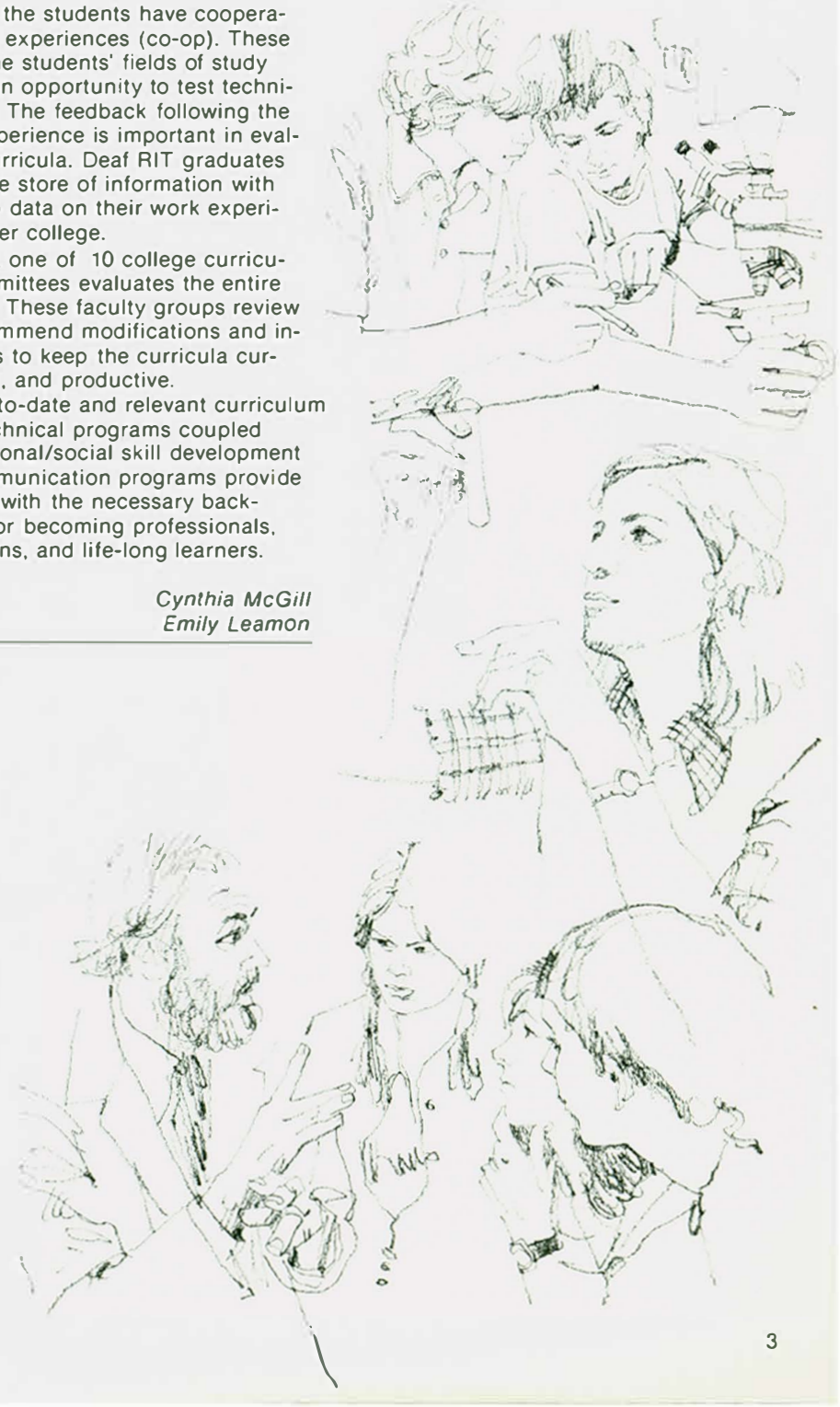
Third, there are consultants. These persons, mostly researchers and developers, bring another dimension. They are experts in their fields, with no particular company or organization affiliation, and are familiar with the research, writing, and latest studies in major technical areas.

A fourth important input into the curricula is student feedback. More than half the students have cooperative work experiences (co-op). These jobs in the students' fields of study provide an opportunity to test technical skills. The feedback following the co-op experience is important in evaluating curricula. Deaf RIT graduates add to the store of information with follow-up data on their work experiences after college.

Finally, one of 10 college curriculum committees evaluates the entire program. These faculty groups review and recommend modifications and innovations to keep the curricula current, vital, and productive.

An up-to-date and relevant curriculum in the technical programs coupled with personal/social skill development and communication programs provide students with the necessary background for becoming professionals, technicians, and life-long learners.

Cynthia McGill
Emily Leamon



Students with SAVVY

Each year, incoming deaf RIT students from almost every state in the union uphold NTID's claim as a National Technical Institute for the Deaf. From as far away as California and as close as suburban Rochester, increasing student enrollment attests to RIT's ability to attract deaf persons interested in continuing their education. Some have an overall academic level of eighth grade; others are academically capable of cross registering into RIT's other nine colleges. But no matter where they come from, they all have one thing in common—the desire to learn.

Keeping an eye on the teacher, David Nelson reverse interprets an English lesson for a deaf student with a visual impairment. David is the first deaf interpreter hired by RIT.

"I came to RIT because my goal is to have a career in computer programming," says David Nelson, a third-year data processing major from Miami, Florida. "Being mainstreamed with both deaf and hearing students here will undoubtedly help me when I get out into the working world."

David came to NTID at RIT from the Florida School for the Deaf in St. Augustine, where he participated in student government, athletics, and the Junior National Association of the Deaf (Junior NAD).

At RIT, the outgoing 21-year-old is regarded by his advisors as "one of the more active students on campus." He has been a member of the Student Congress, is special student assistant to the director of NTID, and acting chairperson of a proposed National Association of Hearing-Impaired College Students. This group, which David was instrumental in organizing, is thought by many to be the missing link for young deaf persons who are no longer in Junior NAD, yet also are not members of their home state's NAD chapter. It is under consideration by the National Association of the Deaf.

David says his mother encouraged him to continue his postsecondary education, but when it came to choosing a college, "she made sure that I made the decision."

He plans to graduate with a bachelor's degree in computer systems and then possibly pursue a masters in business administration. David acknowledges that "RIT provides many good opportunities for employment after graduation."

In the meantime, he's keeping busy. Between his academic schedule, his duties as a resident advisor, and his job as the first deaf interpreter hired by NTID at RIT, David also finds time for photography, reading, discussing politics, and ice skating and skiing. These last two are suspicious hobbies for a Florida native, but David insists, "I love the winter here, especially the snow. Florida doesn't provide that!"

While David Nelson revels in the winter weather, Cupertino, California native Mark Blesch says getting used to "cloudiness and cold days" has been a big adjustment for him.

The 21-year-old data processing major came to NTID at RIT in 1977 with several awards from Homestead High School in Cupertino. Twice recipient of his school's "Most Spirited Player" award and "Most Valuable Player" of the cross-country team, Mark has proved a welcome addition to both RIT and its cross-country team.

Third-year student Mark Blesch relaxes between classes in the NTID "Street" area with student Maria Ritz.

Mark says he hopes his experience at RIT will help him reach his career goal of becoming a business programmer. Aside from academics, he enjoys NTID's Experimental Educational Theatre, captioned films, and all sports, particularly running.

As the only deaf member of the RIT cross-country team which last fall made a record-breaking transatlantic run to celebrate RIT's 150th anniversary, Mark says he enjoyed the opportunity to teach his teammates sign language along the way.

"I don't communicate with hearing students that much," Mark says. "But running with hearing athletes and teaching them some basic signs was really fun."

Sporting an orange RIT cross-country jacket embroidered "Marco," Mark explains that his nickname is for Marco Polo, "another coast-to-coast traveler."

New Orleans, Louisiana native Erin O'Sullivan is not only a national traveler, she's a world traveler as well.

Aside from studying for a time in both France and Israel, the first-year RIT deaf student brings with her two years of college experience from the University of Southwestern Louisiana.

"When I was young, I went to Chinchuba Institute for the Deaf in Louisiana and then transferred to a hearing grammar school," Erin says. She also attended a hearing high school, Louisiana's Slidell High, from which she graduated in 1978. A member of her school's press club, pep squad, cheerleading team, and drama club, Erin was also first runner-up in the Miss Slidell pageant, and plans to enter the Miss NTID pageant in 1981.

"I came to RIT because I was frustrated at the University of Southwestern Louisiana," she says. "I went there because many of my friends did, but there weren't any notetakers or interpreters and it was very difficult to take notes.

"After I had problems, I decided RIT with its many support services would be better for me. My parents wanted me to have a good college education, and since NTID had a data processing program, I decided to come here."

Her career goal is to work "as a computer programmer for a large company. Today's businesses are moving toward the computer field, so many companies will be needing more computer programmers," she reasons.

Erin says she frequently interacts with hearing students at RIT, since she is used to communicating with hearing peers since her early school days.

"I love RIT because I enjoy meeting people from all over the United States and learning different ways of saying things," she says. "I enjoy meeting people wherever I go because it gives me the opportunity to learn about their hometowns and make new friends."

When it comes to making friends and winning awards, fourth-year student Keith Cagle probably has enough of both to stretch all the way back to his home state of Oregon.

Erin O'Sullivan and friend Laura Hatchett converse while waiting for the RIT campus shuttle bus.

Surrounded by some of his accomplishments—a genealogy chart, the yearbook NTIDLife, texts on social work, and a jar of Mt. St. Helens ash collected on a recent visit home—Oregon native Keith Cagle works in a cluster classroom at NTID.

His unique path to NTID at RIT began 21 years ago. Keith's parents have both been deaf since birth, and Keith, along with two deaf brothers, grew up in an area of Portland where "on a clear day you can see Mt. St. Helens, 45 miles away." Keith collected several jars of ash from the volcano after its eruption, but says he hasn't finalized any selling strategy yet.

He attended the Oregon School for the Deaf until entering NTID at RIT three years ago. He intended to major in architectural technology, but as Keith says, "It turned out differently. I found myself getting interested in the field of social work at RIT, so I decided to pursue a B.S.W. in that field.

"RIT is a great institution for a deaf person who needs both a good education and good communication skills," he adds.

Keith distinguished himself as executive editor of the yearbook *NTIDLife,* a project he is very proud of. "It took a lot of time and hard work, but it was definitely worth it," he says.

The former "Mr. NTID" has also served as chairman of the bylaws committee and vice president of the NTID Student Congress (NSC); received the NSC Service Award; and portrayed Romeo in the Experimental Educational Theatre's production of "Romeo and Juliet."

After graduation, Keith says he would like to work as either a vocational rehabilitation counselor or a counselor/social worker for the deaf. He is completing his internship requirement at the Rochester Vocational Rehabilitation Office, and finds the job "very interesting."

"Eventually I'd like to work with the deaf at either the high school or post-secondary level," Keith says. "I'm also very interested in community services for the deaf. I'm looking forward to learning and understanding different systems of community service to help me in my career."

In the meantime, Keith devotes his free time to his favorite hobby—genealogy. "It's an endless hobby and is always fun to work on," he says.

"So far I've located 13 pilgrims on the Mayflower who are my ancestors. And my girlfriend is a very distant cousin!"

Alberto Ramirez has been at RIT only a year, but he's already won NTID's "Most Friendly" award.

The 20-year-old Laredo, Texas native is undecided on a major, but says he is "considering accounting."

Before coming to NTID at RIT, Alberto attended the Texas School for the Deaf in Austin, where he participated in the science club, the drama crew, and student government.

Alberto Ramirez poses a question during his favorite class, English.

He was also captain of the cheerleading squad, treasurer of his junior and senior classes, and a member of the Junior NAD.

"I came to RIT because I want to get a good education," Alberto says. "I really want to have a good job in the future, and getting a college education will help me do that."

Alberto says he spends time with hearing students, both in classes and out, and attributes his ease at communicating to a job he held before coming to RIT.

"I worked at the Internal Revenue Service in Texas," he explains, "and I met a lot of people by writing."

He hasn't wasted any time getting involved at RIT. He worked on the first edition of *NTIDLife* and is social chairperson of the Business Club, the perfect job for someone who lists "having parties and meeting people" as his favorite pastimes.

Kathleen Sullivan

TEACHING the TEACHERS

The Internship Program

Last January, two new "students" arrived on the Rochester Institute of Technology (RIT) campus. They attended classes, worked on projects, and lived in a residence hall for two months, then left. Accelerated learners? In a sense. Actually, Rochester Police Department Officers Dave Stasaitis and Maureen Tuttle were completing a ten-week professional internship program offered by RIT through the Department of Professional Development of NTID.

Their internship represented one of three types offered by NTID at RIT. There are also graduate and special internships available to those who demonstrate an interest in and potential for serving the deaf. In addition, internships are offered to some foreign citizens.

Officers Stasaitis and Tuttle enrolled in the program to develop better communication skills for assisting deaf citizens in the Rochester community, and to develop a training program on deafness for the Rochester Police Department.

Stasaitis had become interested in the idea when he responded to an accident call involving a young deaf girl on a bicycle. Arriving at the scene, he recalls how "useless" he felt when he was unable to communicate with the frightened youngster.

A short time later, the Rochester Police Department offered a beginning course in sign language, and he enrolled. He pursued his interest through Free University, a program offered by NTID interpreters who voluntarily teach sign language to the community, and then enrolled in the internship program at NTID.

"My internship was a really good experience," Stasaitis recalls. "The NTID staff and administration really supported us during our stay at RIT.

"Being out of college about ten years, it was quite an experience living in the dorms. We had to remind ourselves that we were there as students, not law enforcement officers."

Since their internships, Stasaitis and Tuttle have worked on a manual on deafness to be issued to members of the police force in an upcoming in-service training program. If enough interest is sparked, they will help implement a beginner's course in sign language for other police officers.

"Internships like Dave and Maureen's represent one of our efforts to meet the NTID mandate to train professionals to serve the deaf," says Joseph Avery, chairperson of the Department of Educational Support Services Training. "We feel that the more people we can place nationally in different positions where they're likely to have contact with the deaf, the more likely it is that deaf persons will get quality services."

The average length of time for an internship is ten weeks, the equivalent of one quarter at RIT. "This length of time is desirable because most departments want the interns on campus at the beginning and end of the quarter so they can participate in a full academic cycle," Avery says.

The application process for interns begins with Avery, who checks the background and interests of a potential intern. If a person seems a good "match" for a program, Avery then locates a "mentor" for the intern in the appropriate department.

"The mentor is responsible for guidance, direction, support, evaluation, and supervision of the intern. It's a very important part of the program," Avery says.

While most interns apply directly to NTID at RIT, Avery and other members of the Office of Professional Development actively recruit at universities and colleges nationwide.

"If a school has a program related to what RIT is doing through NTID, we consider it. For example, we assume that students enrolled in programs in speech and hearing are interested in the deaf population," Avery says.

Of the approximately 60 interns accepted into the program yearly, graduate interns represent the largest category served.

"We have a broad network of contacts all over the nation with graduate programs and we take students who have finished their course work in fields such as audiology, speech therapy, teaching, counseling, and instructional technology. The most common graduate internship is counseling, followed closely by audiology," Avery says.

The internship program also attracts scholars and professionals from around the world.

"We have three foreign interns here now," Avery says. "One is a professor at Cambridge University in England. It's nice to have people from other countries come and spend time within NTID at RIT. We all benefit from the exchange of ideas."

The last type of internship, special interns, are persons who are neither graduate students nor professionals, but who, nonetheless, have demonstrated a potential for serving the deaf. Right now there are six such interns at NTID—"Sunshine TOO," a drama troupe comprised of both hearing and deaf performers. Their ten-month objective is to enhance public relations between the deaf and hearing populations in the New York State area.

More than 90 percent of all interns enrolled in the program go from RIT to situations where they work with the deaf, a percentage Avery sees as a good measure of the program's success. In addition, 16 percent of the interns, primarily graduate students, have later been hired by RIT to work at NTID.

"Our statistics tell me that our program is helpful to both the interns and the publics they go on to serve," says Avery. "It gives those involved a chance to discover whether they would like to work with the deaf, and vice versa. It's been very useful."

Kathleen Sullivan

NTID at RIT offers professional internships in:

- Career development
- Communication skills
- Counseling deaf people
- Curriculum development
- Development of instructional materials
- Interpreting
- Job placement techniques
- Leadership skills
- Management skills associated with establishing and operating training and service programs; i.e., interpreting, notetaking/tutoring
- Models for providing support services
- Special teaching techniques
- Techniques for diagnosing communication skills (speech, English, audiological, and manual language assessment)

NTID at RIT offers graduate internships in:

- Audiology
- Career and personal counseling
- Curriculum development and evaluation
- Educational administration
- Instructional television
- Job development and placement
- Media development
- Research
- Speech pathology
- Teaching
- Theatre

Sunshine TOO, a drama troupe comprised of both hearing and deaf performers, represents the "special internship" program offered by NTID's Department of Professional Development.

Rochester Police Officer Dave Stasaitis, far right, took a sign language course through NTID to improve his rapport with the deaf community he serves. Manual/Simultaneous Specialist Jennie Ryan, left, demonstrates a sign for "exchange" during one of the sessions.


CROSS
REGISTRATION
Mainstreaming
at its Best

Deaf students have come a long way from the days when their career choices were limited primarily to blue collar manual labor jobs such as lithography, cosmetology, electrical servicing, and drafting.

Today, students enrolled at Rochester Institute of Technology (RIT) through the National Technical Institute for the Deaf (NTID), have a broad range of choices available as they pursue a technical or professional education.

In addition to the certificate and diploma programs available through NTID, qualified students also have the opportunity to cross register in nearly 200 associate, bachelor, and masters level programs at RIT.

"Deaf students who cross register are usually very conscientious and motivated," says Dr. Roy I. Satre, RIT vice president for Academic Affairs. "They must be, to make it to the associate degree level. The requirements for acceptance are exactly the same as for any two-year transfer student."

In the 12 years since the first deaf students enrolled, almost 3,000 have attended NTID at RIT, and of that number, more than 20 percent (611 students) have cross registered in RIT's associate, bachelor and masters level programs. Of the 939 enrolled for the Fall 1980 quarter, 157 were cross registered into RIT's Colleges of Business, Engineering, Fine and Applied Arts, General Studies, Graphic Arts and Photography, Science, and Institute College.

"According to the deans of these other colleges, RIT's deaf students have done very well," Dr. Satre stesses. "In fact, when Institute College gave its first outstanding alumnus award, it was deaf RIT student Gerry Nelson who won the award over all his hearing peers."

The success of these students is due, in part, to the excellent support provided by NTID's team of interpreters, tutors, and notetakers.

"If there has been a problem, it is that we don't have enough interpreters to go around," Dr. Satre says. "This fall, 19 classes with deaf students enrolled had no regular interpreters."

This is an ongoing problem for NTID's Department of Interpreting Services. With a staff of 62, the Department provides more than 1,400 hours of interpreting services each week. Institute faculty and staff are encouraged to learn sign language in order to free interpreters from meetings and social gatherings where their presence is not as critical as it is in the classroom. Mainstreamed classes are always given top priority for interpreter support.

Dr. Roy I. Satre, vice president for Academic Affairs at RIT.

Deaf students who began their postsecondary studies at NTID and went on to cross register in other RIT colleges have one advantage over other transfer students. They lose no college credits because of differences in program requirements. The people responsible for curriculum development at NTID work closely with their counterparts in other RIT colleges to ensure that certificate and diploma coursework establishes a solid foundation for the upper level programs offered.

"We do work closely," Dr. Satre says, "and we have even shared some of the same laboratories over a long period of time.

"RIT's role is to identify deaf students with the academic potential and encourage them to cross register and secure a baccalaureate degree," he says. "I think this should be a continuing process as other colleges of RIT work with support and career guidance professionals at NTID to help these special students."

According to Dr. Satre, RIT has already made provisions in its budget projections for 1985 through 1987 to accommodate the expected enrollment increase of students who lost their hearing as a result of the 1963-65 rubella epidemic.

"The other colleges are already gearing up their degree programs for more cross-registered students in the years to come," Dr. Satre says.

Lynne Williams

NTID students can enroll in classes at RIT's other colleges, such as this engineering course taught by Assistant Professor Kevin Foley, with Assistant Professor Dominic Bozzelli providing interpreter support.

MATT STARR

Matt Starr, the first deal RIT student accepted into the master's degree program in clinical chemistry at RIT, monitors the oxygen level of a premature infant at Strong Memorial Hospital's Intensive Care Nursery, where he works.

Shines in Graduate Program

Matthew Starr is a go getter. His employers describe him as "a first class employee... hard-working, dedicated, conscientious, and delightful."

The 1979 graduate of RIT's College of Science with a B.S. degree in medical technology is the first deaf RIT student accepted into the master's program in clinical chemistry at RIT. In addition, Starr has passed the National Registry Examination of the American Society of Clinical Pathologists to become a certified medical technologist.

That's quite a list of accomplishments for the New York City native who transferred in third grade from a school for the deaf to a hearing public school, a move Starr says "was not easy at all."

Even at that age, however, Starr says he knew what he wanted to do with his life. "I always wanted to become a medical doctor. I've been interested in science since I was a youngster." Attending a hearing high school, and his successful adaptation to it, strengthened Starr's conviction that he could and would succeed at his chosen profession.

"High school was one of the most important factors in helping me make a judgment about my potential for getting along in the hearing world," he says. "Because my experiences there were positive, I decided to attend NTID at RIT, and eventually cross registered into the College of Science."

Starr is only the third hearing-impaired student to complete the requirements of the medical technology program since NTID opened at RIT in 1968. To obtain his degree, he had to complete the curriculum's internship requirement by spending one year studying at the Brooklyn (N.Y.) Veterans Administration Medical Center.

After graduation, Starr began working at Strong Memorial Hospital of the University of Rochester Medical Center, and then decided to continue his education.

"I was thinking about my educational background, and I was hoping to become either a teacher, lab supervisor, or medical researcher. I realized that getting my master's degree in clinical chemistry would provide more open doors for my career."

The clinical chemistry program in which Starr is enrolled requires a research thesis. His project involves studying the biochemistry of phosphatidylcholine, a chemical important for the breathing mechanisms of premature infants with Idiopathic Respiratory Distress Syndrome (IRDS). His research at Strong's Department of Pediatrics will be conducted under the guidance of Dr. Allen Merritt, while Dr. William Bigler will be Starr's academic advisor from the Department of Clinical Sciences at RIT.

Aside from his graduate work, Starr works full time in the Clinical Pathology Laboratories, where he performs general clinical chemistry, emergency toxicology, and is a member of the Intensive Care Nursery medical team.

"Matt has been working primarily as any other technician in our lab, doing routine and stat analyses," says Dr. Alfred Bacharach, lab director. "We are delighted with the way Matt has fit into our lab. He's a first class employee."

Starr admits, "When I first started working in the lab, some people weren't sure I would make it. I knew I had to work hard to gain their respect. We all get along very well now —I've even started to teach everyone sign language."

One of Starr's job responsibilities in the Intensive Care Nursery involves carefully analyzing and monitoring oxygen levels in premature infants.

"There are usually ten to twenty preemies in here," Starr explains. "Some of these babies have a lot of breathing problems, so the doctors and nurses give them oxygen. I monitor the babies' arterial blood oxygen levels and report the results to the doctors; too much or too little oxygen could do irreversible damage to the babies' eyes, lungs, and brains."

Starr's advice to deaf students interested in a science career is as positive as his outlook on life. "There are many opportunities in the science field. For me, the College of Science at RIT provided the background I needed to be successful in my graduate program and my job. It's never easy to get there; you have to work extremely hard and get an excellent education. But it's very rewarding, and if you're determined, you can make it to the top!"

Kathleen Sullivan

Teaching the Art of Learning

Deaf RIT students cross registered in associate, baccalaureate, and masters degree programs not only have specific needs related to their hearing impairments, but also may experience problems common to hearing college students. When they have inadequate or inappropriate study strategies or an inability to cope with academic demands, they turn, as their hearing peers do, to RIT's Learning Development Center (LDC).

The Center is an academic support unit which provides services for all RIT students, and most of the direct service to NTID is for deaf students cross registered in RIT's nine other colleges.

"People learn in different ways, so assessment and instruction in the Center are tailored to meet individual learning needs," says Dr. Paul Kazmierski, associate dean for Learning Development Services. "Many students do not perform well in academic or training settings and score poorly on tests, not because they lack intelligence, but because their learning style does not match that of their peers or the expectations of their instructors. We, therefore, work to develop skills and find more effective strategies for learning and performing in the classroom or on the job."

Faculty in the Center are trained in the psychology of learning, diagnosis, and cognitive development, and have a variety of educational experiences which are matched to students' needs.

The support services most beneficial to deaf RIT students are the three laboratory facilities: reading, writing, and math. These are walk-in labs where students can get help with particular problems, such as a difficult text or trouble with a study approach.

"The math lab is particularly active," Dr. Kazmierski says, "and like our statistics and accounting labs, is a supportive facility. In contrast, NTID's

Dr. Paul Kazmierski deals with many publics in his position as associate dean for Learning Development Services.

math lab allows students to take entire courses in the lab setting."

Mini-workshops are offered twice each quarter and cover subjects such as improving memory, writing research papers, and preparing for exams.

"We're not a remediation center," Dr. Kazmierski stresses. "We believe students have basic abilities in processing and organizing information, but may not be doing it in the most efficient way. The LDC is concerned with teaching students the strategies that are most comfortable for them within the context of the course. Learning history is far different from learning calculus and there are ways of organizing, storing, and retrieving information for each which are not necessarily taught in the course."

Direct services provided to deaf students enrolled in NTID's technical education courses have been on an experimental or consulting basis. In one instance, LDC instructors team-taught a technical education biology course and attempted to integrate the processes of learning with the course content, utilizing some of the strategies for learning biology.

"With other technical education programs, we've functioned as consultants working with the research department," Dr. Kazmierski says. "One example is the *Networking* project devised jointly by Gary Long, chairperson of General Education Research and Development, and Mary Pizzente, coordinator of Adult Services. The project's goal was to teach students to see the organization of paragraphs and written material so they could understand the relationships of several ideas."

The Center also serves the developmental educational needs of the Rochester community with a continuously expanding program of diagnosis, individual and group instruction, and professional consulting. Their clients include school children with learning problems; working people who want to improve their job performance or improve their academic, communication or interpersonal relationship skills; and professionals who use LDC specialists for consultation and to conduct workshops.

Services are provided to more than 3200 students and 700 community clients each year. Workshops are also conducted throughout the United States. Dr. Kazmierski returned recently from directing one in Dayton, Ohio, and plans are being made for another in Orlando, Florida.

Since its establishment in 1950, the Center has earned a national reputation and won awards locally for educational excellence and service to the community.

Lynne Williams

ANATOMY of a learning environment

The windowless, utilitarian classrooms clustered throughout the Lyndon Baines Johnson academic building are quiet oases of learning.

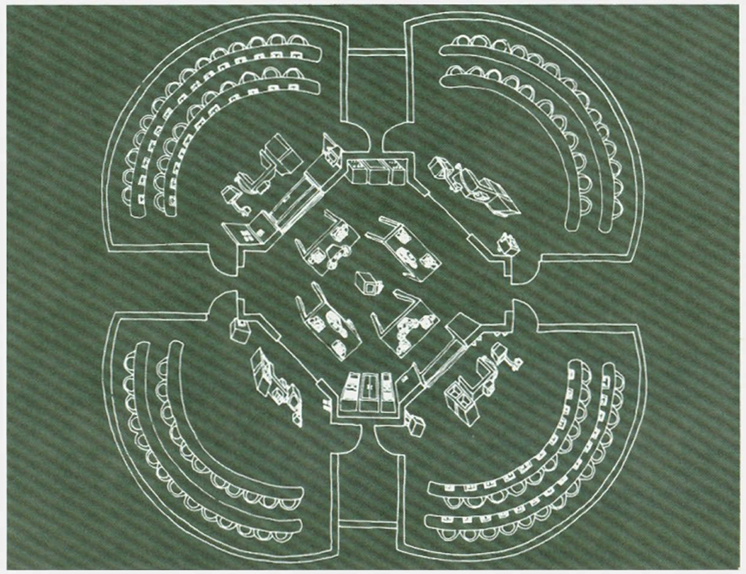
In sharp contrast, the main corridor forms a wide airy street filled with trees and plants, with a sky of colorful banners and broad, angled skylights. Here, students relax and socialize after the intense concentration of the classroom.

This is the special learning environment created for students of the National Technical Institute for the Deaf (NTID) at Rochester Institute of Technology (RIT).

Architects responsible for planning the six-year-old facilities conducted extensive research into the problems created by deafness. They strived to create an environment in which deaf people could perform tasks with maximum safety and minimum discomfort or inconvenience. Taking into consideration the wide variety of environments necessary to enhance the learning process for these students, architects designed an academic building which contains classrooms, faculty offices, laboratories, learning centers, a theatre, shops, and studios.

The cluster classrooms, forming the core of the building, were designed without windows to minimize distraction. Hearing students are able to watch something outside and still keep track of what the instructor says. If a deaf student looks away, contact is lost. White was chosen to enhance speechreading and to provide a setting conducive to study and concentration.

"Originally, all our classrooms had fluorescent lighting with dimmers for controlling light level," says Scott Lawson, Institute facilities analyst. "From an energy point of view, this is very efficient, and diffused light is ideal for speechreading; but the best light for viewing projected images is controlled down lighting which does not strike the projection screen. This is achieved with recessed incandescent lighting. To solve the problem of differing needs, we have experimented with a dual lighting system in some of our remodeled classrooms."



The cluster classroom arrangement makes it possible to separate noisy projection equipment from the classrooms.

Institute planners are also experimenting with an interpreter light, mounted in the ceiling, which will shine on an instructor or interpreter while slides or movies are being shown in a darkened room.

The 25-seat cluster classrooms have a wide-angle seating arrangement enabling all students to see the instructor and each other easily. In this respect, the design is successful; however, it is difficult for an instructor to pay attention to a student at one end of the room and keep the other end within his peripheral vision.

"As part of the remodeling of the academic building, we've modified two of the cluster classrooms into a narrower angle, and asked faculty members for their evaluation," Lawson explains. "Generally, they prefer the narrower rooms. However, these are not as good for student-to-student communication. A combination of both is preferred to help meet the needs of multiple teacher delivery systems.

"Variety is the key to planning facilities for the deaf, which must be very media-oriented," Lawson says. "We have so many different types of classes being taught that classrooms must range all the way from the very simple to the very sophisticated. We've taken one 57-seat banked classroom and converted it into four flat-floored ones with movable seating which are very much in demand for seminar-format classes."

Planners also have addressed the question of fixed seating, particularly in the cluster classrooms. This is desirable to ensure for each student an unobstructed view of the instructor, but it does cause other problems.

"If you are teaching a course that involves student practice, such as Statics or Data Processing, it is important for the instructor to work with the students individually as well as lecturing, and the long continuous benches do act as a barrier to the instructor's mobility," Lawson explains. "To get from point A to point B, which could be just three feet apart, the instructor might have to walk 30 feet."

Most classes use extensive media support, but along with it comes the potential for equipment breakdown. It is important for the instructor to remain in the classroom, so when mechanical problems occur, an intercom system activates a buzzer in Media Services and a light indicates which classroom has the problem. Media Services answers through the same system, and can arrange for repair while the instructor continues with the class.

Facilities planners were successful in keeping the sound level down in the classrooms so students can make the best possible use of their residual hearing. This was accomplished through the use of rear projection for slides and movies, with noisy equipment placed in a room separate from the classroom.

There is however, an acoustical quirk in the cluster classrooms. Each has a focal point for sound located just under the large lighting dome in the center of the room.

"If you stand under that dome, the sound of your voice hits the shell of the dome and echoes right back at you," Lawson explains. "There is also an echo when you stand at the focal point of the curved back wall."

Many changes have taken place in the area of communication skills training since the Institute facilities were dedicated in 1974.

"As we learned about devising systems for teaching communication skills to deaf students, we began customizing several classrooms and labs for particular communication learning activities. Two are devoted entirely to speechreading, another is used solely for auditory training, and still another for the improvement of speech through self-monitoring," Lawson adds.

One thing the original planners, understandably, did not anticipate was the need for a music room. It was discovered, however, that some deaf students derive great enjoyment from music and wanted to participate in music programs. In the process, they could increase the use of their residual hearing, develop personal discipline, and increase the opportunities to interact with their hearing peers.

When a music program was initiated, it was found that some students preferred to work at higher decibel levels because of their hearing impairment. A room was set aside in the service area of the academic building, isolated from other learning activities, and soundproofed as thoroughly as practicable. This has worked out very well and RIT now boasts a musical group made up of talented deaf musicians.

Considerable research at the Institute has been conducted in sound reinforcement systems which make it possible for students to pick up transmitted sound through their hearing aids and/or auxiliary receiving units. Three different systems have been tried: the FM transmitter, the inductance loop, and an infrared transmitter. Each system has its strengths and weaknesses.

"The newest and most expensive system is the infrared," says Lawson. "With it, a person speaks into electronic circuitry which converts the sound into infrared light waves. These light waves, invisible to the eye, are then transmitted into the room. Students have units which pick up the light waves and convert them back into sound. This eliminates the problem of room acoustics and the transmission and fidelity are very good. There is also no problem with the system in one room being picked up by students in adjacent rooms."

Labs and learning centers are another important part of the academic building and, according to Lawson, generally have been laid out very well. There were, however, some problems which surfaced because the Institute was the first of its kind, making planning difficult and challenging.

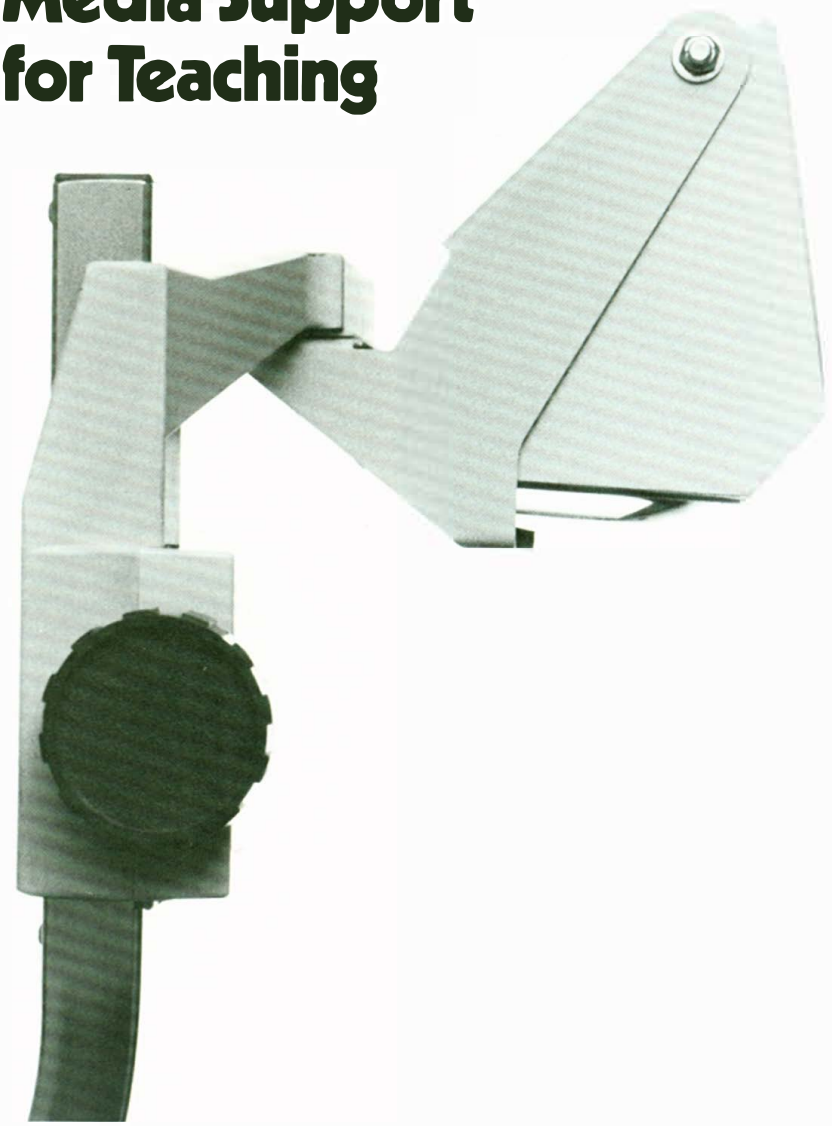
"We didn't know how much emphasis should be devoted to a particular lab, how large it should be or if there should be more than one. On the whole, it has worked out amazingly well," Lawson says. "We shouldn't have done as well as we did. When you're designing space allocations for programs not yet established, with no models to follow, you're walking on water when you come as close as we did."

Each year, as new programs are added or old programs modified, improvements are made in the facilities to further enhance the very special learning environment of RIT's deaf students.

Lynne Williams

HIGH TECH

Media Support for Teaching



A student sits at a computer terminal, practicing interview strategies with a potential employer on videotape; a faculty member works on a slide series for a class; a student assistant rolls a cart, laden with projectors, through the halls toward the classrooms; and dormitory residents gather to watch an interpreted version of the six o'clock news.

All are involved, in one way or another, with the Media Development and Services Division (MD & S). Media support is not uncommon in the post-secondary setting, but for NTID at RIT, it is an integral part of the teaching/learning process.

"One of the main goals of the Division is to look at innovative ways of using and adapting technology to accommodate the very unique, specific needs of the hearing impaired," says Dr. James K. Carroll, Division director. The Division includes three full departments. Each has a distinct purpose, but all work very closely together. *Media Production* develops needed materials that do not already exist or that don't meet curriculum needs. *Media Services* is responsible for furnishing the equipment, providing consultation on externally produced media materials, and presenting those materials. *Instructional Television* handles all TV services and productions for the Institute, including computer-assisted instruction (CAI) and captioning.

In addition, Robert H. Murray, an applications engineer for NTID at RIT, is affiliated with the Division, developing new equipment or adapting existing equipment to meet the needs of deaf students.

Dr. Carroll points to two areas he feels should be emphasized in the coming years, in addition to ongoing work with instructional and general development projects.

"I feel that greater emphasis may be placed on computer-assisted instruction and on captioning. CAI has the potential for playing a larger role, especially when we begin admitting the rubella students, because it enables us to individualize instruction according to specific needs."

At present, most of the CAI programs of study used by NTID at RIT are developed outside the Institute through a Minnesota-based computer system called PLATO.

"We have been using PLATO as an experimental instructional vehicle for a long time," Dr. Carroll explains. "The system has three to five thousand different sets of course materials and a computer terminal links us to its headquarters."

Cost and availability, however, are two disadvantages of the PLATO system. If the computer is down with problems, all of RIT's programs are down; and, if a particular program is in use somewhere else in the country, the Institute must wait in line to use it. All this is being taken into consideration as the Division plans for the future.

"We may find in our analysis and review of CAI that it is more economical to move toward microcomputers," Dr. Carroll says. "With just one terminal, we can accommodate only a limited number of people, but with microcomputers, the acquisition of a few relatively inexpensive units will greatly expand our capacity to serve more faculty and students."

Dr. Carroll also cites the need for more emphasis on captioning research and the potential impact upon students of instructional television combined with captioning.

"We recently have formed a Captioning Research Task Force to help us develop an interdisciplinary plan that can be used to identify very critical research questions in the captioning field," he says.

The best way to understand the workings of this complex and busy Division is to follow the development of a hypothetical project.

The process begins with a faculty member—the client—who may be very knowledgeable about the technical field being taught, but knows very little about teaching such visually oriented persons as deaf students.

(Above) Karen Hopkins, manager of Media Services, discusses a new film with Dr. James K. Carroll, director of Media Development and Services. (Below) Charles Johnstone, audio-visual specialist, sets up projection equipment for one of the cluster classrooms.

The client prepares a proposal and then contacts the instructional developer assigned to his academic area. Working with the Division chairperson, the instructional developer prepares a needs analysis for the course. All academic projects are assigned priority status by the dean and associate deans, and must go through the Instructional Development process. Then, the instructional developer requests appropriate media support from MD & S.

The first department involved, *Media Services,* has "an unusual combination of services available," according to Karen A. Hopkins, manager and "traffic controller" for all media. "We have three areas within our department: the audio/visual or hardware distribution area; the Staff Resource Center, where all software (videotapes, slides, filmstrips, kits, and games) is stored, viewed, or loaned out; and finally, the curriculum materials specialists who meet with faculty and instructional developers to determine how to meet needs."

Curriculum materials specialists Josephine M. Bausch and Elizabeth G. Ewell are responsible for finding any and all materials available in the field. They do a complete search of what has been produced by external vendors and then bring in materials for preview, evaluation, and ultimately, purchase, rental, or adaptation if suitable.

Their search may take them to the Staff Resource Center, a vital hub of activity where media software has been stored since 1979, along with books and periodicals.

"We have a card file in the Center which is updated weekly to include new purchases," Hopkins says. "This enables faculty members to know exactly what is available. The Institute owns approximately 900 pieces of media, with about 100 pieces added each year."

During 1979-1980, NTID at RIT brought in 200 captioned films from Captioned Films for the Deaf, and 300

external unadapted ones. Captioned or interpreted pieces of media are relatively scarce, a situation that NTID at RIT is trying to remedy in part through its Adapted Media Exchange Project. A company giving the Institute permission to adapt its film receives a copy of the adapted version which it, in turn, can market. Since the plan benefits both parties, most companies gladly comply.

If available media do not fill the project needs, the client is referred to either *Media Production* or *Instructional Television* (ITV). Representative media include slides, teachers' guides, student materials, photographs, and overhead transparencies. Media Production provides support if media for an entire course must be developed, or if instructors request that supplementary media be developed for existing curricula.

"Our purpose is to design and develop innovative approaches and materials for teaching the deaf," says Media Production Chairman Thomas J. Castle.

To help solve day-to-day media requests, the department operates a workshop called the "YoYo" (You're On Your Own) Room.

"This facility provides the materials, equipment, and technical guidance faculty need to explore different ways of teaching the deaf," Castle explains. "There are no work plans needed in the YoYo Room, no administrative approval required, and no confines placed on the time spent there. Instructors can do what they want and take as much time as they need. The biggest use of the room is for making overhead transparencies, but we also have had faculty members produce entire textbooks."

For example, materials produced by John Sweeney, a professor in Business Careers Programs, are so effective, they have been shared with audiences at two national conventions.

Some academic projects require television support in one form or another and when they do, ITV becomes involved.

"Our department does a lot of things that aren't traditionally included in a television production department," says Manager Christopher Pruszynski. "Although our main purpose is to prepare television productions, we also are involved in captioning, research, and instructional computing."

On the simplest level, ITV may videotape classes for evaluation of the teaching process, record data for research projects, or support the testing and evaluation of students in the Basic Interpreter Training Program.

> "Our students come from so many different educational backgrounds and with such diverse communication skills that media support is vital if we are to reach each one."

Carmello Sciandra and James Van Wagner, ITV operations engineers, confer with ITV Manager Christopher Pruszynski (standing).

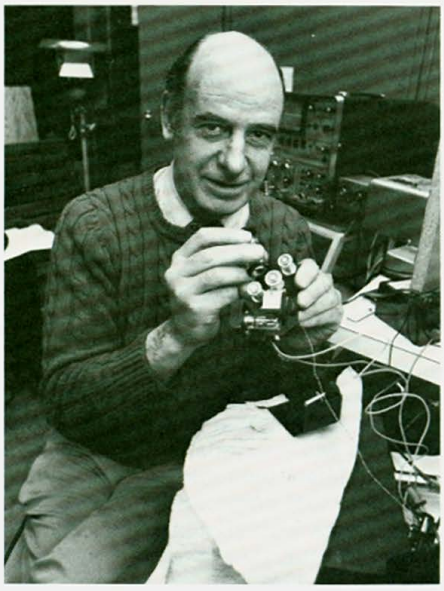
"We also have the television lab," Pruszynski says. "It's the TV equivalent of a YoYo room. The TV Lab producer works with instructors, helping them produce segments for classroom use, or trying out ideas on camera before they formulate full production proposals. The TV lab has been very useful in developing materials for our special audiences.

"Regular TV productions range from classically simple to demandingly elaborate, depending on the needs of the audience," Pruszynski says. ITV producer Jerry Shepard worked with Professor Emeritus Loy Golladay recently to produce "Off Hand Tales," a series of stories told in sign by Golladay, to be used for interpreter training.

"It provides a colorful glimpse of deaf culture," Pruszynski says, "and preserves for future generations the talent and charm of Loy Golladay, one of the nation's premiere deaf educators."

By combining computer technology with television expertise, an ITV development team created DAVID (Data Analysis in Video Interactive Device), a system which allows students to interact directly with a television program.

"In the job interviewing sample, a potential interviewer appears on videotape and the student viewer takes the role of the job candidate," Pruszynski explains. "The interviewer asks the questions and the student types responses on a keyboard. Then, de-



(Above) Media Production Manager Thomas J. Castle discusses a project with staff members. Pictured (l. to r.) are Ken Merchant, Sharon Sarnicola, Mark Benjamin, Shirley Loeffler-Wallace, Jorge Samper, Castle, Kathy Voelkl, Dean Woolever and (seated) Louise Hutchinson. (Left) Applications Engineer Robert Murray works on a device which will read the newly developed caption track of 16mm motion picture film.

pending upon the student's response, the computer will select another question from the interviewer. For example: The interviewer asks, 'Are you willing to relocate to South Carolina?' If the student responds, 'No, I'm not,' then the computer will advance the tape to the section with the reply, 'Well, our only plant is located in South Carolina and you should have considered that before coming here. Sorry, goodbye.' If the student says 'Yes,' the response might be 'Fine, you don't find many people willing to relocate to South Carolina,' and it will continue with the interview."

ITV provides captioning for films and videotapes used in both NTID classes and RIT classes containing cross-registered deaf students. Pruszynski points out that educational captioning is more difficult than captioning for general entertainment programs because caption editors must learn a specific language level, then find out which words are important to the coursework and which can be simplified.

Each week, approximately 30 hours of network programming, captioned by the National Captioning Institute, is decoded by ITV and fed through the Institute's closed circuit TV system to the students.

Once all the media materials have been developed, the client returns to the Media Services audio/visual area where the necessary equipment is assembled for presentation in the classroom.

Audio/Visual Specialist Charlie Johnstone and his staff lend media support to the entire NTID campus.

"Faculty members may check out the equipment and run it themselves, the instructional developer may run it, and there are cases where the instructional developer is involved in the teaching process itself," Johnstone explains. If the faculty member wishes, Johnstone or one of his deaf or hearing RIT student workers can handle the entire process.

If the media equipment doesn't exist or if the existing equipment needs further adaptation, the client is sent to Robert H. Murray, MD & S applications engineer.

"Basically, Bob looks at media hardware and equipment, and either develops or adapts existing equipment to meet the specific needs of the hearing impaired," Dr. Carroll says. "The system for captioning film for open broadcast recently developed by him will revolutionize the industry and he will probably receive international recognition for it."

"The Institute has needs and I try to meet them," Murray says. "For the most part, I try to make use of already existing equipment and put it together as a system. If a part doesn't exist, I try to produce the missing link simply and inexpensively."

One of Murray's more significant recent projects is a method of captioning existing motion pictures for classroom use. With the system he devised, captions are projected using a modified film strip projector in conjunction with any existing movie projector. A tiny photocell is clipped onto the lens rim of the movie projector. This cell counts shutter blade openings and sends the information to a small black box containing electronics. Alongside each caption on the film strip are a series of bar codes which control the timing for that caption, and tell the system how many shutter openings must occur before the next caption is brought into place. The bar code is a simplified version of that used in supermarket scanning devices.

"In some places, people are afraid of failing, so they don't try new approaches," Murray says. "However, the climate here is entirely different. The administration understands that progress involves a certain degree of risk. They are willing to risk failure to ensure progress."

The faculty are unstinting in their praise of the Division.

"There is no end to the helpfulness of MD & S," says Roxanne B. Keach, instructor and English specialist in the Communication Instruction Department. "Our students come from so many different educational backgrounds and with such diverse communication skills that media support is vital if we are to reach each one.

"This service is also tremendously helpful as students gear up to the faster pace of college-level work," she adds. "The bottom line is that we could not manage without media support."

Lynne Williams

Curriculum Councils

Keeping the academic curricula stimulating and current is one of the more critical tasks of the NTID faculty responsible for the education of RIT's deaf students.

One way this is accomplished is through curriculum advisory groups. These committees of six to eight people represent business and industry within a particular field of study. Their task is to look at programs of study used at RIT to determine whether they include all of the technical preparation necessary for a deaf graduate to succeed on the job.

There are 10 advisory groups covering the following broad program areas: Industrial Drafting Technology, Manufacturing Processes, Civil/Architectural Technology, Electro-Mechanical Technology, Applied Art, Business Occupations, Data Processing, Medical Lab Technology, Medical Records Technology, and Optical Finishing Technology.

"The advisory groups perform several functions," says Dr. Bruce Peterson, associate dean and director of Technical and Professional Education (TPE) at RIT for NTID.

"The primary one is to look seriously at curricula content and instructional methods, but the groups also foster interaction between our faculty and professionals in the field. This helps the faculty stay in touch with the latest changes in career areas."

At least once, and sometimes as often as three times annually, the advisory groups meet at the Institute to analyze curricula needs.

Meetings usually include an industry representative, technical faculty from the academic area involved, the department chairperson, and when possible, a recent deaf RIT graduate to contribute some first-hand experience.

These meetings not only enhance discussion of curricula for RIT, but also sensitize committee members to deafness, making them more receptive to hiring deaf RIT graduates. Participation is voluntary, and most members are appointed via referrals from either industry or RIT faculty for NTID. In addition, the Industrial Management Council of Rochester—representing all 56 major industries in the Rochester area—occasionally suggests possible representatives.

Dr. William E. Castle welcomes the curriculum advisory group for NTID's Business Occupations Division.

"Meetings are sometimes lively, as group members differ on how best to train students, depending on the size of the industry," says Dr. Harold F. Farneth, special assistant to the associate dean of TPE. "A 'Mom and Pop' operation with a small number of employees obviously requires a different type of training than larger industries such as Kodak and Xerox, and this is taken into consideration as ideas are offered."

Each suggestion is studied carefully and, regardless of the final decision, a full report is tendered at the following meeting, outlining the action taken.

"Sometimes a suggestion will surprise us," Dr. Peterson admits. "For example, students were complaining about the three to four hour length of one of their labs. It was brought up at a meeting, and we were advised that it wasn't long enough. The reason offered was that workers on the job must sit at boards, similar to those in the lab setting, for eight hours a day, so students realized it was something they will have to get used to."

Another question which surfaced at a recent meeting concerned whether or not to teach students the metric system. Advisory group members from Xerox and Kodak recommended that it be included in students' curricula because at least half of these industries' work is done internationally.

Keeping up with the latest in technology is another challenge for curricula advisors. This is particularly important in the data processing curriculum. The Institute wants its students to have "hands on" experience with the latest technology, but the field is changing so rapidly, it is possible to purchase a piece of equipment and have it become obsolete before it can be installed.

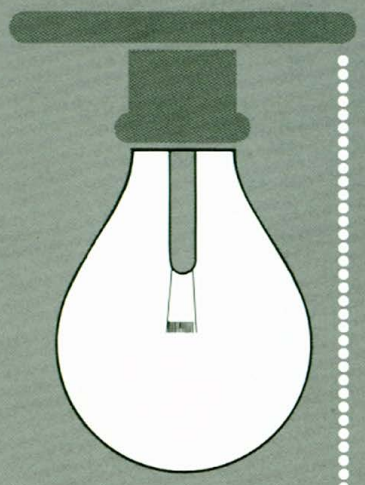
The same situation exists in the field of drafting, where some large industries now have machines performing basic functions usually done by draftspeople.

"This is frightening for the person who lays lead on paper by hand, and raises some pertinent questions. Should students be taught to run a machine or should they be taught how to perform by hand all the steps a machine takes?" Dr. Farneth asks. "Should RIT gamble that all drafting students will find jobs in companies with the latest technology, or should it assume that some will be working in small shops with standard equipment? These are questions that permeate all fields of study and work, and are addressed regularly by the groups."

Once an advisory group makes its recommendations, synthesizing the material gathered becomes a managerial and planning function involving many staff people and managers from NTID. They critique, review, and approve programs, incorporating suggestions where applicable. These programs are then studied by the NTID Curriculum Committee and must be approved by the RIT Intercollegiate Curriculum Committee, the Board of Trustees, and finally, the New York State Board of Regents.

"Using advisory groups has promoted healthy program growth," Dr. Peterson concludes. "Watching these people in action is an exciting experience."

Lynne Williams



Learning Centers:

Deaf RIT students have special learning needs which cannot be met solely by traditional lock-step lecture methods. RIT faculty and staff, therefore, have developed a blend of classroom and individualized study experiences. The individualized instruction takes place in "learning centers."

There are seven learning centers serving the needs of deaf RIT students. Within the Division of Science and Engineering Careers there are three learning centers—Mathematics, Science, and Physics. The Math and Physics Learning Centers, both located in the Lyndon Baines Johnson Building, offer individualized instruction. Yet, they also function as an adjunct to the classroom lecture.

According to Dr. Harry G. Lang, associate professor and chairperson of the Physics Learning Center (PLC), the main purpose of the Center is to give students a background in college and university physics, as well as to prepare them for careers in science and engineering. The PLC is equally beneficial to both slow and fast learners. Lectures, in general, are directed toward the average student. In the self-paced PLC environment, students can proceed at their own rate. More than 1200 slides and 100 captioned films are used to reinforce the one-on-one and small group interactions in the PLC.

The Math Learning Center (MLC) was founded in June 1971. Marvin C. Sachs, associate professor and chairperson of the Department of Physics and Technical Mathematics, explains why the MLC plays such a vital role at RIT: "Deaf students come here with a variety of language levels, a broad spectrum of communication skills, different learning characteristics, and varying levels of motivation. The MLC helps identify their strengths and weaknesses."

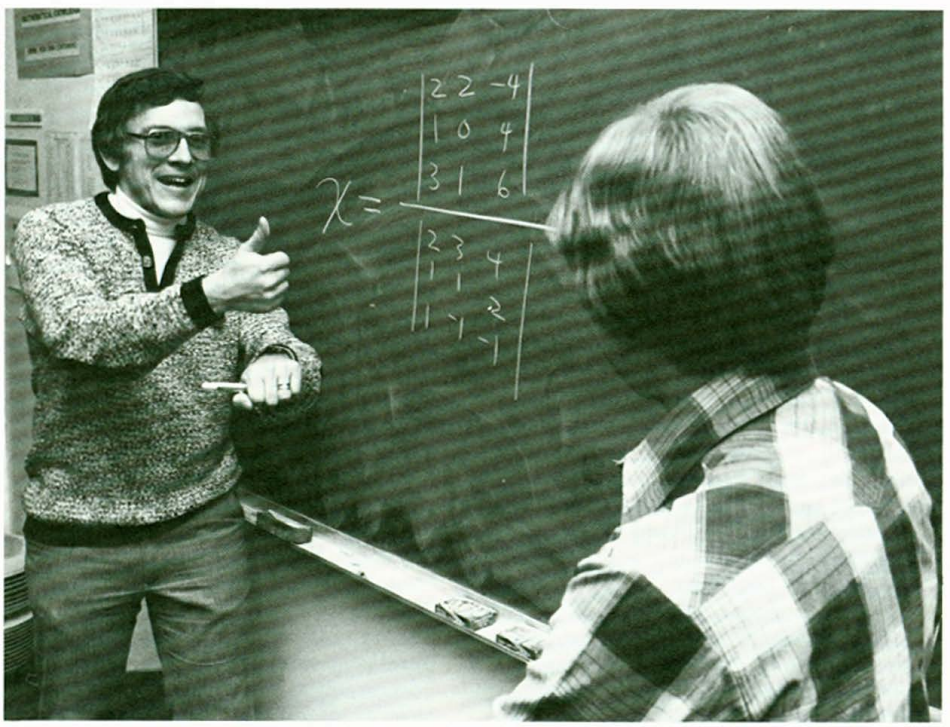
The Science Learning Center (SLC) is located within the College of Science, and serves as a resource center for all hearing and deaf students taking courses within the College. "No courses are offered by the SLC itself," says Marilu Raman, acting chairperson of the Science/Engineering Support Team. Raman, who oversees the SLC, says faculty members of the College of Science often utilize the Center. "They leave study guides, sample tests, slides, films, and other support materials which complement the lectures."

Yet, as Dr. Lang says, there are "bridges" between all three learning centers and Communication program laboratories. Flexible scheduling, self-pacing, individualized instruction, and hands-on experiences are common components. Some faculty teach in several learning centers. Many students receive help in physics through the Communication Program labs as well as in the MLC and SLC. Students' communication skills are reinforced in science and math instruction.
The learning centers also serve as national leadership centers in the area of mainstreaming. Graduate students preparing to teach mainstreamed classes receive training as interns. The learning centers are continually in contact with external publics, providing advice and materials.

In Communication Programs, there are four labs that serve NTID students. The Reading and Writing Labs make up the English Learning Center and

Supporting Classroom Instruction

Various types of equipment are used in the different labs and learning centers, and the atmosphere is different from place to place. While they may be dissimilar in some respects, they are all natural habitats for the exchange of ideas. What is common to each area is an electricity in the air that results from the transfer of information—from faculty to student, or from one student to another.



focus on practice with written language. The Telecommunications Lab focuses on use of the telephone and other telecommunication devices. The Self-Instruction Lab provides students (and staff) with a comprehensive selection of instructional materials in speech, speechreading, and sign language.

Materials in the Self-Instruction Lab are prepared by speaking, listening, speechreading, and sign language instructors. Students can practice monitoring their speech through auditory and visual channels, and can also practice using technical vocabulary related to their majors. During speech practice, students can record themselves and teachers may then listen to the tapes to see how the students are doing.

In addition to allowing students to improve their skills, the Self-Instruction Lab encourages independence and self-reliance, according to Kandy M. McQuay, a Communication Skills instructor who supervises the Self-Instruction Lab.

Students, faculty, staff, interns, and visitors can choose from approximately 600 videotapes dealing with Webster's diacritical markings (symbols used to assist in the pronunciation of words), manual/simultaneous communication, and technical signs.

The Reading and Writing Labs function similarly as self-instruction resource rooms for students. These labs serve more than 90 percent of NTID's entering students, and also reinforce classroom instruction. Most students are required to spend two hours per week in the labs as part of their English language course. The Reading Lab, under the direction of Dr. Janis D.

Cooley, concentrates on improving the reception of English, while the Writing Lab, overseen by Dr. Gerald P. Berent, focuses on its expression.

The Telecommunications Lab was devised by Dr. Diane L. Castle, associate professor of communication instruction, for use by NTID students. "There should be a way for every deaf person to use the telephone," she says.

Dr. Castle has developed the lab curricula so that students have different options, depending on their residual hearing. Forty percent of entering deaf students at RIT are able to use the telephone.

Students in the courses are taught telephone strategies, many of which are second nature to hearing persons. Some of these are: asking for a name to be spelled out or repeated; and the use of code words ("B" as in "boy," etc.). Students are also helped to discover which is their better ear for telephone use, how to use a pay phone in emergencies (the lab is equipped with its own pay phone), and how to order telephones and understand billing rates.

Dr. John A. Albertini, chairperson of Communication Instruction Department II, speaks of the labs as a bridge between the classroom and the outside environment in which an individual uses his or her communication skills. "Language practice is less controlled than in the classroom, but more so than in the outside world," he says.

Emily Leamon

The Total Student

Ask a deaf student at RIT to sum up his or her college "experience" and you'll undoubtedly get a variety of answers. Most, however, will agree on one thing—that participation in activities outside the classroom plays just as large a role in shaping one's personality as those hours spent "cramming" for exams and memorizing mathematical formulas.

Deaf students at RIT are fortunate to have an abundance of curricular and extra-curricular activities available to supplement their technical education.

Theatre, dance, music, art, and athletics are some of the programs students can choose from, depending on individual schedule restraints.

Sometimes, the rigors of academia don't leave much time for such outside interests, but those who find the time are rarely disappointed.

Lauren Adasko, a fifth-year biology student, is one of those who found the time.

"Because I was so involved in theatre in high school, I promised myself that I would act in a play at RIT before I graduated," she says.

"I never had time for anything but biology. But now that I'm about to graduate, I decided it's now or never. I auditioned for 'School for Wives' and landed a major role." For Lauren, it was a valuable experience.

Bruce Halverson, chairperson of NTID's Experimental Educational Theatre (EET) at RIT says, "The performing arts open up a new world for our students and give them the opportunity to explore areas that will greatly enrich their lives."

The theatre department offers a wide range of dance, music, and drama activities. Dance classes fill quickly with deaf and hearing students, and a

music program gives deaf students the opportunity to take individual or group lessons on various instruments. Deaf and hearing musicians perform together in the RIT Pep Band, and deaf musicians play in the NTID Combo. The singing/signing choir is also popular among students and staff.

The well-known Sunshine & Co., now in its fourth year of entertaining audiences, is part of the theatre department. In addition, Sunshine TOO, an offspring of Sunshine & Co., performs for deaf and hearing audiences both locally and around the country. The six-member company is comprised of deaf and hearing performers who were associated with NTID at RIT before becoming full-time company members. Mime, sign, dance, drama, and music are now everyday tools of their profession.

Deaf and hearing students can perform together in several major theatrical productions each year, enabling them to gain a broader understanding of themselves and the world around them.

Matthew Moore, a third-year social work major, is an active participant in the EET. Although he never acted in high school, Matthew has already performed in four plays at RIT, and has gained a reputation as a "show stealer."

"Theatre gives me the opportunity to express myself creatively," he says. "Acting helps build my self-confidence, too."

Since theatre, music, and dance require strict self-discipline, students face demands similar to those they will confront on the job after graduation.

"The same skills students learn in theatre are needed for success on the job—self-confidence, good communication skills, and discipline," says Halverson.

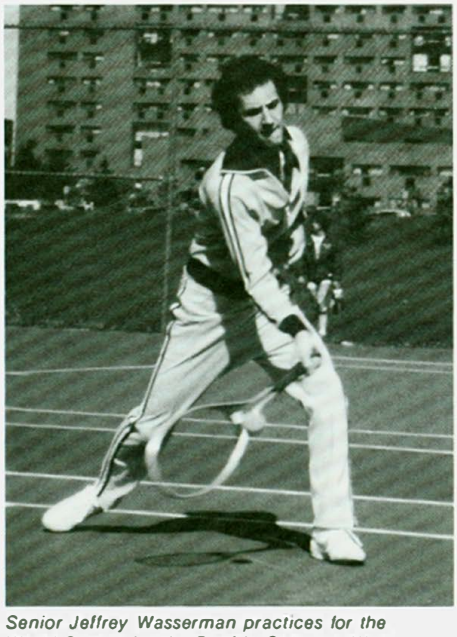
In addition to theatre, students explore fine and applied arts as another enriching activity.

"Art as a complementary learning experience can serve as a vehicle for students to get in touch with their feelings in order to better understand themselves and share their feelings with others," says Tom Raco, director of the Division of Art and Visual Communications.

Cultural programs, exhibitions, and on-campus gallery shows are convenient ways to introduce art to students who might otherwise never have a chance to become involved with it.

Raco feels that RIT's Creative Arts Committee, headed by Dr. William E. Castle, vice president of RIT and director of NTID, will provide many meaningful opportunities for everyone at RIT to become involved in the arts.

First-year medical record technology student Barbara Cornish practices as Diane Habeeb, music consultant, looks on.



Senior Jeffrey Wasserman practices for the World Games for the Deaf in Cologne, West Germany, this summer.

R. Andrew Irving, a third-year applied art student, works in NTID's In-House Co-op.

NTID's applied art and cross-registered students in the College of Fine and Applied Arts have the opportunity to translate the theory of the classroom into actual practice via NTID's In-House Cooperative (Co-op), a simulated commercial art studio.

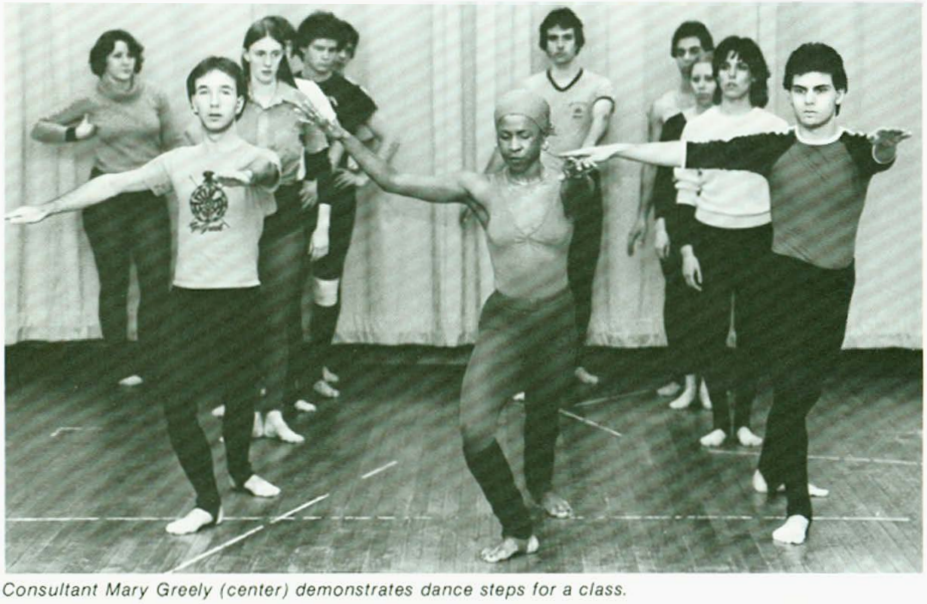
Students in In-House Co-op are exposed to professional equipment and processes while completing a variety of jobs for clients at RIT, in the Rochester community, and across the country. These jobs give students "professional" experience to include in resumes and portfolios.

"Applied art is an extension of me," says Shirley Alderman, a second-year applied art student. "It helps me be more creative and expressive."

Additional opportunities are available to deaf and hearing students with special interests. Photography and art students, for example, can share these interests while living in a special housing facility—a Photo or Art House—within RIT's dormitories.

Participation in the NTID Student Congress, the student newspaper, special interest clubs, and varsity

"The same skills students learn in theatre are needed for success on the job—self-confidence, good communication skills, and discipline."



Consultant Mary Greely (center) demonstrates dance steps for a class.

NTID's Experimental Educational Theatre's fall production of Moliere's "The School for Wives" starred Patrick Graybill and Lauren Adasko.

athletics all encourage social experiences for RIT's deaf students.

Susan Zupnik, a senior computer science student, has played on several RIT women's teams—tennis, softball, and ice hockey. Last year she won the "Coaches Award" in hockey, her favorite sport.

"I like playing sports because I feel they are just as much a part of my education as computer science," Susan says.

Jeffrey Wasserman, a senior graphic arts student, enjoys tennis, a sport he has been playing for seven years. A captain and four-year veteran of the RIT tennis team, Jeffrey came in second out of 61 players in singles competition at the National Games for the Deaf in Wichita Falls, Texas. His win qualifies him for the World Games for the Deaf to be held this summer in Cologne, West Germany.

"Tennis has improved my self-discipline and concentration," says Jeff, "which has helped me in my studies."

Whatever their career fields, deaf students have many opportunities to learn more about themselves and others; to be creative and expressive; to improve their communication skills; to boost their self-confidence; and in general, to learn how to live "an enriched life."

Cynthia McGill

Susan Zupnik won the "Coaches Award" last year for her achievement in ice hockey.

WHAT The Teachers SAY:

Any discussion of teaching and learning would be incomplete if it excluded some comment by the teachers who inspire that process. A school is only as good as the teachers who staff it, and nowhere is this more the case than at NTID at RIT. No amount of sophisticated equipment and technical gadgetry can replace the warmth and enthusiasm of a dedicated teacher.

Here is what a sampling of them, some new to the Institute and others "old hands," have to say about the unique experience of teaching at RIT.

"Teaching at NTID is just like teaching at any other college, except that it is more intense; it requires more preparation, more sensitivity to student needs, more monitoring to see that students are learning what's being taught, and more creativity in developing classroom activities."

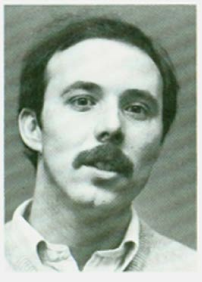
Dr. Richard L. Curwin
Staff Chairperson, Teaching Effectiveness
Educational Support Services Program

"I find teaching deaf students at RIT very demanding. All course material must be presented clearly and thoughtfully so that every student has the opportunity to understand and to learn. Like most of the teachers here, I came without a background in teaching deaf students. My last job was teaching young Hispanic adults in a machine shop sponsored by the Ibero-American Action League. For that job I had to learn Spanish; for this one, manual communication—it's always a challenge to learn another language!"

Raymond R. Grosshans
Lecturer, Department of Industrial Technologies

"I like teaching at RIT because the challenge of helping deaf students improve their communication skills brings with it such a diversity of awesome responsibilities and challenging opportunities. Through teaching, research, curriculum development, and association with other professionals, I think I've been as much a student of deafness as a teacher of deaf students."

Marianne M. Gustafson
Assistant Professor, Communication Instruction Department III



"Teaching in general is a challenge for any person; however, it takes on a special significance with the deaf. The development of communication skills is an intricate aspect of the deaf students' education at RIT through NTID. Should we fail as educators in this area, the student is doomed to failure in the working world. It takes a concerted effort to develop strategies, materials, and methods which improve speechreading and auditory skills and which meet each student's individual needs.... RIT, through NTID, offers an audiologist the unique opportunity to utilize much of the clinical knowledge developed both in school and in other job placements. I look forward to a long and fulfilling stay at NTID."

Lawrence C. Scott, Jr.
Instructor, Communication Instruction Department IV

"As a teacher of psychology, I've found working with deaf students uniquely challenging and rewarding. Deaf students require me to be direct, clear, and to the point. They're not dazzled by erudite verbosity. This challenges the teacher to be especially succinct and accurate.... The classroom provides an opportunity for me to be part of the knowledge acquisition process. It gives me a chance to share in the intellectual and emotional challenges that deaf students face in a formal academic setting."

Laurie Brewer
Instructor in Psychology
General Education Instructional Department

"Even though I've been here seven years, I still feel a great sense of pride and belonging each time I teach a class. Some people who come here without a background in teaching deaf students, as I did, become frustrated in their attempts to communicate effectively. But I find that the need to present material imaginatively challenges everything I do; it brings creativity to a conscious level. And there are so many theories to choose from on how to teach deaf students—it's like being in a big candy store!"

Dr. Charles A. Layne
Assistant Professor, Academic Department for Human Development

"One of the more valuable aspects of teaching here is the opportunity to be innovative in the classroom. The commitment of the Institute to the professional growth and development of each individual staff member and the cooperation of curriculum specialists, media specialists, program managers, and students all have contributed to the satisfaction of teaching at NTID."

Karen K. Conner
Associate Professor, Department of Business Occupations

what is deafness?

strength, perseverance, love of life... in a quiet world.

World Week of the Deaf
Sept. 28-Oct. 4, 1981

International Year of
Disabled Persons
1981

THIS POSTER WAS DESIGNED FOR THE WORLD FEDERATION OF THE DEAF BY STUDENTS IN THE IN-HOUSE CO-OP PROGRAM OF THE ART DEPARTMENT OF THE NATIONAL TECHNICAL INSTITUTE FOR THE DEAF THROUGH AN AGREEMENT BETWEEN ROCHESTER (N.Y.) INSTITUTE OF TECHNOLOGY AND THE U.S. DEPARTMENT OF EDUCATION.

This poster *(opposite page), to be produced in 10 languages, represents one of NTID at RIT's contributions to the International Year of Disabled Persons. The posters will be distributed worldwide in an effort to enhance a positive image of deaf people.*

Rochester Institute of Technology
National Technical Institute for the Deaf

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