

RIT


National Technical
Institute for the Deaf



2019 Annual
Report

2019 Annual Report

National Technical
Institute for the Deaf



Note of Explanation

This Annual Report notes activities and accomplishments throughout Fiscal Year 2019 (October 1, 2018 - September 30, 2019), corresponding primarily to Academic Year 2018-2019. References to Fiscal Year 2020 correspond to characteristics and accomplishments as of fall semester Academic Year 2019-2020.

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

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December 20, 2019

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..."

As always, we begin our report as we begin each academic year and each new initiative – with our mission:

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. Secondly, 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 2019 Annual Report proves that we are succeeding in fulfilling our primary mission – the education and employment of deaf and hard-of-hearing students. In FY 2019, 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. NTID's most recent employment rate for graduates is 95%, with a five-year average of 95%. We know NTID's more than 9,000 alumni are employed at a higher rate, earn more and participate at a lower rate in Social Security programs over their lifetimes.

The FY 2019 Annual Report also demonstrates our success in achieving our secondary mission. Our most recent employment rates for graduates in our ASL-English Interpretation program and Master of Science in Secondary Education of Students who are Deaf or Hard of Hearing is 100%. In May, we graduated our first cohort of students in our Masters in Health Care Interpreting program, the first program of its kind worldwide. In the past year, we received a \$258,000 grant from the National Science Foundation (NSF) to explore how augmented reality technology can make STEM content more accessible to deaf and hard-of-hearing learners in live presentation settings. In March, we received a \$1.65 million award from the NSF to transition our DeafTEC: Technological Education Center for Deaf and Hard-of-Hearing Students program into a resource center that will continue to serve pre-college deaf students nationwide. The NTID Regional STEM Center also expanded to serve 12 states in the southeast, providing training and post-secondary participation for deaf and hard-of-hearing students, parents and educators in STEM fields.

Every year, we encourage our graduates to go out and change the world. Every year, through our education of deaf and hard-of-hearing students, sign language interpreters and teachers of deaf students, as well as our research and outreach programs, we strive to do the same. We thank the Department of Education, Congress, and our faculty, staff, students and friends for making NTID possible. Even after 51 years, there's still more world to change.

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.
President



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

Cover Photo

Bailee Strang, a first-year Design & Imaging Technology major, from Lakewood, Colorado, poses for a photo with RIT mascot "RITchie" during NTID's Summer Vestibule Program (SVP) in August 2019. SVP is a two-week orientation experience that gives new students an introduction to NTID's technical programs, RIT's professional programs and all other aspects of campus life.

Mission Statement

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.

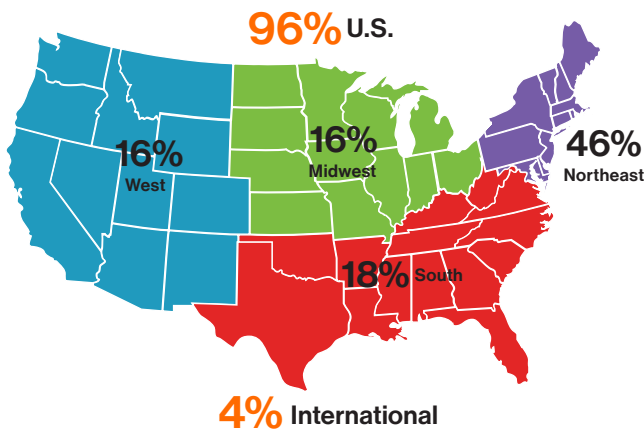
NTID by the Numbers

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 provide a glimpse of what NTID looks like today.

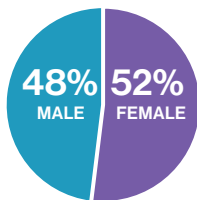
Student Enrollment

1,129 TOTAL ENROLLMENT

BREAKDOWN BY GEOGRAPHIC REGION:

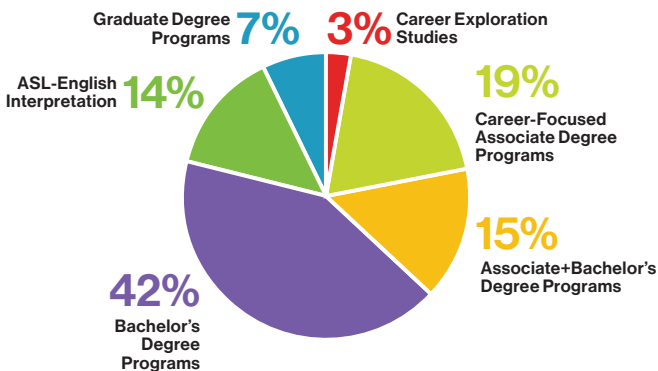


BREAKDOWN BY GENDER:



MORE THAN **9,000** ALUMNI

Academics



Employment/Earnings After College

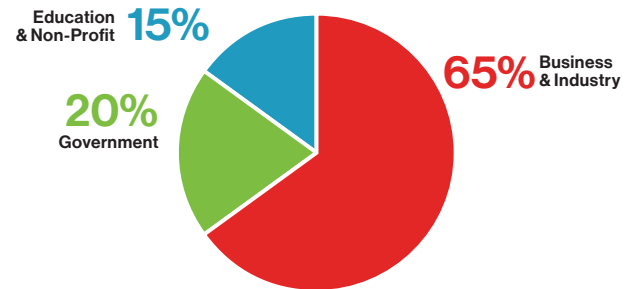
232 STUDENTS COMPLETED A CO-OP LAST YEAR

New RIT/NTID grads are ready to succeed



95% of students who sought jobs after graduation found one within a year

New RIT/NTID alumni thrive in all economic sectors



Employers include:

Boeing, CBS, Food and Drug Administration, IBM, JPMorgan Chase Bank, NASA, Naval Air Systems Command

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

	In Classroom	Outside Classroom
Interpreting	100,270	45,014
Captioning	23,154	2,824
Notetaking	47,181	

Annual Highlights

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

- NTID's most recent employment rate for deaf and hard-of-hearing graduates in 2018 is 95%. The average employment rate over the past five years is 95%.
- NTID's most recent employment rate for Master of Science in Secondary Education of Students who are Deaf or Hard of Hearing graduates and ASL-English Interpretation graduates is 100%.
- 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.
- In October 2018, NTID received a \$258,000 grant from the National Science Foundation (NSF) to explore how augmented reality technology can make STEM content more accessible to deaf and hard-of-hearing learners in live presentation settings. The project represents a partnership between NTID and the Rochester Museum & Science Center, which includes the Rochester Challenger Learning Center.
- In January 2019, RIT was categorized as a "high research activity institution" or "R2" under the updated Carnegie Classification of Institutions of Higher Learning. This designation puts RIT among the top 6% of colleges and universities in the nation.
- In February 2019, NTID was announced as one of three finalists in a global competition to source technology solutions that increase access to local sign languages and advance language and literacy outcomes for deaf and hard-of-hearing children in developing countries. NTID received \$150,000 to pilot and test its *World Around You* platform in the Philippines. The platform collects, documents and shares local sign and written languages through an open-content digital library of folktales offered in an interactive bilingual format.
- In March 2019, NTID received a \$1.65 million award from NSF to transition its DeafTEC: Technological Education Center for Deaf and Hard-of-Hearing Students program into a resource center. The DeafTEC Resource Center will increase the number of deaf and hard-of-hearing individuals in highly skilled technician jobs, building on its eight years of success in this area.
- In FY 2019, NTID established a new research center: the NTID Sensory, Perceptual and Cognitive Ecology (SPaCE) Center, which includes the new Perception, Language & Attention in Youth (PLAY) laboratory.
- In April 2019, NTID celebrated its 50th anniversary with a rededication ceremony that included Lucinda Robb, granddaughter of the late President Lyndon B. Johnson; U.S. Congressman Joseph Morelle; New York Lieutenant Governor Kathy Hochul; remarks sent from U.S. Senators Chuck Schumer and Kirsten Gillibrand; and other state and local officials.
- In May 2019, NTID and Changchun University in China began a cultural and educational partnership that will establish student and faculty exchange programs in the art and design fields. NTID has more than 14 institution partners throughout the world.
- In FY 2019, NTID graduated its first cohorts in the 3D Graphics Technology AAS and Health Care Interpretation MS programs.
- In June 2019, Larwan Berke, an RIT Ph.D. student from Fremont, California, was one of 11 outstanding doctoral students to be awarded a 2019 Microsoft Dissertation Grant of up to \$25,000. Selected from more than 200 proposals, Larwan's work uses automatic speech recognition as a captioning tool to enable greater accessibility for users who are deaf or hard of hearing.
- In recognition of its promotion of diversity and inclusion, RIT received the 2019 Higher Education Excellence in Diversity Award from *INSIGHT Into Diversity* magazine and a 2019 honor by Minority Access Inc., a nonprofit organization committed to increasing diversity, decreasing disparities and reducing incidences of environmental injustice.

Executive Summary

New Registrations	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Fall Admissions (Deaf and Hard-of-Hearing Students Only)*					
Applications	860	771	638	533	575
Acceptances	488	432	435	396	418
Registrations	340	305	289	259	247
Other New Registrations					
AAS/BS ASL-English Interpretation	40	46	42	50	51
MS in Secondary Education	15	17	5	7	8
Total New Registrations	395	368	336	316	306
Enrollment (Deaf and Hard-of-Hearing Students Only)					
Career Exploration Studies (CES)	59	44	38	25	31
Sub-Baccalaureate Programs					
Career-Focused Programs	333	316	265	242	218
Associate+Bachelor's/Pre-Baccalaureate	232	211	202	182	171
Subtotal CES and Sub-Baccalaureate	624	571	505	449	420
Baccalaureate Programs at RIT	543	507	520	506	470
Graduate Programs at RIT	53	44	56	50	53
Subtotal Baccalaureate and Graduate at RIT	596	551	576	556	523
Subtotal Deaf and Hard-of-Hearing Students Only	1,220	1,122	1,081	1,005	943
Other Enrollments					
ASL-English Interpretation	151	140	147	148	155
MS in Health Care Interpretation	N/A	8	15	12	9
MS in Secondary Education	42**	30	19	17	22
Subtotal Other Enrollments	193	178	181	177	186
Total Enrollment	1,413	1,300	1,262	1,182	1,129

* 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 in FY 2016 are six non-matriculated students 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 2015	FY 2016	FY 2017	FY 2018	FY 2019
Withdrawn (All Students)	16%	16%	17%	17%	17%
Graduates					
Total Degrees Granted	285	340	301	302	292
<i>Degree Level</i>					
Certificate	0	2	3	3	1
Associate (AOS)	38	33	37	41	22
Associate (AS/AAS)	62	78	85	72	78
Associate (Interpreting)	0	1	0	0	0
Bachelor's (Interpreting)	29	40	24	29	35
Bachelor's	116	143	123	120	126
Master's	19	23	18	24	17
Master's (MS Health Care Interpretation)	N/A	N/A	N/A	N/A	8
Master's (MSSE)	21	20	11	13	5
Post-Graduation Employment					
Post-Graduation Employment	126	122	130	134	N/A*
Post-Graduation Employment Rate	94%	94%	96%	95%	N/A*
<i>By Sector of the Economy</i>					
Business and Industry	75%	70%	77%	65%	N/A*
Education/Non-Profit	16%	20%	17%	15%	N/A*
Government	9%	10%	6%	20%	N/A*
Cooperative Work Experiences	271	271	313	270	232
Access/Support Services					
Notetaking Hours	60,195	61,924	62,015	52,945	47,181
Tutoring Hours	14,212	14,438	12,881	11,405	8,369**
Interpreting Hours	140,230	149,046	152,630	136,036	145,284
Real-Time Captioning Hours	22,211	24,335	25,952	23,600	25,978

* Post-graduation employment numbers reflect status as of one year following graduation; employment numbers for September 1, 2018 through August 31, 2019 graduates will be reported next year.

** Two academic departments did not have tutoring hours available.

Executive Summary (continued)

Outreach (Number of External Participants)	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Computer Science Week	N/A	N/A	N/A	N/A	26
Create Your Future	N/A	N/A	N/A	N/A	23
Digital Arts, Film and Animation	50	28	20	34	18
Discovering Agriculture through STEM	N/A	N/A	N/A	23	N/A
Droids and Drones	N/A	18	27	30	N/A
Explore Your Future	213	199	203	179	212
Health Care Careers Exploration Program	10	14	23	20	21
Health Science Week	N/A	N/A	N/A	N/A	20
Math Competition	93	119	144	149	168
NTID Center on Employment	568	754	498	290	266
Project Fast Forward	113	56	168	118	158
SpiRIT Writing Contest	64	31	33	26	19
Steps to Success	13	8	18	17	19
TechGirlz/TechBoyz Camp	45	47	60	49	51

Financial Aid (Domestic Students)					
Grant-in-Aid	\$1,459,983	\$1,035,396	\$1,410,243	\$1,344,300	\$1,588,692
Vocational Rehabilitation	10,821,731	10,504,372	9,998,521	9,780,492	8,951,676
Pell Grants	2,662,380	2,611,999	2,399,441	2,619,065	2,492,605
State Grants	458,527	453,851	435,230	488,173	483,487
Federal Loans	4,775,031	3,915,733	3,916,779	3,566,895	3,246,844
Scholarships and Other	3,117,140	4,221,658	4,233,220	4,797,273	4,898,701
Total Financial Aid	\$23,294,792	\$22,743,009	\$22,384,434	\$22,596,198	\$21,662,005
Average Aid per Domestic Student (Excluding Loans)*	\$13,790	\$13,783	\$14,715	\$15,688	\$17,051

* Total financial aid, less loans, divided by domestic student enrollment.

Executive Summary (continued)

Domestic Student Rates*	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Tuition	\$14,570	\$15,140	\$15,730	\$16,518	\$17,162
Room	6,954	7,162	7,376	7,596	7,902
Board	4,964	5,338	5,290	5,662	5,800
Fees	528	544	562	584	646
Total	\$27,016	\$28,184	\$28,958	\$30,360	\$31,510

Fundraising Activity

Cash to Endowment and Restricted Funds	\$450,505	\$683,466	\$872,054	\$1,337,139	**
Equipment and Software	\$43,738	\$20,530	\$40,717	\$100,728	**
Federal Funds Matched***	\$387,666	\$116,373	\$86,322	\$362,598	**



In FY 2019, 21 deaf and hard-of-hearing students in 10th-12th grade learned about job opportunities in health care fields at NTID's Health Care Careers Exploration Program.

* 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.

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.]

Education of the Deaf Act (continued)

- (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. Converted to non-provisional patent June, 2018.



The Next Big Idea competition, sponsored by Purple/ZVRS, is an annual event where teams of students combine skills related to their individual majors to create innovative products, technology or businesses.

Performance Indicators



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

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
2011	1,521
2012	1,547
2013	1,529
2014	1,432
2015	1,387
2016	1,413
2017	1,300
2018	1,262
2019	1,182
2020	1,129

Performance Indicators (continued)

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

Fiscal Year	Target	Number	Status
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
2019	1,045	955	Target Not Met
2020	1,045	890	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. For FY 2019, the target was decreased back to the original 1,045, to better reflect the recent enrollment contraction.

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 NTID and in baccalaureate programs at RIT.

Fiscal Year	Sub-Baccalaureate	Baccalaureate	Total
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
2019	449	506	955
2020	420	470	890

As seen in the above table, NTID experienced a decrease in the undergraduate enrollment of students who are deaf and hard of hearing from 955 students during the 2018-2019 (FY 2019) academic year to 890 students in the 2019-2020 (FY 2020) 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
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
2019	140	148	Target Surpassed
2020	140	155	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 toward an overall enrollment goal of 140 students.

Explanation. Enrollment in this program increased from 72 students in 1997 to its highest level of 164 students in FY 2013 (2012-2013 academic year). The number of students currently enrolled in the program in FY 2020 (2019-2020 academic year) is 155. This measure previously included AAS degree students in ASL-English Interpretation, a now-closed degree program track. Between FY 2009 and FY 2016, just four AAS degree students were enrolled, as they finished their degree requirements.

Performance Indicators (continued)

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
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
2019	95	79	Target Not Met
2020	95	84	Made Progress From Prior Year

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 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.

Explanation. In FY 2020 (2019-2020 academic year), NTID had a total of 22 students in the MSSE program and 53 deaf and hard-of-hearing students in other RIT graduate programs. Enrollment in NTID's MSSE program has declined more than 50 percent over the last five fiscal years, largely as a result of elevated admissions requirements in response to graduates' certification rate. Additionally, previous funding for scholarships has declined, making NTID unable to financially support the number of students as in prior years. FY 2017 marked the first year where students enrolled in NTID's Master of Science in Health Care Interpretation were included. FY 2020 enrollment in this area is nine students. Total enrollment for this measure is currently 84.

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 2019 data will be reported in April 2020.

Performance Indicators (continued)

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
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
2017	70	71.3	Target Surpassed
2018	70	63.9	Target Not Met

Source: Rochester Institute of Technology, Registrar Office records

Frequency of Data Collection: Annual

Data Quality: In April 2019, NTID reported to the Department the FY 2018 persistence rate of its sub-baccalaureate students, who returned from the 2017-2018 academic year to their second year in the 2018-2019 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 63.9%. Currently, there are no sub-baccalaureate students enrolled in the ASL-English Interpretation program.

NTID will report to the Department the FY 2019 persistence rate in April 2020, with a sub-set of disaggregated data on the persistence rates of sub-baccalaureate students who are deaf and hard of hearing 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%. In comparison, IPEDS data indicate that two-year public and two-year non-profit colleges have an average persistence rate of 62.3%.

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.

Performance Indicators (continued)

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
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
2017	87	88.8	Target Surpassed
2018	88	80.7	Target Not Met

Source: Rochester Institute of Technology, Registrar Office records

Frequency of Data Collection: Annual

Data Quality: In April 2019, NTID reported to the Department the FY 2018 persistence rate of its baccalaureate students, including ASL-English Interpretation students, who returned from the 2017-2018 academic year to their second year in the 2018-2019 academic year, along with a sub-set of disaggregated data on the persistence rates of baccalaureate students who are deaf and hard of hearing and ASL-English Interpretation students. Prior to FY 2008, this measure did not include ASL-English Interpretation students.

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

	<u>All students</u>	<u>Deaf students</u>	<u>ASL-English Interpretation students</u>
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%
FY 2017	88.8%	85.0%	100.0%
FY 2018	80.7%	81.5%	77.8%

NTID will report to the Department the FY 2019 persistence rate of its baccalaureate students in April 2020, with a sub-set of disaggregated data on the persistence rates of baccalaureate students who are deaf and hard of hearing and ASL-English Interpretation students.

Target Context: The target for the persistence rate of NTID's baccalaureate students is 88%. In comparison, IPEDS data indicate that four-year public and private colleges have an average persistence rate of 80.8%.

Performance Indicators (continued)

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
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	38.8	Target Surpassed
2017	39	36.9	Target Not Met
2018	40	37.7	Made Progress From Prior Year

Source: Rochester Institute of Technology, Registrar Office records

Frequency of Data Collection: Annual

Data Quality: In April 2019, NTID reported to the Department the FY 2018 percentage of its sub-baccalaureate students (those who were initially enrolled in the 2012-2013 academic year), including ASL-English Interpretation students, who graduated within 150% 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 hard of hearing 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:

	<u>All students</u>	<u>Deaf students</u>	<u>ASL-English Interpretation students</u>
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
FY 2017	36.9%	36.9%	N/A
FY 2018	37.7%	37.7%	N/A

Performance Indicators (continued)

NTID will report to the Department the FY 2019 graduation rate of its sub-baccalaureate students in April 2020, 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 40%. An IPEDS analysis of public and private non-profit two-year institutions indicated an average graduation rate of 31% for full-time, first-time degree-seeking students within 150% of program-based length of time. Based on the comparison with IPEDS data, the target has increased from 35% in 2013 to 40% in 2018, at an increase of 1% 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.

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
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	74.5	Target Surpassed
2017	65	65.6	Target Surpassed
2018	65	79.6	Target Surpassed

Source: Rochester Institute of Technology, Registrar Office records

Frequency of Data Collection: Annual

Data Quality: In April 2019, NTID reported to the Department the FY 2018 percentage of its baccalaureate students (those who were initially enrolled in the 2012-2013 academic year), including ASL-English Interpretation students, who graduated within 150% 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 hard of hearing and ASL-English Interpretation students. Prior to FY 2008, this measure did not include ASL-English Interpretation students.

Performance Indicators (continued)

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

	<u>All students</u>	<u>Deaf students</u>	<u>ASL-English Interpretation students</u>
FY 2014	69.5%	67.1%	78.9%
FY 2015	76.2%	69.2%	91.7%
FY 2016	74.5%	73.5%	84.2%
FY 2017	65.6%	56.5%	88.9%
FY 2018	79.6%	77.3%	87.0%

NTID will report to the Department the FY 2019 graduation rate of its baccalaureate students in April 2020, with a sub-set of disaggregated data on the graduation rates of baccalaureate students who are deaf and hard of hearing and ASL-English Interpretation students.

Target Context: The target for the graduation rate of NTID's baccalaureate students in 2018 is 65%. An IPEDS analysis of institutions of higher education show that four-year public and private colleges have an average graduation rate of 59.8%. Based on the comparison with IPEDS data, the target has increased from 60% in 2011 to 65% for 2016-2018.

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.

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. All graduates receive an 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 2018, a total of 250 deaf and hard-of-hearing students graduated from NTID. Valid data existed one year later on 234 graduates. Of these 234 graduates, 134 students were employed (57%), 81 students were in higher education or training (35%) and 19 students were not employed or in higher education or training (8%). Of the 19 students not employed or in higher education or training, seven were actively looking for work.

Category of Graduate	Count
Employed	134
Unemployed (Seeking Employment)	7
Not Seeking Employment	12
Education (Within RIT)	59
Education (Outside RIT)	22
Unknown	16
Total	250

Performance Indicators (continued)

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
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
2017	50	53	Target Surpassed
2018	50	57	Target Surpassed

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

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%. 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% 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% 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%, the following percentages of students employed who have chosen to pursue employment:

Graduation Year	Percentage
2009	90
2010	90
2011	91
2012	93
2013	94
2014	94
2015	94
2016	94
2017	96
2018	95

Performance Indicators (continued)

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
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
2017	45	42	Target Not Met
2018	45	35	Target Not Met

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

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%. 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% 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% 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.

Performance Indicators (continued)

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)

Graduation Year	Target	Rate	Status
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
2017	5	5	Target Met
2018	5	8	Target Not Met

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%. 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% 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% 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.

Performance Indicators (continued)

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
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
2018	222,827	223,600	Target Not Met
2019	222,827	234,500	Target Not Met

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

Frequency of Data Collection: Annual

Data Quality: The FY 2019 data on the federal cost per graduate, as reported by NTID, is an average of the cost per graduate from FY 2014 to FY 2019. The federal cost per graduate includes graduates who complete programs of study at RIT/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
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
2018	267,737	276,400	Target Not Met
2019	267,737	288,400	Target Not Met

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

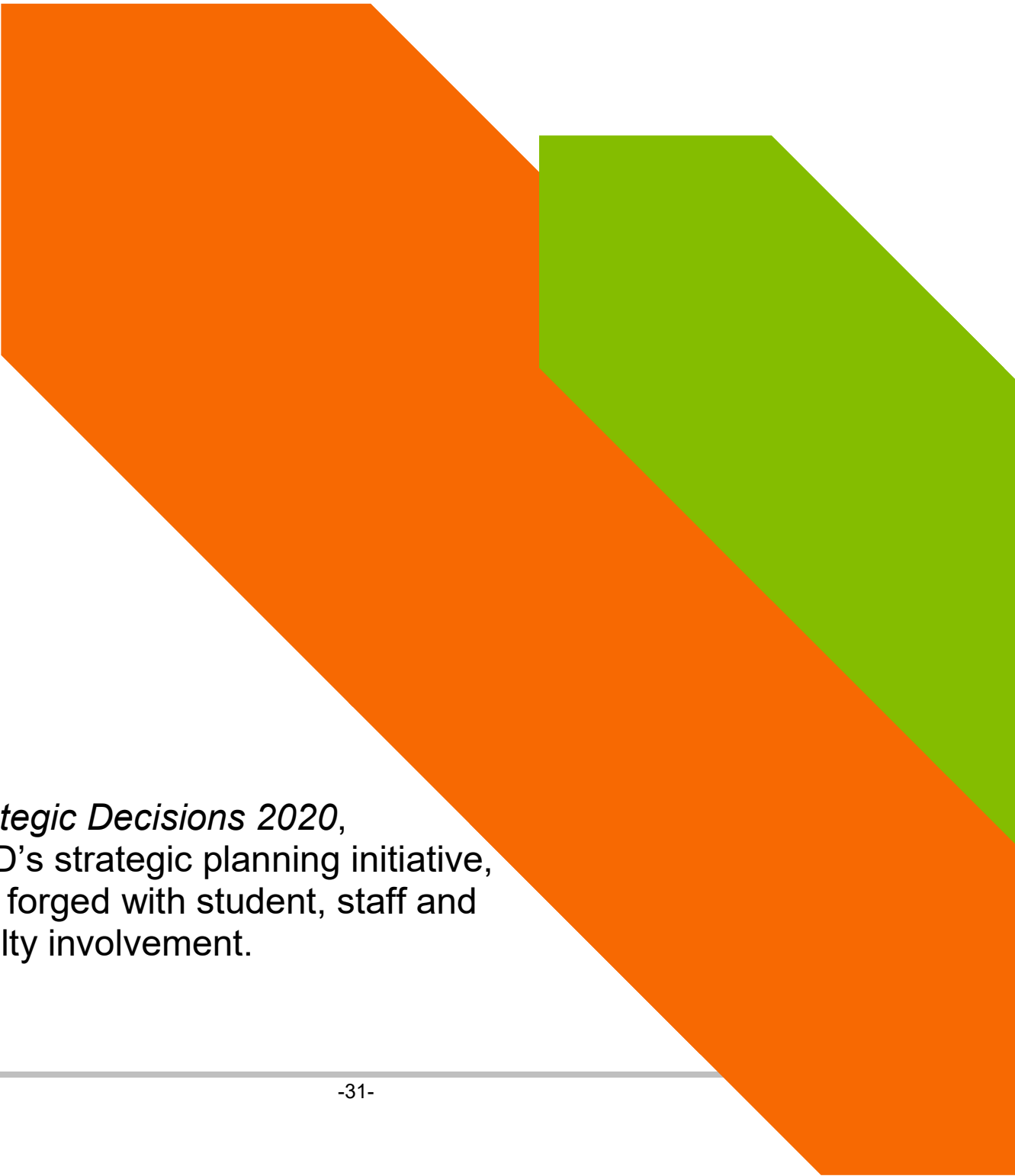
Frequency of Data Collection: Annual

Data Quality: The FY 2019 data on the total educational cost per graduate, as reported by NTID, is an average of the cost per graduate from FY 2014 to FY 2019. The total educational cost per graduate includes graduates who complete programs of study at RIT/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.

Strategic Decisions 2020

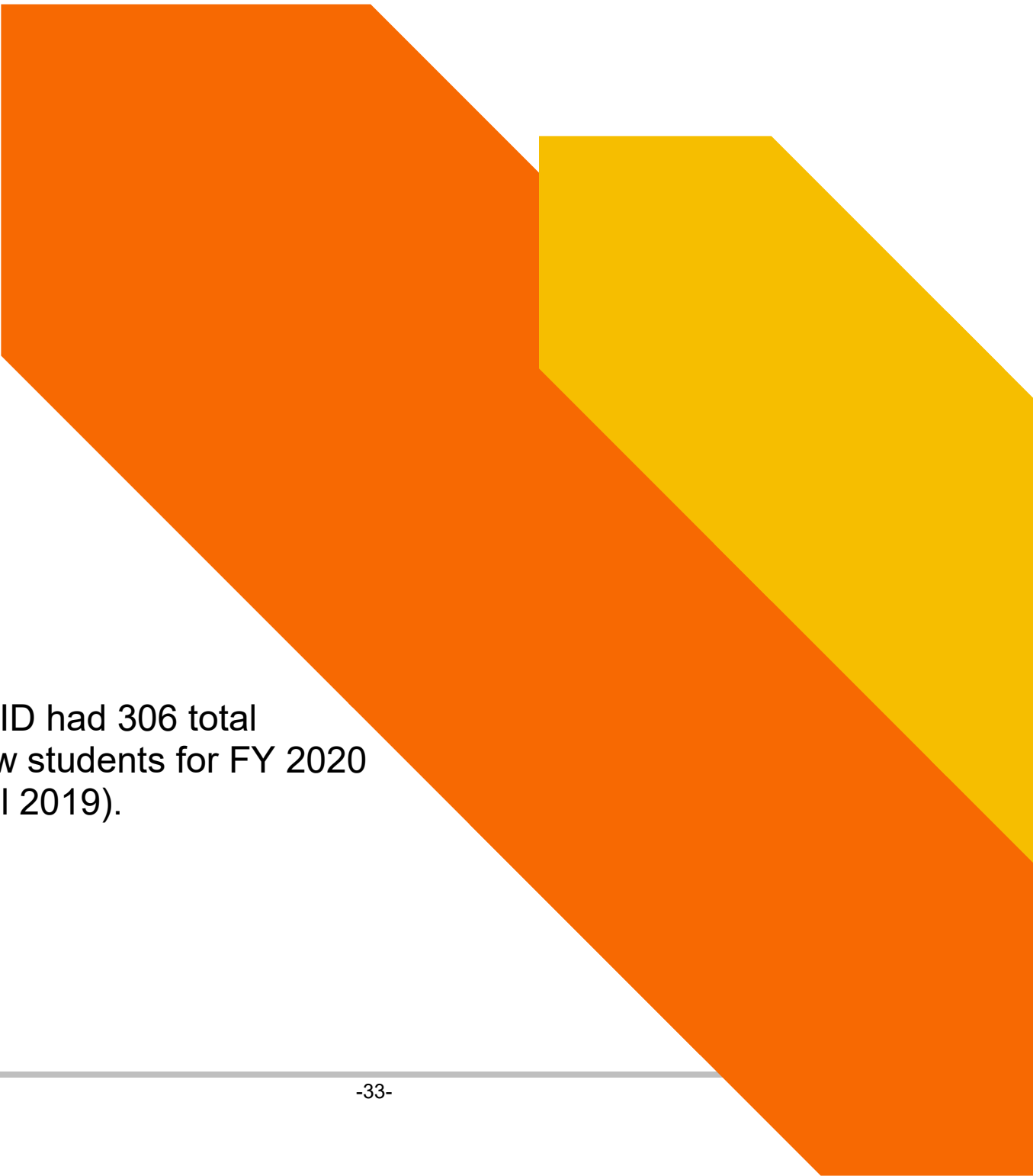
FY 2019 marked the ninth year of NTID's implementation of *Strategic Decisions 2020 (SD 2020)*, which continued to follow the 2015 mid-term review committee's revised recommendations and new initiatives with little change.

In FY 2019, RIT President David Munson and the RIT Board of Trustees finalized revisions to RIT's 2025 strategic plan, *Greatness Through Difference*. Upon release of that plan, in spring 2019, NTID formed a Strategic Planning 2025 Committee comprising eight NTID faculty and staff. Beginning in May 2019, the committee reviewed recent recommendations from other NTID working groups and committees, solicited interviews with and presentations from key members of the NTID community, conducted an online survey of students and employees, hosted nine feedback sessions and reviewed current articles on various issues in higher education. The committee intends to provide a draft of NTID's strategic plan, which will follow the framework and timeline of the RIT plan, to the community by December 2019.



NTID's popular "No Voice Zone," a student-run event supported by RIT's Center for Residence Life, brings deaf and hearing students together weekly to practice American Sign Language.

Admissions and Enrollment



NTID had 306 total new students for FY 2020 (fall 2019).

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 484 recruitment visits during the FY 2019 admissions cycle. Visits this year included 402 mainstream schools, 52 schools for the deaf and seven colleges. This included 54 visits in New York, 80 in the Northeast, 139 in the Midwest, 116 in the Southeast and 95 on the West Coast.

The number of new students entering NTID in fall 2019 was 306. The total included 231 deaf and hard-of-hearing freshmen and transfers, 20 deaf and hard-of-hearing graduate students (four in the Master of Science program in Secondary Education of Students who are Deaf or Hard of Hearing [MSSE] and 16 in other RIT colleges) and 55 hearing students (51 in the ASL-English Interpretation program and four in the MSSE program).

Total enrollment was 1,129 compared to 1,182 for last year. The breakdown of the 1,129 students is as follows:

	Total
Undergraduate Programs	
Career Exploration Studies	31
Career-Focused Associate Programs	218
Associate+Bachelor's Programs and Pre-Baccalaureate	171
Baccalaureate (ASL-English Interpretation)	155
Baccalaureate/Master's Programs in Other RIT Colleges	470
Subtotal NTID Undergraduate Programs	1,045
Graduate Programs at RIT	53
MSSE	22
MS Health Care Interpretation	9
Total Enrolled Students	1,129

NTID's student population remains strong in both ethnic and geographic diversity. Minority students represent 40% of this year's fall 2019 entering class, compared to 38% of the total student body. Minority students have represented approximately 35 to 40% of the entering student population over the past five years. Additionally, minority students have represented approximately 33 to 40% 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 16% from the West, 25% from the South, 12% from the Midwest and 47% from the Northeast.

In addition, NTID enrolled four new international students. The total number of international students is 43, or 3.8% of the entire student population. International students have represented approximately 3 to 4% of the entire student population in the past five years.

In summary, NTID registered 306 new students and is serving a total of 1,129 students.

Comparative Admissions Data

Applications, excluding those to the ASL-English Interpretation or MSSE programs, increased from last year.* The acceptance rate was 72.7% of applications. Registrations were 247, achieving a yield rate of 59.0%.

	FY 2016	FY 2017	FY 2018	FY 2019**	FY 2020
Applicants	860	771	638	533	575
% Increase or Decrease from Previous Year	+8.0%	-10.3%	-17.3%		+7.9%
Accepted Applicants	488	432	435	396	418
% Increase or Decrease from Previous Year	+5.2%	-11.4%	+0.7%		+5.6%
Acceptance Rate (% of Total Applicants)	56.7%	56.0%	68.2%	74.3%	72.7%
Registrations	340	305	289	259	247
Yield Rate (Registrations as a % of Accepted Applicants)	69.7%	70.6%	66.4%	65.4%	59.0%

* 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.

** Due to data definition changes by RIT Enrollment Management, the application count has been adjusted to reflect only fully submitted applications. Percentage increases and decreases will be reported in future years.

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 151 SVP registrants for summer 2019, and 147 continued on to register for fall semester 2019 (FY 2020).

	Number of Students*				
	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
SVP Students Accepted	317	307	253	259	261
SVP Students Registered at Start of Program	226	203	174	170	151
SVP Students Completing Program	225	203	172	168	151
SVP Students Registered in Academic Programs for Fall Term	223	200	172	168	147



SVP students learn about NTID programs and make new friends before the start of their first semester.

* 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 (155), deaf, hard-of-hearing or hearing students enrolled in the Master of Science program

in Secondary Education (22), or students enrolled in the Master of Science in Health Care Interpretation (9). 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 00: Oct. 99-Sep. 00	1,107	-4.16%	1,040	0.97%	-6.05%	1,009	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%	*	*	*	944	-5.79%	-12.67%	271	-12.30%	170	-2.30%
FY 19: Oct. 18-Sep. 19	1,005	-7.03%	*	*	*	862	-8.69%	-14.23%	247	-8.86%	151	-11.20%
FY 20: Oct. 19-Sep. 20	943	-6.17%	*	*	*							

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.

Percent of Registered Students with Full-Time Status

On average, 94% of NTID-supported students are registered full time. At RIT, full-time status is defined as taking at least 12 credit hours in a semester.

	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020		
					Percent	Number	
						Full-Time	Total
Career Exploration	100%	100%	100%	100%	100%	31	31
Career-Focused and Associate+Bachelor's Degrees	98%	99%	94%	96%	94%	361	383
Pre-Baccalaureate	100%	100%	100%	100%	100%	6	6
Baccalaureate and Graduate	93%	91%	93%	95%	93%	486	523
ASL-English Interpretation	95%	91%	97%	97%	97%	150	155
Master of Science in Health Care Interpretation	N/A	50%	33%	0%	22%	2	9
Master of Science in Secondary Education (MSSE)*	81%	93%	95%	100%	91%	20	22
Overall	95%	94%	94%	95%	94%	1,056	1,129

* Included for FY 2016 are six non-matriculated students 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 55 and, of those, 22 were accepted and four 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 prevents 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.

Applicant Continent of Origin	Number of Students*				
	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Africa	16	21	16	16	16
Asia	40	21	11	15	24
Australia/Oceania	0	0	1	0	0
Europe	2	1	2	4	2
North America	20	23	21	14	13
South America	2	0	0	1	0
Unknown	0	0	0	0	0
Total Applicants	80	66	51	50	55
Accepted Applicants	21	18	13	19	22
Acceptance Rate (Percent of Total Applicants)	26%	27%	25%	38%	40%
New Registrations	13	11	11	15	4
Yield Rate (New Registrations as a Percent of Accepted Applicants)	62%	61%	85%	79%	18%
Returning International Students	31	28	32	34	39
Total Enrollment (Returning International Students plus New Registrations)	44	39	43	49	43

* 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.

Demographic Characteristics of All Entering Students

The demographic profile of entering students in FY 2020 remains consistent with the previous year's profile.*

	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Characteristics of Entering Students					
Gender					
Male	59%	54%	63%	56%	51%
Female	41%	46%	37%	44%	49%
Mean Age at Entry					
	21	21	21	20	20
Origin of Entering Students					
United States by Region: 100% of U.S. students distributed across four regions					
West	11%	16%	12%	17%	16%
Midwest	20%	23%	24%	13%	12%
South	22%	24%	22%	26%	25%
Northeast	47%	37%	42%	44%	47%
Distribution of United States and International Students					
United States	96%	97%	96%	94%	98%
International	4%	3%	4%	6%	2%
School Background of Entering Students					
First Time in College	72%	79%	76%	81%	78%
Transfer from Other Colleges	17%	13%	12%	12%	12%
Previously Enrolled at RIT	5%	4%	5%	3%	4%
Graduate Students	6%	4%	7%	4%	6%

* 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 2020*		
	International	U.S.	Overall
Demographics			
Gender			
Male	77%	55%	56%
Female	23%	45%	44%
Entry Scores			
ACT Composite Score	17.8	20.1	20.0
Program Area			
Career Exploration	3%	5%	5%
Career-Focused Associate Degrees	33%	22%	23%
Associate+Bachelor's Degrees	35%	19%	19%
Other Colleges of RIT Baccalaureate	29%	54%	53%
FY 2020 Status of Students Enrolled FY 2019			
Still Registered	69%	65%	65%
Withdrawn	17%	18%	17%
Graduated	14%	17%	18%



In May 2019, NTID entered a partnership with Changchun University in China that establishes a student and faculty exchange program in the art and design fields. The colleges are exploring a joint degree program in graphic design and 3D graphic technology.

* 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.

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 2016	FY 2017	FY 2018	FY 2019	FY 2020
ACT English	16.8	17.1	16.3	15.6	16.2
ACT Reading	19.7	20.1	18.8	18.9	19.8
ACT Mathematics	19.5	19.6	19.2	18.6	18.8
ACT Science Reasoning	20.5	20.6	19.8	19.5	20.0
ACT Composite	19.6	19.7	19.2	19.6	19.9



New students Zee Chauhan, from Livermore, California, Jillian Smith-Stelzer, from Andover, New Jersey, and Andrew Knox, from Russells Point, Ohio, enjoy an RIT hockey game during Brick City Homecoming Weekend.

* 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 27.6, and represent 33.3% of NTID's entering class of 2019. The mean ACT composite score for students entering associate+bachelor's programs is 18.5, and represents 29.0% of NTID's entering class. The mean ACT composite score for students entering career-focused associate programs is 15.1, and represents 24.7% of NTID's entering class. Lastly, the mean ACT composite score for students entering career-exploration programs is 13.4,

and represents 13.0% of NTID's entering class. The average ACT composite score of 19.9 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	33.3%	27.6
NTID		
Associate+Bachelor's Programs	29.0%	18.5
Career-Focused Associate Programs	24.7%	15.1
Career Exploration	13.0%	13.4
Total*	100%	
Average Score of All Entering Students*		19.9

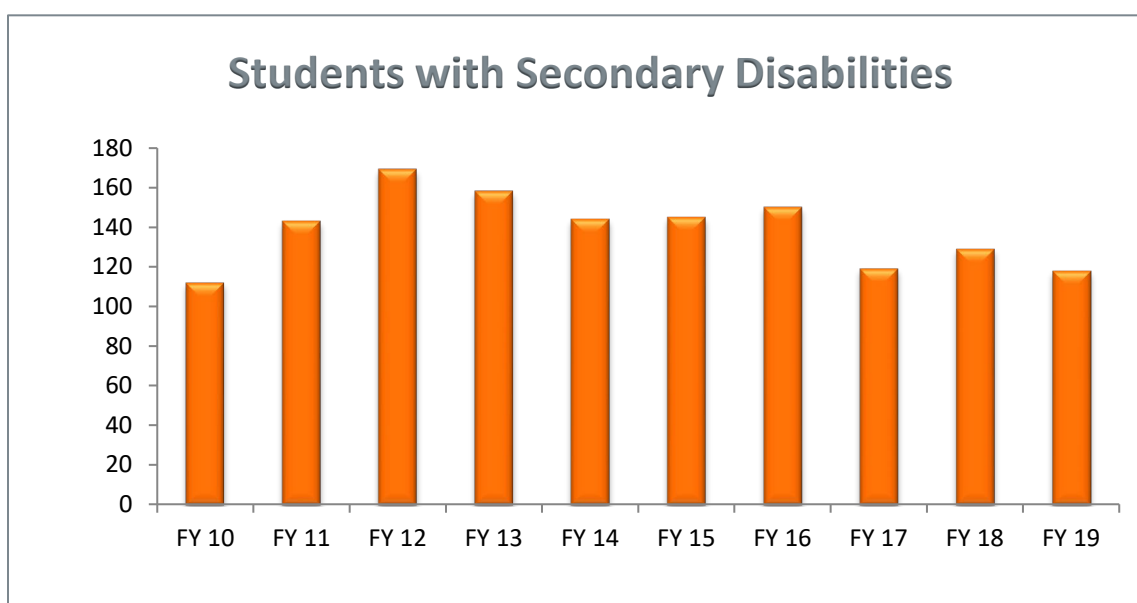
* Includes only undergraduate students. Does not include students enrolled in the ASL-English Interpretation program.

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 2020 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
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%
2018	1,025	129	13%
2019	954	118	12%



* This figure includes all undergraduate deaf and hard-of-hearing students.

Origin of Students

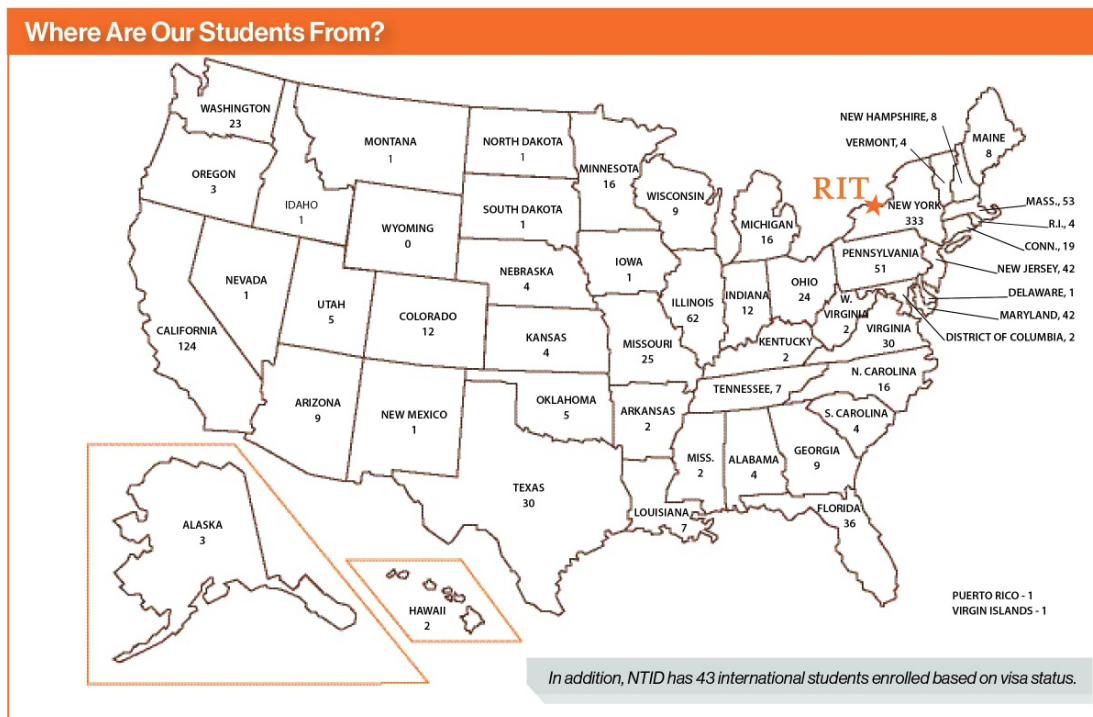
NTID students enrolled as of fall 2019 come from 48 states. A total of 22 countries are represented among current international students.

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 2020
Alabama	4
Alaska	3
Arizona	9
Arkansas	2
California	124
Colorado	12
Connecticut	19
Delaware	1
District of Columbia	2
Florida	36
Georgia	9
Guam	0
Hawaii	2
Idaho	0
Illinois	62
Indiana	12
Iowa	1
Kansas	4
Kentucky	2
Louisiana	7
Maine	8
Maryland	42
Massachusetts	53
Michigan	16
Minnesota	16
Mississippi	2
Missouri	24
Montana	1
Nebraska	4
Nevada	1
New Hampshire	8
New Jersey	42
New Mexico	1
New York	333
North Carolina	16
North Dakota	1
Ohio	24
Oklahoma	5

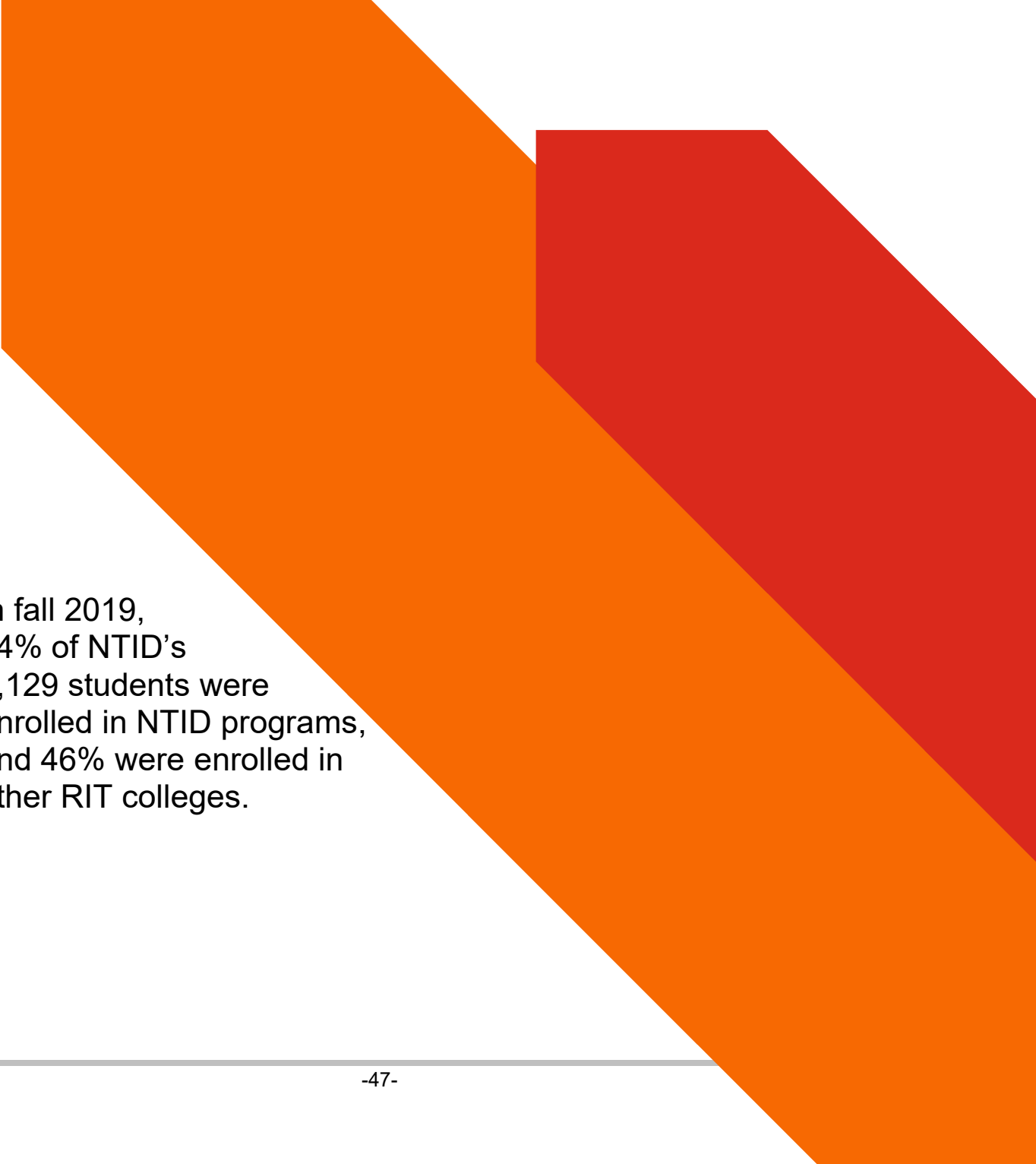
Origin of Students (continued)

Home State or U.S. Territory (Domestic Students)	Number in Student Body FY 2020
Oregon	3
Pennsylvania	51
Puerto Rico	1
Rhode Island	4
South Carolina	4
South Dakota	1
Tennessee	7
Texas	30
Utah	5
Vermont	4
Virgin Islands	1
Virginia	30
Washington	23
West Virginia	2
Wisconsin	9
Wyoming	0
Other*	3
Subtotal	1,086
International	43
Total	1,129



* U.S. citizens living in other countries.

Academic Programs



In fall 2019,
54% of NTID's
1,129 students were
enrolled in NTID programs,
and 46% were enrolled in
other RIT colleges.

Academic Program Highlights

During AY 2018-2019 NTID began working on proposals for new programs submitted in May 2018 as part of RIT's call for seven-year academic master plans from each college. Four programs were approved for development by RIT Provost Ellen Granberg:

- Applied Internet of Things – BS
- Community Development and Inclusive Leadership – BS
- Geospatial Technology – AAS
- Global Perspectives and Practices in Deaf Education – MS

These programs represent new directions for NTID and support the ongoing implementation of *Strategic Decisions 2020 (SD 2020)*. This plan calls for exploration of new majors for career-focused associate and associate+bachelor's degrees, and exploration of new baccalaureate and master's degrees. Both of the proposed baccalaureate programs will have articulation agreements with NTID associate degree programs to facilitate a smooth transition between the degrees for AS/AAS graduates. Similarly, the Community Development and Inclusive Leadership BS creates pathways to RIT master's degree programs for interested students through concentrations in specialized disciplines.

In May 2019 RIT instituted a different process for submitting new program ideas. There will be two open periods each academic year when two-page proposals will be posted for 45 days for university-wide vetting. Resource summaries, college faculty input and dean approval will accompany the two-page proposals. The Provost and President will prioritize programs and determine which can be developed for full proposals. Doctoral program ideas can be vetted any time during the academic year. NTID will use this process to vet new program concepts beyond the four program proposals already under development. Two associate degrees from the Engineering Studies department will undergo the vetting process and discussions began in the American Sign Language and Interpreter Education (ASLIE) department for a possible Ph.D. proposal.

Strategic Decisions 2020 Enrollment Targets

The enrollment targets set in *Strategic Decisions 2020* were: 35% career-focused programs, 20% associate+bachelor's degree programs and 45% baccalaureate/master's programs. At the beginning of AY 2019-2020 the enrollment percentages for deaf and hard-of-hearing undergraduates were 28% career-focused, 19% associate+bachelor's degree programs and 53% 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, 151 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 2018-2019, CES served 25 students in the fall and 14 students in the spring; 100% 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

Academic Program Highlights (continued)

designed to lead directly to employment in high-demand technical jobs. During AY 2018-2019, NTID prepared to accept its first cohort of students into the new AAS program in Business Administration, which was approved by New York State Education Department (NYSED) to accept its first incoming students in AY 2019-2020. This program expands business opportunities for students beyond the current accounting and administrative support technology degrees.

At the beginning of AY 2019-2020, there were 249 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. Ten students completed cooperative work experiences in AY 2018-2019.

The Department of Engineering Studies' (DES) career-focused programs—Computer-Aided Drafting Technology – Architecture (CADT A/E/C) and Precision Manufacturing Technology (PMT), formerly Computer-Integrated Machining Technology (CIMT)—continue to evolve. Recently, the department underwent strategic planning changes that were reviewed by industrial advisory boards to increase program strengths in all areas, and faculty now are actively working on curriculum development.

The former CIMT program went through a significant curriculum modification of 15 technical credits. The courses removed/archived were Industrial Materials, Optical Testing and Physics of Light. The courses modified significantly were Blueprint Reading II, CAD Applications, Precision Measurements II and Precision Optics Manufacturing II. Also, two new courses were added to the curriculum: Advanced CNC Concepts and Introduction to Computer-Aided Manufacturing. As a result of these modifications, the CIMT program title was changed to Precision Manufacturing Technology (PMT).

In AY 2018-2019, the Department of Information and Computing Studies saw the first cohort of the Mobile Application Development program apply to and be accepted into the Web and Mobile Computing baccalaureate program at RIT. In the summer of 2018, those students were successfully placed in cooperative work experiences at RIT in the Center on Access Technology where they developed the NTID 50th Reunion app as well as the Teach2Connect app. The Teach2Connect app helps hearing faculty in other colleges of RIT better understand the needs of deaf and hard-of-hearing students in their classrooms.

The second cohort of Mobile App Development students recently completed co-op work in the summer of 2019, accepting positions at Lockheed Martin in southern California, and at Hands and Voices, a non-profit organization in Chicago where they worked with other designers and developers to develop and publish apps to the Apple and Google Play stores. This cohort is currently in the final semester of the program and again, all students intend to earn baccalaureate degrees at RIT.

The Applied Computer Technology AOS and AAS programs are also successful. Students in this program typically are placed in co-op and full-time positions performing functions related to technical support and network security. Our associate-degree students have received employment opportunities from a wide range of businesses including, but not limited to, Ohio Health, Fidelity Investments and PNC Financial Services. Employer feedback indicates that students are well-prepared and meet expectations. Students often receive offers for full-time permanent employment at these companies after they have completed their co-op requirements.

In 2018, the Department of Liberal Studies (DLS) began a partnership with the NTID International Educational Outreach Office. As a benefit of this partnership, DLS faculty members designed an intensive English language and cultural transition course for international deaf students. The 2018 summer pilot became the foundation for the 2018 fall semester International English special topics course in which all new international undergraduate students enrolled. DLS also partnered with the NTID Center on Educational Research Partnerships to analyze course placement data and new testing platforms. This analysis will help DLS faculty members choose new course placement tests and modify current curricula to support students' reading and writing needs.

Academic Program Highlights (continued)

During SVP 2019, several assessments along with a customized curriculum were used with a select group of first-year students in a pilot program focused on providing this group with college readiness skills, both academic and personal. The NTID Study Abroad program, administered by DLS, also sent a group of AOS, AAS, AS and BS students to study the lives and culture of the Deaf community in Russia and France.

Students in the Laboratory Science Technology (LST) program continue to gain meaningful cooperative work experiences at Dow (Midland, Michigan) and at the National Science Foundation. Several students secured co-ops at the federal level, including at Pacific Northwest National Laboratories (Richland, Washington) and Fisheries and Oceans Canada (Saint Andrews, New Brunswick). Students also completed their required internships at local governmental agencies including the Lycoming County Coroner (Williamsport, Pennsylvania) and the DeKalb County Department of Watershed Management (Doraville, Georgia).

To support NTID's distance-learning initiatives, the department's math faculty have developed online versions of Foundations of Algebra and Applications of Algebra to serve students in all of NTID's associate degree programs. The preparation of additional online math and science courses is in progress. Science and math faculty also continue to collaborate with DeafTEC to support teachers who are leading students through NTID coursework at their own schools, thereby allowing students to earn NTID course credit before they finish high school. Work is also ongoing to develop transfer credit rules and processes that benefit and support deaf and hard-of-hearing students who have been admitted to NTID associate degree programs.

The Department of Visual Communications Studies (VCS) offered two- and three-dimensional design and production courses in two programs, Design & Imaging Technology (DIT) and 3D Graphics Technology (3DGT). The department continued to recruit approximately 20% of the SVP population into its programs. Twenty-one students completed their program requirements. Sixteen AAS and five AOS degrees were awarded. VCS faculty began the process of a complete revision of the curriculum including the evaluation of a potential bachelor's degree program. Results are expected in winter 2020. Faculty continued to engage in professional development activities and recorded 84 submissions to the university's Faculty Scholarship site.

Associate+Bachelor's Degrees

A key feature of NTID's educational portfolio is the number of transfer associate degrees that provide a seamless transition to RIT baccalaureate programs. There now are 12 of these programs, called "associate+bachelor's" degree programs (to avoid confusion with the word "transfer"). They have been very successful, particularly 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.

At the beginning of the 2019-2020 academic year, 171 students were enrolled in these associate+bachelor's degree and pre-baccalaureate programs. This number has steadily increased as the number of such programs is expanded, new articulation agreements are added and the programs are marketed as precursors to RIT baccalaureate programs.

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, which includes the School of International Hospitality & Service Innovation. 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). Six students were accepted to SOIS during AY 2018-2019. Current department numbers show 61% of students are in AS and BS degree programs and 39% are in AOS/AAS degree programs.

Academic Program Highlights (continued)

The Department of Engineering Studies (DES) has two associate+bachelor's degree programs: Applied Mechanical Technology (AMT) and Civil Technology. New student enrollments for fall 2019 increased significantly for AMT, but not for Civil Technology. The AMT articulation agreement with RIT's College of Engineering Technology was modified during AY 2018-2019 by expanding to include Mechanical, Robotics & Manufacturing Engineering Technologies, which includes the electro-mechanical engineering technology program.

In addition to the current programs, the department has proposed several new degree programs that now are undergoing review at the college and university level.

The Information and Computing Studies (ICS) department offers associate+bachelor's opportunities in Human Centered Computing, Computing and Information Technologies and Web and Mobile Computing. In the summer of 2019, students that came from one of these programs and moved into the BS program received co-op opportunities at Fidelity, Prudential, RIT/NTID Technical Support, Cisco, Vertex Pharmaceuticals and Cayuga Medical Center. Students continue to take advantage of the opportunities afforded by our programs to find full-time employment after graduation.

NTID's AS in Applied Liberal Arts (APPLA-AS) remains one of the largest associate+bachelor's degree programs. In the tenth year of the program, APPLA-AS graduates continue to be accepted into RIT's College of Liberal Arts majors. The initial student cohorts have graduated with baccalaureate degrees and have successfully entered the workforce or continued on to graduate studies. The Department of Liberal Studies implemented a monthly dinner and weekly newsletter to keep the APPLA cohort connected to one another as well as aware of information vital to their studies and transition to their baccalaureate programs.

Despite only being offered for one academic year, the AS in General Science program celebrated its first graduate, a student who was originally admitted to the non-degree science pre-baccalaureate program in May 2019. This student completed all requirements for the chemistry track. As of fall 2019, 13 students are matriculated in the AS program across the range of tracks (biochemistry, biology, biomedical sciences, biotechnology & molecular bioscience, chemistry and environmental science) offered. This enrollment is greater than the number of students previously enrolled in the science pre-baccalaureate program, thereby demonstrating the attractiveness of this new AS degree offering. Students have also completed the LST AAS degree, the department's other "A+B" track, and have been accepted into baccalaureate programs at RIT in environmental science, chemistry, biotechnology and molecular bioscience, and applied arts and sciences over the past year.

The department's NSF-funded REU program ("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", NSF Award No. 165929), led by Dr. Bonnie Jacob (PI) and Dr. Jason Nordhaus (co-PI), had a successful second summer. Deaf and hard-of-hearing undergraduate students from across the country came to campus and were mentored by departmental math and science faculty in summer research projects, culminating in student-delivered presentations at RIT's 2019 Undergraduate Research Symposium.

The AAS 3D Graphics Technology program in the Department of Visual Communication Studies (VCS) includes a transfer articulation agreement with the 3D Digital Design (3DDD) BFA program in RIT's College of Art and Design (CAD). Seven students from VCS's 3DGT program were enrolled in CAD's 3DDD program. The second entering cohort in the new 3DGT program, like the first, exceeded capacity. Also of note was that all of the first cohort completed their co-op requirement in the summer session.

There is a long history of students successfully making the transition from the NTID VCS Design & Imaging Technology AAS degree program into a CAD BFA or BS program. There were 70 other students enrolled in CAD programs in addition to the seven students in 3DDD.

Academic Program Highlights (continued)

American Sign Language and Interpreting Education (ASLIE)

ASLIE enrolled 51 new students in fall 2019, bringing the total number of students in the BS degree program in ASL-English Interpretation to 152.

Thirty-five students graduated from the BS degree in ASL-English Interpretation in AY 2018-2019. The 2019 senior satisfaction survey yielded positive results. Ninety-five percent of graduates were satisfied with what they learned in the degree program and would recommend NTID's BS degree in ASL-English Interpretation to others. Additionally, both an employer survey and a mentor survey were conducted to ascertain employer and mentor perceptions of graduates and mentees. The results of these surveys informed curricular review and will assist in preparation for program accreditation by the Collegiate Commission of Interpreting Education (CCIE). The ASL-English Interpretation program continues to seek stakeholder input through the ASLIE Advisory Board.

ASLIE offered the following ASL courses in the Interpreting program: ASL II, Foundations of ASL, ASL IV and ASL VI during the fall semester; and ASL III, ASL V and ASL VII during the spring semester. In AY 2018-2019, the interpreting program had an enrollment of 111 students in the fall semester and 99 students in the spring semester.

In addition to the program courses that are required for graduation, ASLIE students can take a variety of specialized elective courses that enhance their skill set and may provide a competitive edge when seeking employment. The elective courses include the following: Educational Interpreting: K-12; Interpreting in Elementary Settings: K-6; Educational Interpreting: 7-12; Healthcare Interpreting; Mental Health Interpreting; Introduction to VRS/VRI Interpreting; Interpreting Frozen & Literary Texts; Introduction to Working with the DeafBlind Community; Community Interpreting; and Introduction to Cued American Speech. Interpreting in Research Settings was a new course offering this academic year. Eighteen of the required courses in the degree program were reviewed and updated through the curriculum review process this academic year.

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 Federal Communications Commission (FCC) regulations that guide their standards, understand the unique demands of video relay interpreting, 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.

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 earn valuable interpreting experience. The practicum coordinator screens such requests for appropriateness.

ASLIE's MS in Health Care Interpretation program enrolled 11 students in the second cohort beginning summer 2017 and five additional students for the third cohort beginning summer 2018 as well as five additional students beginning summer 2019. 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 ninth year of delivery as a blended online program with a one-week on-site start up. This nine-month program accepted 30 students this year. 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.

Academic Program Highlights (continued)

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 2018-2019, the CLA program had an enrollment of 259 in the fall semester and 147 students in the spring semester. During the summer, ASLIE offered Beginning ASL I and II online. Nineteen students took the summer Beginning ASL I course. In fall 2018, 45 students were enrolled in the ASL and Deaf Cultural Studies minor; in spring 2019, 35 students minored in ASL and Deaf Cultural Studies.

The ASL program also offered evening courses: Introduction to ASL and Deaf Culture I in the fall and spring semesters. The courses are designed for RIT students, faculty, staff and community members interested in a basic introduction to ASL and Deaf Culture. In AY 2018-2019, the Introduction to ASL and Deaf Culture program had an enrollment of 15 students in the fall semester.

The ASL program has provided ASL courses for NTID students as part of the ASL/Deaf Studies requirement. In AY 2018-2019, in the fall semester, 24 students were enrolled in ASL I, and 11 students were enrolled in ASL II. Sixteen students were enrolled in Beginning Mexican Sign Language in the fall semester. Eleven students were enrolled in ASL I and 16 students were enrolled in Beginning Russian Sign Language in the spring semester. There were also 13 students enrolled in Beginning Russian Sign Language Study Abroad and five students enrolled in Special Topics: Introduction Translation and Interpreting Studies for Global Collaboration.

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 2018-2019, ASLIE served seven MSSE students.

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 eighth 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 2019, 17 incoming first-year and transfer students participated in this two-week-long program. For the first time this year, 29 students from two Chinese universities enrolled in order to learn ASL. Three sections were offered: one for NTID students accepted into NTID programs, one for NTID students accepted into RIT programs and a third for international students accepted into NTID programs. Each section had a separate instructor along with a teacher assistant who taught new material for part of the day. Later in the day, all four 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 seven 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's culture.

Academic Program Highlights (continued)

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 five students during the 2018-2019 academic year, its 25th 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 2019-2020, the MSSE program has an enrollment of 22 students, of whom 10 (45.5%) are deaf or hard of hearing and 10% are members of underrepresented populations. At least 11 students are anticipating graduation from the program during the 2019-2020 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 College of Science, College of Liberal Arts and Kate Gleason College of Engineering 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.

The program has the privilege of working with international students. During the 2018-2019 academic year, three international students graduated from the program. For the 2019-2020 academic year, there are two international students and both are expected to graduate in May 2020; one of those students is a Fulbright scholar.

The teacher-candidates 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.

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 its 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 students to directly enroll for five weeks). These programs are offered for three general education credits under International Studies Seminar. They are open to all NTID-coded students at RIT, including the MSSE and ASLIE programs. To date, 12 study abroad experiences have been completed: one trip to Russia, one trip to France, two trips to Chile, two trips to Costa Rica, two trips to Japan, one trip to Italy, two trips to the Siena School in Siena, Italy and one trip to the Institute for Sign Language and Deaf Studies at Hogeschool Utrecht in the Netherlands. Additionally, a trip to China is being planned for 2020. NTID anticipates that up to 35 NTID-supported students will participate in study abroad opportunities in AY 2019-2020.

Academic Program Highlights (continued)

Communication Studies and Services (CSS)

The Communication Studies and Services Department (CSS) is composed of faculty and staff with expertise and training in the areas of communication, audiology and speech-language pathology. CSS audiologists and speech-language pathologists offer for-credit courses for students. Faculty and staff provided 58 credit hours of instruction for 196 students in AY 2018-2019.

CSS offers several courses that cover a variety of topics geared toward workplace success: Problem Solving, Interpersonal Relationships, Communication Across Cultures, Effective Teams and Organizational Communication & the Deaf Employee. Each course satisfies one or more NTID General Education Perspectives. Additionally, some courses are approved for RIT General Education Perspectives, allowing students to focus on their future academic goals post-NTID graduation.

Other areas where direct instruction is provided are MSSE (Master of Science in Secondary Education) and ASL-English Interpretation program. 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 ASL-English Interpretation program.

In addition to these courses, the CSS department supports student learning in a variety of ways. The CSS department also provides clinical services in the Audiology Center and Speech & Language Center, including appointment-based and walk-in opportunities. Faculty and staff provided 2,430 hours of audiology services to 771 students and others members of the RIT community and 3,077 hours of individual speech-language instruction to 144 students. During the 2018-2019 academic year, the audiology discipline provided 462 hours of walk-in services in the Audiology Center, and the speech-language discipline served students during 312 hours of walk-in services.

CSS reinforces students' academic and personal learning and development by hosting communication skill development groups. Topics of interest have included communication apps, writing and group conversation. Faculty and staff within CSS serve as liaisons and advisors to student-centered initiatives such as the Vision Support Committee and Spoken Communication Club.

These above services are available to students to further support communication, their success in the classroom and their preparation for communicative success in the workplace.

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

NTID Learning Consortium

The NTID Learning Consortium is made up of the NTID Learning Center and the NTID Office of Online Learning.

The NTID Learning Center (NLC) provides a variety of academic resources to help students succeed in college. These include computer workstations, spaces for tutoring and individual/group study, a multipurpose video lab, studying tools and printing areas.

Academic Program Highlights (continued)

The NLC is centrally located in Lyndon Baines Johnson Hall and is open 74 hours each week during the fall and spring terms. The NLC employs 12 to 15 student workers, also known as Learning Center Assistants (LCA). The LCAs work at the resource desk and maintain an academically focused environment for users while simultaneously developing work-related skills in a real-world setting.

English and math tutoring are offered by appointment and walk-in services every day the NLC is open. Tutoring in other subjects is offered by academic departments at various times throughout the year. Every year, the NLC supports the administration of the Summer Vestibule Program (SVP) writing and mathematics tests as well as 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.

Laptop and calculator loans are a dedicated service of the NLC. With this program, students can borrow laptops and calculators for up to 24 hours on weekdays or up to 96 hours on weekends. 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 its resource desk. These include smartphone chargers, headphones, memory card readers, webcams, PowerPoint clickers and Wacom pen tablets. The NLC also provides a reference area with books provided by faculty for students to use for their courses.



In addition to resources available at the resource desk, the NLC also houses a multipurpose video lab, seen here, for video recording and editing for the NTID community. 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 NLC also provides a multipurpose video studio for instructors involved with developing video instructional materials. This lab is stationed outside of the NLC and is available to instructors anytime the building is open.

For more formal instructional activities, the NLC utilizes the Sprint Relay Experimental Distance Learning/Access Demonstration Lab (Sprint Lab), which supports various activities such as conducting experimental classroom technology projects as well as video/lecture-capturing for online, blended and flipped course material development for archiving and subsequent “anytime/anywhere” access by students. The Sprint Relay 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. This past year, the NLC purchased a Revolution Lightboard, seen here, for recording instructional materials. This equipment is now being used to record lectures and other instructional videos.

Koarin Tigers purchased a delivery truck for \$120,000 at the beginning of Year 1. Truck has an estimated useful life of 4 years and an estimated residual value of \$20,000. The truck should last 200,000 miles was operated 60,000 miles (year 1), 40,000 miles (year 2), 42,000 miles (year 3), and 58,000 miles (year 4).

$$\left(\frac{1}{\# \text{ of years}}\right) \times 2 = \frac{1}{4} = 0.25 \times 2 = 50\%$$

Year	B.V	Double declining rate	Depreciation expense	Accum. Dep.	New B.V
1	120,000	0.50	60,000	60,000	60,000
2		0.50			
3		0.50			
4		0.50			

Double Declining Depreciation Method

Academic Program Highlights (continued)

The NTID Office of Online Learning continues to expand the number of online courses taught by NTID instructors. At the present time, NTID offers 19 online/blended courses at RIT. Current initiatives include developing dual-credit courses like NTID's Personal Finance course for delivery online and research targeted at developing best practices for effective online learning for deaf and hard-of-hearing learners.

These distance-learning tools and delivery systems allow deaf and hard-of-hearing students opportunities to learn anywhere anytime. The innovative adaptation of current and emerging technology promises significant contributions in expanding conventional notions of where, how and with whom learning can happen.

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 2019-2020, 470 students (53% 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 2018-2019. In addition, academic degree programs completed the RIT Progress Reports based on AY 2017-2018 results.

The ninth annual RIT Progress Report, completed in November 2018, 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 2017-2018 Outcomes Assessment Plans. This was the sixth outcomes assessment Progress Report on semester-based programs taught at RIT. Program information was aggregated by college and at the university level, and was shared with the Provost's Office, Board of Trustees, Deans and RIT Student Learning Outcomes Assessment Committee (SLOAC).

NTID's response rate was 100%, with 18/18 programs completing the report. NTID contributed favorably toward the RIT rate of 98% of programs completing assessments. Additionally:

- One hundred percent of NTID programs met or exceeded established benchmarks for at least one student learning achievement, compared to the RIT level of 96%; and
- Each program's Progress Report was rated for continuous improvement by the RIT Educational Effectiveness Assessment Office. Seventy-eight percent of NTID programs indicated use of assessment results to guide program planning improvements, compared to RIT's 85%. NTID's 78% is an improvement from the previous year's rate of 72%.

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 2018-2019 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 90% of NTID students received satisfactory overall evaluation ratings from their supervisors related to their cooperative work experience performance.

Academic Program Highlights (continued)

ASL and Interpreting Education Department (ASLIE)

- **ASL-English Interpretation BS:** Benchmarks exceeded on eight out of 10 outcomes assessed this year. Seventy-eight 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 successful research papers demonstrating critical thinking and problem-solving skills. Seventy-seven percent of students demonstrated successful interpreting competency from ASL to English and 97% from English to ASL. Eighty-eight percent of the students received a rating of satisfactory or better on the “Ethical Reasoning” rubric. Ninety-seven percent of students were rated by practicum supervisors as demonstrating satisfactory entry-level work habits and 100% for overall interpreting ability. Ninety-five 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 reporting outcomes last year for the first time. This year students met two out of three course-based outcomes and met the program assessment. One hundred percent of students received a rating of satisfactory or better on their videotaped interpretation assignment and earned a B or higher on their final exam. On the graduate satisfaction survey, 88% of graduates were overall satisfied with the program and its impact on advancing their achievement career-wise.

Business Studies Department

- **Accounting Technology AAS:** Exceeded the benchmark for four outcomes and did not have any students in two courses for the other two benchmarks. One hundred percent of students earned an average of 80% or higher on their marketing project. One hundred percent of students received satisfactory overall ratings on co-op employer evaluations and 100% were rated as demonstrating satisfactory job performance related to aptitude, the ability to learn quickly and the ability to apply technical knowledge. The one student seeking employment after graduation was employed.
- **Administrative Support Technology AAS:** Students exceeded the benchmark for two direct course-based assessments and did not meet the benchmark for two other course-based outcomes. Sixty percent of the students demonstrated the ability to type with speed and accuracy at a satisfactory rating. The department will implement use of an online typing platform which provided diagnostic data to address the challenges students face in meeting expectations. One hundred percent 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 and demonstrated their interpersonal skills. In addition to course-based assessments, 100% 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 two and not met for one other outcome. Most of the students exceeded the benchmark on the Student Learning Assessment Test given in Managerial Accounting. Eighty-six percent of students demonstrated appropriate interpersonal business skills and teamwork, which is an improvement compared to the previous year. Students met the benchmark for describing the interrelatedness of social, cultural and business factors that shape and impact the global business environment, which is an improvement compared to the previous year. Also, students were able to successfully identify and apply creative methods for idea generation and formulated a business model for a new product/service. The BS program at the Saunders College of Business accepted all of the students who graduated and applied for admission to their program.
- **Business Technology AOS:** Students exceeded benchmarks on six outcomes and were slightly below criteria on four others. For keyboarding speed and accuracy, 50% of students exceeded the keyboarding outcome and 50% did not achieve the needed speed and accuracy. The department will implement an online typing tool that provides diagnostic data to help students meet expectations. One hundred percent of students earned acceptable ratings on the rubrics for the e-Portfolio and exceeded expectations for the Accounting Capstone. These are strong results for AOS students. Sixty percent met the expectations for the Marketing Project, which

Academic Program Highlights (continued)

incorporates a scaffolding approach with six components. Since this is only the second year for the project, faculty will continue to monitor outcomes. One hundred percent of students received a satisfactory overall rating by their supervisors for their co-op placements and were rated satisfactory on demonstration of ability to learn quickly and apply technical knowledge during their co-op placement. One hundred percent of students seeking employment were employed.

- **Hospitality & Service Management AS:** Although three students graduated from this program in 2018-19, none of them applied for the BS program. RIT moved the BS program in Hospitality to the Saunders College of Business, so the current AS in Business aligns better with the four-year degree than this AS program. NTID suspended enrollment in the AS in Hospitality and Service Management program beginning AY 2019-20 and will complete paperwork for discontinuing it.

Career Exploration Studies Department

- **First Year Experiences:** Benchmark exceeded for student satisfaction with the transition components of the Summer Vestibule Program (SVP) and benchmark requiring 90% of students enrolled in the Freshman Seminar course fall semester earn a grade of C or higher was met. Criteria were not met for students returning for full-time study the following year.
- **Career Exploration Studies:** One hundred percent of students exceeded benchmarks by 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. All CES students who applied to a major were accepted within two semesters.

Communication Studies and Services Department

- **Communication Outcomes:** Students exceeded benchmarks based on co-op supervisors' ratings, including the outcomes for demonstrating competence in face-to-face communication or for email communication during cooperative work experiences. Ninety-seven percent of students scored an average of the acceptable 4 on a 5-point scale this year, improving on the previous year's results.
- **Speech-Language, Aural Rehabilitation and Audiology Services:** Criterion levels were exceeded for all of the four assessed outcomes. One hundred 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 89% 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% of students showing improvement was exceeded, which is an improvement compared to assessment last year. 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 three outcomes; two outcomes were met; and one outcome was not met. The one AMT student taking the Mechanical Design and Fabrication course received a grade of C or better on the written test and final project. Less than 75% of students earned the appropriate grades in key courses preparing them to apply for enrollment in the BS program. One hundred percent of students passed the Strength of Materials course with a passing grade of C or better. Three students graduated with an AAS degree and one graduated with a BS degree in MCET. The student satisfaction survey shows an overall satisfaction with the program.
- **Computer-Aided Drafting Technology AOS/AAS:** Criterion levels exceeded for five outcomes, met for one assessed outcome and not met for five others. All benchmarks were met for identifying issues related to sustainability in the construction industry. Benchmarks were also met for preparing student portfolios and exceeded for outcomes related to engaging productively in a collaborative team project; however, benchmarks were not met for the technical drawing practical assignment and the final project in the Advanced Construction course. One hundred percent of students received satisfactory overall ratings from their supervisors related to their co-op placement performance, which is an improvement compared to the assessment from last year. All of the students indicated overall satisfaction with the program.

Academic Program Highlights (continued)

- **Precision Manufacturing Technology AOS:** The program changed its name from Computer Integrated Machining Technology to Precision Manufacturing Technology this year to more accurately reflect trends in the industry. Criterion levels were exceeded for one outcome, met for eight assessed outcomes and not met for three others, which is an improvement compared to last year's assessment. All benchmarks were met for the ability to interpret blueprints using computer-assisted programming and computer-assisted machining software and for developing skills and knowledge related to safely operate conventional and machines, tools and other automatic equipment.
- **Civil Technology AAS:** There were no new students entering this program in AY 2018-19 so data was not collected on courses taken by first-year students. Three students completed the civil technology program but none applied to the RIT Civil Engineering Technology BS program. One is continuing to take courses at RIT. Prior AAS graduates in the program who have gone on to the Civil Engineering BS have graduated successfully and exemplify the type of students for whom this AAS program was designed.

Information and Computing Studies Department

- **Applied Computer Technology AS:** All students who completed the AS degree were accepted into the GCCIS Information Technology BS program. Criteria were not met for demonstrating fundamental programming and web skills and for student satisfaction outcomes. The program will look into the prerequisite courses for students to take prior to taking other courses related to fundamental programming and web skills to enhance student success in the courses used in this assessment.
- **Applied Computer Technology AOS/AAS:** The findings showed that benchmarks were exceeded for nine of the 11 assessed outcomes and not met for three. For example, 96% of students were able to restore a PC to working condition and 89% of students were able to connect, configure, manage, secure and troubleshoot a small intranet peer-to-peer or client/server network. Ninety-three percent of students successfully passed their technical presentation evaluation. Students were found to be slightly below the benchmark related to installing and configuring the operating system, drivers and application programs for peer-to-peer client/server networks and application programs. Action plans include evaluation of the number of tasks, level of assessments, instructional time and students' time on task during assessments.

Liberal Studies Department

- **Applied Liberal Arts AS:** Seventy-five percent of students passed the written English competency in one course, which is still below the criterion level. Eighty percent to 97% of students passed the general education Perspectives 1-4 courses, which is an improvement compared to assessment last year. The benchmark was nearly met for mathematical and scientific perspectives. The benchmark related to students being accepted into the College of Liberal Arts or an equivalent bachelor's degree program, which is the primary goal of the AS program in Applied Liberal Arts, was exceeded this year, a significant improvement over the previous year. Ninety percent of students expressed overall satisfaction with the program upon graduation and while studying at the baccalaureate level.

Master of Science in Secondary Education Department

- **The Master of Science program in Secondary Education of Students who are Deaf or Hard of Hearing:** Twelve measures included in the revised assessment plan created this year were assessed. Criteria were exceeded for seven measures and met for five. The benchmark for passing the NYSTCE certification tests was exceeded for students who took tests in NYS. Some students chose to pursue certifications in the states where they are teaching after graduation. 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, one of the program's strengths is satisfactory communication skills during student teaching.

Academic Program Highlights (continued)

Science and Mathematics Department

- **Laboratory Science Technology AOS/AAS:** Benchmarks exceeded for seven assessed general skill and technical competence areas, co-op performance, placement and student satisfaction and not met for four. This is the first year the revised assessment plan was used, and it was effective in producing results that can lead to program improvement. Students demonstrated competency in the use of various analytical instrumentation and demonstrated appropriate biological and biotechnology-related techniques. One hundred percent of students received favorable overall ratings by their co-op supervisors in corporate and academic placements. Additionally, 100% of graduates who sought employment were employed. Sixty-five percent of students were overall satisfied with the program, which is a decrease from the assessment last year. The benchmark was not met for a semi-logarithmic plotting lab activity, for performing proteomic and genomic manipulation techniques, or for microscopy technique. The department will be evaluating the series of courses for their impact on this new assessment.

Visual Communications Studies Department

- **Design and Imaging Studies AOS/AAS:** Criteria exceeded for six of the eight outcomes assessed and not met for two. Students exceeded expectations for communicating effectively on co-op and for use of appropriate software and hardware for a graphic media project. Benchmarks were not met related to writing a cover letter and resume and designing and producing graphic media for campus and community organizations.
- **3D Graphics Technology AAS:** AY 2018-19 is the first year of outcomes assessment for this program. Benchmarks were exceeded for four assessed outcomes, met for four and not met for one outcome. One hundred percent of students used appropriate software applications and hardware systems in the design and production of 3D graphics projects, demonstrated effective writing and presenting skills for career preparation and demonstrated effective project management and teamwork skills. Benchmarks related to exhibiting individual competence in 3D graphics and production of professional quality 3D media and describing the interrelatedness of social, cultural, and visual communication factors were exceeded.

Enrollment by Degree Programs

In fall 2019, 54% of NTID's 1,129 students were enrolled in a broad array of programs within NTID. Forty-six percent were enrolled in other colleges of RIT, including 53 students in graduate programs. Of the 1,129 students, 953 are deaf and hard-of-hearing students including 10 students in the

MSSE program. In fall 2019, 45% (430/953) of NTID's deaf and hard-of-hearing students were enrolled in NTID programs, and 55% (523/953) were 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)	20
Career Prep Foundation (UND)	11
Subtotal	31
NTID Career-Focused	
Non-Degree Student (NONDEG)	19
Applied Computer Technology (AAS)	24
Applied Computer Technology (AOS)	30
Business Technology (AOS)	33
Computer-Aided Drafting Technology (AAS)	11
Computer-Aided Drafting Technology (AOS)	11
Computer-Integrated Machining Technology (AOS)	23
Design & Imaging Technology (AAS)	21
Design & Imaging Technology (AOS)	38
Engineering Technologies (UND)	3
Laboratory Science Technology (AOS)	5
Subtotal	218
Associate+Bachelor's Degrees	
3D Graphics Technology (AAS)	20
Accounting Technology (AAS)	7
Administrative Support Technology (AAS)	10
Applied Computer Technology (AS)	8
Applied Liberal Arts (AS)	21
Applied Mechanical Technology (AAS)	7
Business (AS)	17
Business Administration (AAS)	6
Civil Technology (AAS)	3
General Science (AS)	13
Laboratory Science Technology (AAS)	37
Mobile Application Development (AAS)	16
Subtotal	165

Enrollment by Degree Programs (continued)

	Number of Students
NTID ASL-English Interpretation	
ASL-English Interpretation (BS)	155
Health Care Interpretation (MS)	9
Subtotal	164
NTID Master of Science in Secondary Education (MSSE)	
Secondary Education of Students who are Deaf or Hard of Hearing (MS)	22
Subtotal	22
NTID Pre-Baccalaureate Students	
Pre-Baccalaureate Liberal Arts (UND)	3
Pre-Baccalaureate Science (UND)	1
Pre-Baccalaureate Visual Communication (UND)	2
Subtotal	6
NTID Subtotal	606
Baccalaureate Students in Other RIT Colleges	
College of Engineering Technology	
Civil Engineering Technology (BS)	10
Computer Engineering Technology (BS)	4
Electrical Engineering Technology (BS)	3
Electrical/Mechanical Engineering Technology (BS)	4
Engineering Technology (UND)	2
Mechanical Engineering Technology (BS)	18
Media Arts and Technology (BS)	3
Packaging Science (BS)	5
Subtotal	49

Enrollment by Degree Programs (continued)

	Number of Students
Saunders College of Business	
Accounting (BS)	5
Business Undeclared (UND)	2
Finance (BS)	1
Hospitality and Tourism Management (BS)	8
International Business (BS)	4
Management (BS)	8
Management Information Systems (BS)	14
Marketing (BS)	8
New Media Marketing (BS)	3
Supply Chain Management (BS)	2
Subtotal	55
College of Science	
Applied Mathematics (BS)	2
Biochemistry (BS)	3
Bioinformatics (BS)	1
Biology (BS)	8
Biotechnology (BS)	5
Chemistry (BS)	5
Computational Mathematics (BS)	1
Environmental Science (BS)	7
Imaging Science	1
Subtotal	33
College of Art and Design	
3D Digital Graphics (BFA)	10
Art and Design (UND)	1
Film and Animation (BFA)	6
Fine Arts-Studio (BFA)	4
Furniture Design (BFA)	1
Graphic Design (BFA)	25
Illustration (BFA)	3
Industrial Design (BFA)	2
Interior Design (BFA)	3
Medical Illustration (BFA)	2
New Media Design (BFA)	6
Photographic and Imaging Arts (BFA)	17
Photographic Sciences (BS)	2
Studio Arts (BFA)	2
Subtotal	84

Enrollment by Degree Programs (continued)

	Number of Students
College of Liberal Arts	
Advertising and Public Relations (BS)	4
Communication (BS)	10
Criminal Justice (BS)	15
Digital Humanities and Social Sciences (BS)	2
Economics (BS)	2
International and Global Studies (BS)	5
Journalism (BS)	3
Liberal Arts Exploration (UND)	3
Political Science (BS)	3
Psychology (BS)	13
Sociology and Anthropology (BS)	1
Subtotal	61
Kate Gleason College of Engineering	
Biomedical Engineering (BS)	6
Chemical Engineering (BS)	4
Computer Engineering (BS)	5
Electrical Engineering (BS)	8
Engineering Exploration (UND)	3
Industrial Engineering (BS)	3
Mechanical Engineering (BS)	15
Subtotal	44
B. Thomas Golisano College of Computing and Information Sciences	
Computer Science (BS)	19
Computing Exploration (UND)	3
Computing and Information Technologies (BS)	24
Computing Security (BS)	6
Game Design and Development (BS)	4
Human-Centered Computing (BS)	10
New Media Interactive Development (BS)	2
Software Engineering (BS)	4
Web and Mobile Computing (BS)	9
Subtotal	81

Enrollment by Degree Programs (continued)

	Number of Students
University Exploration	
University Exploration (UND)	8
Subtotal	8
School of Individualized Study	
Applied Arts and Sciences (BS)	34
Subtotal	34
Student Affairs	
College Restoration Program	1
Subtotal	1
College of Health Sciences and Technology	
Biomedical Sciences (BS)	16
Exercise Science (BS)	3
Physician Assistant (BS)	1
Subtotal	20
Subtotal Baccalaureate Students in Other Colleges	470



Caitlyn Brewster, a marketing major from Ballston Spa, New York, and Tyler Forston, a 3D graphics technology major from Conroe, Texas, encourage students to join campus organizations at NTID's Apple Festival.

Enrollment by Degree Programs (continued)

	Number of Students
Graduate Students in Other RIT Colleges	
College of Engineering Technology	
Environmental, Health and Safety Management (MS)	1
Subtotal	1
Saunders College of Business	
Accounting (MS)	1
Business Administration (MBA)	5
Entrepreneurship and Innovation (MS)	1
Hospitality and Tourism (MS)	1
Service Leadership and Innovation (MS)	2
Subtotal	10
College of Art and Design	
Film and Animation (MFA)	2
Fine Arts Studio (MFA)	1
Industrial Design (MFA)	1
Visual Communication Design (MFA)	2
Subtotal	6
College of Liberal Arts	
Criminal Justice (MS)	1
Experimental Psychology (MS)	2
Science, Technology and Public Policy (MS)	1
Subtotal	4
College of Science	
Applied and Computational Math (MS)	1
Bioinformatics (MS)	1
Chemistry (MS)	1
Subtotal	3
Kate Gleason College of Engineering	
Electrical Engineering (MS)	1
Manufacturing Leadership (MS)	1
Mechanical Engineering (ME)	1
Subtotal	3

Enrollment by Degree Programs (continued)

	Number of Students
B. Thomas Golisano College of Computing and Information Sciences	
Computer Science (MS)	3
Computing and Information Science (Ph.D.)	4
Data Science (MS)	1
Human Computer Interaction (MS)	2
Information Science and Technology (MS)	1
Subtotal	11
Golisano Institute for Sustainability	
Architecture (M.Arch.)	2
Subtotal	2
College of Health Science and Technology	
Health Systems Management (MS)	1
Physician Assistant (MS)	1
Subtotal	2
School of Individualized Study	
Professional Studies (MS)	11
Subtotal	11
Subtotal Graduate Students in Other Colleges	53
Total	1,129

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
Ph.D.	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 2018-2019	
	Fall	Spring
3D Graphics Technology	8.5	6.7
Accounting Technology	6.3	6.8
Administrative Support Technology	5.6	5.8
American Sign Language	12.8	11.3
Applied Computer Technology	8.3	6.5
Applied Computer Technology – Technical Computing	12.0	12.0
Applied Mechanical Technology	3.0	1.0
ASL-Deaf Culture	15.0	0.0
ASL-English Interpretation	10.2	10.6
Career Development	10.3	7.0
Communication Studies	9.7	12.2
Computer-Aided Drafting Technology	6.8	6.4
Computer-Integrated Machining Technology	6.5	5.2
English	10.0	8.5
General Arts & Imaging	8.6	6.8
General Business	6.0	7.7
Graphic Design	8.0	7.3
Graphic Production	7.4	5.5
Health Care Interpretation	3.0	5.7
Humanities and Social Science	17.6	11.8
Laboratory Science Technology	9.1	8.3
Liberal Studies	0.0	11.0
Master of Science in Secondary Education	6.8	7.0
Mathematics	9.3	8.8
Mobile Application Development	5.8	7.7
Science	8.7	8.2
Overall Average	8.3	7.5

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 2019.

	Number of Sections	Number of Students	
		Deaf or Hard-of-Hearing	Hearing
Saunders College of Business			
Computer-Based Analysis	8	25	213
Subtotal	8	25	213
College of Art and Design			
History of Western Art: Ancient to Medieval	2	30	0
History of Western Art: Renaissance to Modern	2	29	1
Subtotal	4	59	1
Golisano College of Computing and Information Sciences			
Introduction to Database and Data Modeling	1	11	2
Subtotal	1	11	2
College of Engineering Technology			
DC Circuits Lab	2	1	31
Electronics I Lab	2	0	31
Subtotal	4	1	62
College of Liberal Arts			
Advanced American Sign Language I	1	1	2
Beginning American Sign Language I	11	11	189
Beginning American Sign Language II	7	13	99
Beginning Spanish IA	1	0	16
Career Exploration Seminar	1	1	12
Communication	1	14	0
Deaf Art & Cinema	1	10	22
Deaf Culture in America	2	19	37
Deaf Literature	2	9	15
Explorations of Place and Space	1	6	12
Intermediate American Sign Language I	4	20	47
Intermediate American Sign Language II	2	3	10
Introduction to Criminal Justice	3	42	35
Introduction to Psychology	2	29	0
Introduction to Visual Arts	1	4	11
Language and Sexuality	1	2	27
Linguistics of American Sign Language	3	7	41

Educational Support: Teaching (continued)

	Number of Sections	Number of Students	
		Deaf or Hard-of-Hearing	Hearing
College of Liberal Arts (continued)			
Science, Technology and Values	1	15	0
Science Writing	1	0	17
Senior Project in Psychology	1	0	2
Thesis	1	1	0
Thesis Proposal	1	1	0
U.S. History Since 1945	1	10	1
Women and the Deaf Community	3	19	41
Subtotal	53	237	636
College of Science			
Advanced Biology Research	1	1	0
Advanced Chemistry Research	2	2	0
Introduction to Statistics I	3	15	90
Organic Chemistry Lab I	2	6	42
Organic Chemistry Lab II	2	2	32
Research and Thesis	3	0	3
Solar System Astronomy Lab	3	2	40
Stars and Galaxies Lab	3	1	45
Survey Design and Analysis	1	0	13
Undergraduate Research in Mathematics	1	1	0
Subtotal	21	30	265
Interdisciplinary Studies			
Critical Reading and Writing	6	83	0
High Performance Leadership	1	1	15
Multidisciplinary Life	1	9	42
Writing Seminar	6	94	0
Subtotal	14	187	57
Center for Intercollegiate Athletics and Recreation			
Country Line Dance	1	0	6
Functional Yoga	1	2	21
Kundalini Yoga	2	2	58
P90X	2	7	37
Snowboarding	2	2	49
Sunrise Yoga	1	5	24
Turbokick	2	2	37
Ultimate Frisbee	2	2	32
Zumba Fitness	4	14	84
Subtotal	17	36	348
Total	122	586	1,584

American Sign Language and Interpreting Education Programs

The degree program in ASL-English Interpretation graduated 35 students in 2018-2019. Fifty-one new students matriculated into the program in September 2019. Currently, 18% of total enrollment are students from ethnic minority backgrounds.

Since its inception, the Department of ASL and Interpreting Education has graduated 856 students. Of that number, 465 have graduated with an AAS degree, 383 with a BS degree and eight with a certificate.

	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Fall Applicants	188	187	172	125	137
Accepted	50	57	63	64	67
Registrations	40	46	42	50	51
Enrollment					
BS	148	136	147	148	152
MS in Health Care Interpretation	N/A	8	15	12	9
Non-Matriculated	3	4	0	0	3
Total Enrollment	151	148	162	160	164
Employment Report					
Graduates	41	24	30	35	*
Employment Rate	100%	100%	100%	*	*
In addition to the interpreting program, ASL and Interpreting Education faculty also provided the following:				FY 2019 Enrollment	
ASL courses in RIT's College of Liberal Arts					425
ASL courses for deaf students, NTID					78
ASL course for the MSSE program, NTID					15
Introduction to ASL and Deaf Culture					7
New Signers Program					17

* As of the writing of this report, the employment information for FY 2019 and FY 2020 and graduation information for FY 2020 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 25th year. To date, 397 students have graduated from the program. One hundred percent of the FY 2018 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.

Fourteen applications for admission for fall 2019 were received. Twelve were offered admission. Of those, eight matriculated into the program. For the 2019-2020 academic year, the MSSE program has a total enrollment of 22 students: 14 second-year or returning students and eight first-year students. Of the 22 matriculated students, 45% are deaf or hard of hearing and 10% are minority.

MSSE Student Data

	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Fall Applications	33	44	24	13	14
Acceptances	17	19	8	7	12
New Registrations	15	17	5	7	8
Deaf and Hard-of-Hearing Enrollment	15	14	9	8	10
Total Enrollment*	42	30	19	17	22
Employment Report					
Graduates	20	11	13	5	**
Employment Rate	100%	100%	100%	**	**

* Included in FY 2016 are six non-matriculated students 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 2019 and FY 2020 and graduation information for FY 2020 is incomplete.

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 2019:

- 232 students were enrolled in cooperative work experiences
- 52 academic programs had students on cooperative work experiences
- 15 faculty and staff visited 49 students at their job sites during the summer

	Number of Students Involved in Cooperative Work Experiences*				
	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Sub-Baccalaureate					
NTID	94	88	108	84	54
Percent of Total Co-op Enrollment	35%	32%	35%	31%	23%
Baccalaureate/Master's					
College of Engineering Technology	52	51	56	50	50
Saunders College of Business	27	30	38	28	19
B. Thomas Golisano College of Computing and Information Sciences	45	43	50	46	42
Kate Gleason College of Engineering	19	25	23	29	31
College of Health Sciences and Technology	5	3	4	3	1
College of Art and Design	9	10	11	11	23
College of Liberal Arts	19	16	15	14	9
College of Science	1	5	8	5	3
Subtotal	177	183	205	186	178
Percent of Total Co-op Enrollment	65%	68%	65%	69%	77%
Total Co-op Enrollment	271	271	313	270	232

* 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.

Student Support Services Highlights

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

- Audiological services are provided by the Communication Studies and Services Department (CSS). CSS includes six audiologists trained to provide hearing evaluations, consultations, hearing aid trials and programming, cochlear implant mapping and upgrades, assistive technology and accessory fittings and individual listening and speechreading 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 have access to these services and can make appointments in The Audiology Center. In addition, audiologists are available to meet 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. CSS audiologists stay current with ongoing training and close working relationships with representatives from cochlear implant and hearing aid manufacturers to satisfy the ever-evolving needs of a diverse student population. CSS Audiology also offers routine ear, nose, throat and ophthalmology clinics for students on campus to meet with local physicians. CSS providers are prepared to match individuals' communication preferences (sign, voice or both).
- Speech and language services are provided by the Communication Studies and Services Department (CSS). CSS includes six speech-language pathologists trained to provide clinical services for deaf and hard-of-hearing students who want to enhance their communication competence and confidence. Individual, group and walk-in experiences aim to improve students' communication for face-to-face conversations, remote conversations, group discussions, job interviews and formal presentations. Speech-language services are designed to meet students' personal goals and can focus on a variety of areas such as speech intelligibility (articulation, pronunciation, voice, prosody), spoken language, grammar and technical/professional vocabulary and practice, communication strategies for work-related interactions, speechreading and listening training, presentation skill development and increased self-confidence when communicating. The Speech & Language Center is equipped with computer technology that provides students with visual feedback for speech and language analysis. Students can also explore new methods of communication practice and facilitation through the use of trending mobile apps and virtual reality equipment. CSS providers are prepared to match individuals' communication preferences (sign, voice or both).
- 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. In AY 2018-2019, 186 deaf and hard-of-hearing students were seen for these services.
- Personal and career counseling and academic advising. NTID Counseling & Academic Advising Services (CAAS) supports the academic, personal and career growth and success of all NTID-supported students. Department services are designed to be student-centered, proactive, developmental and responsive to student needs. Services are integrated within the students' academic and co-curricular experience and support the curriculum. Department services include academic advising, personal counseling and career counseling. Student success is also promoted through collaboration and consultation with advisors, tutors, instructors, administrators and other support service providers, as well as students' families and community professionals.

CAAS provided more than 12,000 hours of academic advising, personal counseling and career counseling for students in AY 2018-2019. Academic advising includes, but is not limited to, student outreach, developing plans of study and monitoring degree audits to support student success and on-time graduation. Personal counseling addressed a variety of issues including transitional, familial, relational or identity concerns. All counselors and academic advisors (CAAs) adhere to the American Counseling Association Code of Ethics and serve as a confidential resource under Title IX. Career

Student Support Services Highlights (continued)

counseling services are also provided for students seeking assistance in exploring interests, skills, change of majors or identifying career goals. CAAS manages the Career Resource and Testing Center (CRTC), which provides career skills assessments and resources. Career assessment results are reviewed with students and integrated into their academic plan. To ensure quality of services for our students, CAAS also maintains currency in the areas of academic advising and personal and career counseling through professional development.

In addition to filling advising and counseling roles and due to their expertise, CAAs also serve as Career Seminar Instructors during the Summer Vestibule Program and as Freshman Seminar instructors. Both roles are designed to support the transition into college life for first-year students. Members of the department also serve as guest lecturers in other courses to support skills needed for academic and personal success. CAAs also serve as career counselors for RIT/NTID Outreach's summer program for rising seniors, Explore Your Future.

Collaboration and consultation with key individuals, campus partners and community services are key to helping maximize students' academic, personal and career growth. CAAS collaborates with, among other groups, RIT's University Advising Office, Office of Financial Aid and Scholarships, NTID Student Financial Services, academic departments, vocational rehabilitation counselors and the students' families.

- The Student Life Team (SLT) continued its tradition in FY 2019 of both challenging and educating students by 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 experience.

SLT's avenues of outreach and connection with students include: 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.

In addition to the wide variety of programming that SLT offers, the team serves as a source of information for the NTID student community through its strong social media presence, which is used to communicate important events and activities. SLT hires student staff during the summer who provide significant support to the summer outreach programs and Summer Vestibule Program (SVP). SLT strives to build a sense of community that allows students to feel at home and that they are part of something great.

- 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 is a holistic support program geared to deaf and hard-of-hearing student-athletes at the varsity level as well as those participating in club and intramural sports and those interested in overall wellness. Services include academic support, mentoring, oversight, educational workshops, team-building and leadership training. Deaf and hard-of-hearing varsity student-athletes had an excellent year in AY 2018-2019, earning a 3.21 grade-point average as a group. The NTID community continues to thrive through athletic competition, with the Deaf

Student Support Services Highlights (continued)

Basketball Association, Deaf Volleyball Association and TigerFest keeping the student body active throughout the year. All student-athletes are heavily involved in the RIT/NTID community, particularly through multiple student organizations on campus that include Hillel, MOCHA, WOCHA, Student Athlete Advisory Committee and Deaf International Students Association. This past year saw multiple NCAA student-athletes dominating the competition in women's soccer, men's and women's crew, men's and women's swimming and diving, men's and women's track and field, cheerleading, men's wrestling and softball. The growth in deaf and hard-of-hearing student-athlete participation at RIT/NTID is anticipated to continue next year.

- Financial aid for domestic students was provided in FY 2019 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, 489 students received NTID scholarships, 99 received RIT scholarships, 905 received NTID-endowed scholarships and 97 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 2019, 151 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 10 students in fall 2019. 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.
- 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 2018-2019, CES served 24 students in fall and 18 students in spring. One hundred 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 consults on replicating the success of its model across New York State.

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.

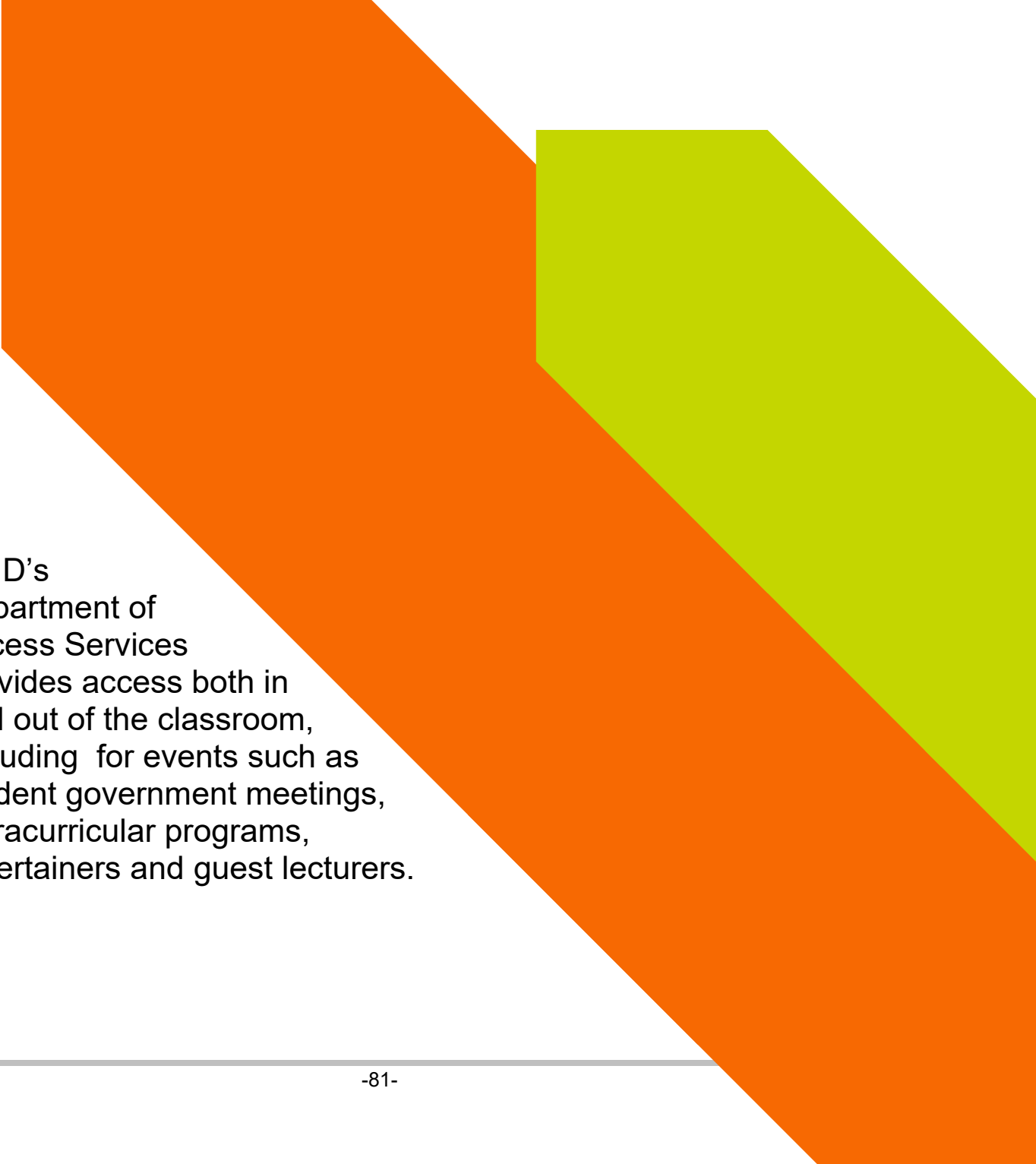
	AY 2018-2019		
	Tutoring Hours	Class Sections Served	Total Student Registrations
College of Engineering Technology (CET)	*	258	450
College of Art and Design (CAD)	**	414	752
Saunders College of Business (SCB)	900*	185	408
Kate Gleason College of Engineering (KGCOE)	309*	178	235
College of Liberal Arts (CLA)	**	557	1,207
College of Health Sciences and Technology (CHST)	1,379	81	205
College of Science (COS)	4,906*	432	983
B. Thomas Golisano College of Computing and Information Sciences (GCCIS)	875*	244	445
School of Individualized Study (SOIS)	***	99	287
Total	8,369	2,448	4,972

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

** Hours not available.

*** Hours for SOIS are reported under the other colleges depending on the course type.

Student Access Services



NTID's
Department of
Access Services
provides access both in
and out of the classroom,
including for events such as
student government meetings,
extracurricular programs,
entertainers and guest lecturers.

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 59 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 demand. 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 and on video streams of RIT events.
- **Assistive Listening Systems.** NTID loans FM systems to students 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 or used 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. This experienced resource, paired with similar expertise developed in the newer real-time captioning service, affords NTID students unparalleled access to the full array of educational opportunities RIT provides. Access Services partners with NTID's Center for Access Technology in continued innovation and application of new technologies for improved access.

Capitalizing on its staff's expertise, Access Services strengthened the onsite development of staff interpreters with expanded professional development efforts. The growth of a formalized Apprentice program has already benefited 132 developing interpreters from 30 discrete training programs in transitioning from school to effective professional interpreting. The expertise of NTID interpreters as specialists in post-secondary education is increasingly being shared through national outreach, including via the NTID Regional STEM Center by improving skills of interpreters in STEM disciplines. With increasing retirements of veteran staff, Access Services hired approximately 40% of its current staff of 193 access providers in recent years. This expansion of professional development supports their continuing 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 Engineering Technology	6,937	3,447	1,939	213
Saunders College of Business	9,389	4,975	1743	180
B. Thomas Golisano College of Computing and Information Sciences	10,012	5,145	2,198	223
Kate Gleason College of Engineering	2,355	2,464	2,018	118
College of Health Sciences and Technology	4,652	1,696	1,615	99
College of Art and Design	21,156	7,441	2,663	341
School of Individualized Study	1,273	723	187	51
College of Liberal Arts	20,106	11,660	5,931	430
College of Science	15,851	9,178	4,625	372
Student Affairs Division	2,732	144	171	116
Golisano Institute for Sustainability	1,035	0	174	9
NTID	4,958	308	66	104
FY 2019 Total Hours	100,456	47,181	23,330	2,256

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 2019	In-Class			Non-Class Activity		Administrative Activity		Overall Total	
	Hours	%*	Sections						
Fall	49,674	75%	822	11,716	18%	4,910	7%	66,300	100%
Spring	49,382	77%	764	10,693	17%	3,878	6%	63,953	100%
Summer	1,214	8%	22	9,441	63%	4,376	29%	15,031	100%
FY 2019 Total	100,270	69%	1,608	31,850	22%	13,164	9%	145,284	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%
FY 2017 Total	108,243	71%	1,644	33,854	22%	10,533	7%	152,630	100%
FY 2018 Total***	96,463	71%	1,634	30,051	22%	9,572	7%	136,036	100%

* Percentages are rounded to the nearest whole number.

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

*** A revised class meeting schedule, only in AY 2017-2018, resulted in both reductions of demand from one fewer week of class each term and an undercount of hours, estimated at 8-10%, due to forced changes in counting methods. AY 2018-2019 has returned to NTID's previous standard method of counting hours.

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.

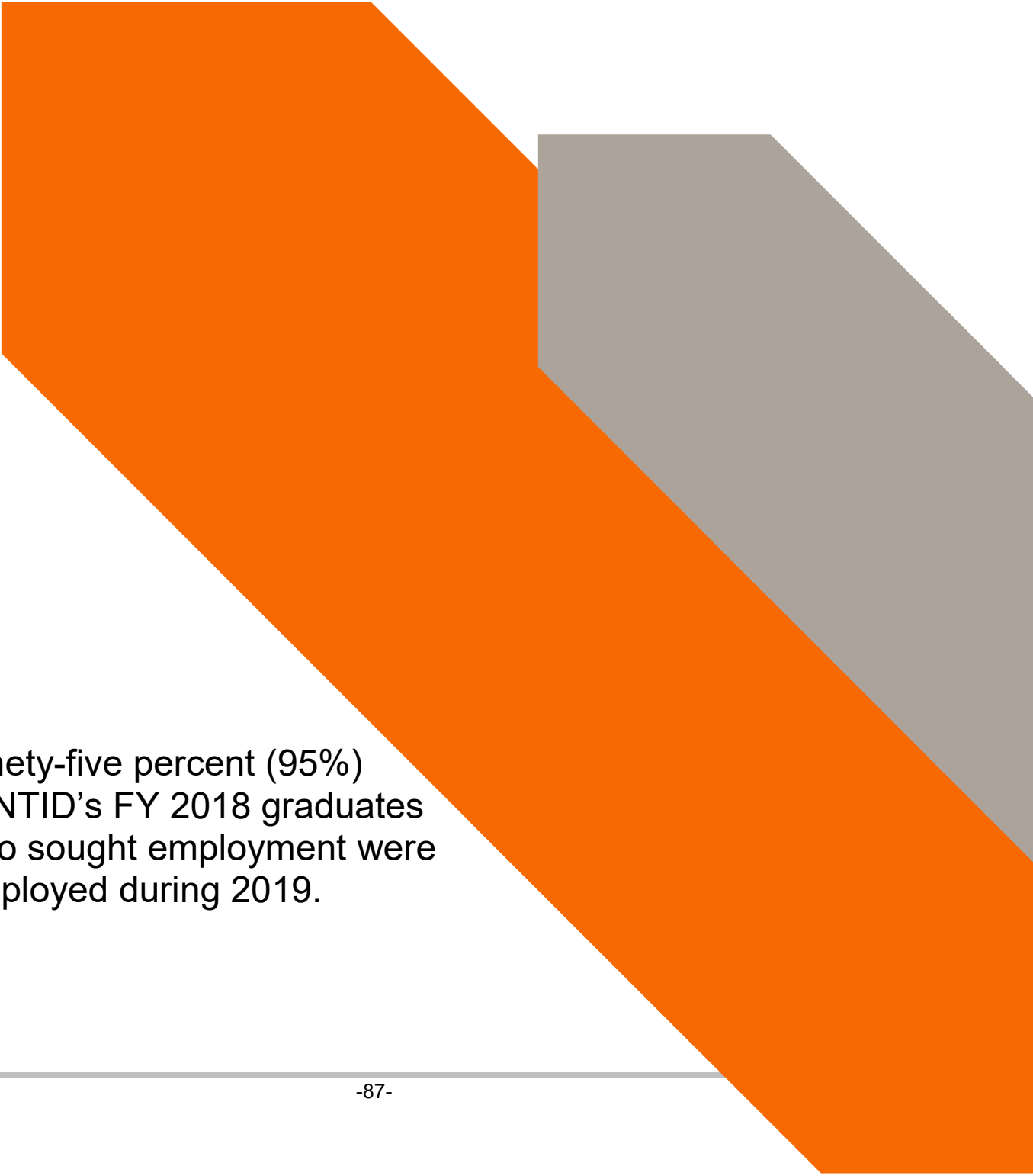
FY 2019	In-Class			Non-Class Activity		Administrative Activity		Overall Total	
	Hours	%*	Sections						
Fall	12,177	98%	358	246	2%	58	0%	12,481	100%
Spring	10,807	98%	305	196	2%	45	0%	11,048	100%
Summer	170	7%	6	1,959	80%	320	13%	2,449	100%
FY 2019 Total	23,154	89%	669	2,401	9%	423	2%	25,978	100%
FY 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%
FY 2017 Total	24,608	95%	642	800	3%	544	1%	25,952	100%
FY 2018 Total***	22,532	95%	642	846	4%	222	1%	23,600	100%

* Percentages are rounded to the nearest whole number.

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

*** A revised class meeting schedule, only in AY 2017-2018, resulted in both reductions of demand from one fewer week of class each term and an undercount of hours, estimated at 8-10%, due to forced changes in counting methods. AY 2018-2019 has returned to NTID's previous standard method of counting hours.

Persistence, Graduation & Employment



Ninety-five percent (95%) of NTID's FY 2018 graduates who sought employment were employed during 2019.

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% 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, 95% of graduates who chose to enter the labor force found employment that is commensurate with the level of their education and training. Figures for 2018 graduates show that 95%, or 134 of the 141 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 deaf and hard-of-hearing individuals 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 have been shown to correlate with graduation from college. Generally, students who withdraw before graduation 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 is committed to addressing retention issues that impact students' persistence from first-year transition through graduation. Staff from different divisions within NTID's Student and Academic Services continue to focus on students' academic and social success through strategies that include offering the Deaf ALANA Promise (DAP) program for first-year African, Latino, and Native American (ALANA) students yearly, providing support for students through the financial aid and vocational rehabilitation process, 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 2018-2019, 292 students graduated. Of those graduates, 34% earned sub-baccalaureate degrees, 56% earned bachelor's degrees and 10% earned master's degrees. Forty 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 649 students who were first-time, full-time, degree-seeking in the years 2016, 2017 and 2018. Data in the table below indicate that for the most recent three-year period, 78% 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
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%
2015, 2016, 2017	702	509	73%
2016, 2017, 2018	649	504	78%

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

Nationally, four-year public and private colleges have a first-year persistence rate of 81%. This compares to an 86% 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 (38% for students admitted into sub-baccalaureate programs and 68% 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	62%	32%
NTID Sub-Baccalaureate**	74%	38%
Four-Year Institutions	81%	60%
Other RIT Colleges (NTID Baccalaureate)**	86%	68%



Abraham Glasser, of Pittsford, New York, graduated with his BS in computer science this May and currently is enrolled in RIT's computing and information sciences doctoral degree program. His co-op experiences at Microsoft and NASA and his work at NTID's Center on Access Technology and in NTID's Research Experience for Undergraduates helped him develop a passion for research.

* 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 2015 to FY 2019

During the past five years, NTID has awarded an average of 304 degrees annually. The number for FY 2019 was 292. 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 2019, 116 of the 292 graduate and undergraduate degrees and certificates (40%) were granted to students from minority backgrounds.*

Six different degree levels are eligible to be awarded to NTID-supported students at 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 sciences; the rest are from technical and professional areas.

Bachelor's/Master's Degrees

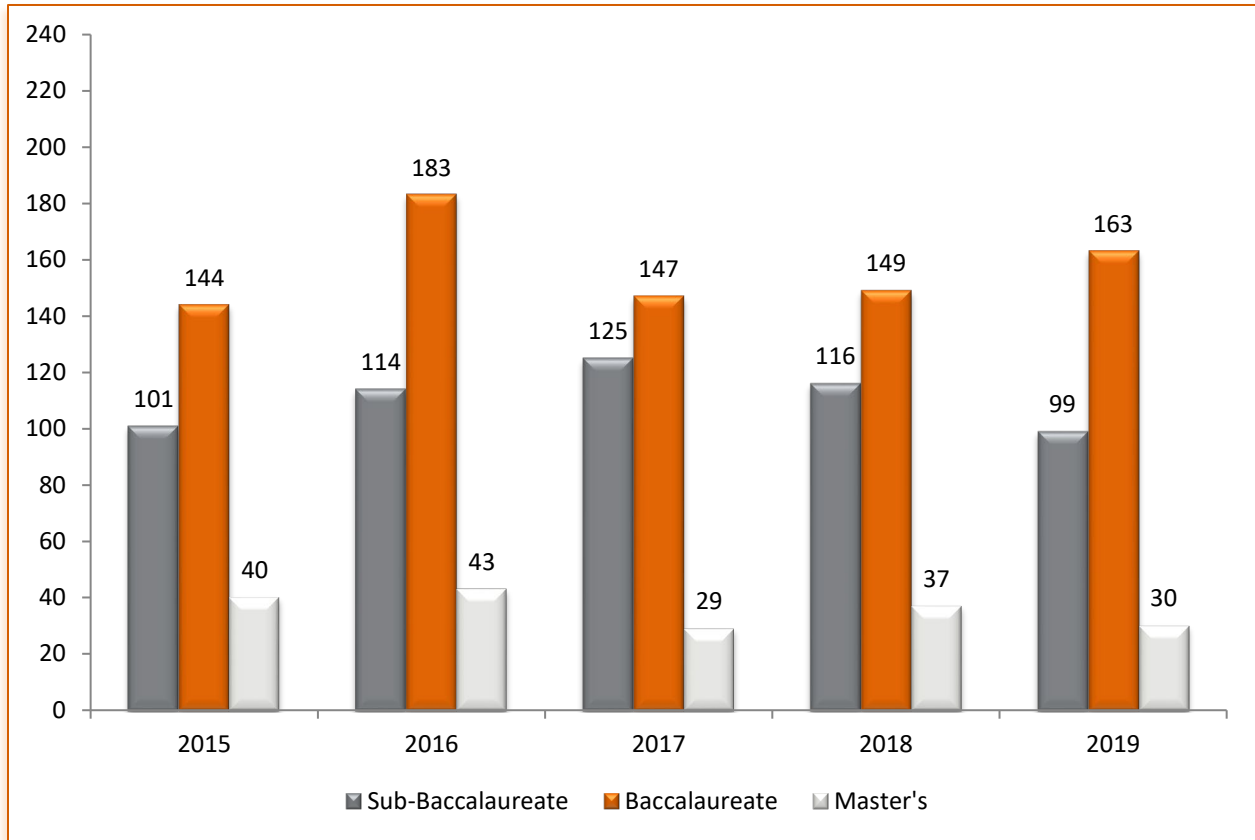
4. A *Bachelor's* degree is awarded to students who complete all required courses to graduate from a four- or five-year program in one of RIT's nine colleges. A bachelor's degree requires completion of 120-128 semester credit hours.
5. A *Master's* degree is awarded to students who complete all required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

* Minority status is either unknown for 17 of these 292 graduates or the graduate has international visa status.

Degrees Granted: FY 2015 to FY 2019 (continued)



	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Sub-Baccalaureate*	35.4%	33.2%	41.5%	38.4%	33.9%
Baccalaureate*	50.5%	54.2%	48.9%	49.3%	55.8%
Master's**	14.1%	12.6%	9.6%	12.3%	10.3%

* 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 and hearing graduates from the Master of Science program in Health Care Interpretation.

Graduates by Program Areas

Of all the degrees awarded to NTID students on the RIT campus in FY 2019, 50% were through programs offered by NTID and 50% through the other colleges of RIT. Historically, 64% of the degrees have been awarded from NTID and 36% 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 2019		CUMULATIVE* (FY 1970 – FY 2019)	
	Number of Graduates	Percentage of Graduates	Number of Graduates	Percentage of Graduates
NTID				
Career-Focused and Associate+Bachelor's Degrees	99	34%	4,518	50%
ASL-English Interpretation Bachelor	35	12%	383	4%
ASL-English Interpretation Associate	0	0%	465	5%
ASL-English Interpretation Certificate	0	0%	8	0%
Master of Science in Health Care Interpretation	8	3%	8	0%
Master of Science in Secondary Education	5	2%	397	4%
Subtotal NTID	147	50%	5,780	64%
Other Colleges of RIT**				
College of Engineering Technology	18	6%	660	7%
Saunders College of Business	12	4%	474	5%
B. Thomas Golisano College of Computing and Information Sciences	21	7%	350	4%
Golisano Institute for Sustainability	0	0%	5	0%
Kate Gleason College of Engineering	3	1%	109	1%
College of Health Sciences and Technology	20	7%	56	1%
College of Art and Design	13	4%	662	7%
College of Liberal Arts	28	10%	566	6%
College of Science	7	2%	205	2%
School of Individualized Study	23	8%	192	2%
Subtotal Other Colleges	145	50%	3,279	36%
Total	292	100%	9,059	100%

* Graduates are summarized uniquely according to their most recent, highest level of degree completion.

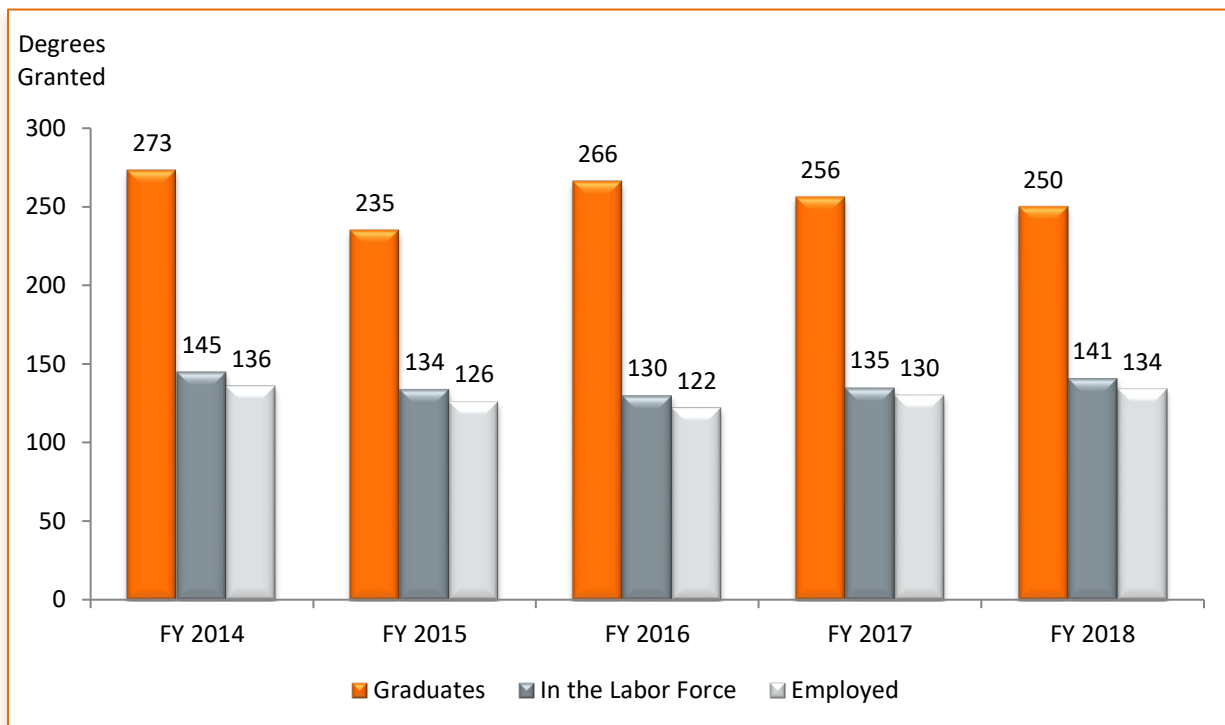
** Includes bachelor's and master's degrees granted by the other colleges of RIT, as well as some associate degrees.

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 2018*, 250** deaf and hard-of-hearing students graduated, and 141 chose to enter the labor force. One hundred and thirty-four were employed, while seven were unable to find employment. Therefore, 95.04% (134/141) found employment. NTID's employment rate over the past five years as calculated above is 95%. Of the 109 remaining graduates from 2018, 81 are continuing their education toward advanced degrees either at RIT or elsewhere, 12 are not looking for employment and 16 have an unknown status.



* As of the writing of this report, the employment information for 2019 is incomplete; therefore, NTID reports employment rates of 2018 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, the Master of Science program in Health Care Interpretation 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) meets with students 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 provide job-seeking advice to students and graduates at different locations on campus and through email, text and videophone.

During FY 2019:

- NCE personnel appeared as guest presenters to discuss the job search process in 10 sections of various technical and academic programs.
- The 18th annual NTID Career Fair was held in October 2018 with 54 employers attending and close to 300 students and alumni participating.
 - Employer Panel for Students – representatives from NAVSEA, PNC Financial Services, Pacific Northwest National Laboratory and Route 66 Promotions provided an overview of their company/agency and discussed the types of training and skills they seek.
- Three students and two NCE staff members attended the Disability:IN conference in Chicago, Illinois, in July 2019.
- Students sought individualized job search assistance at various campus locations.
- Twenty-two students took advantage of two resume review sessions.
- To inform students about NCE services, NCE participated in several interactive events each semester for students, along with other NTID departments and student groups.
- Thirty students met with four alumni (business, computing and visual communications) in a roundtable discussion in April 2019.
- Thirty students listened to five deaf and hard-of-hearing professionals' stories about how their studies and passions led to successful careers in the areas of graphic design, web design, printing technology and photography in April 2019.

Where Recent Graduates Are Working

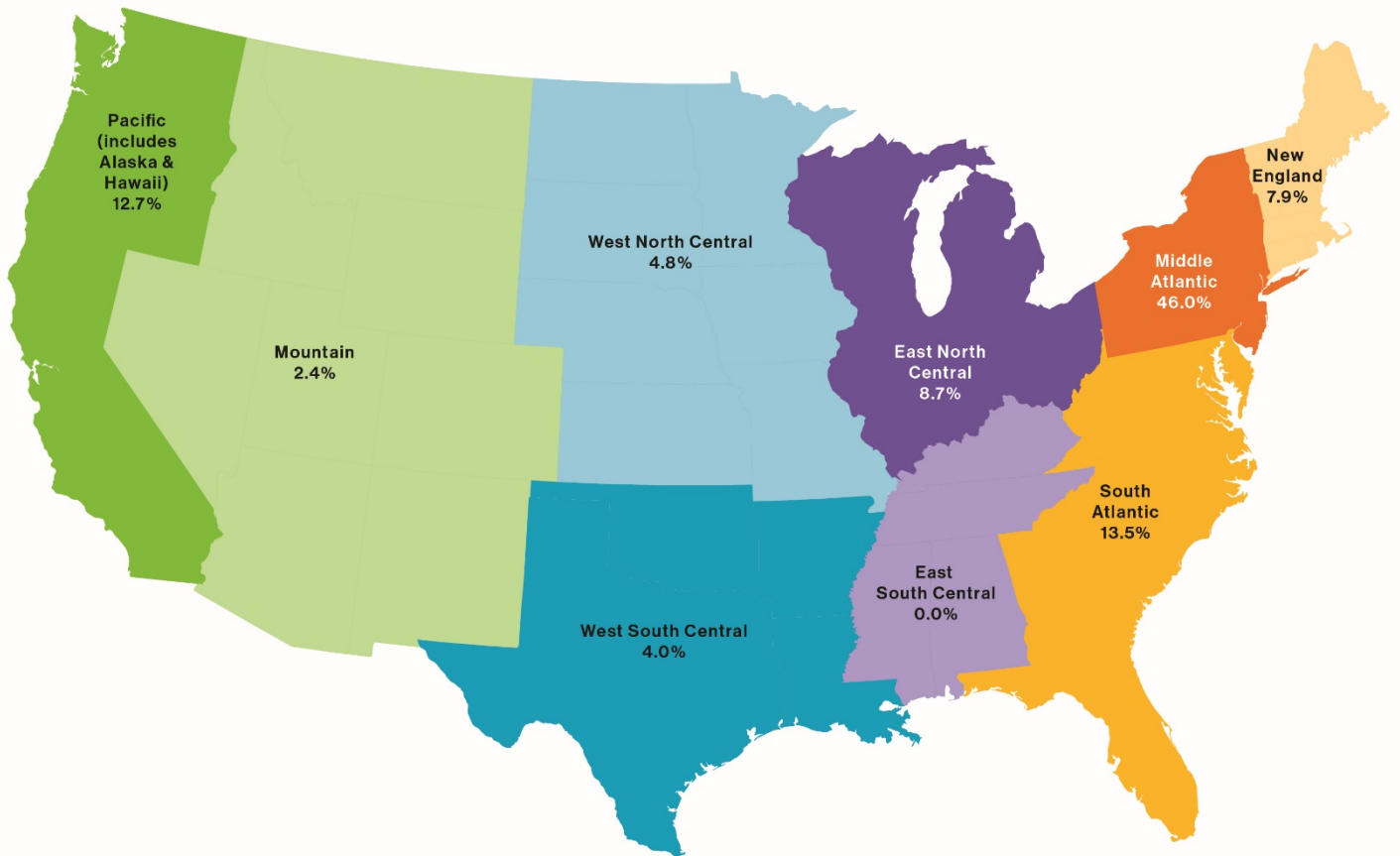
In FY 2018, 39% of U.S. NTID graduates accepted jobs in their home states as their first jobs after graduation, while 29% found employment in the Rochester area and 32% in other areas of

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.

Area	Percent of Placed Graduates				
	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018*
Rochester	21%	17%	13%	25%	29%
Home State	36%	55%	53%	42%	39%
Other	43%	28%	34%	33%	32%
Total	100%	100%	100%	100%	100%

Number of Graduates Placed	136	126	122	130	134
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FY 2018 Graduate Placement by Region**



* Placement numbers for FY 2019 graduates are incomplete and will be reported next year.

** International and unknown locations are excluded.

Employment by Sector of the Economy

Of the last cohort of graduates tracked for employment, 65% have acquired jobs in business and industry, 15% in education/non-profit and 20% in government.

Sector	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018*
Business/Industry	61%	75%	70%	77%	65%
Education/Non-Profit	28%	16%	20%	17%	15%
Government	11%	9%	10%	6%	20%
Total	100%	100%	100%	100%	100%



NTID students interact with potential future employers at NTID's Career Fair. Recent employers of NTID students include Boeing, CBS, U.S. Food and Drug Administration, IBM, JPMorgan Chase & Co., NASA and Naval Air Systems Command.

* Placement numbers for FY 2019 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

17 categories. Percentages among the various categories are different than seen in the *FY 2018 Annual Report*. This year shows moderate changes over many occupational categories.

Occupations of Working 2018 Graduates*	%	Sample Job Titles Held by 2018 Graduates within Category
Computer and Mathematics	13.7%	Software Engineer, Security Solutions Engineer, System and Network Administrator
Office and Administrative Support	13.7%	Human Resources Assistant, Enterprise Account Manager, Bookkeeper
Architecture and Engineering	10.7%	Engineer, CAD Technician, Mechanical Engineer
Life, Physical and Social Science	9.9%	Lab Technician, Patient Care Technician, Physical Science Technician
Education, Training and Library	8.4%	Library Associate, Teacher Assistant
Production	8.4%	CNC Machinist, Machinist Associate/Grinder
Business and Financial Operations	7.6%	Marketing Assistant, Management Analyst, Accountant
Arts, Design, Entertainment, Sports and Media Occupations	6.9%	Visual Information Specialist, Graphic Production Staff
Transportation and Material Moving	6.1%	Package Handler, Warehouse Handler
Food Preparation and Serving	3.8%	Restaurant Associate, Cook II
Management	3.1%	Project Manager
Community and Social Service	2.3%	Residential Child Care Worker
Protective Service	1.5%	Security Specialist
Sales and Related	1.5%	Travel Consultant
Construction and Extraction	0.8%	Construction Worker
Farming, Fishing, and Forestry	0.8%	Conservation Technician Assistant
Legal	0.8%	Research Associate
Total	100%	

* Three of the FY 2018 employed graduates had either unknown job titles or titles too ambiguous for categorization.

Occupations of Alumni by Labor Categories

All NTID alumni graduating through summer 2018 were surveyed in 2019.

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 15 major categories.

In 2019, the top four labor categories remain consistent with the 2014 alumni survey. However the percentage of alumni working in Education, Training and Library increased by nearly 10% since the previous survey. Also, Healthcare Support is a newly included category for 2019, becoming one of the top 10 categories represented.

The next alumni survey will be completed in 2024.

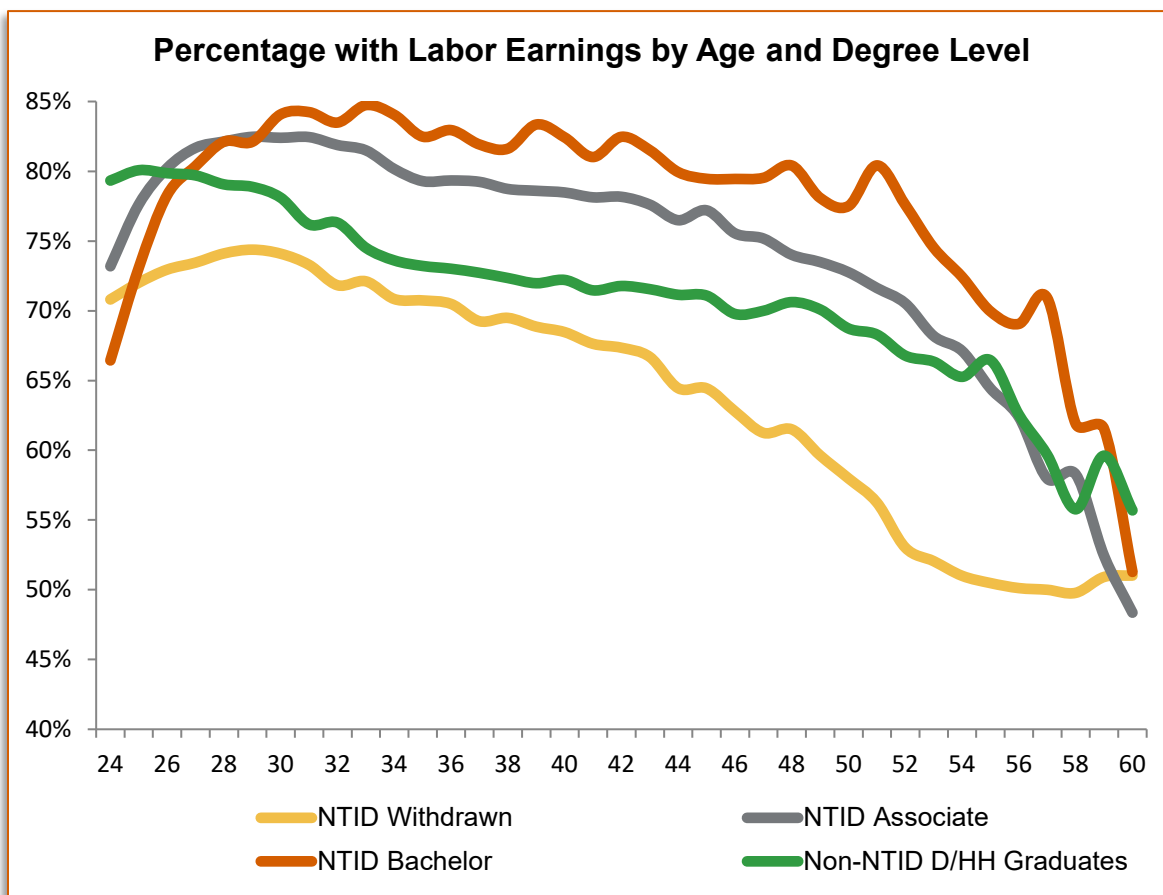
Occupations of Working Alumni*	%	Sample Job Titles Held by Alumni within Category
Education, Training and Library	20.8%	Assistant Professor, Life Skills and Literacy Instructor, Paraprofessional, Special Education Teacher
Community and Social Services	15.5%	Family Service Program Coordinator, Lead Employment Specialist, Senior Vocational Rehabilitation Counselor
Business and Financial Operations	14.2%	Accountant, Conference Director, Financial Analyst, Human Resources Specialist
Computer and Mathematics	8.9%	Chief Technology Officer, Database Developer, Software Developer
Architecture and Engineering	8.9%	CNC Machinist, Principal Packaging Engineer, Senior Electrical Engineer
Office and Administrative Support	8.4%	Administrative Assistant, Operations Coordinator, Testing Coordinator
Arts, Design, Entertainment, Sports and Media	4.1%	Graphic Designer, Senior Art Director, Visual Information Specialist
Life, Physical and Social Sciences	2.7%	Clinical Evaluator, Environmental Protection Specialist, Microbiology Laboratory Technician
Healthcare Support	2.7%	Clinical Trials Laboratory Assistant, Community Resources Professional, Optical Lab Technician, Specimen Technician
Production	2.3%	Manufacturing Technician, Tool and Dye Maker
Food Preparation and Serving	2.1%	Food Service Worker, Prep Cook
Sales	2.1%	District Manager, Retail Associate, Senior Client Director
Personal Care and Services	1.4%	Personal Care Assistant, Residential Care Worker
Transportation and Material Moving	1.4%	Handling and Shipping Staff, Postal Worker, Sort Associate
Healthcare Practitioner	1.1%	Deaf Health Specialist, Pathology Staff

* 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.

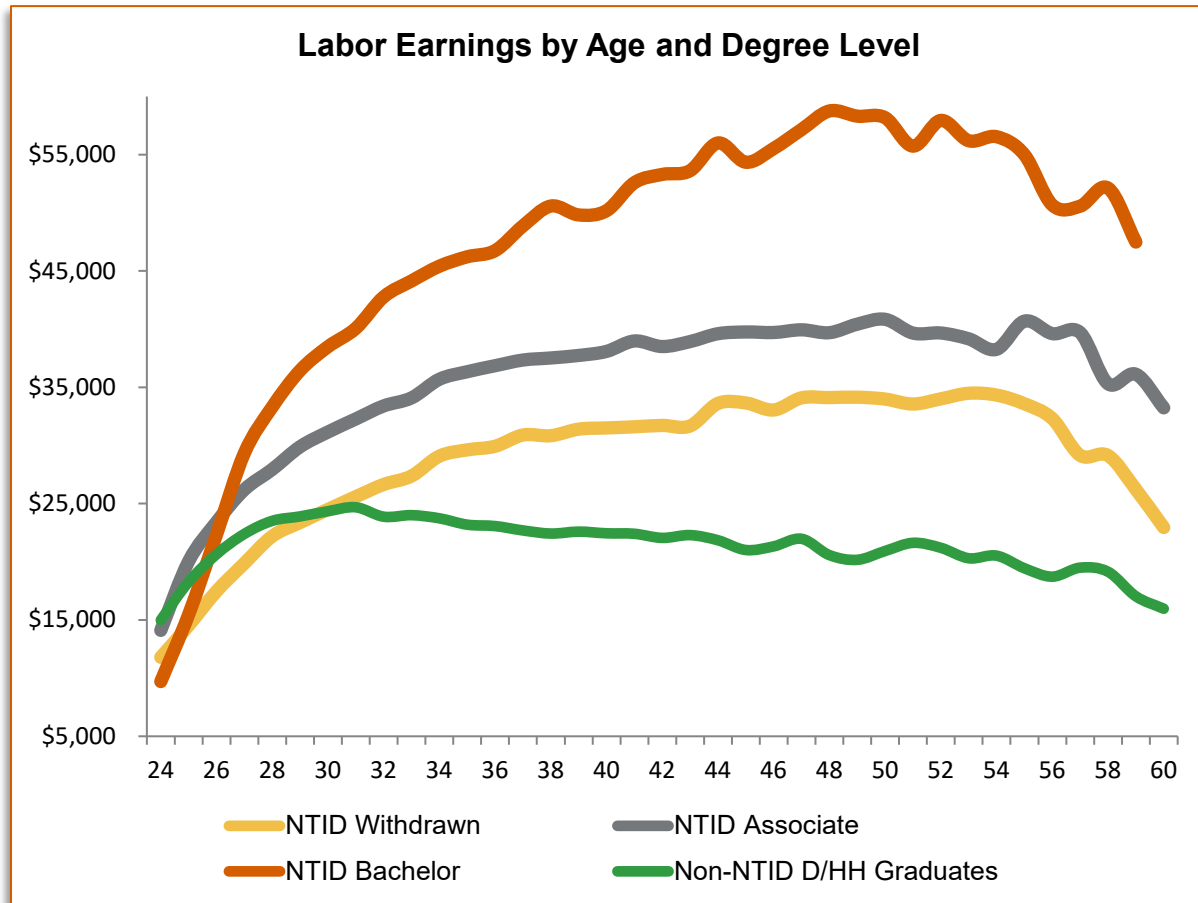


Note: From a 2012 collaborative research study conducted with the Social Security Administration and Cornell University. To accomplish this, NTID forwarded a data file with approximately 16,000 cases to the Social Security Administration. Four study groups were defined by degree attainment: 1) Deaf and 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).

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.

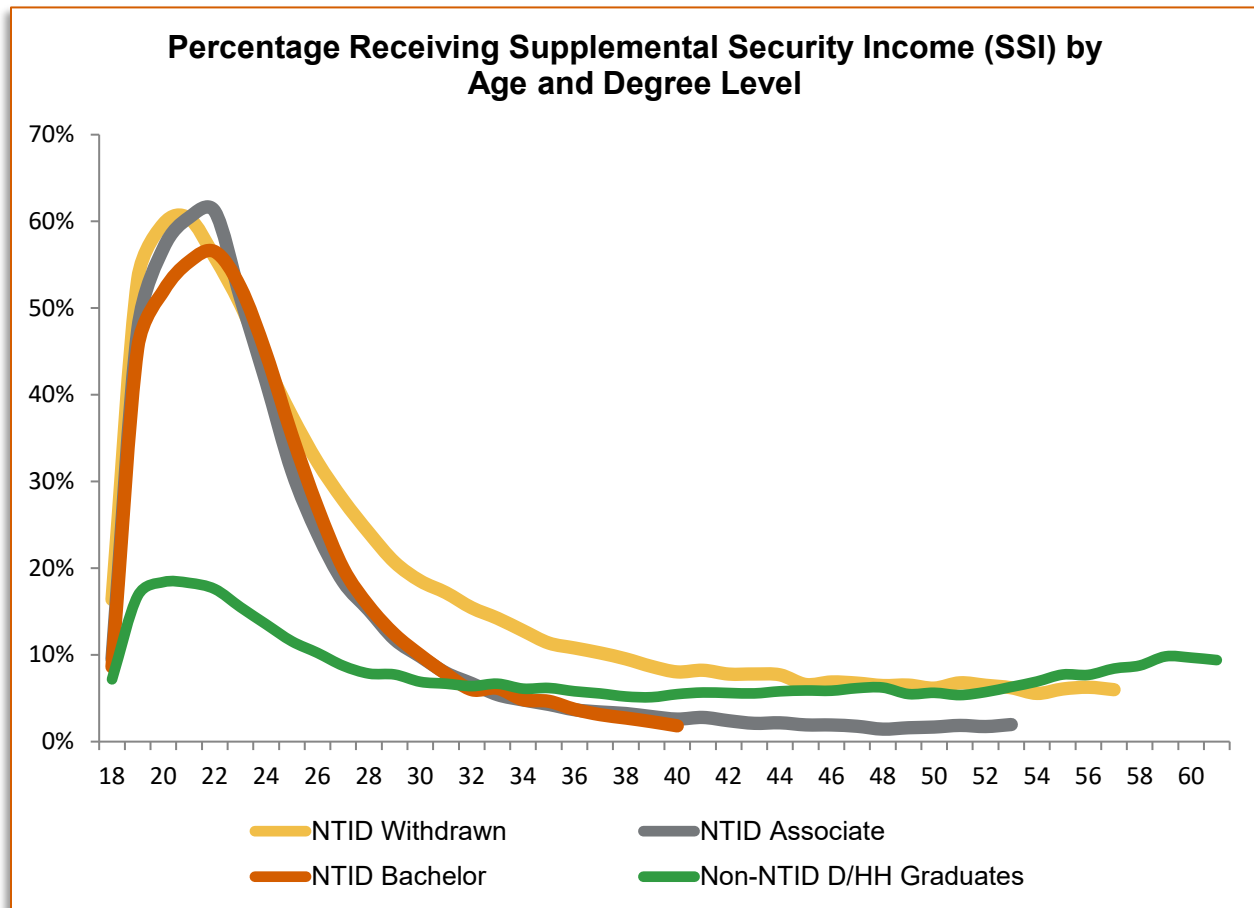


Note: From a 2012 collaborative research study conducted with the Social Security Administration and Cornell University. To accomplish this, NTID forwarded a data file with approximately 16,000 cases to the Social Security Administration. Four study groups were defined by degree attainment: 1) Deaf and 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%, as compared to 8% for deaf and hard-of-hearing graduates from other institutions of higher education.

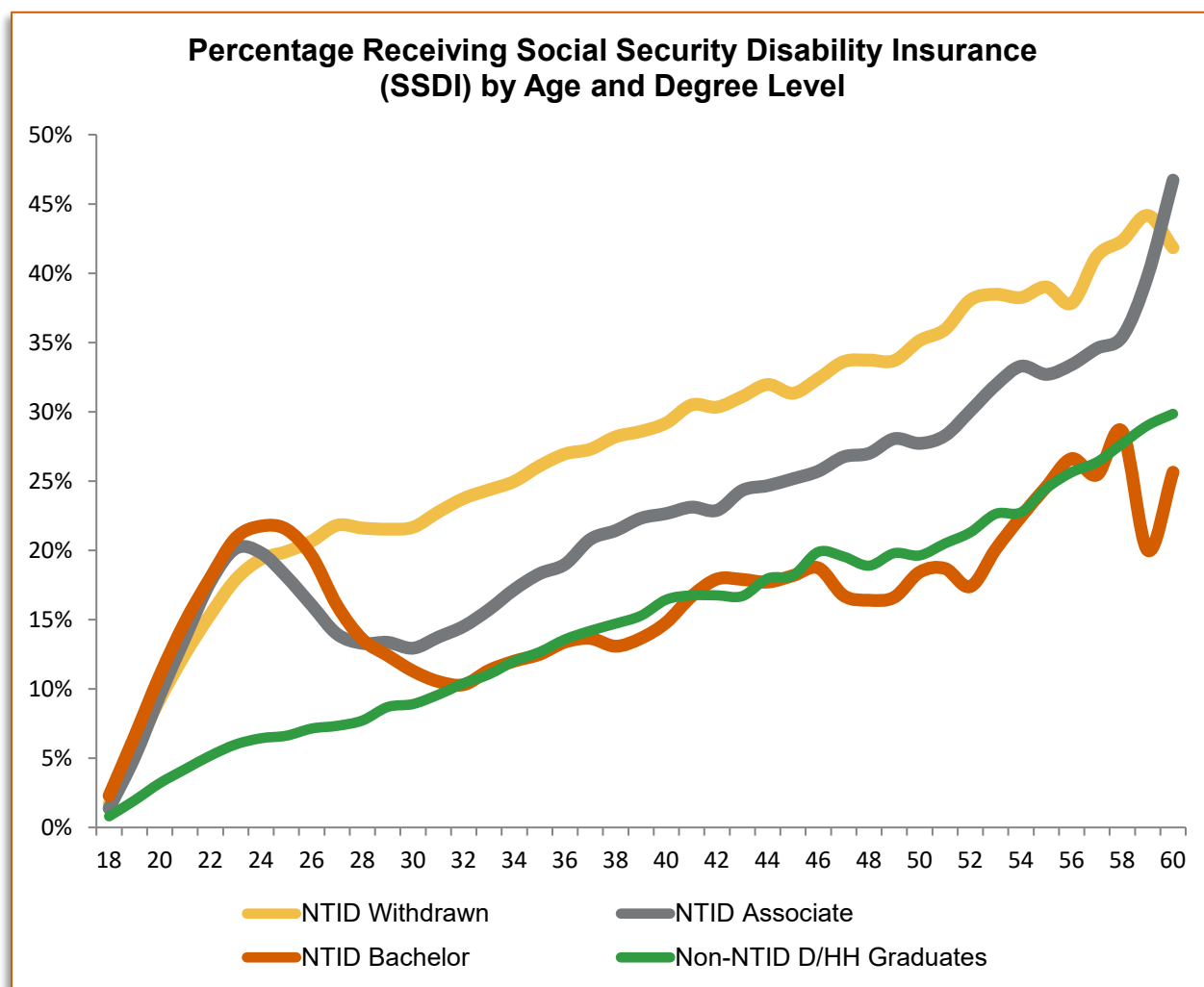


Note: From a 2012 collaborative research study conducted with the Social Security Administration and Cornell University. To accomplish this, NTID forwarded a data file with approximately 16,000 cases to the Social Security Administration. Four study groups were defined by degree attainment: 1) Deaf and 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 (continued)

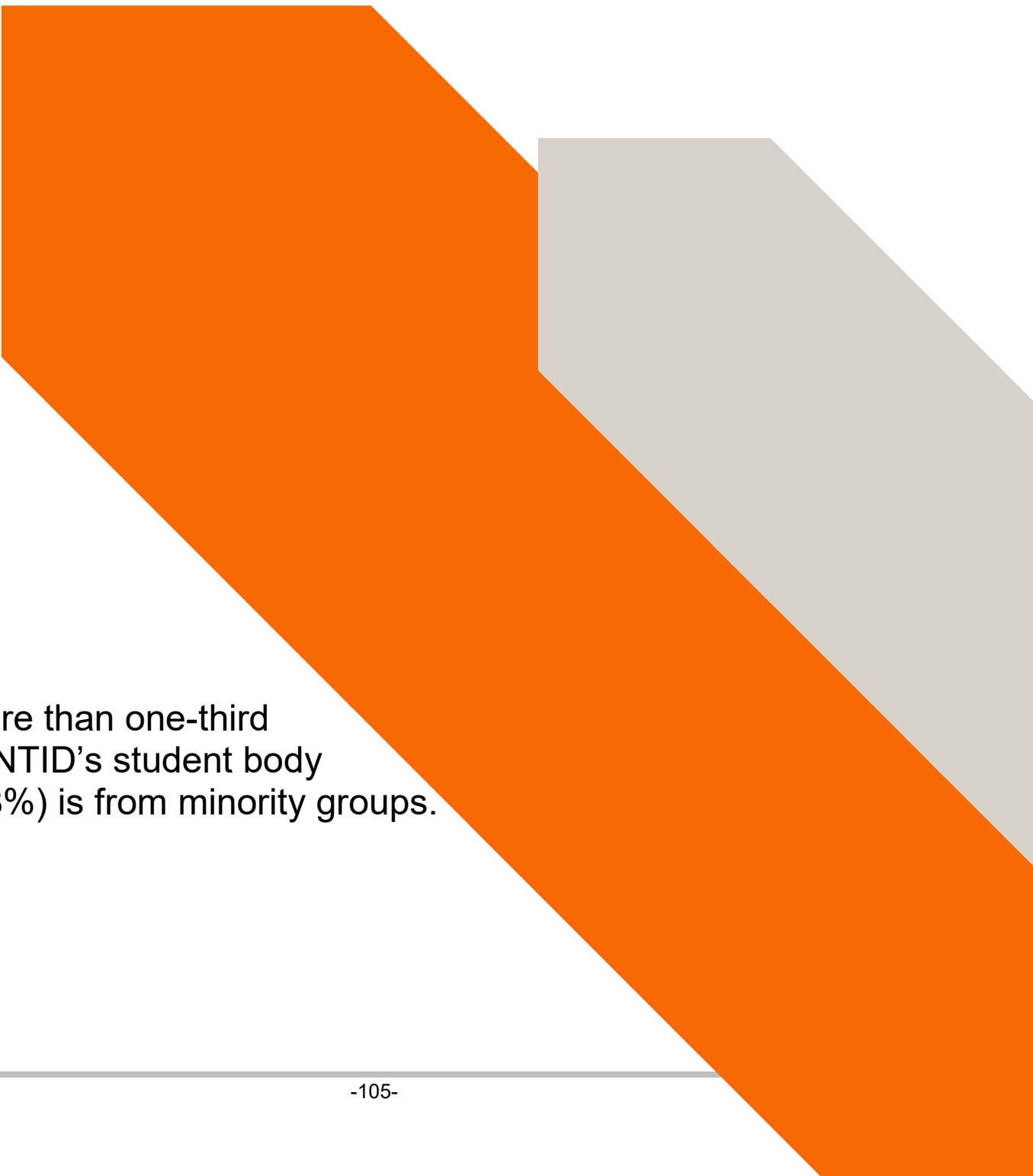
While a smaller percentage of deaf and hard-of-hearing students collect SSDI in their collegiate years, by age 50, 18% of NTID deaf and hard-of-hearing bachelor's degree graduates collect SSDI, as compared with 20% of deaf and hard-of-hearing

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.



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
(38%) is from minority groups.

Diversity and Inclusion Highlights

Students

As of fall 2019, the number of U.S. deaf and hard-of-hearing minority students at NTID is 370*, one of the larger numbers in recent history. FY 2020 highlights follow:

- Forty percent of the fall 2019 entering class is from minority groups. The percentage in the total student body is 38%, 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 86 employees from ethnic minority populations, 35 are Black or African American, 33 are Hispanic/Latino and 18 are other minorities.

Of 574** total number of employees, 153 are deaf or hard of hearing.

Of the 213 employees who are deaf or hard of hearing or are members of a minority group, 146 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, 50% of all hires were either minority individuals or individuals who are deaf or hard of hearing.



Students perform the RIT alma mater at NTID's Commencement in May 2019.

* 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 574 employees, 564.13 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 enter a global community. With 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.

- In 2017, NTID established the Office of Diversity and Inclusion, and Stephanie Smith Albert, a 1988 alumna of NTID's accounting program, was appointed its first director. On October 4, 2018, Stephanie passed away unexpectedly. In February 2019, Pamela Christopher '90, '93, '02, was appointed Interim Director of Diversity & Inclusion. Pamela 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, his administrative council and the RIT vice president and associate provost for diversity and inclusion. A national search for the position began in August 2019.
- Pamela Christopher also partners with the RIT Director of Diversity Education, Taj Smith, to provide cultural-humility and unconscious-bias workshops to RIT faculty and staff. Pamela partners with the RIT Division of Diversity and Inclusion in all diversity-related events. She is a council member and mentor for the Women of Color, Honor and Ambition (WOCHA) program. In August 2019, she presented at the National Black Deaf Advocacy Conference in Oakland, California. Her presentation was on mentorship and was titled, "Beyond the Classroom: Mentorship and Its Impact on Underrepresented Females at PWIs."
- The Expressions of King's Legacy program each January is dedicated to celebrating the life and impact of Dr. Martin Luther King Jr. The featured keynote presenter for the 2019 Expressions of King's Legacy Celebration was Tara Setmayer, a CNN political commentator, ABC News political contributor and, formerly, communications director for GOP congressmen on Capitol Hill. Setmayer also contributes to ABC's "The View," "Good Morning America" and HBO's "Real Time with Bill Maher." Setmayer gained prominence as a CNN political commentator during the 2016 presidential election cycle, where "Vulture" recognized her as one of 2016's "Top 20 Election Coverage Stars" on TV. In 2017, she was named a board director for Stand Up Republic, a nonprofit organization formed in the wake of the 2016 election to unite Americans behind the defense of democratic norms, ideals and institutions.

Diversity and Inclusion Philosophy (continued)

- 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. Dr. Charlotte Thoms, NTID faculty in the Business Studies department and NTID director of diversity recruitment and retention, works regularly with RIT's Office of Faculty Recruitment and Retention to attend recruiting events, visit Historically Black Colleges and Universities (HBCUs) to recruit diverse faculty and support the retention of diverse faculty at NTID.
- 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 director of diversity & inclusion. The group includes approximately 40 members.

Jalon Hall '17, '19, an applied arts and sciences major from Baton Rouge, Louisiana, was recognized in 2019 as a Legacy Leader by RIT's Center for Women and Gender and the Center for Leadership & Civic Engagement. She was also active with RIT's Women of Color, Honor and Ambition (WOCHA) and the NTID Student Life Team.



Admissions Activity by Ethnicity

Fifty-three percent (271) of this year's 520 deaf and hard-of-hearing applicants were students from minority backgrounds. The FY 2020 entering class of deaf and hard-of-hearing students included 111 minority students, who represent 46% of the newly admitted deaf and hard-of-hearing students.

	FY 2016*	%	FY 2017*	%	FY 2018*	%	FY 2019*	%	FY 2020*	%
Total Applicants	860		771		638		533		520	
Non-Minority	327	54%	308	51%	238	51%	213	45%	241	47%
Minority	284	46%	291	49%	229	49%	256	55%	271	53%
Acceptances	488		432		435		396		396	
Non-Minority	246	57%	235	57%	226	56%	177	48%	201	52%
Minority	186	43%	179	43%	181	44%	192	52%	188	48%
Registrations	340		305		289		259		247	
Non-Minority	177	58%	171	59%	153	57%	126	52%	131	54%
Minority	126	42%	118	41%	117	43%	114	48%	111	46%

New students Ryan Hatch, of Lakeville, Minnesota, and Cashmere Pascual, of Albuquerque, New Mexico, participate in Tiger Walk, the opening march before RIT's Convocation for New Students and Families.



* 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.

Ethnicity of Enrolled Students

Minority enrollment at NTID has steadily increased from 8% in FY 1988 to 38% in FY 2020, more than four times what it was 30 years ago.

Until FY 2000 the number of international students was limited to 10% 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%. 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 2017	%	FY 2018	%	FY 2019	%	FY 2020	%
Deaf and Hard-of-Hearing Undergrad and Grad Students								
American Indian or Alaska Native	*		*		*		*	
Asian	117	11.6%	114	11.5%	117	12.6%	109	12.1%
Black or African American	103	10.2%	99	10.0%	91	9.8%	84	9.3%
Hispanic/Latino	151	15.0%	144	14.5%	142	15.4%	143	15.8%
Native Hawaiian or Other Pacific Islander	*		*		*		*	
White	598	59.2%	589	59.4%	539	58.3%	508	56.2%
Two or More Races	34	3.4%	37	3.7%	31	3.4%	30	3.3%
Non-Resident Alien (International)	39		43		49		38	
Unknown Race/Ethnicity	73		46		31		27	
Subtotal Minority Deaf and Hard-of-Hearing Undergrad and Grad Students	412	40.8%	403	40.6%	386	41.7%	370	40.9%
Subtotal Deaf and Hard-of-Hearing Undergrad and Grad Students	1,122		1,081		1,005		943	
Other Enrollments								
ASL-English Interpretation	140	14.5%	147	15.5%	148	17.9%	155	18.1%
Master of Science in Secondary Education	30	30.4%	19	23.1%	17	11.8%	22	10.0%
Master of Science in Health Care Interpretation	8	*	15	*	12	*	9	22.9%
Total Minority Enrollments	441		431		416		401	
Total Enrollments	1,300		1,262		1,182		1,129	
Overall Percent Minority		37.6%		37.1%		38.2%		38.0%

* Frequency counts small and not reported for confidentiality.

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 2016-2018 Cohort	Black or African American	Asian	Hispanic/Latino	Non-Resident Alien (International)	White
Cohort Count	71	63	123	22	330
Persisted to Second Year	46	53	75	18	258
First to Second Year Persistence Rate	65%	84%	61%	82%	78%

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

Fall 2011-2013 Cohort	Black or African American	Asian	Hispanic/Latino	Non-Resident Alien (International)	White
Cohort Count	70	51	87	15	347
Graduated Within Six Years	27	36	38	5	164
Six-Year Graduation Rate	39%	71%	44%	33%	47%

* 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 for those 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 2019 Number of Graduates		
	Minority	Non-Minority	Total***
NTID			
Career-Focused and Associate+Bachelor's Degrees	54	45	99
ASL-English Interpretation	*	31	35
Master of Science in Secondary Education	*	*	5
Master in Health Care Interpretation	*	*	8
Other Colleges of RIT**			
College of Engineering Technology	7	11	18
Saunders College of Business	*	10	12
B. Thomas Golisano College of Computing and Information Sciences	7	14	21
Golisano Institute for Sustainability	*	*	0
Kate Gleason College of Engineering	*	*	3
College of Health Sciences and Technology	8	12	20
College of Art and Design	*	8	13
College of Liberal Arts	9	19	28
College of Science	*	*	7
School of Individualized Study	10	13	23
Total***	116	176	292

* 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.

*** Totals include small counts shown as one asterisk (*), 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.

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 2019

	Total Employees	Female	Black or African American	Hispanic /Latino	Other Racial/ Ethnic Categories*	Deaf and Hard of Hearing
Faculty**	155	79	12	6	6	73
Percent		51%	8%	4%	4%	47%
Exempt Staff**	126	71	11	7	***	46
Percent		56%	9%	6%	***	37%
Executive/ Administrative Manager**	52	21	***	***	***	20
Percent		40%	***	***	***	38%
Non-Exempt Staff						
Real-Time Captionist	59	51	***	***	***	***
Percent		86%	***	***	***	***
Interpreter	140	121	***	11	7	***
Percent		86%	***	8%	5%	***
Technical/ Clerical	94	77	7	6	***	33
Percent		82%	7%	6%	***	35%
Total	574****	399	35	33	18	153
Percent		70%	6%	6%	3%	27%

* Other Racial/Ethnic Categories includes American Indian & Alaskan Native, Asian and two or more races.

** Of the 52 executive/administrative managers, 21 are included on the faculty line, and 31 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 574 employees, 564.13 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.

FY 2019

	Number of NTID Positions Posted	Total Applicants	Number of Applicants by Category					
			Female	Black or African American	Hispanic/Latino	Other Racial /Ethnic Categories*	White Male	Unknown
Faculty	15	90	52	8	5	7	27	6
Exempt Staff	23	481	305	61	48	68	121	21
Non-Exempt Staff**	71	1,209	872	125	140	125	204	47
Total	109	1,780	1,229	194	193	200	352	74

* Other Racial/Ethnic Categories includes American Indian & Alaskan Native, Asian and two or more races.

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

Diversity Report: Faculty and Staff Hiring Results

During FY 2019, individuals from an ethnic minority or who were deaf or hard of hearing totaled 50% of all new hires and women totaled 63% of all new hires. Individuals may appear in more than one category.

FY 2019

	Total New Employees	Female	Black or African American	Hispanic /Latino	Other Racial /Ethnic Categories*	Deaf and Hard of Hearing
Faculty	11	5 45%	**	**	**	**
Exempt Staff	10	5 50%	**	**	**	7 70%
Non-Exempt Staff						
Real-Time Captionist	10	8 80%	**	**	**	**
Interpreter	15	10 67%	**	**	**	**
Technical/Clerical	8	6 75%	**	**	**	**
Total	54	34 63%	**	7 47%	**	15 28%

* Other Racial/Ethnic Categories includes American Indian & Alaskan Native, Asian and two or more races.

** Frequency counts small and not reported for confidentiality.

Diversity Report: Faculty and Staff Termination Results

During FY 2019, 25% of terminations were individuals from ethnic minorities and 74% were women. In the chart below, individuals may appear in more than one category.

FY 2019

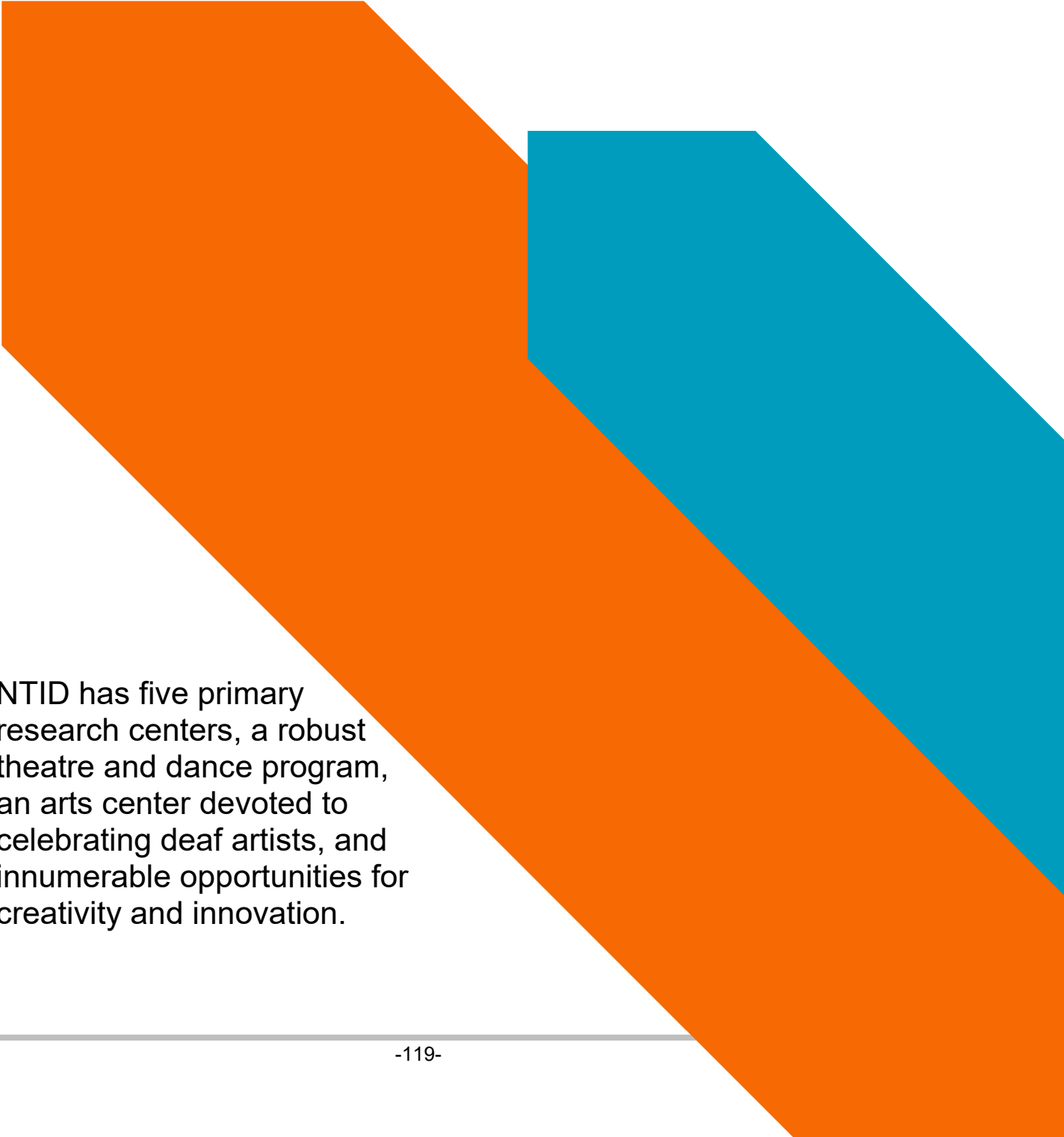
	Total Terminated Employees	Female	Black or African American	Hispanic/Latino	Other Racial /Ethnic Categories*	Deaf and Hard of Hearing
Faculty	11	8 73%	**	**	**	**
			**	**	**	**
Exempt Staff	13	7 54%	**	**	**	7 54%
			**	**	**	**
Non-Exempt Staff***	41	33 80%	**	**	**	**
			**	**	**	**
Total	65	48 74%	5 8%	5 8%	**	14 22%

* Other Racial/Ethnic Categories includes American Indian & Alaskan Native, Asian and two or more races.

** Frequency counts small and not reported for confidentiality.

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

Research, Innovation & Creativity



NTID has five primary research centers, a robust theatre and dance program, an arts center devoted to celebrating deaf artists, and innumerable opportunities for creativity and innovation.

Research

NTID Research Overview

NTID determines topics for research projects on the basis of 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 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 and special projects – largely focused on people who are deaf or hard-of-hearing 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 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

The mission of the OADR is to increase the number of funded projects 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 members of the faculty and staff and plays a key role in expanding NTID's funding portfolio. The office continued to focus on three major priorities in FY 2019: professional development for principal investigators (PIs), providing support for start-up projects and publicizing the accomplishments of faculty and staff who have extramural funding.

a. Professional development

In FY 2019, OADR successfully completed the first year of *PI Prime Time*, a customized professional development program for individuals who want to compete more effectively for funding or improve their skills for managing grant-funded projects. The *PI Prime Time* planning committee consists of NTID research administrators, RIT sponsored research administrators who serve NTID and three NTID faculty advisors. The team ran focus groups to identify key challenges for PIs and subsequently developed a set of six workshops offered during the fall 2018 semester and five workshops offered during the spring 2019 semester. Feedback from the workshops held to date has been quite positive.

Three NTID faculty members used their “start-up package” (SUP) funds to attend professional conferences during the past fiscal year. SUPs are accounts established for new tenure-track faculty, the goal of which is to facilitate research and other scholarly activities in the early years of their tenure at NTID. SUPs are funded by the OADR and the use of each fund is negotiated between the Associate Dean for Research and the faculty member associated with the fund.

A new pilot program in which professional statisticians from the College of Science (COS) offer consultation services to NTID faculty was launched in FY 2019. This program addresses an ongoing need for professional statistical work to strengthen grant proposals. The OADR and COS statisticians developed a contract to fund the program and its services, which range from pre-proposal consultation to assistance with data analysis. The OADR plans to launch a similar program in the future to bring in professional consultation to address program evaluation – another area where grant proposals often require professional input.

Research (continued)

The OADR also emphasizes the importance of professional development for its staff. In FY 2019, both OADR research administrators attended conferences hosted by the Society of Research Administrators and the National Council of University Administrators.

b. Support for new researchers and new research initiatives

In FY 2019, a new research center was established: the NTID Sensory, Perceptual and Cognitive Ecology (SPaCE) Center. Within the SPaCE Center, a new laboratory also was established – the Perception, Language & Attention in Youth (PLAY) laboratory. An innovative aspect of the PLAY laboratory is that it will be permanently located at the Rochester School for the Deaf (RSD). This will facilitate many aspects of the laboratory's activities and expand upon the long-standing partnership between NTID and RSD. More information regarding the SPaCE Center and the PLAY laboratory is presented in the "Research Centers" section below.

The OADR's Scholarship Portfolio Development Initiative (SPDI) supports early-stage principal investigators and soft-funded research faculty who propose pilot projects related to new programs and lines of research. In FY 2019, SPDI offered intramural funds of up to \$10,000 for one-year projects and up to \$12,000 for two-year projects. In addition, applicants could request a supplement of \$3,000 to support collaborators from other colleges and institutions. In FY 2019, two new proposals were funded for a total of \$25,636.

- Categorical Perception in American Sign Language: A Preliminary Investigation
09/01/2019-08/31/2021 \$13,800
PI: Joe Bochner; Co-PI: Vincent Samar; Mentor: Matthew Huenerfauth

The broad goals of this project are to provide evidence for Categorical Perception (CP) in American Sign Language (ASL) and obtain findings to support future development of computer-based evaluation tools to be used with child and adult learners of ASL.

- Impact of Contralateral Hearing Aid on Content Acquisition in Student with Early Onset Deafness & Long-term Unilateral CI Use
06/01/2019-05/31/2021 \$11,836
PI: Linda Gottermeier; Mentor: Michael Stinson

The goal of this project is to enhance learning outcomes for college students with early-onset deafness and long-term unilateral CI use.

c. Publicizing the accomplishments of faculty and staff working on funded projects

OADR hosted its second annual Sponsored Project Awards program that recognizes NTID faculty, staff and students, as well as its partners outside the college, for what they accomplished while supported by intramural or extramural funding sources. In FY 2019, OADR hosted a focus group to solicit input about improving the awards program. Based on that feedback, the following changes were made: (a) a more diverse awards review committee was formed, (b) nominations submitted in video form, allowing submitters to propose candidates in American Sign Language, were invited, and (c) a Student Researcher award was added. Nominations were submitted by NTID faculty and awardees selected by a cross-disciplinary and diverse review team. This second Sponsored Projects Awards ceremony honored 11 researchers, including the two SPDI award recipients (see above) and nine other award recipients in the following categories: Student Researcher (new), Student Research Mentor, Up-and-Coming PI (two winners), X-factor (presented to an individual who is not a PI or Co-PI but whose work significantly contributes to team success), Collaborator, Co-PI, PI, and a Partner award presented to a valued colleague from another college or institution who has made significant contributions to sponsored projects at NTID.

Research (continued)

RESEARCH CENTERS

This section summarizes the activities and accomplishments of each of the NTID Research Centers during FY 2019. When there is collaboration among several research centers, the activity is described in connection with the research center leading the effort. In FY 2019, a new center was created – the NTID Sensory, Perceptual and Cognitive Ecology (SPaCE) Center.

NTID Sensory, Perceptual and Cognitive Ecology (SPaCE) Center

Matthew W. G. Dye, Ph.D., director

The research mission of the NTID SPaCE Center is to study the sensory, perceptual and cognitive capabilities of deaf and hard-of-hearing individuals, and to explore how those individuals create deaf-friendly environments within which they can most effectively function. In FY 2019, SPaCE Center faculty published six articles and book chapters, presented at both domestic and international conferences, and hosted two workshops.

SPaCE Center leadership and staff also promote transparent open-science practices in an accessible environment that allows staff and students to achieve their learning goals and desired employment outcomes. In AY 2018-2019, Brennan Terhune-Cotter and Sarah Kimbley '17, both SPaCE staff members, left the center to pursue doctoral studies at University of California, San Diego and Gallaudet University, respectively. Additionally, Mr. Terhune-Cotter received the X-Factor award during this year's Sponsored Project Awards ceremony.

SPaCE currently houses two laboratories:

1. deaf *x* laboratory

Matthew W. G. Dye, Ph.D., principal investigator

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 2019, the deaf *x* laboratory worked on three major projects:

- Development of Temporal Visual Selective Attention in Deaf Children
National Science Foundation: BCS-1550988 9/1/2016–8/31/2020
PI: Matthew Dye; Co-PI: Peter C. Hauser \$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 2019, the project team completed data collection from deaf and hard-of-hearing children across the nation who are in sign-based and speech-based educational programs. In the coming year, the data will be analyzed and disseminated via peer-reviewed journal articles and presentations at participating residential schools for deaf children.

- Neurocognitive Plasticity in Young Deaf Adults: Effects of Cochlear Implantation and Sign Language Experience
National Institutes for Health: NIDCD R01DC016346 7/1/2017–6/30/2022
PI: Matthew Dye \$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

Research (continued)

implant recipients or candidates. In FY 2019, the team tested their 100th research participant, well on the way to the final goal of 400.

- Collaborative Research: Multimethod Investigation of Articulatory and Perceptual Constraints on Natural Language Evolution

National Science Foundation: BCS-1749376
PI: Matthew Dye

7/1/2018–6/30/2021
\$343,975

The research team will take advantage of the fully visible articulators of sign languages to develop novel pose estimation algorithms so that they can automatically extract information contained in 2D video to create accurate 3D models of articulator movement during sign language production. These models will be used to empirically assess the extent to which linguistic changes are driven by perceptual constraints imposed by the human visual system and/or articulatory constraints imposed by the musculoskeletal system.

2. Perception, Language & Attention in Youth (PLAY) laboratory

Rain G. Bosworth, Ph.D., principal investigator

The mission of the PLAY laboratory is to investigate how different types of sensory experience shape the ways in which we perceive the world, with a particular emphasis on the study of infants and young children. During FY 2019, the PLAY Laboratory worked on one major project:

- Impact of Deafness and Language Experience on Visual Development

National Institutes for Health: NEI R01EY024623
PI: Rain Bosworth

6/1/2019–3/31/2020
\$133,189

This is the first study to look at visual development in deaf people from infancy to adulthood, teasing apart effects that result from deafness versus experience with a visual-manual language, American Sign Language. The current proposal also studies visual perception and spoken language proficiency in children who received cochlear implants.

Workshops and Training

In FY 2019, SPaCE hosted two training workshops. The first, held in Rosica Hall, NTID's dedicated research facility, was an introduction to using the R statistical software package, taught in ASL by RIT/NTID alumnus Dr. Adam Stone '03, research officer for the National Deaf Children's Society in the UK. The second was held in Berlin, Germany, and focused on deaf-informed and deaf-centered ways of conducting rigorous and reproducible science with deaf children, deaf communities and sign languages.

Selected Publications

Stoll, C., & Dye, M.W.G. (2019). Sign language experience redistributes attentional resources to the inferior visual field. *Cognition*, 191.

Bosworth, R.G., Wright, C.E., & Dobkins, K.R. (2019). Analysis of the visual spatiotemporal properties of American Sign Language. *Vision Research*, 164, 34-43.

Dye, M.W.G., & Thompson, R.L. (2019). Perception and production of language in the visual modality: Implications for sign language development. In G. Morgan (Ed.), *Understanding deafness, language and cognitive development. Essays in honour of Bencie Woll* (pp. 135-159). John Benjamins Publishing Co.

Stone, A., & Bosworth, R.G. (2019). Exploring infant sensitivity to visual language using eye tracking and the preferential looking paradigm. *Journal of Visualized Experiments*, e59581.

Research (continued)

Stoll, C., Palluel-Germain, R., Caldara, R., Lao, J., Dye, M.W.G., Aptel, F., and Pascalis, O. (2018). Face recognition is shaped by the use of sign language. *Journal of Deaf Studies and Deaf Education*, 23(1), 62-70.

Stone, A., Petitto, L.A., & Bosworth, R.G. (2018). Visual sonority modulates infants' attraction to sign language. *Language Learning & Development*, 14(2), 130-148.

Center on Access Technology (CAT)

Gary Behm '78, '81, director

Brian Trager '00, '05, associate director

The Center on Access Technology (CAT) was established in 2006 to address the challenges of utilizing, developing and/or adapting new technologies for use by people 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 deaf 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 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.

1. MITRE FCC Telecommunications Relay Services (TRS): Year Two

Federal Communications Commission / MITRE Corporation

\$700,000

PI: Michael Stinson

RIT is collaborating with the MITRE research corporation on research, testing and procedures in order to share assessment approaches, to obtain test results on Video Relay Service (VRS) and Internet Protocol Captioned Telephone Service (IP-CTS), to further develop approaches and research, and to share plans and results. This project involves, but is not limited to: (a) usability research on consumer perspectives regarding the use of IP-CTS, VRS and other assistive technologies, and on determining the accuracy and latency threshold of captions in IP-CTS technology; (b) assessment of the interoperability of VRS devices; (c) assessment of the quality of VRS and IP-CTS services; and (d) research and development of various prototypes closely related to the ongoing ACE efforts.

2. Automated Speech Recognition: Year Three

PI: Brian Trager '00, '05 ; Co-P: Gary Behm '78, '81

In FY 2019, the CAT team continued its pilot testing phase with the Microsoft-developed Presentation Translator, which is an automated speech recognition (ASR) plug-in for PowerPoint. Present efforts in this area aim to automatically recognize and reliably translate spoken language with customized adaptations into real-time captions. The goal of this project is to explore the use of the technology in employment, health care, educational and social settings.

NTID's ASR team is led by CAT and involves collaboration with faculty from the College of Science where ASR is being tested in courses including General Biology I & II, Evolution Biology, Web Development, Programming Fundamentals I: Mobile Domain, Software Analysis and Design, Mobile User Interfaces and Biochemistry. Based on preliminary evaluations, deaf and hearing students alike have expressed positive feedback with ASR in the classroom. The team has employed machine learning specialists to develop robust custom language models utilizing transcripts produced by NTID's Department of Access Services, textbooks and additional content where applicable. The team is currently investigating acoustic and pronunciation models to improve the accuracy of

Research (continued)

real-time transcription. The models are currently exclusive to RIT classrooms and plans are underway to expand the number of classrooms served in FY 2020.

The team also created a catalog of recordings and documents that are available for use as test content. It has also tested and developed recommendations for specific microphones and computing devices that perform well in ASR scenarios, and worked to develop noise suppression, reverberation and feedback mechanism algorithms to improve the quality of the speech signal.

CAT has provided workshops and created websites and videos related to ASR to help build awareness of the technology, which can be used outside the classroom. The team has planned for additional workshops and resources to be made available in hopes that the RIT/NTID community will use ASR as a tool that facilitates communication across campus.

3. Augmented Reality: Accessible Dynamic Informal STEM Learning for Deaf and Hard-of-Hearing: Year One

National Science Foundation: DRL-1811509 9/1/2018–8/31/2020
PI: Wendy A. Dannels '98, '99, '00, '05; Co-PIs: Brian Trager '00, '05 \$258,861
and Sara Schley

Completing its first year, this project has established a partnership between NTID and the Rochester Museum & Science Center for an early-stage pilot implementation involving three different exhibits. The researchers have begun investigation into augmented reality (AR) technology to explore the possibility of creating accessible content to d/Deaf and hard-of-hearing (DHH) youth learners during live presentations on STEM topics. Development is currently underway to include a head-mounted display or smart glasses that will enable DHH learners to receive captioned or signed instruction while simultaneously viewing or interacting with various exhibits. The primary goal is to collect data on the use of AR technology and make recommendations regarding future directions and needs.

NTID Research Center on Culture and Language (CCL)

Peter C. Hauser, Ph.D., director

The former NTID Center on Cognition and Language, directed by Dr. Hauser, has grown significantly over the past few years in both center personnel and external funding. This academic year, the Center evolved into two separate Centers, the NTID Research Center on Culture and Language (CCL) and the SPaCE Center described in a previous section of this chapter. The research mission of CCL is to understand the roles of cultural and linguistic diversity in the lives of deaf people. The Center conducts translational, transdisciplinary and cross-institutional research on cultural and language factors to advance learning, well-being and health within the deaf population. CCL globally disseminates these discoveries to foster a transformative impact on deaf people's lives. During FY 2019, the center's personnel gave 10 presentations to academic, medical and community audiences nationally and internationally. The Center's training mission is to offer state-of-the-art research mentorship programs and activities for deaf and hard-of-hearing scholars and, ultimately, to increase the number of deaf and hard-of-hearing scientists in social, behavioral and biomedical research disciplines. During FY 2019, 11 RIT/NTID undergraduate and graduate students were actively involved in this center's activities, in addition to two post-doctoral fellows.

The CCL operates three laboratories and one research education program.

1. 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 2019, lab personnel worked on the scopes of work specified in two NIH-funded projects in collaboration with multiple institutes:

Research (continued)

- Mechanisms of Health Literacy and Information Accessibility
National Institutes of Health: 1R01DC014703 9/17/2015–8/31/2020
Subaward from University of Michigan \$600,189
PI: Peter C. Hauser

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. During FY 2019, the project team completed two of the project's three aims that involved collecting data from deaf, hard-of-hearing and hearing individuals in the Rochester, Chicago and Flint metropolitan areas. The project team began the final aim of the project, which involves using the quantitative data from the previous aims to select a subsample for qualitative follow-up interviews.

- Pregnancy Outcomes and Experiences of Deaf and Hard-of-Hearing Women Year Two
National Institutes of Health 06/01/18–05/31/19
PI: Jessica Cuculick '98, '02 \$19,603

This project is investigating deaf and hard-of-hearing women's peri-, neo- and post-natal experiences. During FY 2019, the data collection began and was completed, and qualitative interviews were filmed and are currently being transcribed.

2. Deaf Studies Laboratory (DSL)

Joseph Hill, Ph.D., director

The Deaf Studies Laboratory investigates language attitudes and prejudices toward deaf individuals ("audism"). One strand of research focuses on Black Deaf families' experiences and language attitudes toward Black American Sign Language. 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 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) 1/2/2014–12/31/2018
PI: Joseph Hill \$10,000

This project explores language attitudes toward different dialects in American Sign Language. During FY 2019, research assistants continued to develop avatars based on motion capture data, which will be used in the research study in AY 2020-2021. One of DSL's student workers, Jacob Williamson, presented his poster at NTID's 2019 Student Research Fair on the development of an avatar face.

- Documenting Individual Variation in ASL (DIVA)
NTID Scholarship Portfolio Development Initiative (SPDI) 7/1/2018–6/30/2019
PI: Corrine Occhino; Co-PI: Joseph Hill \$9,968

The goal of this project is to collect recordings of 100 students of varying regional, racial, ethnic and socio-economic backgrounds to create a preliminary database of individual linguistic variation in ASL. The objectives of this study are to: 1) describe the natural variation of ASL signers with diverse backgrounds; 2) evaluate ASL users' perceptions of non-standard varieties; and 3) develop a framework and preliminary data for a proposal to the National Science Foundation that will further explore the role of variation in educational and interpreting situations of deaf individuals.

Research (continued)

The DSL successfully collected 100 signs from each of 40 signers from 22 states. The project is still in the data collection phase for the first objective, with the goal of recruiting at least 20 more signers from some of the 28 states without current participants. In the spring of 2019, the research team achieved the second objective, documenting students' perceptions of non-standard varieties with 20 signers participating in the second part of the study.

The DSL shared methodology and preliminary findings on ASL variation in a presentation at the 47th Annual Conference of New Ways of Analyzing Variation in New York City. DSL student research assistants also presented posters at NTID's 2019 Student Research Fair at Rosica Hall.

3. Sign Language Laboratory

Peter C. Hauser, Ph.D., director

The Sign Language Laboratory investigates issues in sign language acquisition and best practices in sign language assessment.

- ASL Test Development Project

NTID Office of the President

9/1/2016–9/29/2020

PI: Peter C. Hauser

This project is developing 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 2019, stimuli were filmed for three ASL tests and were programmed into online tests by NTID developers. The original NTID Classroom Sign Language Assessment was evaluated and revised.

Education Programs

The CCL 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

Bayley, R., Hill, J., Lucas, C., and McCaskill, C. (2018). 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.

Brentari, D., Hill, J., & Amador, B. (2018). Variation in phrasal rhythm in sign languages: introducing "rhythm ratio." *Sign Language & Linguistics*, 21(1), 41–76.

Hill, J., Lillo-Martin, D., & Wood, S. (2019). *Sign Languages: Structures and Contexts*. New York: Routledge.

Kurz, K., & Hill, J. (2018). The heart of interpreting. In T. Holcomb and D. Smith (eds.), *Deaf Eyes on Interpreting*. Washington, DC: Gallaudet University.

McKee, M.M., Hauser, P.C., Champlin, S., Paasche-Orlow, M., Wyse, K., Cuculick, J.A., Buis, L., Plegue, M., Sen, A., & Fetter, M. (2019). Deaf Adults' Health Literacy and Access to Health Information: Protocol for a Multi-Center Mixed Methods Study. *Journal of Medical Internet Research (JMIR) Protocols*.

Research (continued)

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 research 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. In FY 2019, CERP faculty members delivered a variety of invited/keynote lectures for schools and organizations in the United States and abroad, in addition to conference presentations. CERP members collaborated with colleagues at 15 schools and universities in the U.S. and abroad through ongoing research, joint publications, co-hosting conferences and the editing of books (involving individuals from every continent except Antarctica). CERP also hosted visits from collaborating scholars based in the United Kingdom, Germany, Australia, Canada and the Netherlands, as well as several from the United States.

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 Raising and Educating Deaf Children: Policy, Practice and Outcomes (www.raisingandeducatingdeafchildren.org) has had tens of thousands of visitors. The website is supported by donations from private foundations, schools for the deaf and Oxford University Press. Perhaps most notably this year, CERP created and administered a six-week Summer Transition Program for underprepared incoming NTID students. The program, including more than 200 hours of instruction in literacy, mathematics, ASL and "soft skills" (both academic and social-emotional), significantly increased levels of English and mathematics performance among participants. In addition to continuing in future years at NTID, alternative formats of the program are being developed for other secondary and postsecondary settings. Beyond providing essential academic support for students, the program is expected to attract new students in the future, and provide a wealth of data for forthcoming publications.

Selected Publications

CERP's dissemination activities and ongoing research seek "simply to change the world through better understanding and improving the education of deaf students." Beyond presentations, this year CERP faculty members published or have in press 17 peer-reviewed journal articles, with five more under review. They also have published or have in press 10 book chapters and three books.

Beal, J. S., Scheetz, N. A., Trussell, J. W., McAllister, A., & Listman, J. D. (2018). University American Sign Language learners: Longitudinal self- and faculty evaluation ratings. *Journal of Interpretation*, 26(1), 1-27.

Crowe, K. & Marschark, M. (in press). Are French fries a vegetable? Lexical typicality judgment differences in deaf and hearing learners. *Journal of Psycholinguistic Research*.

Duchesne, L. & Marschark, M. (in press). Effects of age of cochlear implantation on vocabulary and grammar: A review of the evidence. *American Journal of Speech and Language Pathology*.

Knors, H., Brons, M., & Marschark, M. (2019). *Deaf education beyond the Western world*. New York, NY: Oxford University Press.

Research (continued)

- Marschark, M., Antia, S., & Knoors, H., Editors (2019). *Co-enrollment in deaf education*. New York, NY: Oxford University Press.
- Marschark, M., Duchesne, L., & Pisoni, D. (2019). Effects of age of cochlear implantation on learning and cognition: A critical assessment. *American Journal of Speech and Language Pathology*, 28, (3), 1318-1334.
- Marschark, M., Edwards, L., Peterson, C., Crowe, K., & Watson, D. (2019). Understanding theory of mind in deaf and hearing college students. *Journal of Deaf Studies and Deaf Education*, 24, 104–118.
- Marschark, M. & Knoors, H., Editors (in press). *The Oxford Handbook of Deaf Studies in Learning and Cognition*. New York, NY: Oxford University Press.
- Marschark, M., Sapere, P., Sarchet, T., & Convertino, C.M. (2019). Cochlear implants and classroom learning among deaf college students. *Biomedical Journal of Scientific & Technical Research*, 18 (5), 13912-13916.
- Marschark, M. & Rosica, M. (in press). Reading abilities of deaf college students: Has Elvis already left the building? In S. Easterbrooks & H. Dostal (Eds.), *The Oxford Handbook of Deaf Studies in Literacy*. New York, NY: Oxford University Press.
- Trussell, J. W., Hasko, J., Kane, J., Amari, B. A., & Brusehaber, C. (2018). Interactive storybook reading instruction for preschoolers' who are deaf and hard-of-hearing: A multiple probe across behaviors analysis. *Language, Speech, and Hearing Services in Schools*, 49(4), 922-937.
- Trussell, J. W., Nordhaus, J., Brusehaber, A., & Amari, B. (2018). Morphology instruction in the science classroom for students who are deaf: A multiple probe across content analysis. *Journal of Deaf Studies and Deaf Education* 23(3), 271-283.
- Walton, D., Marschark, M., Crowe, K., Borgna, G., & Trussell, J. (2019). I am NOT unskilled and unaware: Deaf and hearing learners' self-assessments of linguistic and nonlinguistic skills. *European Journal of Special Needs Education*, 34, 20-34.

Research Center for Teaching and Learning (RCfTL)

Sara Schley, Ed.D., director

Carol Marchetti, Ph.D., associate director

The primary mission of the RCfTL 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.

Research Projects

In FY 2019, RCfTL personnel led one federally funded research project, and partnered on two additional federally funded research efforts. RCfTL personnel wrote two Letters of Intent for review by research foundations.

- Faculty in Pedagogical Exploration and Innovation for Accessible STEM Instruction with Deaf/Hard-of-Hearing Students
National Science Foundation 8/29/2016–8/28/2019
PI: Sara Schley; Co-PIs: Stephanie Cawthon (University of Texas), W. Scot Atkins '89, '92 \$443,200

Research (continued)

This project is developing and operating faculty learning communities to teach basic principles of instructing deaf and hard-of-hearing students to faculty in other RIT colleges. In FY 2018 the project offered two sessions of its 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 continues to be under development.

Faculty and Student Mentoring Activities

A focus of the RCfTL involves mentoring and developing faculty research skills. Examples during FY 2019 included the following projects:

- Diversity in the RIT Classroom. Survey and manuscript project.
PI: Torrence Sparkman (CET); mentor: Sara Schley. 1/1/2017–present
- Culturally Appropriate Icons in Digital Applications for Deaf and Hard-of-Hearing Users.
PI: Doctoral student in GCCIS; mentor: Carol Marchetti

Dissemination

In FY 2019, RCfTL personnel gave five peer-reviewed conference and poster presentations, led six workshops and had four peer-reviewed journal articles accepted for publication (two are currently “in press,” two are in print), as well as a manuscript that went from “in press” to a 2019 publication date, and a published book review. One manuscript is currently under revision at a journal’s request, and three manuscripts are currently under review for publication. Four additional manuscripts have been drafted and are being prepared for publication review.

Peer-Reviewed Publications.

Cawthon, S., Schley, S., & Davidson, S. In Press. Student Observation to Improve Access to Instruction in Postsecondary Education. *Journal of Postsecondary Education and Disabilities: In Brief*. Accepted for publication 6/20/19.

Marchetti, S., Schley, S., O’Neil, J., Elglaly, Y., Zuchegno, A., Mousley, K., Atkins, S. & Cawthon, S. In Press. Faculty Perspectives on Developing Strategies to Improve Access in Diverse Post-Secondary Classrooms. *Learning Communities Journal*.

Schley, S., Blizzard, D., Ross, A., Marchetti, C., Dannels, W., Beiter, K., Kavin, D, & Foster, S. 2019. What About Me? Theorizing Power and Pushback in ADVANCING Marginalized Identities. *Journal of Cultural Analysis and Social Change*. 4(1), 1-13. DOI: 10.20897/jcasc/5844.

Schley, S. & Trussell, J. 2019. Deaf students with disabilities: A functional approach for parents and teachers. *Odyssey: New Directions in Deaf Education*, 20, 76-80.

Ho, C.M., Marchetti, C.E., Foster, S., 2019. A Simple Tool to Address Communication Challenges in Cooperative Learning: Student Perspectives. *Journal of Excellence in College Teaching*. 30, 157-186.

Workshops.

Schley, S. (Nov. 15, 2018). Identifying Postsecondary Classroom Challenges and Designing Inclusion and Collaboration Strategies. Pre-Conference Workshop facilitated at POD Network Annual Conference, Portland, Oregon.

Schley, S., Marchetti, C., Hauser, P. & Dannels, W. (Oct. 19, 2018). PI Prime Time: Communication Strategies for Mixed Teams of Deaf and Hearing Investigators. RIT/NTID, Rochester, New York.

Research (continued)

Bailey, M. & Marchetti, C. (Oct. 10, 2018). Network-Based Mentoring Programs to Support Faculty Connections: A Fresh Approach for NTID Faculty. RIT Faculty Workshop. Rochester, New York.

Marchetti, C., Kidd, D. & Mousley, K. (Oct. 5-6, 2018). Two Day Workshop. Two-Day Workshop. Promoting Student Success in Math Through Best Practices. DeafTEC Teacher Trainer Math Program. Richmond, Virginia.

Bailey, M. & Marchetti, C. (Sept. 20, 2018). Network-Based Mentoring Programs to Support Faculty Connections: A Fresh Approach for NTID Academic Leaders. NTID Professional Development Programming. Rochester, New York.

Mousley, K., Kidd, D., & Marchetti, C. (Aug. 13-14, 2018). Two-Day Workshop. Promoting Student Success in Math Through Best Practices. DeafTEC Train the Trainer Math Program. Rochester, New York.

Publications: Reviews and Opinion.

Schley, S. 2019. Review of Shifting the Dialogue, Shifting the Culture: Pathways to Successful Postsecondary Outcomes for Deaf Individuals, Cawthon, S. & Garberoglio, C., 2017, Gallaudet University Press. *Journal of Deaf Studies and Deaf Education*, 24(3), 318. <https://doi-org.ezproxy.rit.edu/10.1093/deafed/enz007>.

Peer-Reviewed Conference Presentations.

(Items with an asterisk (*) were student collaborations.)

Atkins, W.S. & Sparkman, T. (Aug. 12, 2019) Creating the Inclusive Classroom through Faculty Learning Communities: Takeaways from a Study. Academy of Management: Teaching and Learning Conference. Boston, Massachusetts.

*Bowler, D. & Schley. (Aug. 1, 2019). Faculty Strategies on Improving Access and Inclusion in Postsecondary Classrooms. Undergraduate Research Symposium, RIT. Rochester, New York.

Stinson, M.S., Elliot, L.B., Rentsch, J. & Marchetti, C. E. (April 16, 2019). "Knowledge Building and Problem Solving in Teams with Hearing, Deaf, and Hard of Hearing Postsecondary Students." *Proc. of the 2018 Annual Meeting of the American Educational Research Association*, Ed. Carla O-Conner and Suzanne Wilson. Washington, DC: *n.p.*, Web. doi: [10.302/1301251](https://doi.org/10.302/1301251)

Schley, S., Cawthon, S., Atkins, S., & Marchetti, C. (March 29, 2019). Engaging Students in Faculty Development: Strategies to Increase Access and Inclusion. American Association of Colleges and Universities, Diversity, Equity and Student Success Conference, Pittsburgh, Pennsylvania.

Schley, S., Atkins, W.S., & Marchetti, C. (Dec. 11, 2018). Deaf and Hearing Teams: Including Students in the Faculty Development Process. NTID Scholarship Symposium, Rochester, New York.

OTHER FUNDED RESEARCH AND OUTREACH EFFORTS

Communication Research

Michael Stinson, principal investigator

Research (continued)

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 Four.

National Science Foundation 9/1/2015–8/31/2020
PI: Michael Stinson; Co-PIs: Lisa Elliot, Carol Marchetti \$499,830
(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 incorporated in science, technology, engineering and mathematics (STEM) classes because of its perceived pedagogical benefits, groups that consist of deaf and hard-of-hearing students as well as 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 participated 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 Four.

NTID Internal Funding
PIs: Michael Stinson and Matt Huenerfauth (GCCIS); Co-PI: Lisa Elliot

Automatic Speech Recognition (ASR), software that converts audio input of human speech into text displayed on a 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

Stinson, M.S. & Nikolarazi, M. (in press). Assisting people who are deaf or hard-of-hearing through technology. In A. Tatnall (Ed.) *Encyclopedia of Education and Information Technologies*. New York, Springer Publishing.

Stinson, M., Elliot, L., Marchetti, C., & Rentsch, J. (2019). *Knowledge building and problem solving when teammates have diverse hearing status*. Manuscript submitted for publication.

Deaf STEM Community Alliance

Lisa Elliot, Ph.D., principal investigator

1. Deaf STEM Community Alliance: Supporting Postsecondary Deaf and Hard-of-Hearing Students in Science, Technology, Engineering and Mathematics.

National Science Foundation 9/15/2011–8/31/2020
PI: Lisa Elliot; Co-PI: Austin Gehret \$2,630,818

The goal of this project is to increase graduation rates of deaf and hard-of-hearing STEM majors in postsecondary education. The project demonstrates how an online environment can support deaf and hard-of-hearing students in mainstream settings. Cornell University (Ithaca, New York)

Research (continued)

and Camden County College (Blackwood, New Jersey) are collaborating with NTID to pilot a national model. The project has developed a unique environment, called the Deaf and Hard-of-Hearing Virtual Academic Community (DHHVAC), which is a cyber-infrastructure hosting 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. To date, the DHHVAC has conducted more than 170 synchronous online tutoring sessions and produced more than 600 videos to support students in mathematics and chemistry courses. Seventeen 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.

Publications

Elliot, L.B., Gehret, A.U., Valadez, M.S., Carpenter, R., & Bryant, L.B. (2019). Supporting autonomous learning skills in developmental mathematics courses with asynchronous online resources. Manuscript submitted for publication.

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>

Elliot, L.B., Rubin, B., DeCaro, J.J., Clymer, E.W., Earp, K., & Fish, M. (2013). Creating a virtual academic community for STEM students. *Journal of Applied Research in Higher Education*, 5(2), 173-188, DOI 10.1108/JARHE-11-2012-0051.

2. DCL: NSF INCLUDES EAGER: A Study of Online Scientific and Scholarly Communities for Broadening Participation in STEM
National Science Foundation
PI: Lisa Elliot
- | |
|--------------------|
| 9/1/2018–8/31/2020 |
| \$299,347 |

This project will compare the online scientific and scholarly community groups created by the Deaf STEM Community Alliance, which is hosted by RIT/NTID, and the NSF INCLUDES Open Forum, which is hosted by the American Association for the Advancement of Science. It will explore the life cycle stages of the communities, development of leadership and community engagement managers' roles and skills and members' perceptions of social capital and benefits for each community. The findings will add new knowledge that will contribute to strengthening the NSF INCLUDES Network and other NSF efforts to broaden STEM participation.

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) and the Rochester Regional Health (RRH) organization 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 institutions are combining their experience and expertise in research training, health care and the education of deaf and hard-of-hearing students. The concept of the Rochester Hub is explained in the following published letter, and the specific programs offered to deaf and hard-of-hearing students and professionals are listed below.

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

Research (continued)

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

National Institutes of Health

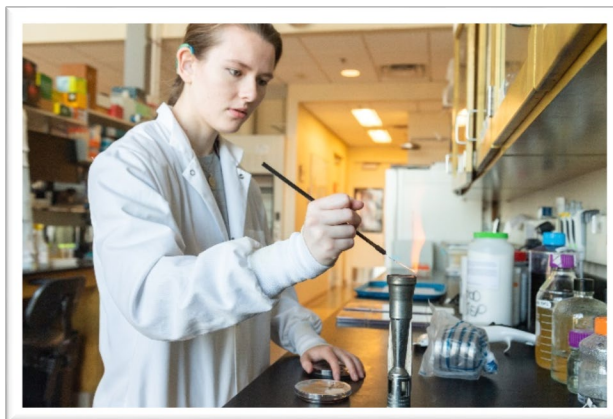
4/5/2017–3/31/2022

PI: Vincent Samar; Co-PI: Paul Craig (COS)

\$1,025,191

The NIH-funded RIT-RISE Scientists-In-Training Program is a cross-campus collaboration among NTID and 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 Services. The goal of the program is to diversify the national scientific workforce by increasing the number of deaf and hard-of-hearing biomedical, biobehavioral and clinical research scientists.

Presently in its third year, the RIT-RISE Scientists-In-Training Program is providing research preparation, research experience, supplemental research training and career preparation to support four deaf/hard-of-hearing undergraduate RIT students who aspire to become successful Ph.D. scientists. RIT-RISE scholars, such as Holly Elder, pictured here, of North Huntingdon, Pennsylvania, engage in intensive research training, working closely with selected RIT faculty and external mentors during three academic years and two summer terms. The grant pays student wages and provides funds for lab and other research supplies. Scholars also receive ongoing advising/counseling, feedback on their writing, special research-environment accommodations as determined by periodic research-environment communication access assessments and enhanced academic mentoring from faculty researchers. The project team uses doctoral readiness meetings and individualized research development plan assessments to track the success of each scholar in achieving targeted core research competencies.



The RIT-RISE Scientists-In-Training Program also provides ongoing curricular and co-curricular programming to promote undergraduate research experiences for students throughout RIT. RIT-RISE developed two new research-oriented courses and a new summer research training workshop that introduces interested students and faculty to hot topics in science, journeys of other successful scientists, essential professional development topics, scientific writing, the responsible conduct of research and the principles of rigor and reproducibility. The RIT-RISE Program is currently exploring partnerships with other universities and institutions to disseminate its research-oriented courses and workshops.

The RIT-RISE Program also collaborated with NTID's Department of American Sign Language and Interpreting Education (ASLIE) to develop new classroom and online courses for undergraduate and graduate interpreting students at RIT/NTID, focused on interpreting in research settings.

Research (continued)

Rochester Bridges to the Doctorate
NIH R25 R25GM107739/417472G
PI: Peter C. Hauser

8/1/2018–7/31/2023
\$1,161,992

The Bridges program was renewed for another five years. This 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, which is locally administered by the NTID Research Center on Culture and Language, provides RIT graduate scholars with unparalleled mentored research experiences at RIT and UR. The scholars, who also take three or more doctoral-level courses at UR, receive research stipends, tuition waivers and conference travel funds. The program supported five scholars during FY 2019.

Rochester Post-Doctoral Partnership
NIH K12 GM106997

PIs: Stephen Dewhurst (UR), Richard Doolittle (CHST)
Training Director: Peter C. Hauser

7/1/2015–3/31/2020
\$401,904

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), the program enhances learning opportunities at each institution to create a pipeline of deaf and hard-of-hearing scientists who can pursue careers in research and teaching. The program is affiliated with the NTID Research Center on Culture and Language.

Deaf Population Health Research

NIH R21 DC016475
PI: Robert Pollard

8/14/2017–7/31/2019
\$224,356

In FY 2019, the Deaf Population Health Research team continued its collaboration with the University of Rochester's National Center for Deaf Health Research (NCDHR) as well as conducted other projects specifically at NTID.

In collaboration with the University of Rochester's Department of Obstetrics and Gynecology, the Deaf Population Health Research team is conducting ongoing NIH-funded two-phase mixed-methods research to study what biopsychosocial factors (e.g., skills and resources) might help prelingual deaf people manage their deafness in a predominantly hearing society. Findings from Phase I qualitative interviews indicated seven specific biopsychosocial themes (markers) including: (1) language deprivation; (2) information deprivation; (3) impaired sense of belongingness; (4) inadequate social support; (5) impaired self-efficacy; (6) academic and employment difficulties and (7) increased stress. Two generic biopsychosocial markers were also identified: (1) mental health issues and (2) physical health issues as these more holistic issues are also influenced by many other non-deaf-specific factors. This project is ongoing.

Publications

Fox, M. L. & Pollard, R. Q. (in press). Interpreting and the mental status exam. In the Handbook of Research on Medical Interpreting. Hershey, Pennsylvania: IGI Global.

Listman, J. D. & Pollard, R. Q. (2019). Deaf culture. The SAGE Encyclopedia of Human Communication Sciences and Disorders (pp. 545-548). Thousand Oaks, CA: SAGE Publications, Inc.

Research (continued)

Barnett, S., Cuculick, J., DeWindt, L., Matthews, K., Sutter, E. (2018). National Center for Deaf Health Research: CBPR with Deaf Communities. In Wallerstein, N., Duran, B., Oetzel, J., Minkler, M. (Eds). *Community-Based Participatory Research for Health: Advancing Social and Health Equity* (3rd ed.). San Francisco, California: Jossey-Bass.

Hall, W. C., Smith, S. R., Sutter, E. J., DeWindt, L. A., & Dye, T. D. V. (2018). Considering parental hearing status as a social determinant of deaf population health: Insights from experiences of the “dinner table syndrome”. *PLoS One*, 13(9):e0202169. doi: 10.1371/journal.pone.0202169. eCollection 2018.

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

6/1/2016–5/31/2020

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.

During FY 2019, six credit-bearing courses underwent significant revisions to reflect changes in the rapidly-evolving app development industry during the third year of the program: Software Analysis and Design, Mobile User Interfaces, Mobile User Experience, Mobile App Development I and II, and Web Services and Data Storage Technologies. In addition, one course (Mobile App Development Capstone) was offered for the first time to third-year students, offering the opportunity to work on porting an app developed for iOS using a cross-platform development platform to recreate the app for both Android and iOS.

Two students have successfully completed the Mobile App Development program and graduated with an associate degree in May 2019. Two students that completed their second year of study successfully obtained summer cooperative work experiences with Lockheed Martin and the Hands & Voices organization. Eight students have successfully completed their first year of the Mobile App Development program. All students in the program have attended learning community events that includes guest speakers from Microsoft and Perficient, team activities, participated in a code competition, engaged in test preparation exercises, conducted homework review and participated in other activities that facilitated student and faculty interactions.

The program assembled an advisory board comprising industry experts and faculty from other colleges to review and recommend changes to the Mobile App Development program. A new course titled Survey of Emerging Visual Design was created as a result of recommendations to bolster design knowledge in students. The course outline was proposed and approved by the NTID Curriculum Committee in the fall of 2018. Development of the course was completed during summer 2019 and is being offered to new students in the fall semester of 2019.

The grant has received approval for a one-year, no-cost extension until May 21, 2020 to improve recruitment, train faculty and create marketing videos with app developers who are deaf or hard of hearing to inspire a new generation of students to enter STEM-related fields.

Research (continued)

Sign Language Research

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

The main research focus is to investigate issues in sign language acquisition and linguistic features in interpreting and translation.

Languages of Interactive Flexible Technology: World Around You (LIFT-WAY)

United States Agency for International Development/World Vision 2019
PI: Kurz, C.; Co-PIs: Jacobs, S.; Senior Personnel: Kurz, K. & Sarchet, T. \$175,000

Book Chapters

Kurz, K., & Hill, J. (2018). *The Heart of interpreting from deaf perspectives*. Deaf Eyes On Interpreting. Holcomb, T. & Smith, D. (Eds.). Gallaudet University Press: Washington, DC.

Kurz, C., Kurz, K., & Harris, R. (2018). Effectively interpreting the content areas utilizing academic language strategies. In T. Holcomb & D. Smith (Eds.), *Deaf Eyes on Interpreting*, Washington, DC: Gallaudet University Press.

Behm, J., & Kurz, K. (2018). *Signs of change: ASL on campus*. A Shining Beacon: Fifty Years of the National Technical Institute for the Deaf. RIT Press: Rochester, NY.

Kurz, K., & Metzger, M. (in progress). Educational interpreters' perspectives of the deaf child's placement progress in K-12 settings. Winston, E. A. & Fitzmaurice, S (Eds). *Educational interpreting: How it can succeed – Second Volume*. Gallaudet University Press.

Kurz, K., & Kurz, C. (in progress). Translation norms in academic settings. Winston, E. A. & Fitzmaurice, S (Eds). *Educational interpreting: How it can succeed – Second Volume*. Gallaudet University Press.

Substance and Alcohol Intervention Services for the Deaf (SAISD)

Keven Poore, program director

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

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 most recent strategic plan 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."

Research (continued)

NTID has become a leader at RIT in supporting students in research projects and FY 2019 was a particularly productive year for students and faculty working together on cutting-edge research projects. A large number of student researchers took advantage of funding to support their research and to travel to present the fruits of that research at professional conferences. Several student researchers were listed as co-authors on peer-reviewed published journal articles. NTID also hosted its fourth annual Student Research Fair, (and again for the fourth straight year, it was the largest to date), where students presented their research projects to the local community (see details below).

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, seven 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, one student researcher was awarded a SURF.
- 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, 14 student researchers were supported by conference travel funds in order to present their research at professional conferences.

For the second straight year, NTID also offered a grant-supported summer research program open to deaf and hard-of-hearing undergraduates from across the country.

- 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 (REU@NTID)
National Science Foundation 6/1/2017–5/31/2020
PI: Bonnie Jacob, Co-PI: Jason Nordhaus \$303,000

This program is a unique REU Site geared toward the needs of deaf and hard-of-hearing scholars. It provides paid research experiences to undergraduates from RIT or other institutions across the country, who spend the summer working at NTID with faculty mentors who are proficient in American Sign Language and accustomed to interacting with deaf and hard-of-hearing students. The REU ran for the second time in the summer of 2019. Eleven deaf and hard-of-hearing undergraduate students (eight from outside RIT, three from RIT) completed research projects in the areas of biochemistry, analytical chemistry, astrophysics, agent-based modeling of disease spread, science education and graph theory under five mentors. Students received training related to research, such as ethics, poster presentations and reading journal articles, in addition to professional development support from three different external speakers who discussed their research as well as issues related to being a deaf or hard-of-hearing scientist. All 11 students presented their research at the RIT Undergraduate Research Symposium in August 2019. A student from the 2019 REU cohort was selected to present her research at the Council for Undergraduate Research REU Symposium in October 2019. The symposium is selective, inviting a maximum of one student per REU site to present research results.



Research (continued)

Student Research Fair at NTID

On April 12, 2019, more than 60 student researchers gave presentations on more than 30 projects at NTID's fourth 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.

Members of the RIT community, including NTID's Foundation and Alumni Association Boards, attended the fair to interact with student researchers. The projects presented came from the fields of chemistry, access technology, health science, biochemistry, astrophysics, education, mathematics, communication studies, environmental science and psychology. Some of the students' project titles are given below:

- Knowledge Building and Problem Solving in Teams with Deaf, Hard-of-Hearing and Hearing College Students
- The Cognitive Benefits of Learning a Second Language in a Second Modality: A Cross-sequential Study of American Sign Language Learners
- Independent Contributions of Child Maltreatment and Schizotypy on Poor Theory of Mind Ability
- Failed Power Domination on Knödel Graphs
- TheatreCaptions
- Classroom Accessibility: A Comparative Analysis of Word Error Rates
- Refining Facial Animation with Non-Manual Markers in American Sign Language
- Effect of Acidosis against Chemically-Induced Hypoxia in Dopaminergic Cells
- A Comparison of Statistical Semantics Algorithms for Astrophysics Literature Recommendations
- Comparison of Leaf Oil Composition in Two *Illicium cf ekmanii* Smith Populations from the Septentrional and Central Mountain Ranges in the Dominican Republic
- Research in Video Game Accessibility
- Effect of Cobalt Chloride on Cell Viability of Dopaminergic MN9D cell Using Lactate Dehydrogenase (LDH) Assay
- Measuring the Content of Tyrosine Hydroxylase on the effect of Cobalt Chloride in Dopaminergic MN9D Cell
- Removal of 2,4-Dichlorophenoxyacetic (2,4-D) from Environmental Water Samples by Carbon Nanotubes
- Collection of Training Data for a Video-Based Search Tool for ASL Dictionaries
- DHH Water Sport Access - Pressure Switch for Footboard
- Elucidating Pal's Role in Sepsis
- An Integrated Molecular Approach to Improving Antimicrobial Biomaterials in Healthcare
- Modeling Macroinvertebrate Communities and Ecological Health
- Probing the Effect of the Pal-Peptidoglycan Interaction on Pal Release from *Escherichia coli*
- Health Literacy Skills of ASL/English Interpreting Students
- Social Factors Predicting Disparities in English Literacy Outcomes in Deaf Children
- Using a Mobile App to Ensure a More Inclusive and Accessible Experience for Museumgoers

28th RIT Undergraduate Research Symposium on August 1, 2019

Each year RIT hosts a large undergraduate research symposium. In FY 2019, more than 20 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.

Innovation and Creativity at NTID

Over the last decade, RIT has 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 newly redesigned classrooms for ASL and Interpreting instruction. The three department classrooms are equipped with updated technology: four HD cameras, three 'smart' microphones, two large screen televisions, a white board and a teacher's station with an Apple computer. The room is controlled by a touchpad and a camera controller. Additionally, each classroom is equipped with technology for the students: new Apple MacBooks and headsets with microphones. The classrooms use Apple's wireless technology to connect faculty and student devices. Capturing student work or presentations happens with the use of a web-based video capture and storage program called GoReact.

Keeping Current in Communication Studies and Services

The Communication Studies and Services (CSS) department recognizes the exciting benefits of emerging 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 and share these communication-related resources and options with students. Recent examples include:

- **Bluetooth technology:** Hearing aids and cochlear implants now have the ability to stream from mobile devices, such as cell phones and tablets. Deaf and hard-of-hearing students enjoy improved communication on the phone for voice and/or video calls, as well as increased access to other media on their devices.
- **Mobile applications (apps):** There are myriad new apps that can be used as tools for communication and accessibility. The faculty and staff in the CSS department actively encourage and train students to use these apps to maximize their communication potential. Trending apps explored with students include those designed for automatic speech recognition, team communication, live captioning of mobile phone calls and real-time hearing device adjustment.
- **Virtual reality equipment/applications:** The CSS department continues to explore the use of virtual reality to practice public speaking and presentation skills. To improve access for deaf and hard-of-hearing students, the department has maintained relationships with app developers to explore adaptations.
- **Remote (off-location) hearing aid programming:** A current trend among hearing-aid manufacturers is the initiation of telehealth services through mobile applications. The audiologists at NTID recognize that some students may have limited access to hearing care while off campus and continue to investigate the use of tele-audiology apps to improve hearing aid outcomes.

CSS remains current with regard to emerging research on electroacoustic hearing configuration, or the use of both electrical stimulation (cochlear implant) and acoustic amplification (hearing aid). Research has suggested improvements in several areas, including music appreciation, general sound quality and speech understanding (particularly in noise). Acoustic components now are available for use with current speech processors from all three major cochlear implant companies, allowing for even more students to benefit from a cochlear implant, if they choose. NTID audiologists have been trained to work with these devices and counsel prospective candidates on expected outcomes.

This research also indicates that the benefits of electroacoustic hearing are observed even when the electric and acoustic stimulation are on opposite ears (bimodal configuration). The CSS faculty and staff have observed that many students coming to college with just one cochlear implant are curious about technology for the contralateral ear, but have either been discouraged from use of a second device or are nervous about the outcomes, due to an extended period of auditory deprivation on that side. The Audiology Center provides semester-long loans of current hearing aid technology so that students can decide whether a bimodal configuration is right for them.

Innovation and Creativity at NTID (continued)

In addition to departmental pursuit of ongoing training in communication-related topics, CSS faculty and staff are actively initiating or invited to participate in various research initiatives across the fields of audiology, speech-language pathology, accessibility and deaf education. Recent projects have focused on:

- bimodal amplification (simultaneous hearing aid and cochlear implant use) in the classroom
- use of mobile applications to enhance cross-cultural communication
- online learning initiatives for deaf learners
- usability of automatic speech recognition for telephone captioning
- effects of cochlear implantation and sign language exposure on cognitive outcomes of young deaf adults

Consulting and training of best practices is also shared internationally in Ethiopia, where a CSS audiologist and speech-language pathologist are routinely part of a volunteer initiative to empower a Deaf community in Ethiopia.

Innovative Teacher Education

Faculty members in NTID's Master of Science program in Secondary Education of Students who are Deaf or Hard of Hearing (MSSE) continue to use the microteaching component of all methods-focused courses. This is accomplished through technical support from the NTID Learning Center as well as the NTID Performing Arts program. In the past, 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 scenarios 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. Past participants have indicated that microteaching is a valuable part of their learning experience.

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, seen here, 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.



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 59 real-time captionists. In addition, unique access services are available for vision-impaired students.

Innovation and Creativity at NTID (continued)

Center for International Educational Outreach

The Center for Education Research Partnerships and the Center for International Educational Outreach established a new outreach initiative in 2019: the Summer Transition Education Program (STP). The program was piloted with 20 deaf and hard-of-hearing first-year NTID students to boost their academic and college-preparedness skills. STP is a six-week long academic program where students engage in academic (reading, writing, math, and American Sign Language) and college-preparedness (time management, stress management, etc.) instruction for eight hours a day for five weeks. The STP scholars spend the remaining time engaging in skills assessments to learn about their strengths and needs to prepare them for their first year in college. During the weekends and evenings, STP scholars are involved in leisure activities and local events to orient them to living on a college campus. This new NTID initiative will run each summer. A regional pilot program is also being explored.

NTID Performing Arts

For its 44th season in AY 2018-2019, NTID Performing Arts presented three main stage productions and special events that involved more than 3,606 deaf, hard-of-hearing and hearing students, faculty, staff and Rochester community members as actors, dancers, theater technicians and front-of-house staff. These performances were attended by more than 7,300 people from throughout New York State as well as schools and community groups from neighboring states. This season included a dance performance created by Nicole Cruz '11

entitled *Leaves of The Poetry Tree*. A production of *Cabaret*, seen in rehearsals here, was directed by Andy Head and won a Kennedy Center Award. The final main stage production was *Fences*, by August Wilson, directed by Dr. Luane Davis-Haggerty, which won a Kennedy Center Award. The RIT Players had their spring production in April, *The Drowsy Chaperone*, and two 24-hour productions, one in September and one in



January. These 24-hour productions are written, directed and performed strictly by the Players themselves with auditions that get new students involved in campus student groups.

Other student groups that performed in the Panara Theatre included Eight Beat Measure, POP and Vocal Accent, all of which are RIT-based a cappella groups. SUNY Potsdam's Pitches, another a cappella group, also were guest performers. NTID student dance groups also performed on the Panara stage, including: the Irish Roar Dancers; Tango Dancers; the Bhangra Ensemble; RIT's Ballroom Dance Club; the Brick City Boppers; the Latin Rhythm Dancers; and Velocity Hip Hop group, all of whom participated in an 'Afternoon of International Dance' performance. NTID's Vis Viva Dance Ensemble performed later in the same evening. All performances were very well attended with 200 or more people at each show.

Special events in NTID's Panara Theatre this year included a special workshop with PUSH Theatre for NTID students. The rededication of RIT/NTID in recognition of the college's 50th Anniversary also was held in the Panara Theatre. The Off Monroe Players did a performance of *The Gondoliers* with near sell-out audiences for every performance.

Innovation and Creativity at NTID (continued)

NTID Performing Arts also provided support for the NTID Math Competition; NTID's Summer Vestibule Program (SVP); NTID's Explore Your Future (EYF) summer program for rising seniors; and NTID's New Student Orientation presentations. Support was also provided for the New York Deaf Patient Care Council Health Forum and space provided for the RIT athletic department to hold their Title IX Conference for all RIT athletes. NTID Performing Arts also was pleased to host the Rochester Prep High School Graduation ceremony for RIT. One of the final special events hosted in Panara Theatre for 2018-2019 was a two-day Deaf Refugee Conference in June 2019.

During AY 2018-2019, 298 students registered for, and attended, Performing Arts classes. Twenty-five students were awarded performing arts scholarships and one student was awarded a performing arts certificate this past year.

In total, approximately 14,700 people were served by NTID Performing Arts program during the 2018-2019 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 art. 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. Including, but not limited to, the papers of distinguished faculty, artwork by alumni and 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.

Innovation and Creativity at NTID (continued)

In FY 2019, the Deaf Studies Archive completed the ASL Poetry and Literature YouTube streaming video (https://www.youtube.com/channel/UCVnYnjKyNuv7eVYQmTe8alw/playlists?view=50&sort=dd&shelf_id=7), which was the result of a Digitizing Hidden Collections grant from the Council on Library and Information Resources that was made possible by funding from the Andrew W. Mellon Foundation. The project was an institute-wide collaboration, with support from the NTID President's Office, Department of Cultural and Creative Studies and Communications, Marketing & Multimedia Services team as well as RIT Archive Collections and Libraries Metadata and Digital Scholarship Services. The rare videos are captioned, voiced, transcribed and signed.

The collection captures the first national NTID ASL Poetry conference (1987) with performances and/or presentations by Patrick Graybill, Peter Cook, Debbie Rennie, Ellie Mae Lentz and Clayton Valli as well as the NTID ASL Literature (1991, 1996) conferences with performances and/or presentations by Clayton Valli, Peter Cook, Ben Bahan, Patrick Graybill, Michelle Banks, Lois Bragg, Bruce Hlibok and others. The collection also contains a groundbreaking video from the 1984 Deaf Beat Summit meeting, with presentations by Dr. Robert Panara and Allen Ginsberg as well as the famous translation of "hydrogen jukebox" by Patrick Graybill that created an "explosion of ASL poetry." The collection also includes the first known 1978 ASL Poetry conference videos showcasing Ella Mae Lentz's works.

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 Library.

RADSCC's various ASL Lecture Series presenters for AY 2018-2019 included Rain Bosworth, Sam '77 and Barbara Ray Holcomb '74, '84, Larwan Berke, Roberta Mather '00, Caroline Solomon, Suzy Rosen Singleton and Clifford "Earl" Terry. Some of the presentations are found on the website: www.rit.edu/ntid/radsc/

RADSCC's 7th annual DeafMute Banquet honored Abbe de l'Epee's 307th birthday and remembered NTID faculty and staff who had passed away over the course of NTID's 50 years of existence. NTID staff member Ken Finton was the master of ceremonies and a memorable slide presentation by Julie Cammeron and her team was shown during the banquet.

RADSCC also collaborated with the Department of Cultural and Creative Studies to kick off the second year of the 2-5-8 Series, so named for the handshape 2 for "looking up" and the movement of handshape 5 to handshape 8 for "interesting," the desired experience for 2-5-8 Series attendees. This year's theme was NTID's 50th year and included events featuring NTID staff: James McCarthy, JT Reid '78, a panel of artists (Nancy Rourke, Kathy McWaters-Velon, Laurie Monahan, Ron Trumble, Fred Beam '85, Jon Kastrup) and faculty/staff members Patti Durr, Mary Beth Kitzel '88, '95, Joan Naturale, Karen Christie and Deirdre Schlehofer.

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 2019, Sunshine 2.0 visited 93 sites and hosted workshops and performances that involved 14,143 youth and adults in the following states: Alabama, Florida, Illinois, Louisiana, Maine, Maryland, Massachusetts, New Jersey, New York, Ohio, Oklahoma, Pennsylvania, Rhode Island, Texas and the District of Columbia.

Fred Beam '85, coordinator for Sunshine 2.0, attended the following conferences in FY 2019:

- Very Special Arts (VSA), the international organization on arts and disability, national conferences in Irvine, California

Innovation and Creativity at NTID (continued)

- VSA Ohio Conference in Columbus, Ohio
- STEM Fair at Harper College in Illinois
- Silent Weekend in Orlando, Florida,
- American Sign Language Teacher Association conference (ASLTA) in California
- Leadership Exchange in Arts and Disability (LEAD) national conferences in Denver
- National Black Deaf Conference (NBDA) in Oakland, California

At most of these conferences, Mr. Beam gave presentations on combining performing arts and STEM.

Sunshine 2.0 also attended the Maine RID Conference, STEM Fair at Harper College in Illinois, National Deaf Education Conference (NDEC), VSA and NBDA to promote NTID, provided workshops related to STEAM and Deaf culture and gave public performances.

Sunshine 2.0 also provided workshops and a performance to incoming NTID students during SVP 2019. Sunshine 2.0 recently performed at the BioQuest Conference at NTID and will participate in the ARTiculating Deaf Experiences Conference from November 6 to 9, 2019.

ASLCORE

Specialized vocabularies used in academic disciplines often lack established ASL signs. Interpreters often fingerspell these words or develop ad hoc signs that can be unclear and potentially confusing. ASLCORE (<https://ascore.org>) began with an NTID innovation grant in 2015 with the goal of developing and making available online new signs for advanced concepts in philosophy courses. After some initial success, the ASLCORE website expanded to include discipline-related terminology in art, biology, computer science, engineering, literature, physics and sustainability. All ASLCORE signs are generated by Deaf users of ASL via a team of Deaf content experts for that discipline and Deaf translators who have native fluency in ASL. With more than 1,500 total entries, ASLCORE also collaborates with a similar project, ASL Clear, a partnership between Boston University's Center for the Study of Communication and the Deaf and The Center for Research and Training at the Learning Center for the Deaf in Framingham, Massachusetts.

Dyer Arts Center

In AY 2018-2019, the RIT/NTID Joseph F. and Helen C. Dyer Arts Center hosted 63 events, including 12 exhibitions. Highlights include:

- *Cultivating Connections*, showcasing art created by local deaf and hearing artists. This was an effort to bring together two communities in one space.
- *Three Masters: Hidden Gems*, an exhibition focusing on three obscure, but wildly talented, deaf artists.
- A solo show of the works of Ashley Hannan '07.

The Dyer Arts Center also created a five-member advisory group, which will meet twice yearly and advise on matters including strategic planning, the strengths and weaknesses of the center and future exhibitions and acquisitions for the permanent collection. The advisory group also has helped develop a mission statement that will guide and shape future decisionmaking.

Representatives of the Dyer Arts Center worked with the University of Rochester's Memorial Art Gallery on an exhibition that will show select pieces of De'VIA works from the permanent collection. Dyer staff members also have been instrumental in the planning stages of the ARTiculating Deaf Experiences Conference in November 2019.

The center acquired 43 new pieces for the permanent collection, including works by Ellen Mansfield, Ashley Hannan '07, Chuck Baird and Morris Broderson.

The Dyer Arts Center also renovated the space to make the center more accessible and added a stage for presentations. Security cameras were replaced. One of the permanent staff members was promoted from gallery assistant to gallery coordinator.

Imagine RIT: Innovation and Creativity Festival

Rochester Institute of Technology held its 12th annual Imagine RIT: Innovation and Creativity Festival on April 29, 2019. This year's festival featured more than 400 interactive exhibits in science, technology, engineering, the arts, mathematics and more, plus live entertainment.

More than 32,000 people came to campus on Saturday, April 29, 2019, for the 12th 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:

- **Sign-Speak:** A two-way communication service platform translating ASL to English and vice versa. Users will be able to sign into our demo camera and see their signs translated in real-time. Additionally, users can observe as their conversations are captioned right before their eyes.
- **Fireblazer Sign News:** A start-up sign-based news business that works with hearing news outlets by translating their audio, written and TV news content to sign language. Original content to present, such as interviews, research, in-depth analysis and more also will be developed.
- **Visual Cues for Gaming Accessibility:** A user interface solution that captures audio output from a video game and uses automatic sound recognition to convert to visual cues as a UI (user interface) to raise accessibility for the deaf and hard-of-hearing gamers in general use and competitive online games.
- **Thinking Hands:** An online educational platform covering core subjects in the K-12 curriculum, with a focus on STEM education for deaf or hard-of-hearing middle school students (grades 6-8). The end goal of Thinking Hands is to cover a greater scope of content covering all age levels in the K-12 school system.
- **Mind & Brain Arts and Crafts Zone:** Designed for young children (aged 3 and up), this exhibit provides arts and crafts activities with a "brain" theme, including coloring maps of the brain, creating neurons out of pipe cleaners and making brains out of Play Doh®. Users can get a picture of their "brain waves" using a portable EEG system. Children will be given the chance to exhibit their coloring and drawing, in return for a small gift (such as a Jell-O® mold shaped like a brain).



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 exemplify RIT President David Munson's vision of RIT as a creative and innovative university that leverages the power of technology, the arts, and design for the greater good.

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* (textbook with accompanying DVD)
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

Intellectual Property (continued)

- *A Shining Beacon: Fifty Years of the National Technical Institute for the Deaf* (hardcover book)
Distributed through NTID Communications, Marketing and Multimedia Services and RIT Press

Patents/Inventions and Copyrights

- U.S. Patent granted by U.S.P.T.O. for “Method for Determining Hearing Thresholds in the Absence of Pure-Tone Testing.” Date of Patent: December 5, 2017. Patent Number: US 9,833,174 B2.
- 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. Converted to non-provisional June, 2018.
- Trademark NTID Speech Recognition Test® (NSRT®).
- 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.
- An ASL Dictionary and Inflection Guide translation to South African Sign Language via license agreement from NTID through the ASLIE Department.
- Translation agreement to digitize and make publically accessible more than 60 videotapes held in the RIT/NTID Deaf Studies Archive through a grant from the Council on Library and Information Resources (CLIR).
- “Method and System to Enhance Telecommunication Relay System for People with Disability”
Provisional patent filed February 14, 2019.



Gabriel Veit, a new media interactive development major from Austin, Texas, Karina Baker, a sociology and anthropology major from Culver City, California, and Alina Kenina, an exercise science major from Clarksburg, Maryland, present their concept at RIT’s Student Accelerator Program Investor Demo Night. This program assists innovators in developing their business concepts for angel investment opportunities.

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.

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

- During FY 2019, NTID faculty and staff conducted 10 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; 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 Program, a summer program for students in grades 9-11; and three camps held in California for students in grades 9-12 that included Create Your Future, Health Science week and Computer Science week. (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 (Computing), Artistic, Social, Enterprising and Investigative (Science). 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 7,058 students have participated in EYF over the past 35 years. Two sessions were offered in summer 2019, with 212 total participants. This year's participants came from 33 states, including two students from Hawaii.

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 2018 through September 2019, there were approximately 1,988 email dialogues and 256 phone call discussions with C-Print Product Development. The C-Print website received 8,090 visits from October 2018 to September 2019. 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 for online training and software totaled 317 from October 2018 through September 2019.
- 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 & Constituent Relations works to build and maintain connections between NTID and its more than 9,000 alumni. NTID retirees and parents of current students are also included in events, activities and engagement initiatives. AY 2018-2019 had 700+ alumni and guests participating in more than 15 activities and events across the country and internationally, including receptions, networking opportunities and presentations.

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 2019, RIT/NTID welcomed more than 554 middle school and high school students and their parents from all over the country to 10 pre-college outreach efforts. Participation is expected to grow annually as marketing and other promotional efforts continue.

Parents, students and teachers alike had high praise for the 2019 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 50 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 18 entries to the 2019 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 2019, 168 students from 58 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 14th annual SpiRIT Writing Contest for deaf and hard-of-hearing students attracted 19 students in grades 10-12 from around the United States in May 2019. 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-three deaf and hard-of-hearing girls and 28 deaf and hard-of-hearing boys in grades 7-9 attended TechGirlz/TechBoyz in 2019 to explore their interests in science, technology, engineering and mathematics. This is the 13th year for TechGirlz and the eighth 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, learned how to program a robotic car, learned about the tenets of wise financial decision-making and became versed in Adobe programs.

Health Care Careers Exploration Program

The Health Care Careers Exploration Program is a program for deaf and hard-of-hearing students entering grades 10-12. This program allowed 21 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, were part of hands-on demonstrations like a mock rescue and became CPR/first-aid certified.

Pre-College Outreach (continued)

Steps to Success

Nineteen high school students, grades 9-12, participated in the Steps to Success program as part of the YES! Youth Program at the National Black Deaf Advocates Conference in Oakland, California, July 30-August 4. Students were provided with career assessment training and tests to help them decide their future careers.

Create Your Future

Create Your Future hosted 23 deaf and hard-of-hearing students from California at California State University, Fresno, in grades 9-12. The students were provided learning opportunities to help them prepare for life after graduation. More than a dozen classes were held that included such topics as an introduction to Vocational Rehabilitation student services, post-secondary educational opportunities and career opportunities in manufacturing.

Health Science Week

Health Science Week was one of three programs held in California in 2019. This program was for deaf and hard-of-hearing students in grades 9-12 and welcomed 20 students to California State University, Sacramento. Students gained experience in health science along with exploring their personal interest in the field. They were able to attend medical demonstrations and facility tours. They participated in hands-on activities in a variety of health science programs.

Computer Science Week

Twenty-six deaf and hard-of-hearing students in grades 9-12 attended Computer Science Week on the campus of California State University, San Bernardino. Students participated in classes about programming and used their new skills to program a robot. They explored two different types of coding, as well as developing good coding practices. They also learned about programming a drone.

Pre-College Outreach AY 2018-2019			
	Total Participants	Minorities	
		Number	Percent
Explore Your Future	212	120	57%
SpiRIT Writing Contest	19	10	53%
Digital Arts, Film and Animation	18	4	22%
Math Competition	168	47	28%
Steps to Success	19	19	100%
Health Care Careers Exploration Program	21	11	52%
TechGirlz/TechBoyz Camp	51	14	27%
Create Your Future	23	22	96%
Health Science Week	20	16	80%
Computer Science Week	26	19	73%

NTID Regional STEM Center

The top priority of the NTID Regional STEM Center 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 Congress to establish a formal regional partnership with at least one organization in the southeastern United States to expand the geographic reach of activities and services supported by NTID consistent with NTID's mission and strategic plan. NTID has

contracted with the Alabama Institute for Deaf and Blind (AIDB) since November 2016 to serve as the NTID Regional STEM Center-Southeast (NRSC-SE). The region served by this partnership includes Alabama, Arkansas, Florida, Georgia, Louisiana, Kentucky, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee and Texas. Additional programming can be provided outside the 12-state region on a case-by-case basis.

The NRSC targets five specific groups:

Students and their Families

Camps and activities offered to deaf and hard-of-hearing middle- and high-school students include but are not limited to: Droids and Drones camps, Robotics Tournaments, GenCyber camps, Deaf Kids Code coding activities, STEM Days and Fairs, ACT Testing Strategies training, marine biology camps, Explore Your Future camps, TechBoyz and TechGirlz camps, pictured here, and Health Care Careers Exploration programs. NTID's annual Math Competition also targets deaf and hard-of-hearing middle-school students. Scholarships are also offered for participation in camps and activities.



Teachers

NRSC has provided support for state, local and regional conferences on education of deaf and hard-of-hearing students, with an emphasis on STEM topics. In addition, we have partnered with the Communication Service for the Deaf (CSD) to offer webinars featuring deaf and hard-of-hearing professionals in STEM-related fields, accompanied by downloadable toolkits and lesson plans for educators. NRSC is also providing support for NTID's Project Fast Forward dual-credit program.

Vocational Rehabilitation (VR) Personnel

NRSC staff have provided training, consultations and visits to VR personnel, and NRSC-provided travel funding has brought VR personnel to the RIT/NTID campus to learn about our programs and services.

Sign Language Interpreters

NTID employs a full-time STEM interpreter trainer who organizes and provides professional training activities and exchange programs for educational trainers on STEM topics.

Employers

NTID Center on Employment (NCE) conducts training for employers, ranging from private corporations to non-profits, and visits job sites where our students have worked. The team also attends various conferences in the southeastern region of the US, educating leaders about hiring and working with deaf and hard-of-hearing employees and how to make workplaces more accessible. There also will be a national summit in May 2020, which is a collaborative effort between RIT/NTID, Gallaudet University, the National Association of the Deaf and CSD.

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 a framework that assumes that people have differing interests in six areas: Realistic, Investigative (Computer), Artistic, Social,

Students participate in hands-on career exploration classes and personal awareness instruction. Multiple social activities and dorm-living opportunities give participants a taste of college life. A total of 7,058 students have participated in EYF over the past 35 years. Since EYF participants are juniors and seniors, the percentage of an EYF cohort that enrolls at NTID is recalculated each year to capture additional enrollments. Two sessions were offered in summer 2019, with 212 total participants.

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Number of Participants	213	199	203	179	212
Percentage of Minorities	34%	47%	55%	51%	57%
Percentage Enrolling at NTID*	51%	46%	49%	23%	N/A**



High school juniors and seniors explore STEM careers and more at NTID's week-long Explore Your Future (EYF) camp. In 2019, 212 students attended EYF.

* These percentages reflect enrollment activity as of fall 2019 and may change in future years as additional EYF participants enroll.

** Students from EYF 2019 currently are in the process of applying to NTID.

Explore Your Future – Enrollment by Location

Summer 2019 EYF students represented 33 states.

Home State or Country	Number in EYF Summer 2019
Arizona	1
California	44
Colorado	2
Connecticut	10
Florida	5
Georgia	6
Hawaii	2
Illinois	11
Indiana	1
Iowa	2
Kentucky	6
Louisiana	4
Maine	2
Maryland	13
Massachusetts	9
Michigan	5
Minnesota	1
Mississippi	1
Missouri	6
Nebraska	1
Nevada	1
New Jersey	6
New Mexico	1
New York	45
North Carolina	4
Ohio	1
Oregon	1
Pennsylvania	4
South Carolina	2
Texas	11
Vermont	2
Virginia	1
Wisconsin	1
Total	212

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 award 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. In August 2019, a three-year DeafTEC Resource Center was awarded to RIT to continue and disseminate the work of DeafTEC.

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 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

Harper College, Palatine, Illinois
Caterpillar, Inc., Peoria, Illinois

Florida

Florida School for the Deaf and the Blind, St. Augustine
Florida State College at Jacksonville, Jacksonville
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 developed by the NTID Center on Employment (NCE) 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.

DeafTEC (continued)

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.

Partner-Led Professional Development. In FY 2019, DeafTEC partners offered 23 workshops to 327 participants.

- Seven *Project Access* workshops to 62 educators
- Seven *Writing in the Disciplines* workshops to 67 educators
- Nine *Promoting Student Success in Math through Best Practices* workshops to 198 educators

To date, DeafTEC partners have offered 183 workshops to a total of 2,952 attendees.

Student STEM Activities. Three hundred thirty-eight (338) deaf and hard-of-hearing students participated in STEM awareness activities offered by DeafTEC's educational partners this year. These activities included:

- FSDB DeafTEC Summer Camp, June 24-28, 2019: 28 high school students attended
- TSD *I Can Learn STEM* camp, June 16-22, 2019: eight high school students attended
- TSD Discover Retreats, *Coding Drones*: April 25, 2019, at Texas Tech University in Lubbock, Texas: eight middle school and three high school students attended; February 22-24, 2019, at Peaceable Kingdom Retreat in Killeen, Texas: 21 high school students attended; October 22-24, 2018, at Peaceable Kingdom Retreat in Killeen, Texas: 28 high school students attended
- CSDR Family Fun Weekend, March 15-17, 2019: 11 middle school and 10 high school students attended
- Harper College STEM Day, May 3, 2019: 130 students attended
- Jacksonville Science Festival, March 7, 2019: 28 middle school and eight high school students attended
- Harper College Deaf Kids Code workshops: Hersey High School, MT, Prospect, Illinois, April 8, 2019: eight high school students attended; Minnesota Academy for the Deaf, Faribault, Minnesota, March 5, 2019: 10 high school students attended; Hinsdale South High School, Darien, Illinois, November 7, 2018: 13 high school students attended; Whitney Young High School, Chicago, Illinois, December 10 & 13, 2018: 24 high school students attended

Other partner activities included:

- Participation in Shadow Day. Three 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 12, 2018, 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. No significant website development was done this year. However, materials are added, edited and updated as needed in the following sections:

- **Best Practices for Teaching.** This major section of the website has been completely revised, eliminating redundancy and improving navigation. It focuses on helping instructors understand and address the challenges deaf and hard-of-hearing students face in mainstream classes. It also 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>.

DeafTEC (continued)

- **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.** DeafTEC has 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.** This section contains videos that emphasize the importance of writing in STEM, including deaf and hearing NTID faculty talking about the types of writing required in STEM careers and students talking about their writing challenges, the types of writing required in 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.** Materials related to STEM careers continue to be added. This year 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* were added. 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% 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 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>. This year 73 new lab science terms were added to the dictionary. The dictionary now contains 466 signed STEM terms, along with the signed definition, and a signed sentence using the term.

DeafTEC (continued)

- **Website Affiliates Section.** This private section of the website, created for all 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.

Working Together Deaf and Hearing People Online Course. This online course for employers, coworkers, HR business leaders and other inclusion/diversity professionals went live on March 3, 2018. The course consists of five self-paced modules along with an introduction and conclusion sections and will take approximately two hours to complete.

- Introduction
- Module 1 - Definitions and Common Misconceptions
- Module 2 – Understanding Hearing Loss
- Module 3 – Deaf Culture
- Module 4 – Essentials of Communication
- Module 5 – Creating an Inclusive Environment
- Conclusion

Upon completion of the course, participants receive a Certificate of Completion and a digital badge. One hundred twenty (120) people have completed the course to date.

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 AY 2018-2019, dual credit courses were offered at three new schools and 10 established schools. All of the current Project Fast Forward school partners are listed below:
 1. Alabama Institute for Deaf and Blind, Talladega, Alabama
 2. American School for the Deaf, West Hartford, Connecticut
 3. Arkansas School for the Deaf, Little Rock, Arkansas
 4. Atlanta Area School for the Deaf, Atlanta, Georgia
 5. California School for the Deaf, Fremont, California
 6. California School for the Deaf, Riverside, California
 7. Cypress Ridge High School, Houston, Texas
 8. Delaware School for the Deaf, Newark, Delaware
 9. Eastern North Carolina School for the Deaf, Wilson, North Carolina
 10. Florida School for the Deaf and the Blind, St. Augustine, Florida
 11. Georgia School for the Deaf, Cave Spring, Georgia
 12. Hinsdale South High School, Hinsdale, Illinois
 13. Indiana School for the Deaf, Indianapolis, Indiana
 14. The Learning Center, Framingham, Massachusetts
 15. Lexington School for the Deaf, Jackson Heights, Queens, New York
 16. Marilton School for the Deaf, Los Angeles, California
 17. Maryland School for the Deaf, Frederick, Maryland
 18. McNeill High School, Round Rock, Texas
 19. Mill Neck Manor School for the Deaf, Mill Neck, New York
 20. Model Secondary School for the Deaf, Washington, DC
 21. Pennsylvania School for the Deaf, Philadelphia, Pennsylvania
 22. New Mexico School for the Deaf, Santa Fe, New Mexico
 23. New York School for the Deaf, White Plains, New York

DeafTEC (continued)

24. North Carolina School for the Deaf, Morganton, North Carolina
 25. Oklahoma School for the Deaf, Sulfur, Oklahoma
 26. Ohio School for the Deaf, Columbus, Ohio
 27. Plano Senior High School, Plano, Texas
 28. Rochester School for the Deaf, Rochester, New York
 29. Tennessee School for the Deaf, Knoxville, Tennessee
 30. Texas School for the Deaf, Austin, Texas
 31. University High School, Irvine, California
 32. Utah Schools for the Deaf and the Blind, Ogden, Utah
 33. Vines High School, Plano, Texas
 34. Washington School for the Deaf, Vancouver, Washington
 35. Western Pennsylvania School for the Deaf, Pittsburgh, Pennsylvania
- **Dual-Credit Courses.** The following courses were developed for high schools to teach and earn their students RIT/NTID college credit. The CAD Applications course is a new offering but will not be taught for dual credit during AY 2019-2020 due to a lack of qualified teachers for the course. The Mathematics in Society and Processes of Science: Biological Studies courses are new offerings and will be taught for dual credit during AY 2019-2020.
 1. *Applications Software:* An introduction to word processing, spreadsheet, presentation and database applications
 2. *Web Development I:* An introduction to Web page development, including XHTML and Web graphics
 3. *PC Hardware I:* An introduction to the fundamental hardware concepts of personal computer (PC) systems, including their structure and components
 4. *Introduction to Programming:* An introduction to the fundamental concepts and terminology of computer programming.
 5. *Page Layout I:* An introduction to page layout applications to produce pages and documents to given specifications
 6. *Raster/Vector Graphics:* Introduces the skills needed for the successful production and manipulation of raster and vector images using image creation and production software
 7. *Blueprint Reading:* An introduction to the skills necessary to read and interpret fundamental engineering drawings of details, subassemblies and assemblies
 8. *Engineering Graphics:* Introduces the skills needed to create professional 2D mechanical, architectural and civil drawings using AutoCAD software
 9. *CAD Applications:* Introduces skills using computer-aided drafting (CAD) as a tool to generate 2D graphics and 3D solid models
 10. *Mathematics in Society:* An exploration of mathematical thinking and procedures including applications to real world situations and using problem solving skills
 11. *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
 12. *Processes of Science: Biological Studies:* An introduction to science processes using biology content as a vehicle to establish an appreciation of the scientific method, critical thinking and problem solving
 13. *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
 14. *Personal Finance:* Provides students with basic financial literacy so they can develop sound financial management of their personal income as well as an understanding of the economic events that can influence their financial well-being and society as a whole.
 - **Courses Taught and Credit Earned.** During 2018-2019, 26 course sections were taught at partner high schools with 158 deaf and hard-of-hearing high school students enrolled in those courses with 14 students enrolled in more than one course for dual credit. Of these students, 115 students or 73% of the total successfully completed their dual-credit course and earned three RIT credits.

DeafTEC (continued)

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 2019:

- 222 dual-credit course sections were taught by 74 teachers in their high schools.
- 1,306 registrations were recorded in Project Fast Forward courses.
- 989 unique deaf and hard-of-hearing students participated in the program.
- 317 deaf and hard-of-hearing students took more than one course.
- 847 (65%) of students enrolled in dual-credit courses received passing grades.
 - When removing teacher errors, 75% of students received passing grades.
- 2,541 RIT/NTID credits were awarded to deaf and hard-of-hearing students.

For 2019-2020, 308 students are registered in 48 course sections thus far. Registrations for the remaining seven course sections are pending. There is a total of 55 course sections for 2019-2020.

- **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 2019, training was offered to 23 new Project Fast Forward high school teachers and 13 new Project Fast Forward high school counselors. During the 12 summers of Project Fast Forward, 2007-2019, the following numbers of teachers and counselors have participated in summer professional development:

- 102 teachers from 39 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 145 teacher trainings.
- 44 guidance counselors attended summer professional development activities to work with students taking dual-credit courses in their high schools.

Student Veterans with Hearing Loss. DeafTEC has created the *Project Good to Go: Teaching Student Veterans with Hearing Loss (PG2G)* website (<https://good2go.org/>), which serves as a national resource for community college faculty by providing best practices for teaching student veterans with hearing loss in STEM classes. The website currently contains expanded information on *DeafTEC's Top Ten Things that Student Veterans Would Like Faculty to Know* document. This document is the result of student veteran participation in focus groups and surveys and is the underpinning of the related professional development offering. This year the PG2G team has made four presentations to 271 community college faculty and staff related to the *Top Ten* list.

Epsilon Pi Tau National Honor Society. On April 23, 2019, with support from DeafTEC, the Delta Xi chapter of Epsilon Pi Tau National Honor Society established at NTID inducted 22 associate-level students, three NTID faculty and a special alumna guest. This is the first EPT chapter in the nation dedicated to deaf and hard-of-hearing students and NTID's first national honor society.

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 266 employer representatives received training through the NTID Center on Employment (NCE) in AY 2018-2019.

Employer Training and Educational Programs

The NTID Center on Employment conducted, delivered and presented 13 programs for 266 human resources professionals and company representatives.

NTID Career Fair

The 18th annual NTID Career Fair was held in October 2018 with 54 employers attending and close to 300 students and alumni participating. During this fair, four 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

Fifteen NTID faculty and staff visited 49 students on cooperative education assignments and their supervisors in 12 states.

Outreach to Employers, Alumni and Other Deaf and Hard-of-Hearing Adults

- Consulted with 78 alumni for job search assistance and providing employment opportunities for our students.
- Supported three engineering students plus one faculty member in participating in the Solar Turbines Training Academy/Shadow Day in San Diego, California, in October 2018.
- Exhibited and presented at SHRM Diversity & Inclusion in Atlanta, Georgia, in October 2018.
- Met and interacted with more than 20 employer representatives at the Assistive Technology Industry Association Conference in Orlando, Florida, in January 2019.
- Attended the CSUN Assistive Technology conference in Anaheim, California, in March 2019.
- Exhibited at the SHRM Talent Acquisition conference in Nashville, Tennessee, in April 2019.
- Exhibited and interacted with 49 company representatives at the Disability:IN conference in Chicago, Illinois, in July 2019.

NCE Marketing Highlights

- Developed news releases and articles to promote employer participation in the NTID Career Fair.
- 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.
- Featured student and recent graduate success stories on the NCE website at least once a month.

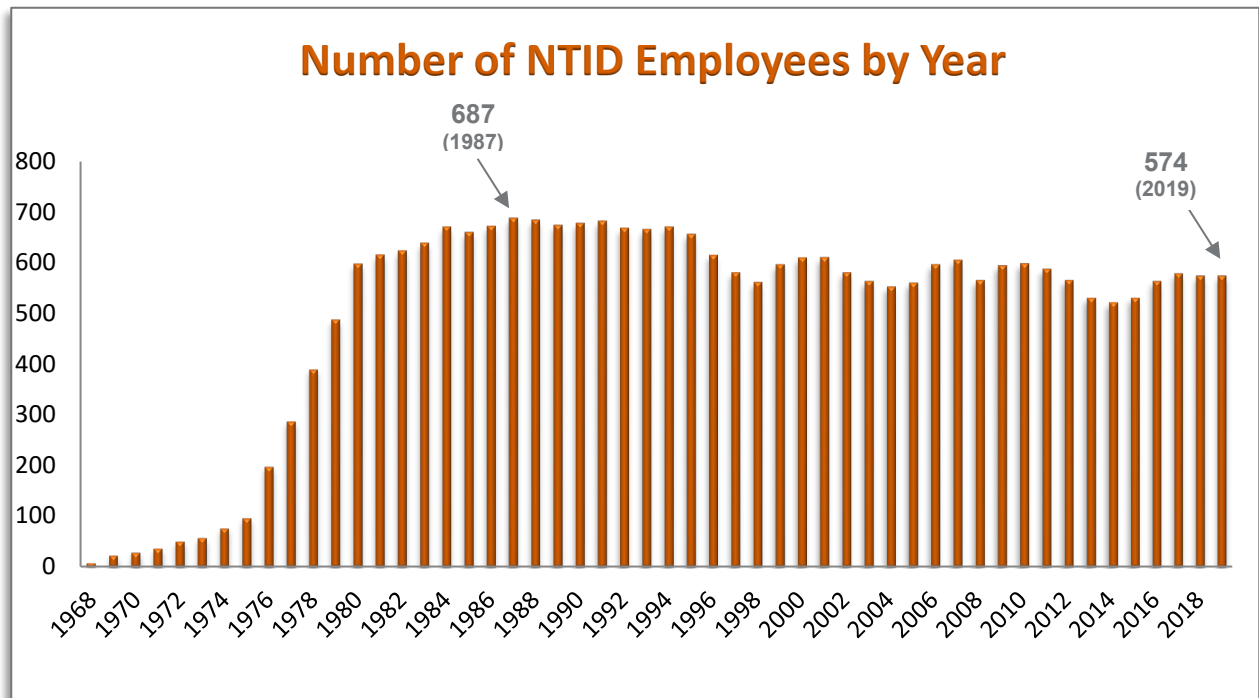
Faculty and Staff

As of fall 2019,
32 percent of NTID's
workforce was eligible
for retirement.

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 2019, NTID employed 574* faculty and staff, equal to fall 2018.



* Of the 574 employees, 564.13 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* FY 2019
Faculty		
Professor	20	\$114,995
Associate Professor	40	\$90,144
Assistant Professor	23	\$75,219
Principal/Senior Lecturer	35	\$70,730
Lecturer	37	\$61,638
Subtotal Faculty	155	\$79,948
Staff		
Exempt Staff	125	\$69,787
Non-Exempt Staff	294	\$47,787
Subtotal Staff	419	\$54,473
Total	574**	\$61,352

* Average salary calculations are based on the standard full-time schedule for each faculty/staff category. Individual variances are adjusted to the same scale.

** Of the 574 employees, 564.13 are covered by NTID's operating funds.

Tenure-Track Positions and Faculty Rank

In FY 2019, senior-level faculty members (professor and associate professor) comprised 73% of all ranked tenure-track faculty as compared to 47% in FY 1985. Of the 75 tenure-track positions, 88% are tenured.

Rank	Number of Tenure-Track Positions*					FY 2019 Faculty with Tenure	
	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Number	Percent
Professor	25	26	24	20	20	20	100%
Associate Professor	43	36	33	33	35	35	100%
Assistant Professor	35	30	28	22	20	11	55%
Total Positions	103	92	85	75	75	66	88%

* 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 2019, 95% of full-time, tenure-track faculty members held graduate degrees.

FY 2019 Highest Degree Level Achieved Tenure and Tenure-Track Faculty*		
	Number	Percent
Doctorate	37	50%
Master's	34	45%
Bachelor's	4	5%
Total	75	100%

* Includes ranked administrators.

Age, Length of Service and Retirement Status of NTID Faculty and Staff*

NTID's faculty and staff average 46.9 years of age with 13.7 years of service at NTID. As of October 2019, 32% are eligible for retirement.**

FY 2019

	Percent Full Time	Average Age	Average Length of Service	Currently in Retirement Transition
Professor	100%	63.3	30.8	2
Associate Professor	98%	56.8	23.4	2
Assistant Professor	100%	50.2	16.2	2
Principal/Senior Lecturer	97%	50.3	15.9	0
Lecturer	97%	44.3	5.0	0
Exempt Staff	98%	47.3	13.8	3
Technical/Clerical	86%	48.2	11.7	3
Interpreter	94%	42.0	13.7	2
Real-Time Captionist	22%	42.0	7.0	0

* Data not available for all faculty and staff.

** More information about RIT's retirement eligibility policies can be found at <https://www.rit.edu/fa/humanresources/retirement>.

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 2015	FY 2016	FY 2017	FY 2018	FY 2019
Full-Time:					
Faculty	16	7	10	4	8
Exempt Staff	11	14	11	4	5
Non-Exempt Staff*	18	32	7	24	12
Total Full-Time	45	53	28	32	25
Part-Time:					
Faculty	1	3	1	0	1
Exempt Staff	1	1	1	0	0
Non-Exempt Staff*	12	15	39	7	5
Total Part-Time	14	19	41	7	6
Total	59	72	69	39	31

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

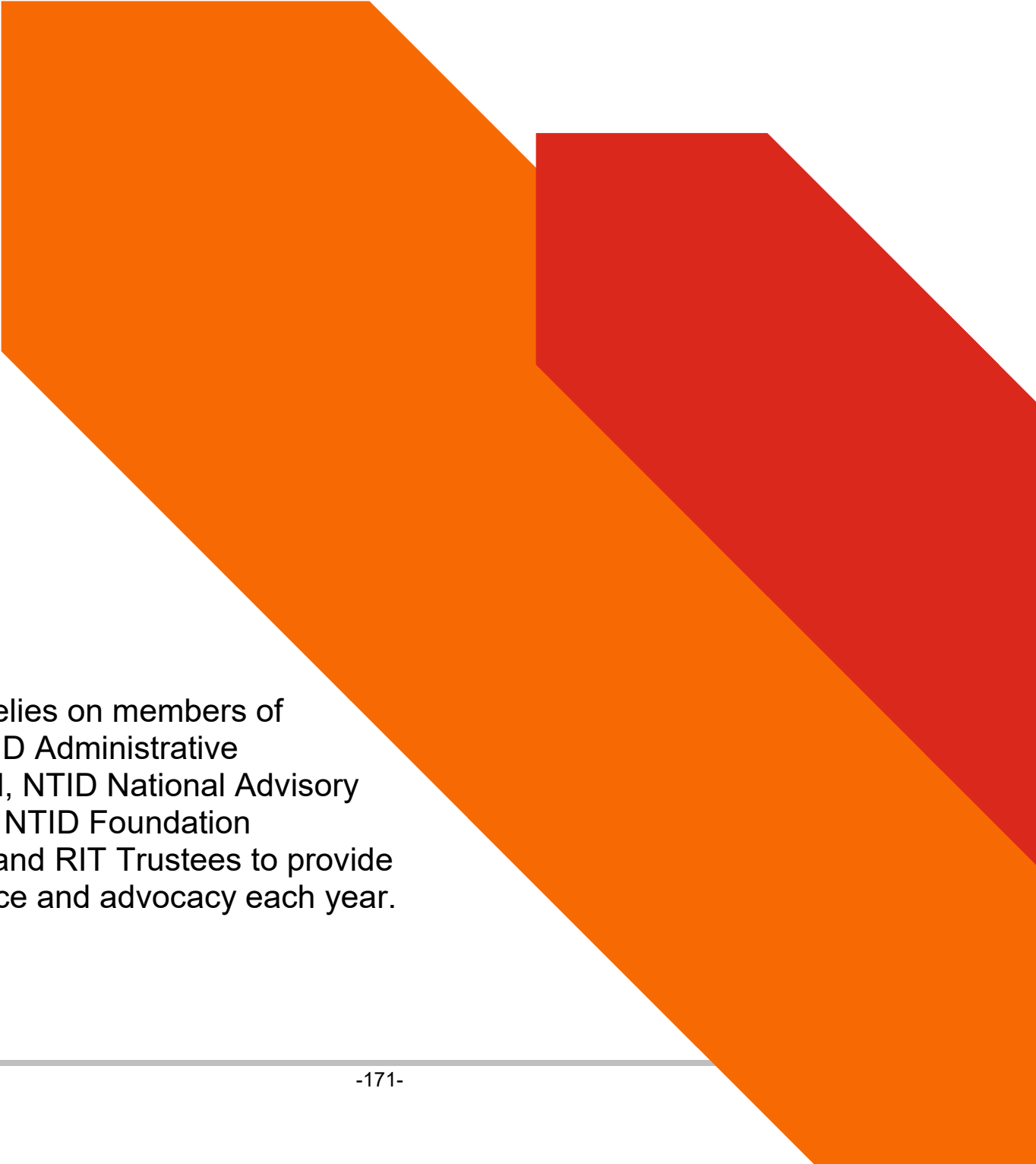
Faculty and Staff Terminations

The faculty and staff turnover rate, 11.3%, is almost the same as last year. Retirements of current faculty and staff are expected to rise as the employee base ages.

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	
Full-Time/Part-Time					Percent	Number
Faculty	11.2%	8.8%	10.4%	9.0%	7.1%	11
Exempt Staff	5.1%	4.0%	4.5%	10.4%	10.3%	13
Non-Exempt Staff*	8.2%	9.4%	10.3%	12.6%	14.0%	41
Total	8.5%	8.0%	9.0%	11.1%	11.3%	65

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

RIT/NTID Leadership



NTID relies on members of the NTID Administrative Council, NTID National Advisory Group, NTID Foundation Board and RIT Trustees to provide guidance and advocacy each year.

NTID Administrative Council



Dr. Gerard J. Buckley '78
President, NTID;
Vice President and
Dean, RIT



Gary Behm '78, '81
Interim Associate
Vice President for
Academic Affairs



Dr. Pamela Carmichael '04
Assistant Vice President of
Communications, Marketing
and Multimedia Services



**Pamela Christopher '90,
'93, '02**
Interim NTID Director of
Diversity & Inclusion



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



Bill McGee '80, '82
Assistant Vice President for
Finance and Budget

NTID Administrative Council (continued)



Dr. Rico Peterson
Assistant Dean and Director,
NTID Access Services



Dr. Robert Pollard
Associate Dean
of Research



Thomastine Sarchet-Maher
'03, '09
Director, Center for 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

Tina Childress

Freelance Presenter and Educational Audiologist, Urbana School District

Rachel Coleman

President, Signing Time Foundation

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

Norma Morán

Parent and Deaf Guide, Hands & Voices DC Chapter

Mary Beth Mothersell '85

Senior Customer Relations Manager, Sprint

David Nelson '81, '85

Senior Community Outreach Specialist, Amtrak

Karen Putz

Owner, Ageless Passions

Robert Sidansky '77

Retired, National Center on Deafness, CSUN

Kathleen Treni

Principal, Continuum of Services for Deaf and Hard of Hearing Students, Bergen County Special Services District

Scott Van Nice

Senior Manager, Digital Forensics & eDiscovery, Proctor & Gamble

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

NTID National Advisory Group (continued)

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



On April 5, 2019, NTID hosted a ceremony rededicating the campus in honor of its 50th anniversary featuring, from left to right, NYS Senator Joseph Robach, NAG member Robert Sidansky '77, NAG chair Dr. Christopher Leheldt, Lucinda Robb (granddaughter of President Lyndon Baines Johnson), NYS Lieutenant Governor Kathleen C. Hochul, U.S. Representative Joe Morelle, NTID president Dr. Gerry Buckley, RIT Board of Trustee member Frank S. Sklarsky '78, RIT Student Government president Robert Moakley and NTID Student Congress president Taylor Repetski, with additional remarks sent by U.S. Senator Charles E. Schumer, U.S. Senator Kirsten Gillibrand and NYS Senator Rich Funke.

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, NTID Academic Affairs

Dr. Gerard J. Buckley '78

President, NTID; Vice President and Dean, RIT

Shraddha Chaplot

Jinnie C. DeTrani

Psychologist, Former School Counselor

Joseph DeTrani

Ambassador, retired
Board of Managers, Sandia National Laboratories
Professor, Missouri State University
Department of Defense and Strategic Studies

Michael Ellis

Global Director, Accessibility, Sprint

Sean P. Flanagan

Sr. Customer Business Manager, Bayer Consumer Care

Sue Flanagan

Volunteer Event Coordinator

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

Daniel Kaiser

Partner, Kaiser Saurborn & Mair, P.C.

Jill Kaiser, LCSW

Psychotherapist

Kathleen Martin

Retired Director of Policy Review and Development, RIT Human Resources

Jeff McCaw '89

Chief Financial Officer, SourceAmerica

Jay McHarg

CEO, AeroSafe Global

Barbara Montan

NTID Foundation Board (continued)

Matthew S. Moore '83

President, MSM Productions, Ltd.
Chairperson, NTID Performing Arts Advisory Committee

Bruce Schilling

Broker Associate, Compass

Kay Schilling

Principal, El Dorado Associates

Chris Soukup

Chief Executive Officer, Communication Services for the Deaf

James Stefano

President, Synergy Global Solutions, Inc.

Rosa Lee Timm, '00

Chief Marketing Officer, Communication Services for the Deaf

James Tourangeau

District Manager, Sorenson Communications, Inc.

Sherri Turpin

Chief Executive Officer, ZVRS

Christopher D. Wagner '94

Chief Operating Officer, Customer Experience, ZVRS; *Chair*

George D. Webb

Retired Senior VP of Operations, Great West Life Insurance Company

Sandra Weintraub

Steven J. Weintraub, M.D.

Medical Director, Department of Anesthesia, North Shore LIJ

Dan Younkman

Lori Younkman

Owner, Entrepreneur, Danori 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. Ellen Granberg

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

Ian Mortimer

Vice President for Enrollment Management

Dr. Daniel B. Ornt

Vice President of the Institute of Health Sciences and Technology; Dean, College of Health Sciences and Technology

Dr. Ryne Raffaele

Vice President for Research and Associate Provost

Deborah M. Stendardi

Vice President for Government and Community Relations

John Trierweiler

Vice President and Chief Marketing Officer for Marketing and Communications

Dr. James H. Watters

Senior Vice President for Finance and Administration

RIT Board of Trustees Active Trustees

Robert W. August

Managing Partner, Laser Wash Group LLC

Mark G. Barberio

BS '85; Principal, Markapital, LLC

Eric J. Bieber

President and CEO, Rochester Regional Health System

Brooks H. Bower

BS '74; Chairman and Chief Executive Officer, Papercone Corp. East

Andrew N. Brenneman

BS '88; Senior Client Director, Sprint

Charles S. Brown, Jr.

MBA '79; Retired Executive Director for the Rochester Area Colleges Center for Excellence in Math and Science, Nazareth College

William A. Buckingham

BS '64; Chair Emeritus, Board of Trustees, Rochester Institute of Technology; Retired Executive Vice President, M&T Bank

David J. Burns

Vice Chair, Board of Trustees, Rochester Institute of Technology; Principal and Founder, Global Business Advisory Services LLC

Ann L. Burr

Retired Chairman, Frontier Communications of Rochester, Vice President, Customer Engagement

Carol B. Cala

BS '97; MS '00; Vice President of Corporate Environment, Safety & Health, Lockheed Martin Corporation

Essie L. Calhoun McDavid

Retired Chief Diversity Officer and Director, Community Affairs Vice President, Eastman Kodak Company

Dale J. Davis, Esq.

BS '96; Executive Intellectual Property Counsel, GE Power Systems

Hyacinth V. Drummond

BS '91

Nita Genova

Women's Council Representative, Rochester Institute of Technology

Arthur A. Gosnell

Chairman and CEO, Stonehurst Capital LLC

Victoria D. Griffith

BS '93; Vice President, Quality Assurance & Purchasing Farmer Restaurant Group; also serves as RIT Alumni Association Representative

Dinah G. Gueldenpfennig Weisberg

MS '97; EMBA '03; President & CEO, REDCOM Laboratories, Inc.

RIT Board of Trustees Active Trustees (continued)

Mark E. Hamister

AAS '74; Chairman and CEO, Hamister Group LLC

Jeffrey K. Harris

BS '75; Vice Chair, Board of Trustees, Rochester Institute of Technology; Retired Corporate Vice President, Lockheed Martin

Darshan N. Hiranandani

BS '02, MBA '03; Managing Director, Hiranandani Group of Companies

Susan R. Holliday

MBA '85; Vice Chair, Board of Trustees, Rochester Institute of Technology; Retired President and Publisher, *Rochester Business Journal*

Andrew R. Jacobson

BS '90, MS '96; Enrolled Agent, Maverick Business Services

Thomas F. Judson, Jr.

Chairman, The Pike Companies

Richard A. Kaplan

CEO, CurAegis Technologies Inc.

Rick A. Kittles, Ph.D.

BS '89; Professor and Founding Director, Health Equity, City of Hope

Eric J. Kuckhoff

MS '84; Retired Vice President, Cargill, Inc.

Christopher W. Lehfeldt, D.D.S.

Dentist, Elmwood Dental Group, PC; also serves as NTID NAG Representative

Austin W. McChord

BS '09; Founder and CEO, Datto, Inc.

Dana A. Mehnert

President, L3Harris Technologies, Communication Systems Sector

Roosevelt Mercer, Jr.

Director, Interagency Planning Office for NextGen, Federal Aviation Administration

Robert D. Moore, Jr.

BS '91; Chief Executive Officer, EagleDream Technologies

David C. Munson

President, Rochester Institute of Technology

Sharon D. Napier

MS '04; CEO, Partners + Napier

Brian P. O'Shaughnessy, Esq.

BS '81, MS '84; Partner, Dinsmore & Shohl LLP

Sandra A. Parker

Retired CEO, Rochester Business Alliance, Inc.

RIT Board of Trustees Active Trustees (continued)

Gerard Q. Pierce

MBA '77; Retired Senior Vice President for Human Resources, Wegmans Food Markets, Inc.

Susan M. Puglia

Retired Vice President, Global Technical Leadership, Sales & Distribution, IBM Corporation

Robert W. Rice

BS '94, MBA '97; President and Managing Partner, BayFirst Solutions LLC

Ronald S. Ricotta

BA '79; CEO and Co-Owner, Century Mold Co., Inc.

Frank S. Sklarsky

BS '78; Retired Executive Vice President and Chief Financial Officer, PPG Industries, Inc.

Kevin J. Surace

BT '85; Former Chairman of the Board, Serious Energy

Sharon Ting

President, Ting & Associates, Inc.

Donald J. Truesdale

BS '87; Chair, Board of Trustees, Rochester Institute of Technology; Chief Executive Officer, Ardea Partners

Kim E. VanGelder

BS '86; Chief Information Officer and Senior Vice President, Eastman Kodak Company

Judy B. von Bucher

Chester N. Watson

BS '74; Retired General Auditor, General Motors Corporation

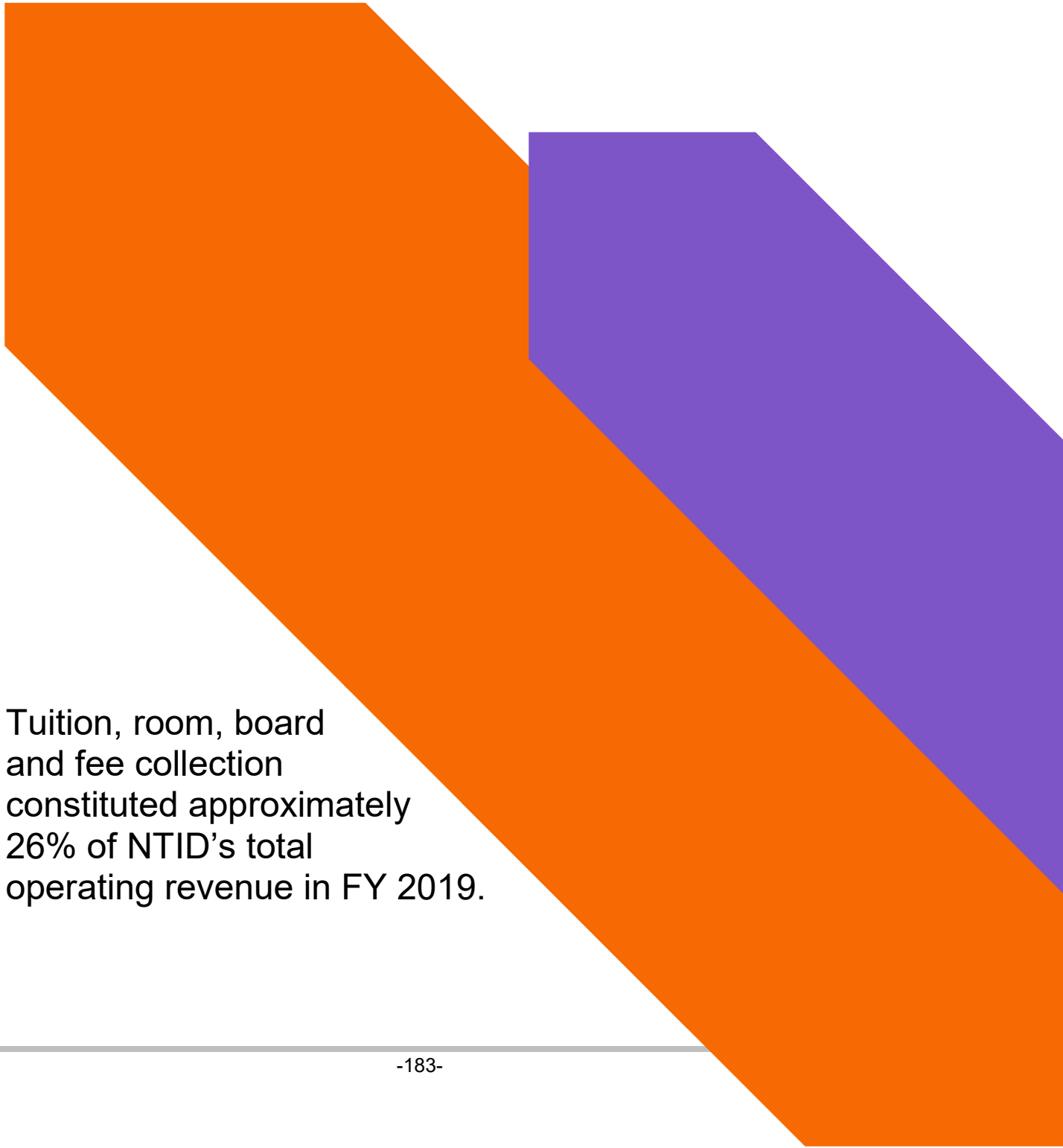
Christine B. Whitman

Chair Emeritus, Board of Trustees, Rochester Institute of Technology; Chairman and CEO, Complemar Partners, Inc.

Ronald L. Zarrella

Chairman Emeritus, Bausch & Lomb, Inc.

Results of Financial Operations



Tuition, room, board
and fee collection
constituted approximately
26% of NTID's total
operating revenue in FY 2019.

Financial Operations Highlights

During FY 2019, 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 an increase in total expenses of .7% above FY 2018 levels. NTID's 2019 Federal appropriation increased 1.4% over FY 2018 funding. As always, NTID exercised prudent cost management to keep cost increases to a minimum.

As noted on the next page, the full fiscal 2019 Federal Appropriation for NTID was \$77.5 million. The \$5.5 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 Institute for Deaf and Blind (AIDB) formalized a partnership and began aggressive efforts to execute the planned outreach activities. To date, all of the \$2 million in outreach funding for FY 2016, FY 2017 and the majority of FY 2018 has been expended and expenditure of FY 2019 outreach funds has been initiated. None of the funds from this outreach effort are reflected in the statement of financial operating results.

Total Personnel Compensation for FY 2019 increased approximately \$208,000 (or .4%) over FY 2018. This increase is due to a \$632,000 increase in the cost of benefits against a decrease in the amount of wages of \$414,000.

Total RIT Services increased by approximately \$2,354,000 (or 7.5%) from FY 2018, primarily as a result of an \$821,000 (or 11%) increase in Residence Hall/Food Services/Student Services costs and a \$913,000 (or 9.7%) increase in cross-registered tuition charges paid to RIT.

Total Other Expenditures decreased by approximately \$1.8 million (or 10%) below FY 2018. This decrease was primarily due to the net result of a year-to-year decrease in capital projects expenditures of \$2.9 million offset by increases to financial aid of \$293,000, matching endowment of \$282,000 and Plant fund of \$552,000. NTID continues to plan for and schedule needed renovations and upgrades to its approximately 50-year-old facilities. While these enhancements continue, there was a lower volume of funding for facility projects in FY 2019 compared to the previous fiscal year.

NTID's FY 2019 financial results continue to demonstrate its strong commitment to excellent stewardship of resources and sound financial management and oversight.

Financial Operating Results

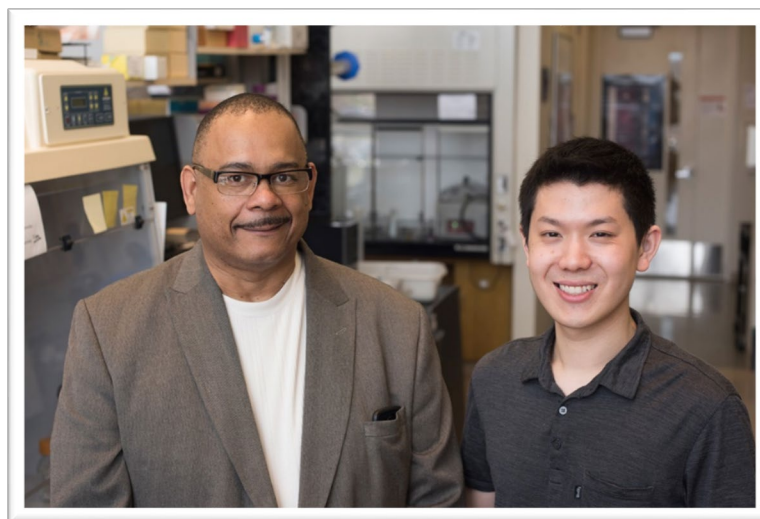
	FY 2018	FY 2019	Variance \$	Variance %
EXPENSES				
Personnel Compensation Expenditures				
Salaries and Wages	\$35,939,240	\$35,525,136	(\$414,104)	-1.2%
Benefits	11,630,360	12,252,133	621,773	5.3%
Total Personnel Compensation	\$47,569,600	\$47,777,269	\$207,669	.4%
RIT Services Expenditures				
Direct:				
Residence Halls/Food Service, Student Services	\$7,457,753	\$8,279,017	\$821,264	11.0%
Cross-Registered Tuition	9,461,325	10,374,585	913,260	9.7%
Physical Plant Services	2,561,560	2,510,284	(51,276)	-2.0%
Indirect:				
Overhead	11,706,736	12,377,450	670,714	5.7%
Total RIT Services	\$31,187,373	\$33,541,336	\$2,353,963	7.5%
Other Expenditures				
Support Expenditures	\$6,895,035	\$6,883,146	(\$11,889)	-.2%
Grant Cost Shares	0	0	0	0%
Financial Aid	2,907,168	3,200,403	293,235	10.1%
Capital	3,686,153	732,557	(2,953,596)	-80.1%
Matching Endowment	86,322	362,598	282,276	327.0%
Plant Fund	4,133,915	4,686,133	552,218	13.4%
Total Other	\$17,622,272	\$15,864,837	(\$1,757,435)	-10.0%
Total Expenses	\$96,465,566	\$97,183,442	\$717,876	.7%
REVENUE				
Federal Appropriation*	\$71,000,000	\$72,000,000	\$1,000,000	1.4%
Non-Federal Funds	25,465,566	25,183,442	(282,124)	-1.1%
Total Revenue	\$96,465,566	\$97,183,442	\$717,876	.7%

* The FY 2018 and FY 2019 Federal Appropriations were \$73,000,000 and \$77,500,000 respectively. The \$2,000,000 not included in the FY 2018 total and the \$5.5 million not included in the FY 2019 total were specifically designated for outreach efforts in the Southeastern United States. Most of the FY 2018 appropriated amount has been spent. We have initiated use of the FY 2019 funds.

Tuition, Room, Board and Other Fees

The tuition rate increased by 3.9% while the rates charged for room, board and fees increased by 3.7% for a total combined rate increase of 3.8%. These non-federal resource collections constituted approximately 26% of NTID's total operating revenue.

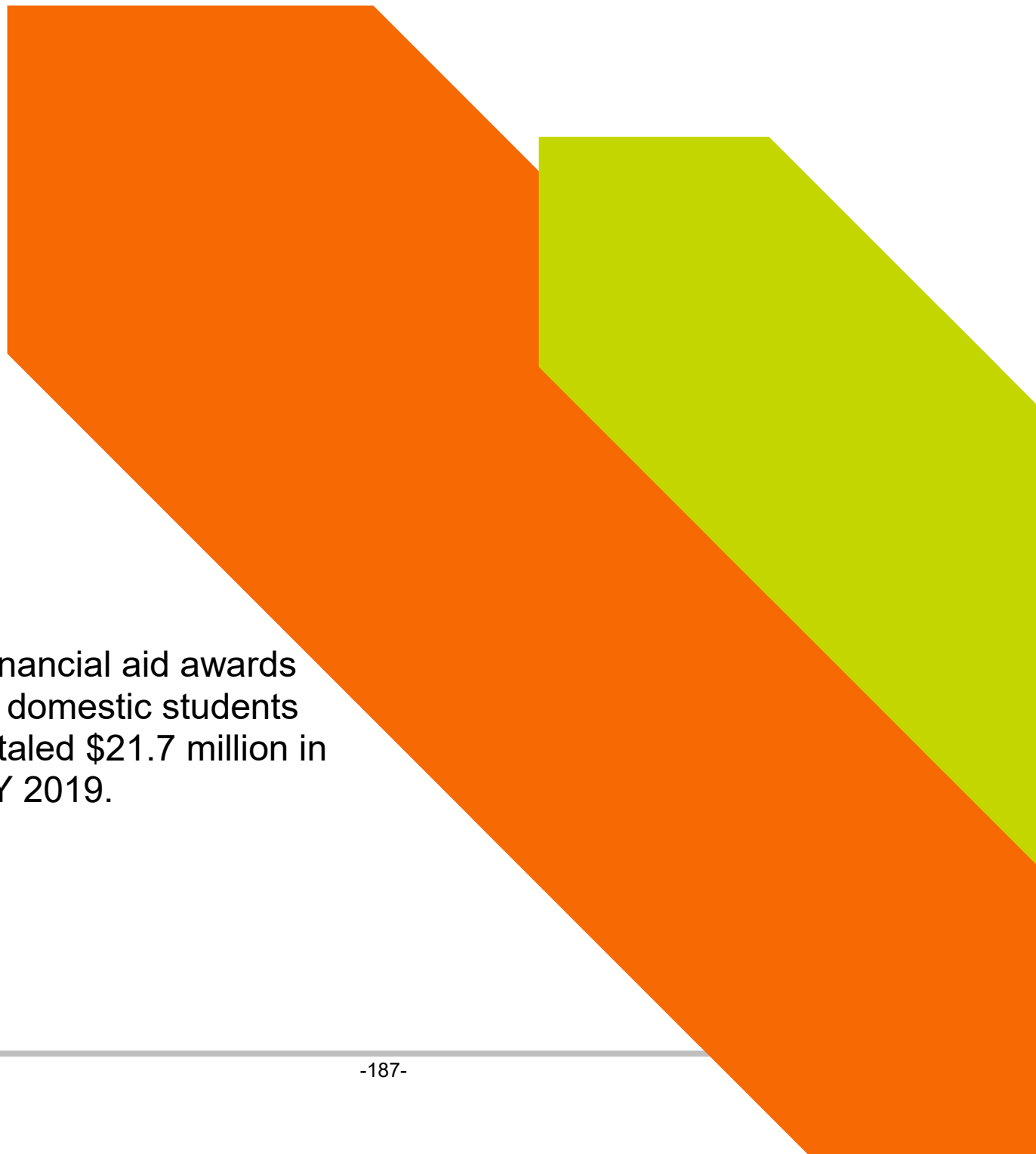
Rates Charged Students					
	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Tuition	\$14,570	\$15,140	\$15,730	\$16,518	\$17,162
Room	6,954	7,162	7,376	7,596	7,902
Board	4,964	5,338	5,524	5,662	5,800
Fees	528	544	562	584	646
Total	\$27,016	\$28,184	\$29,192	\$30,360	\$31,510
Collections	\$27,295,204	\$26,432,000	\$25,465,566	\$25,342,080	*
Enrollment (Fall)	1,413	1,300	1,262	1,182	1,129
Collections Per Student	\$19,317	\$20,332	\$20,179	\$21,440	*



Samuel Lum, right, of New York, New York, graduated in May with a degree in Mechanical Engineering Technology. His faculty mentor Robert Osgood, left, an associate professor of biomedical sciences at RIT, collaborated with him on a project to decrease the incidence of hospital-associated catheter infections.

* As of the writing of this report, the collection information for FY 2020 is incomplete.

Financial Aid



Financial aid awards to domestic students totaled \$21.7 million in FY 2019.

Financial Aid (Domestic Students)

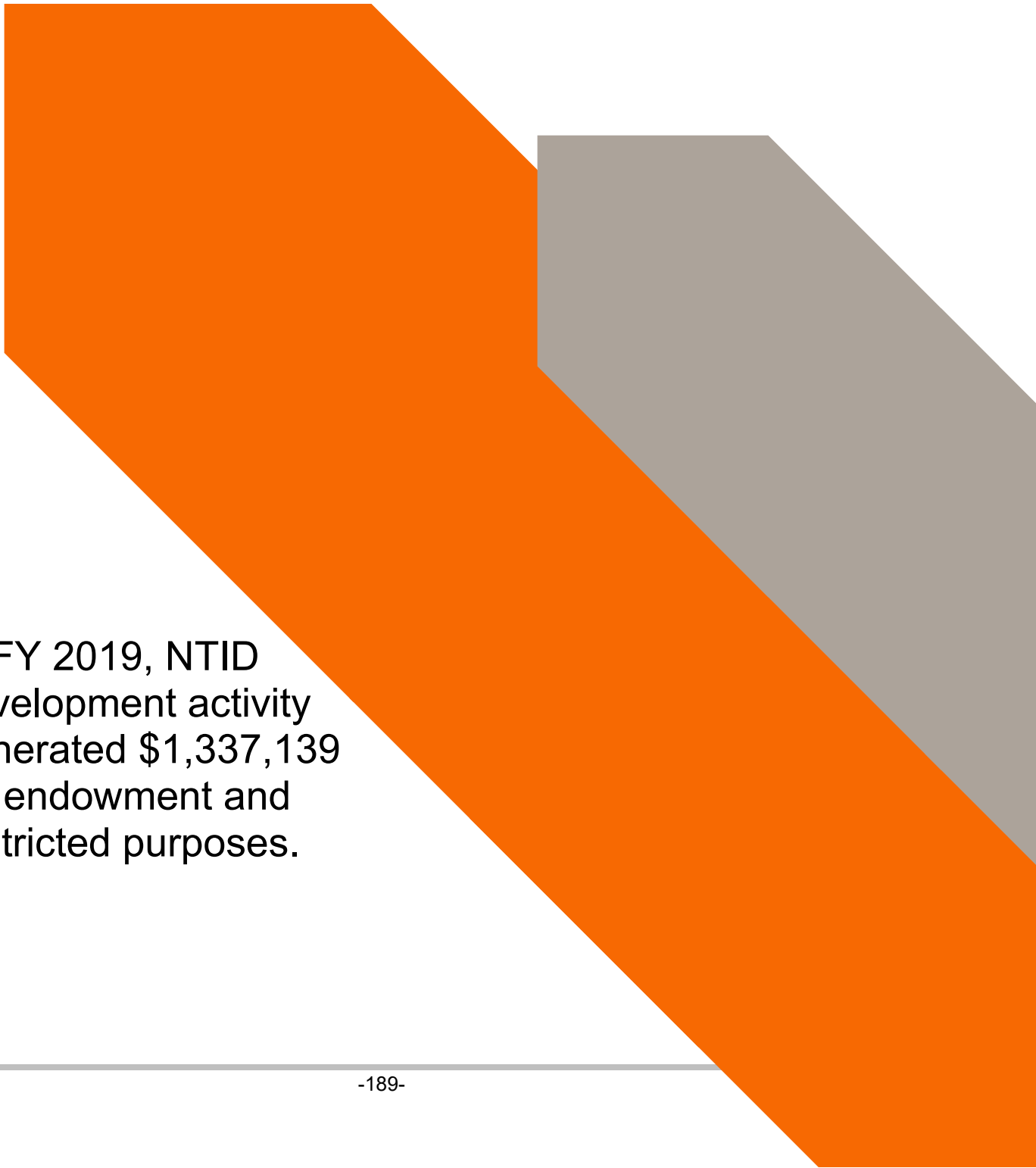
Financial aid awards to domestic students totaled \$21.7 million in FY 2019, a 2.4% decrease from FY 2018. Institutionally sponsored aid increased in FY 2019 by 13.1% and state and federal support decreased by 7.4%. Loans taken out by domestic

students decreased by 9.0%, and the number of awards, including loans, decreased compared to FY 2018. Overall, the average financial aid (excluding loans) per domestic student increased by 5.7% in FY 2019.

SOURCE OF AID	2018		2019		Amount Diff %
	Awards*	Amount	Awards*	Amount	
INSTITUTIONALLY SPONSORED SUPPORT					
Grant-in-Aid:					
NTID Grant-in-Aid	294	\$1,244,125	284	\$1,488,692	19.7%
RIT Grant-in-Aid	27	100,175	21	100,000	-0.2%
Subtotal Grant-in-Aid	321	\$1,344,300	305	\$1,588,692	18.2%
Scholarships:					
NTID	447	\$1,548,749	489	\$1,568,058	1.2%
RIT	91	216,626	99	253,963	17.2%
NTID Endowments	867	\$2,739,828	905	\$2,778,177	18.7%
External Groups	92	229,878	97	232,822	1.3%
Subtotal Scholarships	1,497	\$4,735,081	1,590	\$4,833,020	11.5%
Subtotal Institutionally Sponsored Support	1,818	\$6,079,381	1,595	\$6,421,712	13.1%
STATE AND FEDERAL SUPPORT					
Grants:					
Pell Grants	539	\$2,619,065	503	\$2,492,605	-4.8%
State Grants	198	488,173	194	483,487	-1.0%
Subtotal Grants	737	\$3,107,238	697	\$2,976,092	-4.2%
Other Federal Support:					
Vocational Rehabilitation	793	\$9,780,492	708	\$8,951,676	-8.5%
Federal Work Study	31	62,192	33	65,681	5.6%
Subtotal Other Support	824	\$9,842,684	741	\$9,017,357	-8.4%
Subtotal State and Federal Support	1,561	\$12,949,922	1,438	\$11,993,449	-7.4%
LOANS					
Subsidized Federal Student Loan	434	\$1,530,951	391	\$1,387,286	-9.4%
Unsubsidized Federal Student Loan	397	1,419,925	366	1,270,231	-10.5%
Parent PLUS Loans	60	\$616,019	59	\$589,327	-4.3%
Subtotal Loans	891	\$3,566,895	816	\$3,246,844	-9.0%
TOTAL ALL FINANCIAL AID	4,270	\$22,596,198	4,149	\$21,662,005	-2.4%
Domestic Student Enrollment		1,213		1,080	-6.5%
Average Financial Aid per Student		\$18,628		\$20,057	4.4%
Average Financial Aid per Student Excluding Loans		\$15,688		\$17,051	5.7%

* Students receive more than one form of aid; therefore, the numbers of awards (grants, loans, scholarship, etc.) outnumber the student body.

External Funding Sources



In FY 2019, NTID development activity generated \$1,337,139 for endowment and restricted purposes.

The NTID Foundation

NTID received \$2,122,238 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, building renovations, support for the NTID Theatre Program and a variety of research and pre-college outreach programs.

Contributions of \$10,000 and above received during FY 2019 include:

Alabama Institute for Deaf and Blind
Anonymous (2)
Capitol Region Education Council
Dow Chemical Co. Foundation
Easter Seals Inc.
Dr. D. Robert Frisina
Mr. Andrew R. Jacobson '90, '96
Jephson Educational Trust
Daisy Marquis Jones Foundation
Mr. and Mrs. Daniel J. Kaiser
Ms. Elizabeth Kolombatovic
Maguire Foundation
William G. McGowan Charitable Fund
Merck Research Laboratories
Microsoft Corporation
Gordon & Betty Moore Foundation
MSM Productions, Ltd.
Mrs. Ray B. Ohringer, Estate
Sorenson Communications, Inc.
Frank B. Sullivan Memorial Foundation, Inc.
ZVRS

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 2019, NTID development activity generated \$1,337,139 for endowment and restricted purposes. Of that amount, \$362,598 was matched with federal dollars and directed toward NTID's endowed scholarship funds.

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Endowment and Restricted Funds	\$1,348,092	\$450,505	\$683,466	\$872,054	\$1,337,139
Equipment and Software	\$69,697	\$43,738	\$20,530	\$40,717	\$100,728
Total	\$1,417,789	\$494,243	\$703,996	\$912,771	\$1,437,867



NTID Performing Arts' final main stage production in FY 2019 was "Fences" by August Wilson. The production won a Kennedy Center Award and exemplified NTID's strong performing arts program.

NTID Endowment Programs

A total of \$1,337,139, including matching federal funds* of \$362,598, was added to the Federal Matching Endowment Fund corpus in 2019. The market value of NTID's Federal Matching Endowment portfolio stands at \$65,139,510.

The market value of NTID's total endowments, which include privately raised funds prior to the establishment of the Federal Matching Endowment program, is \$81,143,252.

Value as of September 30, 2019

	Contributed Value	Market Value
Funds Subject to Federal Investment and Spending Guidelines		
Private	\$3,823,158	\$7,595,106
Federal	\$3,816,143	\$7,139,274
Subtotal	\$7,639,301	\$14,734,380
Funds No Longer Subject to Federal Investment and Spending Guidelines	\$22,517,166	\$50,405,130
Total Federal Endowment	\$30,156,467	\$65,139,510
Other Endowments	Contributed Value	Market Value
Private	\$11,929,540	\$16,003,742
Total Endowments	\$42,086,007	\$81,143,252

* 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.

Stephanie S. Albert Memorial Endowed Scholarship Fund

Barlow Endowed Scholarship Fund

Alice Beardsley Memorial Endowed Scholarship Fund for Interpreting Students at NTID

Behm Family Endowed Support Fund in Student Innovation, Technology, and Research

Ned Behnke Memorial Endowed Scholarship Fund

Frank P. Benz Jr. Memorial Scholarship

Doris W. Blanchard Endowed Scholarship Fund

Farid Bozorgi Memorial Endowed Scholarship Fund

Andrew and Mary Brenneman Annual Scholarship

Gladys Brooks Endowed Fund for the Laboratory Science Technology Program

Johnnie Brown (JB) Black History Month Celebration Endowment

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

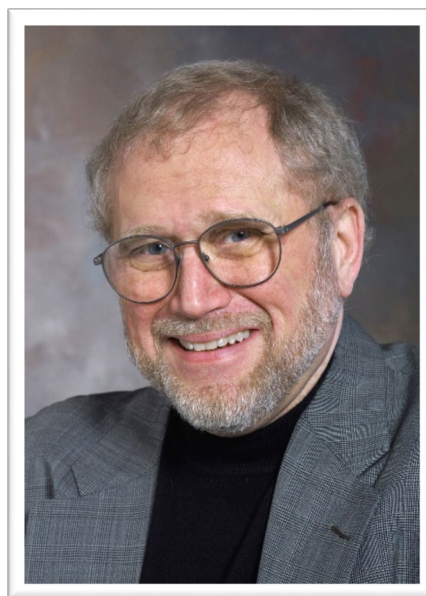
Lillian M. Cowin Memorial Endowed Scholarship Fund

Robert R. and Donna E. Davila Endowed Scholarship Fund

James J. DeCaro Endowed Scholarship Fund

James and Patricia DeCaro Endowed Scholarship

On October 23, 2019, James J. (Jim) DeCaro passed away. In his 47 years of service at NTID, he served as an instructional developer, department chair and division director. He was dean of NTID for 13 years, as well as interim director and interim president. Jim established PEN-International, founded and directed the NTID Center on Access Technology, and conceived, helped design and sought funding for Rosica Hall, the heart of NTID's research and innovation efforts. His legacy will be felt at NTID and throughout the world for decades to come.



Scholarships, Endowed Funds and Estate Commitments (continued)

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
DSK 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
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 Endowed Scholarship Fund
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

Scholarships, Endowed Funds and Estate Commitments (continued)

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 Fund for Health Care Education

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

Maguire Scholars Program at NTID

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

Maguire Scholars Program at NTID

Dr. Genji Murai Endowed Scholarship Fund

Mutterer Family Endowed Scholarship Fund

Alvina Narkin Endowment

M. L. Navrat Endowed Scholarship Fund for NTID

Ruth G. Norton Endowed Scholarship Fund

NTID Alumni Association Endowed Scholarship Fund

NTID Anonymous #12 Endowed Scholarship Fund

NTID Anonymous #21 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

Scholarships, Endowed Funds and Estate Commitments (continued)

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

Ryoichi Sasakawa / James J. DeCaro Endowed Scholarship Fund

Edward L. Scouten Endowed Fund for English Literacy

Wilfrid and Isabel Searjeant Endowed Scholarship Fund

Shelby Center for Excellence Scholarship Fund

Mu Zeta Chapter of Sigma Nu 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

Dr. Frank B. Sullivan 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



Jacob Schwall, a new media marketing major from Fishers, Indiana, Bakar Ali, a program management student from Rochester, New York, and Peter Bilzerian, a management information systems/finance major from Holden, Massachusetts, all received new scholarships for students in business-related majors funded by the Frank B. Sullivan Memorial Foundation.

Scholarships, Endowed Funds and Estate Commitments (continued)

Solon E. Summerfield Foundation Endowed Scholarship Fund

Michael A. Swartzman Memorial Endowed Scholarship Fund

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

WSK Endowed Scholarship Fund

Grants and Contracts

During FY 2019 NTID submitted 15 new grant proposals requesting a total of \$5,310,450 in funding. Eleven of these proposals were funded for a total of \$3,209,184; one proposal is still pending; three proposals were not funded.

As of September 30, 2019, the annual reimbursed expenditures of all grants and contracts at NTID totaled \$3,437,385 with a total value of \$16,623,169 over the lives of the projects.

Project Title	Grant Provider	Year	Amount FY 2019	Total Value
Rochester Prevention Research Center - Year 1	National Institutes of Health	1/1	\$26,640	\$27,063
Renewal of DeafTEC: Technological Education Center for Deaf and Hard-of-Hearing Students	National Science Foundation	4/5	\$956,049	\$4,179,407
Facilitating Knowledge Building in Cooperative Learning of Statistics in Mixed Teams with Deaf/Hard of Hearing and Hearing Students	National Science Foundation	4/5	\$68,216	\$499,830
Mechanism of Health Literacy and Information Accessibility	National Institutes of Health	4/4	\$97,869	\$600,189
Development of Temporal Visual Selective Attention in Deaf Children	National Science Foundation	3/4	\$93,927	\$458,350
RoadMAPPs to Careers: A New Approach to Mobile Apps Education featuring a Mapp for Deaf and Hard-of-Hearing Students	National Science Foundation	3/4	\$133,523	\$851,754
Collaborative Research: Accessible STEM Instruction with Deaf Students: Supporting Faculty in Pedagogical Exploration and Innovation	National Science Foundation	3/4	\$114,752	\$443,200
RIT-RISE Scientists-in-Training Program for Deaf and Hard-of-Hearing Undergraduates	National Institutes of Health	2/5	\$221,227	\$521,514
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	Department of Education	2/3	\$88,846	\$507,190
Neurocognitive Plasticity in Young Deaf Adults: Effects of Cochlear Implantation and Sign Language Exposure	NYS Department of Health	2/5	\$525,312	\$1,599,246
Investigating Key Biopsychosocial Factors that Mediate Lifespan Management of Pre-Lingual Deafness	National Institutes of Health	2/3	\$182,245	\$564,590
Unveiling hidden companions in post-AGB stars: 3D simulations of evolved star binaries	National Aeronautics and Space Administration	2/3	\$29,083	\$95,034
MITRE FCC Telecommunications Relay Services	Center for Medicare & Medicaid Services	2/2	\$60,990	\$501,387
Pregnancy Outcomes and Experiences Among Deaf and Hard of Hearing Women- Year 1	National Institutes of Health	2/5	\$8,757	\$53,363
Collaborative Research: Multimethod Investigation of Articulatory and Perceptual Constraints on Natural Language Evolution	National Science Foundation	2/3	\$84,480	\$354,322
Broadening Participation of Deaf Students in Sign Language Research	National Science Foundation	1/2	\$20,000	\$71,100

Grants and Contracts (continued)

Pregnancy Outcomes and Experiences Among Deaf and Hard of Hearing Women- Year 1	National Institutes of Health	2/5	\$8,757	\$53,363
Collaborative Research: Multimethod Investigation of Articulatory and Perceptual Constraints on Natural Language Evolution	National Science Foundation	2/3	\$84,480	\$354,322
Broadening Participation of Deaf Students in Sign Language Research	National Science Foundation	1/2	\$20,000	\$71,100
Augmented Reality: Accessible Dynamic Informal STEM Learning for Deaf and Hard-of-Hearing	National Science Foundation	2/3	\$60,667	\$258,861
Languages of Interactive Flexible Technology: World Around You (LIFT-WAY)	USAID-United States Agency for International Development / World Vision	2/2	\$17,308	\$25,000
Collaborative Research: Opening the Pathway to Technician Careers: A Conference for Biology Teachers of Deaf Students	National Science Foundation	1/2	\$7,579	\$184,844
DCL: NSF INCLUDES EAGER: A Study of Online Scientific and Scholarly Communities for Broadening Participation in STEM	National Science Foundation	1/2	\$87,431	\$299,347
AccessATE: Making Community College Technical Education More Accessible for Everyone	National Science Foundation	1/2	\$3,536	\$139,475
Languages of Interactive Flexible Technology: World Around You (LIFT-WAY)-Phase 3	USAID-United States Agency for International Development / World Vision	1/1	\$138,122	\$150,000
Rochester Bridges to the Doctorate for Deaf and Hard-of-Hearing Students	National Institutes of Health / University of Rochester	1/5	\$227,119	\$1,161,992
DeafTEC Resource Center	National Science Foundation	1/3	\$15,292	\$1,649,928
MITRE FCC Telecommunications Relay Services (TRS) - Tasks 1-6	Center for Medicare & Medicaid Services / MITRE Corporation	1/2	\$87,510	\$975,159
Impact of Deafness and Language Experience on Visual Development	National Institutes of Health	1/2	\$37,713	\$133,189
Auditory Experience, Critical Periods and the Development of Categorical Perception in Cochlear Implant Users: A Preliminary Investigation	National Institutes of Health	2/2	\$3,111	\$23,616
Lost in Translation: Removing Barriers for Deaf Participation in STEM Fields	Gordon and Betty Moore Foundation	1/4	\$40,080	\$294,219
Total			\$3,437,385	\$16,623,169