DEPARTMENT of HEALTH and HUMAN SERVICES

National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR)

2021 Report to Congress

Prepared by

ADMINISTRATION FOR COMMUNITY LIVING

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Acronyms

ACL	Administration for Community Living
ADA	Americans with Disabilities Act
APR	Annual Performance Reporting System
ARRT	Advanced Rehabilitation Research Training Project
AV	Autonomous Vehicle
CL&P	Community Living and Participation
CLPC	Community Living Policy Center
DRRP	Disability and Rehabilitation Research Project
EMP	Employment
FIP	Field-Initiated Project
FY	Fiscal Year
GLB	Group Lifestyle Balance
H&F	Health and Function
HCBS	Home and Community-Based Services
HHS	U.S. Department of Health and Human Services
ICDR	Interagency Committee on Disability Research
KT	Knowledge Translation
MSI	Minority-Serving Institution
NIDILRR	National Institute on Disability, Independent Living, and Rehabilitation Research
RERC	Rehabilitation Engineering Research Center
RRTC	Rehabilitation Research and Training Center
SBIR	Small Business Innovation Research
SCI	Spinal Cord Injury
TBI	Traumatic Brain Injury

Executive Summary

The Workforce Innovation and Opportunity Act (WIOA) of 2014 transferred the National Institute on Disability, Independent Living and Rehabilitation Research (NIDILRR) to the Administration for Community Living (ACL) from the U.S. Department of Education. With this move, NIDILRR's mission remained unchanged -- to generate new knowledge and to promote its effective use to improve the abilities of individuals with disabilities to perform activities of their choice in the community, as well as to expand society's capacity to provide full opportunities and accommodations for individuals with disabilities. As the primary research enterprise within ACL, NIDILRR's mission is highly complementary to the overarching mission of ACL — to maximize the independence, well-being, and health of older adults, people with disabilities across the lifespan, and their families and caregivers.

ACL's NIDILRR programs address a wide range of disabilities and impairments across all age groups and promote health and function, community living and participation, and employment. To accomplish these goals, ACL invests in research, knowledge translation, and capacity-building activities through its discretionary grant-funding mechanisms.

Funding and Grants Management

The allocation of ACL's NIDILRR grant funds for fiscal year (FY) 2021 totaled $106,604,812. In addition, NIDILRR awarded $6,186,590 in contracts and other support activities in FY 2021. These funds supported 245 grant awards in FY 2021 which supported more than 1,400 discrete projects.

The peer review process for NIDILRR grant competitions is highly rigorous, with 20.6 percent of applicants receiving new grant funding during FY 2021 (see Table 1).

Productivity and Accomplishments

ACL funds research toward the development of new knowledge and innovative technological devices, prototypes, measurement tools, interventions, and other informational products to enhance community living, health and function, and employment among people with disabilities. Grantees employ advanced methodologies to conduct research, including randomized controlled trials, longitudinal studies, and qualitative studies. These investments produce peer-reviewed publications, intervention protocols, software, databases, and a wide range of other outputs and outcomes. Selected examples of grantee accomplishments in FY 2021 include:

ACCESSIBILITY AT DRIVE-THRU MEDICAL SITES

Employers and state/local government entities that create or maintain drive-through medical sites, especially those related to vaccine delivery and drive-up medical services, benefited from

a publication produced by the Pacific ADA Regional Center. *Accessibility at Drive-Thru Medical Sites* describes key considerations and strategies to promote accessibility at drive-through medical sites, including testing sites and vaccination sites. As a result of this publication, the California Office of Emergency Services' Access and Functional Needs Office chief reported use of the document in setting up vaccine super sites and noted that it was instrumental in guiding local efforts to provide accessible drive-up services.

ENABLING ACCESS TO ACCESSIBLE FITNESS EQUIPMENT

Rehabilitation Engineering Research Center RecTech's fitness equipment standards, supported by ASTM, led to Planet Fitness, one of the largest fitness industry providers in the U.S., opting to include an accessible piece of fitness (strength) equipment at each of its 4,500 locations. The equipment selected was based on it passing all of RecTech's equipment standards. RecTech is planning to establish an exercise and fitness center standards lab that will offer any facility that has exercise equipment or is planning to purchase new equipment (e.g., fitness centers, park districts, YMCAs, U.S. Department of Veterans Affairs facilities, etc.) a list of approved equipment that RecTech determines is accessible for people with disabilities. This will be the first exercise and fitness facility standards lab in the U.S. and world.

EVIDENCE-BASED, CDC-APPROVED DIABETES PREVENTION AFTER TBI

The North Texas Traumatic Brain Injury (TBI) Model System examined the efficacy of the Diabetes Prevention Program – Group Lifestyle Balance intervention modified for people with TBI (GLB-TBI) on weight loss compared to an attention control using a randomized controlled trial. The hypothesis of this study was that participation in the 12-month GLB-TBI will lead to weight loss (greater than 5 percent) and reduced risk of metabolic syndrome. Results of this study found that the GLB-TBI group experienced weight loss of 7.9 percent. Participants' risk for metabolic syndrome and developing heart disease and diabetes decreased from greater than 84 percent when compared to U.S. adults at baseline to average risk at 12 months due to reduced abdominal fat (-3.1 inches); blood pressure (44 percent "high" at baseline versus 20.8 percent at 12 months); and triglycerides (high 200.6mg/dL at baseline to normal 147.5mg/dL at 12 months). This program is now recognized by the Centers for Disease Control and Prevention as an evidence-based intervention for diabetes prevention after TBI.

Research Capacity-Building

Research capacity-building efforts under the Advanced Rehabilitation Research Training Projects, Switzer Fellowship Program, and NIDILRR's Center grant programs develop a diverse cadre of emerging disability and rehabilitation researchers. In addition, NIDILRR directs targeted resources to minority-serving institutions, such as historically black colleges and universities and tribal colleges and universities, to develop and implement programs to build disability and rehabilitation research capacity.

Training and Technical Assistance on the Americans with Disabilities Act

ACL sponsors the Americans with Disabilities Act (ADA) National Network, which delivers training, technical assistance, and dissemination of materials for stakeholders with rights and responsibilities under the ADA. The ADA Participation Action Research Consortium complements the Network's activities through research on factors influencing the community living of individuals with disabilities at state, regional, and community levels.

Knowledge Translation

ACL is committed to ensuring that the products of its sponsored research and development promote the independent living, health and function, employment, and community living outcomes of individuals with disabilities. Through its Knowledge Translation Centers, ACL ensures that new knowledge and products gained through research and development are effectively communicated to stakeholders and used to improve the lives of individuals with disabilities.

Ongoing Activities

ACL will focus on implementing and integrating the visions of the NIDILRR Director and the mission of ACL in to NIDILRR programs. In March 2019, ACL published NIDILRR's FY 2018–2023 Long-Range Plan. This document defines the programmatic vision and will frame NIDILRR's research agenda for the coming years. Additionally, the Director has identified goals to bolster the ways in which NIDILRR involves people with disabilities across the entire research process and research enterprise. This includes increasing the representation of researchers with disabilities within NIDILRR's funding mechanisms and disabled researchers of color and from other underrepresented backgrounds and deepen the rehabilitation training field trajectory.

Strategic partnerships with other agencies in the U.S. Department of Health and Human Services (HHS) and across the federal government have been instrumental in advancing NIDILRR's mission. As such, ACL will continue to enhance its existing partnerships and seek out new collaborative opportunities within HHS and more broadly across the federal disability and rehabilitation research communities. ACL's Director of NIDILRR serves as the Chair of the Interagency Committee on Disability Research (ICDR). Under the ICDR Director's leadership, efforts will focus on building upon the ongoing work of the ICDR , contributing to the achievement of goals set forth in the recently drafted government-wide disability and rehabilitation research strategic plan.

2021 Report to Congress

Introduction

ACL's NIDILRR is committed to improving independent living and community participation among people with disabilities by funding research and development in the areas of community living and participation, health and function, and employment. This Annual Report to Congress will describe NIDILRR's activities and accomplishments during fiscal year (FY) 2021. It begins with a summary of the organization's historical foundation, provides a description of its funding process and fiscal allocations, and follows with descriptions of programmatic outcomes impacting the community. This report concludes by describing ongoing initiatives and directions within the organization.

NIDILRR was established by Congress to conduct research that would lead to improved health and function, employment, and community living outcomes for individuals with disabilities. First constituted as the National Institute on Handicapped Research by the Rehabilitation, Comprehensive Services, and Developmental Disabilities Amendments of 1978 (P.L. 95–602), amending the Rehabilitation Act of 1973, the organization was originally housed in the Department of Health, Education, and Welfare, and later the Department of Education. The 1986 amendments to the Rehabilitation Act changed the agency's name to the National Institute on Disability and Rehabilitation Research. On July 22, 2014, the agency was renamed the National Institute on Disability, Independent Living, and Rehabilitation Research and transferred from the Department of Education to ACL within HHS. This change occurred with the passage of P.L. 113–128, the Workforce Innovation and Opportunity Act. NIDILRR personnel officially became ACL employees on February 8, 2015.

NIDILRR's mission is to generate new knowledge and promote its effective use to improve the abilities of individuals with disabilities to perform activities of their choice in the community as well as to expand society's capacity to provide full opportunities and accommodations for individuals with disabilities. To accomplish this mission, NIDILRR:

- Supports research, development, training, technical assistance, and related activities to build new knowledge.
- Promotes the transfer, use, and adoption of technology for individuals with disabilities to improve health and function, employment, and independent community living and participation outcomes.
- Provides for research training to increase the number of qualified researchers, including researchers with disabilities and from minority backgrounds.

- Fosters widespread dissemination and use of scientific and technological information to advance policy, practice, and services that improve outcomes for people with disabilities.

ACL's NIDILRR programs address community living and participation, health and function, and employment outcomes of people with disabilities. ACL's investments in research, development, knowledge translation, and capacity-building activities are carried out through the following discretionary grant-funding mechanisms:

- **Rehabilitation Research and Training Centers (RRTC)** conduct advanced research and training on a wide variety of health, rehabilitation, employment, and community living topics.
- **Rehabilitation Engineering Research Centers (RERC)** conduct rehabilitation engineering research and development toward technological solutions to rehabilitation problems or environmental barriers.
- **Disability and Rehabilitation Research Projects (DRRP)** conduct research, development, technical assistance, training, and utilization activities on health, rehabilitation, employment, and community living topics.
- **Americans with Disabilities Act (ADA) National Network** projects conduct research and provide information, training, and technical assistance to ADA stakeholders.
- **Small Business Innovation Research (SBIR)** projects support small businesses to explore feasibility and develop or evaluate the commercialization potential of new technology products for people with disabilities.
- **Knowledge Translation (KT)** projects promote the use of research-based knowledge in NIDILRR's community of stakeholders.
- **Field-Initiated Projects (FIP)** conduct 3-year studies on topics proposed by applicants to address disability and rehabilitation issues in promising and innovative ways.
- **Model Systems** programs in spinal cord injury (SCI), traumatic brain injury (TBI), and burn injury conduct research on rehabilitation and long-term outcomes of individuals with these conditions. Research in these programs includes collaborative, multisite research and collection and analysis of longitudinal data.
- **Advanced Rehabilitation Research Training Projects (ARRT)** support institutions of higher education to provide advanced interdisciplinary research training to postdoctoral fellows.
- **Research Fellowship Programs, or Mary E. Switzer Fellowships,** are awarded to qualified individuals to conduct 1-year independent research projects.
- **Section 21** projects focus on research capacity-building for Minority-Serving Institutions (MSI), including Historically Black Colleges and Universities (HBCU) and other institutions with significant racial/ethnic minority student populations. Section 21 of the

Rehabilitation Act requires that 1 percent of NIDILRR appropriations be invested to address traditionally underserved populations.

Grant Competitions – 2021 Year in Review

Grant Competition and Peer Review Process

ACL's NIDILRR sponsors disability and rehabilitation research and development in the outcome domains of community living and participation, health and function, and employment. Funding is provided to the research community through its funding mechanisms, with priorities within these mechanisms determined by the agency. NIDILRR utilizes a rigorous peer review process, as required by federal regulation, and internal and external program evaluation to ensure the quality of its sponsored research and development activities. Subject matter experts with the appropriate credentials and content knowledge evaluate the scientific, technical, and management aspects of proposals submitted in response to NIDILRR funding opportunity announcements. This process generates an average score across reviewers, reducing bias and facilitating the ranking of projects by scientific merit. Only the highest-ranking proposals are recommended for ACL funding.

Grant Competitions

Table 1 describes NIDILRR's FY 2021 grant competitions. The number of eligible applicants, review panels, reviewers, awards made, and percentage of applicants receiving funding are shown. A large percentage of applications receive high peer review scores that indicate strong technical merit and significant need. ACL's limited resources allow only a small percentage of these applicants to receive grants each year.

Table 1. NIDILRR Peer Review Process Overview, FY 2021

Grant Opportunity	# Eligible Applicants	# Panels	# Reviewers	# Awards Made	% Applicants Receiving Funding
ARRT – H&F	13	2	10	1	8%
ARRT – CL&P	2	1	5	1	50%
ARRT – EMP	3	1	5	1	33%
SBIR – Phase 1	32	4	20	10	31%
SBIR – Phase 2	14	2	10	4	29%
Switzer	33	3	12	7	21%
FIP	171	18	89	17	10%
FIP – MSI	9	1	5	2	22%
DRRP – Employment	29	3	12	2	7%
DRRP – Parenting	1	1	4	1	100%
DRRP – Pregnancy	6	1	5	1	17%
DRRP – Social Isolation	17	2	10	1	6%
ADA National Network	10	2	10	10	100%

Grant Opportunity	# Eligible Applicants	# Panels	# Reviewers	# Awards Made	% Applicants Receiving Funding
ADA KT Center	1	1	5	1	100%
SCI Model Systems	23	3	15	14	61%
Model Systems KT Center	1	1	5	1	100%
TBI Data Center	1	1	5	1	100%
SCI Data Center	2	-	-	1	50%
RERC – Low Vision/Blindness	1	1	5	0	0%
RERC – Wireless Technologies	4	1	4	1	25%
RRTC – CL Interventions	7	1	5	1	14%
RRTC – Employer Practices	3	1	5	1	33%
TOTAL	383	50	241	79	20.6%

Source: U.S. Department of Health and Human Services, Administration for Community Living, National Institute on Disability, Independent Living, and Rehabilitation Research. These figures do not include FY 2021 awards made from 2020 slates.

Monitoring and Oversight

ACL's NIDILRR uses its Annual Performance Reporting (APR) System, formative review mechanisms, and close monitoring of grant activities by ACL staff to provide rigorous oversight of its funded initiatives. NIDILRR's APR is a web-based grants performance system that grantees use to provide data about goals and objectives, staffing, budget, research and development methods, progress, outputs, and accomplishments. Data are used to determine whether continuation funding should be provided to a grantee. For a new grantee, the first reporting period begins on the start date of the award and extends until May 31 of the following year. Subsequent reporting periods begin June 1 and end May 31. Grantees submit their progress reports annually on July 1.

As part of the APR process, NIDILRR asks grantees to voluntarily disclose the number of staff on the funded project who have a disability, as well as the disability status of the principal investigator. Investigators and other professional staff are the two categories that had the most staff with a disability across the period from 2010 to 2021. The number of staff with a disability across NIDILRR projects had no trend upward or downward across the entire 11-year period. The number of staff with a disability in 2021 (n=389), is similar to the number of staff with disabilities at the beginning of the time period in 2010. The number of grants with a principal investigator with a disability generally increased across the time period from 2010 (n=32) to 2021 (n=45).

Formative evaluations of funded awards are used as supplemental oversight and technical assistance tools for grantees. Such reviews are conducted when program officers believe that a

grantee could benefit from targeted technical assistance in addition to that available from the program officer. A panel of subject matter experts is chosen to provide the technical assistance and make recommendations for improvement if needed.

Staff, as experienced program administrators and researchers, are highly adept at maintaining ongoing, routine communication with and oversight of grantees to help inform their scientific programs and ensure they are meeting goals and objectives. Program officers use the HHS Grants Policy Administration Manual to provide consistent oversight across projects. Risk assessments are conducted to locate poor-performing grantees, with additional oversight and technical support provided as needed. Though rare, findings of ongoing poor performance can lead to a discontinuation of funding to a grantee.

Funding Overview

The allocation of FY 2021 grant funds for the 11 funding mechanisms discussed above is shown in Tables 2 and 3. For each funding mechanism, the table includes the number of new and continuation awards. NIDILRR's overall grant allocations across all 11 funding mechanisms totaled $107,398,202 for FY 2021. NIDILRR awarded $6,186,590 in contracts and other support activities for FY 2021.

Table 2. NIDILRR Funding and Awards, FY 2021

Funding Mechanism (NIDILRR-Funded Centers and Projects)	Award Type (NIDILRR-Funded Centers and Projects)	FY 2021 # of Awards	FY 2021 Total	Grant Amount In Thousands of $	Grant Amount Total
RRTC	Continuations	19	22	16,619	18,549
RRTC	New Awards	3	22	1,929	18,549
RERC	Continuations	15	16	13,649	14,574
RERC	New Awards	1	16	924	14,574
DRRP	Continuations	40	47	18,468	20,967
DRRP	New Awards	7	47	2,498	20,967
ADA Network	Continuations	1	13	500	13,349
ADA Network	New Awards	12	13	12,849	13,349
SBIR	Continuations	4	18	1,095	3,234
SBIR	New Awards	14	18	2,138	3,234
KT	Continuations	8	9	2,873	3,665
KT	New Awards	1	9	792	3,665
FIP	Continuations	35	52	6,992	10,391
FIP	New Awards	17	52	3,398	10,391
Total			177		84,729

Table 3. NIDILRR Model Systems Funding and Awards, FY 2021

Funding Mechanism (NIDILRR-Funded Centers and Projects)	Award Type (NIDILRR-Funded Centers and Projects)	FY 2021 # of Awards	FY 2021 Total	Grant Amount In Thousands of $	Grant Amount Total
SCI	Continuations	1	16	899	8,072
SCI	New Awards	15	16	7,172	8,072
TBI	Continuations	17	18	7,300	7,992
TBI	New Awards	1	18	692	7,992
Burn	Continuations	4	4	1,500	1,500
Burn	New Awards	0	4	0	1,500
ARRT	Continuations	15	19	2,445	3,186
AART	New Awards	4	19	741	3,186
Switzer Fellowships	New Awards (1-year grants)	7	7	490	490
Section 21	Continuations	2	4	1,025	1,425
Section 21	New Awards	2		400	1,425
Total			68		22,665

Exhibits 1 and 2 illustrate the distribution of funded research and development grant projects in FY 2021 across NIDILRR's three domains: health and function, community living and participation, and employment. "Cross-cutting" is a composite category used in the APR to describe projects that reflect two or more domains. Roughly 47 percent of development projects and about 31 percent of research projects were described as cross-cutting. "Research projects" are defined by NIDILRR as "an intensive systematic study, based on a clear hypothesis or research question that is directed toward producing new scientific knowledge about the subject or problem being studied." "Development projects" are defined as "the use of knowledge and understanding gained from research to create materials, devices, systems, or methods beneficial to the target population, including design and development of prototypes and processes."

Exhibit 1. Research Grant Projects by Domain, FY 2021

RESEARCH PROJECTS

Cross-Cutting (two or more domains) 31%

Health and function 33%

Participation and Community Living 17%

Employment 19%

Source: U.S. Department of Health and Human Services, Administration for Community Living, National Institute on Disability, Independent Living, and Rehabilitation Research. *2021 Annual Performance Reports*. "Program Performance Report Table 9."
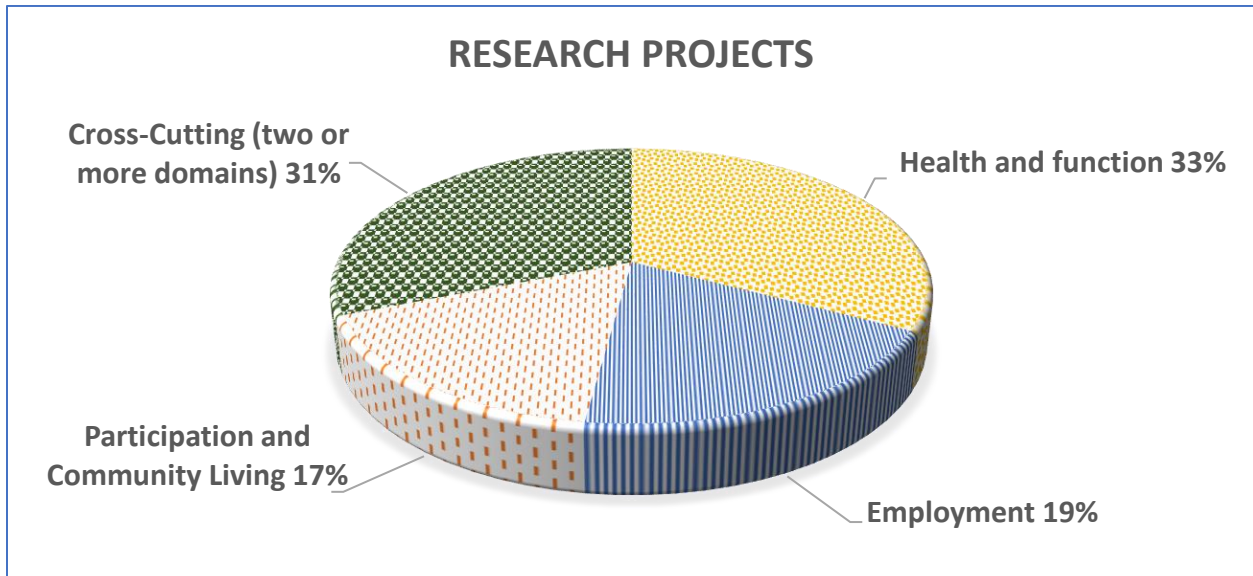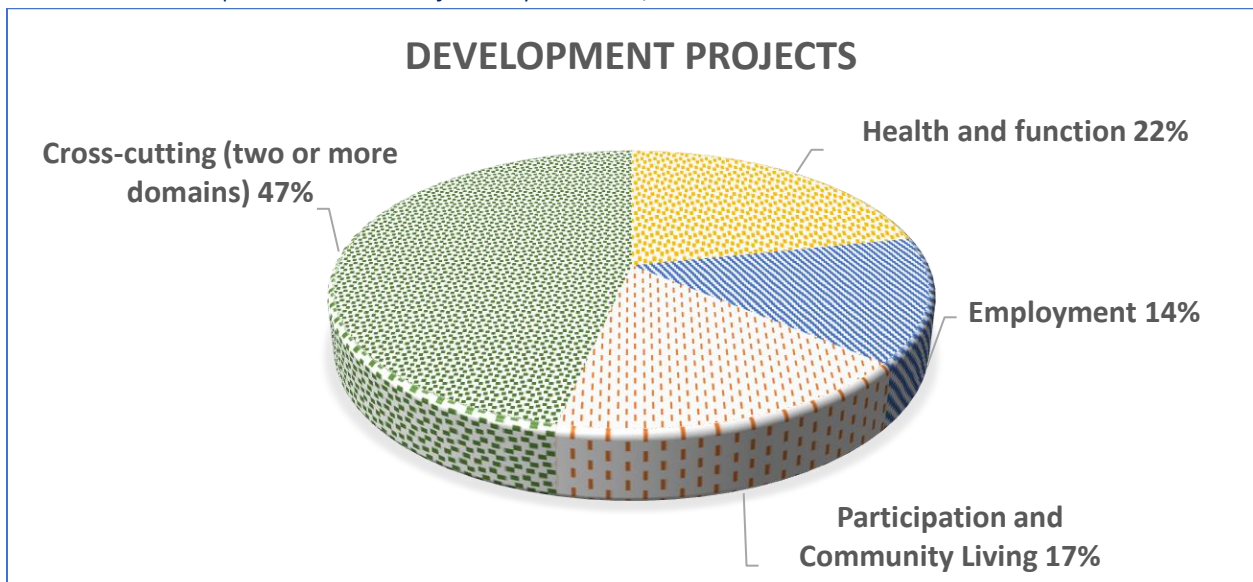
Exhibit 2. Development Grant Projects by Domain, FY 2021

DEVELOPMENT PROJECTS

Cross-cutting (two or more domains) 47%

Health and function 22%

Employment 14%

Participation and Community Living 17%

Source: U.S. Department of Health and Human Services, Administration for Community Living, National Institute on Disability, Independent Living, and Rehabilitation Research. *2021 Annual Performance Reports*. "Program Performance Report Table 11."
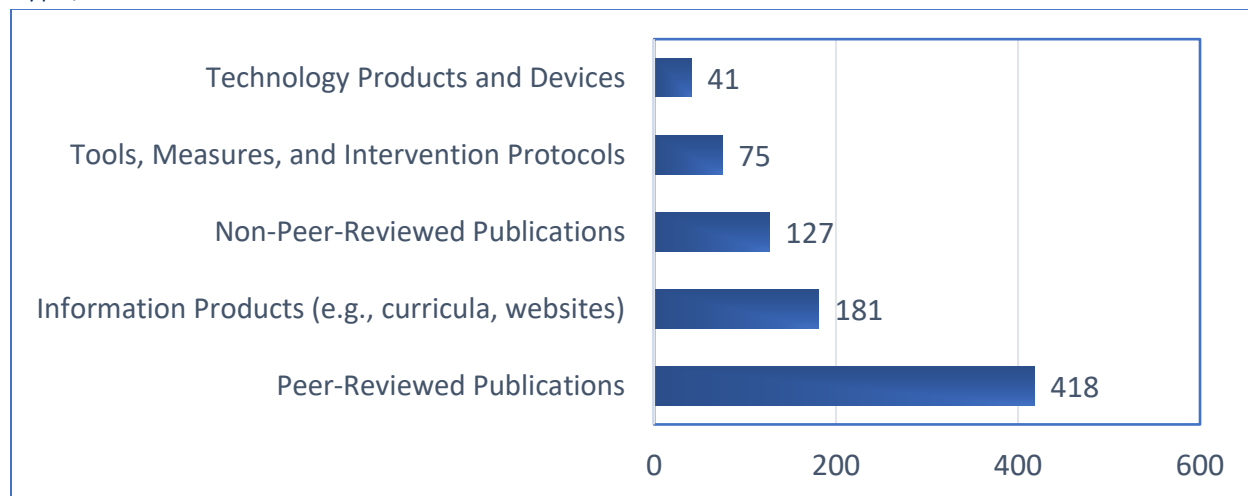
Grantee Activities and Progress

ACL collects output data through the APR. Grantees are required to report each output from their funded activities in one of four categories: publications; tools, measures, and intervention protocols; technology products and devices; and informational products. A brief description of each category of output type follows:

- **Publications** are documents directly funded by a grantee's current award. Publications include journal articles, periodicals, web journals, proceedings from meetings and symposia, books or book chapters, monographs, abstracts, technical or research reports, and reviews. Within this output category are peer-reviewed and non-peer-reviewed publications.
- **Tools, measures, and intervention protocols** include instruments or processes created to acquire quantitative or qualitative information, knowledge, or data on a specific disability or rehabilitation issue as well as research-based protocols for delivering interventions to specific target populations of people with disabilities.
- **Technology products and devices** are developed, modified, tested, or evaluated by the grantee. This category refers to any technology product or device developed under the award that the grantee disseminated or delivered to external audiences during the current reporting period.
- **Information products** refer to items such as training manuals/curricula, fact sheets, newsletters, audiovisual materials, marketing tools, educational aids, websites, presentations, and other forms of disseminated information.

Exhibit 3 compares the number of output products produced by grantees within each category type in FY 2021. Additional detail has been provided for the category of publications, with peer-reviewed and non-peer-reviewed publications being reported separately.

Exhibit 3. Total Outputs Produced by All Grantees across All Program Mechanisms, by Product Type, FY 2021

Product Type	Value
Technology Products and Devices	41
Tools, Measures, and Intervention Protocols	75
Non-Peer-Reviewed Publications	127
Information Products (e.g., curricula, websites)	181
Peer-Reviewed Publications	418

Source: U.S. Department of Health and Human Services, Administration for Community Living, National Institute on Disability, Independent Living, and Rehabilitation Research. *2021 Annual Performance Reports*. "Program Performance Report Tables 18–22."

Data obtained through the 2021 APR show that NIDILRR supported 245 grantees during FY 2021, totaling $107,398,202 which supported 1,415 unique projects across all program mechanisms. These projects reflect the breadth of disability and rehabilitation research within the agency's outcome domains of community living and participation, health and function, and employment. The knowledge and products that are generated by ACL-sponsored research and development grants have a wide variety of important impacts in the field. The summaries that follow provide examples of the outcomes and impacts that resulted from NIDILRR program investments. Additional information concerning these projects is available through the National Rehabilitation Information Center website (http://www.naric.com/).

Sampling of Key Accomplishments by Funded Researchers

ACL-funded researchers conduct myriad coordinated, integrated, and advanced programs of research, training, and information dissemination in content areas that are primarily specified by NIDILRR. Areas of focus include the improvement of rehabilitation methodology and service delivery systems; the improvement of health and functioning; and the promotion of employment, independent living, family support, and economic and social self-sufficiency for individuals with disabilities. ACL-funded training and capacity-building RRTCs provide training — including graduate, pre-service, and in-service training — to build capacity for disability and rehabilitation research. They also serve as centers of national excellence in rehabilitation research. Awards are normally made for a 5-year period.

The following are examples of accomplishments reported by grantees in FY 2021:

Accessibility at Drive-Thru Medical Sites (Grant # 90DP0081)

Employers and state/local government entities that create or maintain drive-through medical sites, especially those related to vaccine delivery and drive-up medical services, benefited from a publication produced by the Pacific ADA Regional Center. *Accessibility at Drive-Thru Medical Sites* describes key considerations and strategies to promote accessibility at drive-through medical sites, including testing sites and vaccination sites. As a result of this publication, the California Office of Emergency Services' Access and Functional Needs Office chief reported use of the document in setting up vaccine super sites and noted that it was instrumental in guiding local efforts to provide accessible drive-up services.

***Cognitopia* Platform for Self-Determination (Grant # 90IFDV0008)**

This FIP is developing an innovative web application, *Getting Out*, that provides a cognitively accessible tool for individuals with mild to moderate cognitive disabilities to help them effectively maintain social relationships established during high school transition, build new relationships, and turn virtual connections with social network members with and without disabilities into real-world relationships around activities of common interest and mutual support. The final product is intended to integrate with the *Cognitopia* platform.

Cognitopia is a web-based suite of self-management applications designed to foster greater independence in activities of school, work, and daily living while optimizing the efforts of support team members. It includes the *MyLife* digital portfolio for person-centered planning, the Routines system for multimedia task analysis, and the *Goal Guide* tool for goal creation, progress tracking, and remote support. *Cognitopia* has been commercially available since fall 2019 and is being used by individuals and families, K–12 schools, postsecondary schools, supported living agencies, and employers. *Cognitopia* has worked closely with the Smart Living, Learning, and Earning with Autism program, a nonprofit that focuses on the use of self-management technology for adults with autism, to develop innovative web applications for goal management and video instruction and task support. One of the Smart Living, Learning, and Earning with Autism houses has *Cognitopia* installed on tablets in key places throughout the house to provide support through preloaded instructional videos and task lists. *Cognitopia* is increasing the use of self-management applications generally and has enabled individuals with developmental disabilities to increase Individualized Education Plan self-direction, access training materials for employment and independent living, and develop self-management skills. More information about *Cognitopia* is available on its YouTube channel and the blog on the *Cognitopia* website.

Design Competition for Inclusive Autonomous Vehicles (Grant # 90REGE0007)

Autonomous vehicles (AVs) have the potential to provide community mobility for people with disabilities (e.g., people with mobility and vision impairments) and older adults who no longer

and/or are unable to drive. Many design challenges must be addressed in order to do so. Inspired by the U.S. Department of Transportation spring 2020 design competition, eager to raise awareness about the importance of inclusive design (specifically inclusive AVs) amongst the University at Buffalo (UB) student body, and aware that the COVID-19 pandemic left many students stuck at home and eager to engage in an exciting opportunity during the summer, the RERC on Accessible Public Transportation and the IDEA Center leadership collaborated to develop, launch, and facilitate UB's [Inclusive Autonomous Vehicle Design Challenge: July 13–August 7, 2020](). Co-sponsored by Blackstone LaunchPad powered by Techstars, UB School of Engineering and Applies Sciences, UB Business and Entrepreneur Partnerships, UB's Innovation Hub, and UB's IDEA Center, this virtual challenge had participants spend 4 weeks ideating and creating a solution to a problem. The challenge was to develop an innovative design concept to ensure that the next generation of fully autonomous vehicles addresses the needs of everyone, especially those who are unable to drive independently. This challenge provided over 120 UB students, from more than 30 different departments, with a meaningful, educational summertime opportunity in which they learned about innovation, inclusive design, product development, and AV transportation while receiving guidance from industry experts and mentors. Students experienced how to effectively work in virtual, interdisciplinary teams while building their resumes. The competition exposed a new cohort of students to the value and importance of inclusive design and illustrated how it applies to different disciplines and domains. Among the other benefits of this challenge was a certificate of completion, the opportunity to win cash prizes, and the potential to work with faculty on the development of larger prototype proposals. This event was a valuable, exciting experience for students, especially due to the pandemic health crisis that had impacted in-person learning capabilities.

Enabling Access to Accessible Fitness Equipment ([Grant # 90REGE0002]())

RERC RecTech's fitness equipment standards supported by ASTM led to Planet Fitness, one of the largest fitness industry providers in the U.S., opting to include an accessible piece of fitness (strength) equipment at each of its 4,500 locations. The equipment selected was based on it passing all of RecTech's equipment standards. RecTech is planning to establish an exercise and fitness center standards lab that will offer any facility that has exercise equipment or is planning to purchase new equipment (e.g., fitness centers, park districts, YMCAs, U.S. Department of Veterans Affairs facilities, etc.) a list of approved equipment that RecTech determines is accessible for people with disabilities. This will be the first exercise and fitness facility standards lab in the U.S. and world.

Evidence-Based, CDC-Approved Diabetes Prevention after TBI ([Grant # 90DPTB0013]())

The [North Texas Traumatic Brain Injury Model System]() examined the efficacy of the Diabetes Prevention Program – Group Lifestyle Balance intervention modified for people with TBI (GLB-TBI) on weight loss compared to an attention control using a randomized controlled trial. The hypothesis of [this study]() was that participation in the 12-month GLB-TBI will lead to weight loss (greater than 5 percent) and reduced risk of metabolic syndrome. Results of this study found that the GLB-TBI group experienced weight loss of 7.9 percent. Participants' risk for metabolic syndrome and developing heart disease and diabetes decreased from greater than 84 percent

when compared to U.S. adults at baseline to average risk at 12 months due to reduced abdominal fat (-3.1 inches); blood pressure (44 percent "high" at baseline versus 20.8 percent at 12 months); and triglycerides (high 200.6mg/dL at baseline to normal 147.5mg/dL at 12 months). This program is now recognized by the Centers for Disease Control and Prevention as an evidence-based intervention for diabetes prevention after TBI.

Knowledge Translation: The Rise of Implementation (Grant # 90DPKT0001)

A project at the American Institutes for Research developed a monograph, *Knowledge Translation: The Rise of Implementation*, which is being used internationally to orient researchers and practitioners about how implementation science articulates with the history and current practice of knowledge translation (KT). The monograph provides an update of the KT literature and reflects on advancements in the KT process, as well as KT's relationship with implementation science. KT practices related to disability research are highlighted along with a look at future directions in KT. This monograph is being listed on websites and in newsletters that target the KT community. A variety of domestic and international organizations are highlighting this influential resource for their users, including Research Impact Canada, Sydney Health Partners Implementation Science, and the Center for Knowledge Translation for Employment Research.

Live Webcast Series on Customized Employment (Grant # 90DP0085)

There is confusion nationally related to the characteristics of customized employment as opposed to supported employment. This project at Virginia Commonwealth University researches the use of customized employment as an intervention to assist individuals with intellectual disabilities and/or autism spectrum disorder to achieve integrated employment outcomes. This grantee-developed webcast series provides information on the essential elements of customized employment used by vocational rehabilitation counselors when determining funding for this service on their caseloads.

The purpose of the webcast series is to provide the most recent implementation information to practitioners on providing customized employment services. During this year, the grantee added a webcast on determining fidelity of the customized employment intervention as well as other webcasts on providing services. A total of nine new webcasts were produced and added to the webcast archives. The archive is available 24/7 and free of charge to anyone. These webinars are being used by vocational rehabilitation counselors and direct employment service providers. The Vocational Rehabilitation Technical Assistance Center for Quality Employment is adopting this webcast series to use with vocational rehabilitation counselors and state vocational rehabilitation agencies. Counselors who complete the webcasts can earn one credit toward their Certified Rehabilitation Counselor certification.

Minority Entity Institutional Research Capacity Building and Infrastructure Model (Grant # 90RTST0001)

The Langston University RRTC on Research and Capacity Building for Minority Entities was funded to engage minority entities/minority-serving institutions (MSIs) in generating new

knowledge leading to improved outcomes for persons with disabilities from traditionally underserved racial and ethnic populations and in investigating what strategies lead to enhanced research capacity and infrastructure at minority entities and MSIs. Langston published a [monograph](#) that describes results of an evaluation of their Minority Entity Institutional Research Capacity Building and Infrastructure Model and its potential for addressing research capacity-building challenges. Findings indicated that Fellows increased their research leadership skills and felt better equipped to lead research teams and establish networks. This finding is important due to the insufficient supply of investigators at MSIs leading federal research and development and available to mentor early-career investigators. The Model is a promising research capacity-building approach. Adoption of the model could empower MSIs to play a more critical role in improving disability and rehabilitation research.

Morphic – An Open-Source Tool for Computer Accessibility ([Grant # 90REGE0008](#))
The shift to increased technology use during the COVID-19 pandemic has highlighted the digital divide for people with disabilities. To address this, the Inclusive Information and Communications Technology RERC and the Automated Personalization Computer Project (funded by the U.S. Department of Education) collaborated to develop an open-source tool called [Morphic](#), which is designed to make computers simpler, make it easier to use assistive technologies, and allow accessibility to follow users from computer to computer. Morphic has been successfully transferred to the nonprofit Raising the Floor and is being deployed on the shared computers in major universities, libraries, and disability service programs across the U.S. and Canada. Morphic is a key part (one of the three pillars) of the Global Public Inclusive Infrastructure first proposed by the IT-RERC under its previous cycles and continuing in our current cycle. Morphic provides four major capabilities that are not available through any other technology (mainstream or assistive technology): (1) the ability to make built-in accessibility features easy to discover and operable with a single click; (2) the ability to make it possible to have one's accessibility settings follow them from computer to computer; (3) the ability to allow assistive technology on-demand — where a person can sit down to any computer and their assistive technologies will instantly show up on that computer — appear and then disappear when they are done; and (4) the ability to create custom MorphicBars that allow one-click access to features, programs, custom functions, websites, and more, allowing the creation of ultra-simple interfaces for people who otherwise would not be able to use a computer. Morphic can open computer use to many who could not use them before. It can also, for the first time, allow assistive technology users the ability to use any computer at a library, school, community center, job center, etc., just like everyone else. The project also surfaced new information on the prevalence and impact of low digital affinity both in people with disabilities and those without. To learn more, view [this video](#) about the basic features of Morphic.

Publication on the Impact of the COVID-19 Pandemic on Food Security for People with Disabilities ([Grant # 90RTGE0001](#))

Supported by funding from ACL and the Health Resources and Services Administration, the [Stats RRTC](#) at the University of New Hampshire published [a paper](#) focused on the impact of the

pandemic on food security for people with disabilities. The aim of this study was to compare rates of food sufficiency and utilization of free food sources between working-age persons with and without disabilities in the U.S. during the pandemic. In September 2020, an online survey was conducted with 13,277 working-age individuals with and without disabilities to gather information about food sufficiency prior to March 2020 and within the last 7 days as well as receipt of free groceries or meals, use of food programs or pantries, and concerns with using free food sources over the past week. Descriptive and multivariate statistics were used to compare these measures for persons with and without disabilities. Findings showed that, controlling for sociodemographic characteristics, the proportion of working-age persons who were food sufficient decreased from March 2020 to September 2020 for persons with disabilities (65 percent to 57 percent, an eight-percentage-point decrease). This decrease was not statistically different from the decrease reported by people without disabilities (78 percent to 73 percent, a five-percentage-point decrease). However, in September 2020, more than half of people with disabilities (58 percent) used free food resources in the past week, a substantial difference compared to persons without disabilities (41 percent). The authors concluded that the low rate of food sufficiency, high rate of free food resource utilization, and concerns noted in using these sources suggested a need for continuing nutrition assistance policy and program development targeted toward the needs of Americans with disabilities.
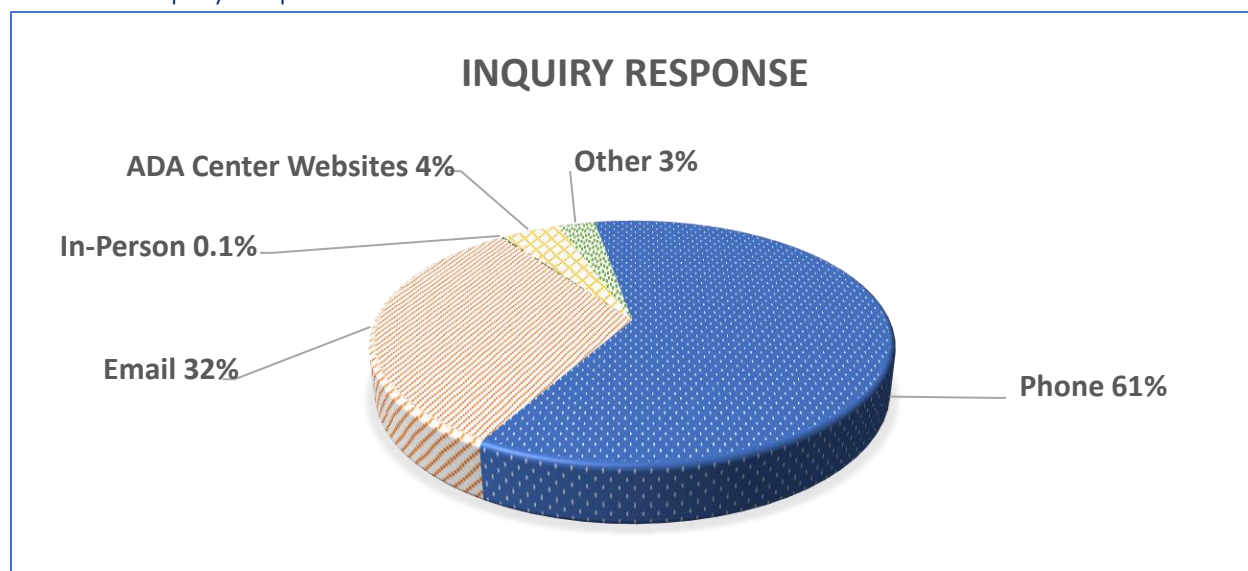
ADA National Network

One of ACL's largest investments is in the ADA National Network, which consists of 10 regional centers that provide information, training, and technical assistance to individuals, businesses, and agencies with rights and responsibilities under the ADA. The network also includes research and KT components, which are carried out by two network grantees: the ADA National Network Collaborative Research Project and the ADA National Network Knowledge Translation Center, respectively.

Knowledge translation efforts in the ADA National Network are led by the ADA Knowledge Translation Center. The Center has three primary goals: (1) increase efficiency and impact by serving as a central resource to support the development, coordination, and deployment of ADA information, training, technical assistance, and capacity-building activities across the ADA National Network; (2) increase awareness and use of ADA research findings to inform practice; and (3) improve understanding of stakeholders' needs for and receipt of ADA services.

ADA National Network grantees are highly responsive to the community, providing advice, information, technical assistance, and training through multiple modalities. In FY 2021, the centers received 16,241 technical assistance inquiries from the public. Exhibit 4 presents the modalities used to provide technical assistance in response to these questions.

Exhibit 4. Inquiry Response

INQUIRY RESPONSE

The 10 ADA National Network Centers conducted 1,113 training activities impacting 100,340 individuals, including customized training presentations, training courses, and conferences during the 2021 APR reporting period (June 1, 2020, through May 31, 2021). Audiences included service providers, individuals with disabilities and their families, business groups, state and local government agencies, architects and design professionals, and other professional groups.

In addition to training and technical assistance, the ADA National Network and its regional centers produce numerous products to aid in disseminating information to the public, employers, and individuals with disabilities about their rights and responsibilities. Table 4 shows the types and number of times a product was disseminated.

Table 4. Product Dissemination

Type	Number Disseminated
Journal Articles	237
Project Publications	950,384
Video and Audio Tapes	102,976
Books or Book Chapters	524
Bulletins, Newsletters, or Factsheets	1,515,410
Research Reports and Conference Proceedings	470
Other Federal Documents	12,297,677

Research Fellowship Program (Mary E. Switzer Fellowship Program)

The Mary E. Switzer Fellowship Program seeks to increase capacity in rehabilitation research by giving qualified individual researchers, including individuals with disabilities, the opportunity to

develop new ideas and further their research expertise. Awards go directly to individuals, not their institutions, enabling Fellows to pursue independent research and training activities. Distinguished Fellows are seasoned in their careers, must hold a doctorate or comparable academic status, and have had 7 or more years of experience relevant to rehabilitation research. Merit Fellowships are given to persons with rehabilitation research experience who do not meet the qualifications for Distinguished Fellowships, usually because they are in earlier stages of their careers. Fellows work for one year on an independent research project of their design. Individuals with disabilities are encouraged to apply for each of these Fellowships.

Eight Switzer Fellowships were awarded in fall 2020, with a total of 13 Fellows submitting annual or final performance reports in 2020. Current Switzer Fellows (awarded in 2021, plus older grants that are in an extension period) are displayed in Table 5.

Table 5. Current Switzer Fellows and Project Titles

Name	Project Title
Nazanin Heydarian (2021)	Characterizing Diabetes Education and Self-management Practices of Blind Adults
Robyn Lewis Brown (2021)	Disability and Workplace Experiences: Understanding Age Variation and Contextual Effects
Jia Rung Wu (2021)	Evaluation of an Extended and Refined Health Action Process Approach as a Model of Health Promotion for People with Chronic Health Conditions and Disabilities During and After the COVID-19 Pandemic
Brielle C Stark (2021)	Characterizing Inner Speech in Aphasia
Ariel Elizabeth Schwartz (2021)	Training Young Adults with Intellectual/Developmental Disabilities and Co-occurring Mental Health Conditions to Deliver a Peer Mentoring Intervention
Vera Kaelin (2021)	Artificial Intelligence to Customize Participation-Focused Interventions in Pediatric Re/habilitation
Megan Kunze (2021)	Promoting Reciprocal Relationships with Flexibility, Coaching, and Teaching (PRRFCT Match)
Xuan Liu (Extension)	Biofeedback Gait Retraining for Stiff Knee Gait Correction: Multi-joint Adaptation in Children with Cerebral Palsy
Morris Huang (Extension)	Implementation of a Sensor Platform for Multi-Day Measurement of Manual Wheelchair User Mobility Patterns in Real-World Environments to Inform Clinical Training and Improved Contexts for Research
Hannah Mercier (Extension)	Characterizing Patterns of Depression, Community Mobility, and Social Engagement in Sub-acute Spinal Cord Injury
Allison Taylor (Extension)	Trauma-Informed Care in Centers for Independent Living

Name	Project Title
Elizabeth Koss Schmidt (Extension)	Understanding Sexuality and Community Participation in Adults on the Autism Spectrum

Ongoing Activities

The accomplishments presented are a small sample of the accomplishments realized as a result of the research and development sponsored by ACL. The accomplishments were chosen to emphasize NIDILRR programs broad impact on individuals with disabilities, the families and care communities that support them, and society writ large. Moving forward, ACL will continue to sponsor rigorous research that is relevant to the needs and experiences of individuals with sensory, mental, physical, and developmental/intellectual disabilities.

ACL will also focus on implementing and integrating the visions of the appointed NIDILRR Director and the ACL Administrator in to NIDILRR programs. ACL published NIDILRR's FY 2018–2023 Long-Range Plan in March 2019. Work is currently underway to draft NIDILRR's new long-range plan, which will describe NIDILRR's programmatic framework, priorities and research agenda for FY 2024-29.

Strategic partnerships with other agencies in HHS and across the federal government have been instrumental in advancing ACL's and NIDILRR's mission. As such, ACL will build on its historical collaborations to identify best practices, conduct co-sponsored research, and address shared goals. NIDILRR's Director will continue to serve as the Chair of the Interagency Committee on Disability Research, a federal partnership charged to promote a cohesive, strategic federal program of disability, rehabilitation, and independent living research; broker partnerships; and facilitate coordination and collaboration among federal departments and agencies conducting such research. ACL intends to continue to lead and contribute to the advancement of the goals and objectives set forth in the government-wide disability and rehabilitation research strategic plan and focus initiatives around three key target areas – disability data and statistics, long-COVID, and equity and inclusion.