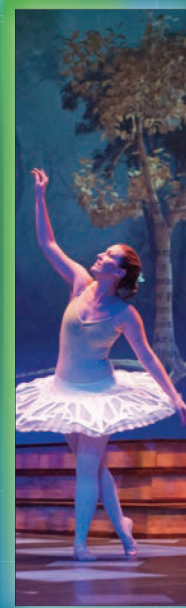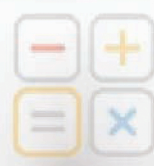# R·I·T | NATIONAL TECHNICAL INSTITUTE FOR THE DEAF

Celebrating Excellence in
Science, Technology, Engineering, Math and the Arts

2017 Annual Report

2017 Annual Report

Note of Explanation

This Annual Report notes activities and accomplishments throughout Fiscal Year 2017 (October 1, 2016 – September 30, 2017), corresponding primarily to Academic Year 2016-2017. References to Fiscal Year 2018 correspond to characteristics and accomplishments as of fall semester Academic Year 2017-2018.

Throughout the report, RIT and NTID alumni are indicated by their graduation years appearing after their names. We apologize for any omissions.

NTID FY 2017 Annual Report Contents

Contents (continued)

Contents (continued)

R·I·T

Rochester Institute of Technology

December 22, 2017

The Honorable Betsy DeVos
Secretary of Education
U.S. Department of Education
400 Maryland Avenue, S.W.
Washington, DC 20202

Dear Secretary DeVos:

We are pleased to submit the following report to fulfill the requirement of the Education of the Deaf Act that the National Technical Institute for the Deaf (NTID), a college of Rochester Institute of Technology (RIT), "… shall prepare and submit an annual report to the Secretary…"

Whether it be administrative decisions, classroom practices or support services for our students, the driving force behind all that we do can be found in NTID's mission statement:

> *To provide deaf and hard-of-hearing students with outstanding state-of-the-art technical and professional education programs, complemented by a strong liberal arts and sciences curriculum, that prepare them to live and work in the mainstream of a rapidly changing global community and enhance their lifelong learning. Secondarily, NTID prepares professionals to work in fields related to deafness; undertakes a program of applied research designed to enhance the social, economic and educational accommodation of deaf people; and shares its knowledge and expertise through outreach and other information dissemination programs.*

The FY 2017 Annual Report charts NTID's success in fulfilling that mission for yet another year. In FY 2017, NTID students continued to have a higher persistence rate and graduation rate than the national persistence and graduation rates for all students, hearing and otherwise, at two-year and four-year colleges. Last year, 313 NTID students completed a co-op, and NTID's most recent employment rate for graduates is 94 percent. We know that NTID's more than 8,500 alumni are employed at a higher rate, earn more and participate at a lower rate in SSI and SSDI programs over their lifetimes. NTID faculty are also distinguishing themselves, with NIH grants totaling more than $3 million awarded this past summer to increase the number of deaf and hard-of-hearing students in the biomedical and behavioral sciences and to study neurological, linguistic and behavioral outcomes for deaf individuals.

Through NTID's career-focused programs that fit the needs of today's employers, work experiences gained through the university's cooperative education program, faculty who specialize in educating deaf and hard-of-hearing students, outstanding graduation and job placement rates and unparalleled access and support services, RIT/NTID is preparing students not just for the workforce, but also for lives full of leadership, innovation, creativity and civic responsibility. With RIT joining the top 100 universities in the nation, according to the September 2017 *U.S. News & World Report* rankings, and the leadership of new RIT president, David Munson, we are well positioned to provide even more opportunities for deaf and hard-of-hearing students in the coming years. As we continue to strive for preeminence in FY 2018 as we did in FY 2017, the RIT/NTID community depends on and is grateful for the support and direction of the Department of Education.
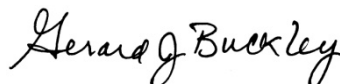
This report is also available in full to the general public at:

www.ntid.rit.edu/media/annual-report

With warm regards,

David C. Munson Jr., Ph.D.
President, RIT

Gerard J. Buckley, Ed.D. '78
President, NTID
Vice President and Dean, RIT

Cover Photos

This year's cover features images of students engaged in RIT/NTID's various areas of academic and co-curricular focus: in Science, a student works on laboratory experiments; our Technology students are delving into the world of motion-capture; Engineering features a computer-integrated machining technology student measuring a part for accuracy; Mathematics shows a middle school student participating in NTID's national math competition; and last, but not least, our lively Arts program is illustrated by the grace of ballet on the RIT/NTID stage.

The primary mission of the National Technical Institute for the Deaf is to provide deaf and hard-of-hearing students with outstanding state-of-the-art technical and professional education programs, complemented by a strong arts and sciences curriculum, that prepare them to live and work in the mainstream of a rapidly changing global community and enhance their lifelong learning.

Secondarily, NTID prepares professionals to work in fields related to deafness; undertakes a program of applied research designed to enhance the social, economic and educational accommodation of deaf people; and shares its knowledge and expertise through outreach and other information dissemination programs.

NTID by the Numbers

The National Technical Institute for the Deaf has grown exponentially since enrolling its first class in 1968. Numbers don't tell the whole story, but they do give you a glimpse of what NTID looks like today.

Student Enrollment

1,262 TOTAL ENROLLMENT

BREAKDOWN BY GEOGRAPHIC REGION:

96% U.S.

15% West
21% Midwest
47% Northeast
17% South
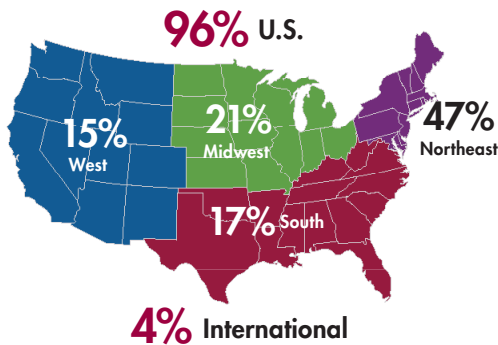
4% International

Brazil, Canada, China, Dominican Republic, Ethiopia, Ghana, India, Indonesia, Jamaica, Japan, Jordan, Nepal, Nigeria, Pakistan, Philippines, Rwanda, Sweden, Tanzania, Trinidad and Tobago, Uganda, Venezuela, Vietnam

BREAKDOWN BY GENDER:

52% MALE
48% FEMALE

MORE THAN **8,500** ALUMNI

Academics

Graduate Degree Programs **7%**
3% Career Exploration Studies
ASL-English Interpretation **12%**
21% Career-Focused Associate Degree Programs
41% Bachelor's Degree Programs
16% Associate+Bachelor's Degree Programs
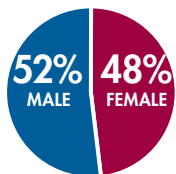
Employment/Earnings After College

313 STUDENTS COMPLETED A CO-OP LAST YEAR

New RIT/NTID grads are ready to succeed

Last year, **94%** of students who sought jobs after graduation found one within a year

New RIT/NTID alumni thrive in all economic sectors

Education & Non-Profit **20%**
10% Government
70% Business & Industry
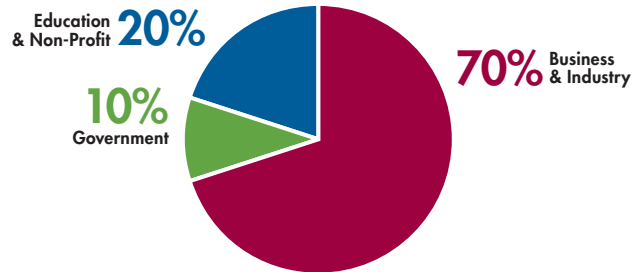
Employers include:
U.S. Department of Defense, Intel, MassMutual, RIT, Whirlpool

RIT/NTID graduates are competitive in the marketplace

RIT/NTID associate degree graduates earn
95%
more than deaf and hard-of-hearing graduates from other postsecondary institutions*.

RIT/NTID bachelor's degree graduates earn
178%
more than deaf and hard-of-hearing graduates from other postsecondary institutions*.

*median salary at age 50 compared to average
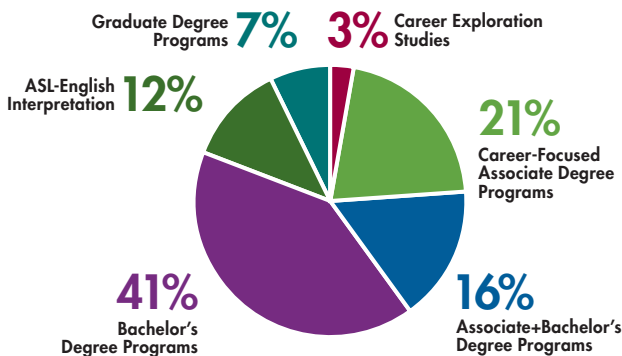
Student Access Services

Hours provided (2016-2017 academic year)

	In Classroom	Outside Classroom
Interpreting	108,243	44,387
Captioning	24,608	1,095
Notetaking	62,015	

Annual Highlights

Noteworthy accomplishments and statistics for the past year include the following:

- NTID's most recent employment rate for graduates in 2016 is 94 percent. The average employment rate over the past five years is 94 percent.
- NTID's first-year persistence rates and graduation rates for both sub-baccalaureate students and baccalaureate students were higher than the national rates for two-year and four-year colleges.
- Robert Panara, the first deaf faculty member at NTID, was honored by the U.S. Postal Service with a Forever Stamp in the Distinguished Americans series. The dedication ceremony was held in NTID's Panara Theatre on April 11, 2017. The stamp features a photograph of Panara signing the word "respect" taken by NTID photographer, Mark Benjamin '76, '94.
- Working Together: Deaf and Hearing People, an interactive workshop to help employers integrate deaf and hard-of-hearing employees, celebrated 33 years and 1,000 workshop presentations. The workshop was created by NTID's Center on Employment and is given roughly 30 times a year with employers throughout the U.S.
- NTID hired its first director of diversity and inclusion, Stephanie M. Smith Albert '88. Ms. Albert is responsible for all NTID issues relating to diversity and inclusion, monitoring NTID's progress on RIT-wide and NTID-specific initiatives and goals and identifying issues to bring to the NTID president and administrative council, as well as the RIT vice president and associate provost for diversity and inclusion.
- David C. Munson Jr. became RIT's 10th president on July 1, 2017. Munson has 38 years of experience in higher education and is the former dean of the University of Michigan's College of Engineering. He earned his bachelor's degree in electrical engineering from the University of Delaware and holds two master's and a doctoral degree in electrical engineering from Princeton University.
- In July 2017, NTID was awarded a $1.025 million grant from the National Institute of General Medical Sciences to develop a scientists-in-training program for deaf and hard-of-hearing undergraduates over the next five years. Funded through the Research Initiative for Scientific Enhancement (RISE) program, the grant is designed to increase the number of underrepresented students who enter Ph.D. programs in the biomedical and behavioral sciences. This program is the first RISE program to specifically serve deaf and hard-of-hearing students.
- In August 2017, NTID received a $2.6 million, five-year award from the National Institute of Health's National Institute on Deafness and Other Communication Disorders to study the neurological, linguistic and behavioral outcomes for deaf individuals after childhood. It is the first study of its kind with college-age adults.
- In August 2017, nine students enrolled in NTID's new associate degree program in 3-D graphics technology. NTID is the first college to offer this kind of program to deaf and hard-of-hearing students. The program introduces concepts related to three-dimensional graphics and teaches students the creative and technical skills required to produce 3-D graphics and prints, environmental renderings ranging from artistic to photorealistic and 3-D models used in multimedia and animation.
- In September 2017, RIT joined the top 100 universities in the nation, ranked 97th out of 311 universities in the prestigious "National Universities" category in the *U.S. News & World Report* rankings.
- In September 2017, NTID and the Environmental Protection Agency (EPA) signed a memorandum of understanding (MOU) that will increase cooperation between NTID and the EPA in areas of mutual interest, including promoting equal opportunity in higher education, contributing to NTID's capacity to provide high-quality education and encouraging the participation of NTID in EPA programs.

Executive Summary

New Registrations	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Fall Admissions (Deaf and Hard-of-Hearing Students Only)*					
Applications	833	796	860	771	638
Acceptances	507	464	488	432	435
Registrations	381	324	340	305	336
Other New Registrations					
AAS/BS ASL-English Interpretation	43	40	40	46	42
MS in Secondary Education	16	16	15	17	5
Total New Registrations	**440**	**380**	**395**	**368**	**383**
Enrollment (Deaf and Hard-of-Hearing Students Only)					
Career Exploration Studies (CES)	111	68	59	44	38
Sub-Baccalaureate Programs					
Career-Focused Programs	368	354	333	316	265
Associate+Bachelor's/Pre-Baccalaureate	190	202	232	211	202
Subtotal CES and Sub-Baccalaureate	**669**	**624**	**624**	**571**	**505**
Baccalaureate Programs at RIT	526	529	543	507	520
Graduate Programs at RIT	42	44	53	44	56
Subtotal Baccalaureate and Graduate at RIT	**568**	**573**	**596**	**551**	**576**
Subtotal Deaf and Hard-of-Hearing Students Only	**1,237**	**1,197**	**1,220**	**1,122**	**1,081**
Other Enrollments					
ASL-English Interpretation	147	146	151	140	147
MS in Health Care Interpretation	N/A	N/A	N/A	8	15
MS in Secondary Education**	48	44	42	30	19
Subtotal Other Enrollments	**195**	**190**	**193**	**178**	**181**
Total Enrollment	**1,432**	**1,387**	**1,413**	**1,300**	**1,262**

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* Figures reported do not include admissions activity in the ASL-English Interpretation program, the Master of Science program in Health Care Interpretation or the Master of Science program in Secondary Education. Specific data on these students is reported in the section on Academic Programs.

** Included from FY 2007 to FY 2016 are non-matriculated students (between four and 15 per year) taking courses offered by the Master of Science program in Secondary Education, but who are part of a grant-supported joint program between NTID and Nazareth College of Rochester to train speech pathologists to work with deaf and hard-of-hearing people.

Executive Summary (continued)

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Withdrawn (All Students)	16%	13%	16%	16%	17%
Graduates					
Total Degrees Granted	424	344	285	340	301
Degree Level					
Certificate	13	0	0	2	3
Diploma	0	0	0	0	0
Associate (AOS)	48	46	38	33	37
Associate (AS/AAS)	104	82	62	78	85
Associate (Interpreting)	1	1	0	1	0
Bachelor's (Interpreting)	52	29	29	40	24
Bachelor's	168	144	116	143	123
Master's	21	8	19	23	18
Master's (MSSE)	17	34	21	20	11
Post-Graduation Employment					
Post-Graduation Employment	174	136	126	122	N/A*
Post-Graduation Employment Rate	94%	94%	94%	94%	N/A*
By Sector of the Economy					
Business and Industry	60%	61%	75%	70%	N/A*
Education/Non-Profit	31%	28%	16%	20%	N/A*
Government	9%	11%	9%	10%	N/A*
Cooperative Work Experiences	295	238	271	271	313
Access/Support Services					
Notetaking Hours	67,671	58,246	60,195	61,924	62,015
Tutoring Hours	16,559	15,661	14,212	14,438	12,881
Interpreting Hours	145,003	132,055	140,230	149,046	152,630
Real-Time Captioning Hours	18,263	21,601	22,211	24,335	25,952

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* Post-graduation employment numbers reflect status as of one year following graduation; employment numbers for September 1, 2016 through August 31, 2017 graduates will be reported next year.

Executive Summary (continued)

Outreach (Number of External Participants)	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
C-Print® Training	6	4	5	9	10
Digital Arts, Film and Animation	63	46	50	28	20
Droids and Drones	N/A	N/A	N/A	18	27
Explore Your Future	192	100	213	199	203
Health Care Careers Exploration Camp	N/A	N/A	10	14	23
Interpreter Training*	104	59	73	165	118
Math Competition	83	79	93	119	144
Notetaker Training	262	417	330	282	363
NTID Center on Employment	413	417	568	754	498
Project Fast Forward	87	78	113	56	168
SpiRIT Writing Contest	38	91	64	31	33
Steps to Success	23	12	13	8	18
TechGirlz/TechBoyz Camp	48	34	45	47	60

Financial Aid (Domestic Students)

Grant-in-Aid	$1,303,299	$1,251,745	$1,459,983	$1,035,396	$1,410,243
Vocational Rehabilitation	9,319,129	10,531,963	10,821,731	10,504,372	9,998,521
Pell Grants	2,796,483	2,751,344	2,662,380	2,611,999	2,399,441
State Grants	517,134	522,612	458,527	453,851	435,230
Federal Loans	5,476,048	5,163,359	4,775,031	3,915,733	3,916,779
Scholarships and Other	2,553,633	3,026,247	3,117,140	4,221,658	4,233,220
Total Financial Aid	**$21,965,726**	**$23,247,270**	**$23,294,792**	**$22,743,009**	**$22,384,434**
Average Aid per Domestic Student (Excluding Loans)**	**$11,157**	**$13,029**	**$13,790**	**$13,783**	**$14,715**

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*   Students supported by grants from the New York State Board of Regents, State Education Department and Vocational and Educational Services for Individuals with Disabilities, awarded to RIT/NTID and the Monroe County #1 Board of Cooperative Education Services of Rochester, N.Y.
** Total financial aid, less loans, divided by domestic student enrollment.

Executive Summary (continued)

Domestic Student Rates*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Tuition	$13,512	$14,040	$14,570	$15,140	$15,730
Room	6,530	6,758	6,954	7,162	7,376
Board	4,648	4,810	4,964	5,338	5,290
Fees	492	512	528	544	562
Total	**$25,182**	**$26,120**	**$27,016**	**$28,184**	**$28,958**
Fundraising Activity					
Cash to Endowment and Restricted Funds	$1,321,580	$1,348,092	$450,505	$683,466	**
Equipment and Software	$57,117	$69,697	$43,738	$20,530	**
Federal Funds Matched***	$85,000	$309,000	$387,666	$116,373	**
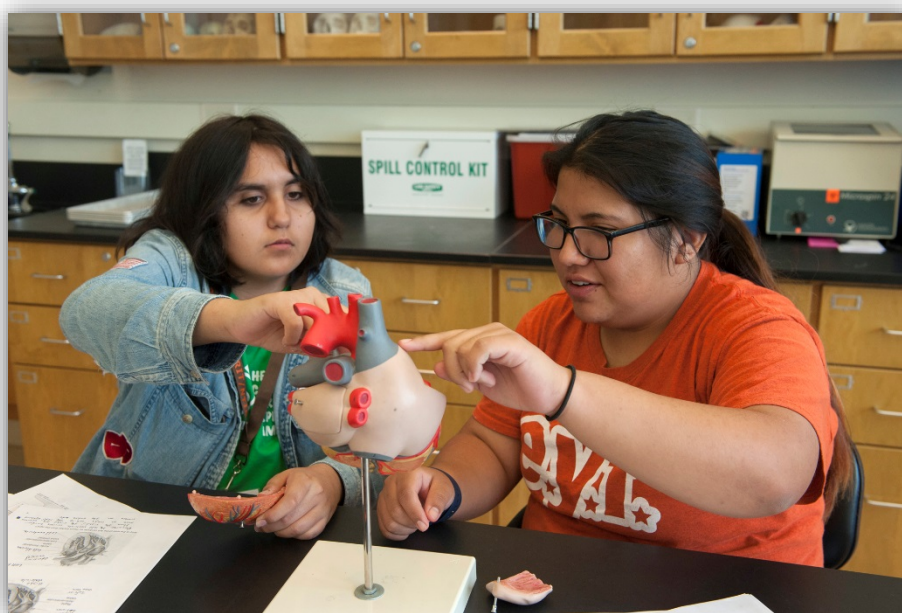
NTID's Health Care Careers Exploration Camp is the first program designed for deaf and hard-of-hearing high school students aspiring to careers in the health care field.

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* Per the Education of the Deaf Act, international students pay differing tuition rates, depending on whether they are from a developing or developed country. Their charges for room, board and fees are the same as for domestic students.

** Information not yet available.

*** Any monies matched must be funded through operating funds efficiencies.

The Education of the Deaf Act

The Education of the Deaf Act requires NTID to submit this report annually to the federal government.

New STEM graduates Timothy Skalko, a Computer Integrated Machining major from Kendall Park, New Jersey, and Maarja Paul, a Laboratory Science Technology major from Schenectady, New York, are ready for the workforce.

Reporting Requirements of the Education of the Deaf Act and the Agreement with RIT

This section includes, verbatim, the section of the Education of the Deaf Act (EDA) that applies to reporting requirements for the National Technical Institute for the Deaf. The material below in brackets provides cross-references, indicating sections of this report that reflect NTID compliance with these EDA provisions. In addition, reporting on inventions is included below based on a requirement of the Agreement with RIT.

NOTE: Where "…" appear, sections of the EDA that do not apply to NTID have been removed.

Reports for the EDA

… the Board of Trustees or other governing body of the institution of higher education with which the Secretary has an agreement [RIT] under section 4332 of this title shall prepare and submit an annual report to the Secretary, and to the Committee on Education and Labor of the House of Representatives and the Committee on Labor and Human Resources of the Senate, not later than 100 days after the end of each fiscal year, which shall include the following: [This *Annual Report* meets this requirement.]

(1) The number of students during the preceding academic year who enrolled and whether these were first-time enrollments, who graduated, who found employment, or who left without completing a program of study, reported under each of the programs … of NTID. [Refer to the Executive Summary section.]

(2) For the preceding academic year, and to the extent possible, the following data on individuals who are deaf and from minority backgrounds and who are students (at all educational levels) or employees:

   (A) The number of students enrolled full- and part-time. [Refer to the Academic Programs and Diversity and Inclusion sections.]

   (B) The number of these students who completed or graduated from each of the educational programs. [Refer to the Persistence, Graduation & Employment and Diversity and Inclusion sections.]

   (C) The disposition of these students upon graduation/completion on the date that is one year after the date of graduation or completion of programs at NTID … in comparison to students from non-minority backgrounds. [Refer to the Persistence, Graduation & Employment and Diversity and Inclusion sections.]

   (D) The number of students needing and receiving support services (such as tutoring and counseling) at all educational levels. [Refer to the Student Support Services section.]

   (E) The number of recruitment activities by type and location for all educational levels. [Refer to the Outreach section of the Executive Summary.]

   (F) Employment openings/vacancies and grade level/type of job and number of these individuals that applied and that were hired… [Refer to the Diversity and Inclusion section.]

(3) (A) A summary of the annual audited financial statements and auditor's report … as required under section 4353 of this title. [The audit of RIT is provided to the Secretary, as is a separate schedule for NTID.]

   (B) A summary of the annual audited financial statements and auditor's report of NTID programs and activities of this title, and such supplementary schedules presenting financial information for NTID for the end of the federal fiscal year as determined by the Secretary. [The audit of RIT is provided to the Secretary, as is a separate schedule for NTID.]

(4) For the preceding fiscal year, a statement showing the receipts of … NTID and from what federal sources, and a statement showing the expenditures … by function, activity, and administrative and academic unit. [Refer to the Financial Operations section.]

(5) A statement showing the use of funds (both corpus and income) provided by the Federal Endowment Program under section 4357 of this title. [Refer to the External Funding section.]

(6) A statement showing how such Endowment Program funds are invested, what the gains or losses (both realized and unrealized) on such investments were for the most recent fiscal year, and what changes were made in investments during that year. [Refer to the External Funding section.]

(7) Such additional information as the Secretary may consider necessary. [NTID responds on a regular basis to requests for additional information from staff of the U.S. Department of Education.]

Agreement with RIT: Certification Regarding Inventions

The *Agreement for Establishment and Operation of the National Technical Institute for the Deaf Between the Secretary of Health, Education, and Welfare and Rochester Institute of Technology (RIT) (1966)* requires annual disclosure of any inventions developed during the year or a certification that no inventions were made during the applicable period. NTID hereby certifies that one invention was made during the year covered by this Annual Report.

Intellectual Property 2017-015-01 – Provisional Patent filed with U.S. P. T.O. for "Method for Measuring Sign Recognition Ability in Learners of American Sign Language (ASL) as a Second Language." Application date: July 18, 2017. IP Inventors named: Joseph Bochner, Vincent Samar, Wayne M. Garrison.

Deaf and hard-of-hearing high school students get hands-on lab experience during NTID's Explore Your Future camp. Participants are exposed to careers in the arts, business, computer science, engineering, health sciences, information technology and science.

Performance Indicators

Performance indicators, required by the Government Performance and Results Act, measure NTID's performance related to enrollment, persistence, graduation and employment.

Rayangelo Abadia, left, an Applied Arts and Sciences major from Oceanside, New York; Vikramdeep Singh, center, an Accounting Technology major from Woodside, New York; and Violeta Priscilla Acosta, right, an Accounting Technology major from Ringgold, Georgia, cherish their friendship and success at NTID's Commencement in May.

National Technical Institute for the Deaf

Performance Indicators

Performance indicators are critical elements of the Congressionally mandated Government Performance and Results Act (GPRA), which requires the Department of Education to measure the performance of all entities within its oversight receiving federal funds. There are four objectives, each with several measures to track performance.

Objective 1 of 4

Provide deaf, hard-of-hearing and hearing students in undergraduate and professional studies with outstanding state-of-the-art technical and professional education programs, complemented by a strong arts and sciences curriculum and supplemented with appropriate student support services.

Though not related directly to required performance indicators, the table below reports an overview of the total enrollment for the National Technical Institute for the Deaf (NTID), which includes:
- Deaf and hard-of-hearing sub-baccalaureate students;
- Deaf and hard-of-hearing baccalaureate students;
- Baccalaureate students in the ASL-English Interpretation program;
- Deaf and hard-of-hearing graduate students enrolled in colleges of RIT other than NTID;
- Deaf, hard-of-hearing and hearing students in NTID's Master of Science program in Secondary Education of Students who are Deaf or Hard of Hearing (MSSE); and
- Students in the Master of Science in Health Care Interpretation (MSHCI) program.

Fiscal Year	Total Enrollment
2009	1,450
2010	1,474
2011	1,521
2012	1,547
2013	1,529
2014	1,432
2015	1,387
2016	1,413
2017	1,300
2018	1,262

Measure 1.1 of 3: The number of NTID-supported deaf and hard-of-hearing undergraduates (desired direction: increase)

Fiscal Year	Target	Number	Status
2009	1,045	1,212	Target Surpassed
2010	1,045	1,237	Target Surpassed
2011	1,045	1,263	Target Surpassed
2012	1,200	1,281	Target Surpassed
2013	1,200	1,269	Target Surpassed
2014	1,200	1,195	Target Not Met
2015	1,200	1,153	Target Not Met
2016	1,200	1,167	Made Progress From Prior Year
2017	1,200	1,078	Target Not Met
2018	1,200	1,025	Target Not Met

Source: National Technical Institute for the Deaf, Registrar Office records

Frequency of Data Collection: Annual

Data Quality: Enrollment data does not include part-time students or non-degree-seeking students, with the exception of part-time students who are taking their final courses for completion of their degrees.

Target Context: In September 2011, the target for the number of undergraduates who are deaf and hard of hearing enrolled in NTID was increased from 1,045 students to 1,200 students, as NTID enrolled more than 1,200 undergraduate students in FY 2009, FY 2010 and FY 2011.

Explanation: Below is a table showing the number of undergraduate students who are deaf or hard of hearing who were enrolled in sub-baccalaureate programs at RIT and in baccalaureate programs at NTID.

Fiscal Year	Sub-Baccalaureate	Baccalaureate	Total
2009	761	451	1,212
2010	759	478	1,237
2011	768	495	1,263
2012	766	515	1,281
2013	718	551	1,269
2014	669	526	1,195
2015	624	529	1,153
2016	624	543	1,167
2017	571	507	1,078
2018	505	520	1,025

As seen in the above table, NTID experienced a decrease in the undergraduate enrollment of students who are deaf and hard of hearing from 1,078 students during the 2016-2017 (FY 2017) academic year to 1,025 students in the 2017-2018 (FY 2018) academic year.

Performance Indicators (continued)

Measure 1.2 of 3: The number of students enrolled in NTID's ASL-English Interpretation program (desired direction: increase)

Fiscal Year	Target	Number	Status
2009	100	135	Target Surpassed
2010	100	138	Target Surpassed
2011	120	147	Target Surpassed
2012	140	160	Target Surpassed
2013	140	167	Target Surpassed
2014	140	147	Target Surpassed
2015	160	146	Target Not Met
2016	160	151	Made Progress From Prior Year
2017	140	140	Target Met
2018	140	147	Target Surpassed

Source: National Technical Institute for the Deaf, Registrar Office records

Frequency of Data Collection: Annual

Data Quality: Enrollment data for students in the ASL-English Interpretation program does not include part-time students or non-degree-seeking students, with the exception of part-time students who are taking their final courses toward completion of their degrees.

Target Context: NTID has reported that the ASL-English Interpretation program receives more applicants than they are able to accept. NTID allowed this program to expand in FY 2009 to help meet the increasing demand for qualified interpreters. As a result of the expansion, the target increased to 120 students for FY 2011, and again to 140 students for FY 2012, and finally to 160 students for FY 2015. In FY 2014, NTID began limiting the number of applicants accepted into the Interpretation program towards an overall enrollment goal of 140 students.

Measure 1.3 of 3: The number of students enrolled in NTID's Master of Science program in Secondary Education of Students Who are Deaf or Hard of Hearing (MSSE), Master of Science program in Health Care Interpretation (MSHCI) and deaf or hard-of-hearing students pursuing graduate degrees in other RIT colleges   (desired direction: increase)

Fiscal Year	Target	Number	Status
2009	105	103	Target Not Met
2010	105	99	Target Not Met
2011	105	111	Target Surpassed
2012	95	106	Target Surpassed
2013	95	93	Target Not Met
2014	95	90	Target Not Met
2015	95	88	Target Not Met
2016	95	95	Target Met
2017	95	82	Target Not Met
2018	95	90	Made Progress From Prior Year

Source: National Technical Institute for the Deaf, Registrar Office records

Performance Indicators (continued)

Frequency of Data Collection: Annual

Data Quality: Enrollment data does not include part-time students or non-degree-seeking students, with the exception of part-time students who are taking their final courses toward completion of their degrees.

Target Context: In the FY 2008 Performance Plan, the target for the number of students enrolled in NTID's MSSE program, as well as students pursuing graduate degrees in the other colleges of RIT, was reduced from 120 students to 105 students. The target was further reduced from 105 students to 95 students for FY 2012 and subsequent years. In FY 2018, NTID had a total of 19 students in the MSSE program and 56 deaf and hard-of-hearing students in other RIT graduate programs. FY 2018 marks the second year where students enrolled in the MSHCI program were included, with an enrollment of 15 students. Total enrollment for this measure currently is 90.

Objective 2 of 4

Maximize the number of students successfully completing a program of study.

Unlike other data reported in performance indicator objectives, the data in Objective 2 is reported to the Integrated Postsecondary Education Data System (IPEDS) using its April timeline. Therefore, FY 2017 data will be reported in April 2018.

Measure 2.1 of 4: The percentage of first-time, full-time, degree-seeking sub-baccalaureate students who were in their first year of postsecondary enrollment in the previous year and who are enrolled in the current year (desired direction: increase)			
Fiscal Year	**Target**	**Percentage**	**Status**
2007		72.4	Measure Not In Place
2008	Set a Baseline	75.5	Target Not In Place
2009	Maintain a Baseline	71.9	Target Not In Place
2010	70	68.8	Target Not Met
2011	70	69.8	Made Progress From Prior Year
2012	70	66.8	Target Not Met
2013	70	68.0	Made Progress From Prior Year
2014	70	73.5	Target Surpassed
2015	70	75.1	Target Surpassed
2016	70	69.5	Target Not Met

Source: Rochester Institute of Technology, Registrar Office records

Frequency of Data Collection: Annual

Data Quality: In April 2017, NTID reported to the Department the FY 2016 persistence rate of its sub-baccalaureate students, who returned from the 2015-2016 academic year to their second year in the 2016-2017 academic year. NTID reported that the persistence rate of its first-time, full-time, degree-seeking sub-baccalaureate students who are deaf and who are not enrolled in NTID's ASL-English Interpretation program is 69.5 percent. Currently, there are no sub-baccalaureate students enrolled in the ASL-English Interpretation program.

Performance Indicators (continued)

NTID will report to the Department the FY 2017 persistence rate in April 2018, with a sub-set of disaggregated data on the persistence rates of sub-baccalaureate students who are deaf and ASL-English Interpretation students, if applicable. Prior to FY 2008, this measure did not include ASL-English Interpretation students.

Target Context: The target for the persistence rate of NTID's sub-baccalaureate students is 70 percent. In comparison, IPEDS data indicate that two-year public colleges have an average persistence rate of 58 percent, and two-year private colleges have an average persistence rate of 67 percent.

Explanation: This measure was added to the FY 2008 Performance Plan and is consistent with the methodology used by IPEDS and other Department programs in measuring the persistence of postsecondary students. The persistence rate is the percentage of first-time, full-time, degree-seeking sub-baccalaureate students who were in their first year of enrollment in the previous year and who are enrolled in the current year.

Measure 2.2 of 4: The percentage of first-time, full-time, degree-seeking baccalaureate students who were in their first year of postsecondary enrollment in the previous year and are enrolled in the current year (desired direction: increase)			
Fiscal Year	**Target**	**Percentage**	**Status**
2007		75.7	Measure Not In Place
2008	Set a Baseline	85.9	Target Not In Place
2009	Maintain a Baseline	88.0	Target Not In Place
2010	85	93.5	Target Surpassed
2011	85	88.2	Target Surpassed
2012	85	85.9	Target Surpassed
2013	85	90.8	Target Surpassed
2014	85	90.0	Target Surpassed
2015	85	93.0	Target Surpassed
2016	86	83.0	Target Not Met

Source: Rochester Institute of Technology, Registrar Office records

Data Quality: In April 2017, NTID reported to the Department the FY 2016 persistence rate of its baccalaureate students, including ASL-English Interpretation students, who returned from the 2015-2016 academic year to their second year in the 2016-2017 academic year, along with a sub-set of disaggregated data on the persistence rates of baccalaureate students who are deaf and ASL-English Interpretation students. Prior to FY 2008, this measure did not include ASL-English Interpretation students.

Performance Indicators (continued)

The following persistence rates were submitted to the Department by NTID:

	All students	**Deaf students**	**ASL-English Interpretation students**
FY 2008	85.9%	85.7%	87.5%
FY 2009	88.0%	87.7%	89.5%
FY 2010	93.5%	92.5%	95.8%
FY 2011	88.2%	89.8%	84.2%
FY 2012	85.9%	82.6%	94.4%
FY 2013	90.8%	89.3%	95.7%
FY 2014	90.0%	90.6%	87.5%
FY 2015	93.0%	90.8%	100.0%
FY 2016	83.0%	81.3%	88.0%

NTID will report to the Department the FY 2017 persistence rate of its baccalaureate students in April 2018, with a sub-set of disaggregated data on the persistence rates of baccalaureate students who are deaf and ASL-English Interpretation students.

Target Context: The target for the persistence rate of NTID's baccalaureate students is 86 percent, with the 2017 and 2018 targets being increased by 1 percent per year to 87 percent and 88 percent, respectively. In comparison, IPEDS data indicate that four-year public and private colleges have an average persistence rate of 73 percent.

Explanation: This measure was added to the FY 2008 Performance Plan and is consistent with the methodology used by IPEDS and other Department programs in measuring the persistence of postsecondary students. The persistence rate is the percentage of first-time, full-time, degree-seeking baccalaureate students who were in their first year of enrollment in the previous year and who are enrolled in the current year.

Measure 2.3 of 4: The percentage of first-time, full-time, degree-seeking sub-baccalaureate students who graduate within 150% of the program-based length of time (desired direction: increase)			
Fiscal Year	**Target**	**Percentage**	**Status**
2007		25.3	Measure Not In Place
2008	Set a Baseline	26.9	Target Not In Place
2009	Maintain a Baseline	37.4	Target Not In Place
2010	26	33.7	Target Surpassed
2011	26	46.0	Target Surpassed
2012	27	40.5	Target Surpassed
2013	35	42.1	Target Surpassed
2014	36	37.3	Target Surpassed
2015	37	39.2	Target Surpassed
2016	38	39.8	Target Surpassed

Source: Rochester Institute of Technology, Registrar Office records

Frequency of Data Collection: Annual

Performance Indicators (continued)

Data Quality: In April 2017, NTID reported to the Department the FY 2016 percentage of its sub-baccalaureate students (those who were initially enrolled in the 2010-2011 academic year), including ASL-English Interpretation students, who graduated within 150 percent of the program-based length of time, along with a sub-set of disaggregated data on the graduation rates of sub-baccalaureate students who are deaf and ASL-English Interpretation students. Prior to FY 2008, this measure did not include ASL-English Interpretation students.

The following graduation rates were submitted to the Department by NTID:

	All students	**Deaf students**	**ASL-English Interpretation students**
FY 2008	26.9%	29.3%	0.0%
FY 2009	37.4%	37.8%	33.3%
FY 2010	33.5%	29.6%	73.3%
FY 2011	46.0%	41.3%	81.0%
FY 2012	40.5%	37.3%	84.6%
FY 2013	41.8%	41.1%	100.0%
FY 2014	37.3%	37.3%	N/A
FY 2015	39.2%	39.2%	N/A
FY 2016	39.8%	39.8%	N/A

(Note: There were only three students included in the ASL-English Interpretation cohort reported for FY 2008. None of these students persisted to graduation, resulting in a rate of 0 percent.)

NTID will report to the Department the FY 2017 graduation rate of its sub-baccalaureate students in April 2018, with a sub-set of disaggregated data on the graduation rates of sub-baccalaureate students who are deaf and ASL-English Interpretation students.

Target Context: The target for the graduation rate of NTID's sub-baccalaureate students is 37 percent. An IPEDS analysis of public and private non-profit two-year institutions indicated an average graduation rate of 31 percent for full-time, first-time degree-seeking students within 150 percent of program-based length of time. Based on the comparison with IPEDS data, the target will increase from 35 percent in 2013 to 40 percent in 2018, at an increase of 1 percent per year.

Explanation: This measure was added to the FY 2008 Performance Plan and is consistent with the methodology used by IPEDS and other Department programs to measure the graduation rate of postsecondary students. Program-based length of time refers to whether the stated program length for sub-baccalaureates is two or three years. The measure will allow the Department to obtain data that is comparable with what is being submitted to IPEDS by other institutions on graduation rates.

Performance Indicators (continued)

Measure 2.4 of 4: The percentage of first-time, full-time, degree-seeking baccalaureate students who graduate within 150% of the program-based length of time (desired direction: increase)

Fiscal Year	Target	Percentage	Status
2007		53.3	Measure Not In Place
2008	Set a Baseline	60.5	Target Not In Place
2009	Maintain a Baseline	64.9	Target Not In Place
2010	60	55.6	Target Not Met
2011	60	65.9	Target Surpassed
2012	61	62.2	Target Surpassed
2013	62	71.9	Target Surpassed
2014	63	69.5	Target Surpassed
2015	64	76.2	Target Surpassed
2016	65	73.5	Target Surpassed

Source: Rochester Institute of Technology, Registrar Office records

Data Quality: In April 2017, NTID reported to the Department the FY 2016 percentage of its baccalaureate students (those who were initially enrolled in the 2010-2011 academic year), including ASL-English Interpretation students, who graduated within 150 percent of the program-based length of time or within six years, along with a sub-set of disaggregated data on the graduation rates of baccalaureate students who are deaf and ASL-English Interpretation students. Prior to FY 2008, this measure did not include ASL-English Interpretation students.

The following graduation rates were submitted to the Department by NTID:

	All students	**Deaf students**	**ASL-English Interpretation students**
FY 2013	71.9%	73.2%	62.5%
FY 2014	69.5%	67.1%	78.9%
FY 2015	76.2%	69.2%	91.7%
FY 2016	73.5%	69.4%	84.2%

(Note: There were no first-time, full-time, degree-seeking baccalaureate students enrolled in NTID's ASL-English Interpretation programs in fall 2004, fall 2005 or fall 2006.)

NTID will report to the Department the FY 2017 graduation rate of its baccalaureate students in April 2018, with a sub-set of disaggregated data on the graduation rates of baccalaureate students who are deaf and ASL-English Interpretation students.

Target Context: The target for the graduation rate of NTID's baccalaureate students in 2016 is 65 percent. An IPEDS analysis of institutions of higher education show that four-year public colleges have an average graduation rate of 45 percent and that four-year private colleges have an average graduation rate of 53 percent. Based on the comparison with IPEDS data, the target has increased from 60 percent in 2011 to 65 percent in 2016, at an increase of 1 percent per year.

Explanation: This measure was added in the FY 2008 Performance Plan and is consistent with the methodology used by IPEDS and other Department programs to measure the graduation rate of baccalaureate postsecondary students who graduate within six years of entry. The measure will allow the Department to obtain data that is comparable with what is being submitted to IPEDS by other institutions on graduation rates.

Performance Indicators (continued)

Objective 3 of 4

Improve post-school outcomes.

The source of the data in these measures is a questionnaire NTID gives to its students who are nearing graduation and immediately after graduation. In addition, all graduates receive an initial email contact from NTID during the first semester after graduation, as well as follow-up letters and phone calls, with the goal of acquiring data for every student who has graduated within the previous year. Questions include the graduate's address, whether the graduate has found or is looking for employment and whether the graduate is attending college or another postsecondary institution. If the graduate is employed, NTID requests information regarding the employment experience, including type of work, starting date and salary.

NTID reports the employment rate for deaf and hard-of-hearing sub-baccalaureate and baccalaureate graduates one year after graduation, based on availability of valid data. In 2016, a total of 266 deaf and hard-of-hearing students graduated from NTID. Valid data existed one year later on 248 graduates. Of these 248 graduates, 122 students were employed (49 percent), 104 students were in higher education or training (42 percent) and 22 students were not employed or in higher education or training (9 percent). Of the 22 students not employed or in higher education or training, eight were actively looking for work.

Category of Graduate	Count
Employed	122
Unemployed (Seeking Employment)	8
Not Seeking Employment	14
Education (Within RIT)	69
Education (Outside RIT)	35
Unknown	18
Total	266

Measure 3.1 of 3: The post-school rate of NTID graduates who are employed during their first year after graduation (desired direction: increase)

Graduation Year	Target	Rate	Status
2007	Set a Baseline	60	Target Not In Place
2008	Set a Baseline	51	Target Not In Place
2009	Maintain a Baseline	47	Target Not In Place
2010	57	42	Target Not Met
2011	57	45	Made Progress From Prior Year
2012	50	46	Made Progress From Prior Year
2013	50	58	Target Surpassed
2014	50	55	Target Surpassed
2015	50	58	Target Surpassed
2016	50	49	Target Not Met

Source: National Technical Institute for the Deaf, post-graduation employment records

Performance Indicators (continued)

Frequency of Data Collection: Annual

Target Context: The average employment rate of 2005, 2006 and 2007 graduates who were employed full-time within one year after graduation was 57 percent. In FY 2010, the Department proposed that the target for this measure in FY 2010 and FY 2011 be equal to this average. The target has been revised downward by the Department to 50 percent for FY 2012 and subsequent years to be more consistent with the data submitted by NTID for FY 2009, 2010 and 2011. In FY 2012, it was also determined that the target percentages across all three categories (Measures 3.1, 3.2 and 3.3) would equal 100 percent of the alumni being tracked by NTID.

Explanation: Originally employment rates were calculated by NTID as the percentage of graduates who are employed among those who choose to pursue employment, following the Bureau of Labor Statistics methodology. In previous years, NTID reported, in comparison with the target of 95 percent, the following percentages of students employed who have chosen to pursue employment:

Graduation Year	Percentage
2007	95
2008	90
2009	90
2010	90
2011	91
2012	93
2013	94
2014	94
2015	94
2016	94

In FY 2006, the Department changed the methodology for calculating employment data, from the percentage of graduates who were employed among those seeking employment, to the percentage of graduates who are employed among all those who graduated from NTID.

Measure 3.2 of 3: The post-school rate of NTID graduates who are in advanced education or training during their first year after graduation (desired direction: increase)

Graduation Year	Target	Rate	Status
2007	Set a Baseline	30	Target Not In Place
2008	Set a Baseline	39	Target Not In Place
2009	Maintain a Baseline	40	Target Not In Place
2010	35	44	Target Surpassed
2011	35	44	Target Surpassed
2012	45	46	Target Surpassed
2013	45	32	Target Not Met
2014	45	35	Made Progress From Prior Year
2015	45	31	Target Not Met
2016	45	42	Made Progress From Prior Year

Source: National Technical Institute for the Deaf, post-graduation employment records

Performance Indicators (continued)

Frequency of Data Collection: Annual

Target Context: The average participation rate of 2005, 2006 and 2007 graduates who were in advanced education or training full-time within one year after graduation is 35 percent. In FY 2010, the Department proposed that the target for this measure in FY 2010 and FY 2011 be equal to this average. The target has been revised upward by the Department to 45 percent for FY 2012 and subsequent years to be more consistent with the data submitted by NTID for FY 2009, 2010 and 2011. In FY 2012, it was also determined that the target percentages across all three categories (Measures 3.1, 3.2 and 3.3) would equal 100 percent of the alumni being tracked by NTID.

Explanation: This indicator was added as part of the post-school outcomes to provide a more complete and accurate picture of outcomes for NTID graduates. The measure focuses on graduates who are in advanced education or training during their first year after graduation. Separate measures cover graduates who are in the workforce during their first year after graduation and graduates who are not engaged in either advanced education or training or in the workforce during their first year after graduation.

Measure 3.3 of 3: The post-school rate of NTID graduates who are not engaged in either advanced education or training or in the workforce during their first year after graduation (desired direction: decrease)

Fiscal Year	Target	Rate	Status
2007	Set a Baseline	10	Target Not In Place
2008	Set a Baseline	10	Target Not In Place
2009	Maintain a Baseline	13	Target Not In Place
2010	8	14	Target Not Met
2011	8	11	Made Progress From Prior Year
2012	5	8	Made Progress From Prior Year
2013	5	10	Target Not Met
2014	5	10	Target Not Met
2015	5	11	Target Not Met
2016	5	9	Made Progress From Prior Year

Source: National Technical Institute for the Deaf, post-graduation employment records

Frequency of Data Collection: Annual

Target Context: The average rate of the 2005, 2006 and 2007 graduates who were neither employed nor in advanced education or training full-time within one year after graduation is 8 percent. In FY 2010, the Department proposed that the target for this measure in FY 2010 and subsequent years be equal to this average. The target was revised downward by the Department to 5 percent for FY 2012 and subsequent years to reflect changes made in the two previous indicators on the percentage of students employed and/or in advanced education or training during their first year after graduation and each alumnus being counted only once. This allows the percentage across all three categories (Measures 3.1, 3.2 and 3.3) to equal 100 percent of the alumni being tracked by NTID.

Explanation: This indicator has been added as part of the post-school outcomes to provide a more complete and accurate picture of outcomes for NTID graduates. The measure focuses on graduates who are not engaged in advanced education or training or in the workforce during their first year after graduation. Other measures cover graduates who are in the workforce during their first year after graduation and graduates who are in either advanced education or training during their first year after graduation.

Objective 4 of 4:

Improve the efficiency of operations at NTID as defined by the cost per successful student outcome, where the successful outcome is graduation.

Measure 4.1 of 2: Federal cost per NTID graduate (desired direction: decrease)			
Fiscal Year	Target	Cost	Status
2006		181,400	Measure Not In Place
2007	Set a Baseline	210,100	Target Not In Place
2008	Maintain a Baseline	188,600	Target Not In Place
2009	Maintain a Baseline	196,300	Target Not In Place
2010	196,898	187,400	Target Surpassed
2011	201,230	205,900	Target Not Met
2012	205,657	172,000	Target Surpassed
2013	209,564	146,600	Target Surpassed
2014	213,755	185,200	Target Surpassed
2015	218,244	226,200	Target Not Met
2016	222,827	191,200	Target Surpassed
2017	222,827	221,200	Target Surpassed

Source: National Technical Institute for the Deaf, Finance and Budget Office

Frequency of Data Collection: Annual

Data Quality: The FY 2017 data on the federal cost per graduate, as reported by NTID, is an average of the cost per graduate from FY 2012 to FY 2017. The federal cost per graduate includes graduates who receive associate, bachelor's and master's degrees from NTID.

Target Context: In determining the appropriate target each year for the federal cost per graduate, future inflation must be taken into account, as well as the variation in the number of students who graduate each year from NTID. The Department has identified and established targets for FY 2010 and subsequent years.

Explanation: This measure is calculated by adding the federal appropriations for the current year and the five preceding years, which is then averaged. The average (from six years of federal appropriations) is divided by the number of graduates in the current year, including sub-baccalaureate, baccalaureate and graduate students. Federal student financial aid, vocational rehabilitation payments, other federal support for students, federal grants and contracts, the Federal Endowment Grant Program tuition and other private funds received by NTID are not included in this calculation.

Performance Indicators (continued)

Measure 4.2 of 2: Total educational cost per NTID graduate (desired direction: decrease)			
Fiscal Year	Target	Cost	Status
2006		214,300	Measure Not In Place
2007	Set a Baseline	250,300	Target Not In Place
2008	Maintain a Baseline	226,700	Target Not In Place
2009	Maintain a Baseline	236,400	Target Not In Place
2010	236,675	223,900	Target Surpassed
2011	241,882	246,400	Target Not Met
2012	247,203	206,100	Target Surpassed
2013	251,800	176,900	Target Surpassed
2014	256,836	224,000	Target Surpassed
2015	262,230	277,100	Target Not Met
2016	267,737	237,300	Target Surpassed
2017	267,737	272,800	Target Not Met

Source: National Technical Institute for the Deaf, Finance and Budget Office

Frequency of Data Collection: Annual

Data Quality: The FY 2017 data on the total educational cost per graduate, as reported by NTID, is an average of the cost per graduate from FY 2012 to FY 2017. The total educational cost per graduate includes graduates who receive associate, bachelor's and master's degrees from NTID.

Target Context: In determining the appropriate target each year for the total educational cost per graduate, future inflation must be taken into account, as well as the variation in the number of students who graduate each year from NTID. The Department has identified and established targets for FY 2010 and subsequent years.

Explanation: This measure is calculated by adding the federal appropriations and non-federal funds (tuition, room, board and fees collected from students) for the current year and the five preceding years, which is then averaged. The average (from six years of federal appropriations and non-federal funds) is divided by the number of graduates in the current year, including sub-baccalaureate, baccalaureate and graduate students. Costs associated with public services, auxiliary enterprises and construction are excluded from this calculation.

Strategic Planning

Strategic Decisions 2020, NTID's strategic planning initiative, was forged with student, staff and faculty involvement.

Incoming NTID students with minimal or no ASL skills may elect to participate in the New Signers Program (NSP), a *Strategic Decisions 2020* initiative that gives new students an ASL-immersion experience before fall orientation begins.

Strategic Decisions 2020

FY 2017 marked the seventh year of NTID's
implementation of *Strategic Decisions 2020*, the
strategic plan for the next three years.

Implementation of *Strategic Decisions 2020* (*SD 2020)* continued to follow the 2015 mid-term review committee's revised recommendations and new initiatives. The following committee was established in FY 2017 and its work will impact strategic planning.

Committee on Equal Opportunity, Communication and Access (CEOCA)

The Committee on Equal Opportunity, Communication and Access (CEOCA) was formed by NTID President Gerry Buckley to address language and communication concerns raised by the student-led Communication Access Now (CAN) movement in fall semester 2015. CEOCA was co-chaired by Dr. Denise Kavin and Rick Postl and comprised of three faculty, three staff and three students. The committee was asked to review core institutional philosophies and values as written in *SD 2020* and to better delineate NTID's position on language, communication and access in the classroom. The committee was also tasked with reviewing language and classroom-related communication practice recommendations made by other committees, present and past.

The committee had three primary charges:

- Review the *SD 2020* document as a framework and foundation for understanding NTID's plans through 2020 and make recommendations for revision, if any.
- Review *SD 2020 Mid-Term Recommendations Report 2015 – 2020*'s Communication and Access section and determine whether additional modifications are appropriate.
- Review the initiatives and working documents that already are underway with regard to improving communication and access in the NTID environment.

In December 2016, CEOCA submitted its report comprised of 11 recommendations to the NTID Administrative Council and RIT President Bill Destler for review. Eight of the committee's 11 recommendations were accepted (two with modifications). Of the remaining three recommendations, one was acknowledged, and the other two will be referred to NTID's next strategic planning committee.

Admissions and Enrollment

NTID had 383 total new students for FY 2018 (fall 2017).

First-year students Elsie Ndua, left, of Silver Spring, Maryland, and Hope Smith, center, of New Milford, Connecticut, join Srishti Bhutani, right, an Applied Computer Technology major from Southborough, Massachusetts, to grab a bite during the Summer Vestibule Program, an orientation program for entering NTID students designed to transition them to college life.

Admissions and Enrollment Highlights

Because deafness is a low-incidence disability, with deaf and hard-of-hearing students widely dispersed throughout the nation, recruiting qualified students to NTID always is a challenge.

Admissions counselors made 441 recruitment visits during the FY 2017 admissions cycle. Visits this year included 368 mainstream schools, 39 schools for the deaf and nine college visits. This included 44 in New York State, 68 in the Northeast, 140 in the Midwest, 91 in the Southeast and 98 on the west coast.

The number of new students entering NTID in fall 2017 was 383. The total included 308 deaf and hard-of-hearing freshmen and transfers, 30 deaf and hard-of-hearing graduate students (two in the Master of Science program in Secondary Education of Students who are Deaf or Hard of Hearing [MSSE] and 28 in other RIT colleges) and 45 hearing students (42 in the ASL-English Interpretation program and three in the MSSE program).

Overall, NTID's applicants decreased by 16 percent from last year's 998 to 834 applicants for fall 2017 enrollment. Total enrollment was 1,262 compared to 1,300 for last year. The breakdown of the 1,262 students is as follows:

	Deaf and Hard-of-Hearing	Hearing	Total
Undergraduate Programs			
Career Exploration Studies	38	0	38
Career-Focused Associate Programs	265	0	265
Associate+Bachelor's Programs and Pre-Baccalaureate	202	0	202
Baccalaureate (ASL-English Interpretation)	0	147	147
Baccalaureate/Master's Programs in Other RIT Colleges	520	0	520
Subtotal NTID Undergraduate Programs	**1,025**	**147**	**1,172**
Graduate Programs at RIT	56	0	56
MSSE Program	9	10	19
MS Health Care Interpretation	0	15	15
Total Enrolled Students	**1,090**	**172**	**1,262**

NTID's student population remains strong in both ethnic and geographic diversity. Minority students represent 40 percent of this year's fall 2017 entering class, compared to 37 percent of the total student body. Minority students have represented approximately 35 to 40 percent of the entering student population over the past five years. Additionally, minority students have represented approximately 33 to 40 percent of the entire student population over the past five years (for more information see the Diversity and Inclusion section). Entering domestic students come from all over the country, with 17 percent from the West, 19 percent from the South, 24 percent from the Midwest and 40 percent from the Northeast.

In addition, NTID enrolled 13 new international students. The total number of international students is 49, or 3.9 percent of the entire student population. International students have represented approximately 3 or 4 percent of the entire student population in the past five years.

In summary, NTID registered 383 new students and is serving a total of 1,262 students.

Comparative Admissions Data

Applications, excluding those to the ASL-English Interpretation or MSSE programs, decreased from last year.* The acceptance rate was 68.2 percent of applications. Registrations were 336, achieving a high yield rate of 77.2 percent.

	Number of New Students				
	FY 2014	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**
Applicants	833	796	860	771	638
% Increase or Decrease from Previous Year	-15.8%	-4.4%	+8.0%	-10.3%	-17.3%
Accepted Applicants	507	464	488	432	435
% Increase or Decrease from Previous Year	+0.1%	-8.5%	+5.2%	-11.4%	+0.7%
Acceptance Rate (Percent of Total Applicants)	60.9%	58.3%	56.7%	56.0%	68.2%
Registrations	381	324	340	305	336
Yield Rate (Registrations as a Percent of Accepted Applicants)	75.1%	69.8%	69.7%	70.6%	77.2%

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* In the figures on this page, "applicants" and the other categories include deaf and hard-of-hearing international students, but do not include admissions activity in the ASL-English Interpretation program, the Master of Science program in Health Care Interpretation or the Master of Science program in Secondary Education. Specific data on these students is reported in the section on Academic Programs. NTID's total application information is reported on p. 32.

Admissions and Enrollment

Summer Vestibule Program

The Summer Vestibule Program (SVP) is an experience that allows new students to engage in career exploration and decision-making, adjust to college life and assess their academic competencies. Students get hands-on experience and information about various academic programs and majors.

SVP includes a Student/Parent Orientation Weekend designed to give participants an overview of the program and familiarize them with NTID and its place on the RIT campus. Informational seminars, awareness workshops and in-depth orientation programs are offered to facilitate student-parent separation and student transition to the college environment.

There were 174 SVP registrants for summer 2017, and 172 continued on to register for fall semester 2017 (FY 2018).

	Number of Students*				
	FY 2014	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**
SVP Students Accepted	346	295	317	307	253
SVP Students Registered at Start of Program	268	212	226	203	174
SVP Students Completing Program	266	212	225	203	172
SVP Students Registered in Academic Programs for Fall Term	266	212	223	200	172

New students congregate for free frozen treats during the SVP Ice Cream Social at NTID's Frisina Quad.

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* Figures reported include deaf and hard-of-hearing international students, but do not include admissions activity in the ASL-English Interpretation program, the Master of Science program in Health Care Interpretation or the Master of Science program in Secondary Education. Specific data on these students is reported in the section on Academic Programs.

NTID Student Enrollment by Term* (Deaf and Hard-of-Hearing Students Only)

The enrollment reported reflects only deaf and hard-of-hearing students in undergraduate programs on the RIT campus or in graduate programs at other RIT colleges. Not included are students enrolled in the ASL-English Interpretation program (147), deaf, hard-of-hearing or hearing students enrolled in the Master of Science program in Secondary Education (19), or students enrolled in the Master of Science in Health Care Interpretation (15). In addition, large numbers of hearing, deaf and hard-of-hearing students access a variety of part-time and non-credit-bearing coursework at NTID year-round.

PERIOD COVERED		FALL TERM		WINTER TERM			SPRING TERM			SUMMER TERM		SUMMER VESTIBULE PROGRAM	
		A	B	A	B	C	A	B	C	A	B	A	B
FY 98:	Oct. 97-Sep. 98	1,085	0.00%	1,010	-1.08%	-6.91%	960	-0.52%	-4.95%	189	1.07%	241	-4.74%
FY 99:	Oct. 98-Sep. 99	1,155	6.45%	1,030	1.98%	-10.82%	976	1.67%	-5.24%	217	14.81%	255	5.81%
FY 00:	Oct. 99-Sep. 00	1,107	-4.16%	1,040	0.97%	-6.05%	1009	3.38%	-2.98%	221	1.84%	256	0.39%
FY 01:	Oct. 00-Sep. 01	1,113	0.54%	1,045	0.48%	-6.11%	1,017	0.79%	-2.68%	236	6.79%	242	-5.47%
FY 02:	Oct. 01-Sep. 02	1,151	3.41%	1,056	1.05%	-8.25%	1,007	-0.98%	-4.64%	224	-5.08%	234	-3.31%
FY 03:	Oct. 02-Sep. 03	1,122	-2.52%	1,027	-2.75%	-8.47%	994	-1.29%	-3.21%	228	1.79%	195	-16.67%
FY 04:	Oct. 03-Sep. 04	1,109	-1.16%	1,047	1.95%	-5.59%	1,005	1.11%	-4.01%	249	9.21%	168	-13.85%
FY 05:	Oct. 04-Sep. 05	1,097	-1.08%	1,029	-1.72%	-6.20%	962	-4.28%	-6.51%	222	-10.84%	190	13.10%
FY 06:	Oct. 05-Sep. 06	1,066	-2.83%	988	-3.98%	-7.32%	926	-3.74%	-6.28%	263	18.47%	219	15.26%
FY 07:	Oct. 06-Sep. 07	1,064	-0.19%	998	1.01%	-6.20%	963	4.00%	-3.51%	339	28.90%	254	15.98%
FY 08:	Oct. 07-Sep. 08	1,154	8.46%	1,099	10.12%	-4.77%	1,040	8.00%	-5.37%	396	16.81%	295	16.14%
FY 09:	Oct. 08-Sep. 09	1,260	9.19%	1,216	10.65%	-3.49%	1,155	11.06%	-5.02%	428	8.08%	265	-10.17%
FY 10:	Oct. 09-Sep. 10	1,275	1.20%	1,166	-4.11%	-8.55%	1,170	1.90%	0.34%	411	-3.97%	269	1.51%
FY 11:	Oct. 10-Sep. 11	1,303	2.20%	1,213	4.03%	-6.91%	1,211	3.50%	-0.16%	442	7.54%	269	0.00%
FY 12:	Oct. 11-Sep. 12	1,323	1.53%	1,211	-0.16%	-8.47%	1,103	-8.92%	-8.92%	314	-28.96%	269	0.00%
FY 13:	Oct. 12-Sep. 13	1,306	-1.28%	1,168	-3.55%	-10.57%	1,082	-1.90%	-7.36%	323	2.87%	268	-0.37%
FY 14:	Oct. 13-Sep. 14	1,237	-5.28%	*	*	*	1,118	3.33%	-9.62%	259	-19.81%	212	-20.90%
FY 15:	Oct. 14-Sep.15	1,197	-3.23%	*	*	*	1,054	-5.72%	-11.95%	308	18.92%	226	6.60%
FY 16:	Oct. 15-Sep.16	1,220	1.92%	*	*	*	1,072	1.71%	-12.13%	270	-12.34%	203	-10.18%
FY 17:	Oct. 16-Sep.17	1,122	-8.03%	*	*	*	1,002	-6.53%	-10.70%	309	+14.44%	174	-14.20%
FY 18:	Oct. 17-Sep.18	1,081	-3.65%	*	*	*							

NOTES: Column A = Number of student enrollments for the period covered
Column B = Percent change of enrollment from the same term in previous year
Column C = Percent change of enrollment from the previous term

* Prior to FY 2014, RIT followed a quarter calendar. Beginning in FY 2014, RIT follows a semester calendar.

Admissions and Enrollment

Percent of Registered Students with Full-Time Status

On average, 94 percent of NTID-supported students are registered full time. At RIT, full-time status is defined as taking at least 12 credit hours in an academic quarter (prior to FY 2014) or semester (FY 2014 and beyond).

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018		
						Number	
					Percent	**Full-Time**	**Total**
Career Exploration	98%	100%	100%	100%	100%	38	38
Career-Focused and Associate+Bachelor's Degrees	95%	97%	98%	99%	94%	420	446
Pre-Baccalaureate	100%	100%	100%	100%	100%	21	21
Baccalaureate and Graduate	90%	94%	93%	91%	93%	536	576
ASL-English Interpretation	97%	95%	95%	91%	97%	142	147
Master of Science in Health Care Interpretation	N/A	N/A	N/A	50%	33%	5	15
Master of Science in Secondary Education (MSSE)*	98%	77%	81%	93%	95%	18	19
Overall	**94%**	**95%**	**95%**	**94%**	**94%**	**1,180**	**1,262**

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* Included for FY 2007 – FY 2016 are non-matriculated students (between four and 15 per year) taking courses offered by the Master of Science program in Secondary Education, but who are part of a grant-supported joint program between NTID and Nazareth College in Rochester, New York, to train speech pathologists to work with deaf and hard-of-hearing people.

International Student Recruitment

This year, applications from international students numbered 51 and, of those, 13 were accepted and 11 registered. Canadian students always have represented the largest contingent of international students, but many of them continue to experience a lack of funding resources, which discourages a number of prospective students from applying or prevented many of those accepted from being able to attend NTID. Students from developing countries also encounter financial difficulties, and NTID has limited scholarship dollars to assist them. However, per the Education of the Deaf Act, international students pay differing tuition rates, depending on whether they are from a developing or developed country. Until the situation in Canada changes, and until NTID obtains additional private scholarship funds, enrollment of international students will continue to be a challenge.

	Number of Students*				
	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Applicant Continent of Origin					
Africa	5	16	16	21	16
Asia	15	25	40	21	11
Australia/Oceania	0	0	0	0	1
Europe	1	1	2	1	2
North America	29	16	20	23	21
South America	0	2	2	0	0
Unknown	5	2	0	0	0
Total Applicants	**55**	**62**	**80**	**66**	**51**
Accepted Applicants	**18**	**14**	**21**	**18**	**13**
Acceptance Rate (Percent of Total Applicants)	33%	23%	26%	27%	25%
New Registrations	**14**	**10**	**13**	**11**	**11**
Yield Rate (New Registrations as a Percent of Accepted Applicants)	78%	71%	62%	61%	85%
Returning International Students	**25**	**30**	**31**	**28**	**32**
Total Enrollment (Returning International Students plus New Registrations)	**39**	**40**	**44**	**39**	**43**

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* Figures reported do not include admissions activity in the ASL-English Interpretation program, the Master of Science program in Health Care Interpretation or the Master of Science program in Secondary Education. Specific data on these students is reported in the section on Academic Programs.

Admissions and Enrollment

Demographic Characteristics of All Entering Students

The demographic profile of entering students
remains consistent with the previous year's data.*

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Characteristics of Entering Students					
Gender					
Male	60%	58%	59%	54%	63%
Female	40%	42%	41%	46%	37%
Mean Age at Entry	21	20	21	21	21
Parents' Hearing Status					
Both Hearing	77%	77%	77%	76%	79%
At Least One Parent Deaf	23%	23%	23%	24%	21%

Origin of Entering Students

United States by Region: 100% of U.S. students distributed across four regions

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
West	15%	11%	16%	12%	17%
Midwest	23%	20%	23%	24%	24%
South	21%	22%	24%	22%	19%
Northeast	41%	47%	37%	42%	40%

Distribution of United States and International Students

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
United States	96%	96%	97%	96%	96%
International	4%	4%	3%	4%	4%

School Background of Entering Students

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
First Time in College	80%	72%	79%	76%	73%
Transfer from Other Colleges	13%	17%	13%	12%	12%
Previously Enrolled at RIT	4%	5%	4%	5%	5%
Graduate Students	3%	6%	4%	7%	10%

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* Figures reported include deaf and hard-of-hearing international students, but do not include admissions activity in the ASL-English Interpretation program, the Master of Science program in Health Care Interpretation or the Master of Science program in Secondary Education. Specific data on these students is reported in the section on Academic Programs.

Demographic Characteristics of Enrolled International Students Compared to Enrolled U.S. Students

	FY 2018*		
	International	**U.S.**	**Overall**
Demographics			
Gender			
Male	73%	58%	58%
Female	27%	42%	42%
Entry Age, All Students	23	21	21
Entry Scores			
Hearing Level (Pure Tone Average)	103.1 dB	93.2 dB	93.6 dB
ACT Composite Score	18.3	19.7	19.7
Program Area			
Career Exploration	0%	4%	4%
Career-Focused Associate Degrees	43%	25%	26%
Associate+Bachelor's Degrees	16%	20%	20%
Other Colleges of RIT Baccalaureate/Master's	41%	51%	50%
FY 2018 Status of Students Enrolled FY 2017			
Still Registered	76%	63%	63%
Withdrawn	3%	17%	17%
Graduated	21%	19%	19%

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* Undergraduate students only. Figures reported do not include students in the ASL-English Interpretation program, the Master of Science program in Health Care Interpretation or the Master of Science program in Secondary Education. Specific data on these students is reported in the section on Academic Programs.

Admissions and Enrollment

ACT Information on Entering Class (Deaf and Hard-of-Hearing Students Only)

Beginning in 1969, the Stanford Achievement Test was used to evaluate educational achievement for admission to NTID. In 1996, the decision was made to replace the Stanford Achievement Test with the American College Test (ACT). In today's college admissions process, the College Board SAT and ACT tests are used equally for decisions based on a concordance chart. Presented below are the mean scores for the ACT based on that concordance.

American College Test (ACT)*	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
ACT English	14.9	14.7	16.8	17.1	16.3
ACT Reading	17.7	17.5	19.7	20.1	18.8
ACT Mathematics	18.3	18.1	19.5	19.6	19.2
ACT Science Reasoning	19.3	18.5	20.5	20.6	19.8
ACT Composite	19.5	18.1	19.6	19.7	19.2

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* Scores reported include deaf and hard-of-hearing undergraduate students, except for students in the ASL-English Interpretation program. Specific data on ASL-English Interpretation, the Master of Science program in Health Care Interpretation and MSSE students is reported in the section on Academic Programs.

Academic Skills of Entering Students

The academic preparedness of most entering NTID-supported students is substantially below that of their hearing peers. NTID students directly admitted to one of RIT's other colleges have a mean ACT composite score of 26.2, and represent 29.5 percent of NTID's entering class of 2017. The mean ACT composite score for students entering associate+bachelor's programs is 19.0, and represents 25.3 percent of NTID's entering class. The mean ACT composite score for students entering career-focused associate programs is 15.3, and represents 32.2 percent of NTID's entering class. Lastly, the mean ACT composite score for students entering career-exploration programs is 14.0, and represents 13.0 percent of NTID's entering class. The average ACT composite score of 19.2 for all entering students is in the range achieved by students entering four-year schools with open admissions standards and many community colleges. By any measure, the majority of these students would not be admissible to the other colleges of RIT, yet many deaf and hard-of-hearing students graduating from baccalaureate/master's programs throughout RIT came through NTID first, which means they graduated in spite of the fact that their entering ACT scores were in the 15-19 range.

| Degree Level	Percentage of Deaf and Hard-of-Hearing Students by Degree Level	ACT Composite Mean
Bachelor's in Other RIT Colleges	29.5%	26.2
NTID		
Associate+Bachelor's Programs	25.3%	19.0
Career-Focused Associate Programs	32.2%	15.3
Career Exploration	13.0%	14.0
Total*	**100%**	
Average Score of All Entering Students*		**19.2**

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* Includes only undergraduate students. Does not include students enrolled in the ASL-English Interpretation program.

Hearing Assessment and Cochlear Implant Information

Hearing is measured in units of intensity called decibels (dB) at a variety of frequencies [Hz (cycles per second)]. The hearing level reported here is calculated by taking the arithmetic mean of an individual's responses in dB to pure tones presented at 500 Hz, 1000 Hz and 2000 Hz. Normal hearing is in the range of -10 dB to 20 dB. Moderate hearing loss is defined as having a pure tone average of 40 to 55 dB, with moderately severe at 56 to 70 dB, severe at 71 to 90 dB and profound at 90 dB or more. NTID continues to serve a considerable diverse deaf and hard-of-hearing population, including both pre- and post-lingually deafened students who elect to use hearing aids, cochlear implants or no amplification at all. Notably, the number of students at RIT/NTID with cochlear implants has grown exponentially, from 29 students in 1999 to 416 in fall 2017. NTID audiologists stay current with ongoing training to satisfy the ever-evolving needs of our diverse student population.

The Communication Studies and Services Department has five audiologists trained to provide hearing aid and cochlear implant programming, consultation and follow-up services. Mapping services are provided to users of cochlear implants from all three current manufacturers. Students can make appointments for programming, mapping, device trialing and upgrading, and auditory training in The Audiology Center. In addition, audiologists are available on-call to meet with students to troubleshoot and repair hearing aids and cochlear implants with no appointment required. The facility is equipped with state-of-the-art computer-based technology, training software and a variety of accessories and assistive devices that are available for demonstration.

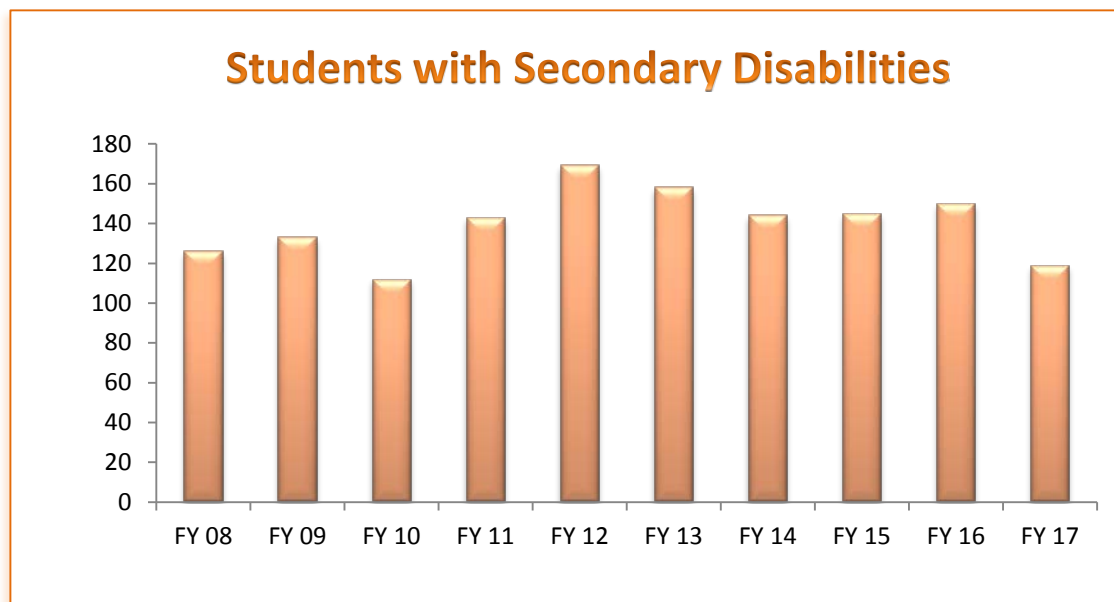|	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Total Number of Deaf Students*	1,255	1,213	1,236	1,136	1,090
Students with Cochlear Implants	363	394	432	410	416
Percent with Cochlear Implants	28.9%	32.5%	35.0%	36.1%	38.2%
Average Hearing Level	90.2 dB	95.9 dB	95.5 dB	95.0 dB	93.6 dB

Students with Cochlear Implants
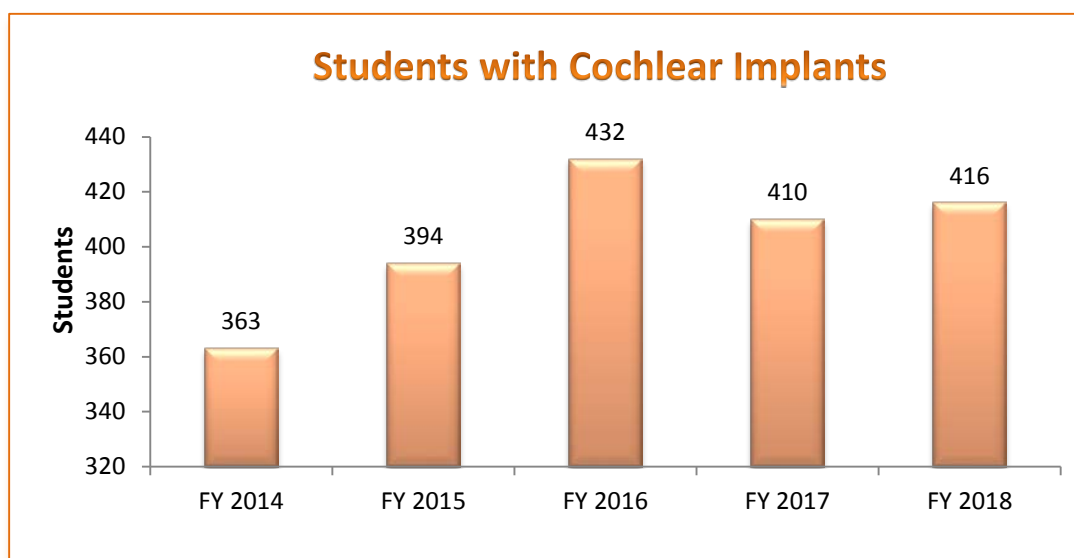
* This figure includes all deaf and hard-of-hearing students, undergraduate and graduate.

Students with Secondary Disabilities

NTID is working with significantly increased numbers of students with disabilities in addition to deafness. The table shows the number and percent of NTID-supported undergraduate students eligible to receive services from the RIT Disability Services Office, which serves students "with physical or mental impairments that limit one or more major life activities." FY 2018 totals will be reported next year, as activity regarding the accommodations of students with secondary disabilities is captured over the full academic year. NTID works directly with the RIT Disability Services Office to accommodate

these students through services such as notetaking and extended time to complete assignments. Their services ensure equal access to education based upon legal foundations established by federal law—the Rehabilitation Act of 1973, including Section 504, and the Americans with Disabilities Act of 1990. NTID has a committee of faculty and staff that focuses on the accommodation of deaf and hard-of-hearing students specifically with visual disabilities, a population that is increasing.

Number and Percent of Students Receiving Secondary Disability Services			
Fiscal Year	Total Deaf Students*	Students with Secondary Disabilities	Percent
2008	1,103	126	11%
2009	1,212	133**	11%**
2010	1,237	112	9%
2011	1,263	143	11%
2012	1,281	169	13%
2013	1,269	158	12%
2014	1,195	144	12%
2015	1,153	145	13%
2016	1,167	150	13%
2017	1,078	119	11%

Students with Secondary Disabilities

* This figure includes all undergraduate deaf and hard-of-hearing students.
** Secondary disability numbers for FY 2009 are estimates; these data are not available.

Admissions and Enrollment

Origin of Students and Graduates

NTID students enrolled as of fall 2017 come from 47 states. A total of 23 countries are represented among current international students.
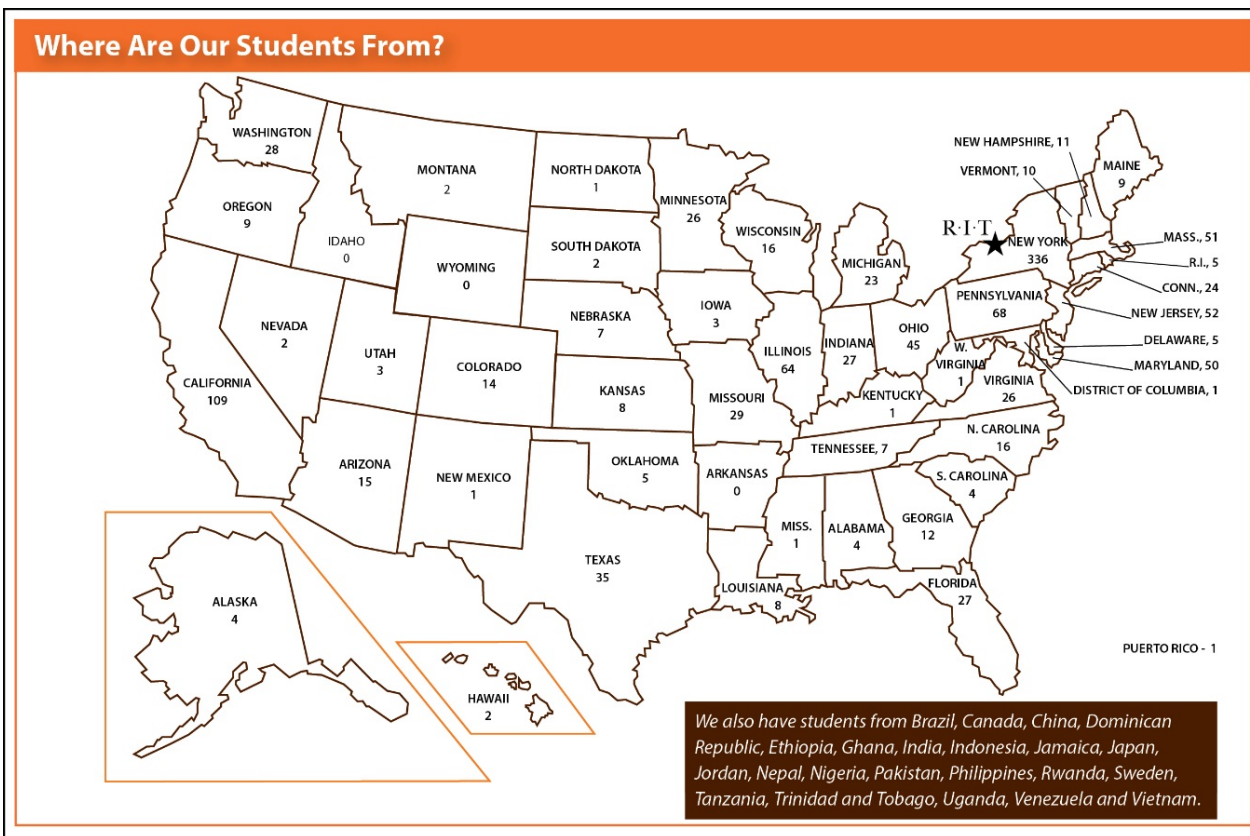
Since NTID began accepting students, NTID has had students from more than 50 countries and all 50 states.

Home State or U.S. Territory (Domestic Students)	Number in Student Body FY 2018	Graduates to Date as of Fall 2017	Cumulative Students to Date*
Alabama	4	37	74
Alaska	4	12	27
Arizona	15	41	124
Arkansas	0	32	69
California	109	445	944
Colorado	14	66	136
Connecticut	24	217	409
Delaware	5	36	80
District of Columbia	1	18	41
Florida	27	205	487
Georgia	12	85	195
Guam	0	0	2
Hawaii	2	28	45
Idaho	0	4	16
Illinois	64	501	1,004
Indiana	27	118	291
Iowa	3	62	116
Kansas	8	52	117
Kentucky	1	48	130
Louisiana	8	56	117
Maine	9	56	127
Maryland	50	207	491
Massachusetts	51	379	748
Michigan	23	299	609
Minnesota	26	116	236
Mississippi	1	6	26
Missouri	29	192	358
Montana	2	8	20
Nebraska	7	44	80
Nevada	2	8	23
New Hampshire	11	63	111
New Jersey	52	422	765
New Mexico	1	25	72
New York	336	2,362	4,535
North Carolina	16	74	168
North Dakota	1	21	37
Ohio	45	423	773
Oklahoma	5	22	50

* Includes current and withdrawn students and graduates.

Home State or U.S. Territory (Domestic Students)	Number in Student Body FY 2018	Graduates to Date as of Fall 2017	Cumulative Students to Date*
Oregon	9	60	117
Pennsylvania	68	612	1,195
Puerto Rico	1	9	20
Rhode Island	5	42	87
South Carolina	4	25	57
South Dakota	2	14	26
Tennessee	7	52	107
Texas	35	217	513
Utah	3	15	31
Vermont	10	46	99
Virgin Islands	0	1	4
Virginia	26	161	340
Washington	28	86	204
West Virginia	1	32	68
Wisconsin	16	128	263
Wyoming	0	5	8
Other**	3	10	137
Subtotal	**1,213**	**8,305**	**16,929**

Where Are Our Students From?

WASHINGTON 28
MONTANA 2
OREGON 9
IDAHO 0
NORTH DAKOTA 1
MINNESOTA 26
WISCONSIN 16
NEW HAMPSHIRE, 11
VERMONT, 10
MAINE 9
WYOMING 0
SOUTH DAKOTA 2
MICHIGAN 23
R·I·T NEW YORK 336
MASS., 51
R.I., 5
NEVADA 2
UTAH 3
COLORADO 14
NEBRASKA 7
IOWA 3
ILLINOIS 64
INDIANA 27
OHIO 45
PENNSYLVANIA 68
CONN., 24
NEW JERSEY, 52
DELAWARE, 5
CALIFORNIA 109
KANSAS 8
MISSOURI 29
KENTUCKY 1
W. VIRGINIA 1
VIRGINIA 26
MARYLAND, 50
DISTRICT OF COLUMBIA, 1
ARIZONA 15
NEW MEXICO 1
OKLAHOMA 5
ARKANSAS 0
TENNESSEE, 7
N. CAROLINA 16
S. CAROLINA 4
MISS. 1
ALABAMA 4
GEORGIA 12
TEXAS 35
LOUISIANA 8
FLORIDA 27
ALASKA 4
HAWAII 2
PUERTO RICO - 1

We also have students from Brazil, Canada, China, Dominican Republic, Ethiopia, Ghana, India, Indonesia, Jamaica, Japan, Jordan, Nepal, Nigeria, Pakistan, Philippines, Rwanda, Sweden, Tanzania, Trinidad and Tobago, Uganda, Venezuela and Vietnam.

* Includes current and withdrawn students and graduates.
** U.S. citizens living in other countries.

Origin of Students and Graduates (continued)

Country (International Students)	Number in Student Body FY 2018	Graduates to Date as of Fall 2017	Cumulative Students to Date*
Australia	0	1	1
Bahamas	0	1	1
Bangladesh	0	1	1
Belgium	0	1	1
Bermuda	0	2	3
Bolivia	0	1	1
Brazil	1	0	1
Bulgaria	0	1	1
Cameroon	0	1	2
Canada	7	179	325
Chad	0	0	1
China	2	4	8
Colombia	0	1	1
Czech Republic	0	1	1
Dominican Republic	1	0	2
Ecuador	0	0	1
Ethiopia	2	0	1
Estonia	0	1	2
Fiji	0	0	1
Ghana	3	5	8
Greece	0	1	2
Guatemala	0	0	1
Honduras	0	1	1
Hong Kong	0	1	1
Hungary	0	1	1
India	7	22	32
Indonesia	1	0	1
Ireland	0	1	2
Jamaica	1	2	6
Japan	2	4	8
Jordan	2	0	2
Kenya	0	0	1
Korea	0	2	3
Lebanon	0	0	1
Malaysia	0	2	3
Mexico	0	1	3
Myanmar	0	0	1
Nepal	2	1	2
Nigeria	4	1	8
Norway	0	0	2
Pakistan	1	3	4
Philippines	2	3	6

* Includes current and withdrawn students and graduates.

Origin of Students and Graduates (continued)

Country (International Students)	Number in Student Body FY 2018	Graduates to Date as of Fall 2017	Cumulative Students to Date*
Portugal	0	1	1
Rwanda	1	0	1
Saudi Arabia	0	2	3
Singapore	0	4	4
Somalia	0	0	1
South Africa	0	1	1
Sweden	2	0	1
Switzerland	0	1	1
Taiwan	0	5	6
Tanzania	2	2	6
Thailand	0	6	7
Trinidad and Tobago	1	1	2
Turkey	0	1	1
Uganda	2	1	2
United Arab Emirates	0	0	1
United Kingdom	0	2	3
Venezuela	1	1	1
Vietnam	1	0	2
Zambia	0	0	2
Zimbabwe	0	2	2
Other	1	15	22
Subtotal	**49**	**291**	**523**
Total	**1,262**	**8,596**	**17,452**

As of fall 2017, NTID has 49 international students enrolled based on visa status.

	Number	Percent
U.S. Students	1,213	96.1%
International Students	49	3.9%
Total	**1,262**	**100.0%**

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* Includes current and withdrawn students and graduates.

Academic Programs

In fall 2017, NTID had 505 students enrolled in its associate-level programs, 147 students enrolled in its ASL-English Interpretation program, 19 students enrolled in its MS in Secondary Education program, 15 students enrolled in its MS in Health Care Interpretation program and 576 students enrolled in baccalaureate, master's and doctoral programs at RIT.

Anastasiya Stepanyuk of Vancouver, Washington, and Andrew Spellman of Caraopolis, Pennsylvania, both Laboratory Science Technology majors, enjoy apples and apple-themed treats at NTID's annual Apple Festival.

Academic Program Highlights

This fiscal year, Academic Affairs continued the implementation of *Strategic Decisions 2020 (SD 2020)*. The academic departments continue to: 1) explore new majors for career-focused associate degrees and associate+bachelor's degrees; 2) explore the possibility of new baccalaureate and master's degrees; 3) enhance the development of "soft skills" in the curriculum; 4) enhance the use of technology to improve learning; 5) coordinate technical education and co-curricular activities; and 6) foster the use of English and ASL in the instructional process.

Four college-wide *SD 2020* initiatives were set in place: 1) Flexibility in the Use of the Direct Instruction Model, 2) a new Innovation, Scholarship and Research Model; 3) discussion of Enrollment Targets for 2020; and 4) Coordinating NTID Institutional Research.

FY 2017 marked the fourth year of the semester system at RIT. All students are following semester-system graduation requirements.

Strategic Decisions 2020 Enrollment Targets

The enrollment targets set in *Strategic Decisions 2020* were: 35 percent career-focused programs, 20 percent associate+bachelor's degree programs and 45 percent baccalaureate/master's programs. At the beginning of AY 2017-2018 the enrollment percentages for deaf and hard-of-hearing undergraduates were 28 percent career-focused, 19 percent associate+bachelor's degree programs and 53 percent baccalaureate/master's programs. *Strategic Decisions 2020* has established the objective of developing a network of high schools and community colleges to create pathways to postsecondary education. The goal is to strengthen the preparation of deaf and hard-of-hearing students entering college and reduce the amount of developmental education that NTID must offer, resulting in higher enrollment at the baccalaureate level.

First Year Experience/Career Exploration Studies and Summer Vestibule Program

First Year Experience (FYE) programming is designed to maximize first-year student success and persistence. Beginning with NTID's Summer Vestibule Program (SVP), FYE provides an array of courses and co-curricular programs as well as personal/academic counseling designed to help students successfully complete their first year of college. This past summer, 172 students attended SVP and participated in a variety of activities, including career exploration, adjusting to college life programs and course placement assessments. Also housed within FYE, the Career Exploration Studies program (CES) allows students the opportunity to explore technical programs while satisfying necessary core and/or prerequisite coursework. During AY 2016-2017, CES served 40 students in the fall and 35 students in the spring; 97 percent of CES students who applied to a major were accepted into a major within two semesters.

Career-Focused Associate Degrees

NTID offers career-focused degrees in the areas of Business, Computing, Engineering Technologies, Laboratory Science Technology and Visual Communications. The programs within these clusters are designed to lead directly to employment in high-demand technical jobs. NTID's *SD 2020* calls for reviewing and updating the career-focused program portfolio by conducting an evaluation of existing programs with the goal of continuing, modifying, deleting and creating new programs—the latter to be in areas such as green technology, sustainability and health care. *SD 2020* also repeats the target stated in the previous strategic plan of having 35 percent of NTID students in programs at this degree level.

At the beginning of Academic Year 2017-2018, there were 303 deaf and hard-of-hearing students enrolled in career-focused programs, including students enrolled in AOS and non-associate+bachelor's AAS degrees as well as students in Career Exploration Studies.

The Business Studies department continues to maintain steady enrollment in the AOS, AAS and AS Business programs. Twenty-eight students completed cooperative work experiences in AY 2016-2017.

Academic Program Highlights (continued)

The Department of Engineering Studies' (DES) career-focused programs such as Computer-Aided Drafting Technology – Architecture based (CADT A/E/C) and Computer-Integrated Machining Technology (CIMT) continue to evolve. As plans move forward, CADT is looking into Sustainable Architecture and Building Technologies for several potential opportunities (i.e., concentration, track or standalone programs). One professor completed a Master's of Architecture degree and will be an essential resource in updating the CADT program regarding sustainable architecture. Another area of interest is to consider incorporating more energy simulation modeling that focuses on energy (power) consumption and life cycle costs of various energy sources such as air conditioning, water and lights. An independent study course was developed and offered. CIMT obtained Mastercam CAM software, new machinery equipment and precision grinding equipment to enhance course instruction. CIMT faculty members are looking into more advanced manufacturing processes (i.e., 3D additive or 3D Prototype Printing in metallic) as part of the next phase of curriculum development regarding advanced metrology including quality control, geometric dimension and tolerancing and inspections. CIMT faculty members also are exploring the development of an AAS degree for the CIMT program. DES submitted a concept paper in biomedical equipment technology (BET) as the first program of consideration that may address the lack of an electronics-related program at NTID. The RIT Provost's office suspended the decision to move forward until new RIT President Dr. David Munson has an opportunity to review the concept paper.

The Department of Information and Computing Studies has a new articulation agreement for students enrolled in the AAS in Mobile Application Development with RIT's B. Thomas Golisano College of Computing and Information Science (GCCIS) to promote continuation of education toward a bachelor's degree in Web and Mobile Computing effective in the fall of 2017. The department offers Applied Computer Technology with concentrations in either Computer Technical Support or Networking and Cybersecurity. Mobile Application Development is in its second year.

During the 2016-2017 academic year, the Department of Liberal Studies (DLS) implemented curriculum changes to the Bridge to College English I and II (NENG 231 and 232) courses. The curriculum changes resulted in significantly higher number of students placing into Critical Reading and Writing (UWRT 100) in both fall and spring semesters. Faculty met regularly to monitor student progress and modify the curriculum. During spring semester, DLS piloted a Grammar Lab which presented numerous units of grammar instruction for students enrolled in Critical Reading and Writing (UWRT 100). Initial data reflected strong student and faculty support for the continuation and expansion of the Grammar Lab for the 2017-2018 academic year. The NTID Study Abroad program, administered by DLS, sent a group of AOS, AAS, AS and BS students to study the Deaf community in Italy.

The Department of Science and Mathematics underwent a major renovation of the second-floor science classroom and laboratory spaces in LBJ Hall during summer 2017. The new chemistry classroom includes a significant upgrade to the student desk and work area as well as the addition of five industry-style fume hoods. Also added was the department's first dedicated wet-lab research space with additional fume hoods and space for scientific instrumentation. These facilities will allow faculty members and students to collaborate throughout the academic year on research projects without having to juggle room availability for classes during the fall and spring terms. All renovated rooms have new cabinets and storage space, new safety equipment and facilities that are ADA compliant. These areas will be used to offer first-year Laboratory Science Technology (LST) biology and chemistry courses as well as general science classes in disciplines such as physics, astronomy, environmental science, forensics and anatomy & physiology.

In terms of curriculum, a new course (Perspectives of Earth and Environmental Science (NSCI-286)) has been approved as a general science, science perspective and technical elective offering for students in NTID degree programs. Departmental faculty members continue to develop and offer online versions of Foundations of Algebra (NMTH-180) and Applications of Algebra (NMTH-210) during the fall and spring semesters as well as during the summer. Faculty members are developing research contracts with students to earn undergraduate research credit in departmental research courses.

Laboratory Science Technology students continue to gain meaningful cooperative work experiences at companies such as Dow, Merck and Kodak; local firms and utilities such as Lord's Seed (Howe, Indiana)

Academic Program Highlights (continued)

and Mohawk Valley Water Authority (Utica, New York); and Research Experiences for Undergraduates (REU) programs at Tufts, Ohio State, RIT, James Madison University, University of Tennessee at Knoxville and University of Massachusetts at Amherst.

In AY 2016-17, the Department of Visual Communications Studies (VCS) offered design and production courses in the Design & Imaging Technology program. The VCS department continues to implement a student success and retention strategy that includes a formal faculty tutoring assignment aimed at first-year students and a variety of faculty, staff and student social interaction events. Two department faculty were recognized with teaching and tutoring excellence awards. Faculty scholarship took the form of solo and group exhibits, visiting artist placements, art competitions and conference presentations. Fourteen students completed their AAS degrees and 11 students completed their AOS degrees.

Associate+Bachelor's Degrees

A key feature of NTID's educational portfolio is the number of transfer associate degrees that provide seamless transition to RIT baccalaureate programs. There now are 10 of these programs, called "associate+bachelor's" degree programs (to avoid confusion with the word "transfer"). They have been very successful, both in terms of growth, graduation at the associate level, transfer to a bachelor's program in one of RIT's other colleges and subsequent graduation at the baccalaureate level. In AY 2016-2017, NTID revised the Applied Computer Technology AS program, pending New York State Education Department approval, to include three concentrations. These prepare students to enroll in RIT's B. Thomas Golisano College of Computing and Information Sciences BS programs in Computing and Information Technologies, Web and Mobile Computing and Human Centered Computing based on new or updated articulation agreements. At the end of AY 2016-17, NTID signed an articulation agreement with RIT's B. Thomas Golisano College of Computing and Information Sciences for students to enter the Web and Mobile Computing BS program from NTID's Mobile Application Development AAS program.

At the beginning of the 2017-2018 academic year, 202 students were enrolled in these and pre-baccalaureate programs. This number is slated to increase as the number of such programs is expanded and marketed as precursors to RIT baccalaureate programs. *Strategic Decisions 2020* calls for increasing the total proportion of students in these programs from the previous target of 15 percent to 20 percent of the deaf and hard-of-hearing student body (excluding students in the ASL-English Interpretation and MS in Health Care Interpretation programs or the Master of Science in Secondary Education program). NTID's AS in Applied Liberal Arts (APPLA-AS) remains one of the largest associate+bachelor's degree programs. Entering its ninth year, the APPLA-AS graduates continue to be accepted, in record numbers, into RIT's College of Liberal Arts (CLA) majors. NTID and CLA executed an expanded articulation agreement to provide APPLA graduates with access to new CLA majors.

In the Business Studies Department, the associate+bachelor's degree programs continue to successfully graduate students who are accepted into RIT's Saunders College of Business and the School of International Hospitality & Service Innovation in RIT's College of Applied Science and Technology. The Administrative Support Technology and Accounting Technology Programs continue to experience success with students transferring to and graduating from RIT's School of Individualized Study (SOIS). Seventeen students were accepted to SOIS during AY 2016-2017. Current department numbers show 52 percent of students in associate+bachelor's degree programs and 48 percent in AOS/AAS programs.

The Department of Engineering Studies (DES) has two associate+bachelor's degree programs, Applied Mechanical Technology and Civil Technology. The new student enrollments for fall 2017 were three and two, respectively. The Civil Technology program, in its third year, should have graduates this year. There were no significant changes in any of the articulation agreements and satisfactory student learning outcome assessments. The next articulation review will occur in 2018. DES is now offering an undergraduate research course as an opportunity for transfer students to experience faculty-directed research prior to transferring to RIT. Enrollment in this course requires permission of the department chair and completion of the NTID Undergraduate Research Contract.

In the Information and Computing Studies (ICS) department, students enrolled in the associate+bachelor's and bachelor's degree programs continue to thrive. The ICS department expanded its articulation agreement with RIT's B. Thomas Golisano College of Computing and Information Science (GCCIS) to facilitate the transition of qualified transfer students from NTID to GCCIS. Students who completed their associate+bachelor's degree can transfer to one of three programs: BS Program in Computing and Information Technologies, BS Program in Web and Mobile Computing or BS Program in Human-Centered Computing.

An articulation agreement for students who complete the Laboratory Science Technology associate of applied science (AAS) degree and who wish to enter a BS program in chemistry or biochemistry has been fully implemented and applied to existing students. The development of a similar agreement for baccalaureate programs in biology and environmental science is underway and a regular review of the existing transfer agreement to RIT's School of Individualized Study (SOIS) has started. A study of student performance in upper-level NTID mathematics courses has led to an agreement with the RIT School of Mathematical Science (SMS) that allows for Trigonometry (NMTH-220), Explorations of College Algebra (NMTH-260), Accelerated Algebra II (NMTH-272) and Advanced Mathematics (NMTH-275) to serve as pre-requisites for certain introductory SMS calculus courses that are required for various baccalaureate majors.

Development of a proposal for the new associate of science (AS) in Applied Science degree has been completed and consideration of the program is being undertaken by NTID and RIT curriculum review bodies. This major, which will replace the existing non-degree science pre-baccalaureate program, will allow RIT/NTID to compete more effectively with community colleges by offering a four-semester program that leads directly into bachelor of science (BS) programs in biochemistry, biology, biomedical science, chemistry and environmental science with all credits earned toward the AS degree applying toward the BS degree.

Requirements by National Institutes of Health (NIH) and National Science Foundation (NSF) funding programs to include underrepresented persons and students with disabilities are having a positive impact on our ability to place students in associate and bachelor's programs in summer research opportunities. The NTID Department of Science and Mathematics has received requests for collaboration and for letters of support for grant applications from universities across the country who are interested in working with deaf and hard-of-hearing students. As a result, students are being placed in programs that have been successfully funded.

In AY 2015-16, the AAS 3D Graphics Technology (3DGT) program curriculum was granted approval by the NYSED. The program has a transfer articulation agreement with the 3D Digital Design BFA program and is the first-ever articulation agreement between NTID and RIT's College of Imaging Arts and Sciences (CIAS). There are no other formal associate+bachelor's agreements with the other BFA or BS programs in CIAS. There is a long history of students successfully making the transition from the NTID VCS Design & Imaging Technology AAS degree program into a CIAS BFA or BS program. In AY 2016-17, 14 VCS program students were accepted in a CIAS bachelor's degree program.

American Sign Language and Interpreting Education (ASLIE)

ASLIE enrolled 42 new students in fall 2017, bringing the total number of students in the BS degree program in ASL-English Interpretation to 147.

Twenty-four students graduated from the BS degree in ASL-English Interpretation in AY 2016-2017. Twelve graduates completed a Senior Satisfaction Survey in which 100 percent of respondents said they would recommend the program to interested students and were satisfied with what they learned in the degree program. One hundred percent of the respondents said the faculty in the program were qualified and knowledgeable in the courses they taught.

Academic Program Highlights (continued)

The ASL-English Interpretation program invited 22 stakeholders to participate in a newly established advisory board. The purpose of the ASLIE Advisory Board is to provide insights into how the program can stay current and relevant in a rapidly changing field and seek input on students' readiness to enter the field upon graduation and other relevant matters.

ASLIE offered the following ASL courses in the Interpreting program: ASL II, ASL Conversational Practice, ASL IV and ASL VI during the fall semester; and ASL III, ASL V and ASL VII during the spring semester. In AY 2016-2017, the interpreting program had an enrollment of 136 students in the fall semester and 128 students in the spring semester.

ASLIE offered the following interpreting courses in the BS program: Introduction to the Field of Interpreting; Interpreting I; Interpreting II: English to ASL; Interpreting II: ASL to English; Interpreting III: English to ASL; Interpreting III: ASL to English; Interpreting IV: Adapting to Diverse Consumers; Practical & Ethical Applications; Processing Skills Development; Discourse Analysis; Issues in Interpreting; Practicum & Seminar I; Practicum & Seminar II; Introduction to K-12 Interpreting; Educational Interpreting: Middle/Secondary Settings; Healthcare Interpreting; Mental Health Interpreting; Introduction to VRS/VRI Interpreting; Interpreting Frozen & Literary Texts; Introduction to Working with the Deaf-Blind Community; Community Interpreting; Business Practices for Interpreters; and Introduction to Cued Speech Transliterating.

ASLIE partnered with the Rochester Sorenson VRS Interpreting Center, an industry leader in providing video relay services, for the Sorenson Synergy program. The Synergy program allows interpreting students to learn about the video relay service industry and the FCC regulations that guide their standards; understand the unique demands of video relay interpreting; and to learn, observe live phone calls and interact with VRS interpreters. Students in the Synergy program are permitted to observe from five to 20 hours of VRS interpreting. During the 2016-2017 academic year, 33 students engaged in 270 hours of observation, an average of 8.18 hours per student.

Students in the BS in ASL-English Interpretation program provided volunteer interpreting services to the Rochester community as a way to satisfy Practicum requirements and to earn valuable interpreting experience. The Practicum coordinator screens such requests for appropriateness. In AY 2016-2017, 25 students gave back to the community by providing more than 560 hours of interpreting support for various community events.

ASLIE's MS in Health Care Interpretation program enrolled eight students in fall semester and seven students in spring semester. The second cohort comprised of 11 students began in summer 2017. The aim of this program is to address the national shortage of sign language interpreters who are prepared to work in health care settings. The goals of the program are to prepare graduates to effectively interpret for deaf consumers (patients and family members) in health care environments, effectively interpret for deaf health professionals in academic and clinical settings and demonstrate administrative skills enabling them to analyze, conduct and consult on the effective and efficient provision of interpreting services in health care institutions.

The Certificate in Healthcare Interpreting (CHI) program is in its seventh year of delivery as a blended online program with a one-week on-site start up. This nine-month program accepts and graduates 15 students annually, all of whom are nationally certified ASL/English interpreters. The feedback from these graduates is overwhelmingly favorable and has led to NTID being viewed as a national leader in the field of healthcare interpreting.

ASLIE's ASL program offers RIT's College of Liberal Arts (CLA) ASL courses Beginning ASL I, II, Intermediate ASL I, II and Advanced ASL I, II for RIT students who want to take ASL as an elective or to fulfill their liberal arts immersion and minor. An ASL immersion comprises any three courses from ASL and Deaf Culture Studies. In AY 2016-2017, the CLA program had an enrollment of 262 in the fall semester and 246 students in the spring semester. During the summer, ASLIE offered Beginning ASL I and II online. Fourteen students took the summer Beginning ASL I course and five students took the

Academic Program Highlights (continued)

summer Beginning ASL II course. In fall 2016, 27 students were enrolled in the ASL and Deaf Culture Studies minor; in spring 2017, 36 students minored in ASL and Deaf Culture Studies.

The ASL program also offered evening courses: Introduction to ASL and Deaf Culture I in the fall and spring semesters. These courses are designed for RIT students, faculty, staff and community members interested in a basic introduction to ASL and Deaf Culture. In AY 2016-2017, the Introduction to ASL and Deaf Culture program had an enrollment of nine students in the fall semester and 11 students in the spring semester.

The ASL program has provided ASL courses for NTID students as part of the ASL/Deaf Studies requirement. In AY 2016-2017, in the fall semester 24 students were enrolled in ASL I and 10 students were enrolled in ASL II. In the spring semester, four students were enrolled in ASL II.

One ASLIE faculty member also provided instruction in the Master of Science program in Secondary Education of Students who are Deaf or Hard of Hearing (MSSE) for future teachers of deaf and hard-of-hearing students. The Structure of ASL and English course was offered in the fall semester. In AY 2016-2017, ASLIE served 13 MSSE students.

ASLIE and the interpreter preparation program at Hogeschool Utrecht University (Holland) successfully continued their student/faculty exchange. In fall 2016, four students from Utrecht University spent 10 weeks with ASLIE, attending ASL/Deaf culture/interpreting-related courses and activities. In summer 2017, eight ASLIE students attended a five-week program at Utrecht University, studying NGT (sign language of the Netherlands), Dutch spoken language, Deaf culture and interpreting-related coursework. In addition, an ASLIE faculty member taught ASL at the Hogeschool for four weeks in January. Based on feedback from participants, the exchange program continues to be successful.

In addressing one of the initiatives in *SD 2020*, ASLIE offered a New Signers Program to incoming NTID students with minimal or no ASL skills for the sixth consecutive year. The New Signers Program (NSP) is an innovative and original program designed to encourage the transition of students with no ASL skills through an ASL-immersion experience. In summer 2017, 22 incoming first-year students participated in this two-week-long program. Two sections were offered: one for NTID students accepted into NTID programs, and the other for NTID students accepted into RIT programs. Each section had a separate instructor who taught new material for part of the day. Later in the day, both sections reconvened in one large group to practice together information that they had learned separately. In addition to in-class instruction, students participated in various experiential and extra-curricular activities around campus. Participants stayed in dorms, providing more impetus for students to bond and to practice their skills with three orientation assistants and a coordinator assistant to guide them in ASL-based activities and interaction. The New Signers Program is positioned to gain momentum and continue as a valued and intrinsic part of NTID culture.

Master of Science program in Secondary Education of Students who are Deaf or Hard of Hearing (MSSE)

The Master of Science program in Secondary Education of Students who are Deaf or Hard of Hearing (MSSE) graduated 11 students during the 2016-2017 academic year, its 23rd year. All of these MSSE graduates are eligible to receive initial certification from New York State (NYS) in an academic content area (grades 7–12) and/or in education of students who are deaf or hard of hearing (grades K–12) if they meet all of the certification requirements, including the NYS teacher certification exams. Those who do not have certification either need to take additional NYS teacher certification exams and complete the edTPA (Teacher Performance Assessment) or choose to pursue certification from the states in which they are teaching. All of the graduates are eligible to receive provisional certification from the Council on Education of the Deaf (CED).

For AY 2017-2018, the MSSE program had an enrollment of 19 students, of whom 9 (47 percent) are deaf or hard of hearing and 19 percent are members of minority groups. It is anticipated that at least 12 students will graduate from the program during the 2017-2018 academic year. The MSSE program

continues to actively recruit students with strong content area backgrounds, especially in science and math through the 4+2 program with RIT's Colleges of Science, Engineering and Liberal Arts as well as RIT's School of Individualized Study. The specifics related to this program can be found at www.ntid.rit.edu/msse-4plus2. MSSE is accredited by the Council for the Accreditation of Teacher Preparation (CAEP), 2013-2020, and approved by the CED, 2014-2019.

Study Abroad Experiences

NTID continues to expand our study abroad program through a three-pronged approach: 1.) NTID faculty-led study abroad experiences (e.g., Chile, Costa Rica, Japan and Italy), 2.) sending students to an affiliated university with established curriculum (offered by the affiliated university and/or NTID faculty), with housing and access services provided (e.g., The Siena School of Liberal Studies) and 3.) exchange program (partnership with educational institutions that allow for students to directly enroll for five weeks). These programs are offered for six general education credits under NDLS 280: International Studies Seminar. They are open to all NTID-coded students at RIT, including the MSSE and ASLIE programs. To date, eight study abroad experiences have been completed: two trips to Chile, two trips to Costa Rica, one trip to Japan, two trips to the Siena School in Siena, Italy and one trip to Institute for Sign Language and Deaf Studies at Hogeschool Utrecht in the Netherlands. Additionally, a trip to Japan is being planned for 2018. NTID anticipates that up to 16 NTID-supported students will participate in study abroad opportunities in AY 2017-2018.

Communication Studies and Services (CSS)

The Communication Studies and Services Department (CSS) is comprised of faculty and staff with expertise and training in the areas of communication, speech-language and audiology. Faculty and staff in the department provide credit-bearing instruction to students in areas related to communication in organizational structures, effective teams, interpersonal situations and other community settings. Other areas where direct instruction is provided are MSSE and ASLIE. An Educational Audiology and Spoken Language Development required course is provided to students enrolled in the MSSE program. Cued Speech courses are provided as electives to those enrolled in the ASLIE program. Faculty and staff provided 44 credit hours of instruction for 141 students in AY 2016-2017. Audiology and speech-language clinical services were provided to the RIT community throughout the 2016-2017 academic year. Faculty and staff provided 2,972.5 hours of individual speech-language instruction to 134 students, and 2,844 hours of audiology services to 668 students and others members of the RIT community.

The CSS department also provides walk-in services in the Speech & Language Center and the Audiology Center. These walk-in services are made available to students in an effort to further support their communication access and success in the classroom. During the 2016-2017 academic year, the speech-language discipline served an additional 245 students during 442.5 hours of on-call services, while the audiology discipline provided 512 hours of on-call services in the Audiology Center, serving more than 1,546 members of the RIT community.

CSS further supports students as advisors and resources to the Gapps (communication apps exploration) Group, Conversation Practice Group, the Vision Support Committee and the Spoken Communication Club.

NTID Learning Center

The NTID Learning Center (NLC) provides a variety of resources (tutoring space, computers for student and faculty use, Video Lab, studying tools and individual/group study space) in supporting the college success of NTID students.

This year, individual students signed up to use NLC computers 24,575 times for approximately 292,550 hours. The NLC also supported 20 hours of course-related activities. This "tracking" of computer use behavior is made possible with in-house software installed on all NLC PCs that tracks how the computer is being used and records the length of time users are logged on.

Academic Program Highlights (continued)

NLC continues to operate the NLC Loan Program, a popular service provided since AY 2006-2007. With this program, students can borrow laptops and calculators for up to 24 hours on weekdays or up to 96 hours on weekends. For the AY 2016-2017, laptops were loaned 4,022 times and calculators were loaned 592 times.

To support learning outside of the typical classroom, the NLC offers individual and small group tutoring and studying in Mathematics, English and Digital Information Technology (DIT). This year, 70 tutors (faculty and students) provided 5,111 hours in a variety of curricular areas for a total of 6,813 hours.

In addition to laptops and calculators, the NLC has a number of studying and learning resources available for faculty, staff and students to borrow from the resource desk, such as smartphone chargers, headphones, memory card readers, webcams, PowerPoint clickers and Wacom pen tablets. Those resources were loaned out 2,765 times. The NLC provides a reference area with books provided by faculty for students to use for their courses. In AY 2016-2017, books were loaned out 350 times.

In addition to resources available at the resource desk, the NLC also provides a video lab, established in 2007 as a video production and editing resource for the NTID community. The studio was reserved for 321 hours in AY 2016-2017. This area is used by interpreting students, deaf and hard-of-hearing students and faculty who want to use state-of-the-art video and editing equipment for classwork and projects.

The Sprint Relay Experimental Distance Learning/Access Demonstration Lab, housed within the NLC and the NTID Multi-Purpose Video Studio, supported by the NLC, hosted 159 courses, workshops and other sessions for 296.5 hours. The Sprint Relay Lab supported various activities, including conducting experimental classroom technology projects as well as video/lecture-capturing for flipped classroom course development for archiving and subsequent "anytime/anywhere" access by students.

The NLC continues to support the administration of Summer Vestibule Program (SVP) writing and mathematics tests and the administration of the Writing Placement Exam (WPE) each semester. The NLC staff provides tours for incoming freshmen and others such as local, national and international visitors.

Support for Baccalaureate Students

Strategic Decisions 2020 continues the goal of pursuing enrollment targets and admissions and programming strategies that will result in increasing numbers of NTID graduates achieving baccalaureate degrees and higher.

At the beginning of AY 2017-2018, 520 students (48 percent of the total deaf and hard-of-hearing student enrollment) were enrolled in baccalaureate programs in one of the other colleges of RIT. NTID faculty and staff provide tutoring, direct instruction, academic advising and counseling for these students. In addition, interpreting, notetaking and captioning services are offered through NTID's Department of Access Services.

Outcomes Assessment

NTID conducted student learning outcomes assessment (OA) in all academic programs as well as several general education and academic support areas during AY 2016-2017. In addition, academic degree programs completed the RIT Progress Reports based on AY 2015-2016 results.

The seventh annual RIT Progress Report, completed in November 2017, utilized a web-based reporting format and asked program chairs and directors to respond to a series of questions and to report on one program-level student learning outcome listed in their AY 2015-2016 Outcomes Assessment Plans. This was the third outcomes assessment Progress Report on semester-based programs taught at RIT.

Academic Program Highlights (continued)

Program information was aggregated by college and at the university level, and was shared with the RIT Provost's Office, Board of Trustees, Deans and RIT Student Learning Outcomes Assessment (SLOA) Committee.

NTID's response rate was 100 percent, with 16/16 programs completing the report. NTID contributed favorably toward the RIT rate of 96 percent of programs completing assessments. Additionally:

- 100 percent of NTID programs met or exceeded established benchmarks for at least one student learning achievement, compared to the RIT level of 93 percent; and each program's Progress Report was rated for continuous improvement by the RIT Educational Effectiveness Assessment Office.
- Ninety-four percent of NTID programs indicated use of assessment results to guide program planning improvements, compared to RIT's 87 percent.

NTID program chairs and directors used RIT's online outcomes assessment management system, TaskStream, for the annual assessment reporting that forms the basis of the above-mentioned RIT Progress Reports. Programs continued to use their approved semester-based Outcomes Assessment Plans. NTID OA plans identify program goals, critical student learning and programmatic outcomes, data sources/measures, performance benchmarks and timelines. Key findings and use of results are entered, along with recommendations. Highlights from AY 2016-2017 OA Reports illustrate NTID's outcomes assessment data collection, analysis processes and results. In addition to the individual program findings summarized below it should be noted that 100 percent of NTID students received satisfactory overall evaluation ratings from their supervisors related to their cooperative work experience performance.

ASL and Interpreting Education Department (ASLIE)
- **ASL-English Interpretation BS:** Benchmarks exceeded on all eight outcomes assessed this year, with 86 percent of students received ratings of satisfactory or better on their overall ASL competency on their Community Presentation Evaluation. One hundred percent of students in the Issues in Interpreting courses produced successful Poster Presentations and 100 percent of students produced successful research papers demonstrating critical thinking and problem-solving skills. One hundred percent of students demonstrated successful interpreting competency from ASL to English and 100 percent from English to ASL. One hundred percent of students were rated by practicum supervisors as demonstrating satisfactory entry-level work habits and 100 percent for overall interpreting ability. Ninety-eight percent of seniors expressed satisfaction with the programs and all students who sought employment after graduation were working.
- **Health Care Interpretation MS:** The MS degree in Health Care Interpretation program started this year for the first time. Data will be collected for next year's round of program learning outcomes assessment.

Business Studies Department
- **Accounting Technology AAS:** Students met all three direct course-based assessments. Acceptable scores were achieved on the Student Learning Assessment Test and the project in the Fundamentals of Marketing course. One hundred percent of students demonstrated competency in the Interpersonal and Teamwork Review in the Capstone course. One hundred percent of students received satisfactory overall ratings on the co-op supervisor's evaluation and 100 percent for demonstrating satisfactory job performance in demonstrating aptitude and ability to learn quickly and apply technical knowledge. The one student seeking employment after graduation was employed.
- **Administrative Support Technology AAS:** Exceeded the benchmark for five outcomes and did not meet the benchmark for two course-based outcomes. All students met the speed/accuracy keyboarding outcome. Most of the students earned an acceptable rating score on the e-Portfolio Rubric, indicating competence in choosing and applying computer software to create business documents. One hundred percent of students received a satisfactory overall rating by their supervisors for their co-op placements, for their ability to learn quickly and apply technical knowledge on the job and for their ability to transfer theory to employment situations. One hundred percent of students seeking employment after graduation were employed.

- **Business AS:** Criteria exceeded for two of the five outcomes, met for one and not met for two other outcomes. All of the students exceeded the benchmark on the Student Learning Assessment Test given in Managerial Accounting, an improvement from last year's assessment. Seventy-five percent of students demonstrated appropriate interpersonal business skills and teamwork, which is below the benchmark of 90 percent. Students did not meet the benchmark for describing the interrelatedness of social, cultural and business factors that shape and impact the global business environment. However, students were able to successfully identify and apply creative methods for idea generation and created a business plan outline for a new product/service. All of the students who graduated and applied for admission to a BS program were accepted.
- **Business Technology AOS:** Students exceeded benchmarks on five outcomes, met one outcome and were slightly below criterion on two others. For keyboarding speed and accuracy, all students exceeded the keyboarding outcome. One hundred percent of students earned acceptable ratings on the rubrics for the e-Portfolio and interpersonal skills and 84 percent met the expectations for the Accounting Capstone. These are strong results for AOS students. Seventy percent met the expectations for the Marketing Project. One hundred percent of students received a satisfactory overall rating by their supervisors for their co-op placements and 75 percent were rated satisfactory on transfer of theory to employment situations. One hundred percent of students seeking employment were employed.
- **Hospitality & Service Management AS:** One student graduated from the program, applied for the BS and was accepted.

Career Exploration Studies Department
- **First Year Experiences:** Benchmark exceeded for student satisfaction with the transition components of the Summer Vestibule Program (SVP) but less than 90 percent of students enrolled in the Freshman Seminar course fall semester earned a grade of "C" or higher. Criterion was not met for students returning for full-time study the following year.
- **Career Exploration Studies:** Benchmarks exceeded for students passing the Level A reading/writing and mathematics courses within two semesters excluding those who withdrew from the university or were suspended from the university from the data. Ninety-five percent of CES students who applied to a major were accepted into a major within two semesters.

Communication Studies and Services Department
- **Communication Outcomes:** Based on co-op supervisors' ratings, students exceeded the outcomes for demonstrating competency in face-to-face communication or for email communication during cooperative work experiences, an improvement from last year's assessment. While the mean communication score is better than the acceptable "4" on a 5-point scale, less than 80 percent of students received that rating.
- **Speech-Language, Aural Rehabilitation and Audiology Services:** Criterion levels exceeded for two of the four assessed outcomes and met for the other two outcomes. More than 95 percent of students indicated satisfaction with speech-language and audiology services and reported a self-perceived benefit as a result of the services. One hundred percent and 98 percent of students were rated by their instructors as demonstrating progress toward communication goals in aural rehabilitation and speech-language, respectively. On formal pre-post testing based on stated goals, the benchmark of 80 percent of students showing improvement was met. Assessments were completed for students whose individual communication focus areas included articulation, pronunciation, voice and/or aural rehabilitation.

Engineering Studies Department
- **Applied Mechanical Technology AAS:** Benchmarks exceeded for two outcomes, met one outcome and did not meet one outcome. All students received a grade of C or better on their Mechanical Design and Fabrication course written test and final project. Less than 75 percent of students earned the appropriate grades in key courses preparing them to apply for enrollment in the BS program. Three students who graduated with associate degrees in the past, graduated with a BS degree in MCET. The student satisfaction survey was not completed by students to report findings. It will be administered earlier in students' final semester during subsequent years.

- **Computer-Aided Drafting Technology AOS/AAS:** Criterion levels exceeded for eight outcomes, met for seven assessed outcomes and not met for five others. All benchmarks were met for identifying issues related to sustainability in the construction industry, which is an improvement compared to last year's assessment. Benchmarks were also met for: producing 2-D drawings; most technical tasks related to Building Information Modeling (BIM) projects, field measurement and input into CAD; researching and incorporating technical information into drawings and documentation; identifying characteristics of construction materials; and developing a portfolio. Benchmarks were approached, but not met, for outcomes related to engaging productively in a collaborative team project, which is a decrease in the ratings compared to last year's assessment. Similarly, benchmarks were approached for producing detailed sections and other details using a BIM project as a basis, and for using technical vocabulary, terminology and building codes. Eighty-two percent of students received satisfactory overall rating from their supervisors related to their co-op placement performance. All four graduates seeking employment were working.
- **Computer-Integrated Machining Technology AOS:** Benchmarks exceeded for seven outcomes, met for two and not met for two, which is an overall improvement from the last assessment cycle. Outcomes were met or exceeded for goals related to interpreting blueprints and specifications to manufacture and inspect products, developing technical skills and knowledge needed to transform ideas and drawings into precision machined parts and operating safely conventional and CNC machines, tools and other automatic equipment. Students also demonstrated competency for developing metrology skills and producing machined parts and optical elements to exact specifications. Students also excelled in the outcome related to safety of the shop.
- **Civil Technology AAS:** This is still a relatively new associate+bachelor's program. One hundred percent of students scored appropriately on technical drawings, technical problem solving and developing a CAD model.

Information and Computing Studies Department
- **Applied Computer Technology AS:** Criteria exceeded for demonstrating fundamental programming and web skills and for student satisfaction outcomes. All students who completed the AS degree were accepted into the GCCIS Information Technology BS program. Criteria was not met for course grades in the BS level Client Programming course, but this assessment will be changed for AY 2017-2018 to better reflect student success in the AS program. The graduation benchmark was not met for students graduating from the BS program after completing the AS, but the first cohorts are still in the seven-year window used to track graduation rates.
- **Applied Computer Technology AOS/AAS:** The findings showed that benchmarks were exceeded for eight of the 11 assessed outcomes and not met for three. For example, 93 percent of students demonstrated expected levels of competency related to installing, configuring, securing and troubleshooting networks, IT troubleshooting and customer support, working effectively as a team member and presenting clearly technical information to an audience of peers. One hundred percent of students successfully passed their technical Presentation Evaluation. Benchmarks were not met related to installing and configuring the operating system, drivers, and application programs, peer-to-peer client/server networks, or LAN/WAN troubleshooting and security. Action plans include evaluation of the number of tasks, level of assessments, instructional time and students' time on task during assessments. Ninety percent of students received satisfactory overall ratings from their supervisors related to their co-op performances. Eighty percent of graduates were employed in the field of computer support.

Liberal Studies Department
- **Applied Liberal Arts AS:** Forty-three percent of students passed the written English competency in one course and 75 percent in the other course, which is still below criterion level. Fifty percent to 76 percent of students passed the general education Perspectives 1-4 courses. While the benchmark was not met for the assessments used to measure success in the program's general education perspectives courses, the criterion was met for the artistic and social perspectives. The benchmark was nearly met for mathematical and scientific perspectives, with math being above

the expected percentage level. Student success in professional electives was also below the benchmark. The percentage was below the benchmark level by 11 percent for acceptance into CLA or equivalent bachelor's degree program, which is the primary goal of the AS program in Applied Liberal Arts. Given the historic success of students transferring into and graduating from CLA, the outcomes used to assess the AS degree need to be reviewed and possibly more appropriate assessments and/or benchmarks established.

Master of Science in Secondary Education Department

- The **Master of Science program in Secondary Education of Students who are Deaf or Hard of Hearing**: Eighteen measures included in the semester plan were assessed; criteria exceeded for eight measures, met for nine and unmet for one. The benchmark for passing the NYSTCE certification tests was exceeded for students who took tests in NYS. Some students choose to pursue certifications in the states where they are teaching after graduation. Some students choose not to earn credits in a content area, so the benchmark was not met. This is not a problem if students don't teach in NYS. Students met or exceeded the criterion levels for teaching performance, writing lesson plans, assessing student learning and demonstrating classroom management skills. For the same outcomes when adapting to meet the diverse needs of their students, all students met the expected competency level. Overall, satisfactory communication skills during student teaching continues to be a strength of this program.

Science and Mathematics Department

- **Laboratory Science Technology AOS/AAS:** Benchmarks again exceeded for 19 assessed general skill and technical competence areas, co-op performance, placement and student satisfaction. The concerted effort to emphasize safety has led to eight years of 100 percent of students meeting safety expectations. Students' resumes were reviewed early in the Laboratory Methods course to promote development of unique professional resumes for co-op and future positions. Students demonstrated competency in the use of various analytical instrumentation and demonstrated appropriate biological and biotechnology-related techniques. Additionally, 100 percent of students received favorable overall ratings by their co-op supervisors in corporate and academic placements. One hundred percent of graduates who sought employment were working. Students showed high levels of satisfaction with the program, including with the Laboratory Mathematics course, which underwent a fair amount of redesign over the past year.

Visual Communications Studies Department

- **Design and Imaging Studies AOS/AAS:** Criteria exceeded for two of the three outcomes assessed and not met for one. Students exceeded expectations for communicating effectively on co-op and for use of appropriate software and hardware for a graphic media project. Benchmark was not met related to design and production of graphic media for campus and community organizations.

Enrollment by Degree Programs

In fall 2017, 53 percent of NTID's 1,262 students were enrolled in a broad array of programs within NTID. Forty-seven percent were enrolled in other colleges of RIT, including 56 students in graduate programs. Of the 1,262 students, 1,081 are deaf and hard-of-hearing students in traditional undergraduate and graduate programs (excluding MSSE and Interpreting students). Fifty-three percent of deaf and hard-of-hearing students (576) enrolled in traditional undergraduate and graduate programs are partially or fully enrolled in the other colleges of RIT. Students are categorized by their primary academic college.

	Number of Students
NTID Career Exploration Studies	
Career Exploration (UND)	14
Career Prep Foundation (UND)	24
Subtotal	**38**
NTID Career-Focused	
Non-Degree Student (NONDEG)	8
Applied Computer Technology (AAS)	24
Applied Computer Technology (AOS)	32
Business Technology (AOS)	29
Computer-Aided Drafting Technology (AAS)	17
Computer-Aided Drafting Technology (AOS)	15
Computer-Integrated Machining Technology (AOS)	30
Design & Imaging Technology (AAS)	43
Design & Imaging Technology (AOS)	52
Engineering Technologies (UND)	3
Laboratory Science Technology (AOS)	10
Subtotal	**263**
Associate+Bachelor's Degrees	
3D Graphics Technology (AAS)	9
Accounting Technology (AAS)	11
Administrative Support Technology (AAS)	18
Applied Computer Technology (AS)	23
Applied Liberal Arts (AS)	31
Applied Mechanical Technology (AAS)	11
Business (AS)	21
Civil Technology (AAS)	8
Hospitality and Service Management (AS)	4
Laboratory Science Technology (AAS)	41
Mobile Application Development (AAS)	4
Subtotal	**181**

Enrollment by Degree Programs (continued)

	Number of Students
NTID ASL-English Interpretation	
ASL-English Interpretation (BS)	147
Health Care Interpretation (MS)	15
Subtotal	**162**
NTID Master of Science in Secondary Education (MSSE)	
Secondary Education of Students who are Deaf/Hard of Hearing (MS)	19
Subtotal	**19**
NTID Pre-Baccalaureate Students	
Pre-Baccalaureate Engineering (UND)	6
Pre-Baccalaureate Liberal Arts (UND)	1
Pre-Baccalaureate Science (UND)	9
Pre-Baccalaureate Visual Communication (UND)	5
Subtotal	**21**
NTID Subtotal	**684**
Baccalaureate Students in Other RIT Colleges	
College of Applied Science and Technology	
Civil Engineering Technology (BS)	7
Computer Engineering Technology (BS)	4
Electrical Engineering Technology (BS)	6
Electrical/Mechanical Engineering Technology (BS)	4
Environmental Sustainability Health & Safety Management (BS)	3
Hospitality & Tourism Management (BS)	10
Manufacturing Engineering Technology (BS)	2
Mechanical Engineering Technology (BS)	20
Packaging Science (BS)	3
Subtotal	**59**

	Number of Students
Saunders College of Business	
Business Administration-Accounting (BS)	13
Business Undeclared (UND)	1
Finance (BS)	6
International Business (BS)	2
Management (BS)	9
Management Information Systems (BS)	14
Marketing (BS)	7
New Media Marketing (BS)	1
Subtotal	**53**
College of Science	
Applied Mathematics (BS)	2
Biochemistry (BS)	5
Bioinformatics (BS)	3
Biology (BS)	12
Chemistry (BS)	2
Computational Mathematics (BS)	1
Environmental Science (BS)	8
Imaging Science	1
Molecular Bioscience and Biotechnology (BS)	5
Physics (BS)	1
Science (UND)	1
Subtotal	**41**
College of Imaging Arts and Sciences	
3D Digital Graphics (BFA)	12
Digital Cinema (BS)	2
Film and Animation (BFA)	3
Fine Arts-Studio (BFA)	4
Glass (BFA)	1
Graphic Design (BFA)	23
Illustration (BFA)	3
Industrial Design (BFA)	4
Interior Design (BFA)	2
Media Arts and Technology (BS)	4
Medical Illustration (BFA)	4
New Media Design (BFA)	5
Photographic Arts and Sciences (UND)	1
Photographic and Imaging Arts (BFA)	13
Photographic Sciences (BS)	2
Woodworking & Furniture Design (AOS)	1
Subtotal	**84**

	Number of Students
College of Liberal Arts	
Communication (BS)	8
Criminal Justice (BS)	19
Digital Humanities and Social Sciences (BS)	2
Economics (BS)	1
International and Global Studies (BS)	5
Journalism (BS)	3
Liberal Arts Exploration (UND)	4
Museum Studies (BS)	2
Political Science (BS)	5
Psychology (BS)	21
Public Policy (BS)	3
Sociology and Anthropology (BS)	4
Subtotal	**77**
Kate Gleason College of Engineering	
Biomedical Engineering (BS)	4
Computer Engineering (BS)	6
Electrical Engineering (BS)	5
Engineering Exploration (UND)	3
Industrial Engineering (BS)	4
Mechanical Engineering (BS)	13
Subtotal	**35**
B. Thomas Golisano College of Computing and Information Sciences	
Computer Science (BS)	14
Computing Exploration (UND)	2
Computing and Information Technologies (BS)	17
Computing Security (BS)	4
Game Design and Development (BS)	4
Human-Centered Computing (BS)	10
Information Technology (BS)	6
Networking and System Administration (BS)	1
New Media Interactive Development (BS)	5
Software Engineering (BS)	7
Web and Mobile Computing (BS)	10
Subtotal	**80**

	Number of Students
University Studies	
University Studies (UND)	7
Subtotal	**7**
School of Individualized Study	
Applied Arts and Sciences (BS)	46
Subtotal	**46**
Student Affairs	
College Restoration Program	3
Subtotal	**3**
College of Health Sciences and Technology	
Biomedical Sciences (BS)	29
Diagnostic Medical Sonography (BS)	2
Exercise Science (BS)	1
Health (CT)	1
Nutrition Management (BS)	2
Physician Assistant (BS)	2
Subtotal	**37**
Subtotal Baccalaureate Students in Other Colleges	**522**
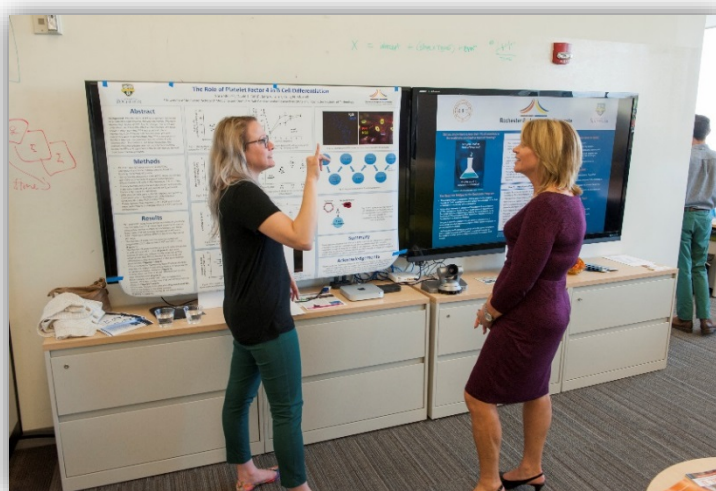
Sara Blick, left, of Schenectady, New York, presents her research during the NTID Student Research Fair. Having received an AAS, BS and, in 2017, MS from RIT/NTID, Sara has enrolled this fall at the University of Rochester in their doctoral program in pathology. She was a scholar in the Rochester Bridges to the Doctorate Program.

Enrollment by Degree Programs (continued)

	Number of Students
Graduate Students in Other RIT Colleges	
College of Applied Science and Technology	
Human Resources Development (MS)	3
Packaging Science (MS)	1
Service Leadership & Innovation (MS)	1
Subtotal	**5**
Saunders College of Business	
Business Administration (MBA)	6
Entrepreneurship & Innovative Ventures (MS)	1
Finance (MS)	1
Subtotal	**8**
College of Imaging Arts and Sciences	
Fine Arts Studio (MFA)	1
Industrial Design (MFA)	1
Visual Arts (MST)	1
Visual Communication Design (MFA)	3
Subtotal	**6**
College of Liberal Arts	
Communication & Media Technology (MS)	1
Criminal Justice (MS)	2
Experimental Psychology (MS)	1
School Psychology (MS)	2
Subtotal	**6**
College of Science	
Bioinformatics (MS)	1
Environmental Science (MS)	1
Mathematical Modeling (PhD)	1
Subtotal	**3**
Kate Gleason College of Engineering	
Computer Engineering (MS)	1
Electrical Engineering (MS)	1
Manufacturing Leadership (MS)	1
Mechanical Engineering (ME)	1
Subtotal	**4**

	Number of Students
B. Thomas Golisano College of Computing and Information Sciences	
Computer Science (MS)	4
Computing and Information Science (PhD)	2
Human Computer Interaction (MS)	1
Information Science and Technology (MS)	2
Networking & System Administration (MS)	1
Subtotal	**10**
Golisano Institute for Sustainability	
Architecture (M.Arch.)	4
Sustainable Systems (MS)	2
Subtotal	**6**
College of Health Science and Technology	
Health Systems Administration (MS)	1
Physician Assistant (MS)	1
Subtotal	**2**
School of Individualized Study	
Professional Studies (MS)	6
Subtotal	**6**
Subtotal Graduate Students in Other Colleges	**56**
Total	**1,262**

Legend	
2M	Double Major
AAS	Associate of Applied Science
ACT	Advanced Certificate
AOS	Associate of Occupational Science
AS	Associate of Science
BFA	Bachelor of Fine Arts
BS	Bachelor of Science
CT	Certificate
M.Arch.	Master of Architecture
MBA	Master of Business Administration
ME	Master of Engineering
MFA	Master of Fine Arts
MS	Master of Science
MST	Master of Teaching
NONDEG	Non-Degree
PhD	Doctor of Philosophy
UND	Undeclared

Average Class Size by Discipline

The variability in average class size is influenced by the nature of instruction. For example, many programs are laboratory oriented and use specialized equipment, which limits the number of students who can reasonably be accommodated in a class.

	AY 2016-2017	
	Fall	Spring
Accounting Technology	8.2	8.7
Administrative Support Technology	7.3	8.0
American Sign Language	12.0	7.5
Applied Computer Technology	7.3	7.3
Applied Computer Technology – Technical Computing	7.2	6.5
Applied Mechanical Technology	8.0	4.3
ASL-Deaf Culture	9.0	9.0
ASL-English Interpretation	11.0	8.8
Career Development	11.2	8.0
Communication Studies	12.0	8.0
Computer-Aided Drafting Technology	8.2	8.3
Computer-Integrated Machining Technology	6.8	5.2
English	10.4	9.0
General Arts & Imaging	8.4	7.3
General Business	9.8	10.3
Graphic Design	8.3	7.4
Graphic Production	5.8	5.9
Health Care Interpretation	7.0	6.0
Humanities and Social Science	14.6	16.2
Laboratory Science Technology	8.4	7.9
Liberal Studies	0.0	15.0
Master of Science in Secondary Education	11.3	11.5
Mathematics	10.3	9.2
Mobile Application Development	9.0	2.7
Science	11.1	9.1
Overall Average	**8.9**	**8.3**

Educational Support: Teaching

In addition to providing academic advisement, tutoring and notetaking services for deaf and hard-of-hearing students enrolled in the other colleges of RIT, NTID faculty also teach some RIT courses with deaf students enrolled. By providing direct instruction in these courses as well as advisement and tutoring, faculty members help maximize the benefit students receive to ensure their success in RIT's highly competitive academic environment. Below are the statistics for FY 2017.

		Number of Students	
	Number of Sections	**Deaf and Hard-of-Hearing**	**Hearing**
Saunders College of Business			
Computer-Based Analysis	1	17	0
Leadership	1	0	14
Subtotal	**2**	**17**	**14**
College of Imaging Arts and Sciences			
The Fine Print Workflow	1	2	7
History of Western Art: Ancient to Medieval	2	33	0
History of Western Art: Renaissance to Modern	2	35	0
Subtotal	**5**	**70**	**7**
College of Liberal Arts			
Abnormal Psychology	1	12	0
American Deaf History	2	33	31
Beginning American Sign Language I	17	19	288
Beginning American Sign Language II	9	27	126
Beginning Spanish IA	2	2	31
Cognitive Psychology	2	27	1
Communication	1	14	0
Computer Crime	2	10	29
Deaf Art & Cinema	1	14	18
Deaf Culture in America	4	40	63
Deaf Literature	1	4	2
Foundations of Sociology	1	12	0
Global Deaf Literature	1	7	3
Intermediate American Sign Language I	3	9	31
Intermediate American Sign Language II	1	1	3
Introduction to Criminal Justice	2	40	0
Introduction to Psychology	4	75	44
Introduction to Visual Arts	2	16	0
Linguistics of American Sign Language	3	19	39
Major Issues in Criminal Justice	1	10	15
Research Methods I	2	13	0

	Number of Sections	Number of Students	
		Deaf and Hard-of-Hearing	Hearing
College of Liberal Arts (continued)			
Senior Project in Psychology	3	7	2
Social Psychology	1	6	26
U.S. History Since 1945	1	15	0
Subtotal	**67**	**432**	**752**
College of Science			
Chemistry Research	1	1	0
Introduction to Statistics I	1	8	28
Organic Chemistry Lab I	3	7	62
Organic Chemistry Lab II	1	5	19
Solar System Astronomy Lab	3	1	34
Stars and Galaxies Lab	3	3	39
Subtotal	**12**	**25**	**182**
Interdisciplinary Studies			
Critical Reading and Writing	10	126	1
High Performance Leadership	2	3	33
Writing Seminar	9	131	0
Subtotal	**21**	**260**	**34**
Center for Intercollegiate Athletics and Recreation			
Country Line Dance	1	0	10
Functional Yoga	1	1	23
Kundalini Yoga	2	8	73
P90X	2	9	29
Sunrise Yoga	1	4	24
Turbo Kick	2	2	49
Ultimate Frisbee	2	3	43
Subtotal	**11**	**27**	**251**
Total	**118**	**831**	**1,240**

American Sign Language and Interpreting Education Programs

The degree program in ASL-English Interpretation graduated 24 students in 2016-2017. Forty-two new students matriculated into the program in September 2017. Currently, 16 percent of total enrollment are students from ethnic minority backgrounds. Since its inception, the Department of ASL and Interpreting Education has graduated 792 students. Of that number, 465 have graduated with an AAS degree, 319 with a BS degree and eight with a certificate.

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Fall Applicants	224	211	188	187	172
Accepted	51	49	50	57	63
Registrations	43	40	40	46	42
Enrollment					
BS	143	143	148	136	147
MS in Health Care Interpretation	N/A	N/A	N/A	8	15
Non-Matriculated	4	3	3	4	0
Total Enrollment	**147**	**146**	**151**	**148**	**162**
Employment Report					
Graduates	30	29	41	24	*
Employment Rate	100%	100%	100%	*	*

In addition to the interpreting program, ASL and Interpreting Education faculty also provided the following:	FY 2017 Enrollment
ASL courses in RIT's College of Liberal Arts (CLA)	527
ASL courses for deaf students, NTID	38
ASL course for the MSSE program, NTID	13
Introduction to ASL and Deaf Culture	20
New Signers Program	22
Global Understanding Program Fall Semester – Hogeschool, the Netherlands students to NTID	4
Global Understanding Program Summer – NTID interpreting students to Hogeschool, the Netherlands	8

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* As of the writing of this report, the employment information for FY 2017 and FY 2018 and graduation information for FY 2018 is incomplete.

Master of Science in Secondary Education of Students who are Deaf or Hard of Hearing (MSSE)

The MSSE program is now in its 23rd year. To date, 384 students have graduated from the program. One hundred percent of the FY 2016 graduates have accepted teaching jobs throughout the country.

To complete the program, each student must successfully complete 94 credit hours, including two student-teaching assignments and a master's project.

In addition to the coursework and other expectations, all full-time students serve as graduate assistants during the semesters they are not student teaching. They work as teaching assistants, program assistants, research assistants or tutors, primarily at NTID.

To recruit students with strong content area backgrounds, especially in science and math, the program has implemented a 4+2 program with RIT's College of Science, Kate Gleason College of Engineering and College of Liberal Arts as well as RIT's School of Individualized Study. The specifics related to this program can be found at www.ntid.rit.edu/msse-4plus2.

Twenty-four applications for admission for fall 2017 were received. Eight were offered admission. Of those, five matriculated into the program. For the 2017-2018 academic year, the MSSE program has a total enrollment of 19 students: 14 second-year or returning students and five first-year students. Of the 19 matriculated students, 47 percent are deaf or hard-of-hearing and 23 percent are minority.

MSSE Student Data

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Fall Applications	38	40	33	44	24
Acceptances	16	19	17	19	8
New Registrations	16	16	15	17	5
Deaf and Hard-of-Hearing Enrollment	18	16	15	14	9
Total Enrollment*	**48**	**44**	**42**	**30**	**19**
Employment Report					
Graduates	34	21	20	11	**
Employment Rate	100%	100%	100%	**	**

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* Included from FY 2007 to FY 2016 are non-matriculated students (between four and 15 per year) taking courses offered by the Master of Science program in Secondary Education, but who are part of a grant-supported joint program between NTID and Nazareth College in Rochester, New York, to train speech pathologists to work with deaf and hard-of-hearing people.

** As of the writing of this report, the employment information for FY 2017 and FY 2018 and graduation information for FY 2018 is incomplete.

Academic Programs

Cooperative Work Experiences

Cooperative work experience is an integral part of academic programming at NTID. Employment specialists assist students in securing 10-week work experiences that augment their studies. Employment specialists or faculty members visit students and their supervisors at their workplaces to assess progress and resolve any workplace issues. Most academic programs require from one to three cooperative assignments, which generally add another year to the program length (totaling

three years for associate degree programs and five years for bachelor's degree programs).

During FY 2017:
- 313 students were enrolled in cooperative work experiences
- 55 academic programs had students on cooperative work experiences
- 20 faculty and staff visited 59 students at their job sites during the summer

	Number of Students Involved in Cooperative Work Experiences*				
	FY 2013	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**
Sub-Baccalaureate					
NTID	105	90	94	88	108
Percent of Total Co-op Enrollment	36%	38%	35%	32%	35%
Baccalaureate/Master's					
College of Applied Science and Technology	64	40	52	51	56
Saunders College of Business	38	18	27	30	38
B. Thomas Golisano College of Computing and Information Sciences	29	33	45	43	50
Kate Gleason College of Engineering	16	18	19	25	23
College of Health Sciences and Technology	5	1	5	3	4
College of Imaging Arts and Sciences	7	10	9	10	11
College of Liberal Arts	25	22	19	16	15
College of Science	6	6	1	5	8
Subtotal	190	148	177	183	205
Percent of Total Co-op Enrollment	64%	62%	65%	68%	65%
Total Co-op Enrollment	**295**	**238**	**271**	**271**	**313**

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* Totals reported include deaf and hard-of-hearing international students, but do not include students in the ASL-English Interpretation program, the Master of Science program in Health Care Interpretation or the Master of Science program in Secondary Education. Specific data on these students is reported elsewhere in this section.

Student Support Services

NTID students have access to audiological services, speech and language services, mental health counseling, career counseling, academic advising, professional academic tutoring, self-advocacy training, wellness activities, substance abuse services and more.

Ethan Ettienne, left, a Business Technology major from Lanham, Maryland, and Mia White, right, a Business major from Littleton, Colorado, also are student-athletes, participating in track and field and soccer, respectively. The NTID Athlete Development Program provides academic support, mentoring, educational workshops, team-building and leadership training.

Student Support Services Highlights

NTID provides a variety of services to support the college success of deaf and hard-of-hearing students:

- Audiological services include hearing evaluations, hearing aid trials, fittings, cochlear implant mapping, assistive technologies, accessories and individual listening therapies that focus on the development of receptive communication skills. RIT students, faculty and staff, NTID-supported alumni and those enrolled in RIT's Osher Lifelong Learning Institute access these services. NTID's Communication Studies and Services (CSS) Audiology also offers routine ear, nose, throat and ophthalmology clinics for students on campus to meet with local physicians.

- Speech and language services are offered to students who want to enhance their use of spoken English and their general communication competence. Individual and group experiences provide opportunities to improve communication in conversations, group discussions and formal presentations. The Speech & Language Center enables students to use computer technology for speech and language analysis and visual feedback.

- Mental health counseling and psychotherapy are provided to deaf, hard-of-hearing and hearing students on campus at the RIT Office of Counseling & Psychological Services. Mental health counselors fluent in American Sign Language provide services for deaf and hard-of-hearing students. A staff psychiatrist at the Student Health Center is available for consultation or referral as needed. Mental health crisis intervention is available 24 hours a day. In addition to individual counseling and psychotherapy, students can participate in support groups and skill-building groups with counseling center staff.

- Personal and career counseling and academic advising. Upon entry, every NTID-supported student is assigned to a counselor/academic advisor (CAA) from NTID's Counseling and Academic Advising Services (CAAS). These professional counselors/academic advisors play an important role in helping students maximize their educational opportunities at RIT. NTID associate-level students receive personal counseling, career counseling and academic advising from their assigned CAA. NTID-supported bachelor-level students also receive both personal counseling and career counseling from their assigned NTID CAA. The academic advising for bachelor-level students is provided by the primary academic advisor in their home college. In AY 2016-2017, NTID's CAAS provided more than 11,000 hours of career counseling, personal counseling and academic advising for students, including working as career counselors for NTID's outreach program, Explore Your Future, and as career seminar instructors during the Summer Vestibule Program. In addition, the CAAs in the department frequently serve as guest lecturers in Freshman Seminar classes and other courses related to various aspects of college success. This department also manages a full-service Career Resource and Testing Center, which provides a number of career assessment tools and resources. These include an interactive, computer-based career information system that helps students assess their career interests, learning styles and values, and explore a wide range of educational and career options. To supplement the results of such career assessments, students are also given individualized attention with their career decision-making process. Additionally, the CAAs also supplement the institute with their outreach efforts along with University Advising Office and work along with RIT's Office of Financial Aid & Scholarships. NTID CAAS also work in collaboration with other service providers on- and off-campus to help students access services and experiences that promote their academic growth and achieve academic success, as well as cultivate and enhance their personal and social development.

- The Student Life Team (SLT) continued its tradition in FY 2017 of both challenging and educating students, providing resources and support for students' successful transitions throughout college and after graduation. SLT's collaborations with NTID's Counseling and Academic Advising Services, the NTID Center on Employment, NTID Student and Academic Services, Department of Public Safety and several offices across RIT's Division of Student Affairs ensured that students were provided diverse opportunities to optimize their collegiate experiences. SLT's co-curricular and late night educational programming, spiritual/religious and civility exploration workshops, self-advocacy and community accountability mentoring programs, social and cultural programs, fraternity and sorority

event collaborations and club/organization advising are avenues of outreaching and networking with students. In July 2017, NTID alumnus Tim Albert '98, '00 began as the new director of the SLT. SLT values the ongoing partnership with NTID alumni to offer every student a greater sense of their purpose as a global citizen.

- Student Wellness / NTID Student and Academic Services provides instruction and services that support wellness education. Deaf and hard-of-hearing students are ensured opportunities for exploring, developing and implementing wellness concepts, principles and behaviors in their lives. It is important to ensure deaf and hard-of-hearing students receive a holistic education with a focus on career, academic, emotional, social, physical, spiritual, financial and environmental dimensions of wellness. Wellness initiatives occur through collaboration within many different areas of NTID and RIT. Students participated in wellness instructional classes, wellness presentations in freshman seminar classes, weekly "Wellness Wednesday" programs that address different topics, presentations in residence halls, Red Barn activities, intramural programs, institute workshops and personal mentoring.

- The NTID Athlete Development Program began its second year and has seen steady growth. The NTID Athlete Development Program is a holistic support program geared to support deaf and hard-of-hearing student-athletes at the varsity level. The services range from academic support, mentoring, educational workshops, team-building and leadership training. Deaf and hard-of-hearing student-athletes had an excellent year, earning a 3.0+ grade point average as a group and garnering awards, including All-American and multiple 'Liberty League Athlete of the Week' honors. Deaf and hard-of-hearing student-athletes have been involved with multiple student organizations on campus, including Hillel, Student Athlete Advisory Committee, Deaf International Students Association and Electronic Gaming Society. This year saw multiple student-athletes dominating the competition in women's volleyball, women's soccer, men's and women's cross country, men's crew, men's and women's swimming and diving, men's and women's track and field and cheerleading, with a strong recruiting class for next year.

- Financial aid for domestic students was provided in FY 2017 to NTID students in the form of Vocational Rehabilitation awards, grants-in-aid, federal and state grants, scholarships and federal loans through RIT's Financial Aid and Scholarships Office. In all, 436 students received NTID scholarships, 95 received RIT scholarships, 762 received NTID endowed scholarships and 99 students received scholarships from external funding sources. In addition, the NTID Financial Services Office provided privately funded short-term loans to students who encountered emergency situations.

- Summer Vestibule Program (SVP) is an orientation program for entering NTID students designed to transition them to college life. In 2017, 172 students went through the orientation program. Assessment tests are given to further evaluate a student's academic placement for English and mathematics classes. Students who are further evaluating their major are given a variety of career sampling choices. This is an opportunity for students to see if their major is what they expected. If not, they have the chance to enroll in a different major/program. There also is ample opportunity for peer interaction and fun. SVP always is a memorable experience as the students bond and make friends as they begin their collegiate career.

- First Year Experience incorporates a freshman seminar required for incoming first-year students and designed to further assist them in their transition to RIT/NTID. Fifteen sections were offered with an average class size of 12 students in fall 2017. A variety of topics are covered, such as navigating the campus, library resources, Student Information System, conflict resolution, time management, clubs/organizations, study skills, stress management, goal setting, healthy relationships and more. This is another opportunity for students to connect with their instructor if they have personal/academic struggles, and the instructor can act as a resource.

Student Support Services Highlights (continued)

- Career Exploration Studies (CES) is a program that allows career-undecided students the opportunity to explore technical programs while satisfying necessary core and/or prerequisite coursework. During AY 2016-2017, CES served 40 students in fall and 35 students in spring. Ninety-seven percent of CES students who applied to a major were accepted into a major within two semesters.

- Substance and Alcohol Intervention Services for the Deaf (SAISD) provides culturally sensitive, linguistically accessible information on alcohol, tobacco and other drugs. In addition, it offers intervention and prevention services to the deaf and hard-of-hearing community at RIT and throughout Rochester and the Monroe County area. SAISD also advocates for and promotes development of a full range of accessible treatment programs for alcohol and other drugs for deaf and hard-of-hearing consumers through the provision of cross-disability short-term technical assistance, consultation and training for professionals. Wherever possible, SAISD promotes its successful model across the state.

Julie Love, left, a Design and Imaging Technology major from Perris, California; Lucas Baron, center, a Design and Imaging Technology graduate from Santa Barbara, California, and Lenesha Hall, an Applied Arts and Sciences major from Kitchener, Ontario, Canada, participate in Heel Violence, a mile walk to support deaf, deaf-blind and hard-of-hearing survivors of domestic violence and/or sexual abuse.

Support Services: Tutoring Hours

NTID faculty provide academic assistance in the form of tutoring for all NTID-supported deaf and hard-of-hearing students registered in the other colleges of RIT. Students registered in the School of Individualized Study are reported under the other colleges depending on the course type.

	AY 2016-2017		
	Tutoring Hours	Class Sections Served	Total Student Registrations
College of Applied Science and Technology (CAST)	*	274	525
College of Imaging Arts and Sciences (CIAS)	108	436	875
Saunders College of Business (SCB)	1,466*	203	593
Kate Gleason College of Engineering (KGCOE)	455*	207	276
College of Liberal Arts (CLA)	900	676	2,316
College of Health Sciences and Technology (CHST)	706	109	356
College of Science (COS)	7,070*	517	1,461
B. Thomas Golisano College of Computing and Information Sciences (GCCIS)	2,176*	295	545
Total	**12,881**	**2,717**	**6,947**

NTID's Student Life Team hosts the Apple Festival as an opportunity for students to meet, eat, dance and learn how to get involved in clubs and organizations on campus. Here, members of the Alpha Xi Delta sorority take a selfie at their table.

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*   Hours for CAST are reported under SCB, KGCOE, COS and GCCIS.

Student Access Services

NTID's Access Services staff provide access services in the classroom as well as outside the classroom for events such as student government meetings, extracurricular programs, guest lecturers and entertainers.

Representatives from more than 40 local and national corporations, federal agencies and nonprofit organizations meet with hundreds of deaf and hard-of-hearing students at NTID's annual job fair. Though many of the company recruiters are RIT/NTID alumni, interpreters like Jennifer Jess, center, are available to facilitate communication between employers and students.

Student Access Services Highlights

NTID provides access services to meet the needs of a large number of deaf and hard-of-hearing students enrolled in baccalaureate and graduate degree programs in RIT's other colleges as well as students enrolled in NTID programs who take courses in the other colleges of RIT. Access services also are provided in NTID instructed classes when needed. Services are provided for non-academic events and activities throughout the RIT community, making RIT the world's most accessible university. Educational access services that NTID offers for deaf and hard-of-hearing students at RIT include:

- **Sign language interpreting** provided by 140 staff members—the largest staff of professional interpreters of any college program in the world—as well as freelance, apprentice and student interpreters. Students also may request interpreters for non-academic activities such as athletic events, religious services, student government meetings, student clubs and guest presentations.
- **Real-time captioning** provided as a real-time access service for students who benefit from English text more than sign language interpreting. A staff of 53 real-time captionists is trained in a computer-assisted system developed for transcribing in real time what teachers and students say in class. Increasing use of remotely provided captioning helps us meet growing demands. Real-time captioning is also provided for special events and out-of-class needs.
- **Classroom notetaking services** provided by more than 400 trained student notetakers whose notes are uploaded onto a website for easy access by deaf and hard-of-hearing students.
- **Captioned classroom video materials.** NTID, in conjunction with RIT, provides captioned video materials for use in classrooms.
- **Assistive Listening Systems.** NTID loans FM systems to students who benefit from such systems in classrooms.

NTID works with each of RIT's colleges to provide the support needed to implement strategies for maximizing access to campus services for deaf students. The Provost's Deaf Access Committee and other groups address the needs of deaf and hard-of-hearing RIT students and ensure that RIT is in full compliance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act for educational accommodation. The institutional position on accessibility for deaf and hard-of-hearing people includes the following strategies, for which NTID provides support:

- Sharing responsibility for providing workshops, training and information to assist faculty in the other RIT colleges in effectively teaching deaf and hard-of-hearing students.
- Providing training and ensuring that academic and administrative service areas that interact with students have staff with a range of communication skills and strategies (sign language, computer terminal or other written interaction) to communicate effectively with deaf students.
- Ensuring that all audio and visual media produced at RIT are effectively captioned, and that existing materials used in classrooms are captioned whenever possible.
- Encouraging RIT to advocate for the captioning of audio and visual materials, teleconferences and other educational media produced externally to RIT.

NTID was an early innovator in access services, initiating training programs for educational interpreters in the 1970s that have grown from small, short-term certificate-level training into a large baccalaureate degree program. Staff interpreters have built careers at NTID, developing specialized expertise across the diverse technologies of RIT's curriculum. The average tenure of a staff interpreter, as of fall 2017, is more than 13 years. This experienced resource, paired with similar expertise developed in the newer real-time captioning service where average staff tenure exceeds seven years, affords NTID students unparalleled access to the full array of educational opportunities RIT provides. Continued innovation and application of new technologies, including remote video interpreting, remote captioning and captioning by automatic speech recognition hold the promise of even better services in years ahead.

To ensure the expertise of its staff, Access Services expanded employment and mentorship of apprentice interpreters, sharing the resources and expertise of NTID with interpreters developing as specialists in post-secondary education. With growing demand for real-time captioning services and increasing retirements of veteran staff, Access Services hired 45 interpreters and 20 captionists, more than a third of its current staff of 193 access providers, within the past three years. Recent enhancements to a rich professional development program support their skill development.

Access Services: Interpreting, Notetaking and Real-Time Captioning

Interpreting, notetaking and real-time captioning services are provided to allow deaf and hard-of-hearing students equal access to information in classes at other RIT colleges and NTID, when necessary.

RIT College	Interpreting Hours	Notetaking Hours	Real-Time Captioning Hours	Class Sections Served
College of Applied Science and Technology (CAST)	8,521	3,929	1,252	201
Saunders College of Business (SCB)	9,531	5,733	2,484	187
B. Thomas Golisano College of Computing and Information Sciences (GCCIS)	9.948	5,764	2,055	216
Kate Gleason College of Engineering (KGCOE)	4,197	3,243	1,541	151
College of Health Sciences and Technology (CHST)	2.109	2,617	1,543	78
College of Imaging Arts and Sciences (CIAS)	24,468	11,493	2,649	376
School of Individualized Study (SOIS)	882	551	202	36
College of Liberal Arts (CLA)	22,431	13,568	6,084	441
College of Science (COS)	20,327	14,251	6,049	433
Student Affairs Division (STUAF)	3,004	160	168	139
Golisano Institute for Sustainability (GIS)	956	670	368	14
NTID	1,869	36	177	45
FY 2017 Total Hours	**108,243**	**62,015**	**24,608**	**2,317**

Student Access Services

Access Services: Interpreting Services

In-class services include interpreting support in all colleges of RIT as well as student/professor meetings, field trips and other activities when required for credit-bearing courses. Non-class services include student use of interpreting services in student government, other student organizations, study abroad, judicial proceedings, emergency situations and extra-curricular programs. Administrative use includes support for RIT faculty/staff activities, such as visiting presenters, conferences and presentations for faculty, staff and audiences.

FY 2017	In-Class			Non-Class Activity		Administrative Activity		Overall Total	
	Hours	%*	Sections						
Fall	53,009	77%	825	12,574	18%	3,317	4%	68,900	100%
Winter	34	1%	2	1,814	64%	1,006	26%	2,854	100%
Spring	54,107	78%	794	11,715	17%	3,372	4%	69,194	100%
Summer	1,093	9%	23	7,751	66%	2,838	22%	11,581	100%
FY 2017 Total	**108,243**	**71%**	**1,644**	**33,854**	**22%**	**10,533**	**7%**	**152,630**	**100%**
FY 2007 Total	80,417	73%	1,617	23,757	21%	6,666	6%	110,840	100%
FY 2008 Total	84,211	74%	1,869	23,620	21%	6,402	5%	114,233	100%
FY 2009 Total	80,475	73%	1,831	22,616	21%	6,527	6%	109,618	100%
FY 2010 Total	85,111	73%	1,848	24,993	21%	6,678	6%	116,782	100%
FY 2011 Total	98,032	75%	2,006	25,592	19%	7,441	6%	131,065	100%
FY 2012 Total	97,232	75%	2,032	25,766	19%	6,902	6%	129,900	100%
FY 2013 Total	111,757	77%	2,262	26,878	19%	6,368	4%	145,003	100%
FY 2014 Total**	99,173	75%	1,660	26,223	20%	6,659	5%	132,055	100%
FY 2015 Total	105,983	76%	1,739	27,196	19%	7,051	5%	140,230	100%
FY 2016 Total	112,110	75%	1,797	29,105	20%	7,831	5%	149,046	100%

*　Percentages are rounded to the nearest percent.
**　Reduced number of sections and hours required in FY 2014 result from RIT's move to a semester-based academic calendar.

Access Services: Real-Time Captioning Services

In keeping with NTID's *Strategic Vision 2010* and *Strategic Decisions 2020*, an increasing supply of real-time captioning is being made available for those students taking courses in the other RIT colleges. Students who believe they would benefit more from a text-based service may request it instead of sign language interpreting as their means of real-time access.

Real-time captioning is provided via specialized software that allows short-hand typing of classroom instruction; these services are provided on occasion for out-of-class activities such as orientations and meetings.

FY 2017	In-Class			Non-Class Activity		Administrative Activity		Overall Total	
	Hours	%*	Sections						
Fall	12,112	98%	324	203	2%	106	1%	12,421	100%
Winter	4	100%	1	0	0%	0	0%	4	100%
Spring	12,272	97%	309	285	2%	85	1%	12,642	100%
Summer	220	25%	8	312	35%	353	40%	885	100%
FY 2017 Total	**24,608**	**95%**	**642**	**800**	**3%**	**544**	**1%**	**25,952**	**100%**
FY 2007 Total	15,074	98%	426	288	2%	78	0%	15,440	100%
FY 2008 Total	16,186	97%	496	356	2%	180	1%	16,722	100%
FY 2009 Total	17,330	95%	538	255	1%	515	3%	18,168	100%
FY 2010 Total	18,977	97%	618	203	1%	313	2%	19,493	100%
FY 2011 Total	21,068	98%	696	223	1%	202	1%	21,493	100%
FY 2012 Total	19,092	98%	592	254	1%	171	1%	19,516	100%
FY 2013 Total	17,782	98%	577	265	1%	216	1%	18,263	100%
FY 2014 Total**	21,140	98%	489	351	2%	110	1%	21,601	100%
FY 2015 Total	21,459	96%	509	630	3%	122	1%	22,211	100%
FY 2016 Total	23,081	96%	625	939	3%	315	1%	24,335	100%

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* Percentages are rounded to the nearest percent.
** Reduced number of sections required in FY 2014 result from RIT's move to a semester-based academic calendar.

Access Services: Staff Training

NTID Access Services offers interpreter, notetaker and real-time captionist training to both staff, apprentice and student service providers. Notetaker training is provided to hearing RIT students hired to take classroom notes for deaf and hard-of-hearing students taking classes in the other colleges of RIT. Staff and apprentice members enjoy in-service training courses, seminars and workshops throughout the year designed to increase knowledge and skills.

Programs	Number Enrolled				
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
In-Service Training for Interpreters	104	59	73	165	118
Notetaker Training	262	417	330	282	363
Real-Time Captionist Training	6	4	5	9	10
Total	**372**	**480**	**408**	**456**	**491**

Access Services Professional Development Program Participants
> Workshops: 1,347
> In-Service Trainings (IST): 118

Persistence, Graduation & Employment

Of NTID's FY 2016 graduates, 94 percent of those seeking employment were employed in 2017.

Valerie Horn, far left, a Public Policy major from Cortland, New York, and Keith Ericksen, far right, a Criminal Justice major from Evanston, Illinois, joined Mary Ellen Tait, second from left, and Pam Christopher '90, '93, '02, third from left, from the NTID Center on Employment (NCE) to present the NCE workshop "Working Together: Deaf and Hearing People" to New York State Assembly staff. Valerie and Keith both interned with Assembly members in the summer.

Persistence, Graduation and Employment Highlights

Preparing deaf and hard-of-hearing students to live and work in the mainstream of society is the primary reason NTID was established in 1965. Prior to 1965, there were few postsecondary educational opportunities for deaf and hard-of-hearing students and virtually none in technical studies. As a result, nearly 85 percent of deaf adults in the early 1960s found themselves in unskilled or semi-skilled jobs.

Today, NTID's highly successful academic programs and services are leading graduates to successful careers in a broad range of fields. Over the past five years, 94 percent of graduates who chose to enter the labor force found employment that is commensurate with the level of their education and training. Figures for 2016 graduates show that 94 percent, or 122 of the 130 students who chose to enter the workforce, found employment.

These statistics reflect the quality of an NTID education and its value. According to a study conducted by NTID with the Social Security Administration (SSA) in 2013, deaf and hard-of-hearing graduates from NTID far outearn those graduating from other institutions of higher education. Specifically, at age 50, $58,000 is the median salary for those graduating from NTID with a bachelor's degree, which is $17,000 more than those graduating from NTID with an associate degree, and $37,000 more than those graduating from other institutions of higher education. NTID deaf and hard-of-hearing graduates also experience higher rates of employment over their lifetimes than those graduating from other institutions of higher education.

Quality employment and higher earnings accrue to college graduates. Generally, students who withdraw fare no better earnings-wise than their peers who never went to college. With this in mind, NTID employs a variety of innovative strategies to improve persistence. All first-year students take Freshman Seminar, which undergoes continuing curriculum revisions to better address the challenges that these students experience. Students who appear to have a higher risk of attrition during their first year are identified and work closely with their Freshman Seminar instructor, counselor/academic advisor and academic chairperson. NTID requires all first-year students to meet with their counselor/academic advisor to review their program requirements, identify courses for the following semester and review their individual plan of employment that was developed with their vocational rehabilitation (VR) counselor, if receiving VR support, and plan of study for degree completion.

NTID's Retention Committee is dedicated to identifying retention issues that impact students' persistence from first-year transition through graduation. The AY 2016-2017 Retention Committee focused on reviewing the Step Up! program for first-year African American, Latino American, and Native American (AALANA) students in the past several years, analyzing exit interview results from NTID's Counseling and Academic Advising Services, examining other institutional systems that promote student retention and identifying strategies to increase the retention of NTID transfer students.

Persistence is a continuing concern for NTID. However, NTID's first-year retention and overall graduate rates continue to exceed national averages when compared to hearing students in associate and bachelor's degree programs in other colleges and universities. Notwithstanding these positive comparisons, NTID continues to work at improving its persistence to graduation rate.

For AY 2016-2017, RIT/NTID awarded 301 associate, bachelor's and master's degrees. Of those graduates, 42 percent earned associate degrees, 49 percent earned bachelor's degrees and 10 percent earned master's degrees. Thirty-six percent of degrees were granted to minority students.

First-Year Persistence Rates

Since there is variability from year to year in terms of persistence rates for entering cohorts of students, NTID monitors and reports annually on persistence using a three-year moving average. The table below presents information about three-year moving averages for first-time, full-time, degree-seeking NTID-supported undergraduate students since 2000. Thus, the most recent three-year average is reported for the 731 students who were first-time, full-time, degree-seeking in the years 2014, 2015 and 2016. Data in the table below indicate that for the most recent three-year period, 76 percent of new students persisted to the second year. Disaggregated rates can be found on the following page.

First-Year Persistence Rates*			
Three-Year Entry Cohort	Number in Cohort	Number Registering Second Year	Overall Persistence Rate
2000, 2001, 2002	674	479	71%
2001, 2002, 2003	646	464	72%
2002, 2003, 2004	625	442	71%
2003, 2004, 2005	594	418	70%
2004, 2005, 2006	607	422	70%
2005, 2006, 2007	697	498	71%
2006, 2007, 2008	804	607	75%
2007, 2008, 2009	861	650	74%
2008, 2009, 2010	844	627	74%
2009, 2010, 2011	780	577	74%
2010, 2011, 2012	827	597	72%
2011, 2012, 2013	855	658	77%
2012, 2013, 2014	814	623	77%
2013, 2014, 2015	779	596	77%
2014, 2015, 2016	731	553	76%

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* Three-year averages for first-time, full-time, degree-seeking students registering for fall term. Students in the ASL-English Interpretation program, the Master of Science program in Health Care Interpretation and the Master of Science program in Secondary Education are not included.

Persistence, Graduation & Employment

Persistence to Graduation for Deaf and Hard-of-Hearing Students

Nationally, four-year public and private colleges have a first-year persistence rate of 81 percent. This compares to an 86 percent persistence rate for first-year NTID students across four-year degree programs. Students admitted to NTID have ACT composite scores that are comparable to students in two-year colleges with open admissions policies; yet, first-year persistence rates at NTID are comparable with those of institutions admitting students who are far better prepared academically. The table below also indicates that NTID's graduation rates (39 percent for students admitted into sub-bachelor-level programs and 65 percent for those in bachelor-level programs) are much higher than public colleges with traditional or selective admission standards.

National and NTID Persistence Rates		
Colleges	**First-Year Persistence Rate***	**Graduation Rate***
Two-Year Institutions	61%	29%
NTID Sub-Baccalaureate**	**72%**	**39%**
Four-Year Institutions	81%	59%
Other RIT Colleges (NTID Baccalaureate)**	**86%**	**65%**

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*   Source of national estimates: www.nces.ed.gov
**   NTID calculates first-year persistence and graduation rates using a three-year moving average.

Degrees Granted: FY 2013 to FY 2017

During the past five years, NTID has awarded an average of 339 degrees annually. The number for FY 2017 was 301. During this same time frame, the number of students achieving bachelor's and master's degrees has increased. This change is indicative of the demands being made by deaf and hard-of-hearing persons for access to higher-level programs and NTID's success in shifting its resources to accommodate the increasing numbers of students seeking higher degrees. In FY 2017, 91 of the 301 graduate and undergraduate degrees and certificates (36 percent) were granted to students from minority backgrounds.*

Six different degree levels are eligible to be awarded to deaf and hard-of-hearing graduates of RIT.

Sub-Baccalaureate Certification

1. An *Associate in Occupational Studies* (AOS) degree requires 45-52 semester credit hours of technical instruction and permits students to enter their careers directly upon graduation. In addition to completing technical courses satisfactorily, students must complete 15 semester credit hours in the NTID general education curriculum, as well as other required semester credit hours determined by their program of study.

2. An *Associate in Applied Science* (AAS) degree permits students to enter their careers directly upon graduation, or in many cases, to transfer to a baccalaureate program in the other colleges of RIT. Completion of this degree requires 48-52 semester credit hours of technical instruction. In addition to the technical courses, students must complete 24 semester credit hours in general education courses, primarily offered through RIT's College of Liberal Arts as well as other required credit hours as determined by their program of study.

3. The *Associate in Science* (AS) degree is an associate+bachelor's degree for students seeking admission to bachelor-level studies. This degree requires completion of 60-63 semester credit hours, half of which must be from liberal arts and science; the rest are from technical and professional areas.

Bachelor's/Master's Degrees

4. A *Bachelor's* degree is awarded to students who complete all required courses to graduate from a four- or five-year program in one of RIT's other eight colleges. A bachelor's degree requires completion of 120-128 semester credit hours.

5. A *Master's* degree is awarded to students who complete all required courses to graduate from a two- or three-year graduate program in one of RIT's other eight colleges. The credit requirements vary among programs, but a minimum of 30 semester credit hours at the graduate level is required.

Doctoral Degrees

6. A *Doctorate in Philosophy* (Ph.D.) degree is awarded to students who complete all courses, research, examinations, defense of dissertation and submission of a final accepted dissertation to graduate from a program within one of RIT's other eight colleges. The credit requirements vary among programs, but a minimum of three years of full-time study and 60 semester credit hours at the graduate level, with at least 18 credit hours of research, are required.

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* Minority status is either unknown for 49 of these 301 graduates or the graduate has international visa status.

Degrees Granted: FY 2013 to FY 2017 (continued)
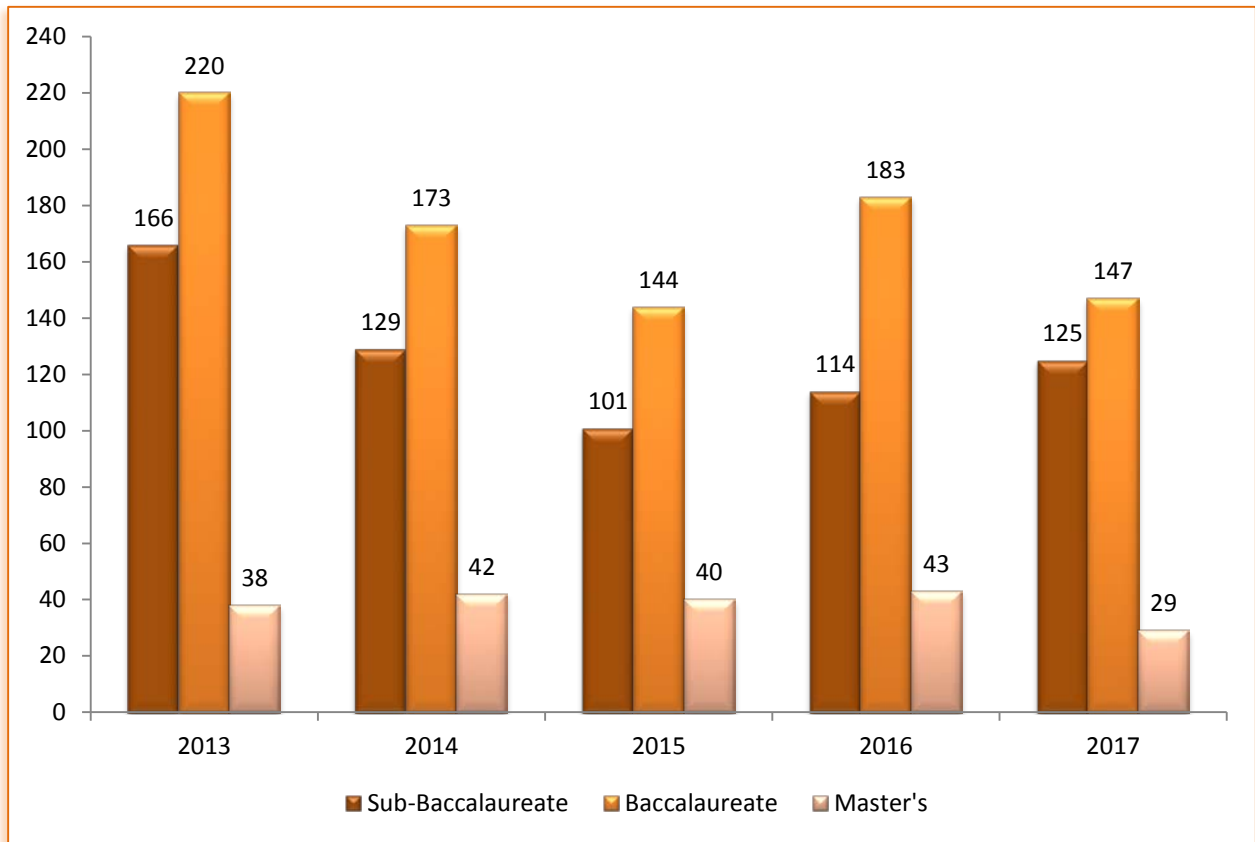
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Sub-Baccalaureate*	39.2%	37.5%	35.4%	33.2%	41.5%
Baccalaureate*	51.8%	50.3%	50.5%	54.2%	48.9%
Master's**	9.0%	12.2%	14.1%	12.6%	9.6%

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*   This number includes hearing graduates from the ASL-English Interpretation programs.
** This number includes deaf and hard-of-hearing graduates from RIT, as well as deaf, hard-of-hearing and hearing graduates from the Master of Science program in Secondary Education.

Graduates by Program Areas

Of all the degrees awarded to NTID students on the RIT campus in FY 2017, 54 percent were through programs offered by NTID and 47 percent through the other colleges of RIT. Historically, 64 percent of the degrees have been awarded from NTID and 36 percent from the other RIT colleges. This change is the result of increased demand by students for entry into bachelor-level programs, better articulation between NTID and RIT curricula and improved and expanded access/support services.

Data on minority status of these graduates appear in the Diversity and Inclusion section.

	FY 2017		CUMULATIVE* (FY 1970 – FY 2017)	
	Number of Graduates	Percentage of Graduates	Number of Graduates	Percentage of Graduates
NTID				
Career-Focused and Associate+Bachelor's Degrees	125	42%	4,359	51%
ASL-English Interpretation Bachelor	24	8%	319	4%
ASL-English Interpretation Associate	0	0%	465	5%
ASL-English Interpretation Certificate	0	0%	8	0%
Master of Science in Secondary Education	11	4%	384	4%
Subtotal NTID	**160**	**54%**	**5,535**	**64%**
Other Colleges of RIT**				
College of Applied Science and Technology	14	5%	751	9%
Saunders College of Business	27	9%	450	5%
B. Thomas Golisano College of Computing and Information Sciences	20	7%	205	2%
Golisano Institute for Sustainability	0	0%	1	0%
Kate Gleason College of Engineering	7	2%	101	1%
College of Health Sciences and Technology	6	2%	30	0%
College of Imaging Arts and Sciences	24	8%	640	8%
College of Liberal Arts	22	7%	533	6%
College of Science	9	3%	180	2%
School of Individualized Study	12	4%	170	2%
Subtotal Other Colleges	**141**	**47%**	**3,061**	**36%**
Total	**301**	**100%**	**8,596**	**100%**

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*   Graduates are summarized uniquely according to their most recent, highest level of degree completion.
**   Includes bachelor's and master's degrees granted by the other colleges of RIT, as well as some associate degrees.

Time Required to Complete a Degree

With the exception of deaf and hard-of-hearing students directly admitted to an RIT college other than NTID, students who are deaf or hard of hearing take a longer time to complete a degree than hearing students. There are many reasons for this, not the least of which is academic preparedness. Deaf and hard-of-hearing students admitted to NTID generally are academically behind their 18- to 19-year-old hearing counterparts. Many enter NTID with ACT composite scores of less than 16 and reading comprehension and language skills between

7th- and 9th-grade levels. Therefore, considerable time and effort is devoted to remediation and career exploration. In addition, most programs have between one and three academic term requirements for cooperative education experiences (paid employment in a field related to study), while some programs require more than three terms of cooperative education. This can extend program length by approximately one year. The table below shows the average number of active terms and years elapsed between entry and date of degree.

Time Required to Complete a Degree: FY 2017 Graduates		
First Degree Category	Average Active Terms*	Average Active Years*
Bachelor's degree**	10.3	4.3
AS/AAS degree	8.1	3.5
AOS degree	8.0	3.4

Tiara Finch, right, a Business Technology major from Indianapolis, Indiana, shows off her associate degree with Business Studies faculty and mentor, Kathleen Szczepanek '90, '92, '93, '01, '08.

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* Does not include terms when students were withdrawn or on leave of absence.
** Does not include students graduating from the ASL-English Interpretation program.

Graduation and Employment for Recent Graduates

Employment rates are calculated using the methodology of the Bureau of Labor Statistics (BLS) in its Current Population Survey (household survey), which provides information on the labor force, employment and unemployment. As the BLS defines it, "The civilian labor force is the sum of employed and unemployed persons. Those not classified as employed or unemployed are not in the labor force. The unemployment rate is the number unemployed as a percent of the labor force. The labor force participation rate is the labor force as a percent of the population... "

NTID's labor force is the sum of those graduates who are employed and those who want to be employed. Those who do not want to be employed because they choose to continue to pursue bachelor's and master's degrees at RIT or at some other institution of higher education, or choose to become homemakers, or to be idle temporarily while traveling, etc., are not in the labor force. During FY 2016*, 266** deaf and hard-of-hearing students graduated, and 130 chose to enter the labor force. One hundred twenty-two were employed, while eight were unable to find employment. Therefore, 93.85 percent (122/130) found employment. NTID's employment rate over the past five years as calculated above is 94 percent. Of the 136 remaining graduates from 2016, 104 are continuing their education toward advanced degrees either at RIT or elsewhere, 14 are not looking for employment and 18 have an unknown status.

Degrees Granted

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Graduates	296	331	273	235	266
In the Labor Force	133	185	145	134	130
Employed	124	174	136	126	122

■ Graduates ■ In the Labor Force ■ Employed

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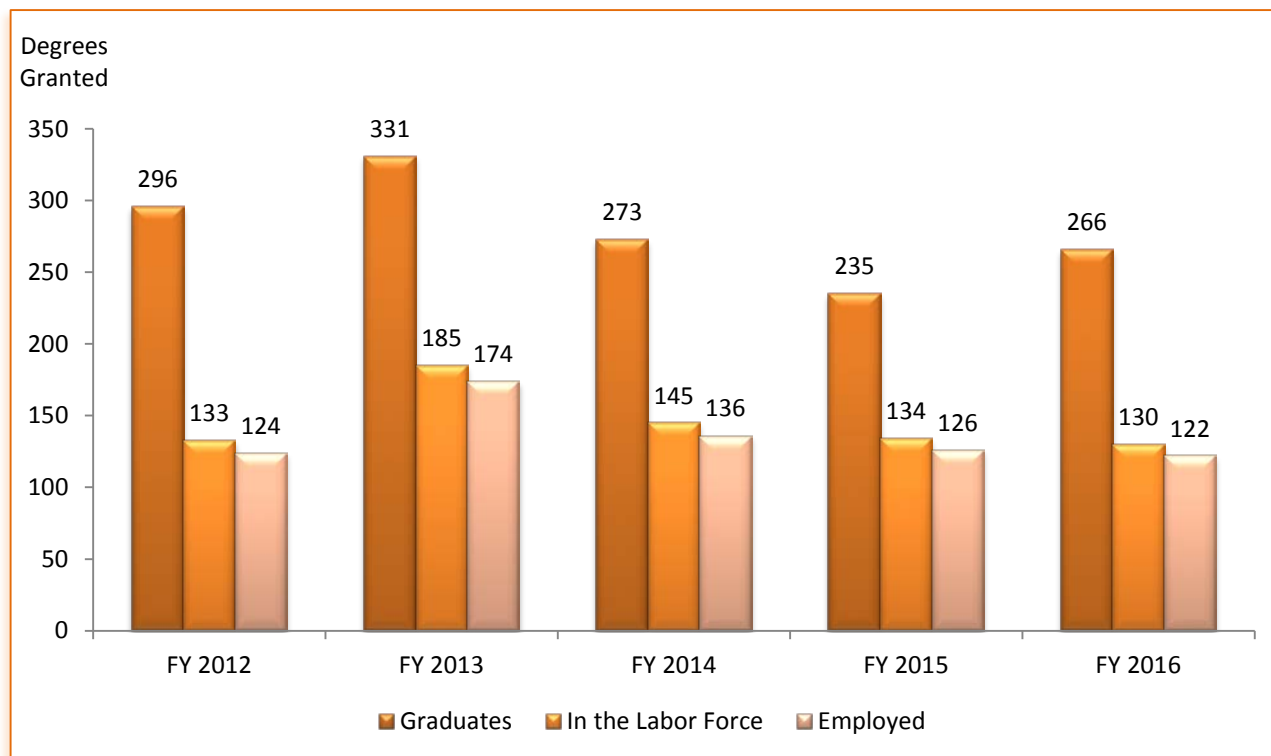
* As of the writing of this report, the employment information for 2017 is incomplete; therefore, NTID reports employment rates of 2016 graduates.

** Students are only counted once in the case of multiple degrees, and the total number of graduates does not include degrees in the ASL-English Interpretation program, the Master of Science program in Secondary Education or any certificates awarded.

Employment Services for Deaf and Hard-of-Hearing Students and Graduates

Prior to students' cooperative work experiences, NTID's Center on Employment (NCE) offers a Job Search Process course to support student learning about how to organize and conduct job search activities. Students utilize extensive NCE website and print resources to research prospective employers, identify appropriate employment opportunities and obtain information about applying for a job and working. During the academic year, employment advisors meet with students at different locations on campus and reach out to students at different NTID events. NCE staff also provide job-seeking advice to students and graduates through email, instant messaging and videophone.

During FY 2017:

- NCE personnel appeared as guest presenters to discuss the job search process in 10 sections of various technical programs.

- The 16th annual NTID Job Fair was held in October 2016 with 52 employers attending and close to 400 students and alumni participating.

    o Employer Panel for Students – representatives from CIA, Google, IRS, Merck and PAHrtners provided an overview of their company/agency and discussed the types of training and skills they seek.

- Two students and one NCE staff member attended the Career Opportunities for Students with Disabilities conference in Cambridge, Massachusetts, in November 2016.

- Students sought individualized job search assistance at various campus locations.

- Forty-one students took advantage of two sessions offered to review and advise on resumes.

- To inform students about NCE services, NCE participated in several interactive events each semester for students, along with other NTID departments and student groups.

- Two alumni and one deaf professional met with 68 students to talk about the importance of soft skills and communication strategies in the workplace.

Where Recent Graduates Are Working

In FY 2016, 53 percent of U.S. NTID graduates accepted jobs in their home states as their first jobs after graduation, while 13 percent found employment in the Rochester area and 34 percent in other areas of the country. The majority of graduates are employed in the eastern parts of the country, areas that have been strong sources of applicants for NTID.

	Percent of Placed Graduates				
	FY 2012	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016***
Area					
Rochester	23%	24%	21%	17%	13%
Home State	38%	38%	36%	55%	53%
Other	39%	38%	43%	28%	34%
Total	**100%**	**100%**	**100%**	**100%**	**100%**
Number of Graduates Placed	**124**	**174**	**136**	**126**	**122**

FY 2016 Graduate Placement by Region**

Pacific (includes Alaska & Hawaii) 10.3%

Mountain 2.6%

West North Central 4.3%

East North Central 11.2%

New England 7.9%

Middle Atlantic 41.4%

South Atlantic 17.2%

West South Central 3.4%

East South Central 1.7%

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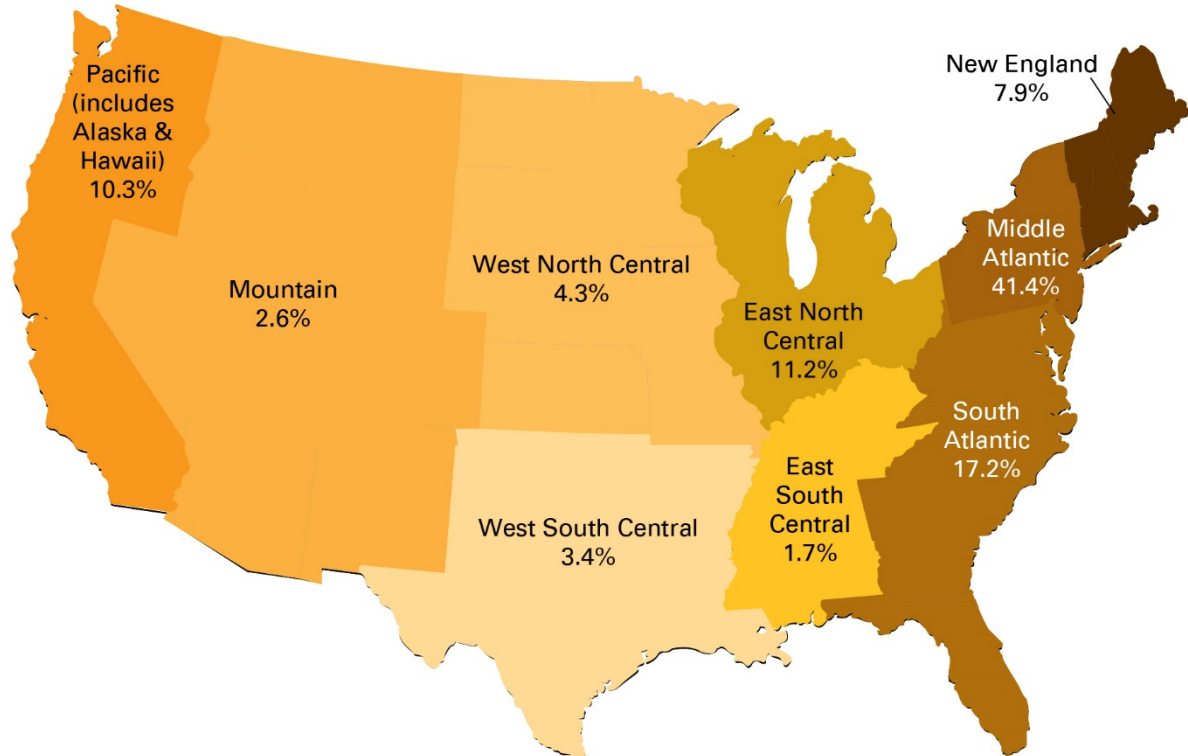
* Placement numbers for FY 2017 graduates are incomplete and will be reported next year.
** International and unknown locations are excluded.

Persistence, Graduation & Employment

Employment by Sector of the Economy

Of the last cohort of graduates tracked for employment, 70 percent have acquired jobs in business and industry, 20 percent in education/non-profit and 10 percent in government.

Sector	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016*
Business/Industry	65%	60%	61%	75%	70%
Education/Non-Profit	24%	31%	28%	16%	20%
Government	11%	9%	11%	9%	10%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

John Macko '85, standing right, director of the NTID Center on Employment (NCE) presents Working Together: Deaf and Hearing People, an interactive workshop to help employers integrate deaf and hard-of-hearing employees, to staff at the Portsmouth Naval Shipyard in Portsmouth, Maine. This workshop marked the 1,000th for NCE, which has been offering these customizable trainings for more than 30 years.

* Placement numbers for FY 2017 graduates are incomplete and will be reported next year.

Occupations of Recent Graduates: Entry Status by Labor Category

The following table reports on the occupations of employed alumni using the Standard Occupational Coding system (SOC) used by the U.S. Department of Labor. Occupations are grouped into 18 categories. Percentages among the various categories are different than seen in the *FY 2016 Annual Report*. This year shows moderate changes over many occupational categories.

Occupations of Working 2016 Graduates*	%	Sample Job Titles Held by 2016 Graduates within Category
Computer & Mathematics	18.9%	Cloud Engineer, Database Analyst, Computer Security Analyst
Sales & Related	11.8%	Marketing and Communication Assistant, Sales Associate, Fulfillment Associate
Business & Financial Operations	9.9%	Accountant, Financial Management Analyst, Regulatory Affairs Specialist
Arts, Design, Entertainment, Sports & Media	9.9%	Graphic Artist/Animator, Photographer, Writer/Reporter
Production Occupations	9.0%	CNC Operator, Freight Handler, Topcoat Inspector
Office & Administrative Support	7.2%	Office Assistant, Inventory Counter Associate
Education, Training & Library	7.2%	Teacher, Teaching Assistant
Architecture & Engineering	7.2%	Drafter, Packaging Engineer
Life, Physical & Social Science	3.6%	Associate Laboratory Technician, Research Assistant
Food Preparation and Serving Related	3.6%	Head Chef, Line Cook
Installation, Maintenance & Repair	2.7%	Technician, Mechanical Research Technician
Building and Grounds Cleaning and Maintenance	2.7%	Custodian, Landscaper
Personal Care & Service	1.8%	Disability Services Aide
Transportation and Material Moving Occupations	0.9%	Delivery Driver
Protective Service Occupations	0.9%	Special Agent
Management Occupations	0.9%	Founder
Healthcare Practitioners and Technical Occupations	0.9%	Safety Specialist
Community & Social Services	0.9%	Athletic Development Coordinator
Total	**100%**	

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* Ten of the FY 2016 employed graduates had either unknown job titles or titles too ambiguous for categorization.

Occupations of Alumni by Labor Categories

NTID alumni from graduation years 1999–2014 were surveyed in 2014.

The following table reports on the occupations of employed NTID alumni using the Standard Occupational Coding system (SOC) used by the U.S. Department of Labor. Occupations are grouped into 13 major categories.

In 2014, the percentage of alumni working in Community and Social Services more than doubled compared with the 2010 alumni survey. Also, there were more alumni in Business & Financial Operations, and fewer alumni in the Education, Training & Library category.

The next alumni survey will be completed in 2019.

Occupations of Working Alumni*	%	Sample Job Titles Held by Alumni within Category
Community and Social Services	27.8%	Outreach Coordinator, Public Health Analyst, Residential Counselor
Business & Financial Operations	14.4%	Accountant, Billing Analyst, Management Analyst, Contracting Officer
Computer & Mathematics	13.4%	Information Assurance Analyst, IT Systems Analyst, Software Engineer, User-Interface Designer
Education, Training & Library	12.4%	Admissions Counselor, Instructional Faculty, Paraprofessional Teacher
Office & Administrative Support	9.3%	Administrative Assistant, Purchasing Specialist, Conference Administrator
Architecture & Engineering	6.2%	Capital Project Engineer, Facilities Engineer, R&D Assistant
Arts, Design, Entertainment, Sports & Media	4.1%	Creative Designer, Media Artist, Product Designer
Life, Physical & Social Science	3.1%	Chemical Lab Technician, Lab Manager, Lab Technician
Production Occupations	3.1%	CNC Operator, Setup Operator, Screen Printer
Management	2.1%	Supervisor, Business Owner
Sales & Related	2.1%	Customer Relations Representative, Sales Floor Team Member
Transportation & Material Moving	1.0%	Forklift Operator
Protective Services	1.0%	Security Officer

* There were several job categories not represented by any of the graduates.

Labor Force Status and Earnings of Alumni

The figures below represent the changing employment conditions of deaf and hard-of-hearing alumni from age 24 to 60. Data represented in these figures are from a 2012 study with the Social Security Administration and Cornell University. Findings indicate that individual graduates benefit significantly from the curricula offered through NTID, regardless of graduating.

However, within the NTID alumni population, the magnitude of the benefit does depend on educational attainment. Deaf and hard-of-hearing graduates from RIT show the highest percentage generating income across the majority of working years, as compared with those deaf and hard-of-hearing graduates from other institutions of higher education.

Percentage with Labor Earnings by Age and Degree Level

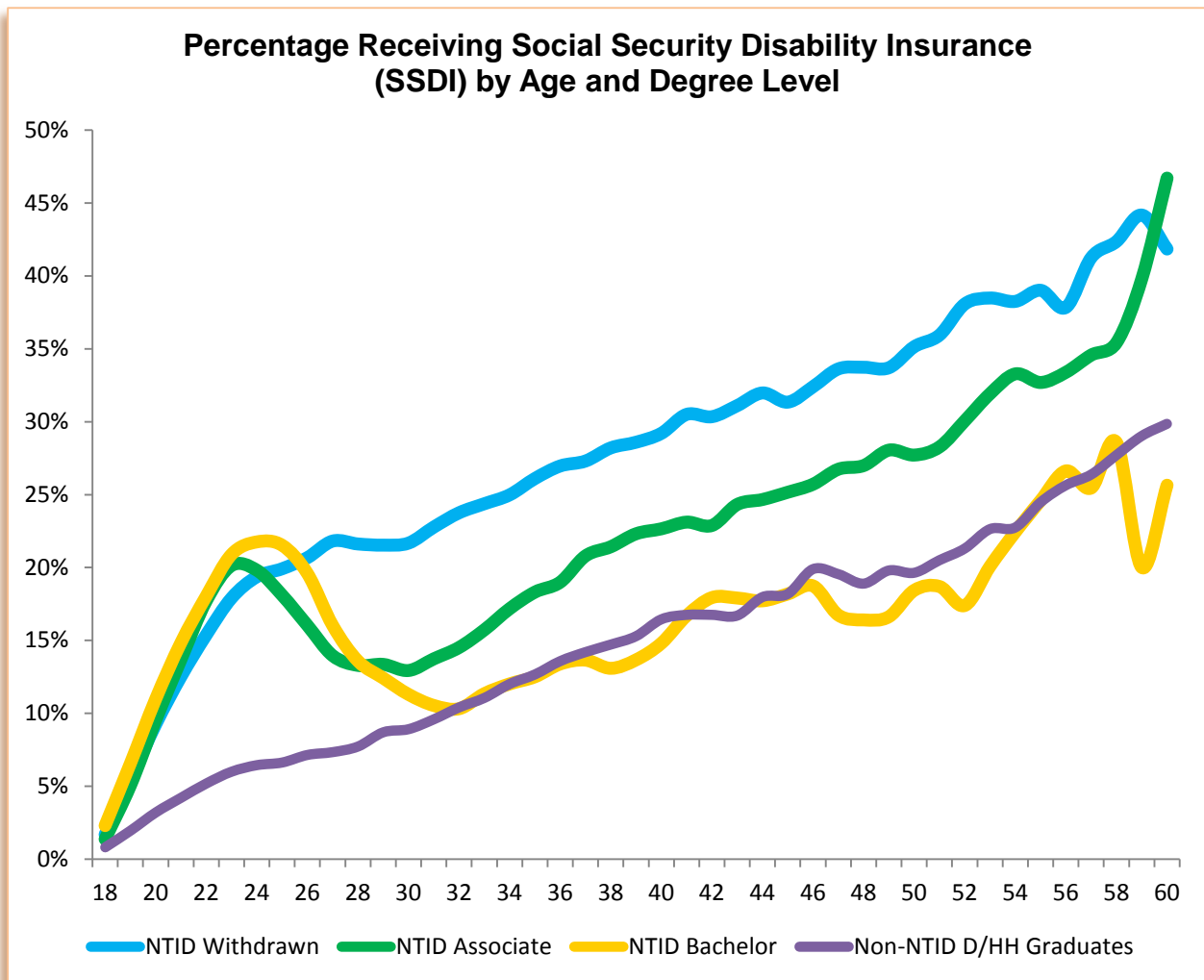Legend: NTID Withdrawn, NTID Associate, NTID Bachelor, Non-NTID D/HH Graduates

Note: From a 2012 collaborative research study conducted with the Social Security Administration and Cornell University. To accomplish this, NTID forwarded a data file with approximately 16,000 cases to the Social Security Administration. Four study groups were defined by degree attainment: 1) Deaf and hard-of-hearing graduates who completed a bachelor's degree from RIT (NTID Bachelor); 2) Deaf and hard-of-hearing associate degree earners from NTID (NTID Associate); 3) Deaf and hard-of-hearing individuals who attended RIT/NTID, but withdrew prior to degree completion (NTID Withdrawn); and 4) Deaf and hard-of-hearing graduates from other institutions of higher education (Non-NTID D/HH Graduates).

Persistence, Graduation & Employment

Labor Force Status and Earnings of Alumni (continued)

Research in collaboration with the Social Security Administration and Cornell University demonstrates the impact that an RIT/NTID education has on producing income for various categories of individuals. At age 50, NTID deaf and hard-of-hearing bachelor's degree graduates earn on average $17,000 more than those with sub-bachelor's degrees, who in turn earn $7,000 more than those who withdrew prior to degree completion from NTID, who earn $13,000 more than deaf and hard-of-hearing graduates from other institutions of higher education. Increased earnings result in greater federal tax contributions.

Labor Earnings by Age and Degree Level

Note: From a 2012 collaborative research study conducted with the Social Security Administration and Cornell University. To accomplish this, NTID forwarded a data file with approximately 16,000 cases to the Social Security Administration. Four study groups were defined by degree attainment: 1) Deaf and hard-of-hearing graduates who completed a bachelor's degree from RIT (NTID Bachelor); 2) Deaf and hard-of-hearing associate degree earners from NTID (NTID Associate); 3) Deaf and hard-of-hearing individuals who attended RIT/NTID, but withdrew prior to degree completion (NTID Withdrawn); and 4) Deaf and hard-of-hearing graduates from other institutions of higher education (Non-NTID D/HH Graduates).

Effect of College Graduation on Reduction in SSI and SSDI Payments

Research in collaboration with the Social Security Administration and Cornell University shows the role that the completion of a college degree plays in reducing dependence on continuing federal support. These differences exist for both the Supplemental Security Income (SSI) and the Social Security Disability Insurance (SSDI) programs. At age 40, NTID deaf and hard-of-hearing graduates collect SSI at a rate of less than 2 percent, as compared to 8 percent for deaf and hard-of-hearing graduates from other institutions of higher education.

Percentage Receiving Supplemental Security Income (SSI) by Age and Degree Level

Legend: NTID Withdrawn, NTID Associate, NTID Bachelor, Non-NTID D/HH Graduates

Note: From a 2012 collaborative research study conducted with the Social Security Administration and Cornell University. To accomplish this, NTID forwarded a data file with approximately 16,000 cases to the Social Security Administration. Four study groups were defined by degree attainment: 1) Deaf and hard-of-hearing graduates who completed a bachelor's degree from RIT (NTID Bachelor); 2) Deaf and hard-of-hearing associate degree earners from NTID (NTID Associate); 3) Deaf and hard-of-hearing individuals who attended RIT/NTID, but withdrew prior to degree completion (NTID Withdrawn); and 4) Deaf and hard-of-hearing graduates from other institutions of higher education (Non-NTID D/HH Graduates).

Persistence, Graduation & Employment

Effect of College Graduation on Reduction in SSI and SSDI Payments (continued)

While a smaller percentage of deaf and hard-of-hearing students collect SSDI in their collegiate years, by age 50, 18 percent of NTID deaf and hard-of-hearing bachelor's degree graduates collect SSDI, as compared with 20 percent of deaf and hard-of-hearing graduates from other institutions of higher education. As made evident by the chart below, the impact that a degree has on SSDI payment collection is substantial.

Percentage Receiving Social Security Disability Insurance (SSDI) by Age and Degree Level

Legend: NTID Withdrawn, NTID Associate, NTID Bachelor, Non-NTID D/HH Graduates

Note: From a 2012 collaborative research study conducted with the Social Security Administration and Cornell University. To accomplish this, NTID forwarded a data file with approximately 16,000 cases to the Social Security Administration. Four study groups were defined by degree attainment: 1) Deaf and hard-of-hearing graduates who completed a bachelor's degree from RIT (NTID Bachelor); 2) Deaf and hard-of-hearing associate degree earners from NTID (NTID Associate); 3) Deaf and hard-of-hearing individuals who attended RIT/NTID, but withdrew prior to degree completion (NTID Withdrawn); and 4) Deaf and hard-of-hearing graduates from other institutions of higher education (Non-NTID D/HH Graduates).

Diversity and Inclusion

More than one-third of NTID's student body is from minority groups.

NTID Performing Arts Program produced "DanceTales," a dance performance incorporating multicultural stories and folklore from around the world as inspiration for a variety of dances, including jazz, ballet, hip-hop, tap, modern dance, folk dance and multiple cultural dances.

Diversity and Inclusion Highlights

Students

As of fall 2017, the number of U.S. deaf and hard-of-hearing minority students at NTID is 403*, one of the larger numbers in the past five years. FY 2018 highlights follow:

- Forty percent of the fall entering class is from minority groups. The percentage in the total student body is 37 percent, which is more than triple what it was 20 years ago.

Faculty and Staff

In addition to seeking faculty and staff members who are experts in their field and well versed in teaching techniques for deaf and hard-of-hearing students, NTID has undertaken recruitment and persistence strategies to attract and keep qualified minority and deaf and hard-of-hearing employees and employees with disabilities. NTID's commitment to nurturing a multicultural community and providing role models for its increasingly diverse student body is positively reflected in the demographic composition of its faculty and staff.

Of 62 employees from ethnic minority populations, 26 are Black or African American, 10 are Hispanic/Latino and 26 are other minorities.

Of 578** total number of employees, 132 are deaf or hard of hearing.

Of the 174 employees who are deaf or hard of hearing or are members of a minority group, 134 are in executive, faculty or exempt positions. Note that some individuals count in more than one category.

NTID's commitment to diversity and inclusion has become an integral component of the college's plan of work. Department heads and faculty and staff members are making concerted efforts to recruit, hire and retain individuals from diverse categories. In the past year, 23 percent of all hires were either minority individuals or individuals who are deaf or hard of hearing.

On September 22, 2017, NTID faculty, staff and students gathered for RIT's raising of the Sign Union flag to commemorate the International Week of the Deaf.

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* Does not include students enrolled in the ASL-English Interpretation program, the Master of Science program in Health Care Interpretation or the Master of Science in Secondary Education program.

** Of the 578 employees, 559.97 are covered by non-research/grant funds.

Diversity and Inclusion Philosophy

NTID provides educational programs that prepare graduates to live and work in a changing global community and to enhance their lifelong learning. To succeed in the global workplace, students need to develop a solid understanding of the diversity of the workplace and possess the knowledge, skills and attributes to thrive in such an environment. The composition of the student body and of the faculty and staff who encounter students needs to reflect that diversity.

Diversity continues to be a focus in higher education and, more significantly, in society at large. Diversity adds richness to educational endeavors, particularly as the college strives for inclusion. Inclusion fosters a society in which members of diverse ethnic, racial, religious and other social groups are able to participate and develop individual traditions within the context of a community.

NTID prepares young people who are deaf or hard of hearing to be ready to enter a global community. With the continuing shifts in national and international demographics, fulfilling this commitment requires that students be prepared to enter a progressively more diverse society and workplace. Students need to develop the willingness, the knowledge and the skills to live and work in such an environment. This is critical if they are to gain the understanding necessary to participate actively in society and contribute in meaningful ways to their own success and that of the community in which they live.

In addition to preparing students to enter society and the workplace, NTID's academic environment must respond to the needs of people who are both deaf or hard of hearing and from minority backgrounds. NTID's commitment to recognize, celebrate and value cultural diversity and individual differences is grounded in the continuing efforts of this country to forge a pluralistic society. It does not arise merely from political pressure or rest solely on public law; instead, it is based on a composite of NTID's mission, a changing student body and the changing nature of the world. An educational institution has a responsibility not only to reflect society, but also to lead in promoting positive change within that society.

- RIT's Division of Diversity and Inclusion advocates for and advances the concerns and needs of the human, cultural and ethnic diversity of the RIT community. Persistent diligence is given to the specific needs of the underrepresented minority populations on campus. The goal is to increase partnerships that foster greater community understanding and appreciation.

- RIT's Campus Week of Dialogue offers campus members an opportunity to acknowledge, better understand and offer resolution to the important challenges experienced by members of the RIT community. This event engages faculty, staff and students in dialogue that ultimately heightens their sense of awareness and comfort levels, enabling constructive dialogue while addressing difficult issues related to diversity. The featured keynote presenter for the 2017 Expressions of King's Legacy Celebration in January was Fredericka Whitfield, weekend anchor of *CNN Newsroom* and daughter of Mal Whitfield, five-time Olympic medalist and Olympic champion in the 800 meters at the 1948 and 1952 Summer Olympics. Fredericka Whitfield has covered national and international stories over three decades in broadcast journalism—from the Olympic Games to wars in Afghanistan and Iraq. She began her career as a morning anchor in Charleston, South Carolina, moving on to positions as a reporter and anchor with *NBC News*, the *Today Show* and *Dateline NBC*, then CNN in 2002. In 2004, she was part of the CNN team receiving the prestigious Alfred I. DuPont Award for coverage of the tsunami disaster in Southeast Asia. She contributed to national and international stories that garnered Emmy and Peabody Awards for comprehensive coverage of Hurricane Katrina in 2005, the 2010 Gulf Oil Spill and the 2011 Arab Spring. Whitfield received Ebony's award for Outstanding Women in Marketing and Communications in 2005.

- Diversity training is offered regularly through the RIT Center for Professional Development as well as within the college in advance of each faculty search, supported by RIT's Office of Faculty Recruitment and Retention.

- The NTID Diversity Group promotes the best possible learning, living and working experience for Black or African American, Hispanic/Latino and American Indian or Alaska Native members of the RIT/NTID community. The group's areas of focus include: RIT/NTID community involvement, professional development and serving as a resource for NTID's special assistant to the president on diversity. The group includes approximately 40 members.

- In 2017, NTID established the Office of Diversity and Inclusion, and Stephanie Smith Albert, pictured here, 1988 alumna of NTID's accounting program, was appointed its first director. In her new role, Albert is responsible for all NTID issues relating to diversity and inclusion, monitoring NTID's progress on RIT-wide and NTID-specific initiatives and goals and identifying issues to bring to the NTID president and his administrative council, as well as the RIT vice president and associate provost for diversity and inclusion. She also will keep current on diversity, inclusion, equal opportunity and access regulations and issues in higher education; present on these topics to internal groups of faculty, staff and students; and work with student leaders and other units within the college, including the NTID Diversity Group, to support diversity-specific initiatives.

Admissions Activity by Ethnicity

Forty-nine percent (229) of this year's 638 deaf and hard-of-hearing applicants were students from minority backgrounds. The FY 2018 entering class of deaf and hard-of-hearing students included 117 minority students, who represent 43 percent of the newly admitted deaf and hard-of-hearing students.

	FY 2014*	%	FY 2015*	%	FY 2016*	%	FY 2017*	%	FY 2018*	%
Total Applicants	833		796		860		771		638	
Non-Minority	350	58%	339	58%	327	54%	308	51%	238	51%
Minority	253	42%	246	42%	284	46%	291	49%	229	49%
Acceptances	507		464		488		432		435	
Non-Minority	265	60%	272	63%	246	57%	235	57%	226	56%
Minority	177	40%	159	37%	186	43%	179	43%	181	44%
Registrations	381		324		340		305		289	
Non-Minority	205	62%	192	62%	177	58%	171	58%	153	57%
Minority	127	38%	111	38%	126	42%	123	42%	117	43%

New students participate in the Tiger Walk, the opening march before RIT's Convocation for New Students and Families.

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* Figures do not include admissions activity in the ASL-English Interpretation program, the Master of Science program in Health Care Interpretation or the Master of Science program in Secondary Education. Percentages are of individuals for whom NTID has data, less those with international visa status.

Diversity and Inclusion

Ethnicity of Entering Students

The FY 2018 entering class included 126 minority students, who represent 40 percent of the entire incoming class. The FY 2018 entering class of deaf and hard-of-hearing students included 117 minority students, who represent 43 percent of the newly admitted deaf and hard-of-hearing students.

	FY 2015	%	FY 2016	%	FY 2017	%	FY 2018	%
Deaf and Hard-of-Hearing Undergrad and Grad Students								
American Indian or Alaska Native	*		*		*		*	
Asian	29	9.8%	27	8.9%	27	9.3%	25	9.3%
Black or African American	32	10.8%	33	10.9%	22	7.6%	26	9.6%
Hispanic/Latino	42	14.2%	52	17.2%	53	18.3%	50	18.5%
Native Hawaiian or Other Pacific Islander	*		*		*		*	
White	185	62.5%	177	58.4%	171	59.2%	153	56.7%
Two or More Races	8	2.7%	13	4.3%	10	3.5%	15	5.6%
Non-Resident Alien (International)	10		13		11		11	
Unknown Race/Ethnicity	18		24		5		8	
Subtotal Minority Deaf and Hard-of-Hearing Undergrad and Grad Students	111	37.5%	126	41.6%	118	40.8%	117	43.3%
Subtotal Deaf and Hard-of-Hearing Undergrad and Grad Students	**324**		**340**		**305**		**289**	

	FY 2015	Percent Minority	FY 2016	Percent Minority	FY 2017	Percent Minority	FY 2018	Percent Minority
Other Enrollments								
ASL-English Interpretation	40	13.9%	40	20.5%	46	8.9%	42	22.5%
Master of Science in Secondary Education**	16	0.0%	15	23.1%	17	33.3%	5	0%
Total Minority Enrollments	**116**		**137**		**126**		**126**	
Total Enrollments	**380**		**395**		**368**		**336**	
Overall Percent Minority		**33.9%**		**38.6%**		**36.4%**		**40.3%**

* Frequency counts small and not reported for confidentiality.
** Includes 4 to 15 non-matriculated students.

Ethnicity of Enrolled Students

Minority enrollment at NTID has steadily increased from 8 percent in FY 1988 to 37 percent in FY 2018, more than four times what it was 29 years ago.

Until FY 2000 the number of international students was limited to 10 percent by a federally mandated cap. As a result of the reauthorization of the Education of the

Deaf Act in 1998, the cap on international students was increased to 15 percent. However, a significant decrease in support from Vocational Rehabilitation in Canada and limited resources of students from other countries have had a negative impact on international enrollment.

	FY 2015	%	FY 2016	%	FY 2017	%	FY 2018	%
Deaf and Hard-of-Hearing Undergrad and Grad Students								
American Indian or Alaska Native	*		*		*		*	
Asian	99	9.7%	115	10.9%	117	11.6%	114	11.5%
Black or African American	113	11.1%	120	11.4%	103	10.2%	99	10.0%
Hispanic/Latino	137	13.5%	151	14.3%	151	15.0%	144	14.5%
Native Hawaiian or Other Pacific Islander	*		*		*		*	
White	639	62.8%	637	60.3%	598	59.2%	589	59.4%
Two or More Races	28	2.8%	31	2.9%	34	3.4%	37	3.7%
Non-Resident Alien (International)	40		44		39		43	
Unknown Race/Ethnicity	140		120		73		46	
Subtotal Minority Deaf and Hard-of-Hearing Undergrad and Grad Students	378	37.2%	419	39.7%	412	40.8%	403	40.6%
Subtotal Deaf and Hard-of-Hearing Undergrad and Grad Students	**1,197**		**1,220**		**1,122**		**1,081**	

	FY 2015	Percent Minority	FY 2016	Percent Minority	FY 2017	Percent Minority	FY 2018	Percent Minority
Other Enrollments								
ASL-English Interpretation	146	15.8%	151	17.3%	140	14.5%	147	15.5%
Master of Science in Secondary Education**	44	6.7%	42	13.3%	30	30.4%	19	23.1%
Master of Science in Health Care Interpretation	N/A		N/A		8	*	15	*
Total Minority Enrollments	**397**		**446**		**441**		**431**	
Total Enrollments	**1,387**		**1,413**		**1,300**		**1,262**	
Overall Percent Minority		**34.3%**		**36.6%**		**37.6%**		**37.1%**

*   Frequency counts small and not reported for confidentiality.
** Includes 4 to 15 non-matriculated students.

Diversity and Inclusion

First-Year Student Persistence and Graduation Rates by Diversity Categories

NTID enrolls students with diverse backgrounds. This diversity has increased significantly during the past decade. However, there are noticeable differences among the various groups in terms of persistence and graduation rates. In FY 2008, the Department of Education requested that NTID's performance indicators in the areas of persistence and graduation be consistent with IPEDS methodology. The information below follows this methodology.

First-Year Persistence Rates for First-Time Full-Time Freshmen*
Three-Year Moving Averages

Fall 2014-2016 Cohort	Black or African American	Asian	Hispanic/Latino	Non-Resident Alien (International)	White
Cohort Count	71	68	112	15	413
Persisted to Second Year	47	63	75	13	315
First to Second Year Persistence Rate	**66%**	**93%**	**67%**	**87%**	**76%**

Six-Year Graduation Rates for First-Time Full-Time Freshmen*
Three-Year Moving Averages

Fall 2009-2011 Cohort	Black or African American	Asian	Hispanic/Latino	Non-Resident Alien (International)	White
Cohort Count	89	29	93	15	409
Graduated Within Six Years	28	15	35	6	196
Six-Year Graduation Rate	**31%**	**52%**	**38%**	**40%**	**48%**

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* Figures reported do not include students in the ASL-English Interpretation program or the Master of Science program in Secondary Education. Specific data for those two programs are included on separate pages for those programs.

Graduates by College and Program Areas: Minority Status

This table shows minority student graduates in the
academic program areas.

| | FY 2017 Number of Graduates | | |
	Minority	Non-Minority	Total*
NTID			
Career-Focused and Associate+Bachelor's Degrees	48	60	125
ASL-English Interpretation	**	19	24
Master of Science in Secondary Education	**	7	11
Other Colleges of RIT*			
College of Applied Science and Technology	**	8	14
Saunders College of Business	6	12	27
B. Thomas Golisano College of Computing and Information Sciences	9	8	20
Golisano Institute for Sustainability	0	0	0
Kate Gleason College of Engineering	**	**	7
College of Health Sciences and Technology	**	**	6
College of Imaging Arts and Sciences	7	10	24
College of Liberal Arts	**	16	22
College of Science	**	**	9
School of Individualized Study	**	9	12
Total*	**91**	**161**	**301**

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*   Totals include small counts shown as two asterisks (**), which are not displayed because of confidentiality. Also included are individuals with unknown race/ethnicity and international visa status. Neither are considered minority or non-minority.
**   Frequency counts small and not reported for confidentiality.
***   Includes bachelor's and master's degrees granted by the other colleges of RIT, as well as some sub-baccalaureate degrees.

Diversity and Inclusion

Diversity Report: Faculty and Staff

NTID continues to emphasize and encourage the hiring, promotion and persistence of women, minorities and individuals who are deaf and hard of hearing. Appropriate representation in each category remains a priority for NTID, given the ever-increasing ethnic diversity in the student body. In the chart below, individuals may appear in more than one category.

FY 2017

	Total Employees	Female	Black or African American Alone	Hispanic /Latino Alone	Other Racial/ Ethnic Category	Deaf and Hard of Hearing
Faculty*	164	83	10	**	10	71
Percent		51%	6%	**	6%	43%
Exempt Staff*	133	76	7	**	7	39
Percent		57%	6%	**	6%	29%
Executive/ Administrative Manager*	61	27	**	**	**	19
Percent		44%	**	**	**	31%
Non-Exempt Staff						
Real-Time Captionist	54	46	0	**	**	**
Percent		87%	0%	**	**	**
Interpreter	142	125	**	**	8	**
Percent		88%	**	**	6%	**
Technical/ Clerical	85	70	6	**	**	21
Percent		82%	8%	**	**	25%
Total	**578***	**400**	**26**	**10**	**26**	**132**
Percent		**69%**	**5%**	**2%**	**5%**	**23%**

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* Of the 57 executive/administrative managers, 24 are included on the faculty line and 33 are included on the exempt staff line. Therefore the numbers in the Executive/Administrative Manager row are not included in the column totals, since they already are included in the faculty or exempt staff lines.
** Frequency counts small and not reported for confidentiality.
*** Of the 578 employees, 559.97 are covered by non-research/grant funds.

Diversity Report: Faculty and Staff Applicants

RIT/NTID tracks minority status and gender of applicants via voluntary self-identification. A summary of those data are provided below. Individuals may be counted in more than one category.

NTID Applicants for Posted Positions
October 1, 2016 – September 30, 2017

	Number of Positions Posted	Total Applicants	Number of Applicants by Category					
			Female	Black or African American Alone	Hispanic /Latino Alone	Other Racial /Ethnic Category	White Male	Unknown
Faculty	22	140	52	19	9	36	51	11
Exempt Staff	27	364	219	57	32	52	95	21
Non-Exempt Staff*	70	673	481	63	53	56	153	25
Total	**119**	**1,177**	**752**	**139**	**94**	**144**	**299**	**57**

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* Includes real-time captionists, interpreters and technical and clerical positions.

Diversity and Inclusion

Diversity Report: Faculty and Staff Hiring Results

During FY 2017, individuals from an ethnic minority
or who were deaf or hard of hearing totaled
23 percent of all new hires and women totaled
65 percent of all new hires. Individuals may appear
in more than one category.

FY 2017

	Total New Employees	Female	Black or African American Alone	Hispanic /Latino Alone	Other Racial /Ethnic Category	Deaf and Hard of Hearing
Faculty	11	6	*	*	*	*
		55%	*	*	*	*
Exempt Staff	12	6	*	*	*	*
		50%	*	*	*	*
Non-Exempt Staff						
Real-Time Captionist	9	*	*	*	*	*
			*	*	*	*
Interpreter	22	*	*	*	*	*
			*	*	*	*
Technical/Clerical	15	*	*	*	*	*
		*	*	*	*	*
Total	**69**	**39**	**7**	*	*	**2**
		65%	12%	*	*	3%

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* Frequency counts small and not reported for confidentiality.

Diversity Report: Faculty and Staff Termination Results

During FY 2017, 8 percent of terminations were individuals from ethnic minorities and 75 percent were women. In the chart below, individuals may appear in more than one category.

FY 2017

	Total Terminated Employees	Female	Black or African American Alone	Hispanic/Latino Alone	Other Racial /Ethnic Category	Deaf and Hard of Hearing
Faculty	17	8	*	*	*	*
		47%	*	*	*	*
Exempt Staff	6	*	*	*	*	*
		*	*	*	*	*
Non-Exempt Staff**	29	22	*	*	*	*
		76%	*	*	*	*
Total	**52**	**39**	*	*	*	**8**
		75%	*	*	*	15%

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* Frequency counts small and not reported for confidentiality.
** Includes technical and clerical positions, real-time captionists and interpreters.

Diversity and Inclusion

Research, Innovation & Creativity

RIT/NTID received a $2.6 million, five-year award from the NIH's National Institute on Deafness and Other Communication Disorders to study the neurological, linguistic and behavioral outcomes for deaf individuals after childhood. Here, Matthew Dye, left, director of NTID's Deaf x Laboratory and grant leader, sets up a test on NTID research associate Brennan Terhune-Cotter with the help of Sara Kimbley, an Experimental Psychology master's student from Lakeland, Florida. Sara is one of the scholars in the Rochester Bridges to the Doctorate Program.

Research

NTID Research Overview

NTID determines topics for research on the basis of research priorities derived from both internal and external sources, including the NTID National Advisory Group and the U.S. Department of Education. NTID also seeks public input on its deafness-related research priorities through direct mailings of questionnaires to individuals and stakeholder organizations, focus groups at national professional meetings, publications and websites. The results of these solicitations are used to identify topics of strategic importance. NTID faculty also contribute to special institutional projects established in response to immediate needs identified by the NTID administrative team and long- and short-term projects related to performance indicators established by the U.S. Department of Education. In addition to strategic research – largely focused on deafness and the deaf experience – NTID supports the research of scholars teaching in any NTID academic area including mathematics, science, business and other disciplines. This research activity creates new knowledge that is passed along to NTID students and provides opportunities for them to participate in research and acquire research skills in a broad array of academic fields.

Office of the Associate Dean of Research (OADR)

Robert Pollard, Ph.D., associate dean of research

FY 2017 marked the first full year of operation for the Office of the Associate Dean of Research (OADR) under the leadership of a permanent ADR. The mission of the OADR is to increase the level of funded research in the college and to support and sustain the research enterprise. The office is responsible for facilitating NTID efforts in evidence-based research relevant to deaf and hard-of-hearing individuals, including teaching and learning, communication and language, employment success and access technology. In addition to providing leadership for strategic research in the college, the office supports all research and grant-related activity by faculty in the college and plays a key role in expanding NTID's research portfolio.

The office focused on three priorities in FY 2017: building the research community, professional development for principal investigators (PIs) and providing fiscal and other forms of support for funded and proposed research projects.

a. Realignment of the research community

Over the past five years, the organization of research at NTID has shifted significantly. Previously, NTID supported a group of research faculty, largely grouped into a department dedicated to research in strategic areas of interest for the college. RIT's adoption of the teacher-scholar model (around 2011) has fundamentally changed the organization of research. The colleges of RIT, including NTID, presently require that newly-hired tenure-track faculty hold terminal degrees in their fields, and that faculty members applying for tenure exhibit significant achievements in both instruction *and research within their fields of expertise*. Several years ago, the NTID research department was disbanded, and each of the current teacher-scholars is assigned to an academic department. Thus, researchers are now spread across NTID departments.

In January 2017, the OADR held a research retreat to promote communication among researchers and elicit ideas for increasing the level of research in the college. A total of 23 members of the faculty and four faculty moderators from other RIT colleges attended the full-day retreat. The program included time for the faculty to work in small groups on four key areas: strategic research directions; the transition from career researchers to teacher-scholars; the place of discipline-based research at NTID; and the relationship of NTID to the other colleges of RIT.

Recommendations from multiple working groups stressed the value of a) revitalizing the research community by creating opportunities for researchers in diverse NTID departments to interact with one another and b) increasing the level of research collaboration with colleagues in the other colleges of RIT.

b. Professional development for principal investigators

Professional development for principal investigators is a priority for the OADR. In FY 2017, the ADR led a group of eight early career faculty to a conference in the Washington, D.C., area. The *CUR Dialogues*, hosted by the Council for Undergraduate Research, brings participants in direct contact with program officers from the major research funding agencies (National Science Foundation, National Institutes of Health, Department of Education, etc.). At the conference, the program officers present information on funding opportunities offered by their agencies and give tips for proposal ideas and preparation. Individual meetings with program officers take place in addition to the more formal program sessions.

The OADR also funded the attendance at an intensive proposal writing workshop, hosted by CUR, for two members of the faculty who were preparing proposals for extramural funding.

c. Post-award support

The OADR centralized post-award support within its office so that principal investigators will have the benefit of highly-trained research administrators. The NTID post-award support team consists of three departmental research administrators who work closely with the RIT sponsored programs administrator for the college.

d. Support for new researchers and new research initiatives

The OADR's Scholarship Portfolio Development Initiative (SPDI) is designed to support early-stage researchers and soft-funded research faculty on pilot projects related to new lines of research. In FY 2017, SPDI offered intramural funds of up to $10,000 for one-year projects, and the program required an experienced researcher to serve as a mentor. This year, three new proposals were funded.

- The Effectiveness of Shadowing for Improving L2 Users' ASL Output.
  Jason Listman, Ed.D. PI$9,950   Dr. Joseph Bochner (mentor)

- Identification of Novel Sodium/Chloride-Independent and Calcium-Sensitive MPP+ Uptake Pathway Present in Dopaminergic Cells.
  Viet Le, Ph.D., PI $10,000   Dr. Todd Pagano (mentor)

- Interaction of Racial & Linguistic Perceptions in Evaluative Responses to Market Signing Features.
  Joseph Hill, Ph.D., PI $10,000   Dr. Peter Hauser (mentor)

RESEARCH CENTERS

This section summarizes the activities and accomplishments of each of the NTID Research Centers during FY 2017. When there is collaboration among several research centers, the activity is described in connection with the research center leading the effort.

Center on Access Technology (CAT)

Gary Behm '78, '81, director

The Center on Access Technology (CAT) was established in 2006 to address the challenges of developing and/or adapting new technologies for use by persons who are deaf or hard of hearing in order to improve access to personal communication within educational environments, social settings and the workplace. CAT investigates, evaluates and reports on the most effective use of access technologies, and trains individuals in order to accelerate the implementation of best practices within postsecondary

education. The center's main strands of research include cyber-infrastructure and provision of remote services, classroom access technologies, mobile and personal communication technologies, training and evaluation services and audio technologies that are of particular interest to deaf and hard-of-hearing people.

The NTID CAT Lab strives to involve students in the R&D enterprise. Faculty and students at all levels (associate, bachelor's, master's and doctorate) collaborate on multidisciplinary projects leading to real solutions.

Automated Speech Recognition, Gary Behm '78, '81, PI

In FY 2017 the CAT Lab continued to research and experiment with automated speech recognition (ASR) technology, a development that has grown out of interdisciplinary research in linguistics, computer science and electrical engineering. Present efforts in this area aim to automatically recognize and reliably translate spoken language into text. CAT's goal is to explore the use of the technology in classroom, employment, health care and social settings.

NTID's ASR team is led by the CAT Lab and includes experts in linguistics, electrical and acoustical engineering and computer science from NTID and RIT's Kate Gleason College of Engineering, College of Liberal Arts, B. Thomas Golisano College of Computing and Information Sciences and College of Applied Science and Technology. Based on a series of evaluations and team meetings with IBM and Microsoft, the team selected Microsoft's Cognitive Services Speech Recognition as the premier solution for further development and application of ASR in the classroom.

The team tested ASR in five classes within RIT's College of Science and NTID, with topics ranging from biology to secondary education. In collaboration with Microsoft, the team is building a catalog of recordings and documents to further refine and improve speech recognition. The ASR team also is conducting beta tests of the newly released PowerPoint Translator, which is a plugin for PowerPoint that can create automatic transcription during a presentation. The team also developed recommendations for specific microphones and computing devices that perform well in various ASR scenarios.

The CAT team also presented at the Microsoft Research gathering in Redmond, Washington, to discuss access challenges in the classroom and how technology can bridge the gap to provide better access to deaf and hard-of-hearing students in postsecondary education.

NTID Center on Cognition and Language (NCCL)

Peter C. Hauser, Ph.D., director

The research mission of the NTID Center on Cognition and Language (NCCL) is to conduct translational, transdisciplinary and cross-institutional research on cognitive, linguistic and sociocultural factors to advance learning, well-being and health within the deaf population. NCCL globally disseminates these discoveries to foster a transformative impact on deaf people's lives. During FY 2017, the center personnel gave 18 national presentations and 13 international presentations to academic, medical, education and community audiences.

The center's training mission is to offer state-of-the-art research mentorship programs and activities for deaf scholars and, ultimately, to increase the number of deaf scientists in social, behavioral and biomedical research disciplines. During FY 2017, 14 RIT/NTID undergraduate and graduate students were actively involved in this center's activities, in addition to one post-doctoral fellow.

The NCCL operates four laboratories, which are described below, and two research educational programs.

1. Deaf x Laboratory

Matthew Dye, Ph.D., director

The mission of the Deaf x Laboratory is to investigate how the deaf experience ("x") shapes cognition, including attention and the executive brain functions. During FY 2017, the Deaf x Laboratory worked on two major projects:

- Development of Temporal Visual Selective Attention in Deaf Children
  National Science Foundation: BCS-1550988   09/01/2016 – 08/31/2019
  Matthew Dye, PI; Peter Hauser, co-PI $449,947

  This longitudinal study focuses on the separate effects of auditory deprivation and language deprivation on the development of temporal visual selective attention in deaf children. During FY 2017, the project team collected data from deaf and hard-of-hearing children across the nation who are in sign-based and speech-based educational programs.

- Neurocognitive Plasticity in Young Deaf Adults: Effects of Cochlear Implantation and Sign Language Experience
  National Institutes for Health: NIDCD R01DC016346   07/01/2017 – 06/30/2022
  Matthew Dye, PI $2,604,026

  The overall aim of this project is to examine the effects of auditory development, cognitive function and language outcomes in a large group of young deaf adults. The results of this study will provide much-needed and timely answers regarding the possible benefits of early cochlear implantation and early intervention with sign language that parents and policy-makers seek as they determine how best to intervene with the next generation of deaf infants who are cochlear implant recipients or candidates. Preliminary grant planning occurred during FY 2017.

2. Deaf Health Laboratory

Jessica Cuculick '98, '02, Ed.D., co-director   Deirdre Schlehofer, Ed.D., co-director

The Deaf Health Laboratory investigates health issues in the deaf and hard-of-hearing community including preventive health, health literacy, health knowledge and the deaf experience in health care. During FY 2017, lab personnel worked on two projects:

- Mechanisms of Health Literacy and Information Accessibility
  National Institutes of Health: 1R01DC014703-01A1   09/17/2015 – 08/31/2020
  Subaward from University of Michigan $600,189
  Peter Hauser, PI; Scott Smith, co-PI

  This project investigates the mechanisms of health literacy among deaf people, focusing particularly on how deaf people navigate and use websites to obtain health-related information. The project team hired a research program coordinator, provided multi-site data collection training and eye-tracking technology training, developed the experiment and began participant recruitment plans. During FY 2017, the project team collected data from deaf, hard-of-hearing and hearing individuals in Rochester, Chicago and Flint metropolitan areas.

- Deaf College Students' Interactive Health Literacy: A Mixed Methods Approach

  NTID Scholarship Portfolio Development Initiative (SPDI)   09/01/2016 – 05/29/2018

  Jessica Cuculick '98, '02, PI; Scott Smith, co-PI $9,987

  This project is exploring health literacy relative to age-related preventive health knowledge among deaf college students. Preliminary results have shown that deaf college students have less access to health information at home and in the community. The project is now investigating different personal and demographic factors that account for the variations found in deaf young adults' health knowledge and literacy.

3. Deaf Studies Laboratory (DSL)

Joseph Hill, Ph.D., director

This laboratory investigates language attitudes and audism. Specifically, one strand of research focuses on Black Deaf families' experiences and language attitudes towards Black American Sign Language (ASL). The other research strand investigates how deaf persons' experiences of stigma impact education, health and career success. The laboratory has been developing an implicit measure of prejudice about deaf individuals ("audism") to understand the effects of prejudice, and the deaf individual's internalization of it, on learning, psychological resilience and academic/vocational success.

- Interaction of Racial and Linguistic Perspectives in Evaluative Responses to Marked Signing Features

  NTID Scholarship Portfolio Development Initiative (SPDI)   01/02/2014 – 12/31/2018

  Joseph Hill, PI $10,000

  This project explores the language attitudes toward different dialects in American Sign Language. The first study will elicit various signing samples from black and white sign models using the video prompts. The sign models will be paired in intra-racial and inter-racial dyads and all sign models will be prompted to re-tell the video scenes to their partners in signing. The marked linguistic features in their signing samples will be identified in subsequent frequency and structural analyses. The second study will have the marked and unmarked signing samples evaluated by black and white deaf subjects using the typical language evaluation questionnaire.

4. Sign Language Laboratory

Kim Kurz '93, '95 Ph.D., director

The Sign Language Laboratory investigates issues in sign language acquisition, educational interpreting and sociolinguistics, including language variation and language attitudes.

- Cognitive Benefits of Learning a Second Language in a Second Modality

  Scholarship Portfolio Development Initiative (SPDI)   09/01/2016 – 08/15/2018

  Kim Kurz '93, '95, PI; Matthew Dye, Co-PI $9,960

  The major goal of this study is to understand the cognitive underpinnings of learning a sign language for individuals whose native language is spoken. During FY 2017, the project team collected longitudinal data from undergraduate students in American Sign Language courses and Spanish courses (control).

- ASL Test Development Project

  NTID Office of the President   09/01/2016 – 09/29/2019

  Peter Hauser, PI

This project will develop multiple measures of American Sign Language (ASL) competency to advance research on sign language and to provide organizations ways to document the ASL skills of their students, clients or employees. In FY 2017, the project's research assistant professor and research coordinator were hired. The project team began developing ASL tests' items.

Education Programs

The NCCL presently plays a major role in two ongoing research education programs for deaf and hard-of-hearing individuals: the *Rochester Bridges to the Doctorate Program*, and the *Rochester Post-Doctoral Partnership.* These programs are detailed in the section below entitled: "Research Educational Development Programs for DHH Individuals."

Selected Publications

Barnett, S.B., Cuculick, J.A., DeWindt, L., Matthews, K., & Sutter, E. (2017). *National Center for Deaf Health Research: CBPR with the Deaf and Hard-of-Hearing Community.* In N. Wallerstein, B. Duran, J. Oetzel & M. Minkler, (Eds.), *Community-Based Participatory Research for Health* (3rd ed.) (pp. 157-174). New York: Jossey-Bass.

Bayley, R., Hill, J., Lucas, C., & McCaskill, C. (2017). Perceptions of Black American Sign Language. In E. Benson, B. Evans, and J. Stanford (eds.), *Language Regard: Methods, Variation, and Change.* Cambridge: Cambridge University Press.

Dye, M.W.G., Kushalnagar, P., and Henner, J. (2017). Concerns with data analysis and interpretation. Commentary on: Geers et al. (2017). Early sign language exposure and cochlear implantation benefits. *Pediatrics*, June 2017, e20163489.

Dye, M.W.G., and Pascalis, O. (2017). Editorial: The sensation-cognition interface: Impact of early sensory experiences on cognition. *Frontiers in Psychology, 8*, 1742.

Hill, J., & McCaskill, C. (2016). Reflections on the Black ASL project. *Sign Language Studie*s, 17(1), 59-63.

Kurz, K.B., Hauser, P.C., & Listman, J. (2016). Work-related resilience: Deaf professionals' perspectives. *Journal of ADARA, 50*, 88-109.

Owens, K., Lapham, A., Cuculick, J., Blizzard, D., Bempong, J., & Schlehofer, D. (2017). Women, Deaf culture and health literacy: Examining the gap between deaf and hearing college students. *Journal of Women's Health*, 26, A-1-A-57.

Quinto-Pozo, D., Singleton, J., & Hauser, P.C. (2017). A case of specific language impairment in a Deaf signer of American Sign Language. *Journal of Deaf Studies and Deaf Education, 22,* 204-218.

Seymour, J.L., Low, K.A., Maclin, E.L., Chiarelli, A.M., Mathewson, K.E., Fabiani, M., Gratton, G., and Dye, M.W.G. (2017). Reorganization of neural systems mediating peripheral visual selective attention in the deaf: an optical imaging study. *Hearing Research, 343*, 162-175.

Center for Education Research Partnerships (CERP)

Marc Marschark, Ph.D., director

The Center for Education Research Partnerships (CERP) is charged with establishing and joining research partnerships concerning development and learning among deaf and hard-of-hearing students across the lifespan and in various educational settings (www.rit.edu/ntid/cerp). Primary activities include promotion of related collaboration among individuals, educational institutions and organizations, both

nationally and internationally. These and other activities focus on bridging research and practice to optimize educational opportunities and success for students who are deaf or hard of hearing. This notion of serving as a collaborator and an incubator for new ideas lies at the heart of the center.

CERP was established to contribute to the education of deaf and hard-of-hearing students of all ages through the sharing of research findings and expertise with others. The success of this initiative is evidenced in CERP faculty members making 22 invited/keynote lectures in addition to another 13 conference presentations this year. CERP collaborated with colleagues at more than a dozen schools and universities in the U.S. and abroad through ongoing research, joint publications, grant proposals and the publication of five books (plus one book translation).

CERP's dissemination activities (invited presentations and publications) and ongoing research seek "simply to change the world through better understanding and improving the education of deaf students." In FY 2017, three CERP faculty members published or have in press 22 peer-reviewed journal articles, five book chapters and two books. CERP members also co-chaired the organization and hosting of two international conferences on deaf education.

Beyond this sharing of knowledge related to deaf education, CERP activities bring greater visibility to RIT/NTID, thus creating additional opportunities for both collaborations and extramural funding. This year, as in most years, CERP responded to hundreds of requests for information and/or assistance. CERP's Educating Deaf Children website (www.educatingdeafchildren.org) and the Raising and Educating Deaf Children: Policy, Practice, and Outcomes (www.raisingandeducatingdeafchildren.org) each had tens of thousands of visitors. Both websites are supported by donations from private foundations and schools for the deaf.

During FY 2017, CERP continued work on a $2.3 million research grant from the National Institute for Deafness and Other Communication Disorders (NIDCD) for a project entitled *Language, Learning, and Cognition among Deaf Students with and without Cochlear Implants* and a subcontract from SRI International, partnering in a project for the U.S. Department of Education (Institute of Education Sciences, IES) on transition of deaf and hard-of-hearing high school students. CERP received a grant from a private foundation for the creation and testing of a language-accessible health survey for deaf and hard-of-hearing learners, in collaboration with RIT Wellness and the American College Health Association.

CERP Research Findings: The most important accomplishments this year are new and exciting findings concerning the language and cognitive foundations of learning by deaf and hard-of-hearing students with and without cochlear implants. The grants from NIDCD and IES are providing insights and longitudinal exploration of ways in which student and family characteristics as well as spoken language and sign language interact with cognitive abilities to affect student learning, psychosocial functioning and academic outcomes. Results have implications for K-12 programming as well as college-level settings; indeed, they pertain to lifelong learning by deaf, hard-of-hearing and hearing students of all ages.

Selected Publications

Blom, H., Marschark, M., & Machmer, E.J. (2017). Simultaneous communication supports learning in noise by cochlear implant users. *Cochlear Implants International, 18*, 49-56.

Bull, R., Marschark, M., Nordmann, E., Sapere, P., and Skene, W.A. (in press). The approximate number system and domain-general abilities as predictors of math ability in children with normal hearing and hearing loss. *British Journal of Developmental Psychology.* doi:10.1111/bjdp.12204

Crowe, K., Dammeyer, J., Lehane, C., & Marschark, M. (2017). Achievement, language, and technology use among college-bound deaf learners. *Journal of Deaf Studies and Deaf Education.* doi:10.1093/deafed/enx029

Research (continued)

Dammeyer, J., Lehane, C., & Marschark, M. (2017). Use of technological aids and interpretation services among children and adults with hearing loss. *International Journal of Audiology, 56*, 740-748.

Gehret, A., Trussell, J. W., & Vacca, L. M., (2017). Approaching undergraduate research with students who are deaf and hard-of-hearing. *Journal of Science Education for Students with Disabilities, 20*(1), 4.

Marschark, M. & Knoors, H. (in press). Sleuthing the 93% solution in deaf education. In H. Knoors & M. Marschark (Eds.), *Evidence-based practice in deaf education*. New York, NY: Oxford University Press.

Marschark, M., Kronenberger, W.G., Rosica, M., Borgna, G., Convertino, C., Durkin, A., Machmer, E., Schmitz, K. L. (2016). Social maturity and executive function among deaf learners. *Journal of Deaf Studies and Deaf Education, 22*, 22-34.

Marschark, M., Paivio, A., Spencer, L.J., Durkin, A., Borgna, G., Convertino, C., & Machmer, E. (2017). Don't assume deaf students are visual learners. *Journal of Physical and Developmental Disabilities, 29*, 153-171.

Newman, L.A., Marschark, M., Shaver, D.M., & Javitz, H. (2017). Course taking effects on postsecondary enrollment of deaf and hard-of-hearing students. *Exceptionality, 25*, 170-185.

Trussell, J. W., Hasko, J., Kane, J., & Cascioli, T., (in press). The effects of interactive storybook reading with preschoolers who are deaf or hard of hearing. *Topics in Early Childhood Special Education.* Advanced online publication, doi:10.1177/0271121417720015

Research Center for Teaching and Learning (RC*f*TL)

Sara Schley, Ed.D., director

The primary mission of the RC*f*TL is to create a sustainable setting in which diverse teams of faculty and students conduct research that will improve deaf education, expose students to research practice and prepare a future generation of NTID educational researchers and scholars. A secondary mission is to facilitate the development of collaborative partnerships between NTID faculty and faculty in the other colleges of RIT focused on the education of deaf and hard-of-hearing students.

Dr. Carol Marchetti, professor in the School of Mathematical Sciences in RIT's College of Science, is the faculty associate for cross-disciplinary research. She has been highly successful in researching, developing and implementing techniques for effectively teaching statistics to mixed classes of deaf and hearing undergraduate students. Her work to develop inclusive educational practices has been supported by both internal and external grants. Her participation in the RC*f*TL represents a three-year, renewable collaborative arrangement between NTID and RIT's College of Science. Dr. Marchetti collaborates with and supports NTID faculty on research projects associated with the RC*f*TL, particularly those involving external grant submissions, encourages the involvement of deaf and hard-of-hearing undergraduate and MSSE students in research and reaches out to faculty in other RIT colleges to promote collaboration on projects related to deaf education.

Research Projects

In FY 2017, RC*f*TL personnel led three federally-funded research projects:

- Communication, Access, and Persistence among Deaf and Hard-of-hearing Students in Foundational Statistics Courses.
  National Science Foundation   09/01/2014 – 08/30/2017
  Carol Marchetti, PI; Co-PIs Susan Foster, Jane Jackson,
  and Keith Mousley '78, '80 $396,986

This project is developing accessible supplemental online learning tools (SOLTs) aimed at improving the success of deaf and hard-of-hearing students in introductory statistics. Fundamental concepts are explained in video tutorials with direct ASL instruction, visuals, English and captioning. The design of each SOLT incorporates a series of micro-videos that breaks a topic into parts and explains the terms and concepts needed to understand the topic. During FY 2017, the team continued its development of SOLT videos and the construction of an assessment tool for statistics learning. It also developed and tested the prototype for a learning game, "MarsU," that provides an interactive user experience involving the use of statistics to win a student government election at the fictional university. The project is prepared to compare the learning outcomes among groups that viewed videos only, those that played the MarsU game with video tutorial support and a control group.

- Faculty in Pedagogical Exploration and Innovation for Accessible STEM Instruction with Deaf/Hard-of-Hearing Students (Collaborative Research)
  National Science Foundation   08/29/2016 – 08/28/2019
  Sara Schley, PI; Co-PIs: Stephanie Cawthon (University of
  Texas), Jessica Cuculick '98, '02 (NTID/NCCL) $443,200

  This project is developing and operating Faculty Learning Communities to teach faculty members in other colleges of RIT basic principles about instructing deaf and hard-of-hearing students. In FY 2017 the project offered its first Faculty Learning Community program. Faculty participants learned basic principles about instructing deaf and hard-of-hearing students and devised and tested ways of improving communication and collaboration in postsecondary classes with mixed groups of deaf and hearing students. An online "accessibility toolkit" of strategies for teaching STEM subjects in a mainstream classroom is under development.

- Deaf Education Curriculum Development and Pilot Teacher Training in Cambodia
  UNICEF
  Christopher Kurz '95, PI; Thomastine Sarchet '03, '09, Co-PI $39,002

  This project develops the curriculum for a set of train-the-trainer workshops for teachers of the deaf in Cambodia. The curriculum includes a series of modules about deaf education that will prepare general teachers to become teachers of the deaf.

Faculty and Student Mentoring Activities

A focus of the RC*f*TL involves mentoring and developing faculty research skills. Since many projects funded through the OADR's Scholarship Portfolio Development Initiative (SPDI) deal with teaching and learning, RC*f*TL personnel often serve as project mentors. Other mentoring occurs via non-funded collaboration across campus. Examples during FY 2017 included the following projects:

- Vizing's Conjecture and Zero Forcing on Graphs
  SPDI   06/01/2016-12/31/2017
  Bonnie Jacob, PI; Carol Marchetti, Stanislaw Radziszowski, mentors $10,000

- Proof in sign: communication of abstract discrete math content to students who use ASL
  PLIG   06/01/2016-06/30/2018
  Bonnie Jacob, PI; Carol Marchetti, Jobby Jacob,
  Jackie McClive, investigators $4,620

- Diversity in the RIT Classroom. Survey and manuscript project.
  Torrence Sparkman, Sara Schley.   01/01/2017 – present.

- A deaf Summer Undergraduate Research Fellow (SURF) worked with the RC*f*TL team as her first research experience. The student gave a poster presentation focusing on qualitative analysis of

faculty perspectives on participating in a faculty learning community on access and inclusion during the 26th RIT Undergraduate Research Symposium on August 4, 2017.

Grant Writing Activity

RC*f*TL personnel contributed to three proposal writing efforts and collaborated on three proposals (not listed) that were submitted by other researchers who plan to investigate issues in teaching and learning. In the latter category is a proposal submitted by the State University of Haiti to collect data on students with disabilities and document pedagogical practices of their teachers in areas of Haiti that were devastated by Hurricane Matthew on October 3, 2016. Dr. Sara Schley served as PI mentor in the proposal preparation and research design and will continue to collaborate with the team on the project (which was funded by USAID).

- Interdisciplinary Partnerships with Schools and Programs That Serve Students Who Are Deaf or Hard of Hearing and Have High-Intensity Needs to Improve Competencies of Dually-Certified Teachers.
  U.S. Department of Education   (Pending)
  Christopher Kurz '95, PI; Co-PIs: Gerald Bateman and Jessica Trussell $1,246,312

- Multimedia Materials and Access to Postsecondary Education: Exploration of Malleable Design Features for Students with Diverse Language and Communication Characteristics.
  U.S. Department of Education   (Pending)
  Sara Schley, PI; Co-PIs: Carol Marchetti, Vicki Hanson $1,399,891

  The proposed project will explore the cognitive load that students experience when viewing online class materials that have multiple areas of information input.

- Deaf Education Curriculum Development and Pilot Teacher Training in Cambodia
  UNICEF   (Awarded)
  Christopher Kurz '95, PI; Thomastine Sarchet '03, '09, Co-PI $39,002

  This project develops the curriculum for a set of train-the-trainer workshops for teachers of the deaf in Cambodia. It includes a series of modules about deaf education that will prepare general teachers to become teachers of the deaf.

Dissemination

In FY 2017, RC*f*TL personnel produced three peer-reviewed publications, one print conference proceeding and two book chapters. They also provided one workshop, gave a keynote presentation and gave an invited panel presentation, along with six poster presentations. In addition to the publications listed below, one article is in press.

Higgins, J., Kurz, C., Reis, J., & Moers, L. (2017). Lessons learned from research and development of ASL guidelines for K-12 educational assessments. In S. Cawthon & C.L. Garberoglio (Eds.), *Research in Deaf Education: Contexts, Challenges, and Considerations*, New York: Oxford University Press.

Higgins, J.A., Famularo, L., Cawthon, S.W., Kurz, C.A., Reis, J.E., & Reis, L.M. (2016). Development of American Sign Language guidelines for K-12 academic assessments. *Journal of Deaf Studies and Deaf Education.* doi: 10.1093/deafed/enw051

Lynn, M.A., Schley, S., Tobin, K., Lengyel, D., Ross, A.M., & Connelly, S.J. (2017). Deaf, hard-of-hearing, and hearing students in a freshmen biology course: how the development of social learning styles and college experiences contribute to success. *Journal of Developmental and Physical Disabilities*, special issue on research on individuals who are Deaf or Hard of Hearing, 29(1), 173-201. Doi: 10.1007/s10882-016-9512-2

Research (continued)

Marchetti, C.E., McClive, J., Jackson, J., Blatto-Vallee, G.C., Mousley, K., & Simkins, D. (2017, June), Board # 95 : Learning Tools for STEM Students: A focused exploratory project with broad potential. Paper presented at *2017 ASEE Annual Conference & Exposition*, Columbus, Ohio. https://peer.asee.org/27961

Schrlau, M., Stevens, R., & Schley, S. (2016). Inverting Core Courses in the Undergraduate Mechanical Engineering Curriculum: Heat Transfer. "Flipped Classrooms in STEM Education," a special issue of *Advances in Engineering Education*, 5(3), 1-27. http://advances.asee.org/wp-content/uploads/vol05/issue03/Papers/AEE-19-Flipping-Schrlau.pdf

Research on Employment and Adapting to Change: Center for Studies on Career Success (REACH)

Ronald Kelly, Ph.D., director   **Gerald P. Berent, Ph.D., associate director**

The goal of REACH is to conduct research on employment and factors of change, as well as career success for deaf and hard-of-hearing people. This includes conducting research on the employment and career outcomes of deaf college graduates and the examination of factors that contribute to their career and life success. These factors include: readiness for college, academic performance in college, personal characteristics, career growth, career change and related decision-making activities.

Research Projects

Researchers in the center are presently working on two projects funded by the National Science Foundation (NSF) for a combined total of $834,706.

1. <u>Deaf Learners' Acquisition of English Verbs and their Component Properties</u>
   National Science Foundation   09/01/2013-02/28/2017
   Gerald Berent, PI.; Co-PIs: Ronald Kelly, Kathryn Schmitz '95,
   Z. Chen (RIT College of Liberal Arts) and Stanley Van Horn
   (RIT Student Affairs) $300,502

   This project currently is in a one-year no-cost extension through 2/28/2018 to distribute research findings through manuscripts, presentations and the final report. Approximately 80 percent of deaf and hard-of-hearing students enter RIT/NTID under-prepared in English language and reading skills as measured by the ACT college readiness test. Verb knowledge is critical to understanding clearly the accurate meanings of college-level reading materials, comprehension of class lectures, participation in class discussions and written communication for demonstrating knowledge of course content. In addition, there is academic vocabulary unique to the content and materials covered in university-level subjects. Functional knowledge of academic English vocabulary is essential to college students' educational success. The majority of deaf and hard-of-hearing students entering college encounter English language challenges, including limited knowledge of academic English vocabulary.

   While most people cannot identify and describe the different types of verbs, almost all hearing native speakers of English accurately function with them in their daily conversations, and when reading and writing. The research project examines the verb knowledge of deaf and hard-of-hearing students and compares the results to the verb knowledge of a) hearing second-language learners of English and b) native hearing speakers of English. The objective is to obtain a better understanding of what to focus on in the teaching/learning process to improve the English language skills of deaf and hard-of-hearing students.

   To date, this research project has tested and collected data from 1,077 college students at RIT/NTID (deaf and hard-of-hearing = 472; hearing second-language learners = 481; and 124 hearing native speakers of English). Data collection ended February 2017.

Preliminary results show similarities in verb knowledge between the deaf and hard-of-hearing and the hearing second-language learners with comparable scores on the Michigan Test of English Language Proficiency. As expected, the hearing native speakers of English score significantly higher on these tests compared to both deaf and hard-of-hearing learners and hearing second-language learners.

2. <u>Stereotype Threat Effects on Deaf and Hard-of-Hearing College Students' Math Performance</u>
National Science Foundation   09/01/2014-08/31/2017
Ronald Kelly, PI; Co-PIs: J. Jamison (U of Rochester),
Peter Hauser (NTID/NCCL) and Gerald Berent $534,204

This project currently is in a one-year no-cost extension through 8/31/2018 to distribute research findings through manuscripts, presentations and the final report. Stereotyping and identity issues abound for deaf and hard-of-hearing individuals relative to their educational and career performance. This research examines stereotype threat effects in deaf and hard-of-hearing college students and the extent that negative stereotype threat results in their under-performance while being evaluated (e.g., taking math tests; or more generally when performance is being evaluated in other educational and career settings). Stereotype threat occurs when a member of a stigmatized group feels at risk of confirming, as self-characteristic, a negative stereotype about one's group. Awareness of the stereotype, beliefs that stereotypes are applicable to self-identity and evaluation in the context of stereotypes are all necessary for the experience of threat to occur and to negatively impact one's performance.

On average, approximately 85 percent of deaf and hard-of-hearing students enter RIT/NTID under-prepared with respect to math skills as measured by the ACT college readiness test. The question is whether stereotype threat effects specifically contribute to deaf and hard-of-hearing students' under performance while their math skills are being evaluated with math tests. This three-year research project has tested and collected data from 849 college students at RIT/NTID and the University of Rochester that included an Implicit Association Task study and a Stereotype Threat Effects study (deaf and hard-of-hearing = 424; and hearing = 425). Data collection ended August 31, 2017.

Briefly, the findings show that stereotype threat effects impact the math performance of deaf and hard-of-hearing college students on the three timed mathematics tests administered in this study (144 arithmetic problems = 5 minutes, 50 modular math problems = 10 minutes and 30 GRE type problems = 20 minutes). Additionally, since deaf and hard-of-hearing individuals have more than one social identity that potentially provide a mix of positive and negative identities (e.g., males are a positively stereotyped group in math domains, while females are a negatively stereotyped group in math domains), gender interacted with the stereotype threat results revealing that females consistently underperformed males on the three math tasks. Furthermore, the GRE type problems posed a far greater challenge to the deaf and hard-of-hearing participants where they performed significantly more poorly regardless of Threat or Non-Threat conditions. Multiple manuscripts are currently in progress for both the IAT and stereotype threat studies for submittal to peer-reviewed journals.

Mentoring and Consultation: REACH researchers provided consultation on design, statistical analysis and publication to seven NTID faculty members.

Dissemination

Berent, G.P., Kelly, R.R., Chen, Z., Van Horn, S., Schueler-Choukairi, T., Schmitz, K.L., Finton, E.M., Persky, K., & Rizzo, S.P. (submitted 2017). *Derivational complexity, interface knowledge, and L2 learner-deaf learner parallels in the acquisition of transitive and intransitive English verb properties.* Manuscript submitted for editorial review by *Studies in Second Language Acquisition (SSLA).*

Kelly, R.R., (in press, anticipated May 2018). The changing face of the NTID research enterprise: 1968-2017. In J. McCarthy (Ed.), *NTID 50th Anniversary History*. Rochester, NY: RIT Press, Rochester Institute of Technology.

Stinson, M.S., Elliot, L.B., & Kelly, R.R. (2017). Deaf and hard-of-hearing high school and college students' perceptions of speech-to-text and interpreting/note taking services and motivation. *Journal of Developmental and Physical Disabilities, 29*(1), 131-152. doi: 10.1007/s10882-017-9534-4.

OTHER FUNDED RESEARCH AND OUTREACH EFFORTS

Communication Research

Michael Stinson, Principal Investigator

Dr. Michael Stinson led two grant-funded research projects in FY 2017:

1. Investigating Team Knowledge Building in Complex Science and Statistics Problem Solving when the Teams Include Deaf/Hard-of-hearing and Hearing College Students, Year Two.
   National Science Foundation $499,830
   Michael Stinson, PI; Co-PIs: Lisa Elliot, Carol Marchetti (NTID/RCfTL), Judith Rentsch (University of Tennessee).

   This project is testing the contribution of team knowledge building theory to optimal solution of complex problems in teams with deaf, hard-of-hearing and hearing students. It uses statistics as the test domain. While group work often is implemented in science, technology, engineering and mathematics (STEM) courses because of its perceived pedagogical benefits, groups that consist of both a) deaf and hard-of-hearing students and b) hearing students often struggle to communicate while working on these critical STEM learning activities. Test teams with two deaf and hard-of-hearing students and two hearing students participate in one of three conditions: (a) control, (b) training and information board or (c) training, information board and messaging. The study informs development of interventions and strategies that directly translate to improved problem solving and participation by team members with diverse characteristics, including deaf and hard-of-hearing members, in STEM secondary and postsecondary classrooms and work settings.

2. Creating the Next Generation of Live Captioning Technologies, Year Two.
   NTID Internal Funding
   Michael Stinson and Matt Huenerfauth (GCCIS), PIs; Co-PI: Lisa Elliot.

   Automatic Speech Recognition (ASR), software that converts audio input of human speech into text displayed on the screen, holds exciting promise for making spoken content accessible for people who are deaf or hard of hearing– especially when captioning/transcription performed by a human is not provided or is prohibitively expensive. Unfortunately, current ASR is imperfect, especially in the noisy and complex audio environment of multi-party meetings. This project investigates how ASR technology can be used to provide live-captioning services by considering the requirements of deaf and hard-of-hearing individuals who meet in small groups with hearing colleagues, and by identifying the key technical challenges that must be addressed in a future research project.

Publications

Elliot, L., Stinson, M., Ahmed, S. & Easton, D. (in press). User experiences when testing a messaging app for communication between individuals who are hearing and deaf or hard of hearing. *Proceedings of the 19th Annual International Conference on Computers and Accessibility (ASSETS17)*, ACM, New York, NY, USA.

Research (continued)

Elliot, L., Stinson, M., Mallory, J., Easton, D., & Huenerfauth. M. (2016). Deaf and hard of hearing individuals' perceptions of communication with hearing colleagues in small groups. *Proceedings of the 18th Annual SIGACCESS Conference on Computers and Accessibility (ASSETS'16).* ACM, New York, NY, USA, 271-272. DOI: https://doi.org/10.1145/2982142.2982198

Mallory, J., Stinson, M., Elliot, L. & Easton, D. (in press). Personal perspectives on using automatic speech recognition to facilitate communication between deaf students and hearing customers. *Proceedings of the 19th Annual International Conference on Computers and Accessibility (ASSETS17)*, ACM, New York, NY, USA.

Rathbun, K., Berke, L., Caulfield, C., Stinson, M., Huenerfauth, M. (2017). "Eye movements of deaf and hard of hearing viewers of automatic captions." *Journal on Technology and Persons with Disabilities,* California State University, Northridge. http://hdl.handle.net/10211.3/190208

Schley, S. & Stinson, M. (2016). Collaborative writing in the post-secondary classroom: Online, in-person and synchronous group work with deaf, hard of hearing, and hearing students. *Journal of Postsecondary Education and Disability,* (*29*)2, 151-164.

Stinson, M.S. (in press). The importance of technologies in the education of deaf students. In M. Marschark & H. Knoors (Eds.), *Educating deaf learners: New perspectives.* New York: Oxford University Press.

Stinson, M.S., Elliot, L.B., & Kelly, R.R. (2017). Deaf and hard-of-hearing high school and college students' perceptions of speech-to-text and interpreting/note taking services and motivation. *Journal of Developmental and Physical Disabilities,* (*29*) 1, 131-152. DOI: 10.1007/s10882-017-9534-4

Stinson, M., Ahmed, S., Elliot, L., Easton, D. (in press). Using automatic speech recognition to facilitate communication between an individual who is hearing and one who is deaf or hard of hearing. *Proceedings of the 19th Annual International Conference on Computers and Accessibility (ASSETS17)*, ACM, New York, NY, USA.

Deaf STEM Community Alliance

Lisa Elliot, Ph.D., principal investigator

Deaf STEM Community Alliance: Supporting Postsecondary Deaf and Hard-of-Hearing Students in Science, Technology, Engineering and Mathematics.
Investigators: Lisa Elliot, James DeCaro, Austin Gehret

Funded by the NSF, this project completed its sixth year during FY 2017. The project has created a unique Virtual Academic Community (VAC), a cyber-infrastructure that hosts remote access and support services, an electronic resource library and a communication network for deaf and hard-of-hearing students, their instructors and access and support service providers, called the Deaf and Hard of Hearing Virtual Academic Community (DHHVAC). To date, the DHHVAC has conducted more than 160 synchronous online tutoring sessions and produced almost 400 videos to support learning resources. Nineteen STEM professionals who are deaf or hard of hearing provided mentoring advice to student participants. The DHHVAC also includes an AAA-rated accessible website according to the WEC Web Content Accessibility Guidelines (www.rit.edu/ntid/dhhvac/), and video archives on a YouTube channel (http://www.youtube.com/users/dhhvac).

The program is designed to increase graduation rates of deaf and hard-of-hearing STEM majors in postsecondary education. Grant team members are creating a model that demonstrates how an online environment can support deaf and hard-of-hearing students in mainstream settings. Cornell University (Ithaca, New York) and Camden County College (Blackwood, New Jersey) are working with NTID to pilot a national model.

Research (continued)

Publications

Gehret, A.U., Elliot, L.B., & MacDonald, J. (2017). *Active collaborative learning through remote tutoring: A case study with students who are deaf or hard of hearing. Journal of Special Education Technology, 32*(1):1-11.
http://journals.sagepub.com/doi/10.1177/0162643416681162

Toward a National Hub of Excellence for Deaf and Hard-of-Hearing Scientists

RIT/NTID is participating in a partnership with the University of Rochester (UR) to develop a National Hub of Excellence that will support the academic development, professional training and career advancement of deaf and hard-of-hearing individuals pursuing careers in biomedical and behavioral science fields. These two anchor institutions are combining their experience and expertise in research training and the education of deaf and hard-of-hearing students. The concept of the Rochester Hub is explained in the following published letter:

Buckley, G., Smith, S., DeCaro, J., Barnett, S., & Dewhurst S. (Jan. 19, 2017). Building community for deaf scientists. *Science*, 355(6322), 255.

1. **Research Educational Development Programs for DHH Individuals**

   Three NIH-funded educational development programs form the nucleus of a pipeline to support the academic development of deaf and hard-of-hearing students who aspire to careers in biomedical and behavioral science fields: RIT-RISE (for RIT undergraduate students); Rochester Bridges to the Doctorate (for RIT graduate students); and the Rochester Partnership to Advance Research and Academic Careers in Deaf Scholars (for UR postdoctoral fellows). The first award is a partnership across six colleges of RIT, and the latter two awards are in full partnership with the University of Rochester.

   RIT-RISE Scientists-In-Training Program for Deaf and Hard-of-Hearing Undergraduates
   (new award)
   Scott R. Smith, PI   Co-PIs: Vincent Samar, and Paul Craig (College of Science)

   In FY 2017, the National Institutes of Health awarded a $1.03 million grant to RIT/NTID for a scientists-in-training program under the direction of Dr. Scott Smith. The project will implement a program to prepare deaf and hard-of-hearing undergraduates to enter Ph.D. programs. It has created a cross-campus network of administrators and research mentors from NTID and its partnering colleges: RIT's College of Science, College of Liberal Arts, College of Health Sciences and Technology, Kate Gleason College of Engineering and B. Thomas Golisano College of Computing and Information Sciences. RIT-RISE will provide co-curricular programming to prepare students for entry into Ph.D. programs related to biomedical and behavioral science research. It also will contribute new credit-bearing research courses to the RIT curriculum, and provide paid, mentored research experiences for up to six selected RISE scholars.

   Rochester Bridges to the Doctorate
   NIH R25 GM107739   09/01/2013 – 05/31/2018
   Peter C. Hauser, RIT PI $1,351,243

   The Bridges program is a partnership between University of Rochester (UR) and RIT/NTID that aims to increase the number of deaf and hard-of-hearing master's degree students who go on to enroll in biomedical and behavioral science doctoral programs. The Rochester Bridges Program provides graduate scholars with unparalleled, mentored research experiences at RIT and UR.

Research (continued)

The scholars, who also take three or more doctoral-level courses at UR, receive research stipends, tuition waivers and conference travel funds. The program is administered by the NTID Center on Cognition and Language. During FY 2017, two first-year master's students and two second-year students were enrolled in the program and worked in research laboratories at RIT and UR. One of the graduates was accepted into a Ph.D. program at a research intensive institute.

Rochester Post-Doctoral Partnership
NIH K12 GM106997   07/01/2015 – 03/31/2020
Stephen Dewhurst (UR)/Richard Doolittle (RIT), PIs $401,904
Peter C. Hauser, Training Director

This program provides highly trained deaf and hard-of-hearing biomedical and behavioral scientists with the knowledge and skills to pursue research and teaching careers in academia. A partnership with the National Center for Deaf Health Research (NCDHR) at the University of Rochester (UR), this program enhances teaching opportunities at each institution to create a pipeline of deaf and hard-of-hearing scientists for careers in research and teaching in academia. During FY 2017, the two deaf post-doctoral fellows who were in the program conducted their research studies at UR. One of the fellows taught two classes at RIT/NTID. The program is affiliated with the NTID Center on Cognition and Language.

NTID also collaborated with the University of Rochester to host the first-ever Rochester Summer Research Training Institute in June 2017. The goal of the Summer Research Institute is to advance the success of deaf and hard-of-hearing individuals in entering careers in the biomedical and behavioral sciences. Open to undergraduate and graduate students, postdoctoral students, faculty and their mentors, the Institute was attended by 85 participants, including many deaf and hard-of-hearing aspiring scientists from across the country. Additional iterations of the institute are being planned for the future.

2. **Healthcare Careers Implementation Commission (HCIC)**

The Healthcare Careers Implementation Commission is an outgrowth of the National Task Force on Health Careers for Deaf and Hard-of-Hearing People (2010-2012). The task force, consisting of representatives from RIT, the University of Rochester Medical Center, Rochester Regional Health System and Gallaudet University, found that many deaf and hard-of-hearing individuals experience academic challenges, poor career guidance, low expectations and employment challenges that result in their lack of desire and ability to pursue advanced degrees and careers in the health care industry. The HCIC draws upon the faculty and staff from relevant colleges and programs across the university for the central purpose of developing educational pathways for deaf and hard-of-hearing students to prepare for careers in the health care fields.

HCIC Leadership

Scott Smith, M.D., M.P.H., Chair

During FY 2017, the Healthcare Careers Implementation Commission worked on both ongoing and new research projects to improve the health of all deaf people.

   a. Collaborated with NTID's Outreach Department to implement the third iteration of the NTID Health Care Exploration Camp summer program, the first program designed for deaf and hard-of-hearing high school students aspiring to careers in the health care fields. Twenty-two campers attended the program this year and post-program evaluations indicated that the program reinforced their desire to pursue a career in a health care field and increased the confidence in their ability to succeed.

b. Collaborated with NTID's American Sign Language and Interpreting Education (ASLIE) department to support its Certificate in Healthcare Interpreting (CHI) program (approximately 15 interpreters participate annually) and its master's degree in Health Care Interpretation that was implemented during FY 2016 (approximately eight graduate students annually).

c. Collaborated with the NTID Department of Science and Mathematics to develop a set of new AS degree programs in Applied Sciences (biology, chemistry, biochemistry, etc.). The goal is to streamline the educational pathways for NTID students who aspire to transfer to science degree programs at RIT. The proposed programs are nearing formal approval and implementation is expected for 2018.

d. Collaborated with the NTID Center on Employment (NCE) to increase potential employers' awareness of employing deaf and hard-of-hearing individuals within the health care industry through participation in national conferences of health care employers and recruiting health care employers to participate in the annual NTID Job Fair.

e. Collaborated with the Center on Access Technology (CAT) on ongoing projects to develop a workable Automated Speech Recognition (ASR) system.

f. Collaborated with the Association of Medical Professionals with Hearing Loss (AMPHL) to host the Eighth Biennial AMPHL Conference at NTID in June 2017, attended by more than 200 participants, including many deaf and hard-of-hearing health care professionals and students, as well as interpreters from all over the world, including Japan, Finland, Germany and Uruguay.

3. **Deaf Health Research**

In FY 2017, the OADR continued its support of the NCCL's Deaf Health Lab by funding a SPDI project to study the health literacy of deaf college students. This project has resulted in an abstract accepted for presentation at the upcoming Health Literacy Annual Research Conference and American Academy on Communication in Healthcare National Meeting in Baltimore. Two graduate students, one undergraduate student and a postdoctoral fellow were involved with the project and will be co-presenting with Dr. Jessica Cuculick from the NCCL Deaf Health Lab.

In FY 2017, NIH funded the study of the psychosocial management of deafness as a chronic condition. The key research question is to identify what facilitates and what poses barriers to how deaf people successfully manage being deaf in a predominantly hearing society. Dr. Robert Pollard and Dr. Scott Smith, the two PIs of this project, will collaborate with Dr. Vincent Samar from NTID as well as with Dr. Wyatte Hall and Dr. Tim Dye from University of Rochester to implement this two-year, $400,000 research project.

Publications:
Humphries, T., Kushalnagar, P., Mathur, G., Napoli, D.J., Padden, C., Rathmann, C., & Smith, S. (2017). Discourses of prejudice in the professions: the case of sign languages. *Journal of Medical Ethics*, 43(9), 648-652. doi: 10.1136/medethics-2015-103242.

Kushalnagar, P., Ryan, C., Smith, S., & Kushalnagar, R. (2017). Critical health literacy in American deaf college students. Health Promotion International. doi: 10.1093/heapro/dax022.

Research (continued)

Personnel Preparation Program

Gerald Bateman, program director

An Accountability Initiative with Special Emphasis on Recruitment of STEM and Minority Teachers of Deaf
and Hard-of-Hearing Students
U.S. Department of Education   01/01/2012 - 12/31/2016
Christopher Kurz '95, Co-director $1,247,199

In fall semester of FY 2016-17, the Personnel Preparation grant supported graduate students in the
Master of Science program in Secondary Education of Students who are Deaf or Hard of Hearing. The
program, which prepares teachers to serve deaf and hard-of-hearing students, included a comprehensive
approach to teacher accountability. The program also targets and recruits minority students to become
classroom and itinerant teachers of deaf and hard-of-hearing students.

Mobile Applications Curriculum Development Grant

Brian Trager '00, '05, Program Director

RoadMAPPs to Careers: A New Approach to Mobile Apps Education featuring a Mapp for Deaf and Hard-
of-Hearing Students
National Science Foundation   06/01/2016 – 03/31/2019
Co-directors: David Lawrence, Elissa Olsen '78, '80, '99 $820,504

The project supports the development and implementation of an associate degree program designed to
increase the number of students in the mobile application development workforce. The five-semester
degree program educates students using a native cross-platform development approach (Xamarin) to
create mobile apps for multiple platforms. Faculty in the Information and Computing Studies department
attended a one-week intensive training course in Xamarin programming.

Four new credit-bearing courses were developed for the program: Programming Fundamentals: Mobile
Domain I and Mobile Domain II (two courses), Mobile User Experience and Software Analysis and
Design. The ICS department executed an articulation agreement with the Web and Mobile Computing
program within the B. Thomas Golisano College of Computing and Information Sciences (GCCIS) so that
most of the credits from the new mobile applications development program will transfer to the BS degree
program in GCCIS.

During AY 2016-17, two students successfully completed the first full year of the program and advanced
to the second year. Paid cooperative work experiences have been pre-arranged for them during the
summer of 2018. The Mobile Apps program offered regular co-curricular learning events for ICS freshmen
to familiarize them with careers in mobile applications development and to engage them in learning
activities. The program also developed and delivered introductory units to the summer enrichment and
NTID intake programs, including Tech Boyz and Tech Girlz, Explore Your Future (EYF) and the Summer
Vestibule Program (SVP/Freshman Orientation) for the 2017 cohort. Two female students (an
underrepresented group in computing technology) enrolled as freshmen in the program in fall 2017, and
six additional students will take introductory mobile applications courses.

Substance and Alcohol Intervention Services for the Deaf (SAISD)

Keven Poore, program director

Ongoing, NYS Office of Alcoholism and Substance Abuse Services/Coordinated Care Services, Inc/
DHHS Substance Abuse and Mental Health

In FY 2017, responsibility for this program shifted to Keven Poore. SAISD has been in continuous
operation since 1979. The five staff members at SAISD provide alcohol, tobacco and other drug

information/referral, prevention/education, intervention, cross-disability professional consultation and training and support to treatment programs. The target population served includes the deaf and hard-of-hearing student population at RIT/NTID and the deaf and hard-of-hearing community in Monroe County and 15 surrounding counties in upstate New York (approximately 55,000 individuals).

STUDENT RESEARCH ACTIVITIES

Todd Pagano, Ph.D., associate dean for teaching & scholarship excellence

RIT and NTID place significant emphasis on student involvement in research. RIT's *Strategic Plan 2025* discusses the "Student-Centered Research University" as one of the five tenets of the RIT plan for "greatness through difference." NTID's *Strategic Decisions 2020* also highlights the importance of student participation in "Innovation and Scholarship Research."

FY 2017 was a very productive year for students and faculty working together on cutting-edge research projects. A record number of student researchers took advantage of funding to support their travel to present the fruits of their research at professional conferences. For the second time, NTID hosted its annual Student Research Fair, which enjoyed a 50 percent increase in student presentations over last year's successful inaugural event.

At NTID, support for student research is shared by the Associate Dean of Research Robert Pollard, who is responsible for student participation on grant-funded activity, and the Associate Dean for Teaching and Scholarship Excellence Todd Pagano, who leads NTID's effort related to student-centered discipline-based research.

Support for Student Involvement in Research

NTID has three support mechanisms to encourage student involvement in research:
- Student research micro-grants: Students (with approval of a faculty mentor) can apply for up to $1,000 in funding to support a specific research project. For example, students can request funds to purchase a specific software program or chemicals, or to pay subject fees.
    - This year, three student researchers were awarded micro-grants.

- Summer Undergraduate Research Fellows (SURF): Funds have been allocated to support NTID undergraduate students conducting research under the direction of a faculty mentor during the summer term. The funds are used to pay student stipends.
    - This year, three student researchers were awarded SURFs.

- Conference Travel Awards: Undergraduate students who have made significant progress can apply for funding to travel to a professional conference and present their findings.
    - This year, eight student researchers were supported by conference travel funds in order to present their research at professional conferences.

Student Research Fair at NTID

On April 28, 2017, more than 40 student researchers gave presentations on 30 projects at NTID's second Annual Student Research Fair. In the weeks leading up to the event, students had the opportunity to participate in a set of faculty-led workshops that focused on writing a research abstract, creating a research poster and presenting at conferences. These workshops were highly attended by student researchers (about 60 percent increase in enrollment over last year).

Members of the RIT community, including NTID's Foundation and Alumni Boards, attended the fair to interact with the student researchers. Projects presented came from the fields of health science, biochemistry, astrophysics, communication studies, access technology, education/pedagogy, Deaf culture, psychology and environmental science. The students' project titles are given below:
- Displaying Confidence from Imperfect Automatic Speech Recognition for Captioning

- High Childhood SES and Cochlear Implants Increase Performance on Print Recognition Measures of Cognitive and Literacy Development in Deaf Adults

- Sleep Quality and Aggression in Deaf and Hearing Adults

- SuperSenses

- Cherry: Sound localization for people who are DHH (deaf or hard of hearing) using TDOA (Time Difference of Arrival) technique

- Automatic Speech Recognition in a Medical Setting

- Real-time Speech Recognition for Deaf and Hard of Hearing (DHH) Rowers in Competitive Rowing

- Faculty Learning Community (FLC)

- Accessibility Strategies: Student Perspectives

- Wired to Learn: Qualitative Analysis of Using Google Hangouts for Online Tutoring

- Creating Tools for Learning Statistics: An Exploratory Project to Benefit Deaf and Hard-of-Hearing Students

- Orbital Stability of the Hierarchal Triple System HIP 3678

- A Tertiary Formation Scenario for GW150914

- Mechanical and Shape-Memory Properties of Magnetorheological Composites Using Varying Concentrations of Functional Iron Particles

- A Deaf-Friendly Adaptation of a Manufacturer's Equipment Aids Deaf Students' Learning Process

- Identifying Barriers and Perceptions Regarding Health Among Deaf and Hard of Hearing Female College Students

- Temporal Sequence Processing in Deaf Children: Cross-Sectional Data

- Cognitive Benefits of Learning American Sign Language

- The Rochester Bridges to the Doctorate

- The Role of Platelet Factor-4 (PF4 or CXCL4) in B Cell Differentiation

- Effect of lead contaminated soils on lycopene content in tomatoes (Solanum lycopersicum)

- Opportunities and Challenges for Precision Medicine and Biomarkers: A Regulatory Science Case Study

- Insertion mutagenesis to introduce HA affinity tags to PHO13 gene in yeast expression plasmids

- Detecting Pal in Gram-negative Sepsis Patients

- Method Development for the HPLC Analysis of Anthraquinones from *Rhamnus cathartica*

- Essential oil composition, antioxidant activity, and total phenolic content of *Eugenia samanensis* Alain, a species endemic to the Samaná Peninsula, Dominican Republic

- Comparison of methods for the capture of E-cigarette emissions for the determination of constituents using gas chromatography-mass spectrometry

- Photophysical Processes in Measurements of Natural Organic Matter with Increasing Tannic Acid Additions Using Multidimensional Fluorescence Spectroscopy

26th RIT Undergraduate Research Symposium on August 4, 2017

Each year RIT hosts an undergraduate research symposium that is among the largest in the country. In FY 2017, more than 30 NTID-supported students were involved in research projects that were presented. NTID student research was supported by federal grants, internal awards or faculty start-up funds. The projects represented both discipline-based research and center-based research that explore deafness and the deaf experience.
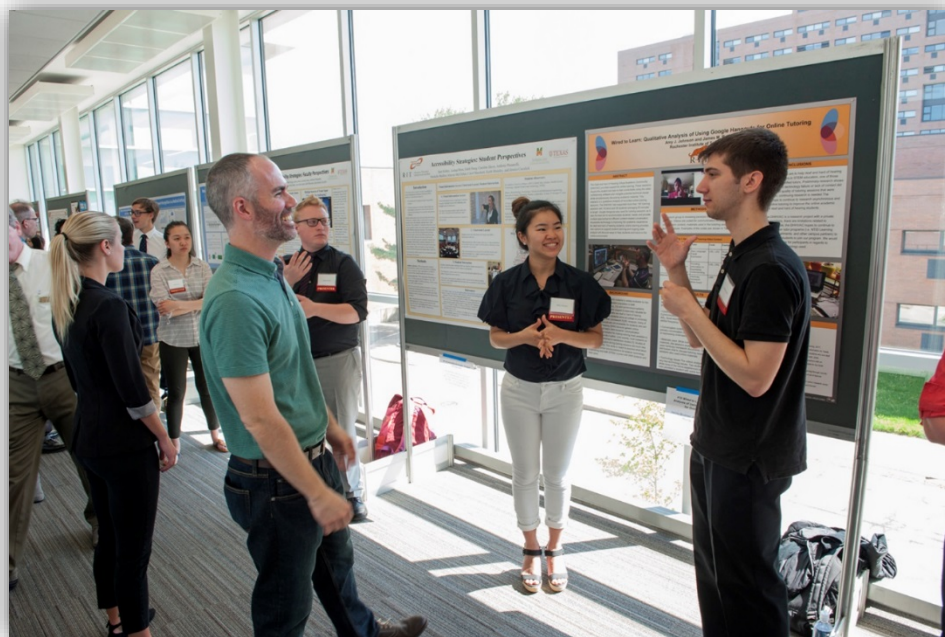
RIT/NTID hosted the annual Student Research Fair on April 28, 2017, in Rosica Hall. Here, Austin Gehret, left, instructional/support faculty Science and Mathematics at RIT/NTID learns about a research project from Amy Jade Johnson, center, a biomedical science major from Austin, Texas, and James Brunner, right, an electrical/mechanical engineering technology major from Guelph, Ontario, Canada.

Innovation and Creativity at NTID

Under the leadership of now retired RIT President William W. Destler, the university increased its emphasis on innovation and creativity, both in the curriculum and in other activities across campus.

The sampling of projects below reflects the innovative and creative activities underway within the National Technical Institute for the Deaf.

Digital Language Laboratory for Interpreting Instruction

The NTID American Sign Language and Interpreting Education department uses a computer-based digital laboratory for ASL-English Interpretation instruction. Three multimedia labs each have 10 student workstations. Each station is equipped with a computer, dual monitors, a camera and a headset with microphone. Each lab is equipped with two digital control racks, two ceiling-mounted robotic video cameras, a microphone, six speakers, an LCD projector and a separate instructor's station with room controls.

Interpreting students use digital technology to record their interpreting between American Sign Language and spoken English. The labs allow them to review their work easily and improve their interpreting skills. When finished with an assignment, students save their work to their own digital folder on the server, or they can save it to a USB stick. They also can drop their files into their instructor's digital folder for assessment. The ability to digitally capture, store and receive video and audio files on the network enables students and faculty to assess interpreting work immediately. The system provides secure anytime, anywhere access to the files from any computer on the RIT/NTID network or from home.

Keeping Current in Communication Studies and Services

The Communication Studies and Services (CSS) department recognizes the potential benefits of technological trends to enhance communication access for deaf and hard-of-hearing individuals. CSS faculty and staff continuously participate in training activities to remain current in emerging technology designed to improve communication, including Bluetooth technology, remote (off-location) programming and communication and hearing aid apps. The Audiology Center also underwent renovation and expansion of its space this year in order to optimize services for students and the department's readiness to display and demonstrate evolving communication technologies.

Furthermore, CSS is committed to equipping future professionals with firsthand knowledge and training to provide innovative speech-language and audiological services to deaf and hard-of-hearing adults. CSS offers internship experiences to master's degree students in Speech-Language Pathology each semester, and annually accepts a full-time extern pursuing their doctoral degree in the field of audiology. These professionals-in-training come from various accredited universities and colleges throughout the United States.

Distance Learning Advances

During AY 2016-2017, NTID offered five courses fully online for the first time. Two additional courses were offered in the blended mode (some in-class meetings/some on-line meetings). An evaluation of these courses revealed "no significant difference" in students' grades when compared to the same in-person courses. As a result, additional courses are being designed and developed for blended and online delivery. During the summer term, six fully online courses were offered – three of them for the first time. Student evaluations indicate satisfaction with the instructors and delivery suggesting continuation and growth in this area in the future.

The Sprint Relay Experimental Distance Learning/Access Demonstration Lab continues to serve as a beta testing site for adapting and evaluating alternative instructional and access technologies in support of remote learners who are deaf or hard of hearing. It also provides a forum for information exchange among RIT/NTID faculty, students, instructional designers, technologists, researchers and access service providers. Projects have included:
- Flipped classroom pre-recorded lectures of various courses for students to watch before attending classes;

- Classroom/lecture capturing recording of math, English, interpreting and sign language courses and in-class exercises for archiving and providing anytime, anywhere access for students outside of a classroom;
- Web and video conferencing with remote locations such as India, Mongolia, South Africa and Chile;
- Multi-point video and phone conferencing supporting faculty collaboration;
- Classroom collaboration using online software to support students in courses in the master's program in secondary education;
- Lecture capturing of graduate students instructing a group of students for practice and performance review; and
- Recording mock/practice interviews to assist graduating students with real-world experiences.

The Sprint Relay Lab features:
- Mobile podium with touch-screen interactive monitor enabling instructors to maintain eye contact with students while using the whiteboard;
- Three wall-mounted HD video cameras (instructor and audience) streaming live videos and a fourth supplementary SD video camera to capture front-of-classroom activities such as student presentations or sign language interpreters;
- Multi-type wireless microphones to capture audio from instructors, students, interpreters and visitors;
- Two short-throw interactive wall-mounted projectors with computer-based display, featuring network capabilities, supporting real-time interactions among remote and onsite learners; and
- One ceiling-mounted projector.

These distance-learning tools allow deaf and hard-of-hearing students from around the world to be part of one classroom. The innovative adaptation of current and emerging technology promises significant contributions in expanding conventional notions of where, how and with whom learning can happen.

Innovative Teacher Education

The microteaching component of all methods courses continues to be used by faculty members in NTID's Master of Science program in Secondary Education of Students who are Deaf or Hard of Hearing (MSSE). This is accomplished through the technical support from the NTID Learning Center as well as the NTID Performing Arts program. Deaf actors have been hired to act out high school student behaviors in mock classroom settings. Two cameras capture both the MSSE teacher-candidate and the actors, and split screen videos are uploaded to the Web, so the teacher-candidates can study and critique their own efforts. The actors model behavior that the teacher-candidates likely will face in a middle or high school classroom setting: addressing students being unprepared for class or not understanding the class materials, handling students arguing or falling asleep in class and resolving boundary issues between the teachers and students. The student actors provide feedback to the teacher-candidates after the end of the lesson. The experience helps teacher-candidates learn how to manage situations before they become teachers. They have indicated microteaching is a valuable part of their learning experience.

In addition to microteaching, the teacher-candidates also are required to observe veteran teachers in live classroom situations as part of their 100-hour practicum requirement. This provides the opportunity to allow the free flow of ideas and strategies between the seasoned teachers and teacher-candidates.

Speech-to-Text Services

C-Print® is a real-time captioning system developed at NTID with support from external and internal funding. It is an access service for students who benefit from a real-time display of English text more than from sign language interpreting. C-Print® currently is used by hundreds of postsecondary and secondary programs across the nation that offer services to deaf students. The system allows captionists to transcribe to text what teachers and students say in class.

Innovation and Creativity at NTID (continued)

Online Access Services Request System

NTID has created an online Service Request and Assignment System for providing streamlined access to sign language interpreting, notetaking and real-time captioning services for students. NTID operates the largest sign language interpreting, notetaking and speech-to-text service organization in the world, including 140 sign language interpreters, more than 400 student notetakers each semester and 53 real-time captionists. In addition, unique access services are available for vision-impaired students.

Center for International Educational Outreach

The Center for International Educational Outreach is now operating in its second year. This year, the office has established partnerships for deaf education initiatives in Ethiopia, Rwanda, Cambodia and the Philippines. All international work is funded by external grants and contracts.

NTID Performing Arts

For its 42nd season in AY 2016-2017, NTID Performing Arts presented three main stage productions and special events that involved more than 350 deaf, hard-of-hearing and hearing students, faculty, staff and members of the Rochester community as actors, dancers, theater technicians and front-of-house staff (ushers). These performances were attended by more than 8,200 people from throughout New York State as well as schools and community groups from neighboring states. This season included a full dance performance "Dance Tales," a unique rendition of multicultural stories and folklore from around the world, which included talented student dance groups, and the RIT College of Liberal Arts production of "the love of three oranges," a contemporary comedy. The RIT Players did two productions this past year: "The Addams Family" and "The RIT Players present a Fall Musical." A celebration with faculty, staff and their families of an annual holiday show also took place.

Special events in NTID's Panara Theatre this year included a live performance with Peter Cook and Kenny Lerner and a one-man performance by Patrick Graybill titled "King Lear." The national group "We the Deaf People" held a special performance by The Malones, a French Deaf couple, as a fundraiser for NTID. Additional theater performances included two performances by RIT's Vis Viva Dance Company, two performances by RIT's 8 Beat Measure a cappella, Brick City Singers a cappella and performances by the RIT a cappella groups Proof of Purchase and Surround Sound.

Support also was provided for the NTID Math Competition, the 303rd birthday celebration of l'Epee, RIT Special Interest Houses Student Talent Show, Rochester's Deaf Film Festival movie evening, Tiger Media's two evenings of movies for students, the Rochester Prep Charter School Award Ceremony, the Association of Medical Professionals with Hearing Loss Conference and events during NTID's Summer Vestibule Program (SVP) and Explore Your Future (EYF). NTID President Gerry Buckley had a special event in the Panara Theatre, NTID Convocation, Hot Topics, for the faculty and staff of NTID. A special memorial service was held in the Panara Theatre this year for the John Sturge family. Panara Theatre also hosted the dedication ceremony of the U.S. Postal Service's Forever Stamp in honor of the theater's namesake, Robert Panara, the first deaf faculty member at NTID.

NTID's 1510 Theatre Lab/Black Box hosted performances of "Tales from the Deaf Side" written and directed by Dr. Aaron Kelstone, CLA's production of "Love's Fire," seven plays inspired by Shakespearean Sonnets, and the "Fairytale Courtroom," a comedy of a courtroom scene with fairytale characters on trial for being the "wicked" person in a fairytale.

During AY 2016-2017, more than 380 students registered for and attended Performing Arts classes. Seventeen students were awarded performing arts scholarships and three students were awarded a performing arts certificate this past year. In total, approximately 8,400 people were served by NTID Performing Arts activities during the 2016-2017 production season.

Showcasing Deaf Artists

A team of NTID faculty and staff developed a website that showcases and promotes the works of deaf and hard-of-hearing artists (www.rit.edu/deafartists). The site features art and biographical information on more than 100 professional deaf artists from around the world as well as streaming videos and articles related to deaf artists and deaf art. Also included on the site are the self-portraits of a group of RIT/NTID students, along with video and/or written descriptions.

Preserving Deaf History

The experiences of deaf people during World War II are captured in a website developed by a team of NTID faculty and staff (www.rit.edu/ntid/ccs/deafww2/). Designed for students, teachers, scholars, researchers and historians, the site features articles, scripts, video clips, testimonies, artwork, books and links to related sites. Also included is an award-winning NTID documentary, *Exodus: A Deaf Jewish Family Escapes the Holocaust* and the documentary, *Worry: A Jewish Deaf-Blind Survivor Shares Her Story*.

The HeART of Deaf Culture: Literary & Artistic Expressions of the Deaf Experience

This multimedia interactive website, produced and edited by NTID faculty members Karen Christie and Patti Durr, explores deaf visual art, ASL and English literature, deaf theater and deaf cinema. It contains in-depth interviews with deaf scholars and creators from each genre, and features more than 300 artworks, poems, abc stories, performances and film clips: https://www.ntid.rit.edu/educational-materials/?controller=product&product_id=34.

Deaf Studies Archive

The RIT/NTID Deaf Studies Archive (https://library.rit.edu/depts/archives/ritntid-deaf-studies-archive) documents RIT's central role in educating people who are deaf or hard of hearing in the United States and draws from Rochester's significant deaf community. The main focus of the archive is Deaf culture, studies, education, theater and artists. This significant archive of primary resources, artwork, videos and books documents the founding and growth of NTID and highlights the many remarkable contributions of deaf, hard-of-hearing and hearing individuals affiliated with NTID. The Rochester area enjoys a vibrant deaf community, and the Deaf Studies Archive represents the first time an effort has been made to preserve some record of this culture. From the papers of distinguished faculty to artwork by alumni to the records of a local deaf theater group, this growing archive showcases the many talented and dedicated individuals affiliated with NTID and beyond. The Deaf Studies Archive is located in the RIT Archives in the Wallace Center and is curated by the NTID librarian and the RIT archivist. The NTID librarian also teaches Deaf Studies classes.

RIT ASL & Deaf Studies Community Center (RADSCC)

The RIT ASL & Deaf Studies Community Center continues to promote education, understanding and participation in the RIT deaf community by all members of the RIT community. A variety of events ranging from weekly ASL classes to regular community meetings and special Rochester-area group gatherings are hosted in the RADSCC located in RIT's Wallace Center. RADSCC participated in Rochester Deaf Awareness Week in October 2016, bringing Monique Holt to present an unveiling of the replica of a plaque honoring William "Dummy" Hoy on the brick wall of the dug-out of the RIT baseball field. RADSCC's ASL Lecture Series presenters for AY 2016-2017 included Kathleen Brockway, Robert Sirvage, Ben Bahan, Nancy Hlibok Amann, Marie Coppola, Storm Smith and Roslyn Rosen. RADSCC used its fifth annual Deaf-Mute Banquet to honor 200 years of ASL, which began after Laurent Clerc's arrival in the U.S. in 1816 before the American School for the Deaf was founded in 1817. Ben Bahan gave a special performance in ASL at the Panara Theatre.

Sunshine 2.0

Sunshine 2.0 is a professional traveling theater troupe based at NTID. The troupe provides performances and activities for deaf and hard-of-hearing children and adults that highlight the fields of Science, Technology, Engineering, Arts and Math (STEAM), as well as educational topics pertaining to the Deaf experience. In FY 2017, Sunshine 2.0 hosted workshops and performances that involved 9,555 youth and adults. These activities occurred in the following states: Alabama, Connecticut, Delaware, Florida, Illinois, Indiana, Kansas, Maryland, Massachusetts, Mississippi, Missouri, New York, Pennsylvania and the District of Columbia. In summer 2017, Fred Beam, coordinator for Sunshine 2.0, attended the national conference for Very Special Arts (VSA), the international organization on arts and disability. This year, VSA gave Sunshine 2.0 a grant to work with deaf students, children of deaf adults (CODAs) and some hearing students on developing short plays. As part of this grant, Sunshine 2.0 served 89 students (69 deaf and 20 CODAs) in Florida, New York and the District of Columbia (where students from many different states participated). For FY 2018, VSA also supported a second year of Sunshine 2.0 working with deaf students to develop short videos about their experience as part of VSA's Digital TiLT program.

Dyer Arts Center

In AY 2016-2017, the RIT/NTID Joseph F. and Helen C. Dyer Arts Center hosted 64 events, including 19 exhibitions. Highlights include a retrospective of Ann Silver, founder of the Deaf Art Movement; (Re)Invention exhibition hosted by the VSA Emerging Young Artists Program/A Jean Kennedy Smith Arts and Disability Program; an exhibition by RIT/NTID alumnus, Jose Saldana; and RIT/NTID student Tammy

Wells' Bachelor of Fine Arts show. The Dyer Arts Center also launched the first-ever exhibition featuring Latin American Deaf artists, Arte del Corazón. During its opening weekend, approximately 200 people attended, with events including a collaboration with NTID's Student Life Team to bring featured artist Drago Renteria as a presenter. Eight artists in total came for the ceremonies, including three from Mexico. Here, Dyer Arts Center director, Tabitha Jacques, front row, right, and NTID president, Gerry Buckley, back row, fourth from left, pose with some of the artists featured in this historic exhibit.

The Dyer Arts Center won two grants: one grant covered conference registration and travel fees for two assistants (Museum Association of New York), and the other grant was the Collections Assessment Program, which brought two experts to assess the center's collections and make recommendations on preservation and storage.

The center acquired 22 new pieces for the permanent collection and hired a permanent collections assistant in June 2017, who has worked to solve storage challenges and better accommodate a growing collection. Gallery walls were renovated as well by replacing old fabric coverings with fresh paint.

The Dyer Arts Center was featured on local Rochester PBS affiliate WXXI's *Arts in Focus* and WXXI's *The More You Know*, and has reached more than 1,000 likes on its Facebook page and 400 followers on Instagram. The center has also started a newsletter via Mail-Chimp, and will use this to inform audiences of upcoming events.

Imagine RIT: Innovation and Creativity Festival

An abundance of innovation and creativity was present throughout the RIT campus Saturday, May 6, 2017, during the 10th annual Imagine RIT: Innovation + Creativity Festival. The event showcased RIT's unique blend of technology and the arts.

More than 25,000 people came to campus on Saturday, May 6, 2017, for the 10th annual Imagine RIT: Innovation + Creativity Festival, a one-day celebration of RIT's unique blend of technology and the arts. As in previous years, the festival, which hosted more than 400 student, faculty and staff exhibits, demonstrations and performances, featured a strong NTID presence. NTID students, faculty, staff and alumni were involved in numerous exhibits across campus.

A sampling of NTID student, faculty and staff exhibits includes:

- **WAVIO Sound Recognition Technology:** The latest in sound recognition technology, the system combines intelligent sound recognition technology with simple hardware to provide an all-in-one system that will work for anyone who is deaf or hard of hearing.

- **Tiger Media:** Tiger Media is a student-run group providing video and photography to student clubs and organizations.

- **Deaf Pioneers Adventure App Development Sign Language to Text:** This exhibit highlights some innovative features in 3-D adventure storytelling and gaming. The app takes users on a first- and third-person narration through animation, gaming and language texts (ASL and English) about Lauren Redden Searing who was a deaf poet and journalist in the United States during the late 19th century.

- **Rochester Bridges to the Doctorate Program:** The Rochester Bridges to the Doctorate Program is the first of its kind that provides master's level mentoring and guidance toward admission to a doctoral degree program in biomedical and behavioral science disciplines.

- **Innovations from NTID's Center on Access Technology:** NTID's Center on Access Technology demonstrated prototypes of their various projects and collaborations with outside companies whose goal it is to meet the needs of employees and clients with accessibility needs.

RIT/NTID also provided sign language interpreting support for the festival to ensure the event was accessible to deaf and hard-of-hearing attendees.

All of the exhibits, activities and performances demonstrated the innovative thinking and creative spirit and energy that are uniquely RIT and that have shaped former RIT President William Destler's vision of RIT as a hub for innovation and entrepreneurship.

Intellectual Property: Licensed Educational Materials, Patents and Inventions

NTID educational materials are categorized into two groups. Materials developed before the October 1997 RIT Intellectual Property Policy was implemented are unlicensed materials. Materials developed after RIT implemented the policy are licensed, and the sales revenue is shared by the creator(s) of the materials and NTID, per the requirements of the policy. All materials are copyrighted to Rochester Institute of Technology and are available through a variety of vendors. Below is a summary of the materials in both categories and distribution information.

Unlicensed Educational Materials

- *From Dream to Reality* (NTID's history book)
  Distributed through NTID Communications, Marketing and Multimedia Services

- *Let's Communicate* (brochure)
  Distributed through NTID Communications, Marketing and Multimedia Services

- *Tips for Communicating* (brochure)
  Distributed through NTID Communications, Marketing and Multimedia Services

- *Project Access Workshop Planner's Guide*
  Distributed through NTID Communications, Marketing and Multimedia Services

Licensed Educational Materials

- *Attention Deficit Scales for Adults - Sign Language Version*
  Distributed through NTID Communications, Marketing and Multimedia Services

- *ASL at Work*
  Distributed by Dawn Sign Press

- *ASL Dictionary and Inflection Guide* (online subscription)
  Order online at www.ntid.rit.edu/dig

- *ASL Dictionary and Inflection Guide (iOS application and Android application)*
  Order online through the Apple Store at https://itunes.apple.com/us/app/id510152499 or through Google Play at https://play.google.com/store/apps/details?id=digmob.rit.edu.asldictionaryfromntid&hl=en

- C-Print® Pro Software and C-Print® online training
  Distributed through NTID College Operations

- *Educational Interpreting* (DVDs and companion booklet)
  Distributed through Harris Communications, Butte Publications and NTID Communications, Marketing and Multimedia Services

- *NTID Speechreading* (DVD and supplementary materials)
  Distributed through AUDiTEC

- *Processing Skills Development* (ASL texts)
  Distributed through Barnes & Noble @ RIT and NTID Communications, Marketing and Multimedia Services

- *The Heart of the Hydrogen Jukebox* (DVD)
  Distributed through NTID Communications, Marketing and Multimedia Services

- *The HeART of Deaf Culture* (online subscription)
  Distributed through NTID Communications, Marketing and Multimedia Services

Research, Innovation & Creativity

Intellectual Property (continued)

Patents/Inventions and Copyrights

- Provisional Patent filed with U.S. P.T.O. for "Method for Measuring Sign Recognition Ability in Learners of American Sign Language (ASL) as a Second Language." Application date: July 18, 2017

- Trademark NTID Speech Recognition Test® (NSRT®), pending patent and application also available for early demonstration and trials, developed at NTID's Center on Access Technology (CAT).

- Translation to ASL of the Connor-Davidson Resilience Scale (CD-RISC), by NTID's Center on Cognition and Language through an agreement between Connor-Davidson and the University of Michigan.

- A previously reported pending patent titled, "See-Through Mask to Facilitate Communication in Environments Requiring the Wearing of a Mask," which came to RIT/NTID via assignment from IBM has been abandoned for lack of novelty.

- An ASL Dictionary and Inflection Guide translation to South African Sign Language via license agreement from NTID through the ASLIE Department.

Student Innovation within RIT/NTID

- NTID student start-up Hz Innovations is developing and launching their product, Wavio sound recognition technology, developed within NTID's Center on Access Technology (CAT).

- NTID student start-up MotionSavvy is developing and launching their product, UNI sign-to-speech and speech-to-text software, developed within NTID's Center on Access Technology (CAT).

Outreach

A primary goal of NTID's Pre-College Outreach programs is to better prepare deaf and hard-of-hearing middle and high school students for college.
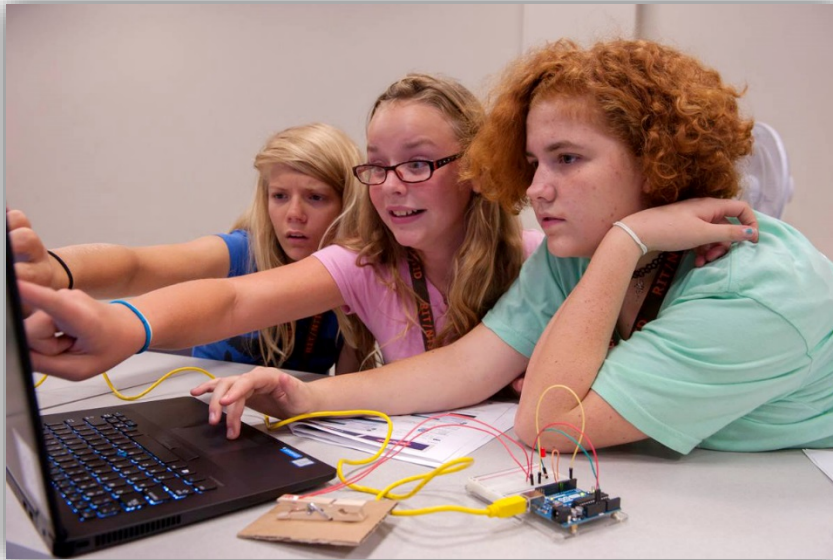
Twenty-nine deaf and hard-of-hearing girls in grades 7–9 attended the week-long summer camp TechGirlz in 2017 to explore their interests in science, technology, engineering and mathematics.

Outreach Highlights

NTID's educational outreach efforts include a number of innovative programs designed to share educational information and provide technical assistance to alumni, other deaf and hard-of-hearing adults, teachers of deaf and hard-of-hearing students, employers, Vocational Rehabilitation personnel, secondary and middle school students and parents of deaf and hard-of-hearing children.

Pre-College Outreach Programs

- NTID's *Strategic Vision 2010* called for an increase in outreach efforts aimed at deaf and hard-of-hearing middle school and high school students. The purpose was to provide educational experiences for these students that would enable them to envision a place for themselves in a college environment after their high school graduation. A special focus of this effort was young women and Black or African American, Hispanic/Latino and American Indian or Alaska Native students. During FY 2017, NTID faculty and staff conducted nine outreach programs: the SpiRIT Writing Contest for students in grades 10–12; Explore Your Future, a summer program for students in grades 10–11; TechGirlz, a summer camp for girls in grades 7–9; TechBoyz, a summer camp for boys in grades 7–9; Steps to Success, a one-day camp for Black or African American, Hispanic/Latino and American Indian or Alaska Native students in grades 7–9; a math competition for middle school students; the Digital Arts, Film and Animation Competition for students in grades 9–12; the Health Care Careers Exploration Camp, a summer program for students in grades 9–11, and Droids and Drones, a camp held in Alabama for students in grades 10–12. (See following pages for program details.)

- Explore Your Future (EYF), a week-long career exploration and evaluation program for deaf and hard-of-hearing students about to enter their junior or senior year of high school, is one of NTID's most

  successful outreach programs. EYF provides opportunities for high school students to learn about themselves and their educational and life/career choices, and is based on the idea that people have differing interests in six areas: Realistic, Investigative, Artistic, Social, Enterprising and Conventional. Students participate in hands-on career exploration classes and personal awareness instruction. Myriad social activities and dorm-living opportunities give the students a taste of college life. A total of 6,299 students have participated in EYF over the past 33 years. Thirty-two percent of the summer 2016 participants subsequently enrolled at NTID. Two sessions were offered in summer 2017. This year's participants came from 33 states, with two students coming from Canada.

Other Outreach Activities

- C-Print® software, developed at NTID, is used by real-time captionists to produce text of spoken content. C-Print is an access service option for deaf and hard-of-hearing students in educational environments. Inquiries about C-Print come via email, phone calls and website visits. From October 2016 through September 2017, there were approximately 2,829 email dialogues and 235 phone call discussions with C-Print Product Development. The C-Print website received 9,284 visits from October 2016 to September 2017. NTID conducts online real-time captionist training as a distance-education program designed to give individuals the core preparation necessary to provide speech-to-text services, primarily in a classroom setting. Orders/requests for online training and software totaled 146 from October 2016 through September 2017. In addition, the C-Print Mobile client is available for download in the iTunes and Google Play stores.

- The NTID Office of Alumni & Constituent Relations plans and implements strategies for engaging alumni and other constituents through social and professional development events, volunteer opportunities and other activities, both campus-based and in targeted regions around the country. With counsel from, and in collaboration with, the NTID Alumni Association Board of Directors, Alumni and Constituent Relations works to build and maintain connections between NTID and its more than 8,500 alumni. Over the past year, more than 800 alumni and guests participated in more than 20 alumni activities and events across the country and internationally, including receptions, workshops and networking opportunities.

Pre-College Outreach

NTID's *Strategic Vision 2010* called for development of an educational outreach consortium that would allow NTID to share its expertise to improve the education and career development of individuals who are deaf or hard of hearing. An outgrowth of this decision has been a series of outreach initiatives designed to provide educational experiences for students in grades 6–12.

NTID's pre-college outreach focuses on empowering deaf and hard-of-hearing middle school and secondary students and their parents with information to help students' long-term career success. A special focus of this effort is young women and Black or African American, Hispanic/Latino and American Indian or Alaska Native students.

In 2017, RIT/NTID welcomed more than 528 middle school and high school students and their parents from all over the country to eight pre-college outreach efforts at NTID. Participation is expected to grow annually as marketing and other promotional efforts continue.

Parents, students and teachers alike had high praise for the 2017 competitions and camps. With the success of these initiatives, RIT/NTID is well on the way to its goal of making outreach a central focus, and sharing 49 years of expertise in access services, program development and the application of technology to ensure that students will possess the skills and knowledge necessary to be active participants in the 21st-century American workforce.

Digital Arts, Film and Animation Competition

Deaf and hard-of-hearing students in grades 9–12 submitted 20 entries to the 2017 Digital Arts, Film and Animation Competition in four different categories: Web page design, graphic media, photo illustration and film. Three winners were selected and received cash prizes and plaques.

Math Competition

RIT/NTID's national Math Competition for middle school students challenges math skills, develops self-confidence and rewards achievements. In April 2017, 144 students from 45 middle schools participated in the competition at NTID. Cash prizes were given to the top three teams and individual winners. The intent of the competition is to foster interest in mathematics.

SpiRIT Writing Contest

RIT's 12th annual SpiRIT Writing Contest for deaf and hard-of-hearing students attracted 33 students in grades 10–12 from around the United States in July 2017. Students and their teachers submitted portfolios of the students' best work. The winners received either a full scholarship to NTID's Explore Your Future program or a $500 cash prize.

TechGirlz and TechBoyz Camps

Twenty-nine deaf and hard-of-hearing girls and 31 deaf and hard-of-hearing boys in grades 7–9 attended TechGirlz/TechBoyz in 2017 to explore their interests in science, technology, engineering and mathematics. This is the 11th year for TechGirlz and the sixth year for TechBoyz. The week-long summer camps held in July gave girls and boys the opportunity to learn more about careers in science and technology-related fields. They built their own computers, analyzed a "crime scene" and worked with computer-aided drafting equipment to create a telescope. The program included an hour-long workshop for parents that focused on what colleges expect from high school students, how parents can encourage their students to prepare for college and how to access financial aid.

Pre-College Outreach (continued)

Health Care Careers Exploration Camp

The Health Care Careers Exploration Camp is a program for deaf and hard-of-hearing students entering 10th–12th grade. This program allowed 23 students the opportunity to learn about various careers in health care in order to discover what types of careers fit their interests. The students attended medical demonstrations and area medical facilities, were part of hands-on demonstrations and became CPR/first aid certified.

Steps to Success

Steps to Success 2017 was held in partnership with the Oklahoma School for the Deaf in Sulphur, Oklahoma. Eighteen families who have middle-school-aged deaf or hard-of-hearing Black or African American, Hispanic/Latino and American Indian or Alaska Native students children registered for the program to learn about best practices and ways to prepare for postsecondary careers.

Droids and Drones

Droids and Drones was offered for the second time this year under the NTID Regional STEM Center. This program was designed to promote career interest in science, technology, engineering and math with emphasis on drone technology and aviation physics. The week-long program, held at the University of Alabama campus in Huntsville, Alabama, was attended by 27 students from eight southeast states.

Pre-College Outreach AY 2016-2017	Total Participants	Minorities	
		Number	Percent
Explore Your Future	203	111	55%
SpiRIT Writing Contest	33	17	52%
Digital Arts, Film and Animation	20	3	15%
Math Competition	144	40	28%
Steps to Success	18	18	100%
Health Care Careers Exploration Camp	23	12	52%
TechGirlz/TechBoyz Camp	60	17	28%
Droids and Drones	27	12	44%

NTID Regional STEM Center

The top priority of the NTID Regional STEM Center (NRSC) is to promote training and post-secondary participation for deaf and hard-of-hearing students in Science, Technology, Engineering and Mathematics (STEM) fields. This program was authorized by a partnership with Congress to establish a formal regional partnership in the southeastern United States, with at least one organization to expand the geographic reach of activities and services supported by NTID consistent with NTID's mission and strategic plan. NTID contracted the Alabama Institute for the Deaf and Blind (AIDB) since November 2016 to serve as the NTID Regional STEM Center-Southeast (NRSC-SE). The region served by the southeast states includes Alabama, Florida, Georgia, Louisiana, Kentucky, Mississippi, North Carolina, South Carolina and Tennessee.

Droids and Drones
NRSC-SE partnered with University of Alabama, Huntsville, to host the Droids and Drones Summer Camp on June 18-23, 2017, at the Huntsville campus. Droids and Drones had 28 students from the Southeast region. NTID faculty Joseph Stanislow, Chris Campbell and Stacey Davis and NTID alumnus and current UAH staff, Steve Forney '09, '12, taught coding, astronomy and STEM basics to the campers. Students had the opportunity to build their own drone and pi-top and learned about 3-D printing.

Georgia STEM Camp
NRSC-SE partnered with Georgia Vocational Rehabilitation and Georgia Commission for the Deaf and Hard of Hearing to hold the Georgia STEM Camp, which took place June 25-30, 2017, at Georgia State University in Atlanta. The STEM Camp had 15 students from Georgia. NTID faculty Joseph Stanislow and NTID staff Mark Sommer taught coding utilizing a platform that enables users to create interactive electronic objects. The students also learned about biology, 3-D printing technology, nanotechnology and mathematics.

Deaf Teen STEM Camp
During July 10-15, 2017, NRSC-SE partnered with DeafTEC and Family Center on Deafness in Florida to offer an Arts Program and a Deaf Teen STEM Camp. Twenty deaf and hard-of-hearing middle and high school students attended the camp. The goal of the camp was to educate, encourage and inspire deaf and hard-of-hearing teens about possible future STEM careers as well as to foster creativity, teamwork, leadership and citizenship.

STEM Educators
NRSC-SE has adopted DeafTEC's practice of successfully integrating more deaf and hard-of-hearing individuals into the workplace in highly skilled technician jobs where these individuals are currently underrepresented and underutilized. DeafTEC serves as a resource for high schools and community colleges that educate deaf and hard-of-hearing students in STEM-related programs for employers. NRSC-SE has employed two new staff as "train the trainer" personnel. The staff has worked with NTID to deliver STEM instruction best practices for students who are deaf or hard of hearing.

Employment
NTID Center on Employment (NCE) conducts trainings for corporations and visits job sites where our students have worked. The team also attends various conferences in the southeast region educating leaders about hiring and working with deaf and hard-of-hearing employees and how to make the workplace accessible.

Interpreters
NRSC's skilled interpreter trainers host workshops at conferences and educational training seminars on best practices on middle and high school STEM interpreting. NTID assembled a team of six interpreters to provide training on best practices in STEM interpreting.

Explore Your Future

Explore Your Future (EYF) is a week-long career exploration and evaluation program conducted at NTID each summer for deaf and hard-of-hearing students about to enter their junior or senior year of high school. It is one of the college's most successful outreach programs. The program provides high school students with the opportunity to learn about themselves and their educational and life/career choices. It incorporates the framework that people have differing interests in six areas: Realistic, Investigative, Artistic, Social, Enterprising and Conventional. Students participate in hands-on career exploration classes and personal awareness instruction. Myriad social activities and dorm-living opportunities give participants a taste of college life. A total of 6,299 students have participated in EYF over the past 33 years. Thirty-two percent of summer 2016 participants subsequently enrolled at NTID. Two sessions were offered in summer 2017. This year's participants came from 33 states and Canada.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Number of Participants	192	100	213	199	203
Percentage of Minorities	34%	32%	34%	47%	55%
Percentage Enrolling at NTID	31%	60%	36%	32%	N/A*

High school juniors and seniors build a remote-controlled car as part of Explore Your Future (EYF) camp. In 2017, 203 students attended EYF.

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* Students from EYF 2017 currently are in the process of applying to NTID.

Explore Your Future – Enrollment by Location

Summer 2017 EYF students represented 33 states
and Canada.

Home State or Country	Number in EYF Summer 2017
Alabama	4
Arizona	3
Arkansas	1
California	28
Colorado	3
Connecticut	2
District of Columbia	1
Florida	15
Georgia	8
Illinois	11
Indiana	1
Kentucky	3
Maine	3
Maryland	11
Massachusetts	11
Michigan	9
Minnesota	1
Mississippi	2
Missouri	4
Nebraska	1
New Jersey	6
New Mexico	2
New York	33
North Carolina	7
Ohio	3
Pennsylvania	5
South Carolina	1
Tennessee	1
Texas	11
Utah	1
Virginia	6
West Virginia	1
Wisconsin	2
Canada	2
Total	**203**

DeafTEC

The National Science Foundation (NSF) Advanced Technological Education (ATE) National Center of Excellence grant, *DeafTEC: Technological Education Center for Deaf and Hard-of-Hearing Students,* was awarded in August 2011. A four-year renewal of the award was received in August 2015. The largest NSF awards in RIT's history, DeafTEC establishes the first ATE center to support individuals who are deaf or hard of hearing. DeafTEC's goal is to successfully integrate more deaf and hard-of-hearing individuals into the workplace in highly skilled STEM technician jobs in which these individuals are currently underrepresented and underutilized. Through regional partnerships, a comprehensive clearinghouse of online resources and a national dual credit program, DeafTEC provides deaf and hard-of-hearing students, as well as their teachers, counselors, employers and co-workers, with the resources that will help those individuals succeed, both in the classroom and on the job.

Regional Partnership Model: The goal of the DeafTEC partnership model is to build a mutually supportive professional community in selected regions of the country that will improve access to technological education and employment for deaf and hard-of-hearing students. DeafTEC has established this train-the-trainer partnership model by selecting one high school, one community college and one or more employers within four regional areas: California, Florida, Texas and, added in 2015, the Midwest region based in Illinois. DeafTEC's regional partners are:

California
    California School for the Deaf, Riverside
    Cisco Systems Inc., San Jose
    Solar Turbines Incorporated, San Diego
    Qualcomm, San Diego

Midwest
    Hinsdale South High School, Darien, Illinois
    Harper College, Palatine, Illinois
    AT&T, Chicago, Illinois
    Motorola Solutions, Inc., Chicago, Illinois
    Caterpillar, Inc., Peoria, Illinois

Florida
    Florida School for the Deaf and the Blind, St. Augustine
    Florida State College at Jacksonville, Jacksonville
    ConMed Corporation, Largo
    Lockheed Martin, Orlando

Texas
    Texas School for the Deaf, Austin
    Austin Community College, Austin
    The Dow Chemical Company, Seadrift
    Lockheed Martin, Dallas

The DeafTEC partnership model involves personnel from each regional partner attending train-the-trainer professional development activities that prepare them to offer the four DeafTEC workshops described below. The trainers then offer these workshops to high school teachers, college faculty and employers within their regions:

1. *Working Together: Deaf and Hearing People* workshop is designed to help employers develop the sensitivity and skills to successfully integrate deaf employees into the workplace.
2. *Project Access* workshop sensitizes teachers in mainstreamed settings to the challenges faced by deaf and hard-of-hearing students and shares Universal Design for instruction strategies and best practices that will benefit all students in the classroom.

3. *Promoting Student Success in Math through Best Practices* workshop provides high school and college math instructors with a toolbox of effective strategies for teaching math to deaf and hard-of-hearing students.
4. *Writing in the Disciplines* workshop assists STEM instructors in bringing a *Writing in the Disciplines* (WID) approach to their STEM classes, which provides students with writing practice that both improves their writing and enhances their learning in the discipline.

Train-the-Trainer Professional Development. Three Train-the-Trainer (TtT) workshops were offered to participants from high school, community college and industry partners this year:

1. TtT Working Together was offered to 18 participants on April 5, 2017
2. TtT Project Access was offered to 15 participants on April 5-7, 2017
3. TtT Writing in the Disciplines was offer to 15 participants on July 12-16, 2017

To date, DeafTEC has offered a total of 16 train-the-trainer sessions to 229 participants. (71 participants were trained to offer more than one workshop.)

Partner-Led Professional Development. In FY 2017, DeafTEC partners offered 19 workshops to 308 participants.

- Nine *Project Access* workshops to 149 educators
- Four *Writing in the Disciplines* workshops to 59 educators
- Four *Promoting Student Success in Math through Best Practices* workshops to 80 educators
- Two *Working Together* workshops to 20 employees

To date, DeafTEC partners have offered 122 workshops to a total of 1,947 attendees.

Student STEM Activities. Six hundred fifty-eight (658) high school and middle school students participated in STEM awareness activities offered by DeafTEC's high school partners this year. These activities included:
- Future Quest and STEM Exploration at Florida School for the Deaf and the Blind, September 23-24, 2017; 35 high school students attended
- STEM Camp at California School for the Deaf, Riverside, July 10-14, 2017; 30 students attended
- STEM Camp to Texas School for the Deaf, June 24-29, 2017; 11 high school students attended
- TSD Discovery Retreat: Maker Fiare, April 28-30, 2017; 22 high school students attended
- CSDR STEM Career Day, March 14, 2017; 460 high school and middle students attended
- Jacksonville Science Festival, February 23, 2017; 49 high school students attended
- TSD Discovery Retreat – Exploring STEM in Aggieland, February 17-19, 2017; 23 middle school students attended
- TSD Discovery Retreat – Maker Faire, November 4-6, 2016; 28 high school students attended

Other partner activities included:
- Participation in Shadow Day. Two deaf and hard-of-hearing BS-level engineering students and one NTID Engineering Studies faculty attended "Shadow Day" at Solar Turbines in San Diego on October 16, 2016, supported by DeafTEC. The goal of Shadow Day was to provide students with an opportunity to experience a typical workday for engineers at Solar. Students attended presentations, went on facilities tours, shadowed an engineer for a day and participated in mock interviews.

Website Development. The DeafTEC website (www.deaftec.org/) serves as a national resource on technical educational and technician careers for deaf and hard-of-hearing students, their parents, teachers and future employers. The website was updated this year and now contains the following updated and new sections:

- **Best Practices for Teaching.** This major section of the website has been completely revised, eliminating redundancy and improving navigation. This section of the website focuses on helping instructors understand and address the challenges deaf and hard-of-hearing students face in

mainstream classes, and presents strategies that teachers can use to meet these challenges and improve their teaching including creating STEM-focused lectures for illustrating classroom lecturing do's and don'ts, and updating the popular PacerSpacer videos. The best practices for teaching materials can be found at: http://deaftec.org/classact.

- **Universal Design for Instruction (UDI).** Information on Universal Design for Instruction (UDI), UDI Principles, and how UDI Principles can be applied in the classroom, as well as a list of UDI resources, have been added to the website.

- **Survival Signs.** New videos of signs for mainstreamed teachers like "Good morning," "Can I help you," and "Can you see me after class" were created to replace the outdated videos that were on the website.

- **Captioning Media.** We have had numerous requests for information on requirements and processes for captioning. Information now available on the website includes Why Caption, Federal Regulations Regarding Captioning, Captioning Standards and Resources for adding captioning to videos.

- **Writing in the Disciplines (WID) Resources.** Contain videos that emphasize the importance of writing in STEM including deaf and hearing faculty at NTID talking about the types of writing required in STEM careers and students talking about the challenges they have faced in writing, the types of writing required in their STEM classes and future careers, and what has helped them become better writers. The videos can be seen at http://deaftec.org/why-writing-matters-stem.

- **Math Resources.** DeafTEC's 64 online math tutorials continue to be extremely popular. The large collection of math tutorials can be found at http://deaftec.org/resources/math.

- **STEM Careers.** We continue to add materials related to STEM careers. This year we added three short videos related to welding careers produced by the Communication Services for the Deaf for Austin Community College: *A Career in Welding*, *Let's Meet Deaf Welders*, and *Working with Deaf Welders*. This section of the website now contains nine high-quality videos of deaf professionals talking about how they prepared for these careers and how they succeeded on the job. The videos can be viewed at http://deaftec.org/stem/professionals.

- **The Importance of STEM.** This webpage under the website's STEM Employment section makes the case for why a career in a STEM field is such a good choice for deaf and hard-of-hearing students, since deaf and hard-of-hearing workers in STEM careers earn 30 percent more than deaf workers in non-STEM careers, regardless of degree. This resource can be viewed at http://deaftec.org/why-stem-deaf-and-hard-hearing-students.

- **Employers' Resources.** Progress is being made with the development of online learning modules for employers to help them learn how best to integrate successfully deaf and hard-of-hearing individuals into their workplaces. The modules are based on the *Working Together: Deaf and Hearing* workshop created by NTID's Center on Employment and offered by DeafTEC's Regional Partners.

- **STEM ASL Video Dictionary Project.** The dictionary, created with Geoff Poor, professor in NTID's American Sign Language and Interpreting Education department, presents technical signs developed and vetted by experts across the country. The STEM ASL Video Dictionary now contains accurate signs for technical vocabulary as well as signed definitions and usage for three STEM disciplines: Information Technology, Lab Sciences and Mathematics. This project is being supported, in part, by a gift from The Dow Chemical Company and can be viewed at http://deaftec.org/stem-asl-video-dictionary.

- **Website Affiliates Section**. This private section of the website, created for all of DeafTEC stakeholders, has been reorganized and continues to be updated and expanded. It includes material presented at various train-the-trainer events for use by regional partners, reports and all of DeafTEC's evaluation tools. It also includes an archive of all professional development events offered by regional partners. This provides both a repository for the providers of the events, and the opportunity for them to share their material with other trainers.

Other DeafTEC Initiatives

- **Epsilon Pi Tau National Honor Society.** On May 3, 2017, with support from DeafTEC, the Delta Xi chapter of Epsilon Pi Tau National Honor Society established at NTID inducted its third group of members consisting of 18 associate-level students, one NTID faculty and seven members of the DeafTEC Advisory Board. This is the first EPT chapter in the nation dedicated to deaf and hard-of-hearing students and NTID's first national honor society.

Project Fast Forward. Project Fast Forward originally was established in 2006 with a three-year grant from the National Science Foundation's Advanced Technological Education program under award DUE#: 0602761 and now is an integral part of DeafTEC. The goal of the project is to build a pathway for deaf and hard-of-hearing students to transition from high school to college in selected STEM disciplines by allowing deaf and hard-of-hearing high school students to take dual-credit courses, earning RIT/NTID college credit while they are still in high school.

- **School Partners.** During the academic year 2016-2017, dual credit courses were offered at two new schools and 13 established schools. In July 2017, teachers from one additional school was trained to teach courses during the 2017-2018 school year. All of our continuing school partners are listed here:
    1. Alabama Institute for the Deaf and Blind, Talladega, Alabama
    2. American School for the Deaf, West Hartford, Connecticut
    3. Atlanta Area School for the Deaf, Atlanta, Georgia
    4. California School for the Deaf, Fremont, California
    5. California School for the Deaf, Riverside, California
    6. Cypress Ridge High School, Houston, Texas
    7. Eastern North Carolina School for the Deaf, Wilson, North Carolina
    8. Florida School for the Deaf and the Blind, St. Augustine, Florida
    9. Hinsdale South High School, Hinsdale, Illinois
    10. Indiana School for the Deaf, Indianapolis, Indiana
    11. Lexington School for the Deaf, Jackson Heights, Queens, New York
    12. Marlton School for the Deaf, Los Angeles, California
    13. Maryland School for the Deaf, Frederick, Maryland
    14. McNeill High School, Round Rock, Texas
    15. Mill Neck Manor School for the Deaf, Mill Neck, New York
    16. North Carolina School for the Deaf, Morganton, North Carolina
    17. Ohio School for the Deaf, Columbus, Ohio
    18. Plano Senior High School, Plano, Texas
    19. Rochester School for the Deaf, Rochester, New York
    20. Texas School for the Deaf, Austin, Texas
    21. University High School, Irvine, California
    22. Western Pennsylvania School for the Deaf, Pittsburgh, Pennsylvania

- **Dual-Credit Courses.** For the 2016-2017 academic year, the following courses were developed for high schools to teach and earn their students RIT/NTID college credit:
    - *Applications Software*: An introduction to word processing, spreadsheet, presentation and database applications

- o *Web Development I*: An introduction to Web page development, including XHTML and Web *graphics*
- o *PC Hardware I*: An introduction to the fundamental hardware concepts of personal computer (PC) systems, including their structure and components
- o *Page Layout I:* An introduction to page layout applications to produce pages and documents to given specifications
- o *Raster/Vector Graphics:* Introduces the skills needed for the successful production and manipulation of raster and vector images using image creation and production software
- o *Blueprint Reading:* An introduction to the skills necessary to read and interpret fundamental engineering drawings of details, subassemblies and assemblies
- o *Engineering Graphics:* Introduces the skills needed to create professional 2D mechanical, architectural and civil drawings using AutoCAD software
- o *Processes of Science: Forensics:* An introduction to science processes using the content of forensics as a vehicle to establish an appreciation of the scientific method, critical thinking and problem solving
- o *Processes of Science: Environmental Studies:* An introduction to science processes using the content of environmental studies as a vehicle to establish an appreciation of the scientific method, critical thinking and problem solving

- **Courses Taught and Credit Earned.** During 2016-2017, 32 course sections were taught at partner high schools with 195 deaf and hard-of-hearing high school students enrolled in those courses. The following is the total number of Project Fast Forward dual-credit courses taught and students served through Project Fast Forward, from fall 2007 to spring 2016:

  - o 163 dual-credit course sections were taught by 60 teachers in their high schools.
  - o 887 registrations were recorded in Project Fast Forward courses.
  - o 700 unique deaf and hard-of-hearing students participated in the program.
  - o 187 deaf and hard-of-hearing students took more than one course.
  - o Of the 887, 67 percent (601/887) received passing grades. Removing the course grades that are the result of teacher actions (887-109), students completed a dual credit course (601/778) with a passing rate of 77 percent.
  - o 1,803 RIT/NTID credits were awarded to deaf and hard-of-hearing students.

  For the academic year 2017-2018, we currently have 24 courses sections scheduled and 155 students registered.

- **Professional Development.** Offered to high school teachers from partnering high schools. Teachers receive technical training on course content and teaching methodologies and on improving access for deaf students in mainstream classrooms. Both teachers and counselors also receive training on selected STEM career opportunities for deaf and hard-of-hearing individuals and on the dual-credit program.

  In July 2017, training was offered to seven new Project Fast Forward high school teachers and one established teacher teaching a new course. During the 10 summers of Project Fast Forward, 2007-2017, the following numbers of teachers and counselors have participated in summer professional development:
  - o 72 teachers from 28 high schools have attended summer professional development to prepare to teach dual credit courses in their high schools, with many teachers returning to NTID to learn content for a second and third course for a total of 106 teacher trainings.
  - o 27 guidance counselors attended summer professional development activities to work with students taking dual credit courses in their high schools.

Employer Outreach

NTID initiates and delivers consultation, training, follow-up and other support services to employers. Through these services, employers become aware of the needs of deaf and hard-of-hearing people for employment and, in partnership with NTID, facilitate graduates entering the workforce and continuing their career development. A total of 498 employer representatives received training through the NTID Center on Employment (NCE) in AY 2016-2017.

Employer Training and Educational Programs

NTID's Center on Employment conducted, delivered and presented 30 programs for 498 human resources professionals and company representatives.

NTID Job Fair

The 16th annual NTID Job Fair was held in October 2016 with 52 employers attending and close to 400 students and alumni participating. During this fair, five employers participated on a panel attended by student job seekers to explain the job search process from their company's perspective and answer questions from student attendees.

Co-op Visitation Program

Twenty NTID faculty and staff visited 59 students on cooperative education assignments and their supervisors in 14 states.

Outreach to Employers, Alumni and Other Deaf and Hard-of-Hearing Adults

- Coordinated 20 on-campus orientations; 10 resume packages requested
- Consulted with 130 alumni for job search assistance and providing employment opportunities for our students
- Supported two engineering students plus one faculty member in participating in the Solar Turbines Training Academy/Shadow Day in San Diego, California, in October 2016
- Successfully completed Alabama, Mississippi and North Carolina trips, which included 17 employer orientations for 63 company representatives
- Presented three employer awareness workshops that were conducted for 93 participants and met and interacted with more than 50 company representatives at the U.S. Business Leadership Network (USBLN) conference in Florida in August 2017

NCE Marketing Highlights

- Developed news releases and articles to promote employer participation in the NTID Job Fair
- Exhibited at SHRM Diversity & Inclusion in Austin, Texas, in October 2016
- Presented Creating Inclusion with Assistive Technologies at the National Industrial Liaison Group Conference in San Antonio, Texas, in July 2017
- Presented *Creating Inclusion/ Assistive Technologies* and exhibited at the United States Business Leadership Network Conference in Orlando, Florida, in August 2017
- Reviewed and revised the program marketing pieces, NCE brochure and NCE website (www.ntid.rit.edu/nce/) to ensure content was up to date
- Posted current relevant information on the NCE Facebook page

Faculty and Staff

As of fall 2017, 32 percent of NTID's workforce was eligible for retirement.

Alesia Allen '04 and Ruth Anna Spooner, both faculty in NTID's Department of Liberal Studies, prepare to congratulate new graduates at RIT/NTID's Commencement.

Faculty and Staff Highlights

Attracting and retaining the most capable and dedicated faculty and staff in order to provide an exceptional learning environment for deaf and hard-of-hearing students is central to fulfilling NTID's mission and purpose. NTID's highly qualified faculty and staff bring to the institute a wide variety of experiences, skills and backgrounds. Some are veteran educators with many years of higher education teaching experience, while others bring to the NTID classroom a wealth of hands-on knowledge gained from working in business and industry. Among the latter group are alumni who, after gaining significant work experience away from NTID, have returned to their alma mater to share the expertise they have learned on the job with a new generation of students.

In 1987, NTID employed 687 faculty and staff. As of fall 2017, NTID employed 578* faculty and staff, up from 563 in fall 2016.

Number of NTID Employees by Year

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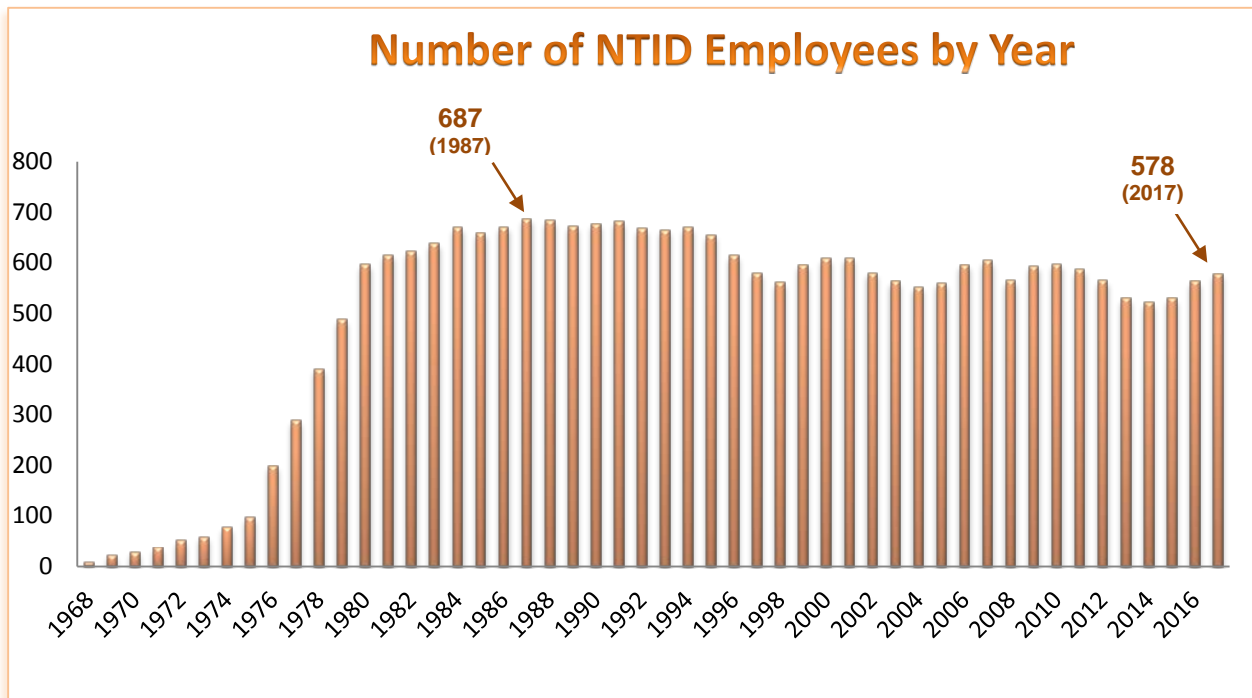
*   Of the 578 employees, 559.97 are covered by NTID's non-research/grant funds.

Average Salary: Faculty and Staff

RIT endeavors to maintain faculty salaries that are on par with the colleges and universities with which it competes. Similarly, RIT provides staff salaries that are competitive with other local and regional colleges and businesses. Annual pay increments for NTID faculty and staff are established by RIT.

	Total Number in Position	Average Salary October 2016 – September 2017
Faculty*		
Professor	25	$110,501
Associate Professor	39	$88,527
Assistant Professor	30	$71,612
Principal/Senior Lecturer	32	$67,916
Lecturer	38	$59,722
Subtotal Faculty	**164**	**$78,086**
Staff		
Exempt Staff**	133	$64,903
Non-Exempt Staff***	281	$45,694
Subtotal Staff	**414**	**$51,865**
Total	**578******	**$59,305**

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*   Faculty are based on full-time, 9-month salaries; visiting faculty are noted within their rank.
**   Based on full-time 12-month salaries.
*** Technical and clerical positions and real-time captionists are based on 35 hours per week/12 months per year. Interpreters are based on 40 hours per week/12 months per year.
**** Of the 578 employees, 559.97 are covered by NTID's operating funds.

Faculty and Staff

Tenure-Track Positions and Faculty Rank

In FY 2017, senior-level faculty members (professor and associate professor) comprised 67 percent of all ranked tenure-track faculty as compared to 47 percent in FY 1985. Of the 85 tenure-track positions, 86 percent are tenured.

Rank	Number of Tenure-Track Positions*					FY 2017 Faculty with Tenure	
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Number	Percent
Professor	31	28	25	26	24	24	100%
Associate Professor	49	45	43	36	33	33	100%
Assistant Professor	37	35	35	30	28	16	57%
Total Positions	**117**	**108**	**103**	**92**	**85**	**73**	**86%**

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* Includes ranked administrators.

Degree Levels of Tenured and Tenure-Track Faculty

Faculty members join NTID with a wide variety of backgrounds, including those with substantial experience in the private sector. In FY 2017, 95 percent of full-time, tenure-track faculty members held graduate degrees.

FY 2017 Highest Degree Level Achieved Tenure and Tenure-Track Faculty*		
	Number	Percent
Doctorate	41	48%
Master's	40	47%
Bachelor's	4	5%
Total	**85**	**100%**

In July 2017, NTID was awarded a $1.025 million grant from the National Institute of General Medical Sciences to develop a scientists-in-training program for deaf and hard-of-hearing undergraduates over the next five years. Funded through the Research Initiative for Scientific Enhancement (RISE) program, the grant is designed to increase the number of underrepresented students who enter the biomedical and behavioral sciences. The team of faculty and staff pictured here will administer the first RISE program to specifically serve deaf and hard-of-hearing students.

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* Includes ranked administrators.

Age, Length of Service and Retirement Status of NTID Faculty and Staff*

NTID's faculty and staff average 47.1 years of age with 13.8 years of service at NTID. As of October 2017, 32 percent are eligible for retirement.**

	Percent Full Time	Average Age	Average Length of Service	Age of Faculty/Staff					Currently in Retirement Transition
				≤ 54	55-61	62-64	65-69	≥70	
Professor	100%	64.0	29.9	3	4	3	11	4	1
Associate Professor	97%	56.8	25.1	12	13	4	5	4	2
Assistant Professor	100%	47.7	14.3	20	3	6	0	1	2
Principal/Senior Lecturer	100%	50.6	14.7	19	8	4	1	0	0
Lecturer	95%	41.6	6.2	32	5	0	1	0	1
Exempt Staff	99%	47.2	13.2	89	32	4	7	1	1
Technical/Clerical	87%	49.5	13.3	45	28	4	6	2	1
Interpreter	75%	41.5	12.9	116	20	5	1	1	0
Real-Time Captionist	26%	44.1	7.6	40	14	0	0	0	0

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*   Data not available for all faculty and staff.
** To be eligible for retirement, an employee's age and years of service must be greater than or equal to 70, and they must be at least 55 years of age if hired after 1995, and at least 50 years of age if hired before 1995.

Faculty and Staff New Hires

The distribution of new hires by category and for
full-time and part-time positions is shown below.

	New Hires				
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Full-Time:					
Faculty	3	11	16	7	10
Exempt Staff	2	3	11	14	11
Non-Exempt Staff*	4	14	18	32	7
Total Full-Time	**9**	**28**	**45**	**53**	**28**
Part-Time:					
Faculty	0	0	1	3	1
Exempt Staff	2	0	1	1	1
Non-Exempt Staff*	10	3	12	15	39
Total Part-Time	**12**	**3**	**14**	**19**	**41**
Total	**21**	**31**	**59**	**72**	**69**

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* Includes technical and clerical positions, real-time captionists and interpreters.

Faculty and Staff Terminations

The faculty and staff turnover rate, 9.0 percent, is an increase from last year. Retirements of current faculty and staff are expected to rise as the employee base ages.

Full-Time/Part-Time	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017 Percent	Number
Faculty	15.1%	8.8%	11.2%	8.8%	10.4%	17
Exempt Staff	10.6%	9.2%	5.1%	4.0%	4.5%	6
Non-Exempt Staff*	6.9%	9.5%	8.2%	9.4%	10.3%	29
Total	**10.4%**	**9.2%**	**8.5%**	**8.0%**	**9.0%**	**52**

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* Includes technical and clerical positions, real-time captionists and interpreters.

RIT/NTID Leadership

David C. Munson Jr., left, looks on as performance group, Dangerous Signs, performs RIT's alma mater during his inaugural ceremonies. Munson became RIT's 10th president on July 1, 2017.

NTID Administrative Council*

Dr. Gerard J. Buckley '78
President, NTID;
Vice President and
Dean, RIT

Stephanie Smith Albert '88
Director of Diversity
and Inclusion

Gary Behm '78, '81
Interim Associate Vice President
for Academic Affairs

Dr. Alvin C. Merritt Boyd III '07
Special Assistant for
Diversity and Inclusion

Dr. Pamela Carmichael '04
Assistant Vice President of
Communications, Marketing
and Multimedia Services

Marianne Gustafson
Associate Dean for
Curriculum and
Special Projects

Linda L. Hoke
Executive Assistant to
the President and
Office Manager

Bernard Hurwitz, J.D.
Associate Vice President for
NTID Administration

Dr. Denise Kavin
Assistant Dean and Executive
Director of NTID Outreach,
Placement and Special Projects

Dr. Mary Karol Matchett '88
Assistant Vice President
for Student and
Academic Services

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* The following individuals also served on the NTID Administrative Council in FY 2017: Dr. Stephen Aldersley, Associate Vice President for Academic Affairs; Steven Morse '86, Assistant Vice President for Finance and Budget; and Dr. Todd Pagano, Associate Dean for Teaching and Scholarship Excellence.

Bill McGee '80, '82
Assistant Vice President for
Finance and Budget

Dr. Rico Peterson
Assistant Dean and Director,
NTID Access Services

Dr. Robert Pollard
Associate Dean
of Research

Thomastine Sarchet '03, '09
Director, International
Educational Outreach

Dr. Kathryn Schmitz '95
Senior Associate Dean for
Academic Administration

Erwin Smith
Assistant Vice President for
Information Technology and
College Operations

NTID National Advisory Group

The National Advisory Group advises the NTID president / RIT vice president and dean in developing and carrying out policies governing the operation and direction of the institute. The National Advisory Group comprises professionals concerned with the education of deaf and hard-of-hearing students, professionals concerned with postsecondary education and individuals familiar with the need for the services provided by NTID.

Active Members

Bedarius Bell, Jr.
State Coordinator of Deaf and Hard of Hearing Services, Alabama Department of Rehabilitation

Joyce Bender
CEO, Bender Consulting Services Inc.

Lisa Dallos
Founder, High10Media

Tracy Ivy '96, '00, '09
American Sign Language Teacher, Minnetonka High School

Dr. Christopher Lehfeldt
Dentist, Elmwood Dental Group, P.C.; *Chair*

Pamela Lloyd-Ogoke '81
Chief of Community Integration Services and Supports, North Carolina Division of Vocational Rehabilitation Services

Mary Beth Mothersell '85
Senior Customer Relations Manager, Sprint

David Nelson '81, '85
Senior Community Outreach Specialist, Amtrak

Gabrielle Nocciolino '09, '11
Theatre Arts Teacher and Performing Arts Coordinator, Texas School for the Deaf

Karen Putz
Owner, Ageless Passions

Joseph Riggio '92, '01
Regional Outreach Manager, ZVRS

Michael Tecklenburg
Counsel, Office of the Democratic Leader of the U.S. House of Representatives

Kathleen Treni
Principal, Continuum of Services for Deaf and Hard of Hearing Students, Bergen County Special Services District

Dr. Sean Virnig
Associate Director, State Special Schools and Services Division, California Department of Education

Dr. Douglas Watson
Professor Emeritus and former Director, Research and Training Center for Persons Who Are Deaf or Hard of Hearing, University of Arkansas

Dr. Scott Wills
Research Scientist, Dow Chemical Company

U.S. Department of Education

Brianne Burger
Director/Liaison, Office of Special Institutions, Office of Special Education and Rehabilitative Services

U.S. Government Representatives

The Honorable Charles E. Schumer
Member, U.S. Senate, New York State

The Honorable Louise M. Slaughter
Member, U.S. House of Representatives, New York State

In September 2017, NTID and the Environmental Protection Agency (EPA) signed a memorandum of understanding that will increase cooperation between NTID and the EPA in areas of mutual interest, including promoting equal opportunity in higher education, contributing to NTID's capacity to provide high-quality education and encouraging the participation of NTID in EPA programs.

NTID Foundation Board

The NTID Foundation is an organization of volunteers committed to the advancement of career development and personal growth opportunities for deaf and hard-of-hearing students at NTID.

Foundation Board members foster involvement and private investment to enrich the quality and vitality of the learning environment at NTID.

Active Members:

Gary Behm '78, '81
Interim Associate Vice President for Academic Affairs

Dr. Gerard J. Buckley '78
President, NTID; Vice President and Dean, RIT

Shraddha Chaplot
Greengineer/Hardware Test Engineer, Cisco Systems, Inc.

Michael Ellis
Global Director, Accessibility, Sprint

Sean P. Flanagan
Sr. Customer Business Manager, Bayer Consumer Care

Sue Flanagan
Volunteer Event Coordinator

Eric Gjerdingen '92

Sarah Gordon '07
Director of Community Relations, Convo

Gordon Hewitt '73, '75
Retired Chief for Strategic Enterprise Initiative Branch, U.S. Dept. of Homeland Security

Edward Latimer, M.D.
Psychiatrist

Jeff McCaw '89
Chief Financial Officer, Goodwill Industries International

Barbara Montan

Matthew S. Moore '83
President, MSM Productions, Ltd.
Chairperson, NTID Performing Arts Advisory Committee

Chris Prilenski

Brandi Rarus '91
Vice President, Public Relations and Community Engagement, CSD, Inc.

Bruce Schilling
Broker Associate, Alain Pinel Realtors

Kay Schilling
Vice President, SAM Supply, Inc.

RIT Officers

Dr. David C. Munson Jr.
University President

Karen Barrows '04
Secretary of the Institute and Chief of Staff

Dr. Gerard J. Buckley '78
President, NTID; Vice President and Dean, RIT

Dr. Lisa Cauda
Vice President for Development and Alumni Relations

Dr. Jeremy Haefner
Provost and Senior Vice President for Academic Affairs

Dr. Keith Jenkins
Vice President and Associate Provost for Diversity and Inclusion

Dr. Sandra S. Johnson
Senior Vice President for Student Affairs

Dr. Katherine J. Mayberry
Vice President for Strategic Planning and Special Initiatives

Dr. James G. Miller
Senior Vice President for Enrollment Management and Career Services

Dr. Daniel B. Ornt
Vice President of the Institute of Health Sciences and Technology; Dean, College of Health Sciences and Technology

Dr. Ryne Raffaelle
Vice President for Research and Associate Provost

Deborah M. Stendardi
Vice President for Government and Community Relations

John K. Trierweiler
Vice President for Marketing and Communications; Chief Marketing Officer

Dr. James H. Watters
Senior Vice President for Finance and Administration

RIT Board of Trustees Active Trustees

Results of Financial Operations

Adam Roach, a Computer Integrated Machining Technology major from Grosse Point Woods, Michigan, completed a co-op at Toolcraft Products in Dayton, Ohio. As a tool and die maker's assistant, he helped make special tooling used in everyday manufacturing.

Financial Operations Highlights

During FY 2017, NTID continued to enhance its impact by growing programming and operations in line with its primary and secondary missions while managing resources efficiently. This effort resulted in a decrease in total expenses of 1.1 percent below FY 2016 levels. NTID's 2017 Federal appropriation remained level with FY 2016 funding. NTID exercised prudent cost management to accommodate both flat Federal funding and a decrease in NTID's non-Federal funds of 4 percent.

As noted on the next page, the full fiscal 2017 Federal Appropriation for NTID was $70.016 million. The $2 million not included in the statement of financial operating results was specifically designated for outreach efforts in the southeast United States. In February 2017, NTID and the Alabama School for the Deaf and Blind (AIDB) formalized a partnership and began aggressive efforts to execute the planned outreach activities. Despite the late start, approximately $671,000 of the $2 million in initial FY 2016 funding was expended, with the remaining funds being carried forward into FY 2018. None of the costs for this outreach effort are reflected in the statement of financial operating results.

Total Personnel Compensation for FY 2017 increased approximately $1 million (or 2.2 percent) over FY 2016. This increase is a result of merit increases awarded to faculty and staff and to a limited extent, restoration of previously open positions within the college.

Total RIT Services increased by approximately $746,000 (or 2.5 percent) over FY 2016, primarily as a result of a $787,453 increase in overhead charges paid to RIT.

Total Other Expenditures decreased by approximately $2.8 million (or 15 percent) below FY 2016. This decrease was the net result of a year-to-year decrease in Plant Funds, which is the up-front transfer of NTID funds for specific capital projects at the time the projects are started. NTID has continually incurred equipment, construction and renovation costs as the college works to update its nearly 50 year-old building and provide state-of-the-art facilities for its students.

NTID's FY 2017 financial results demonstrate its ongoing strong commitment to excellent stewardship of resources and sound financial management and oversight.

Financial Operating Results

	FY 2016	FY 2017	Variance $	Variance %
EXPENSES				
Personnel Compensation Expenditures				
Salaries and Wages	$34,062,237	$35,151,424	$1,089,187	3.2%
Benefits	11,560,255	11,480,072	(80,183)	-0.7%
Total Personnel Compensation	**$45,622,492**	**$46,631,496**	**$1,009,004**	**2.2%**
RIT Services Expenditures				
Direct:				
Residence Halls/Food Service, Student Services	$7,684,294	$7,622,103	($62,191)	-0.8%
Cross-Registered Tuition	9,357,259	9,211,949	(145,310)	-1.6%
Physical Plant Services	2,389,550	2,555,577	166,027	6.9%
Indirect:				
Overhead	10,987,636	11,775,089	787,453	7.2%
Total RIT Services	**$30,418,739**	**$31,164,718**	**$745,979**	**2.5%**
Other Expenditures				
Support Expenditures	$6,977,120	$7,266,312	$289,192	4.1%
Grant Cost Shares	146,920	1,240	(145,680)	-99.2%
Financial Aid	2,423,504	2,759,018	335,514	13.8%
Capital	3,433,230	8,972,756	5,539,526	161.4%
Matching Endowment	387,666	116,373	(271,293)	-70.0%
Plant Fund*	5,901,533	(2,686,965)	(8,588,498)	-145.5%
Total Other	**$19,269,973**	**$16,428,734**	**($2,841,239)**	**-14.7%**
Total Expenses	**$95,311,204**	**$94,224,948**	**($1,086,256)**	**-1.1%**
REVENUE				
Federal Appropriation**	$68,016,000	$68,016,000	$0	0.0%
Non-Federal Funds	27,295,204	26,208,948	(1,086,256)	-4.0%
Total Revenue	**$95,311,204**	**$94,224,948**	**($1,086,256)**	**-1.1%**

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* The year over year decrease in overall Plant Funds (funds coming in/sent from NTID) was due to an increase in the quantity, size and scope of Capital Projects that took place during FY 2017. This increase is also reflected in the "Capital" expenditure line.

** The FY 2016 and FY 2017 Federal Appropriations were $70,016,000. The $2,000,000 not included in these totals was specifically designated for outreach efforts in the southeast United States. Approximately $671,000 of the FY 2016 appropriated amount had been expended through the end of FY 2017.

Tuition, Room, Board and Other Fees

The tuition rate increased by 3.9 percent while the rates charged for room, board and fees increased by 1.4 percent for a total combined rate increase of 2.7 percent. These non-federal resource collections constituted approximately 28 percent of NTID's total operating revenue.

	Rates Charged Students				
	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Tuition	$13,512	$14,040	$14,570	$15,140	$15,730
Room	6,530	6,758	6,954	7,162	7,376
Board	4,648	4,810	4,964	5,338	5,290
Fees	492	512	528	544	562
Total	**$25,182**	**$26,120**	**$27,016**	**$28,184**	**$28,958**
Collections	$25,979,350	$25,935,419	$27,295,204	$26,432,000	*
Enrollment (Fall)	1,432	1,387	1,413	1,300	1,262
Collections Per Student	**$18,142**	**$18,699**	**$19,317**	**$20,332**	*

Baylee Trani, center, a first-year psychology major from Huffington Beach, California, is RIT's first deaf student to play NCAA Division I hockey.

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* As of the writing of this report, the collection information for FY 2018 is incomplete.

Financial Aid

The average student receives significant financial aid to apply to tuition, room, board, fees, books, transportation and other expenses.

Kendell Charles, left, a Computing and Information Technology major from Opelousas, Louisiana, and Eunyoung Doucet, right, an Accounting Technology major from Seattle, Washington, get the crowd excited as part of ASL Appreciation Night at the RIT men's hockey game in November.

Financial Aid (Domestic Students)

Financial aid awards to domestic students totaled $22.4 million in FY 2017, a 1.6 percent decrease from FY 2016. Institutionally sponsored aid decreased in FY 2017 by 7.6 percent and state and federal support decreased by 5.5 percent. Loans taken out by domestic students remained approximately the same, while the number of awards, including loans, decreased slightly compared to FY 2016. Overall, the average financial aid (excluding loans) per domestic student increased by 6.8 percent in FY 2017.

SOURCE OF AID	2016		2017		
	Awards*	Amount	Awards*	Amount	Amount Diff %
INSTITUTIONALLY SPONSORED SUPPORT					
Grant-in-Aid:					
NTID Grant-in-Aid	245	$935,259	298	$1,309,518	40.0%
RIT Grant-in-Aid	34	100,137	31	100,725	0.6%
Subtotal Grant-in-Aid	279	$1,035,396	329	$1,410,243	36.2%
Scholarships:					
NTID	449	$1,463,495	435	$1,427,250	-2.5%
RIT	90	212,133	95	226,283	6.7%
NTID Endowments	956	2,235,002	762	2,223,163	-0.5%
External Groups	94	225,868	99	276,956	22.6%
Subtotal Scholarships	1,589	$4,136,498	1,391	$4,153,652	0.4%
Subtotal Institutionally Sponsored Support	**1,868**	**$5,171,894**	**1,720**	**$5,563,895**	**7.6%**
STATE AND FEDERAL SUPPORT					
Grants:					
Pell Grants	595	$2,611,999	531	$2,399,441	-8.1%
State Grants	217	453,851	168	435.230	-4.1%
Subtotal Grants	812	$3,065,850	699	$2,834,671	-7.5%
Other Federal Support:					
Vocational Rehabilitation	895	$10,504,372	829	$9,989,521	-4.9%
Federal Work Study	45	85,160	35	79,568	-6.6%
Subtotal Other Support	940	$10,589,532	864	$10,069,089	-4.9%
Subtotal State and Federal Support	**1,752**	**$13,655,382**	**1,563**	**$12,903,760**	**-5.5%**
LOANS					
Subsidized Federal Student Loan	442	$1,589,724	439	$1,549,083	-2.6%
Unsubsidized Federal Student Loan	456	1,748,423	483	1,808,142	3.4%
Parent PLUS Loans	76	577,586	61	559,554	-3.1%
Subtotal Loans	**974**	**$3,915,733**	**983**	**$3,916,779**	**0.0%**
TOTAL ALL FINANCIAL AID	**4,594**	**$22,743,009**	**4,266**	**$22,384,434**	**-1.6%**
Domestic Student Enrollment		**1,366**		**1,255**	**-8.1%**
Average Financial Aid per Student		**$16,649**		**$17,836**	**7.1%**
Average Financial Aid per Student Excluding Loans		**$13,783**		**$14,715**	**6.8%**

* Students receive more than one form of aid; therefore, the numbers of awards (grants, loans, scholarship, etc.) outnumber the student body.

External Funding Sources

On April 11, 2017, Robert Panara, the first deaf faculty member at NTID, was honored by the U.S. Postal Service with a Forever Stamp at a dedication ceremony in NTID's Panara Theatre. The stamp features a photograph of Panara signing the word "respect" taken by NTID photographer, Mark Benjamin '76, '94.

The NTID Foundation

NTID received $833,447 in new commitments of support including outright gifts of cash and equivalents, gifts-in-kind, deferred gifts and pledges. These dollars were designated to support NTID endowed funds, international outreach, building renovations and a variety of research and pre-college outreach programs.

Contributions of $1,000 and above received during FY 2017 include:

$250,000 and Above Level:	Dr. and Mrs. James J. DeCaro
$50,000 - $249,999 Level:	The Columbus Foundation Communication Service for the Deaf, Inc. Institute of International Education Mr. and Mrs. Albert T. Pimentel Estate of Mr. Leroy R. Subit
$10,000 - $49,999 Level:	Anonymous Interpretek Jephson Educational Trust William G. McGowan Charitable Fund Merck Research Laboratories Motorola Solutions Foundation Estate of Eleanor P. Scouten John Ben Snow Memorial Trust Sorenson Communications, Inc. Mrs. Lori Younkman ZVRS
$5,000 - $9,999 Level:	Bayer Corp. Easter Seals Inc. Morgan Stanley Global Impact Funding Trust Western Pennsylvania School for the Deaf
$1,000 - $4,999 Level:	Mrs. Renate K. Alpert American School for the Deaf Anonymous Bank of New York Mellon Mr. Derrick J. Behm Mr. Gary '78, '81 and Mrs. Jeanne '79, '81 Behm Mr. Donald H. Beil Mr. David S. Birnbaum Mr. & Mrs. Andrew N. Brenneman '88 Dr. Laurie C. Brewer Dr. & Mrs. Gerard J. Buckley '78 Dr. Richard V. Burkhauser Dr. Pamela L. Carmichael '04 Mr. Jeffrey M. Cohen Mr. Rodney Danco, Jr. Dr. Vincent A. Daniele Dr. Robert R. Davila De La Salle-College of Saint Benilde Mrs. Gail Feigenbaum Mr. and Mrs. Sean Flanagan Ms. Marianne M. Gustafson Hamilton Relay

$1,000 - $4,999 Level:	Mr. Frederic S. Hartman Mr. Gordon J. Hewitt '73, '75 Ms. Charmaine Jacobs Hlibok '94 Dr. & Mrs. T. Alan Hurwitz Mr. Bernard Hurwitz and Ms. Stacy Lawrence '93, '96 Ms. Linda A. Iacelli Mrs. Lyn S. Kelly Dr. Aaron W. Kelstone Edward Latimer, M.D. Mr. John '91, '98 and Mrs. Loriann '94 Macko Mr. and Mrs. Parinay Malik Drs. Robert '70 & Susan '74 Mather Mr. Jeffrey Wayne McCaw Mr. J. David McCloskey Mrs. Barbara Montan Ms. Angela S. Officer '88 Dr. Paul W. Ogden Mrs. Carole L. Pepe Ms. Jacqueline A. Pransky Mrs. Brandeis S. Rarus '91 Mr. John T. Reid '79 Rochester Area Community Foundation Mrs. Sidonie Merkel Roepke '79, '81, '83, '84 Kathryn L. Schmitz, Ph.D. '95 Mr. Robert Sidansky Mr. Erwin J. Smith Sprint Foundation St. Catherine's University Stefano La Sala Foundation, Inc. Frank B. Sullivan Memorial Foundation, Inc. Mr. William Urich Mr. Christopher D. Wagner '94 Wells Fargo Financial

NTID Annual Fundraising Results

Through the ongoing support of the NTID Foundation, the college's development program continues to be successful. The substantial sums that NTID raises demonstrate NTID's commitment to seeking alternative sources of public and private support. In FY 2017, NTID development activity generated $683,466 for endowment and restricted purposes. Of that amount, $116,373 was matched with federal dollars and directed toward NTID's endowed scholarship funds.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Endowment and Restricted Funds	$935,832	$1,321,580	$1,348,092	$450,505	$683,466
Equipment and Software	$29,380	$57,117	$69,697	$43,738	$20,530
Total	**$965,212**	**$1,378,697**	**$1,417,789**	**$494,243**	**$703,996**

NTID performed "Tales from the Deafside," an original play written and directed by NTID faculty member, Aaron Kelstone.

NTID Endowment Programs

A total of $683,466, including matching federal funds* of $116,373, was added to the Federal Matching Endowment Fund corpus in 2017. The market value of NTID's Federal Matching Endowment portfolio stands at $60,223,551.

The market value of NTID's total endowments, which include privately raised funds prior to the establishment of the Federal Matching Endowment program, is $65,906,940.

Value as of September 30, 2017

	Contributed Value	Market Value
Funds Subject to Federal Investment and Spending Guidelines		
Private	$5,402,237	$10,305,022
Federal	$5,395,223	$9,900,563
Subtotal	$10,797,460	$20,205,585
Funds No Longer Subject to Federal Investment and Spending Guidelines	$18,448,257	$40,017,966
Total Federal Endowment	**$29,245,717**	**$60,223,551**

Other Endowments	Contributed Value	Market Value
Private	$1,891,940	$5,683,389
Total Endowments	**$31,137,657**	**$65,906,940**

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* Any monies matched must be funded through operating funds efficiencies.

Scholarships, Endowed Funds and Estate Commitments

The generosity of a large number of friends of
NTID has resulted in the following scholarships,
endowed funds and estate commitments
benefiting NTID students.

Barlow Endowed Scholarship Fund

Alice Beardsley Memorial Endowed Scholarship Fund for Interpreting Students at NTID

Ned Behnke Memorial Endowed Scholarship Fund

Frank P. Benz Jr. Memorial Scholarship

Doris W. Blanchard Endowed Scholarship Fund

Farid Bozorgi Memorial Endowed Scholarship Fund

Bernard Bragg Deaf Theatre, Signed Arts and Deaf Cinema Endowment Fund

Andrew and Mary Brenneman Annual Scholarship

Gladys Brooks Endowed Fund for the Laboratory Science Technology Program

Dr. Gerard Buckley Student Leadership Endowment

Citicorp/Citibank Endowed Scholarship Fund at NTID

Dr. Karen K. Conner Annual Scholarship Fund

Continental Corporation Endowed Scholarship Fund at NTID

Lillian M. Cowin Memorial Endowed Scholarship Fund

Robert R. and Donna E. Davila Endowed Scholarship Fund

James J. DeCaro Endowed Scholarship Fund

James and Patricia DeCaro Endowed Scholarship

Delta Sigma Phi Fraternity Endowed Scholarship Fund

Ronald Dodge Faculty/Staff Grants Endowed Fund

Ronald Dodge Memorial Endowed Scholarship Fund

Dreyfus Foundation Laboratory Science Technology Endowed Student Support Fund

Dorothy E. Ann Fund (D.E.A.F.) Endowed Scholarship Fund

Mr. and Mrs. Joseph F. Dyer Endowed Scholarship Fund

Joseph F. and Helen C. Dyer Arts Center Endowed Fund

Max Factor Family Foundation Endowed Scholarship Fund

Barbara M. Fallon KPMG Memorial Endowed Scholarship Fund

Rose and George Feigenbaum Endowed Scholarship Fund

Ruth H. Fenyvessy Memorial Endowed Scholarship Fund

Curt and Jean Feuer Scholarship at NTID

Maurice and Maxine Forman Endowed Scholarship Fund

Ann Wadsworth Frisina Memorial Endowed Scholarship Fund

Dr. Robert Frisina Award

Max and Helene Frumkes Memorial Endowed Scholarship Fund

Garlinghouse Endowed Scholarship Fund

Warren Goldmann Endowed Scholarship Fund

Scholarships, Endowed Funds and Estate Commitments (continued)

Allen and Gloria Gopen Endowed Scholarship Fund

Debbe A. Hagner Endowed Lecture at NTID

Mildred F. Hall Endowed Scholarship Fund

Hamilton Relay Scholarship

Jennifer Van Atta Hayes Memorial Endowed Scholarship

William Randolph Hearst Endowed Scholarship Fund for Financially Disadvantaged Students

Dr. Mary Jane Hellyar Endowed Scholarship Fund

Frank Horton Endowed Scholarship Fund

William "Dummy" Hoy OTB Endowed Scholarship

T. Alan and Vicki T. Hurwitz Family Endowed Scholarship Fund

Ralph Hymes Endowed Scholarship Fund

Linda A. Iacelli Endowed Student Support Fund

Interpretek Endowed Scholarship Fund

Andrew Jacobson Annual Scholarship

Lucille Ritter Jennings Endowed Scholarship Fund

Jephson Educational Trust Endowed Scholarship Fund for the Performing Arts

JHB Anonymous Scholarship Fund

Johnson Scholarship Foundation Endowed Scholarship for Innovation and Entrepreneurship

David T. Kearns Endowed Scholarship Fund for Technical Excellence

Ron and Lyn Kelly Endowed Scholarship for Deaf and Hard-of-Hearing Students

Drew and Frances King Endowment Fund

Sara L. Kuhnert Endowed Scholarship Fund

La Sala Foundation Doctoral Fellowship Fund

Johanna Larson Endowed Scholarship in the Allied Health Disciplines

Michael E. Lawson Endowed Scholarship

Edward H. Lichtenstein Memorial Endowed Scholarship Fund

Dr. Frank W. Lovejoy Jr. Endowment for Deafness Research

Edmund Lyon Memorial Lectureship Fund

Dr. James C. Marsters Endowed Scholarship Fund

Martin Family Endowed Scholarship

Dr. Robert S. and Carol D. Menchel Endowed Scholarship Fund

Kevin Mowl Memorial Endowed Scholarship Fund

Mageeda Murad Endowed Scholarship Fund

Dr. Genji Murai Endowed Scholarship Fund

Mutterer Family Endowed Scholarship Fund

M. L. Navrat Endowed Scholarship Fund for NTID

Ruth G. Norton Endowed Scholarship Fund

NTID Alumni Association Endowed Scholarship Fund

Scholarships, Endowed Funds and Estate Commitments (continued)

NTID Anonymous #12 Endowed Scholarship Fund

NTID Architectural Technology Award Endowed Scholarship Fund

NTID Business Careers Endowed Scholarship Fund

NTID Emergency EYF Student Scholarship Fund

NTID Endowed Scholarship in the Visual Arts Disciplines

NTID Foundation Endowed Scholarship Fund

NTID Performing Arts Endowed Scholarship Fund

NTID President and Dean's Scholarship for Academic Excellence

NTID Scholarship Fund

NTID Science and Engineering Careers Endowed Scholarship Fund

NTID Student Leadership Endowed Fund

NTID Visual Communications Endowed Scholarship Fund

NYS Federation of Home Bureaus, Inc. Endowed Scholarship Fund in Honor of Martha Perry

Milton H. and Ray B. Ohringer Endowed Scholarship Fund

Robert F. Panara Endowed Scholarship Fund

Shirley M. Panara Memorial Endowed Fund

Sally J. Pimentel Endowed Scholarship

Pulver Family Endowed Scholarship Fund

Robert W. Rice Endowed Scholarship Fund

RIT Celebration of Community Endowed Fund

Mary Hope Robinson Endowment for the Performing Arts

Dr. Ellie Rosenfield Endowed Scholarship Fund

Rothman Family Endowment Fund

Elizabeth Dunlap Sargent Memorial Endowed Scholarship Fund

Royichi Sasakawa / James J. DeCaro Endowed Scholarship Fund

Edward L. Scouten Endowed Fund for English Literacy

Wilfrid and Isabel Searjeant Endowed Scholarship Fund

S. Richard Silverman Endowed Scholarship Fund for International Deaf Students

Carolie R. Simone Endowed Scholarship Fund

Edythe and Edward Sklar Endowed Scholarship Fund

David Smith Memorial Endowed Scholarship Fund

Benjamin J. Soukup Endowed Scholarship Fund

Sprint Endowed Scholarship Fund

Frank B. Sullivan Exemplary Business Student Award

Frank B. Sullivan Outstanding Graduate Business Student Award

Frank B. Sullivan Outstanding Student in Business Award

Solon E. Summerfield Foundation Endowed Scholarship Fund

Michael A. Swartzman Memorial Endowed Scholarship Fund

Scholarships, Endowed Funds and Estate Commitments (continued)

Paul L. and Sally A. Taylor Endowed Scholarship Fund

Michael Thomas Endowed Scholarship Fund in the Performing Arts

Eloise Thornberry Endowed Scholarship Fund

W. Paul Urich Memorial Endowed Scholarship Fund

Al Van Nevel Memorial Foundation Scholarship for Excellence in Business Studies at NTID

Joseph C. and Loretta F. Wolf Endowed Scholarship Fund

Louis S. and Molly B. Wolk Foundation Endowed Scholarship Fund for Deaf Students at RIT

The Woman's Club of Rochester Endowed Scholarship Fund for Deaf Students at RIT

Women's Council Endowed Scholarship Fund for Deaf and Hard-of-Hearing Students at RIT

James Ventimiglia Memorial Printing Award Endowed Fund

Elizabeth W. Williams Endowed Fund for the Performing Arts

Shakenya Ward-Brassell, an Applied Liberal Arts major from Snyder, New York, kicks back at a Summer Vestibule Program '16 reunion in NTID's CSD Student Development Center.

Grants and Contracts

During FY 2017 NTID submitted 19 new grant proposals requesting a total of $15,926,849 in funding. Eight of these proposals were funded for a total of $1,258,523; ten proposals are still pending; one was not funded.

As of September 30, 2017, the annual reimbursed expenditures of all grants and contracts at NTID totaled $1,867,308 with a total value of $8,451,495 over the lives of the projects.

Project Title	Grant Provider	Year	Amount FY 2017	Total Value
Renewal of DeafTEC: Technological Education Center for Deaf and Hard-of-Hearing Students	National Science Foundation	3/4	$965,457	$3,999,807
CTEA: Perkins IV Formula Funding, 2016-2017	Department of Education	1/1	$39,872	$44,401
Facilitating Knowledge Building in Cooperative Learning of Statistics in Mixed Teams with Deaf/Hard of Hearing and Hearing Students	National Science Foundation	3/3	$78,317	$499,830
Mechanism of Health Literacy and Information Accessibility	National Institutes of Health	2/5	$150,028	$338,376
Development of Temporal Visual Selective Attention in Deaf Children	National Science Foundation	2/3	$148,942	$449,947
RoadMAPPs to Careers: A New Approach to Mobile Apps Education featuring a Mapp for Deaf and Hard-of-Hearing Students	National Science Foundation	2/3	$189,709	$820,504
Rochester Prevention Research Center - Year 3	National Institutes of Health	1/1	$50,568	$49,617
Collaborative Research: Accessible STEM Instruction with Deaf Students: Supporting Faculty in Pedagogical Exploration and Innovation	National Science Foundation	1/3	$101,363	$443,200
Accretion to Outflow in Evolved Star Binaries: Disks in AGB, PPN and PN	NASA/Space Telescope Science Institute	1/3	$6,200	$6,220
RIT-RISE Scientists-in-Training Program for Deaf and Hard-of-Hearing Undergraduates	National Institutes of Health	1/5	$54,590	$159,120
Neurocognitive Plasticity in Young Deaf Adults: Effects of Cochlear Implantation and Sign Language Exposure	National Institutes of Health	1/1	$270	$587,493
New York State Deaf Health Survey	NYS Department of Health	1/1	$9,193	$9,171
Deaf Education Curriculum Development and Pilot Teacher Training in Cambodia	US Fund for UNICEF	1/2	$23,092	$39,002
African Deaf Outreach Initiatives	Institute for International Education	1/1	$26,874	$50,000
Sexual Health Pilot Project: Design and Implementation of Dean (NTID) Survey	University of Rochester	1/1	$6,586	$6,607
Auditory Experience, Critical Periods and the Development of Categorical Perception in Cochlear Implant Users: A Preliminary Investigation	Hearing Health Foundation	1/1	$21	$23,616

PROMIS Materials Development	University of Rochester	1/1	$9,667	$10,544
NTID Mobile Apps Development Competition	Motorola Foundation	1/1	$6,559	$30,000
REU SITE: Accessible Multimodal Interfaces	National Science Foundation	3/3	$0	$385,433
Internet Protocol Captioned Telephone Service (IP-CTS) Assessment on Quality and Usability	National Institutes of Health	2/2	$0	$14,614
REU SITE: Summer Undergraduate Research for Students who are Deaf or Hard-of-Hearing in Applying Mathematical and Statistical Methods to Problems from the Sciences	National Science Foundation	1/3	$0	$303,000
Investigating Key Biopsycosocial Factors that Mediate Lifespan Management of Pre-Lingual Deafness	National Institutes of Health	1/2	$0	$180,993
Total			**$1,867,308**	**$8,451,495**

NTID ASL and Interpreting Education faculty Kathy Miraglia '99 places the graduate hood on MS in Health Care Interpretation student, Yakata Nichols, of Redford, Michigan.