



ANNIVERSARY

1968–2018

**2018 Annual Report**

# 2018 Annual Report



## Note of Explanation

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This Annual Report notes activities and accomplishments throughout Fiscal Year 2018 (October 1, 2017 – September 30, 2018), corresponding primarily to Academic Year 2017-2018. References to Fiscal Year 2019 correspond to characteristics and accomplishments as of fall semester Academic Year 2018-2019.

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

# NTID FY 2018 Annual Report Contents

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December 21, 2018

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..."

Fifty years ago, the vision of what NTID's first director D. Robert Frisina called "The Grand Experiment" came to life, with NTID welcoming its charter class of 70 students. Then, as now, NTID's mission was both clear and critical:

*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 2018 Annual Report looks back not just on the past year, but 50 years of excellence in achieving this mission. In FY 2018, 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 96 percent, with a five-year average of 94 percent. We know that NTID's more than 8,800 alumni are on average employed at higher rates and earn more over their lifetimes.

After 50 years, NTID continues to ensure the success of its deaf and hard-of-hearing graduates, enhance the culture of the RIT campus and exert its influence worldwide. Whether it be a Goldwater Scholar in 2018, Biochemistry major Nicole Pannullo, or the third deaf student to be RIT Student Government president, Bobby Moakley, NTID-supported students are thriving academically and making significant contributions to the RIT community. Whether it be hosting the first all-deaf cohort, including NTID students and students from across the country, of the NSF's Research Experience for Undergraduates or partnering with Microsoft on the use of Microsoft Translator in the classroom, NTID is developing and modeling inclusive and accessible strategies for teaching, conducting research and communicating. We are tremendously grateful for the support of the Department of Education these past 50 years and hope to earn support for the next 50 as we continue to transform the lives of deaf and hard-of-hearing people. As NTID has moved from "Grand Experiment" to "Grand Achievement," our success continues to rely on encouraging our *students* to experiment, engage and endeavor to improve the global community.

This report is also available in full to the general public at:

[www.ntid.rit.edu/media/annual-report](http://www.ntid.rit.edu/media/annual-report)

With warm regards,



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



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



## Cover Photo

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The National Technical Institute for the Deaf enrolled its first class of students in 1968 on the then new Henrietta campus of Rochester Institute of Technology. This photo features NTID's iconic Lyndon Baines Johnson Hall, so named for the President who signed the National Technical Institute for the Deaf Act in 1965. The cover also features NTID's 50<sup>th</sup> anniversary logo, created by RIT/NTID graphic design alumna Beth Karbowski Noworatzky '07.

## Mission Statement

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*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.*

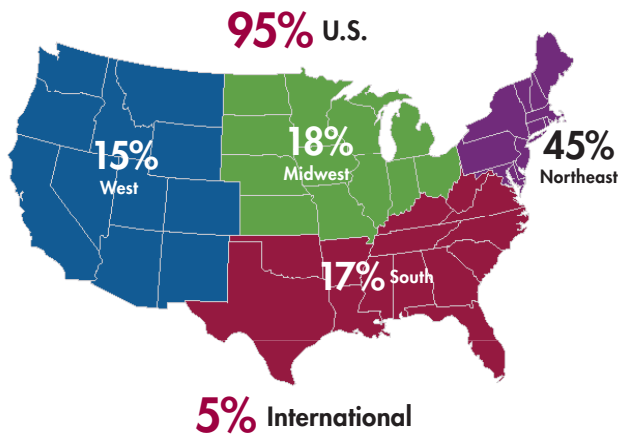
# NTID by the Numbers

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.

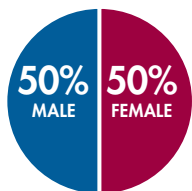
## Student Enrollment

**1,182** TOTAL ENROLLMENT

BREAKDOWN BY GEOGRAPHIC REGION:



BREAKDOWN BY GENDER:



**MORE THAN 8,800** ALUMNI

## Employment/Earnings After College

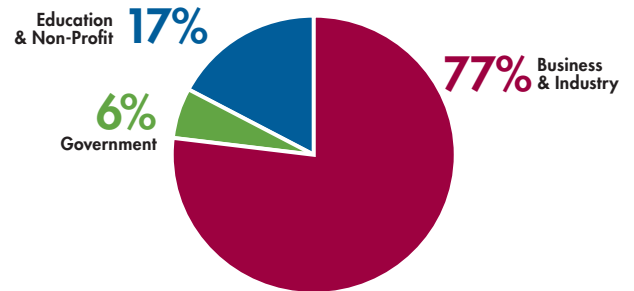
**270** STUDENTS COMPLETED A CO-OP LAST YEAR

New RIT/NTID grads are ready to succeed



**96%** of students who sought jobs after graduation found one within a year

New RIT/NTID alumni thrive in all economic sectors



Employers include:

Bausch & Lomb, General Electric, JP Morgan Chase, National Security Agency, Texas Instruments

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\*.

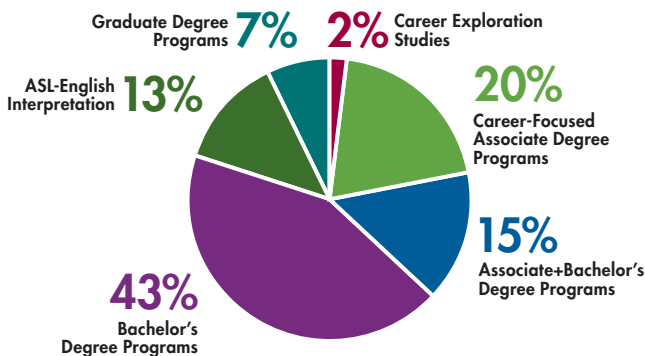
RIT/NTID bachelor's degree graduates earn

**178%**

more than deaf and hard-of-hearing graduates from other postsecondary institutions\*.

\*median salary at age 50 compared to average

## Academics



## Student Access Services

Hours provided

	In Classroom	Outside Classroom
Interpreting	<b>96,463</b>	<b>39,623</b>
Captioning	<b>22,532</b>	<b>1,068</b>
Notetaking	<b>52,945</b>	

## Annual Highlights

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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 2017 is 96 percent. The average employment rate over the past five years is 94 percent.
- 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 percent.
- NTID's first-year persistence rates and graduation rates for both sub-baccalaureate students and baccalaureate students were higher than the national rates for two-year and four-year colleges.
- In December 2017, RIT received a \$50 million-dollar donation, the largest made to the university and one of the largest ever in the region, from RIT alumnus, Austin McChord '09. The gift will be used to foster creativity and entrepreneurship at RIT, including construction of a new Maker Library & Innovative Learning Complex of the Future, and to advance RIT's cybersecurity and artificial intelligence capabilities. These projects will only enhance the STEM and innovation-focused education deaf and hard-of-hearing students can receive at RIT.
- In January 2018, NTID received a grant from the Council on Library and Information Resources to digitize and make publicly accessible more than 60 videotapes in the NTID Deaf Studies Archive that document the ASL poetry and literature movement in Rochester from 1970 through 2011.
- In April 2018, Nicole Pannullo, a Biochemistry major from East Patchogue, New York, was one of 211 students nationwide to be named a 2018 Goldwater Scholar. The distinction is the highest undergraduate award of its kind for the fields of natural sciences, math and engineering. She is the first deaf RIT student to earn this award.
- In April 2018, Microsoft announced a partnership with NTID focused on piloting the use of Microsoft Translator language technology. The translator uses intelligent technology to transcribe a presenter's spoken words and display them in real time. The technology has been used in 10 RIT classes with NTID-supported students.
- In spring 2018, the RIT student body elected its third deaf student, Bobby Moakley, to become president of RIT Student Government. Bobby first became involved in student government as the senator representing NTID-supported students pursuing degrees in other colleges of RIT.
- In May 2018, RIT was one of only 36 universities nationally recognized by the U.S. Department of State as a Gilman Program Top Producing Institution, noting RIT's success in providing study-abroad opportunities for students with disabilities.
- Tom Wheeler, former FCC Chairman, and Tom Harkin, former U.S. Senator and sponsor of the Americans with Disabilities Act, toured NTID in May 2018 and October 2018, respectively.
- In 2018, RIT established its first on-campus voting site at the Gene Polisseni Center. Eligible RIT students were able to vote in the June and September primaries, as well as the November mid-term elections. NTID's Department of Access Services provided sign language interpreting for all polling hours.
- NTID began a year-long celebration of its 50<sup>th</sup> anniversary, kicking it off with the 50<sup>th</sup> Anniversary Reunion, which brought more than 3,500 alumni and visitors to campus in June 2018.
- NTID's Dyer Arts Center celebrated 50 years of NTID alumni artists with the exhibit, *50 Artists 50 Years*, running from June through October 2018.
- NTID Outreach established a new program, Discovering Agriculture through STEM, in June 2018. Twenty-four deaf and hard-of-hearing high school students from California attended the program at Fresno State University.
- In the summer of 2018, NTID became home to the first all-deaf cohort of the National Science Foundation's Research Experience for Undergraduates, bringing deaf and hard-of-hearing students from across the country together to do research.

## Executive Summary

<b>New Registrations</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
Fall Admissions (Deaf and Hard-of-Hearing Students Only)*					
Applications	796	860	771	638	533
Acceptances	464	488	432	435	396
Registrations	324	340	305	289	259
Other New Registrations					
AAS/BS ASL-English Interpretation	40	40	46	42	50
MS in Secondary Education	16	15	17	5	7
<b>Total New Registrations</b>	<b>380</b>	<b>395</b>	<b>368</b>	<b>336</b>	<b>316</b>
<b>Enrollment (Deaf and Hard-of-Hearing Students Only)</b>					
Career Exploration Studies (CES)	68	59	44	38	25
Sub-Baccalaureate Programs					
Career-Focused Programs	354	333	316	265	242
Associate+Bachelor's/Pre-Baccalaureate	202	232	211	202	182
<b>Subtotal CES and Sub-Baccalaureate</b>	<b>624</b>	<b>624</b>	<b>571</b>	<b>505</b>	<b>449</b>
Baccalaureate Programs at RIT	529	543	507	520	506
Graduate Programs at RIT	44	53	44	56	50
<b>Subtotal Baccalaureate and Graduate at RIT</b>	<b>573</b>	<b>596</b>	<b>551</b>	<b>576</b>	<b>556</b>
<b>Subtotal Deaf and Hard-of-Hearing Students Only</b>	<b>1,197</b>	<b>1,220</b>	<b>1,122</b>	<b>1,081</b>	<b>1,005</b>
<b>Other Enrollments</b>					
ASL-English Interpretation	147	146	151	140	148
MS in Health Care Interpretation	N/A	N/A	N/A	8	12
MS in Secondary Education**	48	44	42	30	17
<b>Subtotal Other Enrollments</b>	<b>195</b>	<b>190</b>	<b>193</b>	<b>178</b>	<b>177</b>
<b>Total Enrollment</b>	<b>1,432</b>	<b>1,387</b>	<b>1,413</b>	<b>1,300</b>	<b>1,182</b>

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

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

## Executive Summary (continued)

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Withdrawn (All Students)	13%	16%	16%	17%	17%
<b>Graduates</b>					
Total Degrees Granted	344	285	340	301	302
<i>Degree Level</i>					
Certificate	0	0	2	3	3
Associate (AOS)	46	38	33	37	41
Associate (AS/AAS)	82	62	78	85	72
Associate (Interpreting)	1	0	1	0	0
Bachelor's (Interpreting)	29	29	40	24	29
Bachelor's	144	116	143	123	120
Master's	8	19	23	18	24
Master's (MSSE)	34	21	20	11	13
<b>Post-Graduation Employment</b>					
Post-Graduation Employment	136	126	122	130	N/A*
Post-Graduation Employment Rate	94%	94%	94%	96%	N/A*
<i>By Sector of the Economy</i>					
Business and Industry	61%	75%	70%	77%	N/A*
Education/Non-Profit	28%	16%	20%	17%	N/A*
Government	11%	9%	10%	6%	N/A*
Cooperative Work Experiences	238	271	271	313	270
<b>Access/Support Services</b>					
Notetaking Hours	58,246	60,195	61,924	62,015	52,945
Tutoring Hours	15,661	14,212	14,438	12,881	11,405
Interpreting Hours	132,055	140,230	149,046	152,630	136,036
Real-Time Captioning Hours	21,601	22,211	24,335	25,952	23,600

\* Post-graduation employment numbers reflect status as of one year following graduation; employment numbers for September 1, 2017 through August 31, 2018 graduates will be reported next year.

## Executive Summary (continued)

Outreach (Number of External Participants)	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Digital Arts, Film and Animation	46	50	28	20	34
Discovering Agriculture through STEM	N/A	N/A	N/A	N/A	23
Droids and Drones	N/A	N/A	18	27	30
Explore Your Future	100	213	199	203	179
Health Care Careers Exploration Camp	N/A	10	14	23	20
Math Competition	79	93	119	144	149
NTID Center on Employment	417	568	754	498	290
Project Fast Forward	78	113	56	168	118
SpiRIT Writing Contest	91	64	31	33	26
Steps to Success	12	13	8	18	17
TechGirlz/TechBoyz Camp	34	45	47	60	49
<b>Financial Aid (Domestic Students)</b>					
Grant-in-Aid	\$1,251,745	\$1,459,983	\$1,035,396	\$1,410,243	\$1,344,300
Vocational Rehabilitation	10,531,963	10,821,731	10,504,372	9,998,521	9,780,492
Pell Grants	2,751,344	2,662,380	2,611,999	2,399,441	2,619,065
State Grants	522,612	458,527	453,851	435,230	488,173
Federal Loans	5,163,359	4,775,031	3,915,733	3,916,779	3,566,895
Scholarships and Other	3,026,247	3,117,140	4,221,658	4,233,220	4,797,273
<b>Total Financial Aid</b>	<b>\$23,247,270</b>	<b>\$23,294,792</b>	<b>\$22,743,009</b>	<b>\$22,384,434</b>	<b>\$22,596,198</b>
<b>Average Aid per Domestic Student (Excluding Loans)*</b>	<b>\$13,029</b>	<b>\$13,790</b>	<b>\$13,783</b>	<b>\$14,715</b>	<b>\$15,688</b>

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

## Executive Summary (continued)

Domestic Student Rates*	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Tuition	\$14,040	\$14,570	\$15,140	\$15,730	\$16,518
Room	6,758	6,954	7,162	7,376	7,596
Board	4,810	4,964	5,338	5,290	5,662
Fees	512	528	544	562	584
<b>Total</b>	<b>\$26,120</b>	<b>\$27,016</b>	<b>\$28,184</b>	<b>\$28,958</b>	<b>\$30,360</b>

### Fundraising Activity

Cash to Endowment and Restricted Funds	\$1,348,092	\$450,505	\$683,466	\$872,054	**
Equipment and Software	\$69,697	\$43,738	\$20,530	\$40,717	**
Federal Funds Matched***	\$309,000	\$387,666	\$116,373	\$86,322	**



*Gabriella Ertle, of Aliso Viejo, California, celebrates with her family the completion of her associate degree in Business. This fall, Gabriella is pursuing her BS in Management Information Systems in RIT's Saunders College of Business.*

\* 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.

The Education of the  
Deaf Act



In September 1968, NTID began 50 years of educating deaf and hard-of-hearing students with the enrollment of its charter class of 44 men and 26 women.

National Technical Institute for the Deaf

## 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.

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### 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)

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- (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.



*NTID students had the opportunity to chat with retired Senator Tom Harkin (bottom row, third from left) and his former staff member, Andy Imparato (bottom row, second from left), now executive director of the Association of University Centers on Disabilities, during a visit to NTID. Senator Harkin, whose older brother was deaf, was instrumental in the passing of the Americans with Disabilities Act of 1990.*



## Performance Indicators

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



Twin sisters, Jo, left, and Jane Bempong, of Irving, Texas, are both members of the 2018 class of graduates. Jo completed a BS and MS in Computer Engineering and Jane completed a BS in Psychology. Jo accepted a position as a software engineer at Texas Instruments, and Jane is considering graduate school.

## 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.

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### 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
2010	1,474
2011	1,521
2012	1,547
2013	1,529
2014	1,432
2015	1,387
2016	1,413
2017	1,300
2018	1,262
2019	1,182

## 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
2010	1,045	1,237	Target Surpassed
2011	1,045	1,263	Target Surpassed
2012	1,200	1,281	Target Surpassed
2013	1,200	1,269	Target Surpassed
2014	1,200	1,195	Target Not Met
2015	1,200	1,153	Target Not Met
2016	1,200	1,167	Made Progress From Prior Year
2017	1,200	1,078	Target Not Met
2018	1,200	1,025	Target Not Met
2019	1,045	955	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. In October 2017, 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 RIT and in baccalaureate programs at NTID.

Fiscal Year	Sub-Baccalaureate	Baccalaureate	Total
2010	759	478	1,237
2011	768	495	1,263
2012	766	515	1,281
2013	718	551	1,269
2014	669	526	1,195
2015	624	529	1,153
2016	624	543	1,167
2017	571	507	1,078
2018	505	520	1,025
2019	449	506	955

As seen in the above table, NTID experienced a decrease in the undergraduate enrollment of students who are deaf and hard of hearing from 1,025 students during the 2017-2018 (FY 2018) academic year to 955 students in the 2018-2019 (FY 2019) 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
2010	100	138	Target Surpassed
2011	120	147	Target Surpassed
2012	140	160	Target Surpassed
2013	140	167	Target Surpassed
2014	140	147	Target Surpassed
2015	160	146	Target Not Met
2016	160	151	Made Progress From Prior Year
2017	140	140	Target Met
2018	140	147	Target Surpassed
2019	140	148	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.

### 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
2010	105	99	Target Not Met
2011	105	111	Target Surpassed
2012	95	106	Target Surpassed
2013	95	93	Target Not Met
2014	95	90	Target Not Met
2015	95	88	Target Not Met
2016	95	95	Target Met
2017	95	82	Target Not Met
2018	95	90	Made Progress From Prior Year
2019	95	79	Target Not Met

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

## Performance Indicators (continued)

**Frequency of Data Collection:** Annual

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

**Target Context:** In the FY 2008 Performance Plan, the target for the number of students enrolled in NTID's MSSE program, as well as students pursuing graduate degrees in the other colleges of RIT, was reduced from 120 students to 105 students. The target was further reduced from 105 students to 95 students for FY 2012 and subsequent years. In FY 2019, NTID had a total of 17 students in the MSSE program and 50 deaf and hard-of-hearing students in other RIT graduate programs. FY 2019 marks the third year where students enrolled in the MSHCI program were included, with an enrollment of 12 students. Total enrollment for this measure currently is 79.

### 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 2018 data will be reported in April 2019.

**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
2008	Set a Baseline	75.5	Target Not In Place
2009	Maintain a Baseline	71.9	Target Not In Place
2010	70	68.8	Target Not Met
2011	70	69.8	Made Progress From Prior Year
2012	70	66.8	Target Not Met
2013	70	68.0	Made Progress From Prior Year
2014	70	73.5	Target Surpassed
2015	70	75.1	Target Surpassed
2016	70	69.5	Target Not Met
2017	70	71.3	Target Surpassed

**Source:** Rochester Institute of Technology, Registrar Office records

**Frequency of Data Collection:** Annual

**Data Quality:** In April 2018, NTID reported to the Department the FY 2017 persistence rate of its sub-baccalaureate students, who returned from the 2016-2017 academic year to their second year in the 2017-2018 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 71.3 percent. Currently, there are no sub-baccalaureate students enrolled in the ASL-English Interpretation program.

## Performance Indicators (continued)

NTID will report to the Department the FY 2018 persistence rate in April 2019, with a sub-set of disaggregated data on the persistence rates of sub-baccalaureate students who are deaf and ASL-English Interpretation students, if applicable. Prior to FY 2008, this measure did not include ASL-English Interpretation students.

**Target Context:** The target for the persistence rate of NTID's sub-baccalaureate students is 70 percent. In comparison, IPEDS data indicate that two-year public and two-year non-profit colleges have an average persistence rate of 61 percent.

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

**Measure 2.2 of 4: The percentage of first-time, full-time, degree-seeking baccalaureate students who were in their first year of postsecondary enrollment in the previous year and are enrolled in the current year (desired direction: increase)**

Fiscal Year	Target	Percentage	Status
2008	Set a Baseline	85.9	Target Not In Place
2009	Maintain a Baseline	88.0	Target Not In Place
2010	85	93.5	Target Surpassed
2011	85	88.2	Target Surpassed
2012	85	85.9	Target Surpassed
2013	85	90.8	Target Surpassed
2014	85	90.0	Target Surpassed
2015	85	93.0	Target Surpassed
2016	86	83.0	Target Not Met
2017	87	88.8	Target Surpassed

**Source:** Rochester Institute of Technology, Registrar Office records

**Data Quality:** In April 2018, NTID reported to the Department the FY 2017 persistence rate of its baccalaureate students, including ASL-English Interpretation students, who returned from the 2016-2017 academic year to their second year in the 2017-2018 academic year, along with a sub-set of disaggregated data on the persistence rates of baccalaureate students who are deaf and ASL-English Interpretation students. Prior to FY 2008, this measure did not include ASL-English Interpretation students.

## Performance Indicators (continued)

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

	<u>All students</u>	<u>Deaf students</u>	<u>ASL-English Interpretation students</u>
<b>FY 2008</b>	85.9%	85.7%	87.5%
<b>FY 2009</b>	88.0%	87.7%	89.5%
<b>FY 2010</b>	93.5%	92.5%	95.8%
<b>FY 2011</b>	88.2%	89.8%	84.2%
<b>FY 2012</b>	85.9%	82.6%	94.4%
<b>FY 2013</b>	90.8%	89.3%	95.7%
<b>FY 2014</b>	90.0%	90.6%	87.5%
<b>FY 2015</b>	93.0%	90.8%	100.0%
<b>FY 2016</b>	83.0%	81.3%	88.0%
<b>FY 2017</b>	88.8%	85.0%	100.0%

NTID will report to the Department the FY 2018 persistence rate of its baccalaureate students in April 2019, with a sub-set of disaggregated data on the persistence rates of baccalaureate students who are deaf and ASL-English Interpretation students.

**Target Context:** The target for the persistence rate of NTID's baccalaureate students is 87 percent. In comparison, IPEDS data indicate that four-year public and private colleges have an average persistence rate of 73 percent and 81 percent, respectively.

**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)**

<b>Fiscal Year</b>	<b>Target</b>	<b>Percentage</b>	<b>Status</b>
2008	Set a Baseline	26.9	Target Not In Place
2009	Maintain a Baseline	37.4	Target Not In Place
2010	26	33.7	Target Surpassed
2011	26	46.0	Target Surpassed
2012	27	40.5	Target Surpassed
2013	35	42.1	Target Surpassed
2014	36	37.3	Target Surpassed
2015	37	39.2	Target Surpassed
2016	38	38.8	Target Surpassed
2017	39	36.9	Target Not Met

**Source:** Rochester Institute of Technology, Registrar Office records

**Frequency of Data Collection:** Annual

## Performance Indicators (continued)

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**Data Quality:** In April 2018, NTID reported to the Department the FY 2017 percentage of its sub-baccalaureate students (those who were initially enrolled in the 2011-2012 academic year), including ASL-English Interpretation students, who graduated within 150 percent of the program-based length of time, along with a sub-set of disaggregated data on the graduation rates of sub-baccalaureate students who are deaf and ASL-English Interpretation students. Prior to FY 2008, this measure did not include ASL-English Interpretation students.

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

	<u>All students</u>	<u>Deaf students</u>	<u>ASL-English Interpretation students</u>
<b>FY 2008</b>	26.9%	29.3%	0.0%
<b>FY 2009</b>	37.4%	37.8%	33.3%
<b>FY 2010</b>	33.5%	29.6%	73.3%
<b>FY 2011</b>	46.0%	41.3%	81.0%
<b>FY 2012</b>	40.5%	37.3%	84.6%
<b>FY 2013</b>	41.8%	41.1%	100.0%
<b>FY 2014</b>	37.3%	37.3%	N/A
<b>FY 2015</b>	39.2%	39.2%	N/A
<b>FY 2016</b>	39.8%	39.8%	N/A
<b>FY 2017</b>	36.9%	36.9%	N/A

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

NTID will report to the Department the FY 2018 graduation rate of its sub-baccalaureate students in April 2019, 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 39 percent. An IPEDS analysis of public and private non-profit two-year institutions indicated an average graduation rate of 31 percent for full-time, first-time degree-seeking students within 150 percent of program-based length of time. Based on the comparison with IPEDS data, the target has increased from 35 percent in 2013 to 39 percent in 2017, at an increase of 1 percent per year.

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

## Performance Indicators (continued)

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

Fiscal Year	Target	Percentage	Status
2008	Set a Baseline	60.5	Target Not In Place
2009	Maintain a Baseline	64.9	Target Not In Place
2010	60	55.6	Target Not Met
2011	60	65.9	Target Surpassed
2012	61	62.2	Target Surpassed
2013	62	71.9	Target Surpassed
2014	63	69.5	Target Surpassed
2015	64	76.2	Target Surpassed
2016	65	74.5	Target Surpassed
2017	65	65.6	Target Surpassed

**Source:** Rochester Institute of Technology, Registrar Office records

**Data Quality:** In April 2018, NTID reported to the Department the FY 2017 percentage of its baccalaureate students (those who were initially enrolled in the 2011-2012 academic year), including ASL-English Interpretation students, who graduated within 150 percent of the program-based length of time or within six years, along with a sub-set of disaggregated data on the graduation rates of baccalaureate students who are deaf and ASL-English Interpretation students. Prior to FY 2008, this measure did not include ASL-English Interpretation students.

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

	<u>All students</u>	<u>Deaf students</u>	<u>ASL-English Interpretation students</u>
<b>FY 2013</b>	71.9%	73.2%	62.5%
<b>FY 2014</b>	69.5%	67.1%	78.9%
<b>FY 2015</b>	76.2%	69.2%	91.7%
<b>FY 2016</b>	74.5%	73.5%	84.2%
<b>FY 2017</b>	65.6%	56.5%	88.9%

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

NTID will report to the Department the FY 2018 graduation rate of its baccalaureate students in April 2019, with a sub-set of disaggregated data on the graduation rates of baccalaureate students who are deaf and ASL-English Interpretation students.

**Target Context:** The target for the graduation rate of NTID's baccalaureate students in 2017 is 65 percent. An IPEDS analysis of institutions of higher education show that four-year public colleges have an average graduation rate of 45 percent and that four-year private colleges have an average graduation rate of 53 percent. Based on the comparison with IPEDS data, the target has increased from 60 percent in 2011 to 65 percent in 2017.

## Performance Indicators (continued)

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

NTID reports the employment rate for deaf and hard-of-hearing sub-baccalaureate and baccalaureate graduates one year after graduation, based on availability of valid data. In 2017, a total of 256 deaf and hard-of-hearing students graduated from NTID. Valid data existed one year later on 244 graduates. Of these 244 graduates, 130 students were employed (53 percent), 101 students were in higher education or training (42 percent) and 13 students were not employed or in higher education or training (5 percent). Of the 13 students not employed or in higher education or training, five were actively looking for work.

Category of Graduate	Count
Employed	130
Unemployed (Seeking Employment)	5
Not Seeking Employment	8
Education (Within RIT)	79
Education (Outside RIT)	22
Unknown	12
Total	256

## 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
2008	Set a Baseline	51	Target Not In Place
2009	Maintain a Baseline	47	Target Not In Place
2010	57	42	Target Not Met
2011	57	45	Made Progress From Prior Year
2012	50	46	Made Progress From Prior Year
2013	50	58	Target Surpassed
2014	50	55	Target Surpassed
2015	50	58	Target Surpassed
2016	50	49	Target Not Met
2017	50	53	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 percent. In FY 2010, the Department proposed that the target for this measure in FY 2010 and FY 2011 be equal to this average. The target has been revised downward by the Department to 50 percent for FY 2012 and subsequent years to be more consistent with the data submitted by NTID for FY 2009, 2010 and 2011. In FY 2012, it was also determined that the target percentages across all three categories (Measures 3.1, 3.2 and 3.3) would equal 100 percent of the alumni being tracked by NTID.

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

Graduation Year	Percentage
2007	95
2008	90
2009	90
2010	90
2011	91
2012	93
2013	94
2014	94
2015	94
2016	94
2017	96



## 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
2008	Set a Baseline	39	Target Not In Place
2009	Maintain a Baseline	40	Target Not In Place
2010	35	44	Target Surpassed
2011	35	44	Target Surpassed
2012	45	46	Target Surpassed
2013	45	32	Target Not Met
2014	45	35	Made Progress From Prior Year
2015	45	31	Target Not Met
2016	45	42	Made Progress From Prior Year
2017	45	42	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 percent. In FY 2010, the Department proposed that the target for this measure in FY 2010 and FY 2011 be equal to this average. The target has been revised upward by the Department to 45 percent for FY 2012 and subsequent years to be more consistent with the data submitted by NTID for FY 2009, 2010 and 2011. In FY 2012, it was also determined that the target percentages across all three categories (Measures 3.1, 3.2 and 3.3) would equal 100 percent of the alumni being tracked by NTID.

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

## 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)**

Fiscal Year	Target	Rate	Status
2008	Set a Baseline	10	Target Not In Place
2009	Maintain a Baseline	13	Target Not In Place
2010	8	14	Target Not Met
2011	8	11	Made Progress From Prior Year
2012	5	8	Made Progress From Prior Year
2013	5	10	Target Not Met
2014	5	10	Target Not Met
2015	5	11	Target Not Met
2016	5	9	Made Progress From Prior Year
2017	5	5	Target 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 percent. In FY 2010, the Department proposed that the target for this measure in FY 2010 and subsequent years be equal to this average. The target was revised downward by the Department to 5 percent for FY 2012 and subsequent years to reflect changes made in the two previous indicators on the percentage of students employed and/or in advanced education or training during their first year after graduation and each alumnus being counted only once. This allows the percentage across all three categories (Measures 3.1, 3.2 and 3.3) to equal 100 percent of the alumni being tracked by NTID.

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

## 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
2007	Set a Baseline	210,100	Target Not In Place
2008	Maintain a Baseline	188,600	Target Not In Place
2009	Maintain a Baseline	196,300	Target Not In Place
2010	196,898	187,400	Target Surpassed
2011	201,230	205,900	Target Not Met
2012	205,657	172,000	Target Surpassed
2013	209,564	146,600	Target Surpassed
2014	213,755	185,200	Target Surpassed
2015	218,244	226,200	Target Not Met
2016	222,827	191,200	Target Surpassed
2017	222,827	221,200	Target Surpassed
2018	222,827	223,600	Target Not Met

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

**Frequency of Data Collection:** Annual

**Data Quality:** The FY 2018 data on the federal cost per graduate, as reported by NTID, is an average of the cost per graduate from FY 2013 to FY 2018. 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
2007	Set a Baseline	250,300	Target Not In Place
2008	Maintain a Baseline	226,700	Target Not In Place
2009	Maintain a Baseline	236,400	Target Not In Place
2010	236,675	223,900	Target Surpassed
2011	241,882	246,400	Target Not Met
2012	247,203	206,100	Target Surpassed
2013	251,800	176,900	Target Surpassed
2014	256,836	224,000	Target Surpassed
2015	262,230	277,100	Target Not Met
2016	267,737	237,300	Target Surpassed
2017	267,737	272,800	Target Not Met
2018	267,737	276,400	Target Not Met

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

**Frequency of Data Collection:** Annual

**Data Quality:** The FY 2018 data on the total educational cost per graduate, as reported by NTID, is an average of the cost per graduate from FY 2013 to FY 2018. 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.



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

## ***Strategic Decisions 2020***

FY 2018 marked the eighth year of NTID's implementation of *Strategic Decisions 2020*, the strategic plan for the next two years.

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Implementation of *Strategic Decisions 2020 (SD 2020)* continued to follow the 2015 mid-term review committee's revised recommendations and new initiatives, with little change.

RIT President David Munson and the RIT Board of Trustees are in the process of finalizing RIT's 2025 strategic plan. Upon the release of that plan, NTID will develop its own strategic plan through 2025 that will align with the goals and objectives set out by RIT.

# Admissions and Enrollment

NTID had 316 total new students for FY 2019 (fall 2018).



NTID admissions and counseling staff get ready to roar at Tiger Walk, the opening march before RIT's Convocation for New Students and Families.



## 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 453 recruitment visits during the FY 2018 admissions cycle. Visits this year included 390 mainstream schools, 39 schools for the deaf and 12 college visits. This included 64 visits in New York, 80 in the Northeast, 121 in the Midwest, 93 in the Southeast and 95 on the West Coast.

The number of new students entering NTID in fall 2018 was 316. The total included 248 deaf and hard-of-hearing freshmen and transfers, 14 deaf and hard-of-hearing graduate students (three in the Master of Science program in Secondary Education of Students who are Deaf or Hard of Hearing [MSSE] and 11 in other RIT colleges) and 54 hearing students (50 in the ASL-English Interpretation program and four in the MSSE program).

Total enrollment was 1,182 compared to 1,262 for last year. The breakdown of the 1,182 students is as follows:

	Total
Undergraduate Programs	
Career Exploration Studies	25
Career-Focused Associate Programs	242
Associate+Bachelor's Programs and Pre-Baccalaureate	182
Baccalaureate (ASL-English Interpretation)	148
Baccalaureate/Master's Programs in Other RIT Colleges	506
<b>Subtotal NTID Undergraduate Programs</b>	<b>1,103</b>
Graduate Programs at RIT	50
MSSE Program	17
MS Health Care Interpretation	12
<b>Total Enrolled Students</b>	<b>1,182</b>

NTID's student population remains strong in both ethnic and geographic diversity. Minority students represent 42 percent of this year's fall 2018 entering class, compared to 38 percent of the total student body. Minority students have represented approximately 35 to 40 percent of the entering student population over the past five years. Additionally, minority students have represented approximately 33 to 40 percent of the entire student population over the past five years (for more information see the Diversity and Inclusion section). Entering domestic students come from all over the country, with 15 percent from the West, 17 percent from the South, 18 percent from the Midwest and 45 percent from the Northeast.

In addition, NTID enrolled 16 new international students. The total number of international students is 54, or 4.6 percent of the entire student population. International students have represented approximately 3 or 4 percent of the entire student population in the past five years.

**In summary, NTID registered 316 new students and is serving a total of 1,182 students.**

## Comparative Admissions Data

Applications, excluding those to the ASL-English Interpretation or MSSE programs, decreased from last year.\* The acceptance rate was 74.3 percent of applications. Registrations were 259, achieving a yield rate of 65.4 percent.

	Number of New Students				
	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019**
<b>Applicants</b>	796	860	771	638	533
% Increase or Decrease from Previous Year	-4.4%	+8.0%	-10.3%	-17.3%	
<b>Accepted Applicants</b>	464	488	432	435	396
% Increase or Decrease from Previous Year	-8.5%	+5.2%	-11.4%	+0.7%	
Acceptance Rate (Percent of Total Applicants)	58.3%	56.7%	56.0%	68.2%	74.3%
<b>Registrations</b>	324	340	305	289	259
Yield Rate (Registrations as a Percent of Accepted Applicants)	69.8%	69.7%	70.6%	66.4%	65.4%

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

\*\* 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 170 SVP registrants for summer 2018, and 168 continued on to register for fall semester 2018 (FY 2019).

	Number of Students*				
	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
SVP Students Accepted	295	317	307	253	259
SVP Students Registered at Start of Program	212	226	203	174	170
SVP Students Completing Program	212	225	203	172	168
SVP Students Registered in Academic Programs for Fall Term	212	223	200	172	168



*Students enjoy the ride during a perfect autumn evening at RIT's first Fall Fest.*

\* 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 (148), deaf, hard-of-hearing or hearing students enrolled in the Master of Science program

in Secondary Education (17), or students enrolled in the Master of Science in Health Care Interpretation (12). 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 99: Oct. 98-Sep. 99	1,155	6.45%	1,030	1.98%	-10.82%	976	1.67%	-5.24%	217	14.81%	255	5.81%
FY 00: Oct. 99-Sep. 00	1,107	-4.16%	1,040	0.97%	-6.05%	1009	3.38%	-2.98%	221	1.84%	256	0.39%
FY 01: Oct. 00-Sep. 01	1,113	0.54%	1,045	0.48%	-6.11%	1,017	0.79%	-2.68%	236	6.79%	242	-5.47%
FY 02: Oct. 01-Sep. 02	1,151	3.41%	1,056	1.05%	-8.25%	1,007	-0.98%	-4.64%	224	-5.08%	234	-3.31%
FY 03: Oct. 02-Sep. 03	1,122	-2.52%	1,027	-2.75%	-8.47%	994	-1.29%	-3.21%	228	1.79%	195	-16.67%
FY 04: Oct. 03-Sep. 04	1,109	-1.16%	1,047	1.95%	-5.59%	1,005	1.11%	-4.01%	249	9.21%	168	-13.85%
FY 05: Oct. 04-Sep. 05	1,097	-1.08%	1,029	-1.72%	-6.20%	962	-4.28%	-6.51%	222	-10.84%	190	13.10%
FY 06: Oct. 05-Sep. 06	1,066	-2.83%	988	-3.98%	-7.32%	926	-3.74%	-6.28%	263	18.47%	219	15.26%
FY 07: Oct. 06-Sep. 07	1,064	-0.19%	998	1.01%	-6.20%	963	4.00%	-3.51%	339	28.90%	254	15.98%
FY 08: Oct. 07-Sep. 08	1,154	8.46%	1,099	10.12%	-4.77%	1,040	8.00%	-5.37%	396	16.81%	295	16.14%
FY 09: Oct. 08-Sep. 09	1,260	9.19%	1,216	10.65%	-3.49%	1,155	11.06%	-5.02%	428	8.08%	265	-10.17%
FY 10: Oct. 09-Sep. 10	1,275	1.20%	1,166	-4.11%	-8.55%	1,170	1.90%	0.34%	411	-3.97%	269	1.51%
FY 11: Oct. 10-Sep. 11	1,303	2.20%	1,213	4.03%	-6.91%	1,211	3.50%	-0.16%	442	7.54%	269	0.00%
FY 12: Oct. 11-Sep. 12	1,323	1.53%	1,211	-0.16%	-8.47%	1,103	-8.92%	-8.92%	314	-28.96%	269	0.00%
FY 13: Oct. 12-Sep. 13	1,306	-1.28%	1,168	-3.55%	-10.57%	1,082	-1.90%	-7.36%	323	2.87%	268	-0.37%
FY 14: Oct. 13-Sep. 14	1,237	-5.28%	*	*	*	1,118	3.33%	-9.62%	259	-19.81%	212	-20.90%
FY 15: Oct. 14-Sep. 15	1,197	-3.23%	*	*	*	1,054	-5.72%	-11.95%	308	18.92%	226	6.60%
FY 16: Oct. 15-Sep. 16	1,220	1.92%	*	*	*	1,072	1.71%	-12.13%	270	-12.34%	203	-10.18%
FY 17: Oct. 16-Sep. 17	1,122	-8.03%	*	*	*	1,002	-6.53%	-10.70%	309	+14.44%	174	-14.20%
FY 18: Oct. 17-Sep. 18	1,081	-3.65%	*	*	*	944	-5.79%	-12.67%	271	-12.30%	170	-2.30%
FY 19: Oct. 18-Sep. 19	1,005	-7.03%	*	*	*							

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

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019		
					Percent	Number	
						Full-Time	Total
Career Exploration	100%	100%	100%	100%	100%	25	25
Career-Focused and Associate+Bachelor's Degrees	97%	98%	99%	94%	96%	399	414
Pre-Baccalaureate	100%	100%	100%	100%	100%	10	10
Baccalaureate and Graduate	94%	93%	91%	93%	95%	528	556
ASL-English Interpretation	95%	95%	91%	97%	97%	144	148
Master of Science in Health Care Interpretation	N/A	N/A	50%	33%	0%	0	12
Master of Science in Secondary Education (MSSE)*	77%	81%	93%	95%	100%	17	17
<b>Overall</b>	<b>95%</b>	<b>95%</b>	<b>94%</b>	<b>94%</b>	<b>95%</b>	<b>1,123</b>	<b>1,182</b>

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

## International Student Recruitment

This year, applications from international students numbered 50 and, of those, 19 were accepted and 15 registered. Canadian students always have represented the largest contingent of international students, but many of them continue to experience a lack of funding resources, which discourages a number of prospective students from applying or prevented many of those accepted from being able to attend NTID. Students from developing countries

also encounter financial difficulties, and NTID has limited scholarship dollars to assist them. However, per the Education of the Deaf Act, international students pay differing tuition rates, depending on whether they are from a developing or developed country. Until the situation in Canada changes, and until NTID obtains additional private scholarship funds, enrollment of international students will continue to be a challenge.

Applicant Continent of Origin	Number of Students*				
	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Africa	16	16	21	16	16
Asia	25	40	21	11	15
Australia/Oceania	0	0	0	1	0
Europe	1	2	1	2	4
North America	16	20	23	21	14
South America	2	2	0	0	1
Unknown	2	0	0	0	0
<b>Total Applicants</b>	<b>62</b>	<b>80</b>	<b>66</b>	<b>51</b>	<b>50</b>
<b>Accepted Applicants</b>	<b>14</b>	<b>21</b>	<b>18</b>	<b>13</b>	<b>19</b>
Acceptance Rate (Percent of Total Applicants)	23%	26%	27%	25%	38%
<b>New Registrations</b>	<b>10</b>	<b>13</b>	<b>11</b>	<b>11</b>	<b>15</b>
Yield Rate (New Registrations as a Percent of Accepted Applicants)	71%	62%	61%	85%	79%
<b>Returning International Students</b>	<b>30</b>	<b>31</b>	<b>28</b>	<b>32</b>	<b>34</b>
<b>Total Enrollment (Returning International Students plus New Registrations)</b>	<b>40</b>	<b>44</b>	<b>39</b>	<b>43</b>	<b>49</b>

\* 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 remains consistent with the previous year's data.\*

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
<b>Characteristics of Entering Students</b>					
Gender					
Male	58%	59%	54%	63%	56%
Female	42%	41%	46%	37%	44%
Mean Age at Entry					
	20	21	21	21	20
<b>Origin of Entering Students</b>					
United States by Region: 100% of U.S. students distributed across four regions					
West	15%	11%	16%	12%	17%
Midwest	23%	20%	23%	24%	13%
South	21%	22%	24%	22%	26%
Northeast	41%	47%	37%	42%	44%
<b>Distribution of United States and International Students</b>					
United States	96%	96%	97%	96%	94%
International	4%	4%	3%	4%	6%
<b>School Background of Entering Students</b>					
First Time in College	80%	72%	79%	76%	81%
Transfer from Other Colleges	13%	17%	13%	12%	12%
Previously Enrolled at RIT	4%	5%	4%	5%	3%
Graduate Students	3%	6%	4%	7%	4%

\* 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 2019*		
	International	U.S.	Overall
<b>Demographics</b>			
Gender			
Male	76%	55%	56%
Female	24%	45%	44%
<b>Entry Scores</b>			
ACT Composite Score	17.5	19.7	19.7
<b>Program Area</b>			
Career Exploration	5%	2%	3%
Career-Focused Associate Degrees	40%	25%	25%
Associate+Bachelor's Degrees	21%	19%	19%
Other Colleges of RIT Baccalaureate/Master's	34%	54%	53%
<b>FY 2019 Status of Students Enrolled FY 2018</b>			
Still Registered	77%	62%	63%
Withdrawn	7%	18%	17%
Graduated	16%	20%	20%

*Ping Liu, an Applied Computer Technology major, received the RIT Outstanding Service Award for International Students in April 2018. Ping arrived at RIT with little knowledge of English or ASL and has grown to be an academic star and student leader. She hopes to earn her master's degree in human-centered computing and teach in China one day.*



\* 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.

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American College Test (ACT)*	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
ACT English	14.7	16.8	17.1	16.3	15.6
ACT Reading	17.5	19.7	20.1	18.8	18.9
ACT Mathematics	18.1	19.5	19.6	19.2	18.6
ACT Science Reasoning	18.5	20.5	20.6	19.8	19.5
ACT Composite	18.1	19.6	19.7	19.2	19.6

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

## Academic Skills of Entering Students

The academic preparedness of most entering NTID-supported students is substantially below that of their hearing peers. NTID students directly admitted to one of RIT's other colleges have a mean ACT composite score of 26.5, and represent 30.7 percent of NTID's entering class of 2018. The mean ACT composite score for students entering associate+bachelor's programs is 18.6, and represents 30.7 percent of NTID's entering class. The mean ACT composite score for students entering career-focused associate programs is 15.4, and represents 29.0 percent of NTID's entering class. Lastly, the mean ACT composite score for students entering career-exploration

programs is 14.4, and represents 9.6 percent of NTID's entering class. The average ACT composite score of 19.7 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.

<b>Degree Level</b>	<b>Percentage of Deaf and Hard-of-Hearing Students by Degree Level</b>	<b>ACT Composite Mean</b>
Bachelor's in Other RIT Colleges	30.7%	26.5
<b>NTID</b>		
Associate+Bachelor's Programs	30.7%	18.6
Career-Focused Associate Programs	29.0%	15.4
Career Exploration	9.6%	14.4
<b>Total*</b>	<b>100%</b>	
<b>Average Score of All Entering Students*</b>		<b>19.6</b>

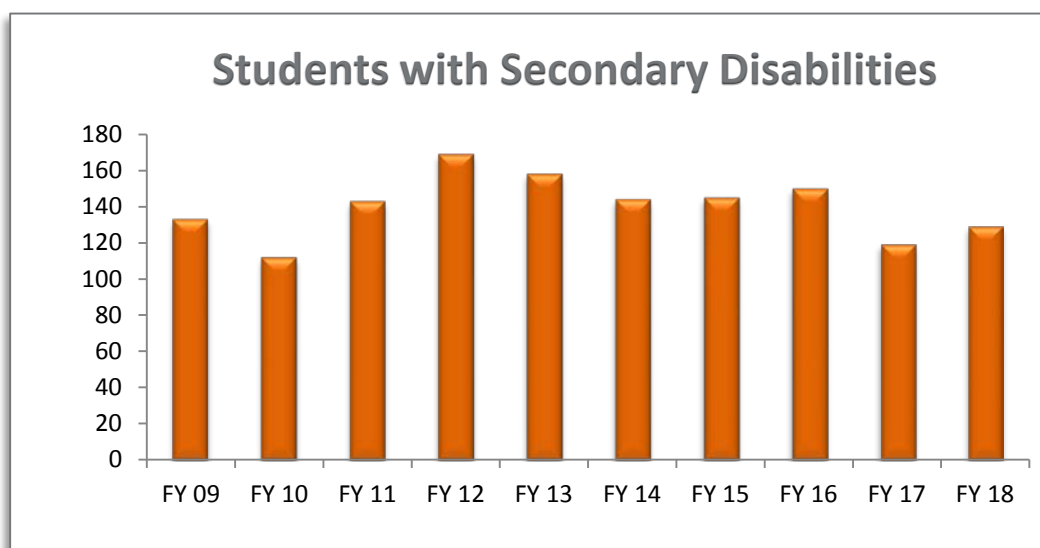
\* Includes only undergraduate students. Does not include students enrolled in the ASL-English Interpretation program.

## 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 2019 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
2009	1,212	133**	11%**
2010	1,237	112	9%
2011	1,263	143	11%
2012	1,281	169	13%
2013	1,269	158	12%
2014	1,195	144	12%
2015	1,153	145	13%
2016	1,167	150	13%
2017	1,078	119	11%
2018	1,025	129	13%



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

\*\* Secondary disability numbers for FY 2009 are estimates; these data are not available.

## Origin of Students

NTID students enrolled as of fall 2018 come from 46 states. A total of 26 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 2019
Alabama	5
Alaska	5
Arizona	9
Arkansas	0
California	116
Colorado	10
Connecticut	25
Delaware	3
District of Columbia	0
Florida	35
Georgia	14
Guam	0
Hawaii	3
Idaho	0
Illinois	60
Indiana	17
Iowa	2
Kansas	5
Kentucky	0
Louisiana	6
Maine	11
Maryland	43
Massachusetts	44
Michigan	22
Minnesota	18
Mississippi	1
Missouri	25
Montana	2
Nebraska	6
Nevada	1
New Hampshire	8
New Jersey	47
New Mexico	1
New York	351
North Carolina	14
North Dakota	1
Ohio	34
Oklahoma	7



## Academic Programs

In fall 2018, NTID had 449 students enrolled in associate-level programs, 148 students enrolled in its ASL-English Interpretation program, 17 students enrolled in its MS in Secondary Education program, 12 students enrolled in its MS in Health Care Interpretation program and 556 students enrolled in baccalaureate, master's and doctoral programs in other colleges at RIT.



Andrew Lytle, left, a 3D Digital Design major from Freeville, New York, joins NTID students Andrew Smith, center, a 3D Digital Design major from Chesterfield, Missouri, and Truc Nguyen, right, a Design & Imaging Technology major from Dong Nai, Vietnam, to demonstrate motion capture suits at RIT/NTID Motion Lab's Open House in March 2018.

## Academic Program Highlights

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During spring semester in Academic Year (AY) 2017-2018 RIT revised its process for academic program development and approval. RIT President David Munson requested that all colleges look ahead and create a seven-year academic master plan specifying potential program additions, expansions and discontinuances. In response, NTID faculty and academic chairs collectively prepared 20 brief proposals they wanted considered for NTID's Master Plan. This represented the creative, collaborative work of more than 30 faculty from nine different NTID departments. As a next step, NTID's president and academic administrative team met and grouped the proposals into potential phases of implementation, based in part on the desire to increase enrollment and job opportunities and to respond to changes at RIT. In May 2018, the first set of six proposals were sent to RIT's president and provost for consideration. Subsequent conversations took place in Fall AY 2018-2019. Input was sought from the NTID Advisory Group and proposals were discussed with each academic chair who submitted them. By October 2018, NTID had been given the approval to begin working on full new program proposals for the following six programs:

- Applied Internet of Things, possibly with focus on accessibility – BS
- Deaf Leadership and Community Development – BS
- Geospatial Technology – AAS
- Global Perspectives and Practices in Deaf Education – MS
- Interpreting and Translation – MS (possibly PhD)
- Sign Language & Cognition – PhD

The approval represented some exciting potential new directions for the NTID portfolio of degree programs. This is just the beginning of the process of adding new programs. There may be changes and modifications to the list as additional feedback is received and analysis is completed.

The Master Plan program proposals are consistent with the ongoing implementation of *Strategic Decisions 2020 (SD 2020)*, which called for exploration of new majors for career-focused associate and associate+bachelor's degrees, and exploration of new baccalaureate and master's degrees.

### **Strategic Decisions 2020 Enrollment Targets**

The enrollment targets set in *Strategic Decisions 2020* were: 35 percent career-focused programs, 20 percent associate+bachelor's degree programs and 45 percent baccalaureate/master's programs. At the beginning of AY 2018-2019 the enrollment percentages for deaf and hard-of-hearing undergraduates were 28 percent career-focused, 19 percent associate+bachelor's degree programs and 53 percent baccalaureate/master's programs. *Strategic Decisions 2020* has established the objective of developing a network of high schools and community colleges to create pathways to postsecondary education. The goal is to strengthen the preparation of deaf and hard-of-hearing students entering college and reduce the amount of developmental education that NTID must offer, resulting in higher enrollment at the baccalaureate level.

### **First Year Experience/Career Exploration Studies and Summer Vestibule Program**

First Year Experience (FYE) programming is designed to maximize first-year student success and persistence. Beginning with NTID's Summer Vestibule Program (SVP), FYE provides an array of courses and co-curricular programs as well as personal/academic counseling designed to help students successfully complete their first year of college. This past summer, 170 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 2017-2018, CES served 38 students in the fall and 28 students in the spring; 98 percent of CES students who applied to a major were accepted into a major within two semesters.

## Academic Program Highlights (continued)

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### Career-Focused Associate Degrees

NTID offers career-focused degrees in the areas of Business, Computing, Engineering Technologies, Laboratory Science Technology and Visual Communications. The programs within these clusters are designed to lead directly to employment in high-demand technical jobs. During AY 2017-2018 a new AAS program in Business Administration 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 Academic Year 2018-2019, there were 267 deaf and hard-of-hearing students enrolled in career-focused programs, including students enrolled in AOS and non-associate+bachelor's AAS degrees as well as students in Career Exploration Studies.

The Business Studies department continues to maintain steady enrollment in the AOS, AAS and AS Business programs. Twenty-two students completed cooperative work experiences in AY 2017-2018.

The Department of Engineering Studies' (DES) career-focused programs such as Computer-Aided Drafting Technology – Architecture (CADT A/E/C) and Computer-Integrated Machining Technology (CIMT) continue to evolve. Recently, the department underwent strategic planning changes and was reviewed by industrial advisory boards to increase program strengths.

As plans move forward, CADT is looking into sustainable architecture, building technologies and energy modeling for potential opportunities (i.e., concentration, track or standalone programs). CADT might also incorporate more energy simulation modeling that focuses on energy (power) consumption and life cycle costs of various energy sources such as air conditioning, water and lights. An independent study course (NCAD 298 Energy Simulation Modeling) was developed and will be offered for the second time.

CIMT obtained MasterCAM software, new machinery equipment that specializes in 5-axis machining to enhance course instruction. According to the department's strategic plans, CIMT faculty members are looking into more advanced manufacturing processes (i.e., 3D additive or 3D Prototype Printing in metallic) as part of the next phase of curriculum development, as well as advanced metrology including quality control, geometric dimension and tolerancing and inspections. CIMT faculty members are updating the current curriculum with more than 33 percent changes to strengthen the program, and also are exploring the development of an AAS degree for the CIMT program.

DES submitted a seven-year master plan at the request of RIT President David Munson's new approach to curriculum development. The proposed programs were: Welding Technology (certificate), Facilities Maintenance Technology (AOS), Geospatial Technology (AAS) and CAD Engineering Design Technology (BS).

In AY 2017-2018, the Department of Information and Computing Studies completed the second successful year of the Mobile Application Development program. With the start of the third year this fall (2018), the department will be teaching the last few new courses of the full mobile curriculum, and will witness the first class of graduates in December 2018. The National Science Foundation grant that was received to help develop and implement the mobile app development program proved extremely helpful as the department was able to hire industry experts to assist in the development and delivery of some of the courses.

The Applied Computer Technology AOS and AAS programs also are doing well. The department conducted an Industrial Advisory Board meeting in September 2018 to affirm the currency and direction of those programs. Feedback received indicate that the department is indeed on the right track and providing excellent skills to students preparing to enter the workforce.

During the 2017-2018 academic year, the Department of Liberal Studies (DLS) continued its pilot of Grammar Lab, which continues to enjoy strong student and faculty support. DLS began a partnership with



## Academic Program Highlights (continued)

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the NTID International Educational Outreach Office. Through this partnership, DLS faculty members began designing 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. In addition, DLS entered a partnership with the NTID Center on Educational Research Partnerships to analyze course placement data and new testing platforms. This analysis will assist DLS faculty members in choosing new course placement tests and modifying current curricula to support growth in students' reading and writing needs. The NTID Study Abroad program, administered by DLS, sent a group of AOS, AAS, AS and BS students to study the lives and culture of the Deaf community in Japan.

Renovation of the Department of Science and Mathematics' second-floor classroom and laboratory spaces was completed in time for their use during AY 2017-2018. The design of the new chemistry lab classroom includes an island countertop-workspace designed to facilitate visual communication among students and between students and the instructor. The addition of five fume hoods provides faculty with a way to emphasize proper laboratory work protocols from a student's very first day in the Laboratory Science Technology (LST) program. The two dedicated research spaces were immediately put to use by students, staff and faculty through faculty-led research projects taken for credit during the fall and spring terms and also as part of the department's first Research Experiences for Undergraduates (REU) grant obtained from the National Science Foundation.

LST students continue to gain meaningful cooperative work experiences at companies such as Dow (Midland, Michigan and Collegetown, Pennsylvania) and Kodak (Rochester, New York); local firms and utilities such as MASI Environmental Laboratory (Columbus, Ohio), Hawkins Inc. (Roseville, Minnesota), Coating Place Inc. (Verona, Wisconsin) and Tyler Memorial Hospital (Tunkhannock, Pennsylvania); REU programs at Tufts University, North Carolina State University, Gallaudet University, University of Wyoming, University of Tennessee at Knoxville and University of Massachusetts at Amherst; and at the Reclamation Laboratory for Exotic Species (Denver, Colorado). Requirements by National Institutes of Health (NIH) and National Science Foundation (NSF) funding programs to include underrepresented persons and students with disabilities continue to have a positive impact on the department's ability to place students in associate and bachelor's programs in summer research opportunities. The Department of Science and Mathematics has received requests for collaboration and for letters of support for grant applications from universities across the country who are interested in working with deaf and hard-of-hearing students. As a result, students are being placed in programs that have been successfully funded.

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 VCS department initiated the use of student tutors and teaching assistants as a new component in its student success and retention strategy. In response to the university's focus on scholarship, eight VCS faculty recorded 63 submissions to the university's Faculty Scholarship site. A VCS lecturer was the second-largest contributor for the year. Nine students completed their AAS degrees and seven students completed their AOS degrees.

### **Associate+Bachelor's Degrees**

A key feature of NTID's educational portfolio is the number of transfer associate degrees that provide seamless transition to RIT baccalaureate programs. There now are 12 of these programs, called "associate+bachelor's" degree programs (to avoid confusion with the word "transfer"). They have been very successful, both in terms of growth, graduation at the associate level, transfer to a bachelor's program in one of RIT's other colleges and subsequent graduation at the baccalaureate level. In AY 2017-2018, NTID received NYSED approval for the revised Applied Computer Technology AS program, to include three concentrations. These prepare students to enroll in RIT's B. Thomas Golisano College of Computing and Information Sciences BS programs in Computing and Information Technologies, Web and Mobile Computing and Human-Centered Computing based on new or updated articulation agreements. NTID also has a signed articulation agreement with RIT's B. Thomas Golisano College of Computing and Information Sciences for students to enter the Web and Mobile Computing BS program from NTID's Mobile Application Development AAS program. In AY 2017-2018, NYSED approved the Associate of

## Academic Program Highlights (continued)

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Science degree in General Science, with the first students admitted in Fall AY 2018-2019. This degree provides for continuation of studies in any of five baccalaureate programs: biology, biochemistry, chemistry and environmental sciences in the College of Science and biomedical sciences in the College of Health Science and Technology.

At the beginning of the 2018-2019 academic year, 182 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 and the School of International Hospitality & Service Innovation in RIT's College of Engineering Technology. The Administrative Support Technology and Accounting Technology Programs continue to experience success with students transferring to and graduating from RIT's School of Individualized Study (SOIS). Nine students were accepted to SOIS during AY 2017-2018. Current department numbers show 62 percent of students in AS and BS degree programs and 38 percent in AOS/AAS degree programs.

The Department of Engineering Studies (DES) has two associate+bachelor's degree programs, Applied Mechanical Technology and Civil Technology. New student enrollments for fall 2018 were three and two, respectively. The Civil Technology program, in its fourth year, should have graduates this year. There was one significant change in the Applied Mechanical Technology articulation agreement by adding the electro-mechanical engineering technology program. The new agreement will be signed during this academic year. DES is now offering an undergraduate research course as an opportunity for associate+bachelor's students to experience faculty-directed research before transferring to RIT. Enrollment in this course requires permission of the department chair and completion of the NTID Undergraduate Research Contract.

In the Information and Computing Studies (ICS) department, students enrolled in the associate+bachelor's and bachelor's degree programs continue to thrive. In 2017-2018, some realignment was made so that students graduating with an AS degree in Applied Computer Technology can transfer to either the BS program in Computer and Information Technology or the BS in Human-Centered Computing program in RIT's B. Thomas Golisano College of Computing and Information Science (GCCIS). Students who complete their AAS degree in Mobile Application Development can transfer to the BS program in Web and Mobile Computing in RIT's GCCIS.

NTID's AS in Applied Liberal Arts (APPLA-AS) remains one of the largest associate+bachelor's degree programs. Entering its ninth year, APPLA-AS graduates are being accepted, in record numbers, 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. DLS 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.

For the Department of Science and Mathematics, articulation agreements now are in place for students who earn the Associate of Applied Science (AAS) degree in Laboratory Science Technology and who wish to enter a Bachelor of Science (BS) program at RIT in biochemistry, biology, biotechnology & molecular bioscience, chemistry or environmental science. The agreements outline the technical, liberal arts, English and electives coursework taken during the AAS program that will count toward the BS degree. Additionally, the new Associate of Science (AS) in General Science degree (originally proposed as AS in Applied Science) has received approval from the New York State Department of Education and will be open to students effective Fall 2018. This degree is replacing the department's non-degree science pre-baccalaureate program for students who are deemed to be nearly ready to enter a baccalaureate program but who are not admitted into one upon application to RIT. The program is expected to allow RIT/NTID to compete more effectively with community colleges by offering a four-semester program that leads directly into Bachelor of Science (BS) programs in biochemistry, biology, biomedical science,

## Academic Program Highlights (continued)

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chemistry and environmental science with all credits earned for the AS degree transferring internal to RIT toward the BS degree. Having a degree-granting AS program will also allow for smoother transitions for students who for a variety of reasons are in a position to switch out of another degree-granting major and into the General Science program.

Dr. Bonnie Jacob (PI) and Dr. Jason Nordhaus (co-PI) successfully obtained funds from NSF to support a three-year 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. 1659299). As a result, five faculty members in the department served as research mentors for 10 deaf and hard-of-hearing undergraduate students recruited from across the country to come to NTID to conduct research projects in mathematics, biochemistry, chemistry and astrophysics. At the end of the summer, each student delivered an oral, signed or poster presentation at RIT's Undergraduate Research Symposium. The department's newly renovated laboratory spaces were the ideal place for faculty and students to conduct their work.

The AAS 3D Graphics Technology program in the Department of Visual Communication Studies includes a transfer articulation agreement with the 3D Digital Design (3DDD) BFA program in RIT's College of Art and Design. The first cohort entering the 3DGT program exceeded capacity and completed year one of their two-and-a-half year span of study. There also is a long history of students successfully making the transition from the NTID VCS Design & Imaging Technology AAS degree program into a College of Art and Design BFA or BS program. Nine of the 16 BFA degrees awarded by the College of Art and Design were NTID-supported students. The success rate is, in part, due to the efforts of VCS faculty to engage RIT College of Art and Design faculty and the one year pre-baccalaureate experience designed to address individual student needs for acceptance to the RIT college.

### **American Sign Language and Interpreting Education (ASLIE)**

ASLIE enrolled 50 new students in fall 2018, bringing the total number of students in the BS degree program in ASL-English Interpretation to 148.

Thirty-two students graduated from the BS degree in ASL-English Interpretation in AY 2017-2018. In lieu of a senior satisfaction survey, an ASLIE program five-year alumni survey (including seniors) was conducted in the spring of 2017. Of the 202 surveys administered, a strong response rate of 71.8 percent yielded excellent data for program review. Ninety-six percent of graduates indicated overall satisfaction with their experience within ASLIE as a whole. Other responses in the 90 percent and above range included alumni satisfaction with developing positive relationships with faculty, feeling satisfaction with the instruction received, acquiring a solid foundation for entry-level work in the field and a willingness to recommend ASLIE to prospective students. The ASL-English Interpretation program continues to seek stakeholder input through the ASLIE Advisory Board. The purpose of the ASLIE Advisory Board is to provide insights into how the program can stay current and relevant in a rapidly changing field and seek input on students' readiness to enter the field upon graduation and other relevant matters.

ASLIE offered the following ASL courses in the Interpreting program: ASL II, ASL Conversational Practice, ASL IV and ASL VI during the fall semester; and ASL III, ASL V and ASL VII during the spring semester. In AY 2017-2018, the interpreting program had an enrollment of 99 students in the fall semester and 96 students in the spring semester.

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

## Academic Program Highlights (continued)

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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. During the 2017-2018 academic year, 33 students engaged in 270 hours of observation, an average of 8.18 hours per student.

Students in the BS in ASL-English Interpretation program provided volunteer interpreting services to the Rochester community as a way to satisfy practicum requirements and earn valuable interpreting experience. The practicum coordinator screens such requests for appropriateness. In AY 2017-2018, 30 students gave back to the community by providing more than 600 hours of interpreting support for various community events.

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

ASLIE's ASL program offers RIT's College of Liberal Arts (CLA) ASL courses Beginning ASL I, II, Intermediate ASL I, II and Advanced ASL I, II for RIT students who want to take ASL as an elective or to fulfill their liberal arts immersion and minor. An ASL immersion comprises any three courses from ASL and Deaf Culture Studies. In AY 2017-2018, the CLA program had an enrollment of 272 in the fall semester and 188 students in the spring semester. During the summer, ASLIE offered Beginning ASL I and II online. Twenty-one students took the summer Beginning ASL I course and five students took the summer Beginning ASL II course. In fall 2017, 35 students were enrolled in the ASL and Deaf Cultural Studies minor; in spring 2018, 42 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. These courses are designed for RIT students, faculty, staff and community members interested in a basic introduction to ASL and Deaf Culture. In AY 2017-2018, the Introduction to ASL and Deaf Culture program had an enrollment of 15 students in the fall semester and no students in the spring semester.

The ASL program provided ASL courses for NTID students as part of the ASL/Deaf Studies requirement. In AY 2017-2018, in the fall semester 14 students were enrolled in ASL I and eight students were enrolled in ASL II. In the spring semester, three students were enrolled in ASL II. Nine students enrolled in Beginning Mexican Sign Language in fall semester, and 13 students enrolled in Beginning Russian Sign Language in spring semester.

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 2017-2018, ASLIE served six MSSE students.

## Academic Program Highlights (continued)

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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 seventh 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 2018, 26 incoming first-year and transfer students participated in this two-week-long program. 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 who taught new material for part of the day. Later in the day, all three 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 four orientation assistants and a coordinator assistant to guide them in ASL-based activities and interaction. The New Signers Program is positioned to gain momentum and continue as a valued and intrinsic part of NTID culture.

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

The Master of Science program in Secondary Education of Students who are Deaf or Hard of Hearing (MSSE) graduated 13 students during the 2017-2018 academic year, its 24<sup>th</sup> 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 2018-2019, the MSSE program had an enrollment of 17 students, of whom eight (47 percent) are deaf or hard of hearing and 12 percent are members of minority groups. It is anticipated that at least six students will graduate from the program during the 2018-2019 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](http://www.ntid.rit.edu/msse-4plus2).

The program has the privilege of working with international students. During the 2017-2018 academic year, three international students graduated from the program. For the 2018-2019 academic year, there are five international students.

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 for students to directly enroll for five weeks). These programs are offered for three general education credits under NDLS 280: International Studies Seminar. They are open to all NTID-coded students at RIT, including the MSSE and ASLIE

## Academic Program Highlights (continued)

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programs. To date, 10 study abroad experiences have been completed: 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, two trips are planned for 2019 – Russia and France. NTID anticipates that up to 35 NTID-supported students will participate in study abroad opportunities in AY 2018-2019.

### 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 41 credit hours of instruction for 133 students in AY 2017-2018.

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 ASLIE (American Sign Language and Interpreting Education). An Educational Audiology and Spoken Language Development required course is provided to students enrolled in the MSSE program. Cued Speech courses are provided as electives to those enrolled in the ASLIE program.

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 2,633 hours of audiology services to 763 students and others members of the RIT community and 2,480 hours of individual speech-language instruction to 137 students. During the 2017-2018 academic year, the audiology discipline provided 455 hours of walk-in services in the Audiology Center, and the speech-language discipline served students during 382.5 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 computers workstations, tutoring and individual/group study spaces, a multipurpose video lab, studying tools and printing areas.

## Academic Program Highlights (continued)

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The NLC, pictured above, is centrally located in Lyndon Baines Johnson Hall and is open 74 hours each week during the fall and spring terms. In addition to the NLC supervisor, 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 also is offered by academic departments at various times throughout the year. Every year, the NLC supports the administration of the Explore Your Future (EYF) online assessments, the Summer Vestibule Program (SVP) writing and mathematics tests and the administration of the Writing Placement Exam (WPE) each semester. The NLC staff provides tours for incoming freshmen and others such as local, national and international visitors.

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.

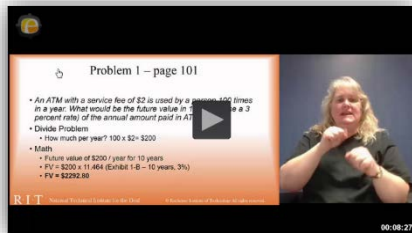
In addition to resources available at the resource desk, the NLC also houses a multipurpose video lab for video recording and editing for the NTID community. This area is used by interpreting students, deaf and hard-of-hearing students and faculty who want to use state-of-the-art video and editing equipment 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 Lab continues to serve as a beta testing site for adapting and evaluating alternative instructional and access technologies in support of remote learners who are deaf or hard of hearing. It also provides a forum for information exchange among RIT/NTID faculty, students, instructional designers, technologists, researchers and access service providers.

## Academic Program Highlights (continued)

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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 a dual-credit course using NTID's Personal Finance course online with Utah Schools for the Deaf and the Blind; a pilot program providing Microsoft Excel 2016 Certification prep training for external audiences; 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 2018-2019, 506 students (50 percent of the total deaf and hard-of-hearing student enrollment) were enrolled in baccalaureate programs in one of the other colleges of RIT. NTID faculty and staff provide tutoring, direct instruction, academic advising and counseling for these students. In addition, interpreting, notetaking and captioning services are offered through NTID's Department of Access Services.

### Outcomes Assessment

NTID conducted student learning outcomes assessment (OA) in all academic programs as well as several general education and academic support areas during AY 2017-2018. In addition, academic degree programs completed the RIT Progress Reports based on AY 2016-2017 results. The eighth annual RIT Progress Report, completed in December 2017, utilized a web-based reporting format and asked program chairs and directors to respond to a series of questions and to report on one program-level student learning outcome listed in their AY 2016-2017 Outcomes Assessment Plans. This was the fourth 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 (SLOA) Committee.

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

- Ninety-four percent of NTID programs met or exceeded established benchmarks for at least one student learning achievement, compared to the RIT level of 93 percent; and
- Each program's Progress Report was rated for continuous improvement by the RIT Educational Effectiveness Assessment Office. Seventy-two percent of NTID programs indicated use of assessment results to guide program planning improvements, compared to RIT's 83 percent. NTID had several new degree programs from which data were collected; however, it still was early to make changes based on the data.

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 2017-2018 OA reports illustrate NTID's outcomes assessment data collection, analysis processes and results. In addition to the individual program findings



## Academic Program Highlights (continued)

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summarized below it should be noted that 100 percent of NTID students received satisfactory overall evaluation ratings from their supervisors related to their cooperative work experience performance.

### ASL and Interpreting Education Department (ASLIE)

- **ASL-English Interpretation BS:** Benchmarks exceeded on all eight outcomes assessed this year. Ninety-one percent of students received ratings of satisfactory or better on their overall ASL competency on their Community Presentation Evaluation. One hundred percent of students in the Issues in Interpreting courses produced successful poster presentations and 100 percent of students produced successful research paper competency. Eighty-six percent of students demonstrated successful interpreting competency from ASL to English and 100 percent from English to ASL. Ninety-two percent of students received a rating of satisfactory or higher on their ethical reasoning rubric. One hundred percent of students were rated by practicum supervisors as demonstrating satisfactory entry-level work habits and 100 percent for overall interpreting ability. Ninety-one 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 collected data for the first time this year. Of two direct course-based assessments, one program outcome was met and another one was not met. One hundred percent of students demonstrated satisfactory results related to knowledge of human anatomy, physiology, common diseases, illnesses, diagnosis and treatments as they apply to interpreting in health-care settings.

### Business Studies Department

- **Accounting Technology AAS:** Students met all three direct course-based assessments. One hundred percent of students demonstrated satisfactory and higher rating related to performing the functions of the accounting cycle for service, merchandising and manufacturing businesses. One hundred percent of students demonstrated interpersonal business skills and teamwork in a professional environment in their capstone project and the project in the Fundamentals of Marketing course. There were no students in the co-op work experience this year.
- **Administrative Support Technology AAS:** Exceeded the benchmark for five outcomes and did not meet the benchmark for one course-based outcome. All students met the benchmark for speed and accuracy keyboarding. 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. All 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:** All of the benchmarks were exceeded for the five outcomes. All of the students exceeded the benchmark on the Student Learning Assessment Test given in Managerial Accounting. One hundred percent of students demonstrated appropriate interpersonal business skills and teamwork, which is an improvement compared to last year's assessment. All students met the benchmark for describing the interrelatedness of social, cultural and business factors that shape and impact the global business environment. Ninety-three percent of students successfully met the outcome for the Introduction to Entrepreneurship course and all students met the outcome for the World of Business and Innovation course. All of the students who graduated from this program were accepted to RIT's Saunders College of Business BS program.
- **Business Technology AOS:** Students exceeded benchmarks on six outcomes, met one outcome and were below criterion on one outcome. One hundred percent of students earned acceptable ratings on the rubrics for the e-Portfolio. All of the students met the expectations for the Accounting Capstone. Eighty percent of students demonstrated interpersonal skills and 90 percent of students demonstrated teamwork skills. These are strong results for AOS students. Seventy-one percent met the expectations for keyboarding accuracy and speed. However, 43 percent of students met the Marketing Project outcome. One hundred percent of students received a satisfactory overall rating by their supervisors for their co-op placements. Ninety-one percent of students received a satisfactory rating from their co-op supervisor related to their ability to demonstrate aptitude/ability to learn quickly and apply technical knowledge and 88 percent

## Academic Program Highlights (continued)

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were rated satisfactory on transfer of theory to employment situations. One hundred percent of students seeking employment were employed.

- **Hospitality & Service Management AS:** Of the two outcomes, one was exceeded and one was not met. All of the students exceeded the benchmark for the Service Management in a Global Economy course. However, none of the students graduated from this program this year. This is a small program and no new students will be accepted until the AS program can be modified based on revisions being made in RIT's BS Hospitality program.

### Career Exploration Studies Department

- **First Year Experiences:** Benchmark exceeded for student satisfaction with the transition components of the Summer Vestibule Program (SVP), but just below 90 percent of students enrolled in the Freshman Seminar course fall semester earned a grade of "C" or higher. Criterion was not met for students returning for full-time study the following year.
- **Career Exploration Studies:** Students passing the Level A reading/writing and mathematics courses within two semesters exceeded the benchmark. This does not include those who withdrew from the university or were suspended from the university. Nearly 100 percent of students who applied to a major were accepted into a major within two semesters.

### Communication Studies and Services Department

- **Communication Outcomes:** Based on co-op supervisors' ratings, students exceeded the outcomes for demonstrating competency in face-to-face communication and for email communication during cooperative work experiences. Eighty-nine percent of students received the acceptable "4" on their 5-point scale communication outcomes assessment.
- **Speech-Language, Aural Rehabilitation and Audiology Services:** Criterion levels exceeded for one of the four assessed outcomes and met for the other three outcomes. Ninety-eight percent of students indicated satisfaction with audiology services and 90 percent were satisfied with the speech-language services. Students reported a self-perceived benefit as a result of the services. One hundred percent and 92 percent of students were rated by their instructors as demonstrating progress toward communication goals in aural rehabilitation and speech-language, respectively. On formal pre-post testing based on stated goals, the benchmark of 80 percent of students showing improvement was met. Assessments were completed for students whose individual communication focused in the areas of articulation, pronunciation, voice and/or aural rehabilitation.

### Engineering Studies Department

- **Applied Mechanical Technology AAS:** Benchmarks exceeded for three outcomes and met one outcome. Eighty-three percent of students received a grade of C or better on their Mechanical Design and Fabrication course written test and final project. More than 75 percent of students earned the appropriate grades in key courses preparing them to apply for enrollment in the BS program. Four students who graduated with associate degrees in the past, graduated with a BS degree from RIT's College of Engineering Technology.
- **Computer-Aided Drafting Technology AOS/AAS:** Criterion levels exceeded for nine outcomes and not met for seven assessed outcomes. Benchmarks for final portfolio in Construction CAD II were met this year, which is an improvement compared to last year's assessment. Benchmarks also were met for: some technical tasks related to Building Information Modeling (BIM) projects; field measurement and input into CAD; researching and incorporating technical information into drawings and documentation; identifying characteristics of construction materials and developing a portfolio. Benchmarks were approached, but not met, for outcomes related to some other technical tasks related to Building Information Modeling (BIM) projects; creating and interpreting dimensions for technical drawings and identifying characteristics of construction materials. Similarly, benchmarks were approached for producing detailed sections and other details using a BIM project as a basis, and for using technical vocabulary, terminology and building codes. One hundred percent of students received a satisfactory overall rating from their supervisors related to their co-op placement performance, which is an improvement this year compared to last year's assessment. All four graduates seeking employment were employed.

## Academic Program Highlights (continued)

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- **Computer-Integrated Machining Technology AOS:** Benchmarks exceeded for 10 outcomes, met for two and not met for one, which is an overall improvement from the last assessment cycle. Outcomes were met or exceeded for goals related to interpreting blueprints and specifications to manufacture, inspecting products and developing technical skills and knowledge needed to transform ideas and drawings into precision machined parts and to safely operate conventional and CNC machines, tools and other automatic equipment. Students also demonstrated competency for developing metrology skills and producing machined parts and optical elements to exact specifications. Students met the outcome related to safety of the shop. One hundred percent of students received overall satisfactory performance from their co-op supervisors.
- **Civil Technology AAS:** This is still a relatively new associate+bachelor program. One hundred percent of students passed the Strength of Materials course outcome requirement.

### Information and Computing Studies Department

- **Applied Computer Technology AS:** Criteria exceeded for student satisfaction outcome. Criteria was not met for demonstrating fundamental programming and web skills. The graduation benchmark was met for students graduating from the BS program after completing the AS, but the first cohorts are still in the seven-year window used to track graduation rates. Eighty-six percent of AS students were accepted to RIT's B. Thomas Golisano College of Computing and Information Sciences.
- **Applied Computer Technology AOS/AAS:** The findings showed that benchmarks were exceeded for nine of the 15 assessed outcomes and not met for six. The department is addressing the unmet outcomes by reviewing them. For example, the faculty recognized troubleshooting task as the most difficult task and will be considering modifications for this specific task. One hundred percent of students demonstrated expected levels of competency related to troubleshooting, installing and restoring IT, configuring the operating system, drivers and application programs, creating a shared folder with correct permissions, demonstrating connection to file sharing, LAN/WAN troubleshooting and security and securing a network. Benchmarks were not met related to connecting, configuring, managing, securing and troubleshooting a small intranet peer-to-peer or client/server networks and customer support. One hundred percent of students received satisfactory overall ratings from their supervisors related to their co-op performances, which is an increase compared to the last assessment cycle. One hundred percent of graduates were employed in the field of computer support, which also is an increase compared to last year's assessment.
- **Mobile Application Development AAS:** Benchmarks were exceeded for three outcomes and not met for two outcomes during this assessment cycle. Outcomes were exceeded for goals related to correctly and efficiently coding a solution using an UML diagram; creating a UML diagram and demonstrating effective verbal and written communication skills. Below 80 percent of students passed their final hands-on exam, which assessed creating, securing test and maintaining mobile applications for two or more platforms. Only one out of two platforms was completed this year. One hundred percent of students received overall satisfactory performance related to their verbal and written communication skills. This is still a relatively new AAS program and more data will be collected during the next assessment cycle before making changes.

### Liberal Studies Department

- **Applied Liberal Arts AS:** One hundred percent of students passed the written English competency in one course and 78 percent in the other course, which is a great improvement compared to last year's assessment. Fifty-three percent to 75 percent of students passed the general education Perspectives 1-4 courses. While the benchmark was not met for the assessments used to measure success in the program's general education perspectives courses, the criterion was met for the artistic and scientific perspectives. The benchmark was nearly met for social perspective and not met for the mathematical perspective. Student success in professional electives also was below the benchmark this year. The percentage was below the benchmark level by 16 percent for acceptance into RIT's College of Liberal Arts or equivalent bachelor's degree program, which has decreased this year compared to last year's assessment and is the primary goal of the AS program in Applied Liberal Arts. Although, students have successfully transferred into and graduated from CLA, the outcomes used to assess the AS

## Academic Program Highlights (continued)

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degree need to be reviewed and possibly more appropriate assessments and/or benchmarks will be established for the future.

### Master of Science in Secondary Education Department

- **The Master of Science program in Secondary Education of Students who are Deaf or Hard of Hearing:** Twenty-four measures included in the semester plan were assessed; criteria exceeded for 11 measures and met for 13, an improvement this year compared to last year's assessment. The benchmark for passing the NYSTCE certification tests was met for students who took tests in New York State. Some students choose to pursue certifications in the states where they are teaching after graduation. Some international students choose not to take the NYS teacher certification exam. Students met or exceeded the criterion levels for teaching performance, writing lesson plans, assessing student learning, demonstrating classroom management skills and satisfying their content areas. For the same outcomes when adapting to meet the diverse needs of their students, all students met the expected competency level. All of the school administrators reported in the employer satisfaction survey that they are satisfied with the MSSE graduates teaching in their schools. Overall, one of the program's strengths is related to satisfactory communication skills during student teaching.

### Science and Mathematics Department

- **Laboratory Science Technology AOS/AAS:** Benchmarks again exceeded for 18 assessed general skill and technical competence areas, co-op performance, placement and student satisfaction. The concerted effort to emphasize safety has led to nine years of 100 percent of students meeting safety expectations. Students' resumes were reviewed early in the Laboratory Methods course to promote development of unique professional resumes for co-op and future positions. Ninety-two percent of students demonstrated competency adhered to quality control procedures. Most students demonstrated competency in the use of various analytical instrumentation and demonstrated appropriate biological and biotechnology-related techniques. Ninety-two percent of students received satisfactory overall ratings by their co-op supervisors in corporate and academic placements. One hundred percent of graduates who sought employment were working. All students showed high levels of satisfaction with the program preparation and courses. This is an exemplary program assessment that is recognized at RIT.

### Visual Communications Studies Department

- **Design and Imaging Studies AOS/AAS:** Criteria exceeded for two of the three outcomes assessed and not met for one. Students exceeded expectations for working collaboratively in multidisciplinary teams, formulating and responding to constructive team and individual feedback and overall student performance by co-op supervisors. Benchmark was not met for supervisors' assessment that students are competitive for the job market.
- **3D Graphics Technology AAS:** This is a new AAS program this year. More data will be collected next year. One measurement was used in the program outcomes assessment during this assessment cycle. Ninety-two percent of students received favorable rating from their co-op supervisors related to their overall performance.

## Enrollment by Degree Programs

In fall 2018, 53 percent of NTID's 1,182 students were enrolled in a broad array of programs within NTID. Forty-seven percent were enrolled in other colleges of RIT, including 50 students in graduate programs. Of the 1,182 students, 1,014 are deaf and hard-of-hearing students in traditional undergraduate and graduate programs (excluding

MSSE and Interpreting students). Fifty-five percent of deaf and hard-of-hearing students (556) enrolled in traditional undergraduate and graduate programs are enrolled in the other colleges of RIT. Students are categorized by their primary academic college.

	Number of Students
<b>NTID Career Exploration Studies</b>	
Career Exploration (UND)	9
Career Prep Foundation (UND)	16
<b>Subtotal</b>	<b>25</b>
<b>NTID Career-Focused</b>	
Non-Degree Student (NONDEG)	9
Applied Computer Technology (AAS)	28
Applied Computer Technology (AOS)	33
Business Technology (AOS)	27
Business Technology (UND)	1
Computer-Aided Drafting Technology (AAS)	16
Computer-Aided Drafting Technology (AOS)	9
Computer-Integrated Machining Technology (AOS)	25
Design & Imaging Technology (AAS)	41
Design & Imaging Technology (AOS)	39
Engineering Technologies (UND)	4
Laboratory Science Technology (AOS)	9
<b>Subtotal</b>	<b>241</b>
<b>Associate+Bachelor's Degrees</b>	
3D Graphics Technology (AAS)	19
Accounting Technology (AAS)	8
Administrative Support Technology (AAS)	14
Applied Computer Technology (AS)	17
Applied Liberal Arts (AS)	21
Applied Mechanical Technology (AAS)	9
Business (AS)	21
Civil Technology (AAS)	2
General Science (AS)	4
Hospitality and Service Management (AS)	2
Laboratory Science Technology (AAS)	40
Mobile Application Development (AAS)	15
<b>Subtotal</b>	<b>172</b>

## Enrollment by Degree Programs (continued)

	Number of Students
<b>NTID ASL-English Interpretation</b>	
ASL-English Interpretation (BS)	148
Health Care Interpretation (MS)	12
<b>Subtotal</b>	<b>160</b>
<b>NTID Master of Science in Secondary Education (MSSE)</b>	
Secondary Education of Students who are Deaf or Hard of Hearing (MS)	17
<b>Subtotal</b>	<b>17</b>
<b>NTID Pre-Baccalaureate Students</b>	
Pre-Baccalaureate Engineering (UND)	1
Pre-Baccalaureate Liberal Arts (UND)	4
Pre-Baccalaureate Visual Communication (UND)	5
<b>Subtotal</b>	<b>10</b>
<b>NTID Subtotal</b>	<b>625</b>
<b>Baccalaureate Students in Other RIT Colleges</b>	
<b>College of Engineering Technology</b>	
Civil Engineering Technology (BS)	11
Computer Engineering Technology (BS)	4
Electrical Engineering Technology (BS)	4
Electrical/Mechanical Engineering Technology (BS)	3
Engineering Technology (UND)	3
Hospitality & Tourism Management (BS)	9
Manufacturing Engineering Technology (BS)	1
Mechanical Engineering Technology (BS)	27
Packaging Science (BS)	2
<b>Subtotal</b>	<b>64</b>

## Enrollment by Degree Programs (continued)

	Number of Students
<b>Saunders College of Business</b>	
Accounting (BS)	11
Business Undeclared (UND)	2
Finance (BS)	4
International Business (BS)	3
Management (BS)	6
Management Information Systems (BS)	12
Marketing (BS)	7
New Media Marketing (BS)	2
<b>Subtotal</b>	<b>47</b>
<b>College of Science</b>	
Applied Mathematics (BS)	1
Biochemistry (BS)	3
Bioinformatics (BS)	2
Biology (BS)	10
Biotechnology (BS)	6
Chemistry (BS)	2
Computational Mathematics (BS)	2
Environmental Science (BS)	4
Imaging Science	1
Physics (BS)	1
Science (UND)	2
<b>Subtotal</b>	<b>34</b>
<b>College of Art and Design</b>	
3D Digital Graphics (BFA)	8
Film and Animation (BFA)	5
Fine Arts-Studio (BFA)	4
Glass (BFA)	1
Graphic Design (BFA)	26
Illustration (BFA)	3
Industrial Design (BFA)	5
Interior Design (BFA)	1
Media Arts and Technology (BS)	3
Medical Illustration (BFA)	4
New Media Design (BFA)	4
Photographic and Imaging Arts (BFA)	14
Photographic Sciences (BS)	3
Woodworking & Furniture Design (AOS)	1
Woodworking & Furniture Design (BFA)	1
<b>Subtotal</b>	<b>83</b>

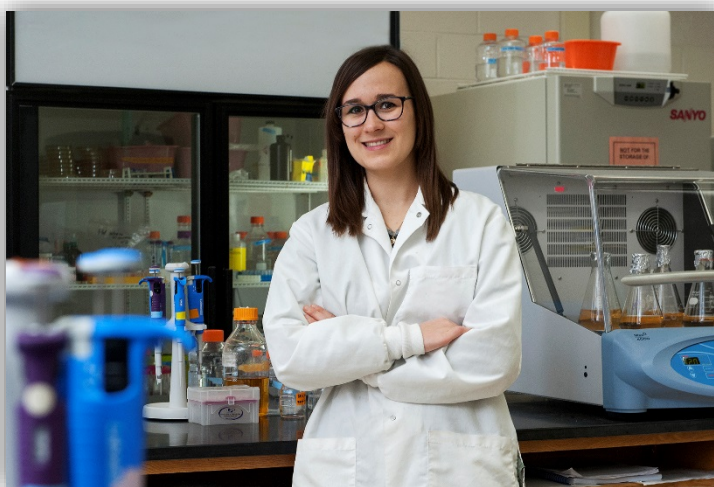
## Enrollment by Degree Programs (continued)

	Number of Students
<b>College of Liberal Arts</b>	
Advertising and Public Relations (BS)	1
Communication (BS)	6
Criminal Justice (BS)	15
Digital Humanities and Social Sciences (BS)	3
Economics (BS)	2
International and Global Studies (BS)	3
Journalism (BS)	2
Liberal Arts Exploration (UND)	2
Museum Studies (BS)	2
Political Science (BS)	3
Psychology (BS)	18
Public Policy (BS)	3
Sociology and Anthropology (BS)	3
<b>Subtotal</b>	<b>63</b>
<b>Kate Gleason College of Engineering</b>	
Biomedical Engineering (BS)	4
Chemical Engineering (BS)	2
Computer Engineering (BS)	8
Electrical Engineering (BS)	7
Engineering Exploration (UND)	1
Industrial Engineering (BS)	4
Mechanical Engineering (BS)	14
<b>Subtotal</b>	<b>40</b>
<b>B. Thomas Golisano College of Computing and Information Sciences</b>	
Computer Science (BS)	22
Computing Exploration (UND)	2
Computing and Information Technologies (BS)	19
Computing Security (BS)	4
Game Design and Development (BS)	4
Human-Centered Computing (BS)	10
Information Technology (BS)	3
Networking and System Administration (BS)	1
New Media Interactive Development (BS)	4
Software Engineering (BS)	7
Web and Mobile Computing (BS)	7
<b>Subtotal</b>	<b>83</b>



## Enrollment by Degree Programs (continued)

	Number of Students
<b>University Exploration</b>	
University Exploration (UND)	7
<b>Subtotal</b>	<b>7</b>
<b>School of Individualized Study</b>	
Applied Arts and Sciences (BS)	46
<b>Subtotal</b>	<b>46</b>
<b>Student Affairs</b>	
College Restoration Program	4
<b>Subtotal</b>	<b>4</b>
<b>College of Health Sciences and Technology</b>	
Biomedical Sciences (BS)	28
Diagnostic Medical Sonography (BS)	1
Echocardiography (CT)	1
Exercise Science (BS)	3
Nutrition Management (BS)	2
Physician Assistant (BS)	1
<b>Subtotal</b>	<b>36</b>
<b>Subtotal Baccalaureate Students in Other Colleges</b>	<b>507</b>



*Nicole Pannullo, a Biochemistry major from East Patchogue, New York, was one of 211 students nationwide to be named a 2018 Goldwater Scholar. The distinction is the highest undergraduate award of its kind for the fields of natural sciences, math and engineering. She is the first deaf RIT student to earn this award.*

## Enrollment by Degree Programs (continued)

	Number of Students
<b>Graduate Students in Other RIT Colleges</b>	
<b>College of Engineering Technology</b>	
Hospitality and Tourism Management (MS)	1
Human Resources Development (MS)	1
Packaging Science (MS)	1
Service Leadership & Innovation (MS)	1
<b>Subtotal</b>	<b>4</b>
<b>Saunders College of Business</b>	
Accounting (MS)	1
Business Administration (MBA)	3
<b>Subtotal</b>	<b>4</b>
<b>College of Art and Design</b>	
Fine Arts Studio (MFA)	1
Industrial Design (MFA)	1
Visual Communication Design (MFA)	2
<b>Subtotal</b>	<b>4</b>
<b>College of Liberal Arts</b>	
Communication & Media Technology (MS)	1
Criminal Justice (MS)	3
Experimental Psychology (MS)	1
School Psychology (MS)	2
<b>Subtotal</b>	<b>7</b>
<b>College of Science</b>	
Bioinformatics (MS)	1
Chemistry (MS)	1
Mathematical Modeling (PhD)	1
<b>Subtotal</b>	<b>3</b>
<b>Kate Gleason College of Engineering</b>	
Electrical Engineering (MS)	1
Manufacturing Leadership (MS)	1
Mechanical Engineering (ME)	1
<b>Subtotal</b>	<b>3</b>

## Enrollment by Degree Programs (continued)

	Number of Students
<b>B. Thomas Golisano College of Computing and Information Sciences</b>	
Computer Science (MS)	5
Computing and Information Science (PhD)	3
Human Computer Interaction (MS)	2
Information Science and Technology (MS)	1
Software Engineering (MS)	1
<b>Subtotal</b>	<b>12</b>
<b>Golisano Institute for Sustainability</b>	
Architecture (M.Arch.)	1
<b>Subtotal</b>	<b>1</b>
<b>College of Health Science and Technology</b>	
Physician Assistant (MS)	1
<b>Subtotal</b>	<b>1</b>
<b>School of Individualized Study</b>	
Professional Studies (MS)	11
<b>Subtotal</b>	<b>11</b>
<b>Subtotal Graduate Students in Other Colleges</b>	<b>50</b>
<b>Total</b>	<b>1,182</b>

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

## Average Class Size by Discipline

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

	AY 2017-2018	
	Fall	Spring
3D Graphics Technology	11.0	9.0
Accounting Technology	6.4	8.4
Administrative Support Technology	5.8	6.3
American Sign Language	7.8	8.0
Applied Computer Technology	5.8	6.0
Applied Computer Technology – Technical Computing	5.8	6.4
Applied Mechanical Technology	7.0	5.7
ASL-Deaf Culture	15.0	0.0
ASL-English Interpretation	10.5	8.8
Career Development	10.3	4.5
Communication Studies	10.8	10.2
Computer-Aided Drafting Technology	7.6	6.9
Computer-Integrated Machining Technology	6.1	5.7
English	10.6	10.0
General Arts & Imaging	10.2	7.1
General Business	8.4	7.8
Graphic Design	10.8	9.0
Graphic Production	7.7	10.5
Health Care Interpretation	11.0	7.5
Humanities and Social Science	14.1	13.9
Laboratory Science Technology	8.6	8.3
Liberal Studies	10.0	12.0
Master of Science in Secondary Education	8.2	8.8
Mathematics	10.1	8.4
Mobile Application Development	4.3	3.3
Science	9.4	8.3
<b>Overall Average</b>	<b>9.0</b>	<b>7.7</b>

## 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 2018.

	Number of Sections	Number of Students	
		Deaf or Hard-of-Hearing	Hearing
<b>Saunders College of Business</b>			
Computer-Based Analysis	4	23	85
<b>Subtotal</b>	<b>4</b>	<b>23</b>	<b>85</b>
<b>College of Art and Design</b>			
History of Western Art: Ancient to Medieval	2	37	0
History of Western Art: Renaissance to Modern	2	34	0
<b>Subtotal</b>	<b>4</b>	<b>71</b>	<b>0</b>
<b>College of Liberal Arts</b>			
Abnormal Psychology	2	20	0
American Deaf History	2	28	34
Beginning American Sign Language I	12	15	213
Beginning American Sign Language II	10	19	117
Beginning Spanish IA	1	1	15
Cognitive Psychology	1	9	0
Communication	1	16	0
Computer Crime	2	10	29
Deaf Art & Cinema	2	23	26
Deaf Culture in America	2	14	42
Deaf Literature	1	2	9
Deaf People Global Perspective	2	28	33
Diversity in Deaf Community	2	29	29
Intermediate American Sign Language I	4	21	51
Intermediate American Sign Language II	2	7	13
Introduction to Creative Writing	1	18	2
Introduction to Criminal Justice	3	44	30
Introduction to Psychology	2	36	0
Introduction to Visual Arts	1	7	0
Linguistics of American Sign Language	3	8	37
Research Methods I	1	5	0
Science, Technology and Values	1	17	0

## Educational Support: Teaching (continued)

	Number of Sections	Number of Students	
		Deaf or Hard-of-Hearing	Hearing
<b>College of Liberal Arts (continued)</b>			
Senior Project in Psychology	2	4	0
U.S. History Since 1945	1	16	0
Women and the Deaf Community	1	13	18
<b>Subtotal</b>	<b>62</b>	<b>410</b>	<b>698</b>
<b>College of Science</b>			
Biochemistry Research	1	1	0
Chemistry Research	1	1	0
Organic Chemistry Lab I	2	3	45
Organic Chemistry Lab II	2	10	37
Solar System Astronomy Lab	3	1	48
Stars and Galaxies Lab	3	1	50
Stellar Structures and Atmospheres	1	19	188
<b>Subtotal</b>	<b>13</b>	<b>36</b>	<b>368</b>
<b>Interdisciplinary Studies</b>			
Critical Reading and Writing	5	72	0
High Performance Leadership	2	5	23
Oppression/Lives of Deaf People	2	9	20
Writing Seminar	9	124	1
<b>Subtotal</b>	<b>18</b>	<b>210</b>	<b>44</b>
<b>Center for Intercollegiate Athletics and Recreation</b>			
Country Line Dance	1	1	4
Functional Yoga	1	1	11
Kundalini Yoga	1	5	29
P90X	2	10	34
Sunrise Yoga	1	5	20
Ultimate Frisbee	1	1	11
<b>Subtotal</b>	<b>7</b>	<b>23</b>	<b>109</b>
<b>Total</b>	<b>108</b>	<b>773</b>	<b>1,304</b>

## American Sign Language and Interpreting Education Programs

The degree program in ASL-English Interpretation graduated 29 students in 2017-2018. Fifty new students matriculated into the program in September 2018. Currently, 16 percent of total enrollment are students from ethnic minority

backgrounds. Since its inception, the Department of ASL and Interpreting Education has graduated 821 students. Of that number, 465 have graduated with an AAS degree, 348 with a BS degree and eight with a certificate.

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Fall Applicants	211	188	187	172	125
Accepted	49	50	57	63	64
Registrations	40	40	46	42	50
Enrollment					
BS	143	148	136	147	148
MS in Health Care Interpretation	N/A	N/A	8	15	12
Non-Matriculated	3	3	4	0	0
<b>Total Enrollment</b>	<b>146</b>	<b>151</b>	<b>148</b>	<b>162</b>	<b>160</b>
<b>Employment Report</b>					
Graduates	29	41	24	29	*
Employment Rate	100%	100%	100%	*	*
<b>In addition to the interpreting program, ASL and Interpreting Education faculty also provided the following:</b>				<b>FY 2018 Enrollment</b>	
ASL courses in RIT's College of Liberal Arts					486
ASL courses for deaf students, NTID					47
ASL course for the MSSE program, NTID					6
Introduction to ASL and Deaf Culture					15
New Signers Program					26

\* As of the writing of this report, the employment information for FY 2018 and FY 2019 and graduation information for FY 2019 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 24<sup>th</sup> year. To date, 392 students have graduated from the program. One hundred percent of the FY 2017 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](http://www.ntid.rit.edu/msse-4plus2).

Thirteen applications for admission for fall 2018 were received. Seven were offered admission. Of those, seven matriculated into the program. For the 2018-2019 academic year, the MSSE program has a total enrollment of 17 students: 10 second-year or returning students and seven first-year students. Of the 17 matriculated students, 47 percent are deaf or hard-of-hearing and 12 percent are minority.

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### MSSE Student Data

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Fall Applications	40	33	44	24	13
Acceptances	19	17	19	8	7
New Registrations	16	15	17	5	7
Deaf and Hard-of-Hearing Enrollment	16	15	14	9	8
<b>Total Enrollment*</b>	<b>44</b>	<b>42</b>	<b>30</b>	<b>19</b>	<b>17</b>
<b>Employment Report</b>					
Graduates	21	20	11	13	**
Employment Rate	100%	100%	100%	**	**

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

\*\* As of the writing of this report, the employment information for FY 2018 and FY 2019 and graduation information for FY 2019 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 2018:

- 270 students were enrolled in cooperative work experiences
- 57 academic programs had students on cooperative work experiences
- 16 faculty and staff visited 37 students at their job sites during the summer

	Number of Students Involved in Cooperative Work Experiences*				
	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
<b>Sub-Baccalaureate</b>					
NTID	90	94	88	108	84
Percent of Total Co-op Enrollment	38%	35%	32%	35%	31%
<b>Baccalaureate/Master's</b>					
College of Engineering Technology	40	52	51	56	50
Saunders College of Business	18	27	30	38	28
B. Thomas Golisano College of Computing and Information Sciences	33	45	43	50	46
Kate Gleason College of Engineering	18	19	25	23	29
College of Health Sciences and Technology	1	5	3	4	3
College of Art and Design	10	9	10	11	11
College of Liberal Arts	22	19	16	15	14
College of Science	6	1	5	8	5
Subtotal	148	177	183	205	186
Percent of Total Co-op Enrollment	62%	65%	68%	65%	69%
<b>Total Co-op Enrollment</b>	<b>238</b>	<b>271</b>	<b>271</b>	<b>313</b>	<b>270</b>

\* 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.



**Bobby Moakley, an Environmental Science major from East Falmouth, Massachusetts, is the third deaf student to become president of RIT Student Government. Bobby's start in RIT Student Government was as the cross-registered senator from NTID. One of his priorities as president is to have more direct communication with student organizations, especially those representing deaf and hard-of-hearing students, international students, diverse students, LGBTQ students and student athletes.**

## Student Support Services Highlights

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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 2017-2018, 186 deaf and hard-of-hearing students were seen for these services.
- Personal and career counseling and academic advising. Upon entry, all NTID-supported students are assigned to a counselor/academic advisor (CAA) from NTID's Counseling and Academic Advising Services (CAAS). These professional counselors/academic advisors play an important role in helping students maximize their educational opportunities at RIT. NTID associate-level students receive personal counseling, career counseling and academic advising from their assigned CAA. NTID-supported baccalaureate students also receive both personal counseling and career counseling from their assigned NTID CAA. The academic advising for baccalaureate students is provided by the primary academic advisor in their home college. In AY 2017-2018, NTID's CAAS provided more than 12,000 hours of personal counseling, career counseling and academic advising for students, including working as career counselors for NTID's outreach program, Explore Your Future, and as career seminar instructors during the Summer Vestibule Program. In addition, the CAAs in the department taught Freshman Seminar classes and frequently serve as guest lecturers in other courses related to various aspects of academic success. This department also manages a full-service Career Resource and Testing Center, which provides a number of career assessment tools and resources. These include an interactive, computer-based career information system that helps

## Student Support Services Highlights (continued)

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students assess their career interests, learning styles and values, and explore a wide range of educational and career options. To supplement the results of such career assessments, students are also given individualized attention with their career decision-making process from their CAAs. Additionally, CAAs support the institute with their outreach efforts along with University Advising Office and financial guidance along with RIT's Office of Financial Aid & Scholarships. NTID CAAS also collaborates with other service providers on- and off-campus to help students access services and experiences that promote their academic growth and achieve academic success, as well as cultivate and enhance their personal and social development.

- The Student Life Team (SLT) continued its tradition in FY 2018 of both challenging and educating students, providing resources and support for students' successful transitions throughout college and after graduation. SLT's collaborations with NTID's Counseling and Academic Advising Services, the NTID Center on Employment, NTID Student and Academic Services, Department of Public Safety and several offices across RIT's Division of Student Affairs ensured that students were provided diverse opportunities to optimize their collegiate experiences. SLT's co-curricular and late night educational programming, spiritual/religious and civility exploration workshops, self-advocacy and community accountability mentoring programs, social and cultural programs, fraternity and sorority event collaborations and club/organization advising are avenues of outreaching and networking with students.
- 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 support deaf and hard-of-hearing student-athletes at the varsity level. The services range from academic support, mentoring, educational workshops, team-building and leadership training. Deaf and hard-of-hearing student-athletes had an excellent year, earning a 3.23 grade point average as a group and garnering awards, including All-American and multiple "Liberty League Athlete of the Week" honors, while several carried out their duties as captains of their respective teams. Deaf and hard-of-hearing student-athletes have been involved with multiple student organizations on campus, including Hillel, Student Athlete Advisory Committee, Deaf International Students Association and Electronic Gaming Society. This past year saw multiple student-athletes dominating the competition in women's soccer, men's cross country, 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.
- Financial aid for domestic students was provided in FY 2018 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, 447 students received NTID scholarships, 91 received RIT scholarships, 867 received NTID-endowed scholarships and 92 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.

## Student Support Services Highlights (continued)

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- Summer Vestibule Program (SVP) is an orientation program for entering NTID students designed to transition them to college life. In 2018, 170 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 2018. 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 2017-2018, CES served 38 students in fall and 28 students in spring. Ninety-eight percent of CES students who applied to a major were accepted into a major within two semesters.
- Substance and Alcohol Intervention Services for the Deaf (SAISD) provides culturally sensitive, linguistically accessible information on alcohol, tobacco and other drugs. In addition, it offers intervention and prevention services to the deaf and hard-of-hearing community at RIT and throughout Rochester and the Monroe County area. SAISD also advocates for and promotes development of a full range of accessible treatment programs for alcohol and other drugs for deaf and hard-of-hearing consumers through the provision of cross-disability short-term technical assistance, consultation and training for professionals. Wherever possible, SAISD promotes its successful model across the state.



*Substance and Alcohol Intervention Services for the Deaf staff show off their table at the annual Finger Lakes Health Fair, held at NTID in September 2018. In addition to serving the deaf and hard-of-hearing community at RIT, they provide intervention and prevention services to deaf people throughout Rochester and the county.*

## Support Services: Tutoring Hours

NTID faculty provide academic assistance in the form of tutoring for all NTID-supported deaf and hard-of-hearing students registered in the other

colleges of RIT. Students registered in the School of Individualized Study are reported under the other colleges depending on the course type.

	AY 2017-2018		
	Tutoring Hours	Class Sections Served	Total Student Registrations
College of Engineering Technology (CET)	*	280	458
College of Art and Design (CAD)	874	362	756
Saunders College of Business (SCB)	1,448*	162	377
Kate Gleason College of Engineering (KGCOE)	412*	153	211
College of Liberal Arts (CLA)	974	729	1,782
College of Health Sciences and Technology (CHST)	836	113	255
College of Science (COS)	6,059*	484	1,163
B. Thomas Golisano College of Computing and Information Sciences (GCCIS)	802*	292	540
<b>Total</b>	<b>11,405</b>	<b>2,575</b>	<b>5,542</b>

*Maya Penn, a 2018 BS Psychology graduate, will be teaching deaf children in Ghana as a member of the Peace Corps. Her desire for public service was honed by her leadership at NTID as vice president of NTID's Ebony Club and her involvement with NTID's Student Life Team.*



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



## Student Access Services

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



Dedicated on October 14, 1984, Hugh L. Carey Hall was named in honor of the former congressman and governor of New York State who proposed the bill for NTID in the U.S. House of Representatives in 1965. NTID's Department of Access Services is based there, and the expansion of access services staff resulted in an addition in 1991 and renovations in 2017.



## Student Access Services Highlights

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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 142 staff members—the largest staff of professional interpreters of any college program in the world—as well as freelance, apprentice and student interpreters. Students also may request interpreters for non-academic activities such as athletic events, religious services, student government meetings, student clubs and guest presentations.
- **Real-time captioning** provided as a real-time access service for students who benefit from English text more than sign language interpreting. A staff of 53 real-time captionists is trained in a computer-assisted system developed for transcribing in real time what teachers and students say in class. Increasing use of remotely provided captioning helps us meet growing demands. Real-time captioning is also provided for special events and out-of-class needs.
- **Classroom notetaking services** provided by more than 400 trained student notetakers whose notes are uploaded onto a website for easy access by deaf and hard-of-hearing students.
- **Captioned classroom video materials.** NTID, in conjunction with RIT, provides captioned video materials for use in classrooms 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 110 developing interpreters from 29 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 more than a third 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	6,941	3,715	1,575	209
Saunders College of Business	7,154	6,202	1,552	163
B. Thomas Golisano College of Computing and Information Sciences	8,993	5,764	2,221	244
Kate Gleason College of Engineering	2,692	2,783	1,511	115
College of Health Sciences and Technology	3,112	2,043	1,577	97
College of Art and Design	22,470	9,224	2,495	365
School of Individualized Study	2,149	570	305	39
College of Liberal Arts	18,363	11,611	5,836	450
College of Science	16,438	11,619	5,102	399
Student Affairs Division	2,586	76	131	135
Golisano Institute for Sustainability	1,095	463	107	15
NTID	4,470	233	120	84
<b>FY 2018 Total Hours*</b>	<b>96,463</b>	<b>52,945</b>	<b>22,532</b>	<b>2,315</b>

\* 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 percent, due to forced changes in counting methods. AY 2018-2019 has returned to NTID's previous standard method of counting hours.

## 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 2018	In-Class			Non-Class Activity		Administrative Activity		Overall Total	
	Hours	%*	Sections						
Fall	48,432	78%	843	11,016	18%	2,995	5%	62,443	100%
Spring	46,286	77%	764	10,684	18%	3,476	6%	60,446	100%
Summer	1,745	13%	27	8,351	63%	3,101	23%	13,197	100%
<b>FY 2018 Total**</b>	<b>96,463</b>	<b>71%</b>	<b>1,634</b>	<b>30,051</b>	<b>22%</b>	<b>9,572</b>	<b>7%</b>	<b>136,036</b>	<b>100%</b>
FY 2008 Total	84,211	74%	1,869	23,620	21%	6,402	5%	114,233	100%
FY 2009 Total	80,475	73%	1,831	22,616	21%	6,527	6%	109,618	100%
FY 2010 Total	85,111	73%	1,848	24,993	21%	6,678	6%	116,782	100%
FY 2011 Total	98,032	75%	2,006	25,592	19%	7,441	6%	131,065	100%
FY 2012 Total	97,232	75%	2,032	25,766	19%	6,902	6%	129,900	100%
FY 2013 Total	111,757	77%	2,262	26,878	19%	6,368	4%	145,003	100%
FY 2014 Total***	99,173	75%	1,660	26,223	20%	6,659	5%	132,055	100%
FY 2015 Total	105,983	76%	1,739	27,196	19%	7,051	5%	140,230	100%
FY 2016 Total	112,110	75%	1,797	29,105	20%	7,831	5%	149,046	100%
FY 2017 Total	108,243	71%	1,644	33,854	22%	10,533	7%	152,630	100%

\* Percentages are rounded to the nearest percent.

\*\* 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 percent, due to forced changes in counting methods. AY 2018-2019 has returned to NTID's previous standard method of counting hours.

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

## Access Services: Real-Time Captioning Services

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

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

FY 2018	In-Class			Non-Class Activity		Administrative Activity		Overall Total	
	Hours	%*	Sections						
Fall	11,734	98%	340	252	2%	42	0%	12,028	100%
Spring	10,718	97%	298	315	3%	24	0%	11,057	100%
Summer	80	16%	3	279	54%	156	30%	515	100%
<b>FY 2018 Total**</b>	<b>22,532</b>	<b>95%</b>	<b>642</b>	<b>846</b>	<b>4%</b>	<b>222</b>	<b>1%</b>	<b>23,600</b>	<b>100%</b>
FY 2008 Total	16,186	97%	496	356	2%	180	1%	16,722	100%
FY 2009 Total	17,330	95%	538	255	1%	515	3%	18,168	100%
FY 2010 Total	18,977	97%	618	203	1%	313	2%	19,493	100%
FY 2011 Total	21,068	98%	696	223	1%	202	1%	21,493	100%
FY 2012 Total	19,092	98%	592	254	1%	171	1%	19,516	100%
FY 2013 Total	17,782	98%	577	265	1%	216	1%	18,263	100%
FY 2014 Total***	21,140	98%	489	351	2%	110	1%	21,601	100%
FY 2015 Total	21,459	96%	509	630	3%	122	1%	22,211	100%
FY 2016 Total	23,081	96%	625	939	3%	315	1%	24,335	100%
FY 2017 Total	24,608	95%	642	800	3%	544	1%	25,952	100%

\* Percentages are rounded to the nearest percent.

\*\* 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 percent, due to forced changes in counting methods. AY 2018-2019 has returned to NTID's previous standard method of counting hours.

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



## Persistence, Graduation & Employment

Of NTID's FY 2017 graduates, 96 percent of those seeking employment were employed in 2018.



Taher Chowdhury, center, of Ozone Park, New York, celebrates Commencement 2018 and his transfer to RIT's Applied Arts & Sciences BS program with brothers Tanvir, left, a Computer Integrated Machining major, and Shakir, right.

## Persistence, Graduation and Employment Highlights

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

Today, NTID's highly successful academic programs and services are leading graduates to successful careers in a broad range of fields. Over the past five years, 94 percent of graduates who chose to enter the labor force found employment that is commensurate with the level of their education and training. Figures for 2017 graduates show that 96 percent, or 130 of the 135 students who chose to enter the workforce, found employment.

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

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

NTID 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 are focused on reviewing the Step Up! program from NTID's Student Life Team and Career Exploration Studies program for first-year African American, Latino American, and Native American (AALANA) students yearly, 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 2017-2018, 302 students graduated. Of those graduates, 39 percent earned sub-baccalaureate degrees, 49 percent earned bachelor's degrees and 12 percent earned master's degrees. Thirty-four 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 702 students who were first-time, full-time, degree-seeking in the years 2015, 2016 and 2017. Data in the table below indicate that for the most recent three-year period, 73 percent of new students persisted to the second year. Disaggregated rates can be found on the following page.

First-Year Persistence Rates*			
Three-Year Entry Cohort	Number in Cohort	Number Registering Second Year	Overall Persistence Rate
2000, 2001, 2002	674	479	71%
2001, 2002, 2003	646	464	72%
2002, 2003, 2004	625	442	71%
2003, 2004, 2005	594	418	70%
2004, 2005, 2006	607	422	70%
2005, 2006, 2007	697	498	71%
2006, 2007, 2008	804	607	75%
2007, 2008, 2009	861	650	74%
2008, 2009, 2010	844	627	74%
2009, 2010, 2011	780	577	74%
2010, 2011, 2012	827	597	72%
2011, 2012, 2013	855	658	77%
2012, 2013, 2014	814	623	77%
2013, 2014, 2015	779	596	77%
2014, 2015, 2016	731	553	76%
2015, 2016, 2017	702	509	73%

\* 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 percent. This compares to an 83 percent persistence rate for first-year NTID students across four-year degree programs. Students admitted to NTID have ACT composite scores that are comparable to students in two-year colleges with open admissions policies; yet, first-year persistence rates at NTID

are comparable with those of institutions admitting students who are far better prepared academically. The table below also indicates that NTID's graduation rates (38 percent for students admitted into sub-baccalaureate programs and 71 percent for those in bachelor-level programs) are much higher than public colleges with traditional or selective admission standards.



National and NTID Persistence Rates		
Colleges	First-Year Persistence Rate*	Graduation Rate*
Two-Year Institutions	62%	30%
<b>NTID Sub-Baccalaureate**</b>	<b>69%</b>	<b>38%</b>
Four-Year Institutions	81%	60%
<b>Other RIT Colleges (NTID Baccalaureate)**</b>	<b>83%</b>	<b>71%</b>

\* Source of national estimates: [www.nces.ed.gov](http://www.nces.ed.gov)

\*\* NTID calculates first-year persistence and graduation rates using a three-year moving average.

## Degrees Granted: FY 2014 to FY 2018

During the past five years, NTID has awarded an average of 314 degrees annually. The number for FY 2018 was 302. 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 2018, 83 of the 302 graduate and undergraduate degrees and certificates (34 percent) were granted to students from minority backgrounds.\*

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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.

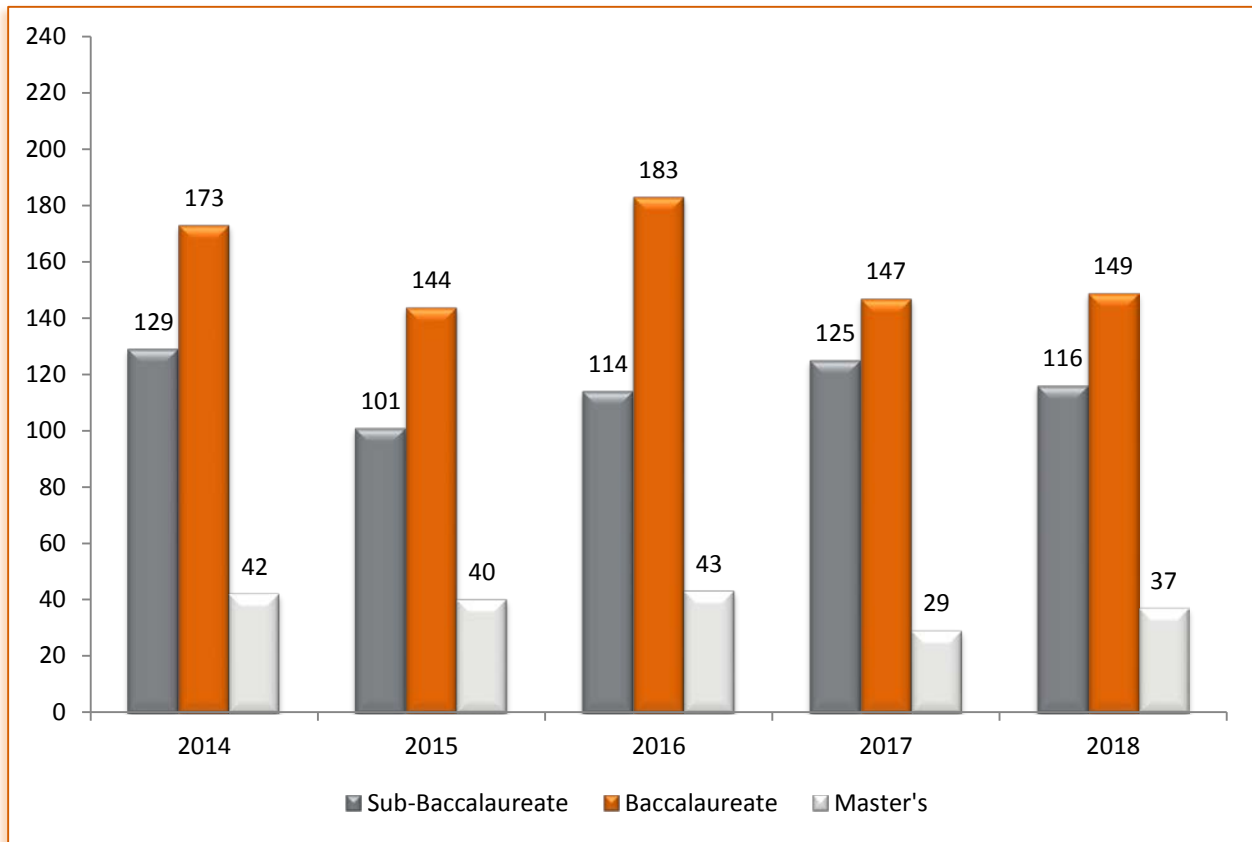
### Doctoral Degrees

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

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\* Minority status is either unknown for 56 of these 302 graduates or the graduate has international visa status.

## Degrees Granted: FY 2014 to FY 2018 (continued)



	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Sub-Baccalaureate*	37.5%	35.4%	33.2%	41.5%	38.4%
Baccalaureate*	50.3%	50.5%	54.2%	48.9%	49.3%
Master's**	12.2%	14.1%	12.6%	9.6%	12.3%

\* 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.

## Graduates by Program Areas

Of all the degrees awarded to NTID students on the RIT campus in FY 2018, 52 percent were through programs offered by NTID and 48 percent through the other colleges of RIT. Historically, 64 percent of the degrees have been awarded from NTID and 36 percent from the other RIT colleges. This change is the result of increased demand by

students for entry into bachelor-level programs, better articulation between NTID and RIT curricula and improved and expanded access/support services.

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

	FY 2018		CUMULATIVE* (FY 1970 – FY 2018)	
	Number of Graduates	Percentage of Graduates	Number of Graduates	Percentage of Graduates
<b>NTID</b>				
Career-Focused and Associate+Bachelor's Degrees	116	38%	4,420	50%
ASL-English Interpretation Bachelor	29	10%	348	4%
ASL-English Interpretation Associate	0	0%	465	5%
ASL-English Interpretation Certificate	0	0%	8	0%
Master of Science in Secondary Education	13	4%	392	5%
<b>Subtotal NTID</b>	<b>158</b>	<b>52%</b>	<b>5,633</b>	<b>64%</b>
<b>Other Colleges of RIT**</b>				
College of Engineering Technology	17	6%	649	8%
Saunders College of Business	26	9%	471	5%
B. Thomas Golisano College of Computing and Information Sciences	12	4%	333	4%
Golisano Institute for Sustainability	4	1%	5	0%
Kate Gleason College of Engineering	6	2%	106	1%
College of Health Sciences and Technology	9	3%	39	1%
College of Art and Design	16	5%	652	8%
College of Liberal Arts	23	8%	550	6%
College of Science	14	5%	199	2%
School of Individualized Study	17	5%	186	2%
<b>Subtotal Other Colleges</b>	<b>144</b>	<b>48%</b>	<b>3,190</b>	<b>36%</b>
<b>Total</b>	<b>302</b>	<b>100%</b>	<b>8,823</b>	<b>100%</b>

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

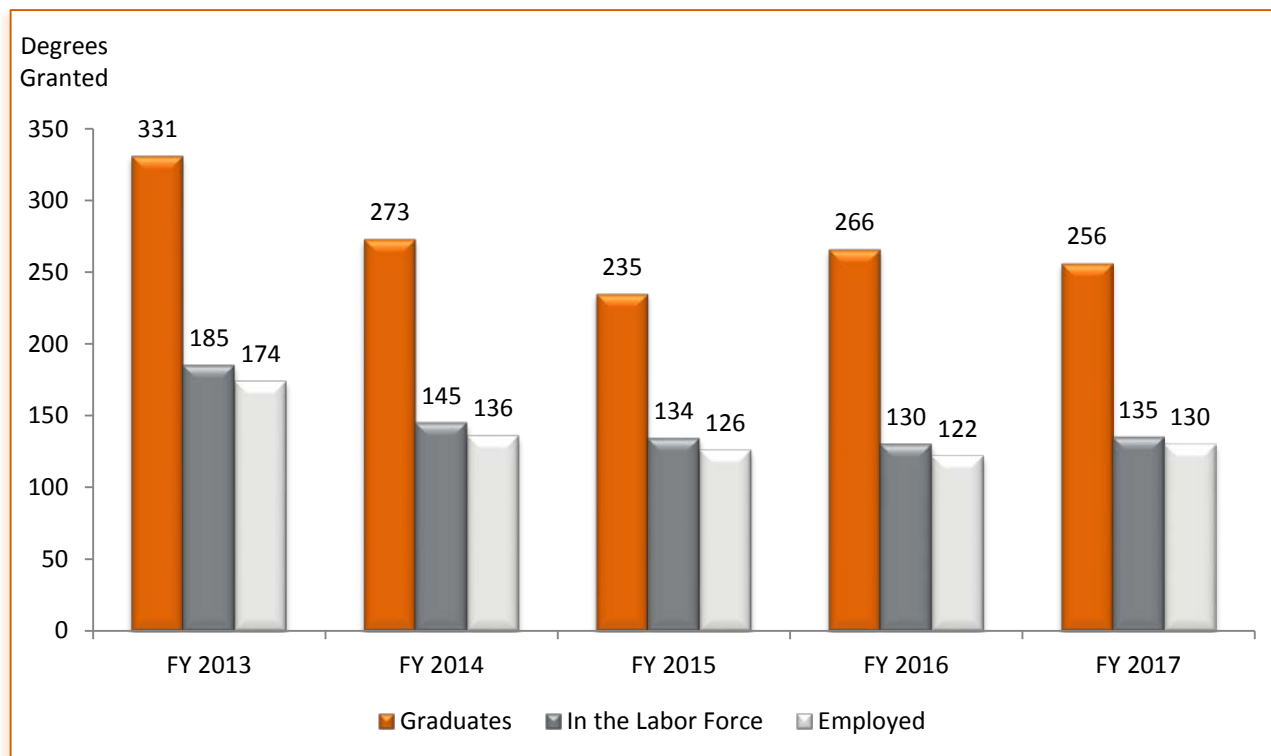
\*\* Includes bachelor's and master's degrees granted by the other colleges of RIT, as well as some associate degrees.

## 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 2017\*, 256\*\* deaf and hard-of-hearing students graduated, and 135 chose to enter the labor force. One hundred and thirty were employed, while five were unable to find employment. Therefore, 96.3 percent (130/135) found employment. NTID’s employment rate over the past five years as calculated above is 94 percent. Of the 121 remaining graduates from 2017, 101 are continuing their education toward advanced degrees either at RIT or elsewhere, eight are not looking for employment and 12 have an unknown status.



\* As of the writing of this report, the employment information for 2018 is incomplete; therefore, NTID reports employment rates of 2017 graduates.

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

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

Prior to students' cooperative work experiences, NTID's Center on Employment (NCE) offers a Job Search Process course to support student learning about how to organize and conduct job search activities. Students utilize extensive NCE website and print resources to research prospective employers, identify appropriate employment opportunities and obtain information about

applying for a job and working. During the academic year, employment advisors meet with students at different locations on campus and reach out to students at different NTID events. NCE staff also provide job-seeking advice to students and graduates through email, instant messaging and videophone.

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During FY 2018:

- NCE personnel appeared as guest presenters to discuss the job search process in 10 sections of various technical programs.
- The 17<sup>th</sup> annual NTID Career Fair was held in October 2017 with 48 employers attending and close to 300 students and alumni participating.
  - Employer Panel for Students – representatives from Caterpillar, Deaf Access Services, EPA, L'Oreal, NAVSUP and Tobyhanna Army Depot provided an overview of their company/agency and discussed the types of training and skills they seek.
- Five students and three NCE staff members attended the Disability:IN conference in Las Vegas, Nevada, in July 2018.
- Students sought individualized job search assistance at various campus locations.
- Fifty-nine 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-eight students participated in the Dining Etiquette event in March 2018.

## Where Recent Graduates Are Working

In FY 2017, 42 percent of U.S. NTID graduates accepted jobs in their home states as their first jobs after graduation, while 25 percent found employment in the Rochester area and 33 percent

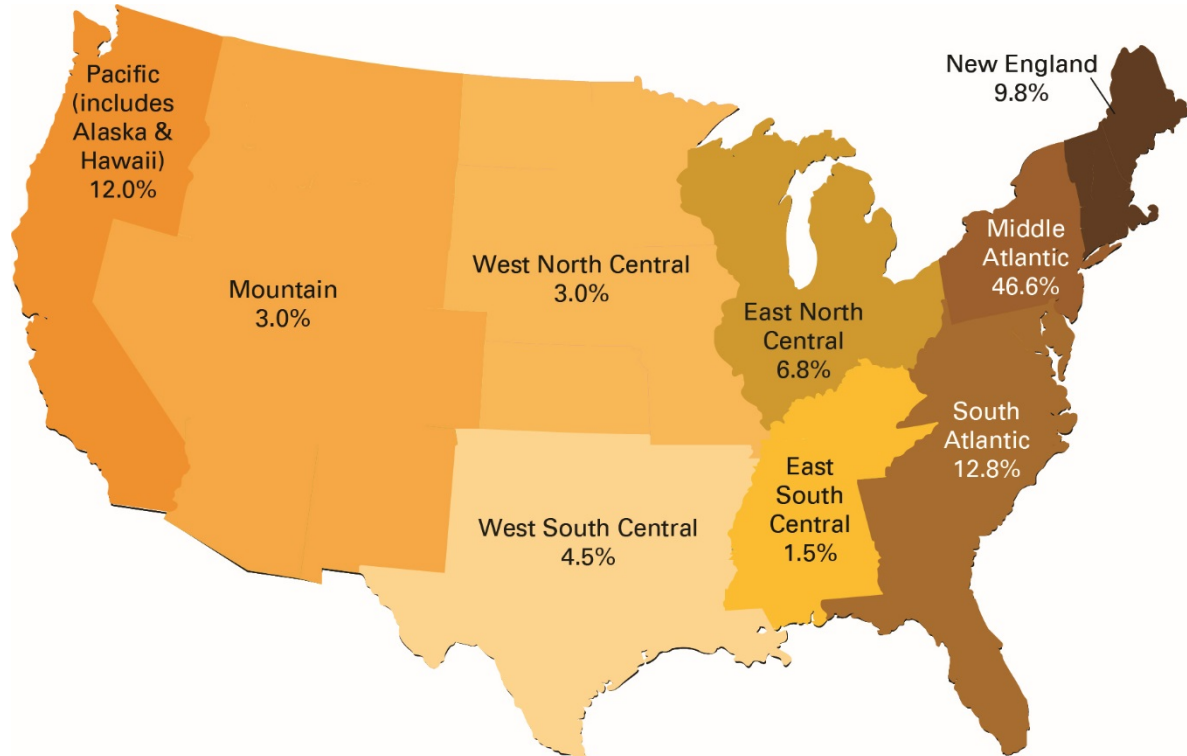
in other areas of the country. The majority of graduates are employed in the eastern parts of the country, areas that have been strong sources of applicants for NTID.

Area	Percent of Placed Graduates				
	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017*
Rochester	24%	21%	17%	13%	25%
Home State	38%	36%	55%	53%	42%
Other	38%	43%	28%	34%	33%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Number of Graduates Placed	174	136	126	122	130
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FY 2017 Graduate Placement by Region\*\*



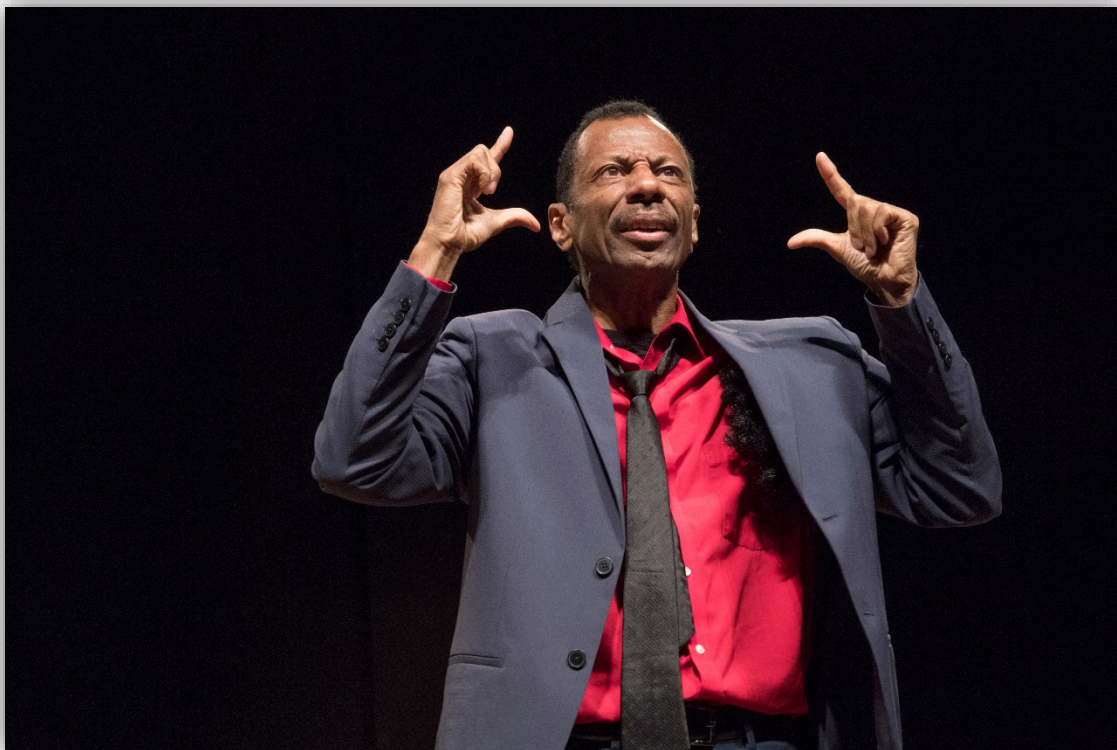
\* Placement numbers for FY 2018 graduates are incomplete and will be reported next year.

\*\* International and unknown locations are excluded.

## Employment by Sector of the Economy

Of the last cohort of graduates tracked for employment, 77 percent have acquired jobs in business and industry, 17 percent in education/non-profit and 6 percent in government.

Sector	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017*
Business/Industry	60%	61%	75%	70%	77%
Education/Non-Profit	31%	28%	16%	20%	17%
Government	9%	11%	9%	10%	6%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>



*CJ Jones '73, an applied computer technology graduate, was the first deaf computer operator at Xerox. However, he is best known as an entertainer, having starred in the hit film Baby Driver in 2017. He has been self-employed for 35 years and is the CEO of Sign World TV Inc. He was also the master of ceremonies for some of NTID's 50<sup>th</sup> Anniversary Reunion events.*

\* Placement numbers for FY 2018 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

19 categories. Percentages among the various categories are different than seen in the *FY 2017 Annual Report*. This year shows moderate changes over many occupational categories.

Occupations of Working 2017 Graduates*	%	Sample Job Titles Held by 2017 Graduates within Category
Computer & Mathematics	16.0%	Support Technician, Software Engineer, Technology Analyst
Architecture & Engineering	15.2%	Engineer, Quality Analyst, Engineering Specialist
Arts, Design, Entertainment, Sports & Media	10.1%	Music Producer, Interior Designer
Business & Financial Operations	9.5%	Financial Analyst, Business Developer, Accounting Administrator
Education, Training & Library	8.1%	Instructor, Teaching Assistant
Sales & Related	6.0%	Sales Consultant, Associate
Production	6.0%	Machinist
Office & Administrative Support	5.3%	Office Assistant
Community & Social Services	3.9%	Residential Counselor
Food Preparation & Serving Related	3.2%	Market Team Leader
Building & Grounds Cleaning & Maintenance	3.2%	Landscaper
Management	3.2%	Operations Manager
Personal Care & Service	2.5%	Community Living Assistant
Transportation & Material Moving	2.5%	Package Handler
Healthcare Practitioners & Technical	2.5%	Physician Assistant
Life, Physical & Social Science	0.7%	Lab Technician
Farming, Fishing, & Forestry	0.7%	Technician
Protective Service	0.7%	Corrections Officer
Construction & Extraction	0.7%	Apprentice
<b>Total</b>	<b>100%</b>	

\* Seven of the FY 2017 employed graduates had either unknown job titles or titles too ambiguous for categorization.

## Occupations of Alumni by Labor Categories

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

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

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

The next alumni survey will be completed in 2019.

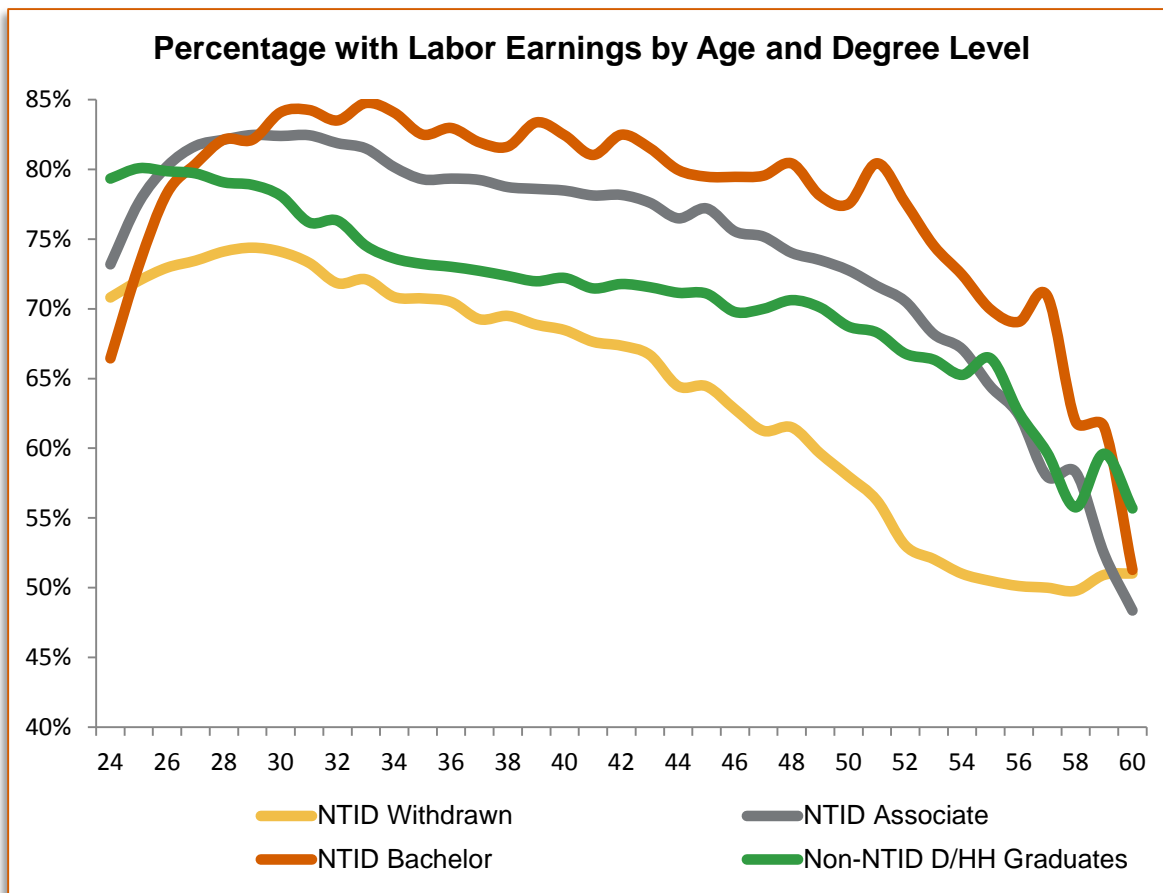
Occupations of Working Alumni*	%	Sample Job Titles Held by Alumni within Category
Community and Social Services	27.8%	Outreach Coordinator, Public Health Analyst, Residential Counselor
Business & Financial Operations	14.4%	Accountant, Billing Analyst, Management Analyst, Contracting Officer
Computer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

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

## Labor Force Status and Earnings of Alumni

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

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

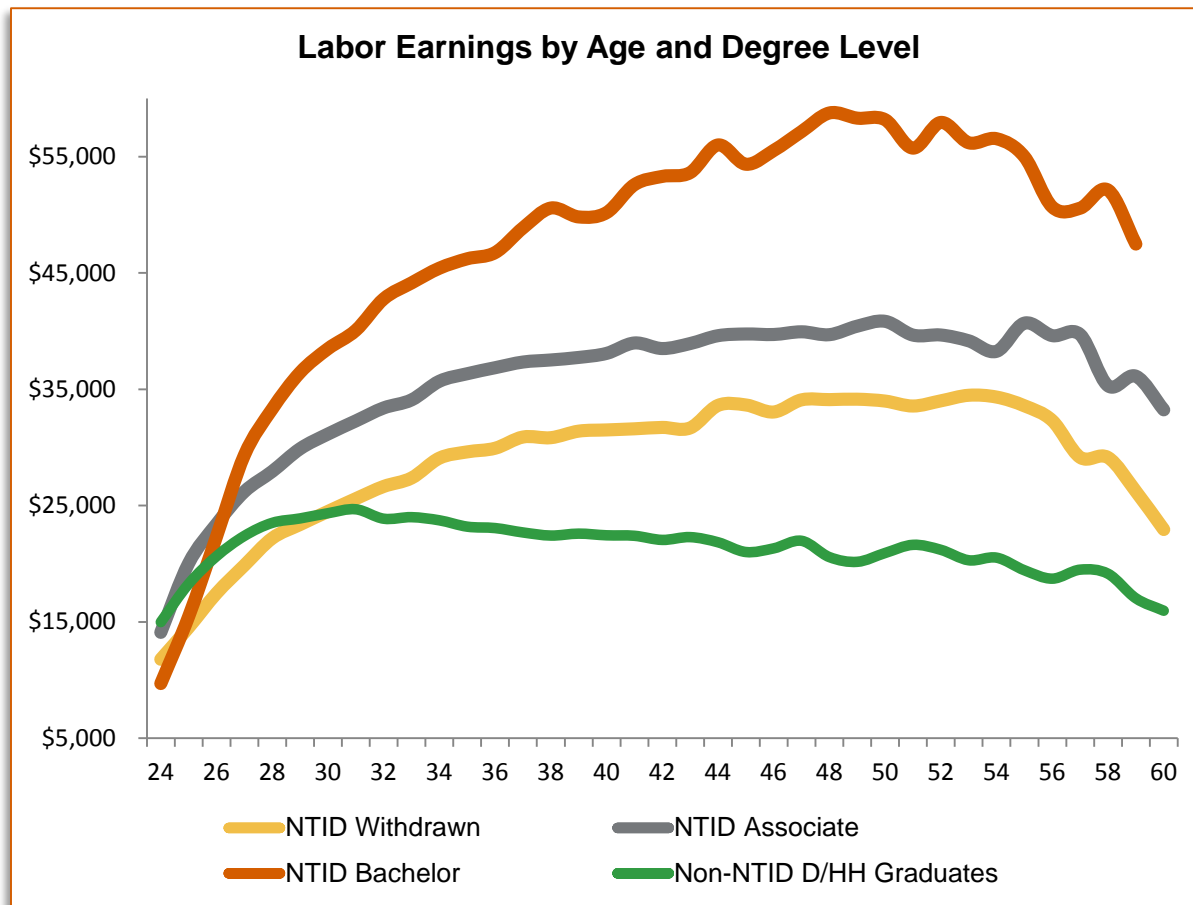


Note: From a 2012 collaborative research study conducted with the Social Security Administration and Cornell University. To accomplish this, NTID forwarded a data file with approximately 16,000 cases to the Social Security Administration. Four study groups were defined by degree attainment: 1) Deaf and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

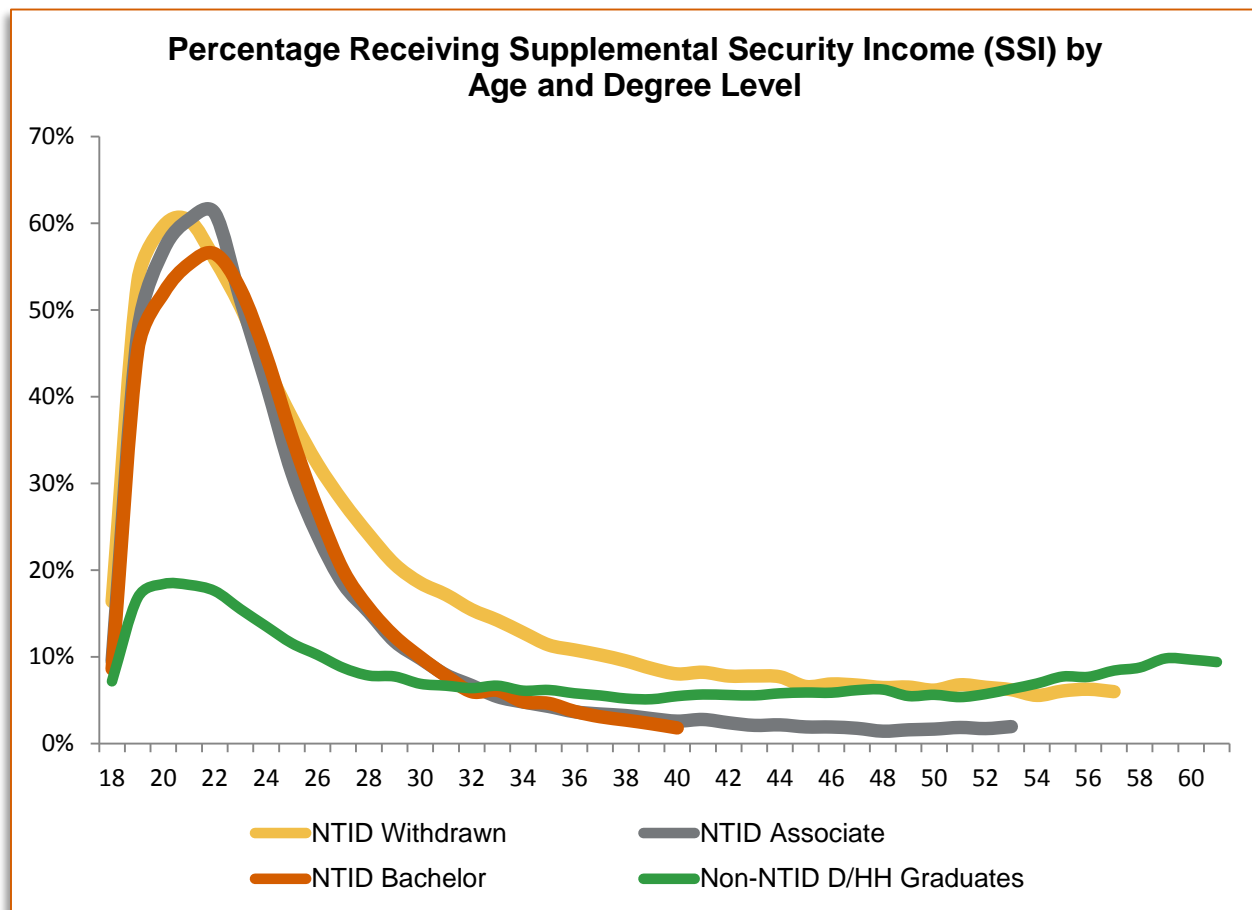


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## Effect of College Graduation on Reduction in SSI and SSDI Payments

Research in collaboration with the Social Security Administration and Cornell University shows the role that the completion of a college degree plays in reducing dependence on continuing federal support. These differences exist for both the Supplemental Security Income (SSI) and the

Social Security Disability Insurance (SSDI) programs. At age 40, NTID deaf and hard-of-hearing graduates collect SSI at a rate of less than 2 percent, as compared to 8 percent for deaf and hard-of-hearing graduates from other institutions of higher education.

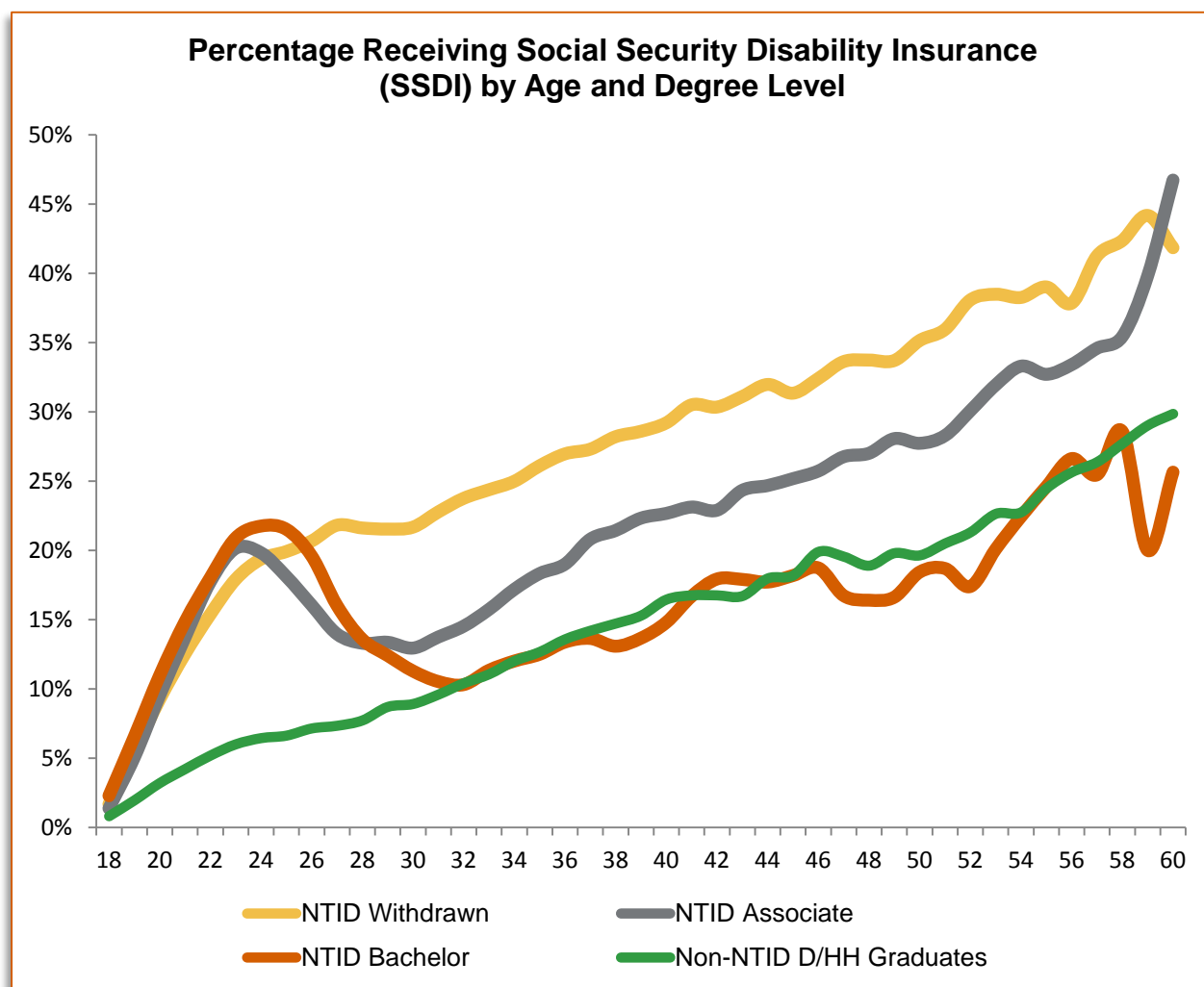


Note: From a 2012 collaborative research study conducted with the Social Security Administration and Cornell University. To accomplish this, NTID forwarded a data file with approximately 16,000 cases to the Social Security Administration. Four study groups were defined by degree attainment: 1) Deaf and 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 percent of NTID deaf and hard-of-hearing bachelor's degree graduates collect SSDI, as compared with 20 percent of deaf

and hard-of-hearing graduates from other institutions of higher education. As made evident by the chart below, the impact that a degree has on SSDI payment collection is substantial.



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



# Diversity and Inclusion

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



This fall, the RIT/NTID Latin American Deaf Club and NTID's Student Life Team sponsored *Breaking Stereotypes*, a panel discussion about strategies for moving beyond labels and stereotypes. Here, Anna Reyes, a Business major from Silver Spring, Maryland, shares more about her life experiences.



## Diversity and Inclusion Highlights

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### Students

As of fall 2018, the number of U.S. deaf and hard-of-hearing minority students at NTID is 386\*, one of the larger numbers in recent history. FY 2019 highlights follow:

- Forty-two percent of the fall entering class is from minority groups. The percentage in the total student body is 38 percent, which is more than triple what it was 20 years ago.

### Faculty and Staff

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

Of 77 employees from ethnic minority populations, 33 are Black or African American, 11 are Hispanic/Latino and 33 are other minorities.

Of 574\*\* total number of employees, 152 are deaf or hard of hearing.

Of the 204 employees who are deaf or hard of hearing or are members of a minority group, 120 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, 54 percent of all hires were either minority individuals or individuals who are deaf or hard of hearing.



*NTID performed Agency, an original play written by deaf playwright Ray Luczak that deals with diversity, audism, inclusion and sexual harassment in American society.*

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

\*\* Of the 574 employees, 561.89 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.

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

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

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

In 2017, NTID established the Office of Diversity and Inclusion, and Stephanie Smith Albert, 1988 alumna of NTID's accounting program, pictured here, was appointed its first director. In her new role, Albert was responsible for all NTID issues relating to diversity and inclusion, monitoring NTID's progress on RIT-wide and NTID-specific initiatives and goals and identifying issues to bring to the NTID president and his administrative council, as well as the RIT vice president and associate provost for diversity and inclusion. On October 4, 2018, Stephanie passed away unexpectedly, and the NTID community continues to feel her absence. However, she made significant contributions during her time in this role, and NTID remains committed to the work she began. A search for her position will be conducted in 2019, and a scholarship will be established in her honor.



## Diversity and Inclusion Philosophy (continued)

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- NTID Director of Diversity and Inclusion Stephanie Smith Albert '88 presented a segment on diversity and inclusion to all freshman seminars. She partnered with RIT's Multicultural Center for Academic Success to provide an English workshop for NTID students, hosted a workshop on applying and interviewing for jobs, scheduled diversity and inclusion training for all members of the NTID community and attended national conferences on diversity. She also gave unconscious bias trainings for search committees and had planned additional diversity and inclusion workshops and discussions for the coming year.
- 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 2018 Expressions of King's Legacy Celebration was Marc Lamont Hill, host of BET News and political contributor for CNN. He is the Steve Charles Professor of Media, Cities, and Solutions at Temple University in Philadelphia, and is the author or co-author of four books: the *New York Times* bestseller *Nobody: Casualties of America's War on The Vulnerable from Ferguson to Flint and Beyond*; the award-winning *Beats, Rhymes, and Classroom Life: Hip-Hop Pedagogy and the Politics of Identity*, *The Classroom and the Cell: Conversations on Black Life in America*; and *Gentrifier*.
- 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 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 special assistant to the president on diversity. The group includes approximately 40 members.

## Admissions Activity by Ethnicity

Fifty-five percent (256) of this year's 533 deaf and hard-of-hearing applicants were students from minority backgrounds. The FY 2019 entering class of deaf and hard-of-hearing students included 114 minority students, who represent 48 percent of the newly admitted deaf and hard-of-hearing students.

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

*The Delta Xi chapter of Epsilon Pi Tau honor society, established at NTID in 2015 and the only chapter specifically for deaf and hard-of-hearing students, inducted 26 new members in May 2018. Epsilon Pi Tau recognizes academic excellence of students in fields related to technology.*



\* 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 Entering Students

The FY 2019 entering class included 124 minority students, who represent 42 percent of the entire incoming class. The FY 2019 entering class of deaf and

hard-of-hearing students included 114 minority students, who represent 48 percent of the newly admitted deaf and hard-of-hearing students.

	FY 2016	%	FY 2017	%	FY 2018	%	FY 2019	%
<b>Deaf and Hard-of-Hearing Undergrad and Grad Students</b>								
American Indian or Alaska Native	*		*		*		*	
Asian	27	8.9%	27	9.3%	25	9.3%	27	11.3%
Black or African American	33	10.9%	22	7.6%	26	9.6%	31	12.9%
Hispanic/Latino	52	17.2%	53	18.3%	50	18.5%	46	19.2%
Native Hawaiian or Other Pacific Islander	*		*		*		*	
White	177	58.4%	171	59.2%	153	56.7%	126	52.5%
Two or More Races	13	4.3%	10	3.5%	15	5.6%	10	4.2%
Non-Resident Alien (International)	13		11		11		15	
Unknown Race/Ethnicity	24		5		8		4	
Subtotal Minority Deaf and Hard-of-Hearing Undergrad and Grad Students	126	41.6%	118	40.8%	117	43.3%	114	47.5%
<b>Subtotal Deaf and Hard-of-Hearing Undergrad and Grad Students</b>	<b>340</b>		<b>305</b>		<b>289</b>		<b>259</b>	
	FY 2016	Percent Minority	FY 2017	Percent Minority	FY 2018	Percent Minority	FY 2019	Percent Minority
<b>Other Enrollments</b>								
ASL-English Interpretation	40	20.5%	46	8.9%	42	22.5%	50	16.3%
Master of Science in Secondary Education**	15	23.1%	17	33.3%	5	0%	7	33.3%
<b>Total Minority Enrollments</b>	<b>137</b>		<b>126</b>		<b>126</b>		<b>124</b>	
<b>Total Enrollments</b>	<b>395</b>		<b>368</b>		<b>336</b>		<b>316</b>	
<b>Overall Percent Minority</b>		<b>38.6%</b>		<b>36.4%</b>		<b>40.3%</b>		<b>42.0%</b>

\* Frequency counts small and not reported for confidentiality.

\*\* Includes 4 to 15 non-matriculated students.

## Ethnicity of Enrolled Students

Minority enrollment at NTID has steadily increased from 8 percent in FY 1988 to 38 percent in FY 2019, more than four times what it was 30 years ago.

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

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

	FY 2016	%	FY 2017	%	FY 2018	%	FY 2019	%
<b>Deaf and Hard-of-Hearing Undergrad and Grad Students</b>								
American Indian or Alaska Native	*		*		*		*	
Asian	115	10.9%	117	11.6%	114	11.5%	117	12.6%
Black or African American	120	11.4%	103	10.2%	99	10.0%	91	9.8%
Hispanic/Latino	151	14.3%	151	15.0%	144	14.5%	142	15.4%
Native Hawaiian or Other Pacific Islander	*		*		*		*	
White	637	60.3%	598	59.2%	589	59.4%	539	58.3%
Two or More Races	31	2.9%	34	3.4%	37	3.7%	31	3.4%
Non-Resident Alien (International)	44		39		43		49	
Unknown Race/Ethnicity	120		73		46		31	
Subtotal Minority Deaf and Hard-of-Hearing Undergrad and Grad Students	419	39.7%	412	40.8%	403	40.6%	386	41.7%
<b>Subtotal Deaf and Hard-of-Hearing Undergrad and Grad Students</b>	<b>1,220</b>		<b>1,122</b>		<b>1,081</b>		<b>1,005</b>	
	FY 2016	Percent Minority	FY 2017	Percent Minority	FY 2018	Percent Minority	FY 2019	Percent Minority
<b>Other Enrollments</b>								
ASL-English Interpretation	151	17.3%	140	14.5%	147	15.5%	148	17.9%
Master of Science in Secondary Education**	42	13.3%	30	30.4%	19	23.1%	17	11.8%
Master of Science in Health Care Interpretation	N/A		8	*	15	*	12	*
<b>Total Minority Enrollments</b>	<b>446</b>		<b>441</b>		<b>431</b>		<b>416</b>	
<b>Total Enrollments</b>	<b>1,413</b>		<b>1,300</b>		<b>1,262</b>		<b>1,182</b>	
<b>Overall Percent Minority</b>		<b>36.6%</b>		<b>37.6%</b>		<b>37.1%</b>		<b>38.2%</b>

\* Frequency counts small and not reported for confidentiality.

\*\* Includes 4 to 15 non-matriculated students.

## 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 2015-2017 Cohort	Black or African American	Asian	Hispanic/Latino	Non-Resident Alien (International)	White
Cohort Count	69	64	126	18	370
Persisted to Second Year	40	57	79	16	284
<b>First to Second Year Persistence Rate</b>	<b>58%</b>	<b>89%</b>	<b>63%</b>	<b>89%</b>	<b>77%</b>

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

Fall 2010-2012 Cohort	Black or African American	Asian	Hispanic/Latino	Non-Resident Alien (International)	White
Cohort Count	82	45	105	17	368
Graduated Within Six Years	28	27	50	8	167
<b>Six-Year Graduation Rate</b>	<b>34%</b>	<b>60%</b>	<b>48%</b>	<b>47%</b>	<b>45%</b>

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

## Graduates by College and Program Areas: Minority Status

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

	FY 2018 Number of Graduates		
	Minority	Non-Minority	Total***
<b>NTID</b>			
Career-Focused and Associate+Bachelor's Degrees	39	57	116
ASL-English Interpretation	*	23	29
Master of Science in Secondary Education	*	5	13
<b>Other Colleges of RIT**</b>			
College of Engineering Technology	*	7	17
Saunders College of Business	*	19	26
B. Thomas Golisano College of Computing and Information Sciences	*	*	12
Golisano Institute for Sustainability	*	*	4
Kate Gleason College of Engineering	*	*	6
College of Health Sciences and Technology	*	*	9
College of Art and Design	*	9	16
College of Liberal Arts	7	13	23
College of Science	*	*	14
School of Individualized Study	*	*	17
<b>Total***</b>	<b>83</b>	<b>163</b>	<b>302</b>

\* 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 2018						
	Total Employees	Female	Black or African American Alone	Hispanic /Latino Alone	Other Racial/ Ethnic Category	Deaf and Hard of Hearing
<b>Faculty*</b>	155	82	11	**	12	72
Percent		53%	7%	**	8%	46%
<b>Exempt Staff*</b>	125	68	11	**	9	47
Percent		54%	9%	**	7%	38%
Executive/ Administrative Manager*	62	27	**	**	**	29
Percent		44%	**	**	**	47%
<b>Non-Exempt Staff</b>						
<b>Real-Time Captionist</b>	57	50	**	**	**	**
Percent		88%	**	**	**	**
<b>Interpreter</b>	137	118	**	**	15	**
Percent		87%	**	**	11%	**
<b>Technical/ Clerical</b>	100	83	7	**	**	32
Percent		83%	7%	**	**	32%
<b>Total</b>	<b>574***</b>	<b>401</b>	<b>33</b>	<b>11</b>	<b>33</b>	<b>152</b>
Percent		<b>70%</b>	<b>6%</b>	<b>2%</b>	<b>6%</b>	<b>26%</b>

\* Of the 62 executive/administrative managers, 24 are included on the faculty line, and 36 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, 561.89 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 2018

	Number of NTID Positions Posted	Total Applicants	Number of Applicants by Category					
			Female	Black or African American Alone	Hispanic /Latino Alone	Other Racial /Ethnic Category	White Male	Unknown
Faculty	13	107	46	14	8	15	37	1
Exempt Staff	17	433	262	47	37	58	108	0
Non-Exempt Staff*	54	1,140	795	130	86	77	230	4
<b>Total</b>	<b>84</b>	<b>1,680</b>	<b>1,103</b>	<b>191</b>	<b>131</b>	<b>150</b>	<b>375</b>	<b>5</b>

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

## Diversity Report: Faculty and Staff Hiring Results

During FY 2018, individuals from an ethnic minority or who were deaf or hard of hearing totaled 54 percent of all new hires and women totaled 74 percent of all new hires. Individuals may appear in more than one category.

### FY 2018

	Total New Employees	Female	Black or African American Alone	Hispanic /Latino Alone	Other Racial /Ethnic Category	Deaf and Hard of Hearing
Faculty	4	*	*	*	*	*
		*	*	*	*	*
Exempt Staff	4	*	*	*	*	*
		*	*	*	*	*
Non-Exempt Staff						
Real-Time Captionist	9	*	*	*	*	*
			*	*	*	*
Interpreter	3	*	*	*	*	*
			*	*	*	*
Technical/Clerical	19	14	*	*	*	9
		74%	*	*	*	47%
<b>Total</b>	<b>39</b>	<b>29</b>	<b>*</b>	<b>*</b>	<b>7</b>	<b>13</b>
		74%	*	*	18%	33%

\* Frequency counts small and not reported for confidentiality.

## Diversity Report: Faculty and Staff Termination Results

During FY 2018, 12 percent of terminations were individuals from ethnic minorities and 66 percent were women. In the chart below, individuals may appear in more than one category.

FY 2018						
	Total Terminated Employees	Female	Black or African American Alone	Hispanic/Latino Alone	Other Racial /Ethnic Category	Deaf and Hard of Hearing
Faculty	15	6 40%	*	*	*	*
Exempt Staff	13	*	*	*	*	*
Non-Exempt Staff**	36	27 75%	*	*	*	*
<b>Total</b>	<b>64</b>	<b>42</b> 66%	*	*	*	<b>5</b> 8%

\* Frequency counts small and not reported for confidentiality.

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



## Research, Innovation & Creativity



**Tom Wheeler, seated, keynote speaker at RIT's 2018 commencement ceremony, paid a visit to NTID's Center on Access Technology Lab. Mr. Wheeler, who served as chairman of the Federal Communications Commission (FCC) from 2013 to 2017, was interested in their work on video relay and automated speech recognition.**

## Research

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### NTID Research Overview

NTID determines topics for 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 deafness-related 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 level 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 focused on three priorities in FY 2018: 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 2018, OADR initiated a plan to create an in-house, customized program of professional development, called *PI Prime Time*, 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 research administrators who serve NTID and three NTID faculty advisors. The team ran focus groups over the summer to identify key challenges for PIs, and subsequently developed a set of six workshops to be offered during the fall 2018 semester. Feedback from the workshops held to date has been quite positive.

In FY 2018, the ADR led a group of five early career faculty to a conference in the Washington, D.C., area. The *CUR Dialogues*, hosted by the Council for Undergraduate Research, brings participants in direct contact with program officers from the major research funding agencies (National Science Foundation, National Institutes of Health, Department of Education, etc.). At the conference, the program officers present information on funding priorities and opportunities offered by their agencies and give tips for proposal ideas and preparation. Individual meetings with program officers take place in addition to the more formal program sessions.

In cooperation with several NTID departments, the OADR provided travel funds for 12 NTID faculty members to attend an international conference on qualitative research methods at the University of Illinois at Urbana-Champaign, as well as funds for sign language interpreter services. The faculty members who attended reported that the conference information will be of great value to qualitative research efforts that are becoming increasingly popular at NTID.

## Research (continued)

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### b. Support for new researchers and new research initiatives

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 2018, 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 2018, four new proposals were funded, for a total of \$50,825.

- Out of the Hot Seat, Into the Hot Seat: The Cognitive Effects of a No-Rest Approach to Team Interpreting  
PI: Robyn Dean; mentor: Robert Pollard \$12,974
- Black Holes Inside Giant Stars: The First Relativistic Simulations of Common Envelopes  
PI: Jason Nordhaus; Co-PIs: Joshua Faber and Richard O'Shaughnessy (COS); mentor: Manuela Campanelli \$13,000
- Documenting Individual Variation in ASL (DIVA)  
PI: Corrine Occhino; Co-PI: Joseph Hill; mentor: Peter C. Hauser \$9,968
- Improving DHH Students' Content-Area Reading Skills  
PI: Jessica Trussell; mentor: Marc Marschark \$14,883

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

This year, which marks NTID's 50<sup>th</sup> anniversary, OADR launched a program to recognize NTID and its partners for what they have accomplished with intramural or extramural funding sources. Nominations were submitted by NTID faculty, and awardees selected by a cross-disciplinary review team. This first Sponsored Programs Awards ceremony honored 12 researchers and program directors, including the SPDI award recipients (see above) and six other award recipients in the following categories: Student Research Mentor, Up-and-Coming PI, X-factor (presented to an individual whose work significantly contributes to team success), Collaborator, Co-PI, PI and a special NTID Partner award presented to a valued colleague from another college. In addition, two special lifetime achievement awards were presented. Dr. Michael Stinson received the Pioneer Award for a lifetime of achievement in educational technology (speech-to-text processing) and the Founders Award was presented to Dr. James DeCaro for developing an international teacher training program that shows participants how to adapt NTID-developed instructional materials and practices so that they are culturally appropriate for use in their country's classrooms.

## RESEARCH CENTERS

This section summarizes the activities and accomplishments of each of the NTID Research Centers during FY 2018. When there is collaboration among several research centers, the activity is described in connection with the research center leading the effort.



## Research (continued)

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### Center on Access Technology (CAT)

Gary Behm '78, '81, director

Brian Trager '00, '05, associate director

The Center on Access Technology (CAT) addresses the challenges of 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 One

Federal Communications Commission / MITRE Corporation

\$501,387

PI: Michael Stinson; Co-PIs: Chris Campbell, Mel Chua,  
Wendy A. Dannels '98, '99, '00, '05 and Brian Trager '00, '05

RIT is collaborating with the MITRE research corporation on research, testing and procedures regarding Video Relay Service (VRS) and Internet Protocol Captioned Telephone Service (IP-CTS). This project engages deaf communities through FCC's Disability Advisory Committee and the subcommittees for Relay User Equipment distribution. Project work includes (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; and (c) assessment of the quality of VRS and IP-CTS services.

2. Automated Speech Recognition

PI: Gary Behm '78, '81; Co-PIs: Brian Trager '00, '05 and Chris Campbell

In FY 2018, the CAT team continued to test the reliability of using Microsoft's automated speech recognition (ASR) engine to translate spoken language in the college classroom and display it as text. Faculty from the College of Science collaborated with CAT to test ASR in general biology, evolutionary biology and statistics classes. Several classes at NTID also participated in ASR pilot testing to understand how the technology may be used to produce supplemental real-time captioning and provide interpreting support. Preliminary evaluations suggest that both deaf and hearing students benefit from the use of this technology.

The success of the project rests on pioneering work by the CAT team. CAT developed custom language models to recognize the specialized vocabulary employed by each course and created a catalog of content-specific recordings and documents made available for use in preliminary testing. The CAT team also tested and developed recommendations for specific microphones and computing devices that suppress noise and control for reverberation. CAT offered workshops at NTID on ASR to help build awareness of the technology and how it could be used in one-on-one and small group settings.

## Research (continued)

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

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  
and Sara Schley \$258,861

This project launched a partnership between NTID, the Rochester Museum & Science Center and the Rochester Challenger Learning Center focused on early-stage pilot implementation to improve access to three different exhibits. The researchers will investigate augmented reality (AR) technology as a way to make exhibit content accessible to deaf and hard-of-hearing adolescents during spontaneous and live presentations on STEM topics.

### **NTID Center on Cognition and Language (NCCL)**

**Peter C. Hauser, Ph.D., director**

The research mission of the NTID Center on Cognition and Language (NCCL) is to conduct translational, transdisciplinary and cross-institutional research on cognitive, linguistic and sociocultural factors to advance learning, well-being and health within the deaf population. NCCL globally disseminates these discoveries to foster a transformative impact on deaf people's lives. During FY 2018, the center personnel gave 18 national presentations and 13 international presentations to academic, medical and community audiences.

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 2018, 14 RIT/NTID undergraduate and graduate students were actively involved in this center's activities, in addition to two post-doctoral fellows.

The NCCL operates four laboratories and two research educational programs.

#### **1. Deaf x Laboratory**

**Matthew Dye, Ph.D., director**

The mission of the Deaf x Laboratory is to investigate how the deaf experience ("x") shapes cognition, including attention and the executive brain functions. During FY 2018, the Deaf x Laboratory worked on three major projects:

- Development of Temporal Visual Selective Attention in Deaf Children

National Science Foundation: BCS-1550988 9/1/2016–8/31/2019  
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 2018, the project team collected data from deaf and hard-of-hearing children across the nation who are in sign-based and speech-based educational programs.

- Neurocognitive Plasticity in Young Deaf Adults: Effects of Cochlear Implantation and Sign Language Experience

National Institutes for Health: NIDCD R01DC016346 7/1/2017–6/30/2022  
PI: Matthew Dye \$2,604,026

## Research (continued)

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The overall aim of this project is to examine the effects of auditory development, cognitive function and language outcomes in a large group of young deaf adults. The results of this study will provide much-needed and timely answers regarding the possible benefits of early cochlear implantation and early intervention with sign language that parents and policy-makers seek as they determine how best to intervene with the next generation of deaf infants who are cochlear implant recipients or candidates. In FY 2018 the PI and a recently hired postdoctoral scholar received training at Professor Anu Sharma's lab at University of Colorado, Boulder, and they began to collect and analyze data.

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

National Science Foundation: BCS-1749376

7/1/2018–6/30/2021

PI: Matthew Dye

\$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. 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 2018, lab personnel worked on three projects:

- Mechanisms of Health Literacy and Information Accessibility

National Institutes of Health: 1R01DC014703-01A1

9/17/2015–8/31/2020

Subaward from University of Michigan

\$600,189

PI: Peter C. Hauser; Co-PI: Scott Smith

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 2018, the project team collected data from deaf, hard-of-hearing and hearing individuals in Rochester, Chicago and Flint metropolitan areas.

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

NTID Scholarship Portfolio Development Initiative (SPDI)

9/1/2016–2/18/2018

PI: Jessica Cuculick '98, '02; Co-PI: Scott Smith

\$9,987

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

- Pregnancy Outcomes and Experiences of Deaf and Hard-of-Hearing Women (Year one)

National Institutes of Health

9/11/2017–5/31/2018

PI: Jessica Cuculick '98, '02

\$14,639

## Research (continued)

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This project is investigating deaf and hard-of-hearing womens' peri-, neo- and post-natal experiences. During FY 2018, the project design was finalized with the team, semi-structured qualitative interviews were developed and participant recruitment began.

### 3. Deaf Studies Laboratory (DSL)

Joseph Hill, Ph.D., director

This laboratory investigates language attitudes and 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 prejudice about deaf individuals ("audism") to understand the effects of prejudice, and the deaf individual's internalization of it, on learning, psychological resilience and academic/vocational success.

- Interaction of Racial and Linguistic Perspectives in Evaluative Responses to Marked Signing Features  
NTID Scholarship Portfolio Development Initiative (SPDI) 1/2/2014–12/31/2018  
PI: Joseph Hill \$10,000

This project explores the language attitudes toward different dialects in American Sign Language. During FY 2018, sign models worked to sign different stories while being connected to motion capture equipment. Research assistants were hired to develop avatars based on the motion capture data, which will be used in the research study in AY 2018-2019.

- 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.

### 4. Sign Language Laboratory

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

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

- Cognitive Benefits of Learning a Second Language in a Second Modality  
Scholarship Portfolio Development Initiative (SPDI) 9/1/2016–8/15/2018  
PI: Kim Kurz '93, '95; Co-PI: Matthew Dye \$9,960

The major goal of this study is to understand the cognitive underpinnings of learning a sign language for individuals whose native language is spoken. During FY 2018, the project team collected longitudinal data from undergraduate students in American Sign Language courses and Spanish courses (control group).

## Research (continued)

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- ASL Test Development Project

NTID Office of the President  
PI: Peter C. Hauser

9/1/2016–9/29/2019

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 2018, the project's research assistant professor and research coordinator were hired, and the project team began developing items for the ASL tests.

### Education Programs

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

### Selected Publications

- Bayley, R., Hill, J., Lucas, C., & McCaskill, C. (2018). Perceptions of Black American Sign Language. In B. E. Evans, E. J. Benson, & J. N. Stanford (Eds.), *Language Regard: Methods, Variation and Change* (pp. 167–182). 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), 39–74.
- Bruan, D., Clark, M.D., Marchut, A.E., Solomon, C.M., Majocho, M., Davenport, Z., Kushalnagar, R.S., Listman, J., Hauser, P.C., & Gormally, C. (in press). Welcoming deaf students into STEM: Recommendations for university science education. *CBE Life Science Education*.
- Dye, M.W.G. & Emmorey, K. (2017). Multimodal multilingual development of DHH learners. *Journal of Deaf Studies and Deaf Education*, 22, 402-403.
- Dye, M. & Pascalis, O. (Eds) (2017), *The Impact of Sensory, Linguistic and Social Deprivation on Cognition*. Lausanne: Frontiers Media.
- Kurz, K., & Hill, J. (2018). The heart of interpreting. In T. K. Holcomb & D. H. Smith (Eds.), *Deaf Eyes on Interpreting* (pp. 58–76). Washington, DC: Gallaudet University Press.
- Stoll, C., Palluel-Germain, R., Caldara, R., Lao, J., Dye, M.W.G., Aptel, F., & Pascalis, O. (2018). Face recognition is shaped by the use of sign language. *Journal of Deaf Studies and Deaf Education*, 23(1), 62-70.

### 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](http://www.rit.edu/ntid/cerp)). Primary activities include promotion of related collaboration among individuals, educational institutions and organizations, both nationally and internationally. These and other activities focus on bridging research and practice to optimize educational opportunities and success for students who are deaf or hard-of-hearing. This notion of serving as a collaborator and an incubator for new ideas lies at the heart of the center.

CERP was established to contribute to the education of deaf and hard-of-hearing students of all ages through the sharing of research findings and expertise with others. In FY 2018, CERP faculty members

## Research (continued)

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delivered 16 invited/keynote lectures for various schools and organizations in addition to conference presentations. CERP members collaborated with colleagues at more than a dozen schools and universities in the U.S. and abroad through ongoing research, joint publications, grant proposals, conference planning, and the editing of books (this year involving individuals from every continent except Antarctica). CERP also hosted visits from collaborating scholars based in the United Kingdom, 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 Educating Deaf Children website ([www.educatingdeafchildren.org](http://www.educatingdeafchildren.org)) and the Raising and Educating Deaf Children: Policy, Practice and Outcomes ([www.raisingandeducatingdeafchildren.org](http://www.raisingandeducatingdeafchildren.org)) have had tens of thousands of visitors. Both websites are supported by donations from private foundations and schools for the deaf.

### Funded Research

During FY 2018, CERP completed work on a \$2.3 million research grant from the National Institute on Deafness and Other Communication Disorders (NIDCD) for a project entitled *Language, Learning, and Cognition among Deaf Students With and Without Cochlear Implants*. The project, a collaboration with colleagues from Denmark and the United Kingdom, has provided insights and longitudinal explorations of ways in which student and family characteristics, as well as spoken language and sign language, interact with cognitive abilities to affect student learning, psychosocial functioning and academic outcomes. Results have implications for K-12 programming as well as college-level settings; indeed, they pertain to lifelong learning by deaf, hard-of-hearing and hearing students of all ages.

CERP also completed work on a \$13,500 grant from a private foundation for the creation and testing of a language-accessible health survey for deaf and hard-of-hearing learners, in collaboration with RIT Wellness and the American College Health Association.

### 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 19 peer-reviewed journal articles, with 11 more under review. They also have published or have in press 11 book chapters and three books (two more books are in press and another is in preparation). CERP members also co-chaired the organization and hosting of two conferences.

Borgna, G., Convertino, C., Walton, D., Marschark, M., Crowe, K., & Trussell, J. (2018). Numerical and real-world estimation abilities of deaf and hearing college students. *Deafness and Education International, 20*, 59-79.

Crowe, K., Marschark, M., Dammeyer, J. & Lehane, C. (2017). Achievement, language, and technology use among college-bound deaf learners. *Journal of Deaf Studies and Deaf Education, 22*, 393-401.

Guiberson, M. & Crowe, K. (2018). Interventions for multilingual children with hearing loss: A scoping review. *Topics in Language Disorders, 38*(3), 225-41.

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

Knooks, H. & Marschark, M., Editors (2019). *Evidence-based practice in deaf education*. New York, NY: Oxford University Press.

## Research (continued)

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Marschark, M. (2018). *Raising and educating a deaf child, third edition*. New York, NY: Oxford University Press.

Marschark, M., Antia, S., & Knoors, H., Editors (in press). *Co-enrollment in deaf education*. New York, NY: Oxford University Press.

Marschark, M., Machmer, E., Spencer, L., Borgna, G., Durkin, A. & Convertino, C. (2018). Language and psychosocial functioning among deaf learners with and without cochlear implants. *Journal of Deaf Studies and Deaf Education*, 23, 28-40.

Marschark, M., Walton, D., Crowe, K., Borgna, G., & Kronenberger, W. (2018). Relations of social maturity, executive function, and self-efficacy among deaf university students. *Deafness and Education International*, 20, 100-120.

McCormack, J., Baker, E., & Crowe, K. (2018). The human right to communicate and our need to listen: Learning from people with a history of childhood communication disorder. *International Journal of Speech-Language Pathology*, 20(1), 142-151.

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*. Advanced online publication doi:10.1044/2018\_LSHSS-17-0085

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. (in press). I am NOT unskilled and unaware: Deaf and hearing learners' self-assessments of linguistic and nonlinguistic skills. *European Journal of Special Needs Education*.

### 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.

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

### Research Projects

In FY 2018, RCfTL personnel led two federally-funded research projects.

## Research (continued)

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- Communication, Access, and Persistence among Deaf and Hard-of-hearing Students in Foundational Statistics Courses [called the Thinking Cap project]

National Science Foundation 9/1/2014–8/30/2018  
PI: Carol Marchetti; Co-PIs: Susan Foster, Jane Jackson  
and Keith Mousley '78, '80 \$396,986

This project developed prototypes for supplemental online learning tools to improve the success of deaf and hard-of-hearing (DHH) students in introductory statistics. This included the creation of five video tutorials with direct ASL instruction, visuals, English and captioning that breaks a topic into parts and explains the terms and concepts needed to understand the topic. Nineteen deaf and hard-of-hearing students engaged in studies to test the effectiveness of the videos. The average gain was 10.0 percent, significantly different from zero ( $p = 0.0003$ ), with a large effect size (Cohen's  $d=1.01$ ).

The project also developed an assessment tool for statistics learning and a prototype for an interactive educational game. Users of "MarsU" had to deploy statistics appropriately in strategizing to win a student government election at the fictional university. Results from usability testing show that most participants had difficulty understanding the purpose of the game. However, pre- and post-test scores indicate a learning gain of 15 percent on average, a promising result.

- 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

This project is developing and operating Faculty Learning Communities to teach faculty members in other colleges of RIT basic principles about instructing deaf and hard-of-hearing students. In FY 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 2018 included the following projects:

- Vizing's Conjecture and Zero Forcing on Graphs  
SPDI 6/1/2016–11/30/2018  
PI: Bonnie Jacob; mentors: Carol Marchetti and Stanislaw  
Radziszowski (GCCIS) \$10,000
- Proof in sign: Communication of abstract discrete math content to students who use ASL  
PLIG 6/1/2016–6/30/2018  
PI: Bonnie Jacob; investigators: Carol Marchetti, Jobby Jacob (COS)  
and Jackie McClive (COS) \$4,620
- Diversity in the RIT Classroom. Survey and manuscript project.  
PI: Torrence Sparkman (CET); mentor: Sara Schley. 1/1/2017–present



## Research (continued)

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- Culturally Appropriate Icons in Digital Applications for Deaf and Hard-of-Hearing Users.  
PI: Doctoral student in GCCIS; mentor: Carol Marchetti

An interesting doctoral research question emerged from activities conducted by the Thinking Cap team. A deaf Computer Science doctoral student led the development of the MarsU digital learning game and conducted a usability study of the pilot game with deaf and hard-of-hearing students. The study pointed to the need to develop culturally appropriate icons in digital applications for DHH users, which she has taken up as a dissertation topic.

### Dissemination

In FY 2018, RC/TL personnel gave nine conference and poster presentations, led nine workshops, produced one print conference proceeding, and had one peer-reviewed journal article accepted for publication. Seven manuscripts are currently under review for publication.

Schley, S. 2018 (Feb. 27, 2018). Creating an Inclusive Classroom (opinion). *Inside Higher Ed*, #Career Advice #Teaching and Learning.  
<https://www.insidehighered.com/advice/2018/02/27/how-create-inclusive-classroom-students-disabilities-opinion>

Marchetti, C. (April 17, 2018). Teamwork that Works. *Inside Higher Ed*.  
<https://www.insidehighered.com/advice/2018/04/17/tips-improving-student-teamwork-class-opinion>

Ho, C.M., Marchetti, C.E., Foster, S., (In Press). A Simple Tool to Address Communication Challenges in Cooperative Learning: Student Perspectives. *Journal of Excellence in College Teaching*.

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

Ronald Kelly, Ph.D., director

Gerald P. Berent, Ph.D., associate director

The goal of REACH is to conduct research on the employment and career outcomes of deaf college graduates and the examination of factors that contribute to their career and life success. These factors include: the development of language and mathematics skills, readiness for college, academic performance in college, personal characteristics, career growth, career change and related decision-making activities. Having completed their funded research projects, both of the REACH center directors retired during FY 2018, and the center has concluded its work. The directors leave a significant corpus of scholarly articles describing the results of decades of research.

### Research Projects

During FY 2018, researchers in the center completed two funded research projects.

1. Deaf Learners' Acquisition of English Verbs and their Component Properties  
National Science Foundation 9/1/2013–2/28/2018  
PI: Gerald Berent.; Co-PIs: Ronald Kelly, Kathryn Schmitz '95,  
Z. Chen (RIT College of Liberal Arts) and Stanley Van Horn  
(RIT Student Affairs) \$300,502

Verb knowledge is critical to understanding clearly the meanings of college-level reading materials, comprehending class lectures, participating in class discussions and writing to demonstrate knowledge of course content. This research project examined the verb knowledge of deaf and hard-of-hearing students and compared the results to the verb knowledge of a) hearing

## Research (continued)

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second-language learners of English and b) native hearing speakers of English. In FY 2018, the team focused on analysis of data collected from 1,077 college students at RIT/NTID. Results show similarities in verb knowledge between the deaf and hard-of-hearing and the hearing second-language learners with comparable scores on the Michigan Test of English Language Proficiency. As expected, the hearing native speakers of English score significantly higher on these tests compared to both deaf and hard-of-hearing learners and hearing second-language learners.

2. Stereotype Threat Effects on Deaf and Hard-of-Hearing College Students' Math Performance  
National Science Foundation 9/1/2014–8/31/2018  
PI: Ronald Kellyl; Co-PIs: J. Jamison (U of Rochester),  
Peter C. Hauser and Gerald Berent \$534,204

Stereotyping and identity issues abound for deaf and hard-of-hearing individuals relative to their educational and career performance. This research examined stereotype threat effects in deaf and hard-of-hearing college students and the extent that negative stereotype threat resulted in their under-performance while being evaluated (e.g., taking math tests; or more generally when performance is being evaluated in other educational and career settings). Stereotype threat occurs when a member of a stigmatized group feels at risk of confirming, as self-characteristic, a negative stereotype about one's group. During FY 2018 the team analyzed data collected from hearing and deaf and hard-of-hearing college students, results that will be published at a later date.

## Publications

REACH faculty members also gave four presentations.

Berent, G. P., Kelly, R. R., Chen, Z., Van Horn, S., Schueler-Choukairi, T., Schmitz, K. L., Rizzo, S. P., Finton, E. M., & Persky, K. (2018). *Derivational complexity, interface knowledge, and L2 learner-deaf learner parallels in acquisition of transitive and intransitive sentence properties*. Manuscript under revision.

Berent, G. P., Kelly, R. R., Rizzo, S. P., Chen, Z., Schueler-Choukairi, T., Persky, K., Schmitz, K. L., Van Horn, S. (2018). *DHH college students' general and academic English verb knowledge: Lexical frequency and cross-population parallels*. Manuscript submitted for publication.

Kelly, R. R. (2018). Evaluations and stereotypes interact to negatively impact performance and career advancement of deaf and hard-of-hearing individuals. *The ADARA Update*, 3, 15-18.

Kelly, R. R., (2018). The changing face of the NTID research enterprise: 1968-2017. In J. McCarthy (Ed.), *A Shining Beacon: Fifty Years of the National Technical Institute for the Deaf* (pp. 125-133). Rochester, NY: RIT Press, Rochester Institute of Technology.

Kelly, R. R., & Albertini, J. A. (2018, July). *Raising and educating deaf children*. Soft skills are important to deaf and hard-of-hearing students' success in academics and future career growth. Retrieved from <http://www.raisingandeducatingdeafchildren.org/2018/07/16/soft-skills-are-important-to-deaf-and-hard-of-hearing-students-success-in-academics-and-future-career-growth/>

Mousley, K., & Kelly, R. R. (2018). Developing deaf students' fraction skills requires understanding magnitude and whole number division. *Journal of Education and Learning*, 7(2), 12-20.

## Research (continued)

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### OTHER FUNDED RESEARCH AND OUTREACH EFFORTS

#### Communication Research

Michael Stinson, principal investigator

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 three.

National Science Foundation	9/1/2015–8/31/2019
PI: Michael Stinson; Co-PIs: Lisa Elliot, Carol Marchetti (RCfTL), Judith Rentsch (University of Tennessee)	\$499,830

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 Three.

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. (2018, April 16). *Team knowledge building and problem solving with hearing, deaf, and hard-of-hearing postsecondary students*. Paper presented at the Annual Meeting of the American Educational Research Association, New York, NY.

## Research (continued)

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### 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 9/15/2011–8/31/2019  
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) 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/](http://www.rit.edu/ntid/dhhvac/)), and video archives on a YouTube channel.

2. DCL: NSF INCLUDES EAGER: A Study of Online Scientific and Scholarly Communities for Broadening Participation in STEM

National Science Foundation 9/1/2018–8/31/2019  
PI: Lisa Elliot \$299,347

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

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

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

#### RIT-RISE Scientists-In-Training Program for Deaf and Hard-of-Hearing Undergraduates

National Institutes of Health 4/5/2017–3/31/2022

PI: Scott R. Smith; Co-PIs: Paul Craig (COS), Vincent Samar \$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 second year, the RIT-RISE Scientists-In-Training Program is providing research preparation, research experience, supplemental research training and career preparation to support three deaf/hard-of-hearing undergraduate RIT students who aspire to become successful PhD scientists. RIT-RISE scholars engage in the labs of their selected RIT faculty mentors during three academic years and one summer term. The grant pays student wages and provides funds for lab supplies. Scholars also receive ongoing advising/counseling, feedback on their writing, special lab accommodations as determined by the lab communication access assessment and mentoring from trained faculty researchers. The project team tracks the success of each scholar in achieving targeted core research competencies using the Individualized Research Development Plans. In the third year of the program, the RIT-RISE scholar will work in the laboratory of a scientist outside of RIT.

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 offered 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 and essential professional development topics. The RIT-RISE Program will disseminate and share these research-oriented courses and workshops with other universities and institutions.

The RIT-RISE Program also collaborates with NTID's Department of American Sign Language and Interpreting Education (ASLIE) to support the training of interpreters to work with deaf and hard-of-hearing scientists in the future by providing a new online course on interpreting in research lab settings to undergraduate and graduate interpreting students at RIT/NTID.

#### Rochester Bridges to the Doctorate

NIH R25 GM107739

9/1/2013–5/31/2018

PI: Peter C. Hauser

\$1,351,243

The Bridges program is a partnership between University of Rochester (UR) and RIT/NTID that aims to increase the number of deaf and hard-of-hearing master's degree students who go on to enroll in biomedical and behavioral science doctoral programs. The Rochester Bridges Program, which is locally administered by the NTID Center on Cognition 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

## Research (continued)

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waivers and conference travel funds. The program supported five scholars during FY 2018, and NIH approved a proposal to continue funding the program.

### Rochester Post-Doctoral Partnership

NIH K12 GM106997

7/1/2015–3/31/2020

PIs: Stephen Dewhurst (UR), Richard Doolittle (CHST)

\$401,904

Training Director: Peter C. Hauser

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 teaching opportunities at each institution to create a pipeline of deaf and hard-of-hearing scientists who can pursue careers in research and teaching. During FY 2018, the three deaf post-doctoral fellows who were in the program conducted their research studies at UR. The program is affiliated with the NTID Center on Cognition and Language.

### 1. Healthcare Careers Implementation Commission (HCIC)

**Scott R. Smith, M.D., M.P.H., chair**

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

During FY 2018, the Healthcare Careers Implementation Commission worked on both ongoing and new research projects to improve the health of all deaf people.

- a. Collaborated with NTID's Outreach Department to implement the fourth iteration of the NTID Health Care Exploration Camp summer program, the first program designed for deaf and hard-of-hearing high school students aspiring to careers in the health care fields. Twenty campers attended the program and post-program evaluations indicated that the program reinforced their desire to pursue a career in a health care field and increased the confidence in their ability to succeed.
- b. Continued to collaborate with NTID's American Sign Language and Interpreting Education (ASLIE) department to support its Certificate in Healthcare Interpreting (CHI) program (approximately 15 interpreters participate annually) and its master's degree in Health Care Interpretation that was implemented during FY 2016 (approximately eight graduate students annually).
- c. Continued to collaborate with the NTID Department of Science and Mathematics to develop a set of new AS degree programs in Applied Sciences (biology, chemistry, biochemistry, etc.). The goal is to streamline the educational pathways for NTID students who aspire to transfer to science degree programs at RIT.
- d. Continued to collaborate with the Center on Access Technology (CAT) on ongoing projects to develop a workable Automated Speech Recognition (ASR) system.
- e. Continued to collaborate with the Association of Medical Professionals with Hearing Loss (AMPHL) to support the training and employment of deaf and hard-of-hearing health care workers.

## Research (continued)

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### 1. Deaf Population Health Research

PIs: Scott R. Smith and Robert Pollard; Co-PI: Wyatte C. Hall (U Rochester)

In FY 2018, the Deaf Population Health Research team collaborated with the University of Rochester's National Center for Deaf Health Research (NCDHR), the Deaf Population Health Research team to publish an analysis of the Rochester Deaf Health Survey indicating that most deaf adults who have hearing parents were not able to understand indirect family communication during childhood such as at the dinner table (e.g., the "dinner table syndrome"). Because indirect family communication is an important source of health information that might not be provided through direct conversations, the manuscript concluded that many deaf adults are at increased risk for weaker health knowledge and health literacy because they were not able to access indirect conversations during childhood.

Publication:

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.

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.

### 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

6/1/2016–3/31/2019

Co-directors: David Lawrence, Elissa Olsen '78, '80, '99

\$820,504

The project supports the development and implementation of an associate degree program designed to increase the number of students in the mobile application development workforce. The five-semester degree program educates students using a native cross-platform development approach (Xamarin) to create mobile apps for multiple platforms.

During FY 2018 four new credit-bearing courses were developed for the second year of the program: Mobile User Interfaces, Mobile App Development I and II, and Web Services and Data Storage Technologies. In addition, four courses offered in the first year were revised and offered to new students (two male and two female) in their first year of the program.

The students that completed their second year of study successfully obtained paid summer co-operative work experiences in the Center for Access Technology. They worked with the CAT team to develop two apps: the NTID 50<sup>th</sup> Anniversary Reunion app and a Teach2Connect app.

The four new students, as well as others taking the mobile version of Programming Fundamentals I, engaged in bi-weekly activities to familiarize freshmen in the Information and Computing Studies department with topics related to mobile applications development. Events included guest speakers, field

## Research (continued)

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trips, test preparation exercises, homework review and other activities to facilitate student and faculty interactions. The program also developed and delivered introductory units to the summer enrichment and NTID intake programs, including Tech Boyz and Tech Girlz, Explore Your Future (EYF) and the Summer Vestibule Program (SVP/Freshman Orientation) for the 2018 cohort.

### 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."

FY 2018 was again a very 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 their research at professional conferences. Several student researchers were listed as co-authors on peer-reviewed published journal articles. NTID also hosted its third annual Student Research Fair, 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, six student researchers were awarded micro-grants.
- Summer Undergraduate Research Fellows (SURF): Funds have been allocated to support NTID undergraduate students conducting research under the direction of a faculty mentor during the summer term. The funds are used to pay student stipends.
  - This year, three student researchers were awarded SURFs.
- Conference Travel Awards: Undergraduate students who have made significant progress can apply for funding to travel to a professional conference and present their findings.
  - This year, 15 student researchers were supported by conference travel funds in order to present their research at professional conferences.

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



## Research (continued)

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- 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 first time in the summer of 2018. Eight deaf and hard-of-hearing undergraduate students (five from outside RIT, three from RIT) completed research projects in the areas of biochemistry, analytical chemistry, astrophysics 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 eight students presented their research at the RIT Undergraduate Research Symposium in August 2018. Several students are working on journal articles and upcoming external presentations of their research.

### Student Research Fair at NTID

On April 13, 2018, more than 50 student researchers gave presentations on more than 30 projects at NTID's third 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 National Advisory Board, attended the fair to interact with the student researchers. The projects presented came from the fields of access technology, health science, biochemistry, astrophysics, education, mathematics, communication studies, environmental science and psychology. The students' project titles are given below:

- The Challenges of Developing Online Instruction for Fast Changing Technology
- How the Raspberry Pi Technology Evolution Benefits DHH Student Instruction at NTID
- Fluorescence Characteristics and PARAFAC Modeling of Bitumen from Ancient Ceramics
- Characterizing the Chemical Fingerprint of Smith's Buckthorn, a Rhamnaceae Species Native to Colorado and New Mexico
- Protein-Protein Interactions of Visual Cycle Retinoid Isomerohydrolase
- Identification of Novel Sodium/Chloride-independent and Calcium-sensitive MPP+ Update Pathway Present in Dopaminergic Cells
- What is the Cause of Deafness-Related Central Visual Field Attention Deficits?
- Motion Lab: Sunshine 2.0
- Motion Lab: Deaf Pioneer
- Motion Lab: Avatar Research
- Dynamical Constraints for the Seventh Planet in the Trappist-1 System
- Breaking Grounds: A Qualitative Analysis of Online Tutoring Sessions
- Exploration of pho13 Knockout Growth Phenotype in Non-Engineered Strains of *Saccharomyces cerevisiae*
- Mathematical Determination of the Worst Case Scenario for Monitoring Electric Power Networks

## Research (continued)

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- Evaluating the Use of Automatic Speech Recognition in Lectures with Different Modalities
- Math Competition 2018
- An Inclusive Mobile App for Museumgoers
- Faculty Learning Communities: Perspectives of Student Mentors
- The Convergence of Customer-Facing Technology and Specially-Abled Restaurants
- Environmental Education for the Deaf/HH: Policies, Practices and Prospects
- Using Written English as a Learning Tool in the ASL Classroom
- RIT-RISE Scientists-In-Training Program for Deaf and Hard-of-Hearing Undergraduates
- Investigating Key Biopsychosocial Factors that Mediate Lifespan Management of Prelingual Deafness
- Do Deaf and Hearing Adults Show the Same Psychological Organization of Anxiety, Depression, Rumination, and OCD?
- VisualSync™: Rowing Accessibility for Deaf and Hard of hearing
- Improving Accessibility for the Center on Access Technology Website
- Accessible Writing Tool for Deaf and Hard-of-Hearing Students
- Undocumented Voices of Deaf Women Leaders: A Historical Analysis
- Women, Deaf Culture and Health Literacy: Examining the Gap between Deaf and Hearing College Students
- Interactive Health Literacy Skills of Deaf and Hard-of-hearing College Students
- Rochester Bridges to the Doctorate

### 27<sup>th</sup> RIT Undergraduate Research Symposium on August 3, 2018

Each year RIT hosts a large undergraduate research symposium. In FY 2018, 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.

*Steven McClusky, a Software Engineering major from Blue Springs, Missouri, works on the NTID Center on Access Technology's accessible rower project, which was featured in the 2018 Student Research Fair at NTID. Deaf and hard-of-hearing rowers are able to receive visual cues that match verbal coxswain instructions. Inspired by a deaf student on the RIT men's rowing team, the technology uses automated speech recognition.*



## 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.

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### Digital Language Laboratory for Interpreting Instruction

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

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

### Keeping Current in Communication Studies and Services

The Communication Studies and Services (CSS) department recognizes the 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:** Most recently, the CSS department has explored 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 initiated 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 have investigated 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

## **Innovation and Creativity at NTID (continued)**

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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 or not a bimodal configuration is right for them.

### **Innovative Teacher Education**

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

### **Speech-to-Text Services**

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

### **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 142 sign language interpreters, more than 400 student notetakers each semester and 53 real-time captionists. In addition, unique access services are available for vision-impaired students.

### **Center for International Educational Outreach**

The Center for International Educational Outreach is now operating in its third year. In addition to existing partnerships in Ethiopia, Rwanda, Cambodia and the Philippines, the center also has launched new partnerships with two universities in China to support deaf education initiatives. All international work is funded by external grants and contracts.

### **NTID Performing Arts**

For its 43<sup>rd</sup> season in AY 2017-2018, NTID Performing Arts presented main stage productions and special events that involved more than 750 deaf, hard-of-hearing and hearing students, faculty, staff and members of the Rochester community as actors, dancers, theater technicians and front-of-house staff (ushers). These performances were attended by more than 9,000 people from throughout New York State as well as schools and community groups from neighboring states. This season included a full dance performance of the story *Beauty and the Beast*, directed and choreographed by Thomas Warfield. NTID's second production was titled *Agency*, an original play written by Deaf playwright Ray Luczak and directed by Dr. Luane Davis Haggerty. This production dealt with diversity, audism, inclusion and sexual harassment in American society. The play was specifically written for Deaf minority characters and also

## Innovation and Creativity at NTID (continued)

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addressed dramatically and thoughtfully issues that have been prevalent in campus conversations. *Agency* began as a stage reading in NTID's 1510 theatre lab that worked on how the play would become a main-stage production. Finally, *The Wonderful World of Oz*, pictured here, was adapted and directed by RIT/NTID retiree, Jim Orr. *Oz* was performed for students, faculty and the local community in April 2018 and then performed again during the NTID 50<sup>th</sup> Anniversary Reunion in June 2018 for alumni, faculty past and present and current students.



The RIT Players had their fall production in December, *Hearts Like Fists* and also their 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 to get new students involved in campus student groups.

Other student groups that performed in the Panara Theatre were RIT a capella group 8 Beat Measure with guest, SUNY Geneseo's Hips n' Harmony, an all-female a cappella group. RIT student dance groups also performed NTID's Panara Theatre. The Irish Roar Dancers, Tango Dancers and the Bhangra Ensemble had an *Afternoon of International Dance* performance, followed by a performance by NTID's Vis Viva Dance Ensemble. All were very well attended with 200 or more in attendance at each performance.

Special events in NTID's Panara Theatre this year included a special workshop with PUSH theatre for students. The NYS Ballet Company performed *Dracula* with sell-out audiences for every performance.

Support also was provided for the NTID Math Competition, NTID's Summer Vestibule Program (SVP), Explore Your Future (EYF) and NTID Freshman Orientation presentations.

During AY 2017-2018, more than 410 students registered for and attended Performing Arts classes. Twenty-eight students were awarded performing arts scholarships and three students were awarded a performing arts certificate this past year.

In total, approximately 12,810 people were served by NTID Performing Arts program during the 2017-2018 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](http://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/](http://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*.

## **Innovation and Creativity at NTID (continued)**

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### **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](https://www.ntid.rit.edu/educational-materials/?controller=product&product_id=34).

### **Deaf Studies Archive**

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

### **RIT ASL & Deaf Studies Community Center (RADSCC)**

The RIT ASL & Deaf Studies Community Center continues to promote education, understanding and participation in the RIT deaf community by all members of the RIT community. A variety of events ranging from weekly ASL classes to regular community meetings and special Rochester-area group gatherings are hosted in the RADSCC located in RIT's Wallace Center. RADSCC participated in the International Week of the Deaf 2017 by raising the Sign Unity Flag for the first time ever on a university campus in September 2017. RADSCC's ASL Lecture Series presenters for AY 2017-2018 included Harry Lang, Norma Moran, Lindsay Darnall, Michael Conrad, Johanna Lucht, Louise Stern and Oliver Pouliot, Soya Mori and Howard Rosenblum. RADSCC's 6<sup>th</sup> annual DeafMute Banquet honored and celebrated the life and works of deaf Latinx people. NTID faculty member Marguerite "Marge" Carrillo was the master of ceremonies and students portrayed several characters. RADSCC also collaborated with the Department of Cultural and Creative Studies to kick off 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 The 2-5-8 Series attendees. This series included events with NTID faculty Ritchie Bryant, Alesia Allen '04, Joan Naturale/Patti Durr and Pam Conley, as well as with Octavian Robinson, a De'VIA challenge at Dyer Arts Gallery and a Black Deaf Community panel.

### **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 2018, Sunshine 2.0 visited 82 sites and hosted workshops and performances that involved 8,223 youth and adults in the following states: Alabama, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Kansas, Kentucky, Maryland, Massachusetts, Mississippi, Missouri, New Jersey, New York, North Carolina, Pennsylvania, South Carolina, Texas and the District of Columbia. In summer 2017, Fred Beam '85, coordinator for Sunshine 2.0, attended the national conference for Very Special Arts (VSA), the international organization on arts and disability. This year, VSA gave Sunshine 2.0 a grant to work with deaf students, children of deaf adults (CODAs) and some hearing students to develop short videos about their experience as part of VSA's Digital TILT Filmmaking program. As part of this grant, Sunshine 2.0 served 81 students focusing on students from New York State, involving students from St. Mary School for the Deaf, Rochester School for the Deaf, Guilderland High School, IRT Theater

## Innovation and Creativity at NTID (continued)

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in NYC and New York School for the Deaf-Fanwood, NYC. An additional 23 students benefited from the VSA Digital TiLT program in St. Petersburg, Florida. Sunshine 2.0 also attended the VSA Intersectional Conference in Atlanta, Georgia. The group provided a workshop to educators and administrators who work with disabled children. Sunshine 2.0 also attended the National Association of the Deaf convention in Hartford, Connecticut. Sunshine 2.0 also gave workshops and a performance to incoming NTID students during SVP 2018.

### Dyer Arts Center

In AY 2017-2018, the RIT/NTID Joseph F. and Helen C. Dyer Arts Center hosted 64 events, including 12 exhibitions. Highlights include *50 Artists 50 Years*, showcasing art created by alumni over 50 years in conjunction with NTID's 50<sup>th</sup> Anniversary Reunion; *Beyond Form: Non-Objective Art*, an exhibition focusing solely on Abstract works by deaf artists and a retrospective of Ellen Mansfield, a De'VIA artist. *50 Artists 50 Years* brought in more than 1,000 visitors to the exhibition alone during the reunion, and more after the reunion. The Dyer Arts Center also developed a historical exhibition for NTID's 50<sup>th</sup> anniversary, creating content and including photos and archival objects. The exhibition will be converted into a traveling exhibition and given to the Alumni Office to use.

A Dyer Arts Center representative presented at several conferences and workshops such as Small Museums Association on the subject of Deaf Art and Deaf History in the Museum and on the subject of accessibility for deaf people in museums at the Museum Association of New York. The Dyer Arts Center also consulted on accessibility for an exhibition at the Rochester Museum and Science Center and participated in the creation of signs related to art terminology for ASLCore. In partnership with Center on Access Technology, the Dyer Arts Center released an app where visitors could learn more about the artworks in the center.

The center acquired 27 new pieces for the permanent collection and also has acquired hundreds of sketches and archival materials from artist Igor Kolombatovic's family. Under the NTID Office of the President, the Dyer Arts Center executed two commissioned artworks for NTID—one was *Together* created by Susan Dupor for the 50<sup>th</sup> anniversary, and the other was a bust of NTID's first deaf leader, Dr. Robert Davila, created by Olivia Kim.

The Dyer Arts Center also developed a rental policy for using the center as an event space as a means for increasing revenue.



*This summer, NTID's Dyer Arts Center hosted the exhibit 50 Artists, 50 Years, featuring art created by NTID alumni over 50 years in conjunction with NTID's 50<sup>th</sup> anniversary. This piece, Echo Mode, by Ashley Hannan '08, was one of the works featured.*

## Imagine RIT: Innovation and Creativity Festival

Rochester Institute of Technology held its 11<sup>th</sup> annual Imagine RIT: Innovation and Creativity Festival April 28, 2018. The 2018 festival featured a record 438 interactive exhibits in science, technology, engineering, the arts, mathematics and more, plus live entertainment.

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More than 25,000 people came to campus on Saturday, April 28, 2018, for the 11<sup>th</sup> 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 a record 438 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:

- **Inclusive Museum Experience App:** A cross-platform app that allows greater accessibility while allowing the user to learn more about a work of art using numeric input, scanning a QR code or using NFC (Near Field Communications).
- **Accessible Mixed Reality with HoloLens:** The NTID Center on Access Technology's exhibit using the Microsoft HoloLens explored how MR could be used to improve accessibility for deaf and hard-of-hearing individuals.
- **VisualSync: An Accessible Rowing Experience:** This exhibit explored the use of Automatic Speech Recognition to allow deaf and hard-of-hearing members of RIT's crew teams to receive commands from the coxswain in real time.
- **Digital STEM for Deaf and Hard-of-Hearing Students:** This exhibit demonstrated the multiple ways that the Deaf and Hard of Hearing Virtual Academic Community (DHHVAC), sponsored by the National Science Foundation, supports student learning in STEM fields.
- **ASLCORE – Sign Vocabulary Website:** ASLCORE.ORG is a website providing new, conceptually accurate American Sign Language translations of content-specific vocabulary and concepts. Groups of Deaf translators have created new signs in the subjects of Philosophy, Literature, Physics, Biology and Art.



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.

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### 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](http://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)

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- *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).



## 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.



Teams from 49 middle schools across the nation participated in NTID's Math Competition in April 2018.

## Outreach Highlights

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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 2018, 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; Steps to Success, a one-day camp for Black or African American, Hispanic/Latino and American Indian or Alaska Native students in grades 7–9; a math competition for middle school students; the Digital Arts, Film and Animation Competition for students in grades 9–12; the Health Care Careers Exploration Camp, a summer program for students in grades 9–11; Droids and Drones, a camp held in Alabama for students in grades 10–12 and Discovering Agriculture through STEM, a camp held in California for students in grades 9–12. (See following pages for program details.)
- Explore Your Future (EYF), a week-long career exploration and evaluation program for deaf and hard-of-hearing students about to enter their junior or senior year of high school, is one of NTID's most successful outreach programs. EYF provides opportunities for high school students to learn about themselves and their educational and life/career choices, and is based on the idea that people have differing interests in six areas: Realistic, Investigative, Artistic, Social, Enterprising and Conventional. Students participate in hands-on career exploration classes and personal awareness instruction. Myriad social activities and dorm-living opportunities give the students a taste of college life. A total of 6,846 students have participated in EYF over the past 34 years. Thirty-two percent of the summer 2017 participants subsequently enrolled at NTID. Two sessions were offered in summer 2018. This year's participants came from 30 states, the District of Columbia and Canada.



### Other Outreach Activities

- C-Print® software, developed at NTID, is used by real-time captionists to produce text of spoken content. C-Print is an access service option for deaf and hard-of-hearing students in educational environments. Inquiries about C-Print come via email, phone calls and website visits. From October 2017 through September 2018, there were approximately 2,916 email dialogues and 246 phone call discussions with C-Print Product Development. The C-Print website received 8,713 visits from October 2017 to September 2018. 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 125 from October 2017 through September 2018. In addition, the C-Print Mobile client is available for download in the iTunes and Google Play stores.
- The NTID Office of Alumni & Constituent Relations plans and implements strategies for engaging alumni and other constituents through social and professional development events, volunteer opportunities and other activities, both campus-based and in targeted regions around the country. With counsel from, and in collaboration with, the NTID Alumni Association Board of Directors, Alumni and Constituent Relations works to build and maintain connections between NTID and its almost 9,000 alumni. With NTID celebrating its 50<sup>th</sup> anniversary, close to 5,000 alumni and guests participated in more than 20 alumni activities and events across the country and internationally, including Reunion Roadshows, homecoming events, alumni receptions and networking opportunities and the NTID 50<sup>th</sup> Anniversary Reunion itself which brought more than 3,500 alumni and friends to the campus in June 2018.

## 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.

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In 2018, RIT/NTID welcomed more than 527 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 2018 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 21<sup>st</sup> Century American workforce.

### Digital Arts, Film and Animation Competition

Deaf and hard-of-hearing students in grades 9–12 submitted 34 entries to the 2018 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 2018, 149 students from 49 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 13<sup>th</sup> annual SpiRIT Writing Contest for deaf and hard-of-hearing students attracted 26 students in grades 10–12 from around the United States in May 2018. 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 deaf and hard-of-hearing girls and 29 deaf and hard-of-hearing boys in grades 7–9 attended TechGirlz/TechBoyz in 2018 to explore their interests in science, technology, engineering and mathematics. This is the 12<sup>th</sup> year for TechGirlz and the seventh year for TechBoyz. The week-long summer camps held in July gave girls and boys the opportunity to learn more about careers in science and technology-related fields. They built their own computers, analyzed a "crime scene" and worked with computer-aided drafting equipment to create a telescope. The program included an hour-long workshop for parents that focused on what colleges expect from high school students, how parents can encourage their students to prepare for college and how to access financial aid.

## Pre-College Outreach (continued)

### Health Care Careers Exploration Camp

The Health Care Careers Exploration Camp is a program for deaf and hard-of-hearing students entering 10<sup>th</sup>–12<sup>th</sup> grade. This program allowed 20 students the opportunity to learn about various careers in health care in order to discover what types of careers fit their interests. The students attended medical demonstrations and area medical facilities, were part of hands-on demonstrations and became CPR/first-aid certified.



#### Steps to Success

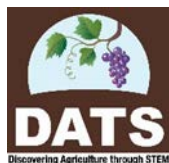
Steps to Success 2018 was held in partnership with the Southern Regional National Black Advocates Conference in Raleigh, North Carolina. Sixteen deaf or hard-of-hearing middle school students who were Black or African American, Hispanic/Latino and American Indian or Alaska Native registered for the program to learn about preparing for college and postsecondary careers.

### Droids and Drones

Droids and Drones was offered for the third time this year under the NTID Regional STEM Center. This program was designed to promote career interest in science, technology, engineering and math with emphasis on drone technology and aviation physics. The week-long program, held at the University of Alabama campus in Huntsville, Alabama, was attended by 30 students from seven southeast states.



### Discovering Agriculture through STEM



Twenty-four deaf and hard-of-hearing high school students from California attended Discovering Agriculture through STEM on June 24-29, 2018. Hosted by NTID Outreach at Fresno State University, agriculture-related activities included a mixture of hands-on laboratories, engineering challenges, career exploration assessments and facility tours. Six RIT/NTID staff and faculty members and four RIT/NTID students traveled to Fresno to facilitate the week-long program. California's Department of Vocational Rehabilitation and the Deaf and Hard of Hearing Service Center of Fresno provided job advocacy and pre-employment transition services workshops.

Pre-College Outreach AY 2017-2018			
	Total Participants	Minorities	
		Number	Percent
Explore Your Future	179	92	51%
SpiRIT Writing Contest	26	8	31%
Digital Arts, Film and Animation	34	7	21%
Math Competition	149	41	28%
Steps to Success	17	17	100%
Health Care Careers Exploration Camp	20	6	30%
TechGirlz/TechBoyz Camp	49	15	31%
Droids and Drones	30	15	50%
Discovering Agriculture through STEM	23	13	57%

## 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 a partnership with Congress to establish a formal regional partnership in the southeastern United States, with at least one organization to expand the geographic reach of activities and services

supported by NTID consistent with NTID's mission and strategic plan. NTID contracted with the Alabama Institute for the Deaf and Blind (AIDB) since November 2016 to serve as the NTID Regional STEM Center-Southeast (NRSC-SE). The region served by the southeast states includes Alabama, Florida, Georgia, Louisiana, Kentucky, Mississippi, North Carolina, South Carolina and Tennessee.

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### Droids and Drones

NRSC-SE partnered with University of Alabama, Huntsville, to host the Droids and Drones Summer Camp June 17-22, 2018, at the Huntsville campus. Droids and Drones had 30 students from the Southeast region. NTID faculty and NTID alumnus and current UAH staff, Steve Forney '09, '12, taught coding and STEM basics to the campers. Students had the opportunity to build their own drone and droid and learned about 3D printing.

### Georgia STEM Camp

NRSC-SE partnered with Georgia Vocational Rehabilitation and the Georgia Commission for the Deaf and Hard of Hearing to hold the Georgia STEM Camp, which took place June 10-15, 2018, at Georgia State University in Atlanta. The STEM Camp had 15 students from Georgia. NTID faculty and staff members taught 3D printing and solar panel workshops. Students built and brought home a portable solar panel phone charger. NTID representatives also shared their experiences working in the STEM field during a Deaf STEM Professionals Panel.

### Marine Lab

Thirty-nine deaf and hard-of-hearing middle school students from the state of Florida attended Marine Biology Lab on November 10-12, 2017. Marine Biology Lab, hosted at MarineLab in Key Largo, gave students firsthand sight of the havoc Hurricane Irma wrought on the Keys. During the daytime, students boarded boats to wade through mangrove forests, snorkel through coral reefs and explore the Keys' vibrant ecology. After hours, they entered laboratories to view phytoplankton through microscopes and discussed the impact of humanity and weather on Earth.

### STEM Educators

NRSC-SE has adopted DeafTEC's practice of successfully integrating more deaf and hard-of-hearing individuals into the workplace in highly skilled technician jobs where these individuals are currently underrepresented and underutilized. DeafTEC serves as a resource for high schools and community colleges that educate deaf and hard-of-hearing students in STEM-related programs for employers. NRSC-SE has employed two new staff as "train the trainer" personnel. The staff has worked with NTID to deliver STEM instruction best practices for students who are deaf or hard of hearing.

### Employment

NTID Center on Employment (NCE) conducts trainings for corporations and visits job sites where our students have worked. The team also attends various conferences in the southeast region educating leaders about hiring and working with deaf and hard-of-hearing employees and how to make the workplace accessible.

### Interpreters

NRSC-SE's skilled interpreter trainers host workshops at conferences and educational training seminars on best practices on middle and high school STEM interpreting. NTID assembled a team of six interpreters to provide training on best practices in STEM interpreting.



## Explore Your Future

Explore Your Future (EYF) is a week-long career exploration and evaluation program conducted at NTID each summer for deaf and hard-of-hearing students about to enter their junior or senior year of high school. It is one of the college's most successful outreach programs. The program provides high school students with the opportunity to learn about themselves and their educational and life/career choices. It incorporates the framework that people have differing interests in six areas: Realistic, Investigative, Artistic, Social,

Enterprising and Conventional. Students participate in hands-on career exploration classes and personal awareness instruction. Myriad social activities and dorm-living opportunities give participants a taste of college life. A total of 6,846 students have participated in EYF over the past 34 years. Thirty-two percent of summer 2017 participants subsequently enrolled at NTID. Two sessions were offered in summer 2018. This year's participants came from 30 states and Canada.

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Number of Participants	100	213	199	203	179
Percentage of Minorities	32%	34%	47%	55%	51%
Percentage Enrolling at NTID	60%	36%	32%	32%	N/A*



*High school juniors and seniors explore STEM careers and more at NTID's week-long Explore Your Future (EYF) camp. In 2018, 179 students attended EYF.*

\* Students from EYF 2018 currently are in the process of applying to NTID.

## Explore Your Future – Enrollment by Location

Summer 2018 EYF students represented 30 states and Canada.

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Home State or Country	Number in EYF Summer 2018
Alabama	1
Arizona	1
California	36
Colorado	3
Connecticut	1
District of Columbia	2
Florida	7
Georgia	2
Illinois	13
Indiana	2
Kentucky	4
Louisiana	3
Maryland	13
Massachusetts	6
Michigan	5
Minnesota	5
Missouri	3
Nebraska	3
New Hampshire	2
New Jersey	3
New York	31
North Carolina	3
Ohio	3
Oregon	1
Pennsylvania	6
South Carolina	1
Texas	5
Virginia	4
Washington	2
West Virginia	1
Wisconsin	6
Canada	1
<b>Total</b>	<b>179</b>

## 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.

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**Regional Partnership Model:** The goal of the DeafTEC partnership model is to build a mutually supportive professional community in selected regions of the country that will improve access to technological education and employment for deaf and hard-of-hearing students. DeafTEC has established this train-the-trainer partnership model by selecting one high school, one community college and one or more employers within four regional areas: California, Florida, Texas and, added in 2015, the Midwest region based in Illinois. DeafTEC's regional partners are:

### California

California School for the Deaf, Riverside  
Cisco Systems Inc., San Jose  
Solar Turbines Incorporated, San Diego  
Qualcomm, San Diego

### Midwest

Hinsdale South High School, Darien, Illinois  
Harper College, Palatine, Illinois  
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)

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4. *Writing in the Disciplines* workshop assists STEM instructors in bringing a *Writing in the Disciplines* (WID) approach to their STEM classes, which provides students with writing practice that both improves their writing and enhances their learning in the discipline.

**Train-the-Trainer Professional Development.** A *Promoting Student Success in Math Through Best Practices Train-the-Trainer* workshop was offered at NTID to 11 participants from high school and community college partners on August 12-14, 2018.

To date, DeafTEC has offered a total of 17 train-the-trainer sessions to 238 participants. (Of those, 92 participants were trained to offer more than one workshop.)

**Partner-Led Professional Development.** In FY 2018, DeafTEC partners offered 33 workshops to 537 participants.

- Nine *Project Access* workshops to 193 educators
- Fifteen *Writing in the Disciplines* workshops to 211 educators
- Eight *Promoting Student Success in Math through Best Practices* workshops to 86 educators
- One *Working Together* workshop to 47 employees

To date, DeafTEC partners have offered 160 workshops to a total of 2,625 attendees.

**Student STEM Activities.** Two hundred and fifty-one (251) deaf and hard-of-hearing students participated in STEM awareness activities offered by DeafTEC's educational partners this year. These activities included:

- Miami Mini STEM Camp, Florida School for the Deaf and the Blind, July 24-26, 2018: one high school and two middle school students attended
- Miami Mini STEM Camp, Florida School for the Deaf and the Blind, July 17-19, 2018: two high school and two middle school students attended
- STEM Career Exploration Weekend, Florida School for the Deaf and the Blind: 21 high school students and 20 parents and professionals attended
- STEM Camp, Texas School for the Deaf, June 24-29, 2018: nine students attended
- Discovery Retreat: Exploring the Weather, Texas School for the Deaf, April 20- 22, 2018: 16 high school students attended
- Discovery Retreat: Exploring the Weather, Texas School for the Deaf, February 17, 2018: 20 middle and high school students and 32 parents and professionals attended
- IBM THINKLab Visit, Austin Community College, February 23, 2018: 10 college students attended
- Deaf Space Pioneer Day, Texas School for the Deaf, January 14, 2018: 41 on-site students and 90 off-site students attended
- Qualcomm's Thinkabit Lab Visit, California School for the Deaf, Riverside, December 4, 2017: 12 middle school students attended
- Discovery Retreat: Exploring Weather, Texas School for the Deaf, November 11 -12, 2017: 22 high school students and three college 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 20, 2017, 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/](http://www.deaftec.org/)) serves as a national resource on technical educational and technician careers for deaf and hard-of-hearing students, their parents, teachers and future employers. The website was updated this year and now contains the following updated and new sections:

## DeafTEC (continued)

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- **Best Practices for Teaching.** This major section of the website has been completely revised, eliminating redundancy and improving navigation. This section of the website focuses on helping instructors understand and address the challenges deaf and hard-of-hearing students face in mainstream classes, and presents strategies that teachers can use to meet these challenges and improve their teaching including creating STEM-focused lectures for illustrating classroom lecturing do's and don'ts, and updating the popular PacerSpacer videos. The best practices for teaching materials can be found at: <http://deaftec.org/classact>.
- **Universal Design for Instruction (UDI).** Information on Universal Design for Instruction (UDI), UDI Principles and how UDI Principles can be applied in the classroom, as well as a list of UDI resources, have been added to the website.
- **Survival Signs.** New videos of signs for mainstreamed teachers like "Good morning," "Can I help you" and "Can you see me after class" were created to replace the outdated videos that were on the website.
- **Captioning Media.** 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.** We continue to add materials related to STEM careers. This year we added three short videos related to welding careers produced by the Communication Services for the Deaf for Austin Community College: *A Career in Welding*, *Let's Meet Deaf Welders*, and *Working with Deaf Welders*. This section of the website now contains nine high-quality videos of deaf professionals talking about how they prepared for these careers and how they succeeded on the job. The videos can be viewed at <http://deaftec.org/stem/professionals>.
- **The Importance of STEM.** This webpage under the website's STEM Employment section makes the case for why a career in a STEM field is such a good choice for deaf and hard-of-hearing students, since deaf and hard-of-hearing workers in STEM careers earn 30 percent more than deaf workers in non-STEM careers, regardless of degree. This resource can be viewed at <http://deaftec.org/why-stem-deaf-and-hard-hearing-students>.
- **Employers' Resources.** Progress is being made with the development of online learning modules for employers to help them learn how best to integrate successfully deaf and hard-of-hearing individuals into their workplaces. The modules are based on the *Working Together: Deaf and Hearing* workshop created by NTID's Center on Employment and offered by DeafTEC's regional partners.
- **STEM ASL Video Dictionary Project.** The dictionary 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>.

## DeafTEC (continued)

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- **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.

**Project Fast Forward.** Project Fast Forward originally was established in 2006 with a three-year grant from the National Science Foundation's Advanced Technological Education program under award DUE#: 0602761 and now is an integral part of DeafTEC. The goal of the project is to build a pathway for deaf and hard-of-hearing students to transition from high school to college in selected STEM disciplines by allowing deaf and hard-of-hearing high school students to take dual-credit courses, earning RIT/NTID college credit while they are still in high school.

- **School Partners.** During the academic year 2017-2018, dual credit courses were offered at one new school and 12 established schools. All of the Project Fast Forward school partners are listed below:
  1. Alabama Institute for the Deaf and Blind, Talladega, Alabama
  2. American School for the Deaf, West Hartford, Connecticut
  3. Atlanta Area School for the Deaf, Atlanta, Georgia
  4. California School for the Deaf, Fremont, California
  5. California School for the Deaf, Riverside, California
  6. Cypress Ridge High School, Houston, Texas
  7. Eastern North Carolina School for the Deaf, Wilson, North Carolina
  8. Florida School for the Deaf and the Blind, St. Augustine, Florida
  9. Hinsdale South High School, Hinsdale, Illinois
  10. Indiana School for the Deaf, Indianapolis, Indiana
  11. The Learning Center, Framingham, Massachusetts
  12. Lexington School for the Deaf, Jackson Heights, Queens, New York
  13. Marilton School for the Deaf, Los Angeles, California
  14. Maryland School for the Deaf, Frederick, Maryland
  15. McNeill High School, Round Rock, Texas
  16. Mill Neck Manor School for the Deaf, Mill Neck, New York
  17. North Carolina School for the Deaf, Morganton, North Carolina
  18. Oklahoma School for the Deaf, Sulfur, Oklahoma
  19. Ohio School for the Deaf, Columbus, Ohio
  20. Plano Senior High School, Plano, Texas
  21. Rochester School for the Deaf, Rochester, New York
  22. Texas School for the Deaf, Austin, Texas
  23. University High School, Irvine, California
  24. Utah Schools for the Deaf and the Blind, Ogden, Utah

## DeafTEC (continued)

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25. Vines High School, Plano, Texas

26. 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 Personal Finance course is a new offering and will be taught for dual credit during 2018-2019 school year.
  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. *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
  10. *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
  11. *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 2017-2018, 26 course sections were taught at partner high schools with 144 deaf and hard-of-hearing high school students enrolled in those courses. Of these students, 87.5 percent successfully completed their dual-credit course and earned three RIT credits.

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 2018:

- 195 dual-credit course sections were taught by 68 teachers in their high schools.
- 1,047 registrations were recorded in Project Fast Forward courses.
- 808 unique deaf and hard-of-hearing students participated in the program.
- 239 deaf and hard-of-hearing students took more than one course.
- 730 (70%) of students enrolled in dual-credit courses received passing grades.
- 2,190 RIT/NTID credits were awarded to deaf and hard-of-hearing students.

For 2018-2019, 99 students are registered in 18 course sections.

- **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.

## DeafTEC (continued)

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In July 2018, training was offered to eight new Project Fast Forward high school teachers and two new Project Fast Forward high school counselors. During the 11 summers of Project Fast Forward, 2007-2018, the following numbers of teachers and counselors have participated in summer professional development:

- 82 teachers from 30 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 111 teacher trainings.
- 31 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 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. The PG2G team has offered seven professional development workshops to 208 community college faculty and staff related to the *Top Ten* list.

**Epsilon Pi Tau National Honor Society.** On May 1, 2018, with support from DeafTEC, the Delta Xi chapter of Epsilon Pi Tau National Honor Society established at NTID inducted its fourth group of members consisting of 18 associate-level students and three NTID faculty. 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 290 employer representatives received training through the NTID Center on Employment (NCE) in AY 2017-2018.

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## Employer Training and Educational Programs

NTID's Center on Employment conducted, delivered and presented 10 programs for 290 human resources professionals and company representatives.

### NTID Career Fair

The 17<sup>th</sup> annual NTID Career Fair was held in October 2017 with 48 employers attending and close to 300 students and alumni participating. During this fair, five employers participated on a panel attended by student job seekers to explain the job search process from their company's perspective and answer questions from student attendees.

### Co-op Visitation Program

Sixteen NTID faculty and staff visited 37 students on cooperative education assignments and their supervisors in 14 states.

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

- Consulted with 116 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 2017.
- Successfully completed Louisiana, Mississippi, North Carolina and Tennessee trips, which included 10 employer activities for 115 company representatives.
- Exhibited and interacted with more than 50 company representatives at the Disability:IN conference in Las Vegas, Nevada, in July 2018.

### NCE Marketing Highlights

- Developed news releases and articles to promote employer participation in the NTID Career Fair.
- Exhibited at SHRM Diversity & Inclusion in San Francisco, California, in October 2017.
- Met and interacted with more than 30 employer representatives at the National Industrial Liaison Group Conference in Anaheim, California, in August 2018.
- Reviewed and revised the program marketing pieces, NCE brochure and NCE website ([www.ntid.rit.edu/nce/](http://www.ntid.rit.edu/nce/)) to ensure content was up to date.
- Posted current relevant information on the NCE Facebook page.
- Revised and upgraded the Speechreading video for the Working Together: Deaf & Hearing People program.
- Featured student and recent graduate success stories on the NCE website at least once a month.
- Redesigned and upgraded NCE tabletop exhibit for use in conference.

## Faculty and Staff

As of fall 2018, 35 percent of NTID's workforce was eligible for retirement.



Laural Hartman '05, '07, is a faculty member in NTID's Visual Communications Studies department. Her work was featured in the *50 Artists, 50 Years* exhibit in NTID's Dyer Arts Center.

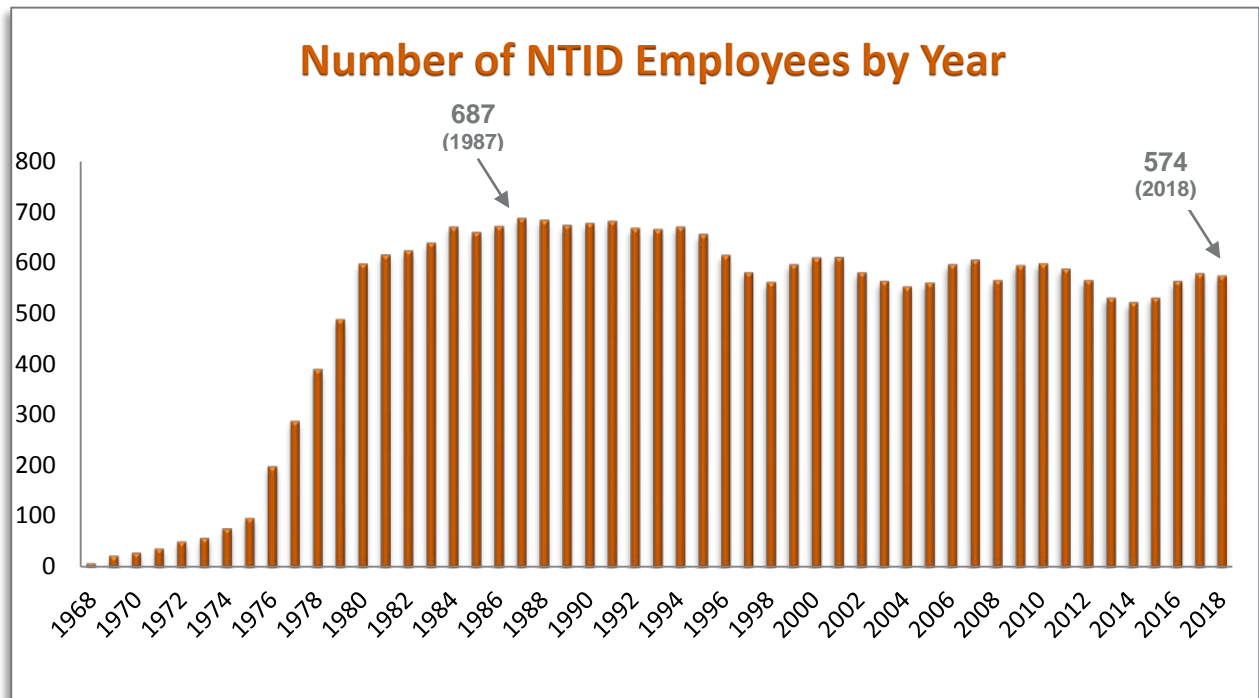
## Faculty and Staff Highlights

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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 2018, NTID employed 574\* faculty and staff, down from 578 in fall 2017.



\* Of the 574 employees, 561.89 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 2018
<b>Faculty</b>		
Professor	20	\$111,780
Associate Professor	39	\$92,124
Assistant Professor	27	\$72,006
Principal/Senior Lecturer	32	\$70,756
Lecturer	37	\$61,600
<b>Subtotal Faculty</b>	<b>155</b>	<b>\$79,458</b>
<b>Staff</b>		
Exempt Staff	125	\$68,139
Non-Exempt Staff	294	\$45,793
<b>Subtotal Staff</b>	<b>419</b>	<b>\$52,460</b>
<b>Total</b>	<b>574**</b>	<b>\$59,750</b>

\* 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, 561.89 are covered by NTID's operating funds.

## Tenure-Track Positions and Faculty Rank

In FY 2018, senior-level faculty members (professor and associate professor) comprised 71 percent of all ranked tenure-track faculty as compared to 47 percent in FY 1985. Of the 75 tenure-track positions, 84 percent are tenured.

Rank	Number of Tenure-Track Positions*					FY 2018 Faculty with Tenure	
	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	Number	Percent
Professor	28	25	26	24	20	20	100%
Associate Professor	45	43	36	33	33	33	100%
Assistant Professor	35	35	30	28	22	10	45%
<b>Total Positions</b>	<b>108</b>	<b>103</b>	<b>92</b>	<b>85</b>	<b>75</b>	<b>63</b>	<b>84%</b>

\* 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 2018, 95 percent of full-time, tenure-track faculty members held graduate degrees.

FY 2018 Highest Degree Level Achieved Tenure and Tenure-Track Faculty*		
	Number	Percent
Doctorate	37	50%
Master's	34	45%
Bachelor's	4	5%
<b>Total</b>	<b>75</b>	<b>100%</b>



*In July 2018, NTID earned a \$250,000 grant to develop open source software that will enable communities to create literacy content in their country's sign languages and share it via a digital library of folktales. The NTID team pictured here left to right, Mel Chua, Stephen Jacobs, Tommie Sarchet-Maher '03, '09, Kim Kurz '93, '95 and Christopher Kurz '95, collaborated with the Philippine Federation of the Deaf and De La Salle-College of Saint Benilde to develop a proposal that will bring folktales and sign language to deaf and hard-of-hearing Philippine children.*

\* Includes ranked administrators.

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

NTID's faculty and staff average 47.0 years of age with 13.8 years of service at NTID. As of October 2018, 35 percent are eligible for retirement.\*\*

### FY 2018

	Percent Full Time	Average Age	Average Length of Service	Currently in Retirement Transition
Professor	100%	62.3	29.8	1
Associate Professor	97%	56.7	24.7	2
Assistant Professor	100%	48.2	14.1	1
Principal/Senior Lecturer	100%	51.2	15.6	0
Lecturer	95%	43.3	6.8	0
Exempt Staff	91%	47.3	13.6	0
Technical/Clerical	62%	47.5	11.9	1
Interpreter	77%	42.4	14.0	0
Real-Time Captionist	18%	43.9	7.8	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 2014	FY 2015	FY 2016	FY 2017	FY 2018
<b>Full-Time:</b>					
Faculty	11	16	7	10	4
Exempt Staff	3	11	14	11	4
Non-Exempt Staff*	14	18	32	7	24
<b>Total Full-Time</b>	<b>28</b>	<b>45</b>	<b>53</b>	<b>28</b>	<b>32</b>
<b>Part-Time:</b>					
Faculty	0	1	3	1	0
Exempt Staff	0	1	1	1	0
Non-Exempt Staff*	3	12	15	39	7
<b>Total Part-Time</b>	<b>3</b>	<b>14</b>	<b>19</b>	<b>41</b>	<b>7</b>
<b>Total</b>	<b>31</b>	<b>59</b>	<b>72</b>	<b>69</b>	<b>39</b>

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



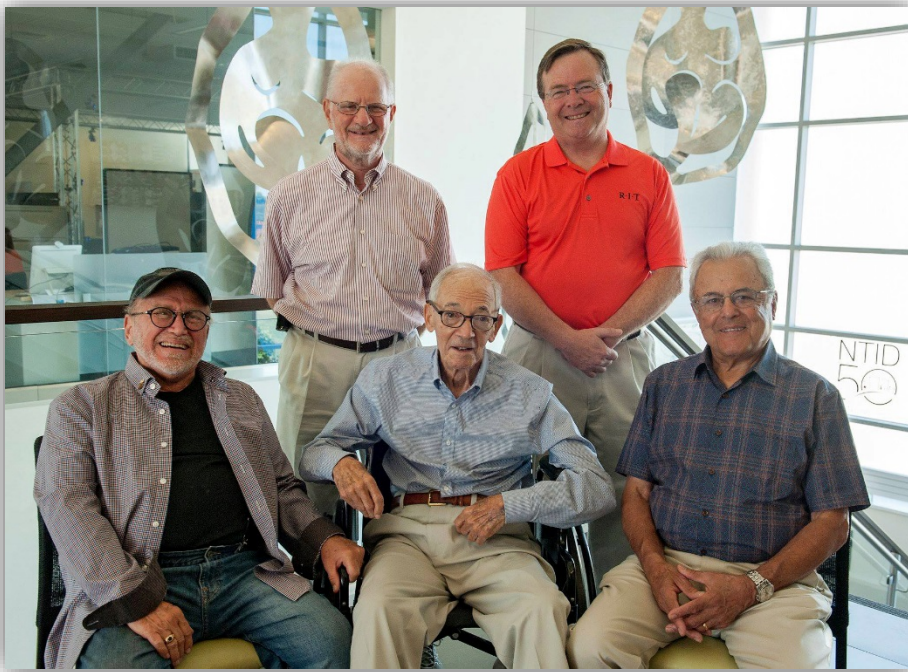
## Faculty and Staff Terminations

The faculty and staff turnover rate, 11.1 percent, is an increase from last year. Retirements of current faculty and staff are expected to rise as the employee base ages.

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	
Full-Time/Part-Time					Percent	Number
Faculty	8.8%	11.2%	8.8%	10.4%	9.0%	14
Exempt Staff	9.2%	5.1%	4.0%	4.5%	10.4%	13
Non-Exempt Staff*	9.5%	8.2%	9.4%	10.3%	12.6%	37
<b>Total</b>	<b>9.2%</b>	<b>8.5%</b>	<b>8.0%</b>	<b>9.0%</b>	<b>11.1%</b>	<b>64</b>

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

## RIT/NTID Leadership



**NTID's 50<sup>th</sup> Anniversary Reunion in June 2018 reunited five of NTID's six leaders. From left to right, they are: James J. DeCaro, 1995 and 2010; T. Alan Hurwitz, 2003-2009; D. Robert Frisina, 1967-1976; Gerard J. Buckley '78, 2011-present and Robert R. Davila, 1996-2003. William E. Castle, 1976-1995, was unable to attend.**

## NTID Administrative Council\*

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



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



**Dr. Alvin C. Merritt Boyd III '07**  
Special Assistant for  
Diversity and Inclusion



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



**Marianne Gustafson**  
Associate Dean for Curriculum  
and Special Projects



**Linda L. Hoke**  
Executive Assistant to  
the President and  
Office Manager



**Bernard Hurwitz, J.D.**  
Associate Vice President for  
NTID Administration



**Dr. Denise Kavin**  
Assistant Dean and  
Executive Director of NTID  
Outreach, Placement and  
Special Projects



**Dr. Mary Karol Matchett '88**  
Assistant Vice President  
for Student and  
Academic Services



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

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\* The following individual also served on the NTID Administrative Council in FY 2018: Stephanie Smith Albert '88, Director of Diversity and Inclusion.

## NTID Administrative Council (continued)

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**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.

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### Active Members

**Bedarius Bell, Jr.**

State Coordinator of Deaf and Hard of Hearing Services, Alabama Department of Rehabilitation

**Lisa Dallos**

Founder, High10Media

**Tracy Ivy '96, '00, '09**

American Sign Language Teacher, Minnetonka High School

**Dr. Christopher Leheldt**

Dentist, Elmwood Dental Group, P.C.; *Chair*

**Pamela Lloyd-Ogoke '81**

Chief of Community Integration Services and Supports, North Carolina Division of Vocational Rehabilitation Services

**Mary Beth Mothersell '85**

Senior Customer Relations Manager, Sprint

**David Nelson '81, '85**

Senior Community Outreach Specialist, Amtrak

**Karen Putz**

Owner, Ageless Passions

**Kathleen Treni**

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

**Dr. Sean Virnig**

Associate Director, State Special Schools and Services Division, California Department of Education

**Dr. Douglas Watson**

Professor Emeritus and former Director, Research and Training Center for Persons Who Are Deaf or Hard of Hearing, University of Arkansas

**Dr. Scott Wills**

Research Scientist, The Dow Chemical Company

## NTID National Advisory Group (continued)

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### 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



*In March 2018, NTID was saddened by the loss of Congresswoman and honorary NTID National Advisory Group member Louise Slaughter. Congresswoman Slaughter was a staunch advocate for NTID funding, helped launch the Task Force on Health Care Careers for the Deaf and Hard-of-Hearing Community and received the RIT Presidential Medallion in 2010 in honor of her support for deaf and hard-of-hearing students. She will be missed.*

## 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.

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### Active Members:

#### **Gary Behm '78, '81**

Interim Associate Vice President for Academic Affairs

#### **Dr. Gerard J. Buckley '78**

President, NTID; Vice President and Dean, RIT

#### **Shraddha Chaplot**

Greeneer/Hardware Test Engineer, Cisco Systems, Inc.

#### **Michael Ellis**

Global Director, Accessibility, Sprint

#### **Sean P. Flanagan**

Sr. Customer Business Manager, Bayer Consumer Care

#### **Sue Flanagan**

Volunteer Event Coordinator

#### **Eric Gjerdingen '92**

#### **Sarah Gordon '07**

Director of Community Relations, Convo

#### **Gordon Hewitt '73, '75**

Retired Chief for Strategic Enterprise Initiative Branch, U.S. Dept. of Homeland Security

#### **Edward Latimer, M.D.**

Psychiatrist

#### **Kathleen Martin**

Retired Director of Policy Review and Development, RIT Human Resources

#### **Jeff McCaw '89**

Chief Financial Officer, Goodwill Industries International

#### **Barbara Montan**

#### **Matthew S. Moore '83**

President, MSM Productions, Ltd.

Chairperson, NTID Performing Arts Advisory Committee

#### **Chris Prilenski**

#### **Brandi Rarus '91**

Vice President, Public Relations and Community Engagement, CSD, Inc.

#### **Bruce Schilling**

Broker Associate, Alain Pinel Realtors

## NTID Foundation Board (continued)

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**Kay Schilling**

Principal, El Dorado Associates

**Chris Soukup**

Chief Executive Officer, Communication Services for the Deaf

**James Stefano**

President, Synergy Global Solutions, Inc.

**Ricky Thomas**

President, Maguire & Moore Capital Advisors, Inc.

**James Tourangeau**

District Manager, Sorenson Communications, Inc.

**Sherri Turpin**

Chief Executive Officer, ZVRS

**Christopher D. Wagner '94**

Chief Operating Officer, 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

**Lori Younkman**

Owner, Entrepreneur, Danori Inc.



## RIT Officers

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**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**

Senior Vice President and Provost

**Dr. Keith Jenkins**

Vice President and Associate Provost for Diversity and Inclusion

**Dr. Sandra S. Johnson**

Senior Vice President for Student Affairs

**Dr. Katherine J. Mayberry**

Vice President for Strategic Planning and Special Initiatives

**Dr. Ian Mortimer**

Senior 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 K. Trierweiler**

Vice President and Chief Marketing Officer for Marketing and Communication

**Dr. James H. Watters**

Senior Vice President for Finance and Administration

## RIT Board of Trustees Active Trustees

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**Robert W. August**

Managing Partner, Laser Wash Group 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

**Judy B. von Bucher**

**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

**Cindy L. Cooper**

Women's Council Representative, Rochester Institute of Technology

**Hyacinth V. Drummond**

BS '91

**Arthur A. Gosnell**

Chairman and Chief Executive Officer, Stonehurst Capital LLC

**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*

**Jay T. Holmes**

Retired Executive Vice President and Chief Administrative Officer, Bausch & Lomb, Inc.

## RIT Board of Trustees Active Trustees (continued)

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**Stephen Hoover, Ph.D.**

Sr. Vice President and CTO, Xerox Corporation

**Andrew R. Jacobson**

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

**Thomas F. Judson, Jr.**

Chairman, The Pike Companies

**Richard A. Kaplan**

Chief Executive Officer, CurAegis Technologies Inc.

**Rick A. Kittles, Ph.D.**

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

**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.

**Essie L. Calhoun McDavid**

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

**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 Jr.**

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 Chief Executive Officer, Rochester Business Alliance, Inc.

**Wolfgang Pfizenmaier**

Retired Member of the Management Board, Heidelberger Druckmaschinen AG

**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.

## **RIT Board of Trustees Active Trustees (continued)**

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**Richard E. Sands**

Chairman, Constellation Brands, Inc.

**Janet F. Sansone**

Retired Chief Management Officer, The United States Government Printing Office

**Kevin Sheldon**

BS '02; Chief Operating Officer, CareJourney; also serves as RIT Alumni Association Representative

**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.

**Harry P. Trueheart III**

Chairman Emeritus, Nixon Peabody LLP

**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

**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 Chief Executive Officer, Complemar Partners, Inc.

**Ronald L. Zarrella**

Chairman Emeritus, Bausch & Lomb, Inc.



## Results of Financial Operations



**Ethan Ettienne, a Business Technology major from Lanham, Maryland, and star track-and-field athlete, shares a moment of gratitude with his family at commencement.**

## Financial Operations Highlights

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During FY 2018, 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 2.4 percent above FY 2017 levels. NTID's 2018 Federal appropriation increased 4.4 percent over FY 2017 funding. NTID exercised prudent cost management to keep cost increases to a minimum in light of the increased federal funding along with a decrease in NTID's non-Federal funds of 2.8 percent.

As noted on the next page, the full fiscal 2018 Federal Appropriation for NTID was \$73 million. The \$2 million not included in the statement of financial operating results was specifically designated for outreach efforts in the Southeast United States. In February 2017, NTID and the Alabama School for Deaf and Blind (AIDB) formalized a partnership and began aggressive efforts to execute the planned outreach activities. Despite the late start, all of the \$2 million in initial FY 2016 funding was expended, and expenditure of FY 2017 outreach funds was initiated. None of the funds from this outreach effort are reflected in the statement of financial operating results.

*Total Personnel Compensation* for FY 2018 increased approximately \$938,000 (or 2 percent) over FY 2017. This increase is a result of merit increases awarded to faculty and staff and to a limited extent, restoration of previously open positions within the college. NTID also added the position of Director of Diversity and Inclusion during this period.

*Total RIT Services* increased by approximately \$23,000 (or .1 percent) over FY 2017, primarily as a result of a \$249,000 (or 2.7) increase in cross-registered tuition charges paid to RIT.

*Total Other Expenditures* increased by approximately \$1.2 million (or 7.3 percent) above FY 2017. This increase was the net result of a year-to-year increase in Plant Funds, which is the up-front transfer of NTID funds for specific capital projects at the time projects are started. NTID has continually incurred equipment, construction and renovation costs as the college works to update its 50-year-old building and provide state-of-the-art facilities for its students.

NTID's FY 2018 financial results continue to demonstrate its strong commitment to excellent stewardship of resources and sound financial management and oversight.

## Financial Operating Results

	FY 2017	FY 2018	Variance \$	Variance %
<b>EXPENSES</b>				
Personnel Compensation Expenditures				
Salaries and Wages	\$35,151,424	\$35,939,240	\$787,816	2.2%
Benefits	11,480,072	11,630,360	150,288	1.3%
<b>Total Personnel Compensation</b>	<b>\$46,631,496</b>	<b>\$47,569,600</b>	<b>\$938,104</b>	<b>2.0%</b>
RIT Services Expenditures				
Direct:				
Residence Halls/Food Service, Student Services	\$7,622,103	\$7,457,753	(\$164,350)	-2.2%
Cross-Registered Tuition	9,211,949	9,461,325	249,376	2.7%
Physical Plant Services	2,555,577	2,561,560	5,983	.2%
Indirect:				
Overhead	11,775,089	11,706,736	(68,353)	-0.6%
<b>Total RIT Services</b>	<b>\$31,164,718</b>	<b>\$31,187,373</b>	<b>\$22,655</b>	<b>0.1%</b>
Other Expenditures				
Support Expenditures	\$7,266,312	\$6,895,035	(\$371,277)	-5.1%
Grant Cost Shares	1,240	0	(1,240)	-100%
Financial Aid	2,759,018	2,907,168	148,150	5.4%
Capital	8,972,756	3,686,153	(5,286,603)	-58.9%
Matching Endowment	116,373	86,322	(30,051)	-25.8%
Plant Fund	(2,686,965)	4,133,915	6,820,880	254.9%
<b>Total Other</b>	<b>\$16,428,734</b>	<b>\$17,622,272</b>	<b>\$1,193,538</b>	<b>7.3%</b>
<b>Total Expenses</b>	<b>\$94,224,948</b>	<b>\$96,465,566</b>	<b>\$2,240,618</b>	<b>2.4%</b>
<b>REVENUE</b>				
Federal Appropriation*	\$68,016,000	\$71,000,000	\$2,984,000	4.4%
Non-Federal Funds	26,208,948	25,465,566	(743,382)	-2.8%
<b>Total Revenue</b>	<b>\$94,224,948</b>	<b>\$96,465,566</b>	<b>\$2,240,618</b>	<b>2.4%</b>

\* The FY 2017 and FY 2018 Federal Appropriations were \$70,016,000 and \$73,000,000 respectively. The \$2,000,000 not included in these totals was specifically designated for outreach efforts in the Southeast United States. All \$2,000,000 of the FY 2016 appropriated amount and approximately \$449,000 of the FY 2017 appropriated amounts had been expended through the end of FY 2018.



## Tuition, Room, Board and Other Fees

The tuition rate increased by 5 percent while the rates charged for room, board and fees increased by 2.9 percent for a total combined rate increase of 4 percent. These non-federal resource collections constituted approximately 26 percent of NTID's total operating revenue.

<b>Rates Charged Students</b>					
	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>
Tuition	\$14,040	\$14,570	\$15,140	\$15,730	\$16,518
Room	6,758	6,954	7,162	7,376	7,596
Board	4,810	4,964	5,338	5,524	5,662
Fees	512	528	544	562	584
<b>Total</b>	<b>\$26,120</b>	<b>\$27,016</b>	<b>\$28,184</b>	<b>\$29,192</b>	<b>\$30,360</b>
Collections	\$25,935,419	\$27,295,204	\$26,432,000	\$25,465,566	*
Enrollment (Fall)	1,387	1,413	1,300	1,262	1,182
<b>Collections Per Student</b>	<b>\$18,699</b>	<b>\$19,317</b>	<b>\$20,332</b>	<b>\$20,179</b>	*

*Paula MacDonald, a computer-aided drafting technology major from Cumberland, Canada, was NTID's undergraduate delegate for the 2018 commencement ceremony. Having completed a co-op with Fulcrum Engineering, Paula is enrolled in RIT's Civil Engineering Technology baccalaureate program.*



\* As of the writing of this report, the collection information for FY 2019 is incomplete.

## Financial Aid



**ASL-Interpreting Education majors Brianna Conrad, of Frederick, Maryland; Connor Murray, of Kerhonkson, New York; and Caroline Geen, of Pittsford, New York; look forward to beginning their careers as sign language interpreters.**

## Financial Aid (Domestic Students)

Financial aid awards to domestic students totaled \$22.6 million in FY 2018, a .1 percent increase over FY 2017. Institutionally sponsored aid increased in FY 2018 by 9.3 percent and state and federal support increased by .4 percent. Loans taken out by domestic students decreased

by 8.9 percent, while the number of awards, including loans, increased slightly compared to FY 2017. Overall, the average financial aid (excluding loans) per domestic student increased by 6.6 percent in FY 2018.

SOURCE OF AID	2017		2018		Amount Diff %
	Awards*	Amount	Awards*	Amount	
<b>INSTITUTIONALLY SPONSORED SUPPORT</b>					
Grant-in-Aid:					
NTID Grant-in-Aid	298	\$1,309,518	294	\$1,244,125	-5.0%
RIT Grant-in-Aid	31	100,725	27	100,175	-.5%
Subtotal Grant-in-Aid	329	\$1,410,243	321	\$1,344,300	-4.7%
Scholarships:					
NTID	435	\$1,427,250	447	\$1,548,749	8.5%
RIT	95	226,283	91	216,626	-4.3%
NTID Endowments	762	2,223,163	867	\$2,739,828	23.2%
External Groups	99	276,956	92	229,878	17.0%
Subtotal Scholarships	1,391	\$4,153,652	1,497	\$4,735,081	14.0%
<b>Subtotal Institutionally Sponsored Support</b>	<b>1,720</b>	<b>\$5,563,895</b>	<b>1,818</b>	<b>\$6,079,381</b>	<b>9.3%</b>
<b>STATE AND FEDERAL SUPPORT</b>					
Grants:					
Pell Grants	531	\$2,399,441	539	\$2,619,065	9.2%
State Grants	168	435,230	198	488,173	12.2%
Subtotal Grants	699	\$2,834,671	737	\$3,107,238	9.6%
Other Federal Support:					
Vocational Rehabilitation	829	\$9,989,521	793	\$9,780,492	-2.2%
Federal Work Study	35	79,568	31	62,192	-21.8%
Subtotal Other Support	864	\$10,069,089	824	\$9,842,684	-2.3%
<b>Subtotal State and Federal Support</b>	<b>1,563</b>	<b>\$12,903,760</b>	<b>1,561</b>	<b>\$12,949,922</b>	<b>.4%</b>
<b>LOANS</b>					
Subsidized Federal Student Loan	439	\$1,549,083	434	\$1,530,951	-1.2%
Unsubsidized Federal Student Loan	483	1,808,142	397	\$1,419,925	-21.5%
Parent PLUS Loans	61	559,554	60	616,019	10.1%
<b>Subtotal Loans</b>	<b>983</b>	<b>\$3,916,779</b>	<b>891</b>	<b>\$3,566,895</b>	<b>-8.9%</b>
<b>TOTAL ALL FINANCIAL AID</b>	<b>4,266</b>	<b>\$22,384,434</b>	<b>4,270</b>	<b>\$22,596,198</b>	<b>.1%</b>
<b>Domestic Student Enrollment</b>		<b>1,255</b>		<b>1,213</b>	<b>-3.3%</b>
<b>Average Financial Aid per Student</b>		<b>\$17,836</b>		<b>\$18,628</b>	<b>4.4%</b>
<b>Average Financial Aid per Student Excluding Loans</b>		<b>\$14,715</b>		<b>\$15,688</b>	<b>6.6%</b>

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

# External Funding Sources



More than 3,000 NTID alumni returned to NTID's campus for the 50<sup>th</sup> Anniversary Reunion in June 2018.

## The NTID Foundation

NTID received \$1,057,998 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 50<sup>th</sup> Anniversary Reunion and a variety of research and pre-college outreach programs.

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Contributions of \$1,000 and above received during FY 2018 include:

<b>\$100,000 and Above Level:</b>	Anonymous Communication Service for the Deaf, Inc. William Randolph Hearst Foundation Maguire Foundation
<b>\$50,000 - \$99,999 Level:</b>	Mr. Gary W. '78, '81 and Mrs. Jeanne '81 Behm Council on Library & Information Resources Dr. Sharon A. Meyers Motorola Solutions Foundation ZVRS
<b>\$10,000 - \$49,999 Level:</b>	Dow Chemical Co. Foundation Easter Seals Inc. Fidelity Charitable Gift Fund Interpretek Jephson Educational Trust Daisy Marquis Jones Foundation Bruce and Kathleen Martin Merck Research Laboratories MSM Productions, Ltd. Mr. Marc S. Roer '81 Estate of Eleanor P. Scouten Sorenson Communications, Inc. Sprint
<b>\$5,000 - \$9,999 Level:</b>	Anonymous Bayer Consumer Care Dr. T. Alan and Mrs. Vicki T. Hurwitz Mr. Thomas B. Osborne '96, '00 Mr. James J. Stefano Mr. William Urich
<b>\$1,000 - \$4,999 Level:</b>	Mr. Elwin W. Babb Baird Foundation Mr. Derrick J. Behm The 2008 Beil Family Trust Mrs. Karen J. Beiter '88, '94 Mr. David S. Birnbaum '71 S. & J. Braitman Family Supporting Foundation, Inc. Mr. and Mrs. Andrew Brenneman '88 Dr. Laurie Brewer and Ms. Patricia M. Albanese '00 Dr. Gerard J. '78 and Mrs. Judy Buckley Dr. Pamela L. Carmichael '04 Dr. Jessica A. Cuculick '98, '02 Dr. Vincent A. Daniele Ms. Wendy Ann Dannels '98, '99, '00, '05 Dr. Robert R. Davila DawnSignPress

## The NTID Foundation (continued)

### **\$1,000 - \$4,999 Level:**

De La Salle-College of Saint Benilde  
Deaf Hearing Communication Centre, Inc.  
DEAF Inc.  
Mark '74, '76 and Beverly '75 Feder  
Dr. Terry and Mrs. Gail Feigenbaum  
Ms. Marianne M. Gustafson  
Mr. Frederic S. Hartman '82, '84  
Heart Cruises, LLC  
Mr. Gordon J. Hewitt '73, '75  
Samuel '77 and Barbara Ray '74, '84 Holcomb  
Mr. Bernard Hurwitz and Ms. Stacy Lawrence '93, '96  
Richard and Sylvia Hymes  
Dr. Ronald and Mrs. Lyn S. Kelly  
Mr. Aaron W. Kelstone  
Kramer Wealth Managers  
Dr. Christopher Lehfeldt  
Mr. Shaun G. Levine '13  
Ms. Gayle M. Macias '06  
Mr. John '91, '98 and Mrs. Loriann '94 Macko  
Mr. Parinay Malik '11  
Dr. Mary Karol Matchett '88  
Drs. Robert '70 and Susan '74 Mather  
Mr. Paul L. Mente, Jr.  
Mu Zeta Alumni Association  
Al Van Nevel Memorial Foundation  
Mrs. Angela Officer '88  
Mrs. Carole L. Pepe '83  
Phonak LLC  
Ms. Jacqueline A. Pransky '12  
Mr. Martin S. Price '86  
Mr. John T. Reid '79  
Mr. Joseph Pietro Riolo '85  
Rochester Area Community Foundation  
Rochester School for the Deaf  
Mrs. Sidonie Merkel Roepke '79, '81, '83, '84  
Mrs. Arlene H. Sankey '89, '93  
Mrs. Thomastine A. Sarchet-Maher '03, '09  
Mr. and Mrs. Michael S. Servé '76  
Mr. Robert Sidansky '77  
Sigma Nu Mu Zeta Chapter  
Mr. Erwin J. Smith  
Stefano La Sala Foundation, Inc.  
Mr. James D. Stuber  
Frank B. Sullivan Memorial Foundation, Inc.  
Mr. James Tourangeau  
Christopher '94 and Staci '92 Wagner  
Mr. Thomas Robert Willard '85  
Mr. Leonard C. Williams IV '77, '79  
Ms. Barbara J. Wood '75

## 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 2018, NTID development activity generated \$872,054 for endowment and restricted purposes. Of that amount, \$86,322 was matched with federal dollars and directed toward NTID's endowed scholarship funds.

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Endowment and Restricted Funds	\$1,321,580	\$1,348,092	\$450,505	\$683,466	\$872,054
Equipment and Software	\$57,117	\$69,697	\$43,738	\$20,530	\$40,717
<b>Total</b>	<b>\$1,378,697</b>	<b>\$1,417,789</b>	<b>\$494,243</b>	<b>\$703,996</b>	<b>\$912,771</b>



*In April 2018, Microsoft announced a partnership with NTID focused on piloting the use of Microsoft Translator language technology. The translator uses intelligent technology to transcribe a presenter's spoken words and display them in real time. The technology has been used in 10 RIT classes, such as the one pictured here, with NTID-supported students.*

## NTID Endowment Programs

A total of \$872,054, including matching federal funds\* of \$86,322, was added to the Federal Matching Endowment Fund corpus in 2018. The market value of NTID's Federal Matching Endowment portfolio stands at \$64,132,780.

The market value of NTID's total endowments, which include privately raised funds prior to the establishment of the Federal Matching Endowment program, is \$80,275,335.

### Value as of September 30, 2018

	Contributed Value	Market Value
<b>Funds Subject to Federal Investment and Spending Guidelines</b>		
Private	\$4,660,560	\$9,721,822
Federal	\$4,653,544	\$9,356,192
Subtotal	\$9,314,104	\$19,078,014
<b>Funds No Longer Subject to Federal Investment and Spending Guidelines</b>	\$20,111,055	\$45,054,766
<b>Total Federal Endowment</b>	<b>\$29,425,159</b>	<b>\$64,132,780</b>
<b>Other Endowments</b>	<b>Contributed Value</b>	<b>Market Value</b>
Private	\$11,919,335	\$16,142,555
<b>Total Endowments</b>	<b>\$41,344,494</b>	<b>\$80,275,335</b>

\* 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.

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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

Bernard Bragg Deaf Theatre, Signed Arts and Deaf Cinema Endowment Fund

Andrew and Mary Brenneman Annual Scholarship

Gladys Brooks Endowed Fund for the Laboratory Science Technology Program

Dr. Gerard Buckley Student Leadership Endowment

Citicorp/Citibank Endowed Scholarship Fund at NTID

Dr. Karen K. Conner Annual Scholarship Fund

Continental Corporation Endowed Scholarship Fund at NTID

Lillian M. Cowin Memorial Endowed Scholarship Fund

Robert R. and Donna E. Davila Endowed Scholarship Fund

James J. DeCaro Endowed Scholarship Fund

James and Patricia DeCaro Endowed Scholarship

Delta Sigma Phi Fraternity Endowed Scholarship Fund

Ronald Dodge Faculty/Staff Grants Endowed Fund

Ronald Dodge Memorial Endowed Scholarship Fund

Dreyfus Foundation Laboratory Science Technology Endowed Student Support Fund

Dorothy E. Ann Fund (D.E.A.F.) Endowed Scholarship Fund

Mr. and Mrs. Joseph F. Dyer Endowed Scholarship Fund

Joseph F. and Helen C. Dyer Arts Center Endowed Fund

Max Factor Family Foundation Endowed Scholarship Fund

Barbara M. Fallon KPMG Memorial Endowed Scholarship Fund

Rose and George Feigenbaum Endowed Scholarship Fund

Ruth H. Fenyvessy Memorial Endowed Scholarship Fund

Curt and Jean Feuer Scholarship at NTID

Maurice and Maxine Forman Endowed Scholarship Fund

Ann Wadsworth Frisina Memorial Endowed Scholarship Fund

Dr. Robert Frisina Award

Max and Helene Frumkes Memorial Endowed Scholarship Fund

## Scholarships, Endowed Funds and Estate Commitments (continued)

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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 Annual Scholarship  
Lucille Ritter Jennings Endowed Scholarship Fund  
Jephson Educational Trust Endowed Scholarship Fund for the Performing Arts  
JHB Anonymous Scholarship Fund  
Johnson Scholarship Foundation Endowed Scholarship for Innovation and Entrepreneurship  
David T. Kearns Endowed Scholarship Fund for Technical Excellence  
Ron and Lyn Kelly Endowed Scholarship for Deaf and Hard-of-Hearing Students  
Drew and Frances King Endowment Fund  
Sara L. Kuhnert Endowed Scholarship Fund  
La Sala Foundation Doctoral Fellowship Fund  
Johanna Larson Endowed 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

## Scholarships, Endowed Funds and Estate Commitments (continued)

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Dr. Genji Murai Endowed Scholarship Fund  
Mutterer Family Endowed Scholarship Fund  
M. L. Navrat Endowed Scholarship Fund for NTID  
Ruth G. Norton Endowed Scholarship Fund  
NTID Alumni Association Endowed Scholarship Fund  
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  
NYS Federation of Home Bureaus, Inc. Endowed Scholarship Fund in Honor of Martha Perry  
Milton H. and Ray B. Ohringer Endowed Scholarship Fund  
Robert F. Panara Endowed Scholarship Fund  
Shirley M. Panara Memorial Endowed Fund  
Sally J. Pimentel Endowed Scholarship  
Pulver Family Endowed Scholarship Fund  
Robert W. Rice Endowed Scholarship Fund  
RIT Celebration of Community Endowed Fund  
Mary Hope Robinson Endowment for the Performing Arts  
Dr. Ellie Rosenfield Endowed Scholarship Fund  
Rothman Family Endowment Fund  
Elizabeth Dunlap Sargent Memorial Endowed Scholarship Fund  
Royichi Sasakawa / James J. DeCaro Endowed Scholarship Fund  
Edward L. Scouten Endowed Fund for English Literacy  
Wilfrid and Isabel Searjeant Endowed Scholarship Fund  
S. Richard Silverman Endowed Scholarship Fund for International Deaf Students  
Carolie R. Simone Endowed Scholarship Fund  
Edythe and Edward Sklar Endowed Scholarship Fund  
David Smith Memorial Endowed Scholarship Fund

## Scholarships, Endowed Funds and Estate Commitments (continued)

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Benjamin J. Soukup Endowed Scholarship Fund

Sprint Endowed Scholarship Fund

Frank B. Sullivan Exemplary Business Student Award

Frank B. Sullivan Outstanding Graduate Business Student Award

Frank B. Sullivan Outstanding Student in Business Award

Solon E. Summerfield Foundation Endowed Scholarship Fund

Michael A. Swartzman Memorial Endowed Scholarship Fund

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



*In fall 2018, NTID welcomed the inaugural group of Maguire Scholars, deaf or hard-of-hearing students who receive \$5,000 per year, up to four years, in exchange for a minimum grade point average of 3.0 and participation in community service or extracurricular activities.*

## Grants and Contracts

During FY 2018 NTID submitted 23 new grant proposals requesting a total of \$8,521,448 in funding. Ten of these proposals were funded for a total of \$2,082,596; eight proposals are still pending; five proposals were not funded.

As of September 30, 2018, the annual reimbursed expenditures of all grants and contracts at NTID totaled \$2,794,956 with a total value of \$10,889,092 over the lives of the projects.

Project Title	Grant Provider	Year	Amount FY 2018	Total Value
Renewal of DeafTEC: Technological Education Center for Deaf and Hard-of-Hearing Students	National Science Foundation	4/4	\$804,587	\$3,999,807
Facilitating Knowledge Building in Cooperative Learning of Statistics in Mixed Teams with Deaf/Hard of Hearing and Hearing Students	National Science Foundation	3/4	\$96,691	\$499,830
Mechanism of Health Literacy and Information Accessibility	National Institutes of Health	3/4	\$135,908	\$454,111
Development of Temporal Visual Selective Attention in Deaf Children	National Science Foundation	3/3	\$171,692	\$449,949
RoadMAPPs to Careers: A New Approach to Mobile Apps Education featuring a Mapp for Deaf and Hard-of-Hearing Students	National Science Foundation	3/3	\$197,502	\$820,504
Rochester Prevention Research Center - Year 4	National Institutes of Health	1/1	\$22,952	\$27,066
Collaborative Research: Accessible STEM Instruction with Deaf Students: Supporting Faculty in Pedagogical Exploration and Innovation	National Science Foundation	2/3	\$166,848	\$443,200
RIT-RISE Scientists-in-Training Program for Deaf and Hard-of-Hearing Undergraduates	National Institutes of Health	2/5	\$117,256	\$366,494
Neurocognitive Plasticity in Young Deaf Adults: Effects of Cochlear Implantation and Sign Language Exposure	NYS Department of Health	1/5	\$329,215	\$1,096,977
Unveiling hidden companions in post-AGB stars: 3D simulations of evolved star binaries	National Aeronautics and Space Administration	1/3	\$41,463	\$79,195
Substance and Alcohol Intervention Services for the Deaf (SAISD) 2018	National Institutes of Health	1/1	\$108,995	\$360,697
MITRE FCC Telecommunications Relay Services	Center for Medicare & Medicaid Services	1/2	\$281,119	\$501,387
Pregnancy Outcomes and Experiences Among Deaf and Hard of Hearing Women- Year 1	National Institutes of Health	1/1	\$18,386	\$14,639
Collaborative Research: Multimethod Investigation of Articulatory and Perceptual Constraints on Natural Language Evolution	National Science Foundation	1/3	\$28,142	\$343,977

## Grants and Contracts (continued)

Augmented Reality: Accessible Dynamic Informal STEM Learning for Deaf and Hard-of-Hearing	National Science Foundation	1/2	\$1,203	\$258,861
NTID Mobile Apps Development Competition	Motorola Foundation	1/1	\$23,441	\$30,000
Languages of Interactive Flexible Technology: World Around You (LIFT-WAY)	United States Agency for International Development	1/1	\$7,355	\$25,000
Auditory Experience, Critical Periods and the Development of Categorical Perception in Cochlear Implant Users: A Preliminary Investigation	National Institutes of Health	1/2	\$9,979	\$23,616
<b>Total</b>			<b>\$2,794,956</b>	<b>\$10,889,092</b>



*In January 2018, NTID established the first National Science Foundation Deaf College Innovation Bowl, a competition that will showcase innovative ideas of deaf students from throughout the country centered on technological solutions that are STEM based. RIT's Simone Center for Innovation & Entrepreneurship will administer the competition along with NTID.*