



The National Institute on Disability and Rehabilitation Research

FY 2014 Organization Highlights



Letter from the Director



John Tschida
Director of NIDRR

On behalf of our talented staff, I'm pleased to present to the Congress, the Administration and our broader community of stakeholders this summary of activities and accomplishments for fiscal year (FY) 2014. It was a busy and successful year at the National Institute on Disability and Rehabilitation Research (NIDRR). We published 26 funding priorities, which generated 506 applications. A total of 248 peer reviewers across 53 panels reviewed those submissions, resulting in 61 new grant awards. These were in addition to the 250 grants already being monitored. The quality of the proposals and level of competition continues to increase. The enclosed highlights provide just a small but representative sampling of the diverse and rigorous work being done by our grantees. It's impressive to see how much is being done with and for individuals with disabilities. Even more exciting is to see how our grantees are influencing practice and policy, or developing products, to make a meaningful difference in the daily lives of individuals with disabilities.

At NIDRR we take our mission – to generate new knowledge and promote its effective use – very seriously. Everything we do is informed by the Rehabilitation Act, our authorizing statute, which outlines a clear vision and expectation of inclusion for Americans with disabilities. As a result of new legislation passed in FY 2014, the Workforce Innovation and Opportunity Act (WIOA), we will now fulfill our mission as a part of the Administration for Community Living (ACL) within the Department of Health and Human Services (HHS).

Our colleagues at ACL share the same commitment to inclusion and full societal participation for individuals with disabilities. Philosophically, we are cut from the same cloth. ACL has been an agency with a strong program and policy focus. With the addition of NIDRR, it will now have research capacity. This creates immediate opportunities for alignment where we have strong common interests, including work in the areas of family support and outcome measurement for home and community-based services.

We'll maintain strong ties to the Department of Education, our home for the last 34 years, especially given our strong working relationship with the Rehabilitation Services Administration on our employment research portfolio. Our name is also changing. The agency will be known as the National Institute on Disability, Independent Living, and Rehabilitation Research.

In this new structure, we'll continue to be guided by our strategic plan and focused on a rigorous evaluation of our research programs. The latter will explore not just our efficiency of operations, but also the value of our grant investments. NIDRR has a proud history of funding innovative and groundbreaking work, often investing relatively small amounts of money in initiatives that require strong disability competency to ensure that those living with disabilities are well represented. We'll continue this work during FY 2015, through both funding priorities and more than a dozen interagency agreements. We're proud of our partnerships across the federal government, which seek to both leverage the work being done by other agencies and better coordinate the disability research agenda.

Finally, we acknowledge that we need the help and input of our community stakeholders. We must engage the field as well as the broader disability community. Our statute has been amended in important places to include more external and disability representation. This includes our soon-to-be-implemented advisory council, which will be instrumental in creating and fostering a culture of research within ACL. As we look optimistically to the future, I'd welcome your thoughts on how, together, we can ensure NIDRR is responsive and relevant in the fulfillment of our mission.

The National Institute on Disability and Rehabilitation Research Mission

NIDRR was established in the landmark Rehabilitation Act of 1973, as amended in 1978. The Rehabilitation Act laid out a groundbreaking perspective on disability and citizenship in the Congressional finding that, “Disability is a natural part of the human experience and in no way diminishes the rights of individuals to ... live independently; enjoy self-determination; make choices; contribute to society; pursue meaningful careers; and enjoy full inclusion and integration in the economic, political, social, cultural and educational mainstream of American society.”

“Disability is a natural part of the human experience...”

*Rehabilitation Act of 1973,
as amended 29 USC § 701*

NIDRR’s mission is 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, and to expand society’s capacity to provide full opportunities and accommodations for its citizens with disabilities.

As the federal government’s primary disability research agency, NIDRR achieves this mission by:

- providing for research, demonstration, training, technical assistance and related activities to maximize the full inclusion and integration into society, employment, independent living, family support, and economic and social self-sufficiency of individuals with disabilities of all ages ...;
- promoting the transfer of, use and adoption of rehabilitation technology for individuals with disabilities in a timely manner ...; and
- ensuring the widespread distribution, in usable formats, of practical scientific and technological information.

NIDRR organizes its activities around three major outcome domains—community living and participation, health and function, and employment—and addresses a wide range of disabilities and impairments across populations of all ages.

While keeping NIDRR’s mission and portfolio intact, the passage of the WIOA brings significant organizational changes to NIDRR. NIDRR will move to ACL within HHS, and change its name to the National Institute on Disability, Independent Living, and Rehabilitation Research. WIOA directs NIDRR to strengthen its focus on independent living and health and wellness topics, its role in technical assistance and dissemination of research to advance policy and practice, and its attention to research training related to services authorized under the Rehabilitation Act.



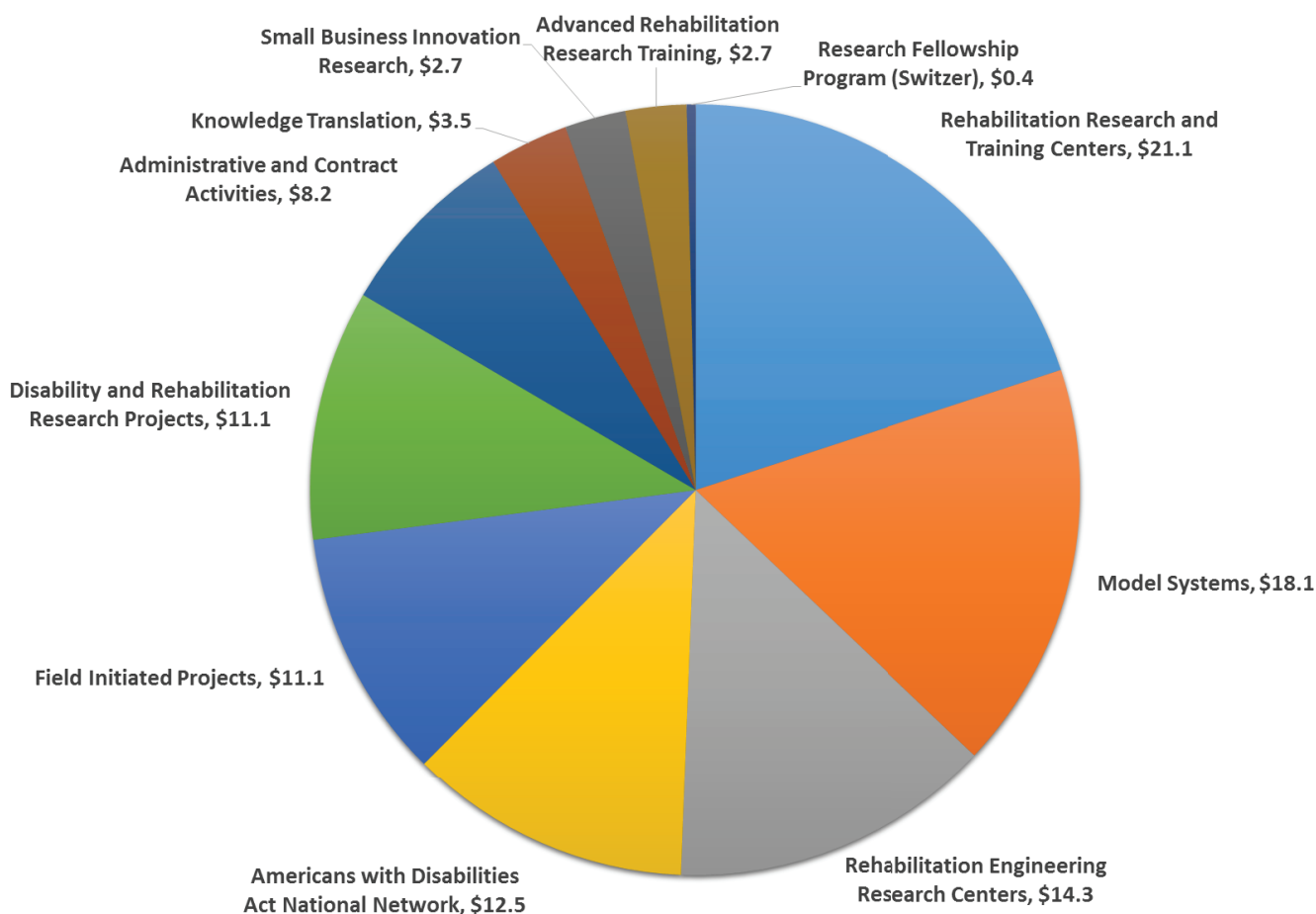
How Is NIDRR Funding Used?

Through its diverse portfolio, NIDRR addresses a broad scope of research, capacity building, and knowledge translation activities related to disability, rehabilitation, and independent living. The tables and statistics presented below provide an overview of the distribution of NIDRR's funding and highlights of grantee activities and productivity in FY 2014.

Funding by Major Program Areas in FY 2014

NIDRR's budget for FY 2014, issued through direct appropriations, totaled \$103,970,000 across 10 grant programs. More than 92 percent of that funding went toward competitive grant activities. The remaining \$8.2 million was allocated among a variety of administrative and contract activities that included support for a national database on disability research (NARIC), a national database on assistive technology products (AbleData), the Interagency Committee on Disability Research (ICDR) to coordinate disability research across the federal government, and a contract to support NIDRR's peer review process. Other activities included contracts to support the Web Accessibility Initiative at the Massachusetts Institute of Technology (now co-funded by IBM, HP, Adobe, and the European Commission), program evaluation, management activities, and other initiatives. These expenditures are shown in Exhibit I.

Exhibit I. NIDRR's Budget (in millions) by Program Area in FY 2014





NIDRR Programs in Brief

NIDRR's grant programs vary in purpose, scope, duration and size. The three main categories of activities that NIDRR sponsors are research and development, knowledge translation, and capacity building.

Research and Development

NIDRR supports two large center programs, the Rehabilitation Research and Training Centers (RRTC) and the Rehabilitation Engineering Research Centers (RERCs). RRTCs conduct advanced research and training on a range of health and function, employment, and community living topics. RERCs conduct research and development on a wide variety of topics including application of technical solutions to rehabilitation problems or environmental barriers. The Disability and Rehabilitation Research Project (DRRP) program supports projects that may conduct research, development, technical assistance, training and utilization activities. NIDRR's Model Systems programs in spinal cord injury (SCIMS), traumatic brain injury (TBIMS), and burn injury (BMS) provide rehabilitation care and conduct research on recovery and long-term outcomes. In addition, these centers conduct collaborative, multisite research. The Field-Initiated Projects (FIP) program supports three-year projects on topics chosen by applicants that address rehabilitation issues in promising and innovative ways. The Small Business Innovation Research (SBIR) program supports projects from small businesses that explore the technical merits or feasibility of an idea or technology, conduct research and development, or evaluate commercialization potential.

Knowledge Translation

Knowledge Translation (KT) projects focus on promoting the use of research-based knowledge to solve real issues faced by individuals with disabilities. NIDRR KT centers work to support NIDRR grantees in producing and promoting the use of new knowledge and products among disability stakeholders in a variety of important disability issue areas.

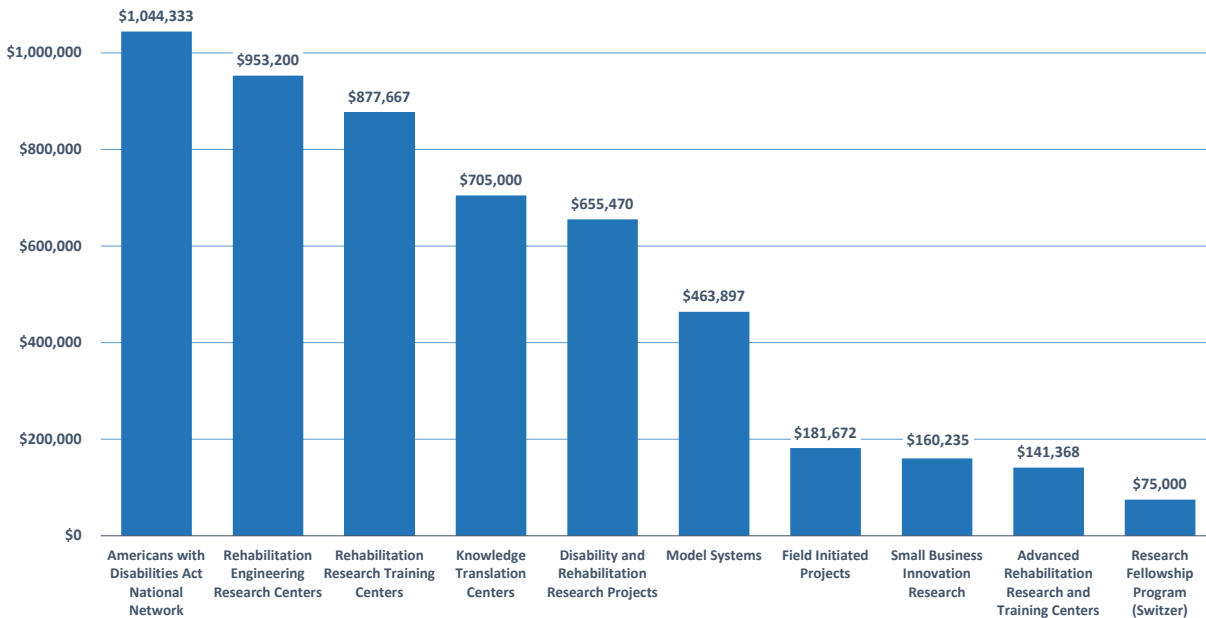
Capacity Building

To increase research capacity in the disability and rehabilitation field, NIDRR supports two research training programs. The Mary E. Switzer Fellowship Program gives qualified individual researchers, including individuals with disabilities, the opportunity to develop new ideas and gain research experience. Fellows work for one year on an independent research project of their own design. The Advanced Rehabilitation Research Training Projects (ARRT) provide funding to institutions of higher education to recruit and provide advanced interdisciplinary research training to qualified postdoctoral fellows. In addition, research training is a requirement for RRTCs and RERCs. Other grants, such as the Model Systems, also support significant research training.

Average Program Funding Levels

Exhibit 2 shows the average annual funding amounts for grant programs. The Americans with Disabilities Act (ADA) National Network has the highest average funding per grant. The Research Fellowships (Switzer) awarded to individuals receive the lowest average funding per grant.

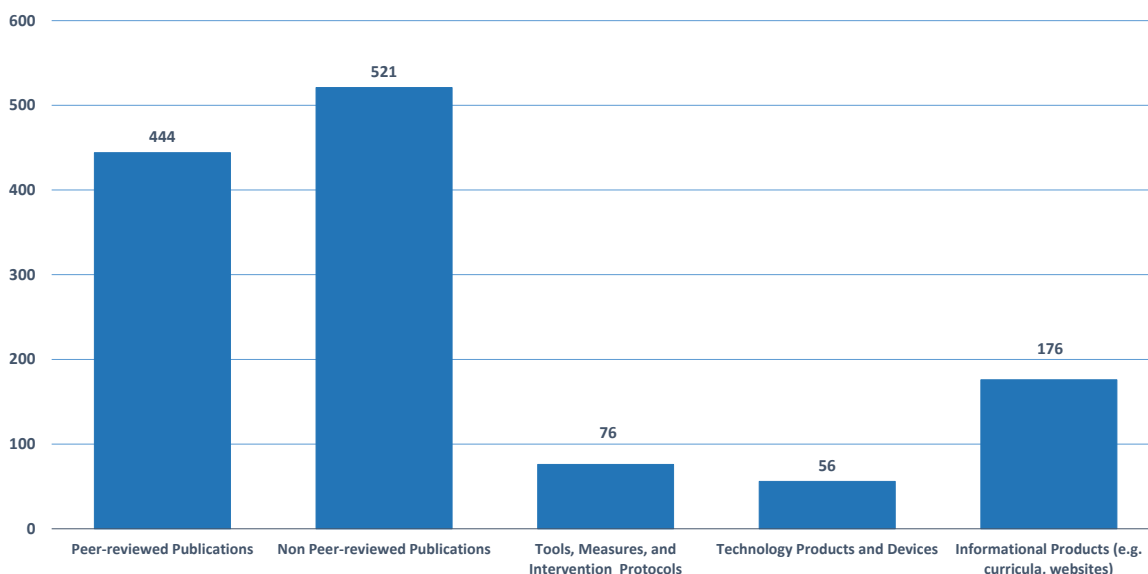
Exhibit 2. Average Funding per Grant by Program Area in FY 2014



Products of NIDRR Grants

NIDRR grantees produced a variety of products, as shown in Exhibit 3. In FY 2014, peer-reviewed and non-peer-reviewed publications accounted for the largest number of products, followed by informational products. Other products include tools, measures, intervention protocols, as well as technology products and devices.

Exhibit 3. Number and Type of Products Generated by NIDRR Grants in FY 2014



Focus on NIDRR's Resource Centers

NIDRR supports three national resource centers to help the public find and use current information about disability policy, assistive technology, and disability research.



NIDRR has supported the implementation of the ADA since 1991. The ADA is a comprehensive civil rights law designed to guarantee people with disabilities protection from discrimination in employment, access to public places, and access to services and public programs. The ADA Network (<http://adata.org>) includes 10 regional centers and the ADA Knowledge Translation Center that together serve local, regional and national stakeholders to foster ADA implementation. In 2014, the ADA Network served upwards of 235,000 employers, state and local governments, and people with disabilities, through technical assistance, training, and information dissemination.

Centers promoted ADA implementation in the workplace by working directly with employers and individuals seeking employment, as well as creating training materials. For example, centers helped industries improve outreach to disability talent pipelines and to ensure inclusion of veterans in diversity efforts. Several centers launched the Just-in-Time (JIT) Toolkit for Managers, an online training about supporting employees with disabilities. The JIT Toolkit is currently used by a health system and a university, resulting in 15,442 page views.

Centers provided consultation to improve access to state and local government facilities and public places. In one major effort, a Center collaborated with the City of St. Louis in a renovation of the iconic St. Louis Arch to ensure its accessibility by adding ramps, elevators and braille signage. Additionally, the ADA Centers produce a wealth of popular resources and publications that enhance awareness of the ADA and provide information to stimulate change in attitudes, behavior, and policies. New resources developed in 2014 include a book on service animals, an undergraduate accessible design course for architecture students, and a Spanish training series on ADA customer service rights and responsibilities. A full 2014 profile report is available at https://adata.org/sites/adata.org/files/files/ADAProfile_Final_9-19.pdf.



NIDRR supports AbleData (<http://abledata.com>), an information center hosting an extensive database of assistive technology products and resources to increase awareness of and access to assistive devices. Over 60 percent of patrons are people with disabilities, family, and friends. In FY 2014, AbleData responded to 2,390 information requests and received almost 10 million website visitors who viewed over 120 million pages.



NIDRR supports NARIC (<http://naric.com>), a research library and information center to promote access to disability and rehabilitation research information. Seventy percent of patrons were people with disabilities, families, friends, and advocates. In FY 2014, NARIC responded to more than 1,100 information requests by phone; email; chat-based reference; social media; in person at conferences, workshops, training events, and meetings; and regular mail. Nearly 200,000 visitors read over three million pages and conducted more than 84,000 searches of the NARIC database. This included a significant increase in the use of the Spanish-language pages since last year.

Knowledge Translation Support in FY 2014

Knowledge translation (KT) is an active process of ensuring that new knowledge and products from research and development are used to improve the lives of individuals with disabilities. As such, NIDRR requires its grantees to involve stakeholders in the research and development process, translate findings into usable formats, and disseminate information to the community or identify plans to transfer products into the market. NIDRR also funds specialized KT projects in different content areas to assist grantees in their KT efforts. NIDRR invested over \$4 million across six specialized KT projects as shown in Exhibit 4.

Exhibit 4. NIDRR's Knowledge Translation Grants in FY 2014

Center on Knowledge Translation for Technology Transfer	\$924,511
ADA Network Knowledge Translation Center	\$850,000
Model Systems Knowledge Translation Center	\$800,000
Center on Knowledge Translation for Disability and Rehabilitation Research	\$750,000
Center on Knowledge Translation for Employment Research	\$650,000
Center for International Rehabilitation Research Information and Exchange	\$399,995
TOTAL	\$4,374,506

A sampling of valuable KT products generated in FY 2014 follow:

KT Strategies Database

The SEDL's Center on Knowledge Translation for Disability and Rehabilitation Research and Center on Knowledge Translation for Employment Research jointly created the first comprehensive searchable database that brings together research evidence on knowledge translation tools and strategies (<http://www.ktdrr.org/ktstrategies>). The database contains reviews of articles from 2000 or later that describe relevant KT tools and strategies that could be applied in disability and rehabilitation settings. Each article was reviewed and summarized for easy access, and assessed for the quality of supporting research evidence.

Lessons Learned in Technology Transfer

The technical brief, "Lessons Learned in Technology Transfer," describes the exemplary technology transfer and KT work of Dr. Gregg Vanderheiden and the Trace Research and Development Center at the University of Wisconsin-Madison. The team implemented a needs-driven approach, focused their research and development efforts on creating innovative technology solutions, and successfully transferred them to the marketplace. This earned the researchers the Center on Knowledge Translation for Technology Transfer (KT4TT) 2013 Product Utilization Support and Help (PUSH) Award (http://www.ktdrr.org/ktlibrary/articles_pubs/focus37).

Fact Sheets

Working with the Model Systems grantees, the Model Systems Knowledge Translation Center created fact sheets on Traumatic Brain Injury (TBI) (<http://www.msktc.org/tbi/factsheets>), Spinal Cord Injury (SCI) (<http://www.msktc.org/sci/factsheets>), and burn injury (<http://www.msktc.org/burn/factsheets>). The fact sheets serve as resources for consumers and their supporters and caregivers. TBI fact sheets highlight alcohol use, cognitive problems, and depression. SCI fact sheets cover pain management, skin care, and wheelchair use. Burn injury fact sheets address body image, employment, and psychological distress.

Research Capacity Building Support in FY 2014

NIDRR's goal is to increase capacity to conduct disability and rehabilitation research and development activities that make positive contributions to the lives of individuals with disabilities. In 2014, NIDRR devoted \$4.5 million to capacity building programs as shown in Exhibit 5.

Exhibit 5. Research and Capacity Building Program Expenditures

	No. of Grantees	Expenditures
ARRT	19	\$2,686,000
Switzer	5	\$375,000
Section 21	4	\$1,425,000
TOTAL	28	\$4,486,000

NIDRR's primary investments are the ARRT (<http://www2.ed.gov/programs/rtg/index.html>) and Research Fellowship (Switzer) programs (<http://www2.ed.gov/programs/resfel/index.html>). The ARRT program provides support to institutions to recruit qualified post-doctoral individuals and prepare them for careers in disability and rehabilitation research. Grantees provide advanced interdisciplinary research training. Switzer Research Fellowships give individual researchers opportunities to develop new ideas, gain research experience, and concentrate on specific lines of research.

Promoting Diversity in Disability Research

A key component of NIDRR's capacity building activities is the Section 21 Program. Section 21 of the Rehabilitation Act requires that NIDRR invest at least one percent of its annual appropriations to address traditionally underserved populations. NIDRR supports minority institutions to promote participation of diverse populations in rehabilitation research. In 2014, Langston University's RRTC on Research and Capacity Building for Minority Entities organized a successful summit to encourage minority participation in the NIDRR research portfolio (<http://www.langston.edu/capacitybuilding-rrtc>). The RRTC gathered 31 minority-serving institutions, including 22 Historically Black Colleges and Universities, three Tribal Colleges and Universities, and six Hispanic-serving Institutions to share information about the RRTC, invite collaboration and discuss issues and challenges in building minority-serving institution (MSI) research capacity. This strategy will stimulate interest in disability research among MSIs across the country and help the RRTC develop models for building research training programs at minority institutions.

Switzer Alumni Spotlight

Dorothy (Dot) Nary, PhD, is an assistant research professor at the University of Kansas and was a Switzer Fellow from 2011 to 2012. Recently, the work she completed under the Fellowship, "Making Homes More 'Visitable' for Wheelchair Users and Potential Hosts," was published in the distinguished journal, *Archives of Physical Medicine and Rehabilitation*.



Dr. Nary has significant research experience in accessibility and independent living, promotion of physical activity among individuals with mobility impairments, and the intersection of aging and disability. As a wheelchair user herself, Dr. Nary is in a unique position to understand the challenges that people with mobility issues face and the Switzer Fellowship provided a meaningful research opportunity. She noted, "The Switzer Fellowship offered me a year to explore an understudied area that would otherwise have continued to be neglected. I hope this article will stimulate further research."

How is NIDRR Research Making a Difference?

NIDRR research is applied in focus, designed to generate new knowledge and technologies, and to stimulate change in programs, practices, and public policies to the benefit of Americans with disabilities and their families. Selected grantee accomplishments from FY 2014 are presented below to illustrate the variety of NIDRR grantee activities that are improving the lives of people with disabilities.

Researchers Publish Groundbreaking Series on Disorders of Consciousness

Researchers from the NIDRR-funded TBIMS partnered with researchers from the Department of Veterans Affairs (VA) and the American Congress of Rehabilitation Medicine and European colleagues to produce a collection of pioneering research articles on Disorders of Consciousness (DOC) following brain injury. The *Archives of Physical Medicine and Rehabilitation* published the collection in the October 2013 issue as a special section titled “Clinical Management of Patients with Disorders of Consciousness: Prognosis, Medical Needs, and Program Models” to showcase the best practice models for persons with severe brain injuries.

Many insurance companies do not cover acute inpatient rehabilitation services for patients who are not yet fully conscious on the assumption that patients with prolonged unconsciousness have little rehabilitation potential. Patients are transferred to skilled nursing facilities or sent home without receiving specialty brain injury rehabilitation. However, researchers found that some patients with traumatic DOC who receive inpatient rehabilitation can, in fact, become independent in mobility, activities of daily living, and communication. Moreover, the proportion that is independent in these activities increases significantly for two to five years after injury, with about 20 percent achieving independence.

Several articles also indicated that persons with DOC require intensive medical management during the early months after injury, a level of management that is difficult to achieve at home or in skilled nursing facilities. Researchers from the U.S. and Europe presented models of care that address the needs of DOC patients and their caregivers. This evolving understanding of DOC calls for a reconsideration of currently appropriate models of care and has practical implications for the timing and duration of rehabilitation services. The full collection of articles can be accessed at <http://www.sciencedirect.com/science/journal/00039993/94/10>.



Photo Credit: ScienceProgress.org - Center for American Progress

Policy Research Offers a Path to a Better Long-Term Services and Supports System

In support of the HHS' new cross-agency initiative to improve the U.S. long-term services and supports (LTSS) system, NIDRR and ACL collaborated to establish the RRTC on Community Living Policy at the University of California San Francisco. The Center's inaugural publication, "Toward a Model Long-Term Services and Supports System: State Policy Elements," appeared in the October 2014 issue of *The Gerontologist*. The paper identifies and promotes promising policies and practices in LTSS at the state level. Already widely circulated and among the most-read articles in that issue, the paper describes an ideal LTSS system as one that "promotes community living over institutionalization, integration over segregation, and full social participation over isolation in a way that is equitable, economically sustainable, and targeted broadly to include all people at risk of institutionalization, isolation, or functional decline in the absence of services."



The article highlights key issues in moving toward such an ideal system and suggests promising strategies to improve access to public LTSS programs. These strategies include: supporting consumer-directed services, better developing the LTSS workforce, supporting family caregivers, transitioning institutional residents back to the community, diverting people from institutional placement, promoting accountability through measurement, and reporting of LTSS quality and outcomes. A particular focus of this article is on issues concerning the transition to integrated systems that offer both acute healthcare and LTSS. The full article is available at <http://gerontologist.oxfordjournals.org/content/early/2014/03/07/geront.gnu013.full.pdf+html>.

New Online Platform Increases Access to Data on Intellectual and Developmental Disability Policy Issues

The NIDRR-funded RRTC on Community Living (RRTC-CL) for People with Intellectual Disabilities at the University of Minnesota's Institute on Community Integration is advancing positive changes in policy and practice for individuals with intellectual and developmental disabilities (IDD) through an original dissemination effort. In 2014, the RRTC-CL published three new briefs that summarize research on employment, housing and poverty. These were disseminated via a new online interactive data visualization platform that improves access to the data for policy makers and advocates.



Photo Credit: University of Minnesota, RRTC on Community Living for People with Intellectual Disabilities

One brief, "Residential Setting and Individual Outcomes: An Assessment of Existing National Core Indicator Research," investigated the relationship between residential setting and individual outcomes (e.g., employment, community inclusion, social interaction, health-wellness) for people with IDD. Overall, people living in smaller settings, such as their own home, or small agency home, experienced better outcomes than those living in larger settings. States can use the brief to guide compliance with Centers for Medicare and Medicaid Services (CMS) Home and Community-Based Services regulations. Another brief, "Employment First across the Nation: Progress on the Policy Front," illustrates how Employment First policy approaches have been implemented in states over the last decade.

These briefs have been viewed over 6,500 times and are being used in policy discussions at all levels of government and IDD systems. They have been used by the National Governor's Association to inform a policy publication, a Minnesota agency to draft a new employment policy, CMS to develop new community living regulations, and Senator Harkin's office to prepare for legislative briefings on housing and poverty. The policy research briefs are available at <http://rtc.umn.edu/rtc/index.php?seriesID=10>.

Researchers Raise Awareness about Aging Well with Secondary Conditions

People living with long-term conditions like multiple sclerosis or muscular dystrophy often experience other health conditions that may be related, but not directly caused by, their disabilities. These secondary conditions include chronic pain, fatigue, depression, worsening muscle spasms, or chronic infections. Poor management of a secondary condition can worsen the primary disability, yet very little is known about how individuals cope with these secondary issues. To study the impact of secondary conditions, researchers from the NIDRR-funded RRTC on Promoting Healthy Aging for Individuals with Long-Term Physical Disabilities (Healthy Aging RRTC) at the University of Washington surveyed about 2,000 people in the U.S. living with spinal cord injury, multiple sclerosis, muscular dystrophy, and post-polio syndrome about their secondary conditions.



The authors found that secondary conditions like pain, depression, fatigue and trouble sleeping posed substantial problems, especially in middle-aged participants. They created as many challenges in daily life as did the physical disability itself. Chronic pain, for instance, was more disruptive to daily life than certain medical diagnoses, including diabetes, arthritis, and hypertension. As clinicians, researchers, and people aging with disabilities learn about the severe impact of secondary conditions on overall health, greater efforts must be made to proactively screen and effectively treat these co-occurring conditions.

The study, “Modeling Secondary Health Conditions in Adults Aging with Physical Disability,” was published in the *Journal of Aging and Health* (<http://jah.sagepub.com/content/26/3/335>). To make the information more readily available to consumers, the Healthy Aging RRTC also published a summary of the research written in plain language titled “How to Age Well with Secondary Problems” (<http://agerrtc.washington.edu/node/164>).

New Technology Promotes Walking and Fitness

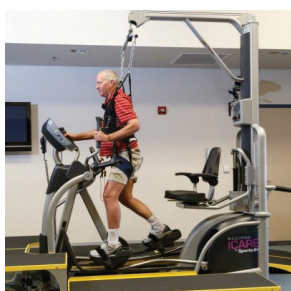


Photo Credit: Madonna Rehabilitation Hospital, Institute for Rehabilitation Science and Engineering

With a three-year field-initiated grant from NIDRR, Madonna Rehabilitation Hospital's Institute for Rehabilitation Science and Engineering developed a device named Intelligently Controlled Assistive Rehabilitation Elliptical (ICARE) trainer. The ICARE is an affordable therapeutic, motorized elliptical trainer designed for use in hospitals, fitness facilities and homes to help people improve their walking and cardiovascular fitness. The ICARE's patented motor and sensor system adapts to clients' needs and assists them in moving their limbs when muscle weakness, pain, or movement control problems limit independent movement. The ICARE has an electronically height-adjustable seat, body weight support system, stairs, platforms, and adapted pedals. Thus, clinicians no longer need to repeatedly lift and move patients' legs.

In July 2012, Madonna partnered with SportsArt Fitness Inc. to manufacture and distribute the ICARE, which is now being used in rehabilitation and fitness settings around the world. In 2013, the Madonna ICARE won the prestigious international *da Vinci Innovation Award* in the Recreation and Leisure category, which recognizes innovative research in adaptive and assistive technologies that enable equal access for all people.

Regaining the ability to walk and improving overall conditioning are important rehabilitation goals for individuals who have experienced stroke, brain injury, spinal cord injury, or other disabling conditions. Existing therapeutic technology tends to be very labor intensive and/or expensive, and thus is not readily available outside of a specialized rehabilitation hospital. At about one-tenth the cost of robotic treadmill devices, the ICARE helps people with limited mobility exercise in a walking-like pattern. For more information about the ICARE, please visit <http://www.madonna.org/researcher/movement/research>.

University-Industry Partnership Brings First Foldable Wheelchair Wheel to Market

At one time or another, every manual wheelchair user struggles with the difficulty of traveling by car, taxi, or airplane. Even detachable, hula-hoop sized wheels don't fit easily in car trunks or aircraft overhead bins. The NIDRR-funded Center on Knowledge Translation for Technology Transfer (KT4TT) at the University at Buffalo, and a New Jersey-based corporation, Maddak Inc., partnered to solve this problem. This solution illustrates the value of university/industry collaboration to transform novel concepts into effective solutions to the everyday problems faced by people with disabilities.



Photo Credit: Maddak Inc.

In 2011, Maddak approached the KT4TT for help in designing and testing a foldable wheelchair wheel. The KT4TT enlisted the expertise of the NIDRR-funded RERC on Wheeled Mobility at the Georgia Institute of Technology to provide Maddak with insight on wheelchair wheels testing and standards guidelines. In parallel, the KT4TT conducted focus groups to ensure that consumers, clinicians and durable medical equipment suppliers gave input into the prototype's function and design features. Maddak and the KT4TT then involved another NIDRR grantee and small business entity, Beneficial Designs Inc., to perform final testing on the pre-production prototype. This collaboration involving Maddak and three different NIDRR-sponsored projects has culminated in the world's first commercially available foldable wheel for manual wheelchairs, now referred to as Morph Wheels.

The Morph Wheels can be removed and folded in a matter of seconds, allowing a manual wheelchair user more travel options. Morph Wheels won multiple design awards in 2013, including the *London Design Museum Award* in transportation, the *Medtrade Innovation Award*, and the *Popular Science Best of What's New in Health Award*. In addition, the Morph Wheels were part of CNN's Focus on Innovation as one of 10 Ideas of 2013. To learn more about the Morph Wheels, visit (<http://morphwheels.com>).

Award Winning Video Series Aids Burn Injury Survivors with Return to Work



Photo Credit: Model Systems Knowledge Translation Center

Individuals with burn injuries face many challenges, including uncertainty about returning to work. These include concerns over accommodation needs and apprehension about communicating with co-workers. Likewise, employers may be unsure about how to help their employees return to work. To empower individuals with burn injuries and to educate employers, the NIDRR-funded Model Systems Knowledge Translation Center (MSKTC) collaborated with the NIDRR-funded Northwest Regional Burn Model System at the University of Washington to develop an award-winning hot topic module, *Employment after Burn Injury*. The module is a suite of free resources that explain common issues people with burn injuries

may experience when returning to work. It covers strategies for returning to work, such as employer accommodations, psychological issues, body image after burn injury, and ways to react to co-workers (<http://www.msktc.org/burn/Hot-Topics/Employment>).

The primary 10-minute, captioned video introduces Ben Swanson, a burn injury survivor, who shares his story of returning to work after injury. This video was awarded a 2014 Bronze Telly Award for outstanding achievement in the category of internet/online video education. Swanson's story is accompanied by 13 short clips that share additional information and strategies for transitioning into employment. Clips are available on the MSKTC website (<http://www.msktc.org/burn/videos>) or on DVD by email request (MSKTC@air.org) at no charge. The videos have been widely disseminated through the Burn Model Systems' websites, MSKTC social media, Phoenix Society's Annual World Burn Congress Meeting, and the American Burn Association Annual Meeting.

ADA National Network and FEMA Partner to Promote Inclusive Emergency Preparedness Planning

The ADA National Network, comprised of ten regional centers funded by NIDRR, provides technical assistance and training to public and private organizations to support effective implementation of the ADA. In this capacity, regional centers provide technical assistance to improve policies and practices surrounding accessibility and accommodation issues during an emergency or national disaster. One significant achievement of the Network is a partnership established by the Pacific ADA Center, on behalf of the ADA National Network, with the Federal Emergency Management Administration (FEMA) Office of Disability Integration and Coordination.



Together, the team collaborated in the design of FEMA's promising practices in emergency management inclusive of people with disabilities. The Pacific ADA Center was instrumental in raising awareness of disability issues with FEMA, emergency preparedness planners, and within its own network. To disseminate these practices, staff from Pacific ADA Center and FEMA collaboratively designed a monthly webinar series. The webinars provide a unique platform for people with disabilities, first responders, and other community partners to exchange promising practices on inclusive emergency preparedness. Experts in the field will discuss topics, such as resource management, evacuation, as well as accessibility and reasonable accommodation issues under the Rehabilitation Act of 1973, the ADA, and other laws. The Network previously found a scarcity of research on critical access and accommodation issues, such as emergency preparedness. Providing a public forum and structured training to share lessons from the field will help responders develop practical and tailored approaches for accommodating people with disabilities during an emergency. The webinar series schedule and registration information can be viewed at <http://adapresentations.org/schedule.php>.

Special Issue Brings Insightful Analysis to the Disability Benefits Policy Debate

Researchers from the NIDRR-funded RRTC on Employment Policy and Measurement at the University of New Hampshire identified concerns about the sustainability of the federal disability benefits system. They argue that the dramatic increase in federal expenditures under the Supplemental Security Income (SSI) and Social Security Disability Insurance (SSDI) programs over the past thirty years and the large declines in employment and income of people with disabilities over this period have led to a serious sustainability problem. Personal barriers to employment, work disincentives inherent in the SSI and SSDI programs, a fragmented and poorly coordinated system of supports, and limited means by which early intervention might occur all contribute to the difficulty facing policy makers in developing strategies to reduce disability expenditures. To examine this set of policy issues collectively, these researchers compiled and co-edited a special issue of the *IZA Journal of Labor Policy*, "Social Security Disability Benefits: Finding Alternatives to Benefit Receipt."



Nine articles in this special issue provide new information about the factors affecting disability benefits program growth and the potential for early intervention and employment support strategies to reduce reliance on these benefits. A common finding by researchers across the articles suggests that more narrowly targeting supports to people with disabilities and significant health conditions before they apply for benefits has strong potential for reducing program growth. To encourage broad dissemination and use of these incisive analyses, all of the articles are available free of charge through the open access journal at <http://www.izajolp.com/series/SSDB>.

Innovative Economic Model Demonstrates Vocational Rehabilitation Program Effectiveness

The state-federal vocational rehabilitation (VR) program helps people with disabilities find and keep employment. With a federal investment of over \$3 billion, VR serves about 1.5 million people with physical and mental disabilities annually. VR services include vocational assessment and counseling, job training and placement, educational services, assistive technology, and mobility orientation and training. However, the effectiveness of the program remains uncertain. With a NIDRR field-initiated grant, University of Richmond researchers developed and tested a rigorous return on investment (ROI) model that estimates the long-term impacts of VR services on employment likelihood, subsequent earnings, and receipt of SSI and SSDI for VR applicants with specific types of disabilities. Key findings suggest a complex picture of VR effectiveness:

- Overall, VR services have a positive ROI. In Virginia, 80 percent of VR applicants earned more as a result of VR services. For every \$1,000 the agency spent, the average consumer earned \$7,100 more over 10 years than they would have earned without VR services. The top 10 percent earned \$45,100 or more.
- Employment outcomes differ dramatically by disability type and service. For example, training, including supported employment, is most effective for people with mental illness while education is most effective for people with cognitive impairments.
- For people with mental illness, VR services result in better labor market outcomes as well as a higher likelihood of receiving SSI and SSDI benefits when employment is unlikely.

Two papers from this study are available online:

- “The Effects of Vocational Rehabilitation for People with Mental Illness” at <http://people.virginia.edu/~sns5r/resint/vocrehtf/vocrehmi.pdf>.
- “The Effects of Vocational Rehabilitation for People with Cognitive Impairments” at <http://people.virginia.edu/~sns5r/resint/vocrehtf/vocrehci.pdf>.

The researchers have recently received a new grant to further refine the model and develop tools for states to estimate ROI.



Blind Travelers Benefit from a New State-of-the-Art Public Transit Tool

Researchers at the NIDRR-funded RERC on Blindness and Low Vision at Smith-Kettlewell are collaborating with community agencies to provide innovative travel tools for travelers who are blind or have visual impairments. Subway maps are commonplace for sighted transit riders, but for people with visual disabilities, accessible transit maps are rare. In collaboration with the San Francisco LightHouse, a major California community service organization for the blind and visually impaired, and with additional funding contributed by the Department of Transportation (DOT), the RERC created a new kind of orientation and mobility tool—portable, inexpensive, talking, tactile maps for transit stations.

Many blind and visually-impaired pedestrians may forego public transit for more expensive and less-effective travel alternatives because they find it highly stressful to travel through unfamiliar train stations. The new universally accessible maps of Bay Area Rapid Transit (BART) stations make it easy to plan routes through unfamiliar stations, thus improving independent traveling and community living. The maps are embossed, include Braille labels and tactile symbols, and are printed with high-contrast graphics and large print. In addition, the maps work together with a special smartpen, which provides audio information about specific map elements. This feature makes the maps usable by individuals with a range of vision impairments and Braille skills.



Photo Credit: San Francisco LightHouse

These innovative map concepts were pioneered at the RERC, whose expertise in vision rehabilitation, community living, and user-centered design propelled these innovations from concepts to products in the hands of the blind and visually-impaired community. To date, the San Francisco LightHouse has produced thousands of station maps benefitting hundreds of blind and visually-impaired travelers in the Bay Area, and these numbers are constantly growing. In addition, the LightHouse is expanding this program to other transit systems around California and the country.



Photo Credit: Contra Costa Times

Study Points to Education Policy Improvements for Children with Brain Injury

Two NIDRR grantees—the TBI Model System at Mount Sinai Medical School and the RRTC on Interventions for Children and Youth with Traumatic Brain Injury—worked closely with staff from NIDRR, the Office of Special Education Programs, and the National Association of State Directors of Special Education to conduct two related surveys of state programs in special education. The surveys investigated the extent to which U.S. public schools identify and meet the educational needs of children with TBI. The goal of the collaboration was to provide empirical support for policy and practice improvements.

One result of this work is a data-driven position paper, “State of the States: Meeting the Educational Needs of Children with Traumatic Brain Injury,” published by the Mount Sinai Brain Injury Research Center and the Brain Injury Association of America (<http://www.biausa.org/biaa-position-papers.htm>). Key points from the paper include:

- Up to seven million U.S. school children (ages five to fifteen) may have experienced a traumatic brain injury. More than a million are estimated to have persisting cognitive, emotional, and behavioral challenges after even a mild brain injury.
- No state has implemented a statewide systematic means of identifying children with mild or moderate-to-severe brain injuries, and only two-thirds of state education agencies (SEAs) reported having any identification mechanisms for TBI in their states.
- Over 70 percent of SEAs indicated that children with mild injuries may not be classified under The Individuals with Disabilities Education Act’s TBI category at all or may be classified into other disability categories, such as Other Health Impaired or Specific Learning Disability.
- The problems in educating children who are identified and classified by their schools as having a TBI include a lack of awareness and implementation of best practices, resulting in wide variability in the quality and effectiveness of educational programs.



How Does NIDRR Collaborate?

NIDRR Partnerships – Interagency Agreements

NIDRR collaborates with other federal agencies to fulfill its mission. The formality and nature of these partnerships vary widely and span areas such as employment, technology, and health. In FY 2014, NIDRR received \$2,157,021 from other agencies and contributed \$749,000 to other agencies. Presently, NIDRR has active Interagency Agreements or Memoranda of Understanding (MOU) with the VA, the Centers for Disease Control and Prevention (CDC), the Substance Abuse and Mental Health Administration (SAMHSA), the National Institute of Standards and Technology (NIST), the ACL, the DOT, the Access Board, and the Federal Communications Commission (FCC).

Data Analysis

Projects with the VA and the CDC have sought to support and expand data capabilities related to the long-term outcomes of TBI and the long-term effects of treatment in veterans and civilians. Through an initiative with ACL, NIDRR is supporting Virginia Commonwealth University with the development and implementation of an integrated program of data collection, analysis, and continuous quality improvement within the developmental disabilities service system in the Commonwealth of Virginia.

Technology

NIDRR supported NIST's investigation into the potential of cloud-based accessibility technology for voting systems as defined in the NIST Cloud Computing Technology Roadmap. Through an MOU with the FCC, the two agencies are exploring the needs of potential users of telecommunications relay service technologies, with the goal of improving the health and well-being of people who are deaf, hard of hearing, or speech impaired. NIDRR has partnered with DOT to fund the RERC on Physical Access and Transportation at Carnegie Mellon University to carry out the Accessible Transportation Technologies Research Initiative. This initiative is aimed at researching, developing, and testing a new system using Intelligent Transportation Systems (ITS) and other assistive technologies to enhance mobility quality and choice for travelers with disabilities.

Mental Health

NIDRR and SAMHSA recently co-funded four RRTCs. These include the RRTC on Transition to Employment for Youth and Young Adults with Serious Mental Health Conditions, the RRTC on Community Living and Participation Among Youth and Young Adults with Serious Mental Health Conditions, the RRTC on Improving Employment Outcomes for Individuals with Psychiatric Disabilities, and the RRTC on Co-occurring Health, Wellness and Employment Outcomes for Individuals with Psychiatric Disabilities.



Interagency Committee on Disability Research

In FY 2014, NIDRR chaired the ICDR (<http://www.icdr.ed.gov>). The ICDR was originally authorized under the Rehabilitation Act of 1973, as amended and will continue under WIOA with some structural changes. The ICDR mission is 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. Selected activities and accomplishments for FY 2014 are presented here:



- The ICDR prepared a paper, “Primer on Interagency Research Collaboration,” for its membership and others interested in federal interagency collaboration. This paper provides an overview of best practices to promote interagency collaboration, enhance the knowledge base about interagency collaboration, increase capacity to promote interagency collaboration, promote better understanding of the complex nature of interagency relationships, and identify strategies to support sustained partnerships.
- The ICDR hosted meetings between federal agency representatives and the National Aeronautics and Space Administration Strategic Opportunities and Partnership Development Office in order to cultivate relationships with a variety of industries, academia, and government and international agencies to advance technology and develop new innovations.
- To support long-term planning, the ICDR convened a panel of experts to make recommendations for applying identified best practices to its unique legislative mandate and subject matter, and to suggest steps toward creating a sustainable interagency coordination network on disability research. The process resulted in a published report entitled, “Creating a Sustainable Interagency Coordination Network on Disability Research” (<http://www.icdr.ed.gov/content/rsc/reports>).

About NIDRR

The National Institute on Disability and Rehabilitation Research (NIDRR), a component of the U.S. Department of Education's Office of Special Education and Rehabilitative Services (OSERS), is the main federal agency that supports applied research, training and development to improve the lives of individuals with disabilities. NIDRR staff and its grantees are committed to:

- Generating new knowledge and promoting its effective use in improving the ability of persons with disabilities to perform activities of their choice in the community, and
- Expanding society's capacity to provide full opportunities and accommodations for its citizens with disabilities



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This report is available on the Department of Education's website at:
<http://www2.ed.gov/programs/nidrr/2014organizationhighlights.pdf>

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