

2013

# Summary of 2013 Annual Performance Reports from NIDRR Grantees

January 10, 2014

National Institute on Disability and Rehabilitation Research  
Office of Special Education and Rehabilitative Services  
U.S. Department of Education



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The purpose of this report is to present selected key data from the National Institute on Disability and Rehabilitation Research (NIDRR) 2013 grantee Annual Performance Report (APR). Grant funding presented in this report is for the APR reporting period June 1, 2012 through May 31, 2013. The report also compares data for 2009 through 2013 on some variables.

### **Mission**

NIDRR's mission is to generate new knowledge and promote its effective use to improve the abilities of people with disabilities to perform activities of their choice in the community, and also to expand society's capacity to provide full opportunities and accommodations for its citizens with disabilities.

### **Statutory Mandate**

NIDRR was established by the 1978 amendments to the Rehabilitation Act of 1973. NIDRR's purpose is to

... provide for research, demonstration projects, training, 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 ...; promote the transfer of rehabilitation technology to individuals with disabilities through research and demonstration projects ...; ensure the widespread distribution, in usable formats, of practical scientific and technological information ...; identify effective strategies that enhance the opportunities of individuals with disabilities to engage in employment ...; and increase opportunities for researchers who are members of traditionally underserved populations, including researchers who are members of minority groups and researchers who are individuals with disabilities (29 USC §760).

### **Funding Mechanisms**

NIDRR uses eight grant funding mechanisms defined by Catalog of Federal Domestic Assistance (CFDA) numbers:

Advanced Rehabilitation Research Training (ARRT) grants provide funding to institutions of higher education to recruit qualified post-doctoral candidates with clinical, management, basic or engineering research experience and prepare them to conduct independent research on disability and rehabilitation issues [CFDA 84.133P].

Disability and Rehabilitation Research Projects (DRRP) emphasize research and development projects, training, and knowledge translation on rehabilitation topics. DRRP subcategories are: Americans with Disabilities Act National Network (ADA), Traumatic Brain Injury Model Systems Centers, Burn Model Systems Centers, Knowledge Translation (KT) and general DRRPs [CFDA 84.133A].

Field Initiated Projects (FIP) address rehabilitation issues in promising and innovative ways. As the name implies, topics for these projects are chosen by the applicants. Awards are based upon merit and potential impact on the field of rehabilitation [CFDA 84.133G].

Rehabilitation Engineering Research Centers (RERC) conduct programs of advanced engineering and technical research designed to apply technology, scientific achievement, and psychological and social knowledge to solve rehabilitation problems and remove environmental barriers. RERCs are affiliated with institutions of higher education or non-profit organizations [CFDA 84.133E].

Rehabilitation Research and Training Centers (RRTC) conduct coordinated and integrated advanced research to alleviate or stabilize disabling conditions, promote maximum social and economic independence of people with disabilities, or improve rehabilitation methodology or service delivery systems. RRTCs operate in collaboration with institutions of higher education and providers of rehabilitation services and serve as national centers of excellence in rehabilitation research [CFDA 84.133B].

Research Fellowships Program (RFP), also known as the Mary E. Switzer Fellowship, gives individual researchers an opportunity to develop new ideas and gain research experience. Fellows design and work for one year on an independent research project [CFDA 84.133F].

Small Business Innovation Research (SBIR) grants, as administered by NIDRR as a part of the larger mandatory SBIR program, help support the production of new assistive and rehabilitation technology. This two-phase program takes a rehabilitation-related product from development to market readiness [CFDA 84.133S].

Spinal Cord Injury Model Systems Centers (SCIMS) study the course of recovery and outcomes following the delivery of a coordinated system of care for individuals with SCI. Under this program, SCIMS centers provide comprehensive rehabilitation services to individuals with SCI and conduct spinal cord research, including clinical research [CFDA 84.133N].

NIDRR also funds contracts to provide technical support related to NIDRR's internal management and knowledge translation activities.

### **Annual Performance Reporting System**

In 2000, NIDRR launched its web-based grants performance system called the Annual Performance Reporting system. Grantees use this system to provide data about goals and objectives; staffing; budget; research issues such as sample size and method; progress; outputs; and accomplishments. 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 report data annually in the APR on July 1. Because grants and their associated projects are in various stages of completion, these data provide a snapshot look at grant status as of May 31 in a given year.

### **Data Categories Used in This Report**

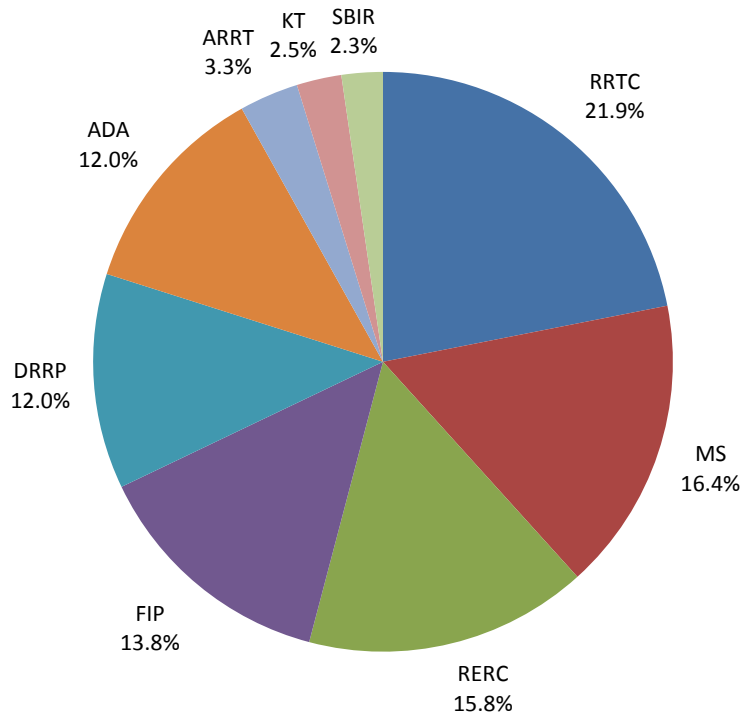
In this report, data are reported under program mechanism categories that differ from the CFDA categories. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the general DRRP category; KT and ADA are presented as separate categories. TBI and burn model systems are combined with SCI model systems under the category MS. Please see the Appendix for a full description of program mechanisms as used in this report. The Appendix also contains definitions of project type, domain, and research method as used in this report.

## Section 1. NIDRR Funds Received by Grantees

Information on funding comes from the following APR item: *The total amount (exclusive of supplements) of funds that you received from NIDRR for this budget period for this award.* Budget period is not synonymous with reporting period. A budget period is a specific interval of time for which federal funds are being provided from a particular fiscal year to fund approved activities and budget. Budget period is defined as 365 days from the start date of the grant. For multiyear awards, consecutive budget periods proceed immediately from the end of the previous budget period and are 365 days in duration. The amount of funding grantees reported receiving from NIDRR on the 2013 APR refers to the budget year. All other data in this report refer to the 2013 APR reporting period which is from June 1 through May 31.

### ***How much NIDRR funding did grantees receive in the budget period covered by the 2013 APR?***

**Exhibit 1. Percentage of total NIDRR funding received by grantees, by program mechanism: 2013**



NOTE: SBIR Phase I grants not included. DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; KT and ADA are presented as separate categories. TBI and burn model systems are combined with SCI model systems under the category MS. These data are not collected from RFP grantees in the APR.

SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

The table below shows the dollar amount and percentage of total NIDRR funding received by grantees by program mechanism in 2013:

Program mechanism	NIDRR funds received	Percent of total funding received
RRTC	\$22,842,122	21.9
MS	17,096,099	16.4
RERC	16,498,837	15.8
FIP	14,385,274	13.8
DRRP	12,551,249	12.0
ADA	12,531,295	12.0
ARRT	3,440,787	3.3
KT	2,549,995	2.5
SBIR	2,364,309	2.3
Total	104,259,967	100

- Exhibit 1 shows the distribution of \$104 million in grant funding among nine program mechanisms based on budget period reporting in the 2013 APR. RRTCs reported receiving 21.9 percent of the \$104 million in grant funding, followed by MS and RERC with about 16 percent each. The smallest program mechanisms were KT and SBIR with about 2 percent of total funding each.

### Exhibit 2. Number of grants, projects and funding, by program mechanism: 2013

Program mechanism	Number of grants	Number of projects	Average number of projects per grant	Number of grants receiving funding this budget period <sup>1</sup>	NIDRR funds received
RRTC	28	383	14	26	\$22,842,122
MS	50	266	5	37	17,096,099
RERC	20	236	12	17	16,498,837
FIP	92	139	2	74	14,385,274
DRRP	28	208	7	25	12,551,249
ADA	12	179	15	12	12,531,295
ARRT	22	84	4	19	3,440,787
KT	3	24	8	3	2,549,995
SBIR	12	22	2	10	2,364,309
Total	267	1541	6	223	104,259,967

<sup>1</sup>Excludes grants with no-cost extensions.

NOTE: SBIR Phase I grants not included. DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; KT and ADA are presented as separate categories. TBI and burn model systems are combined with SCI model systems under the category MS. These data are not collected from RFP grantees in the APR.

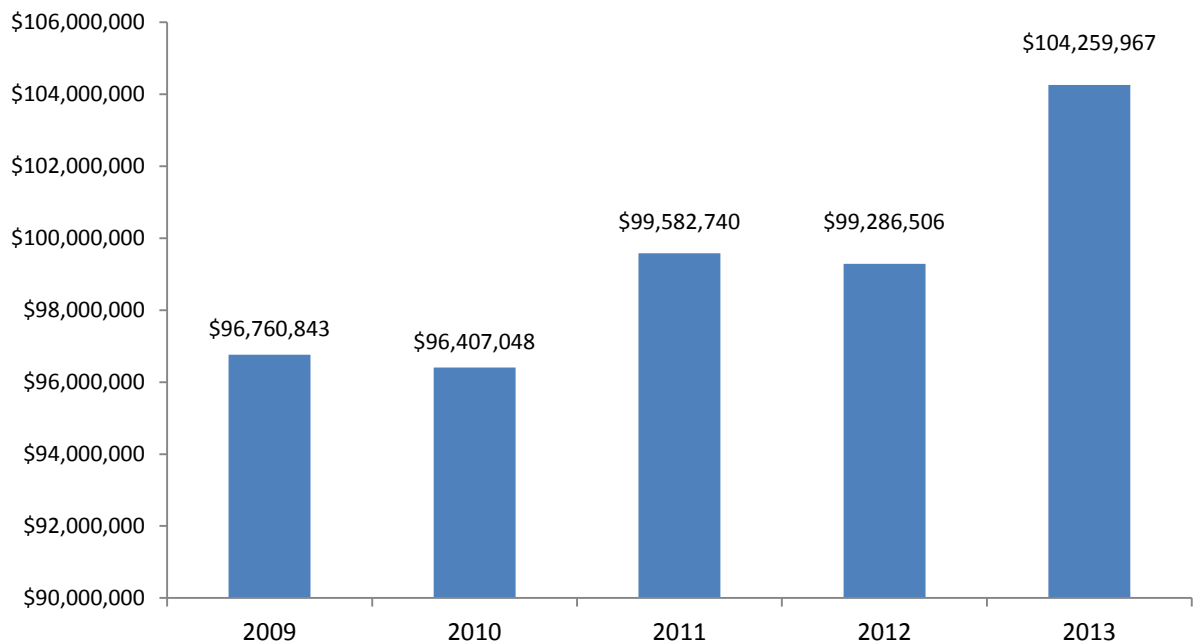
SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.



- Exhibit 2 shows the dollar amount reported by grantees in each program mechanism and the number of grants and associated projects. In 2013, there were 267 grants: 223 which received funds during the associated budget period and 44 with no-cost extensions.
- There were 1,541 projects associated with the grants. Across all program mechanisms, the average number of projects per grant was six. The ADA and RRTC mechanisms had the largest number of average projects per grant with 15 and 14, respectively.

***How did the amount of NIDRR grant funding received by grantees change from 2009 through 2013?***

**Exhibit 3. Funding received by grantees: 2009–2013**

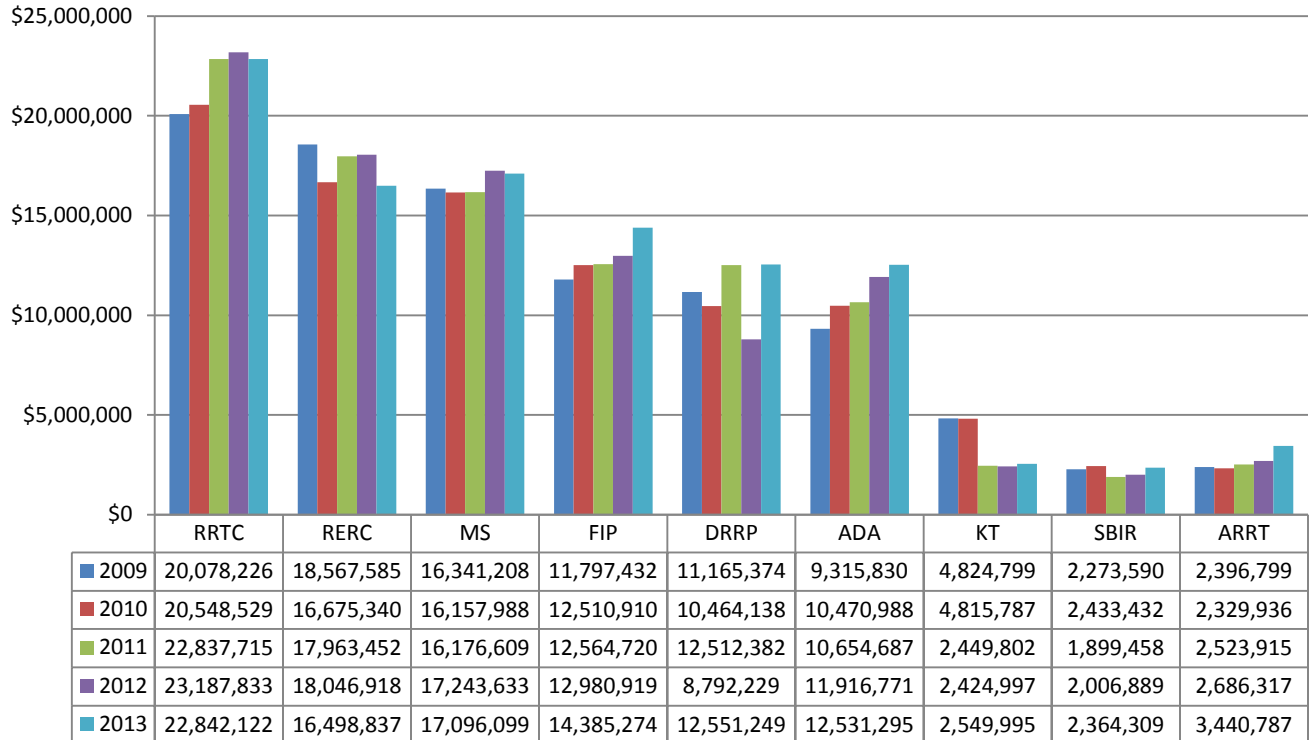


SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- Exhibit 3 shows how the amount of NIDRR grant funding received by grantees changed from 2009 through 2013.
- As reported by grantees in the 2013 APR, grantees received \$104 million in funding from NIDRR in 2013.
- Overall funding received from NIDRR rose by \$7,499,124 from 2009 through 2013, an increase of about 7.7 percent.

**How did the amount of NIDRR grant funding received by program mechanisms change from 2009 through 2013?**

**Exhibit 4. Distribution of grant funds, by program mechanism and year: 2009–2013**



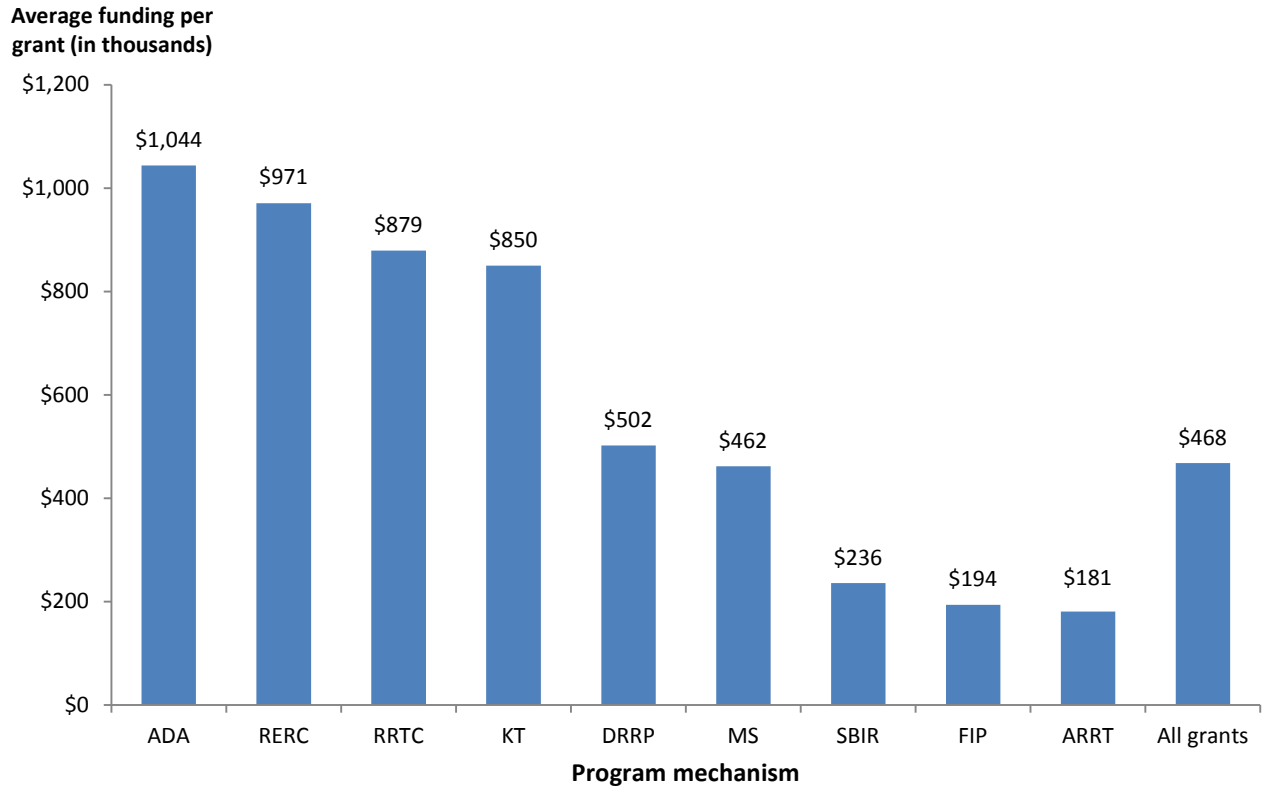
NOTE: SBIR Phase I grants not included. DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; KT and ADA are presented as separate categories. TBI and burn model systems are combined with SCI model systems under the category MS. These data are not collected from RFP grantees in the APR.

SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- Exhibit 4 shows how grant funds were distributed among program mechanisms for the 5-year period of 2009 through 2013.
- In 2013, RRTCs received nearly \$23 million in grant funding, the highest figure among the program mechanisms. This pattern held constant through the five years.
- The RRTC, MS, FIP, DRRP, ADA, SBIR, and ARRT program mechanisms reported increased funding between 2009 and 2013. The RERC and KT program mechanisms had reduced funding when comparing 2009 and 2013. In addition, FIP and ADA were the only mechanisms that exhibited a constant upward trend throughout the five years.

**What was the average funding received per grant for each program mechanism?**

**Exhibit 5. Average funding received per grant (in thousands of dollars), by program mechanism: 2013**



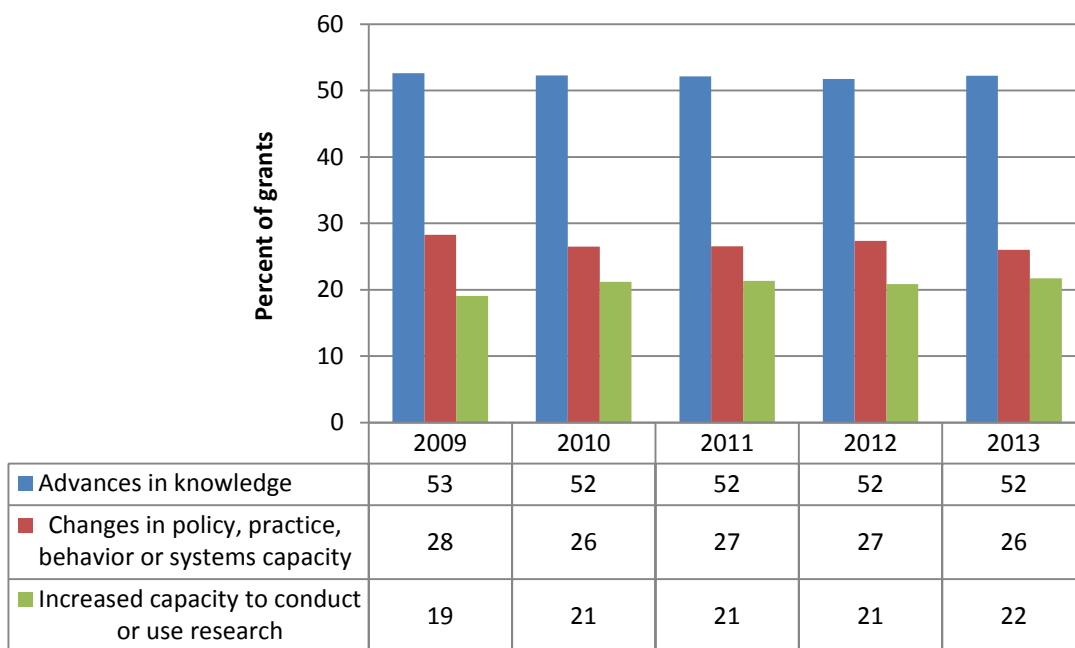
NOTE: SBIR Phase I grants not included. DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; KT and ADA are presented as separate categories. TBI and burn model systems are combined with SCI model systems under the category MS. These data are not collected from RFP grantees in the APR.

SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- In 2013, the average NIDRR grant received \$468,000.
- ADA and RERC grants had the highest average funding per grant, at \$1 million and \$971,000 respectively. In addition, the average RRTC, KT, and DRRP grants were higher than the overall average, while the MS, SBIR, FIP, and ARRT grants were below the overall average.

## What types of changes did grantees expect to produce?

Exhibit 6. Percentage of grants expected to produce select types of changes: 2009–2013



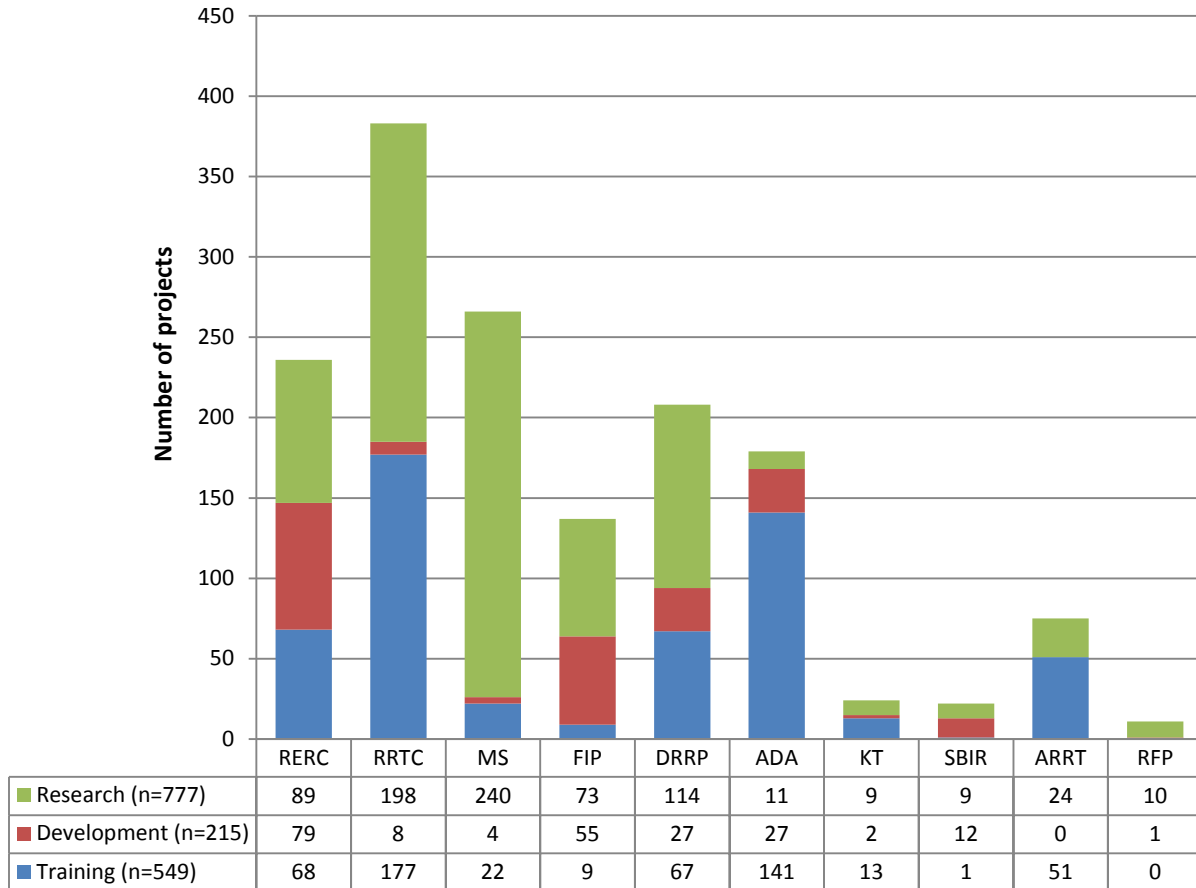
SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- Grants funded by NIDRR are expected to produce contributions to the field of disability and rehabilitation. In the APR, grantees were asked to select the type of change or improvement that will occur as a result of the grant. Exhibit 6 compares the three types of change over five years.
- In all years, most grants expected to achieve *Advances in knowledge*. This pattern has remained fairly constant from year to year. There was a slight shift toward changes that produce *Increased capacity to conduct or use research*. In 2009, 19 percent of grants expected to contribute to increased capacity compared with 22 percent in 2013. At the same time, there was a very slight decrease in the percentage of grants that expected to produce *Changes in policy, practice, behavior, or systems capacity*.

## Section 2. Project Information

### *What types of projects were conducted in the various program mechanisms in 2013?*

**Exhibit 7. Number of projects, by program mechanism and type of project: 2013**



NOTE: SBIR Phase I grants not included. DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; KT and ADA are presented as separate categories. TBI and burn model systems are combined with SCI model systems under the category MS. RFP grantees are asked to characterize the fellowship as a research or development project.

SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- Exhibit 7 shows how many research, development, and training projects were conducted under each program mechanism in 2013. Grantees conducted 1,541 projects during 2013. The most common type of project was research (777), followed by training (549), and development (215).
- MS and RRTC mechanisms conducted the most research projects, with 240 and 198 projects respectively. These two program mechanisms accounted for 56 percent of all research projects.
- RERCs conducted the most development projects with 79, followed by FIPs with 55.

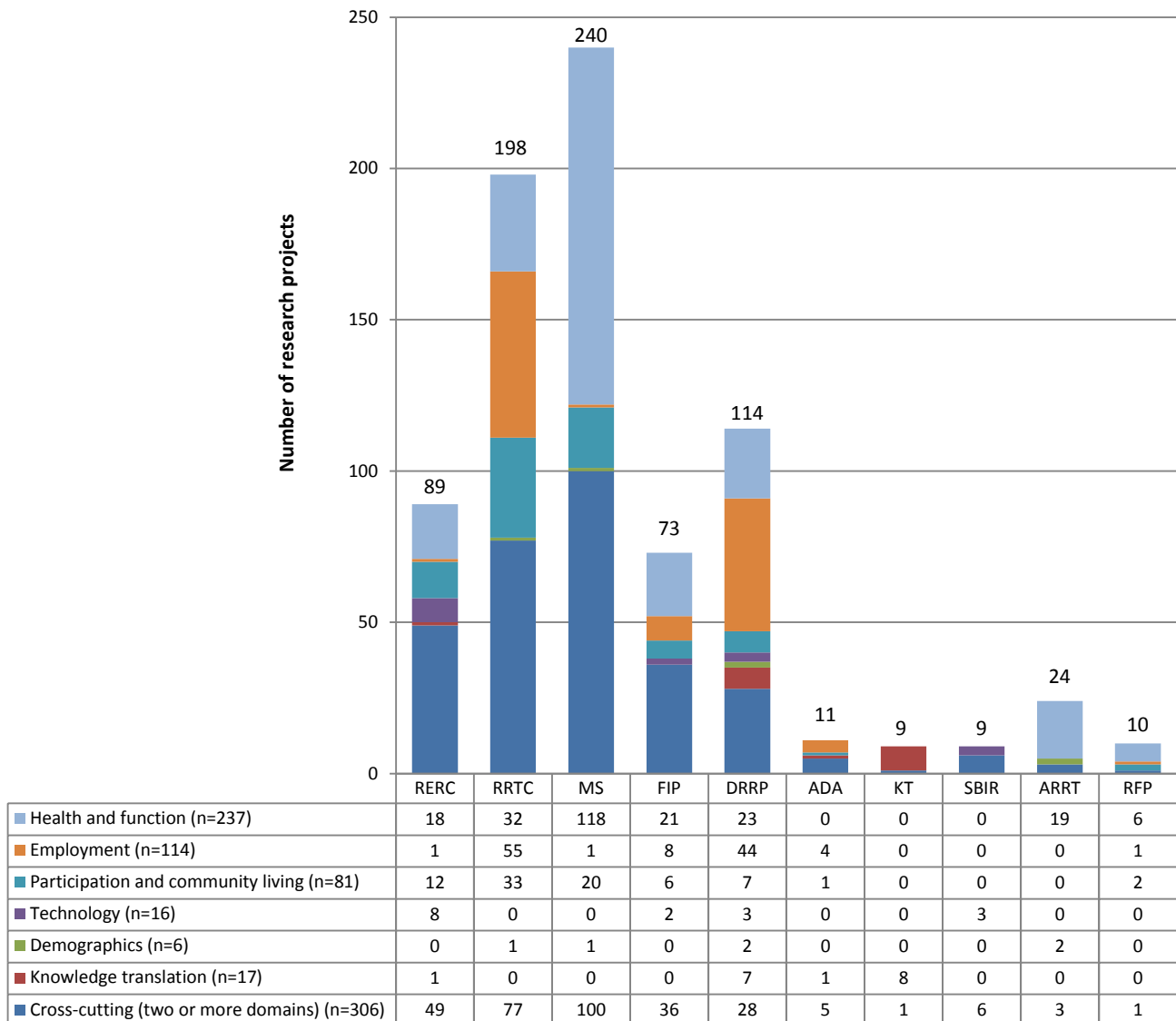
- RRTCs and ADAs conducted the most training projects, with 177 and 141 respectively.
- Looking within program mechanisms, RERC projects were almost evenly divided among research, development, and training. RRTC projects were evenly divided between research and training. MS projects focused primarily on research (240 of 266 projects), while ADA center projects were primarily focused on training (141 of 179 projects).

## Section 3. Research Projects

A research project is defined 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.” This definition was derived from the regulations governing the DRRP program (34 CFR 350.13).

### *How were research projects distributed among program mechanisms and domains in 2013?*

**Exhibit 8. Number of research projects, by program mechanism and domain: 2013**



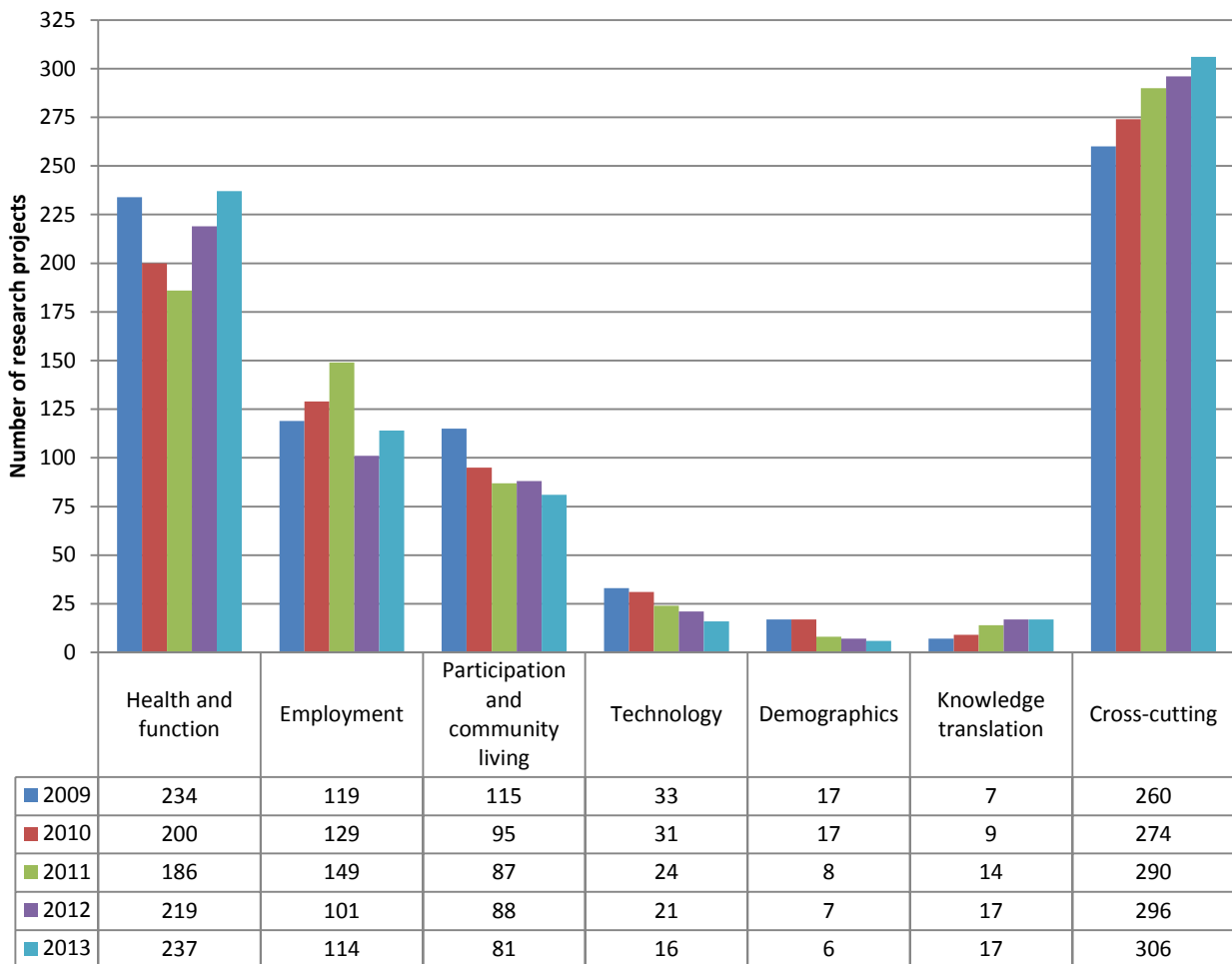
NOTE: SBIR Phase I grants not included. DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; KT and ADA are presented as separate categories. TBI and burn model systems are combined with SCI model systems under the category MS. RFP grantees are asked to characterize the fellowship as a research or development project.

SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- In the APR, grantees were asked: “Based on the objectives listed, what **one** NIDRR Long-Range Plan Domain does this project **best** fit in?” Exhibit 8 shows the number of research projects in each program mechanism and domain in 2013.
- Overall, *Cross-cutting* (contributing to two or more domains) was the most commonly identified domain, with 306 of the 777 research projects. *Health and function* was the next most common domain with 237 projects, followed by *Employment* (114 projects) and *Participation and community living* (81 projects).
- Over half of RERC research projects were in the *Cross-cutting* domain, while MS and FIP projects focused on the *Health and function* and *Cross-cutting* domains. ARRT projects focused almost exclusively on *Health and function*. *Employment* projects were concentrated in the RRTC and DRRP program mechanisms.

### ***How did the distribution of research projects among domains change from 2009 through 2013?***

**Exhibit 9. Number of research projects, by domain and year: 2009–2013**



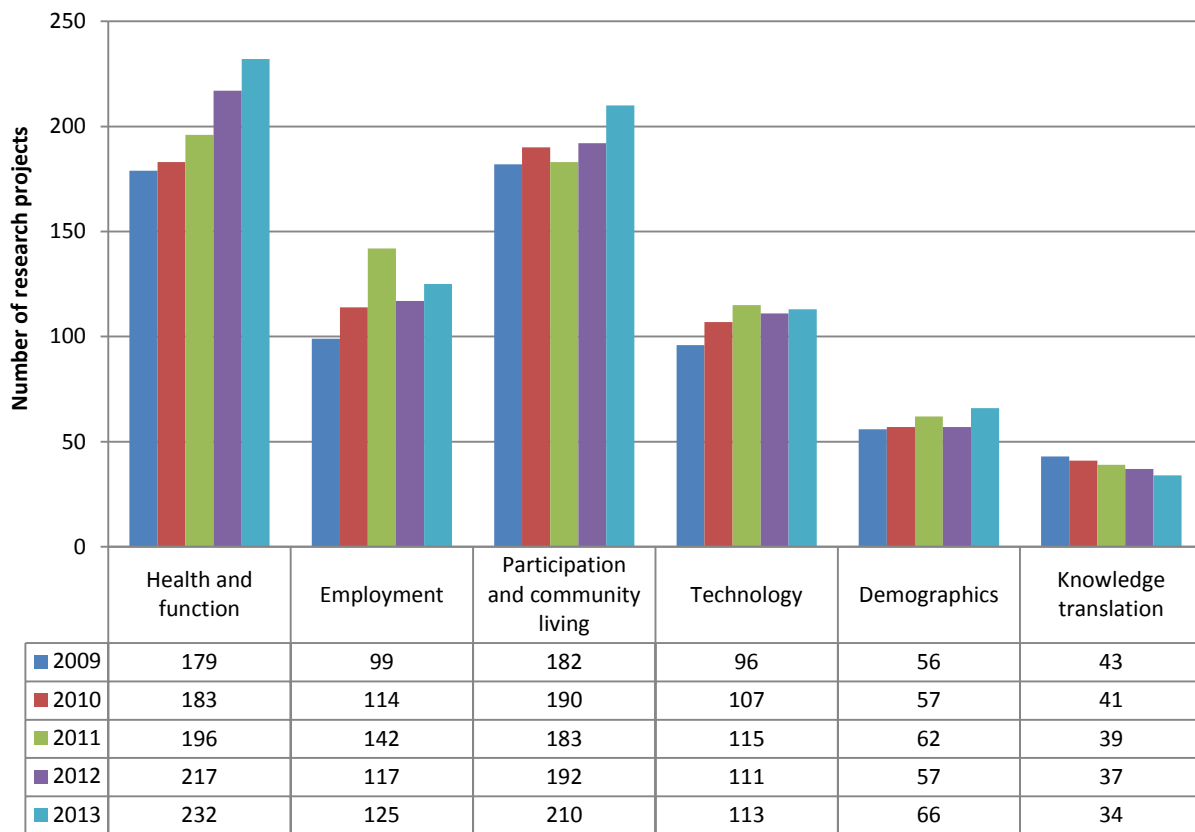
SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.



- In the APR, grantees were asked: “Based on the objectives listed, what **one** NIDRR Long-Range Plan Domain does this project **best** fit in?” Exhibit 9 shows the number of research projects in each domain for 2009–2013.
- In 2013, the *Cross-cutting* domain accounted for 306 research projects, while the next most frequently reported domain was *Health and function* with 237 projects. In all five years, the *Cross-cutting* domain was the most frequently chosen domain for research projects.
- Across the 5-year period, the number of projects in the *Participation and community living*, *Technology*, and *Demographics* domains declined. The number of research projects in the *Knowledge translation* and *Cross-cutting* domains increased.

**How did the specified domains for Cross-cutting research projects change from 2009 through 2013?**

**Exhibit 10. Number of research projects with *Cross-cutting* focus, by specified domains and year: 2009–2013**



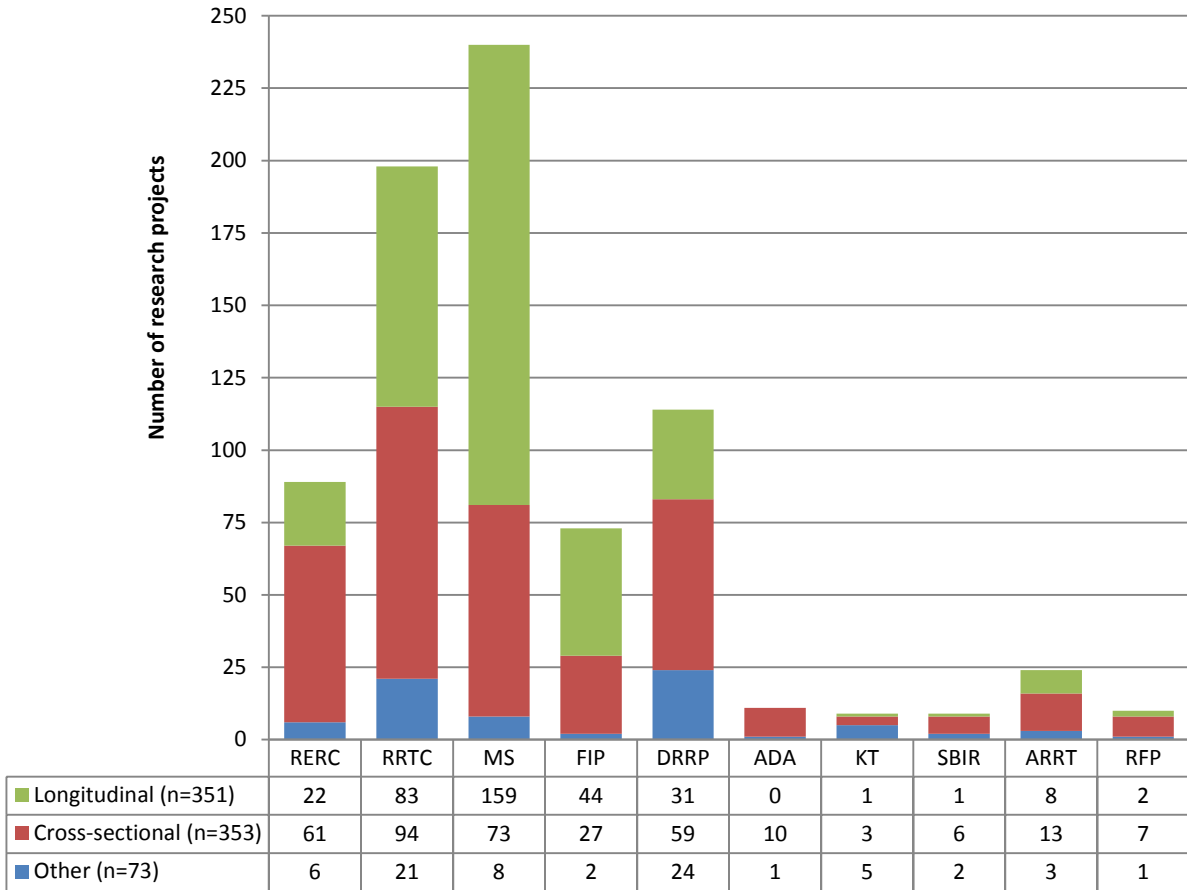
SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- Grantees that identified their research projects as *Cross-cutting* were asked to specify which two or more domains applied. Exhibit 10 shows the domains associated with research projects identified as *Cross-cutting* for 2009 through 2013.

- In every year from 2009 through 2013, *Health and function* and *Participation and community living* were specified as domains for the *Cross-cutting* research projects more often than the other domains.

**What was the distribution of research projects by program mechanism and time dimension (cross-sectional and longitudinal) in 2013?**

**Exhibit 11. Number of research projects, by program mechanism and time dimension: 2013**



NOTE: SBIR Phase I grants not included. DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; KT and ADA are presented as separate categories. TBI and burn model systems are combined with SCI model systems under the category MS. RFP grantees are asked to characterize the fellowship as either a research or a development project.

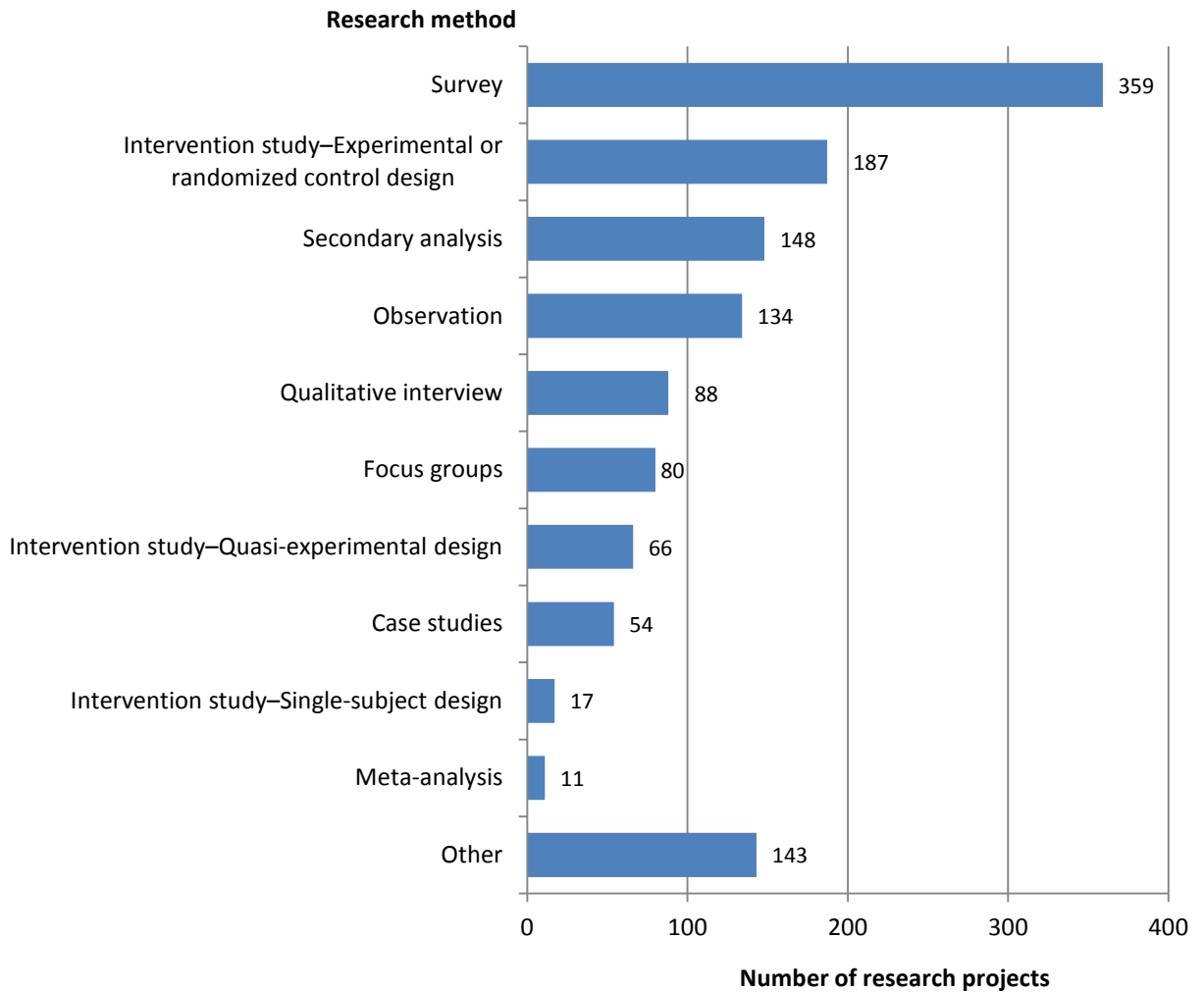
SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- Grantees were asked to designate the time dimension associated with each research project. *Longitudinal* is defined as repeated measurements taken over many time points. *Cross-sectional* is defined as measurement taken at one point in time. Exhibit 11 shows the time dimension for the 777 research projects in each program mechanism in 2013.

- The 777 research projects consisted of 353 *Cross-sectional* studies, 351 *Longitudinal* studies and 73 reported as *Other*.
- *Longitudinal* and *Cross-sectional* design studies are concentrated in the RRTC and MS program mechanisms.

***What methods or designs did research projects use?***

**Exhibit 12. Number of research projects using particular research methods: 2013**



NOTE: Grantees may select more than one research method for each project. See the Appendix for definitions of the research methods.

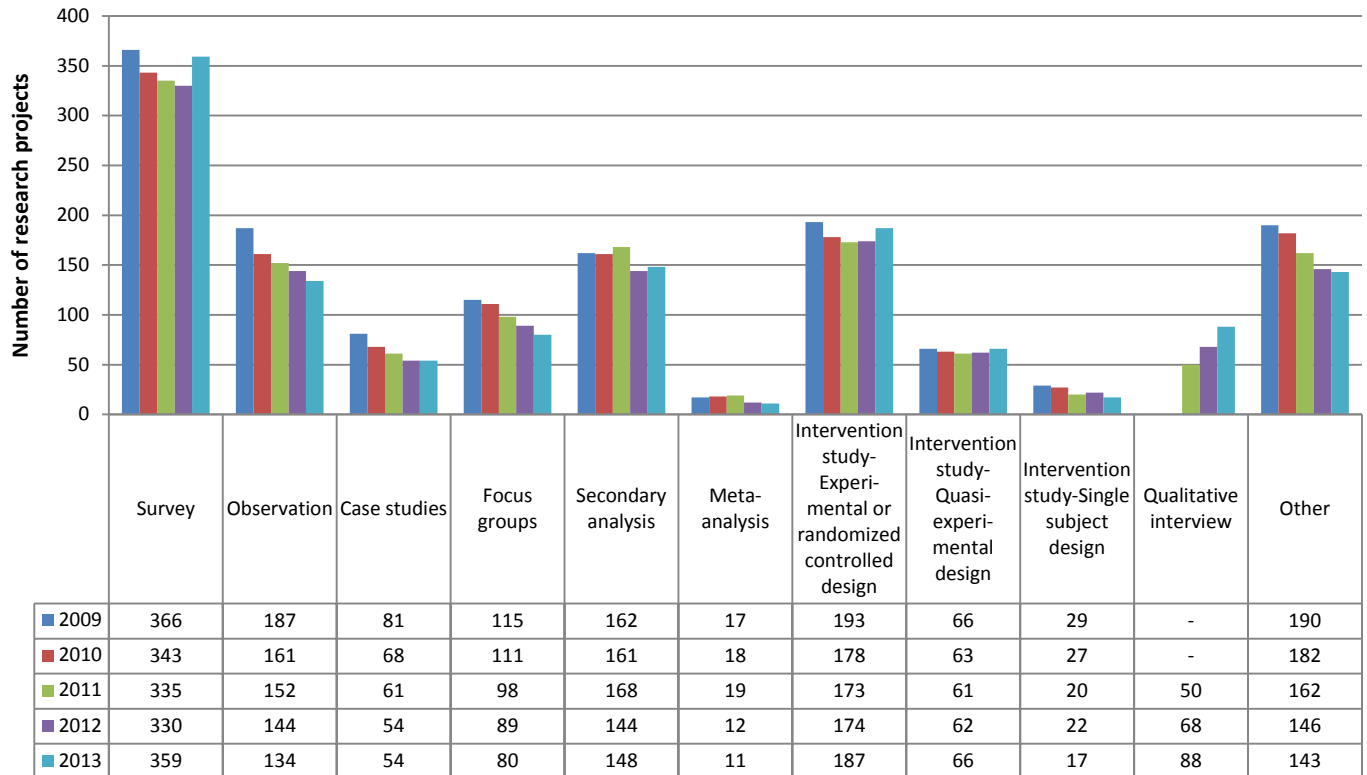
SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- Grantees were asked to specify the method or design associated with each research project. Exhibit 12 displays the various methods used in research projects in 2013. Note that grantees may select more than one research method for each project.

- The most common research method used was a *Survey*, occurring in 359 of the 777 research projects. The next most common method was *Intervention studies—Experimental or randomized control design* with 187 projects.

### How did the use of research methods change from 2009 through 2013?

**Exhibit 13. Number of research projects using particular research methods, by year: 2009–2013**



– *Qualitative interview* was collected as a separate category beginning in 2011. In 2009 and 2010, *Other* included methods such as literature reviews and qualitative interviews.

NOTE: Grantees may select more than one research method for each project.

SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

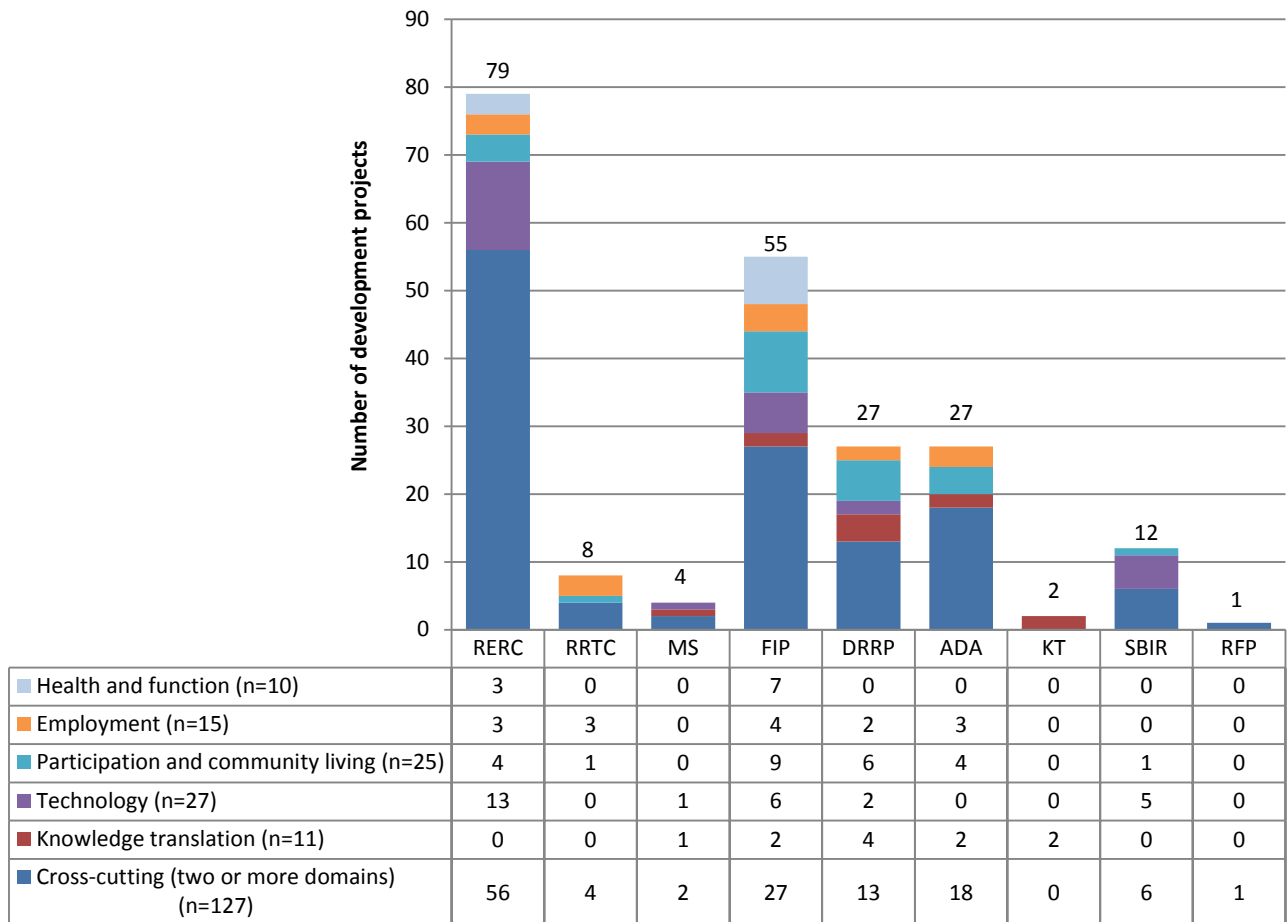
- Grantees were asked to specify the method or design associated with each research project. Exhibit 13 shows the number of research projects that used a particular research method for 2009–2013. Note that grantees may select more than one research method for each project.
- *Survey* was the most frequently used research method in all five years. The number of research projects using this method decreased slightly from 366 projects in 2009 to 359 projects in 2013.
- By 2013, the use of *Observation*, *Case studies*, and *Focus groups* decreased notably over this time period. *Intervention study-Experimental or randomized controlled design* and *Intervention study-Quasi-experimental design* both remained fairly constant over the five years.

## Section 4. Development Projects

A development project is defined as “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.” This definition was derived from the regulations governing the DRRP program (34 CFR 350.16).

### *How were development projects distributed among program mechanisms and domains in 2013?*

**Exhibit 14. Number of development projects, by program mechanism and domain: 2013**



NOTE: SBIR Phase I grants not included. DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; KT and ADA are presented as separate categories. TBI and burn model systems are combined with SCI model systems under the category MS. RFP grantees are asked to characterize the fellowship as a research or development project.

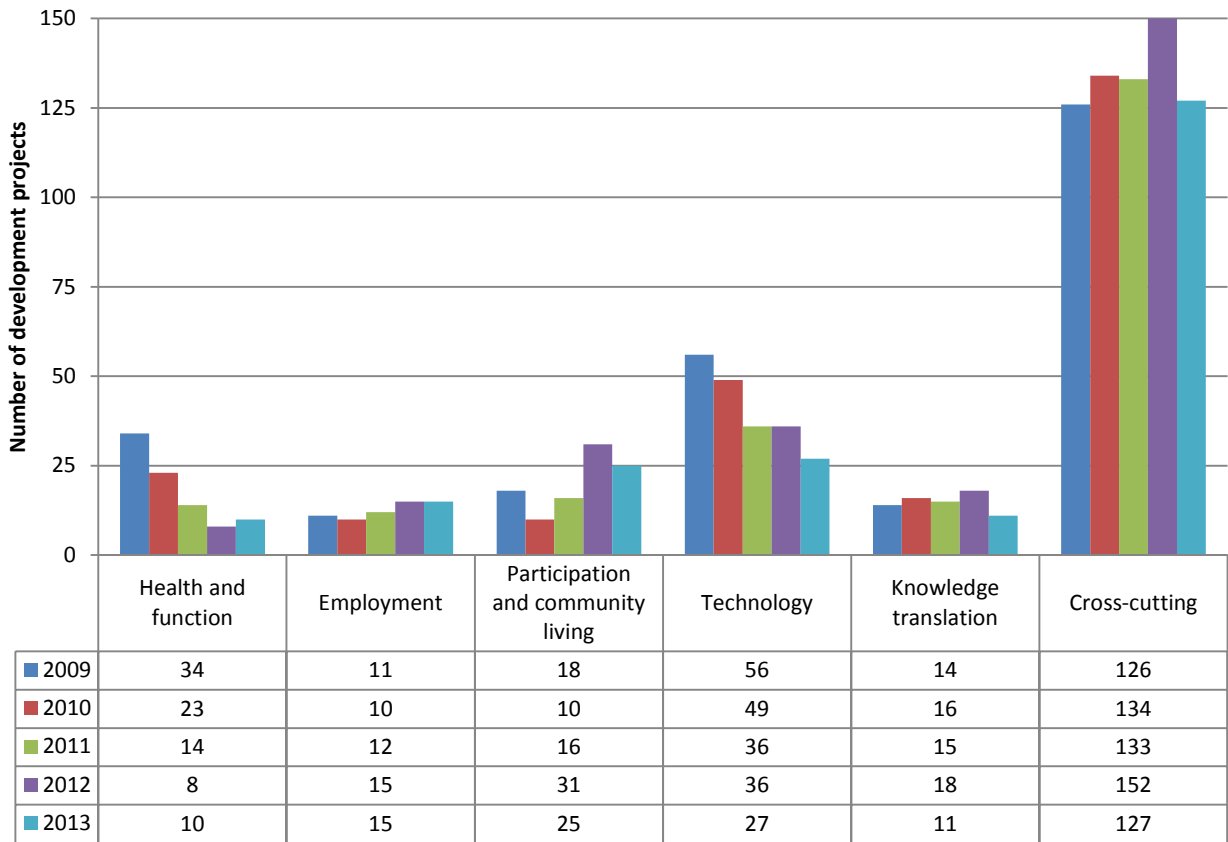
SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- In the APR, grantees were asked: “Based on the objectives listed, what **one** NIDRR Long-Range Plan Domain does this project **best** fit in?” Exhibit 14 shows the number of development projects in each domain in 2013.

- Overall, *Cross-cutting* (contributing to two or more domains) was by far the most commonly identified domain, with 127 of the 215 development projects. *Technology* was the next most common domain with 27 projects, followed closely by *Participation and community living* at 25 projects. There were no development projects in the *Demographics* domain in 2013.
- The *Cross-cutting* domain accounted for about half the development projects in each program mechanism, with the exception of KT, which reported no *Cross-cutting* projects, and RFP which reported one *Cross-cutting* project. *Technology* domain projects were concentrated in the RERC program mechanism.

**How did the distribution of development projects among domains change from 2009 through 2013?**

**Exhibit 15. Number of development projects, by domain and year: 2009–2013**



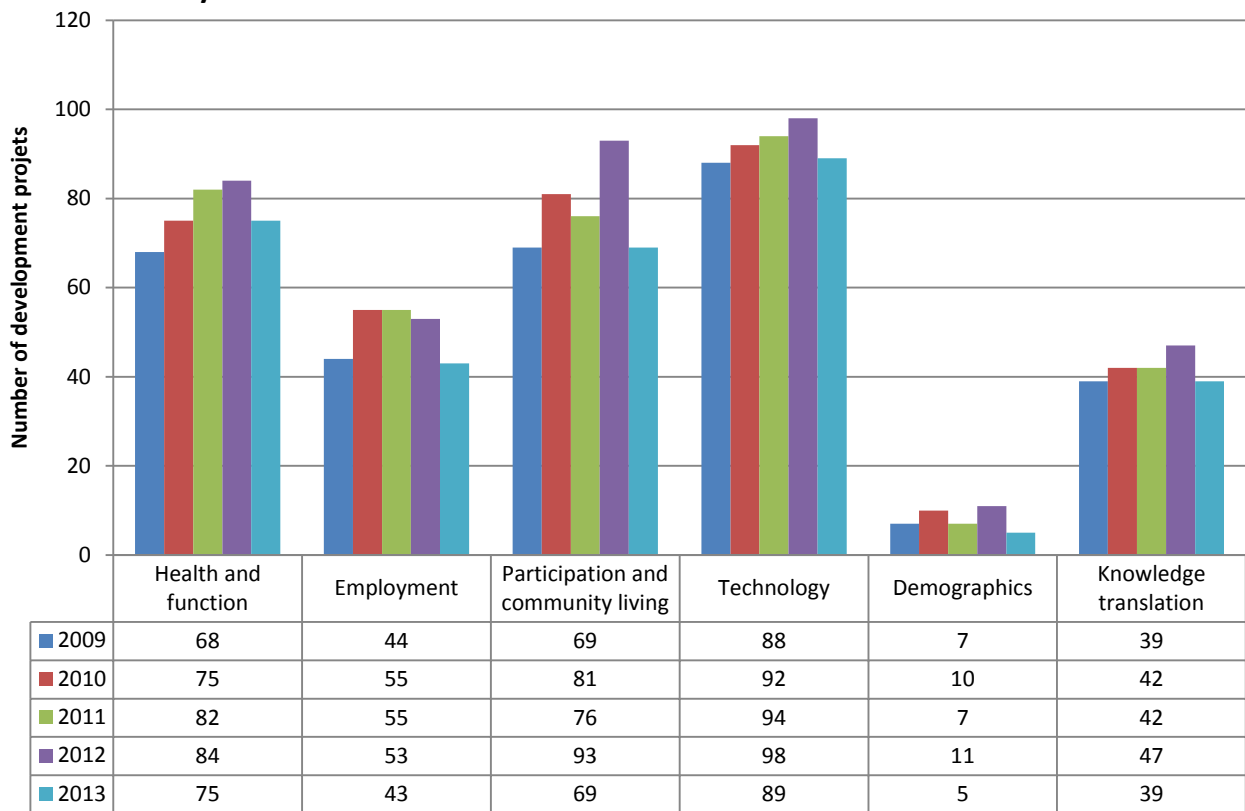
SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- In the APR, grantees were asked: “Based on the objectives listed, what **one** NIDRR Long-Range Plan Domain does this project **best** fit in?” Exhibit 15 displays the distribution of development projects by domain for 2009 through 2013.

- In each year from 2009 through 2013, *Cross-cutting*, i.e., contributing to two or more domains, was by far the most dominant domain for development projects. There were no development projects in the *Demographics* domain during this period.
- Across the 5-year period, the *Health and function* and *Technology* domains showed a reduction in the number of projects. *Employment* and *Knowledge translation* remained fairly constant. The number of *Cross-cutting* projects increased until 2012, but returned to 2009 levels in 2013.

**How did the specified domains for Cross-cutting development projects change from 2009 through 2013?**

**Exhibit 16. Number of development projects with *Cross-cutting* focus, by specified domains and year: 2009–2013**

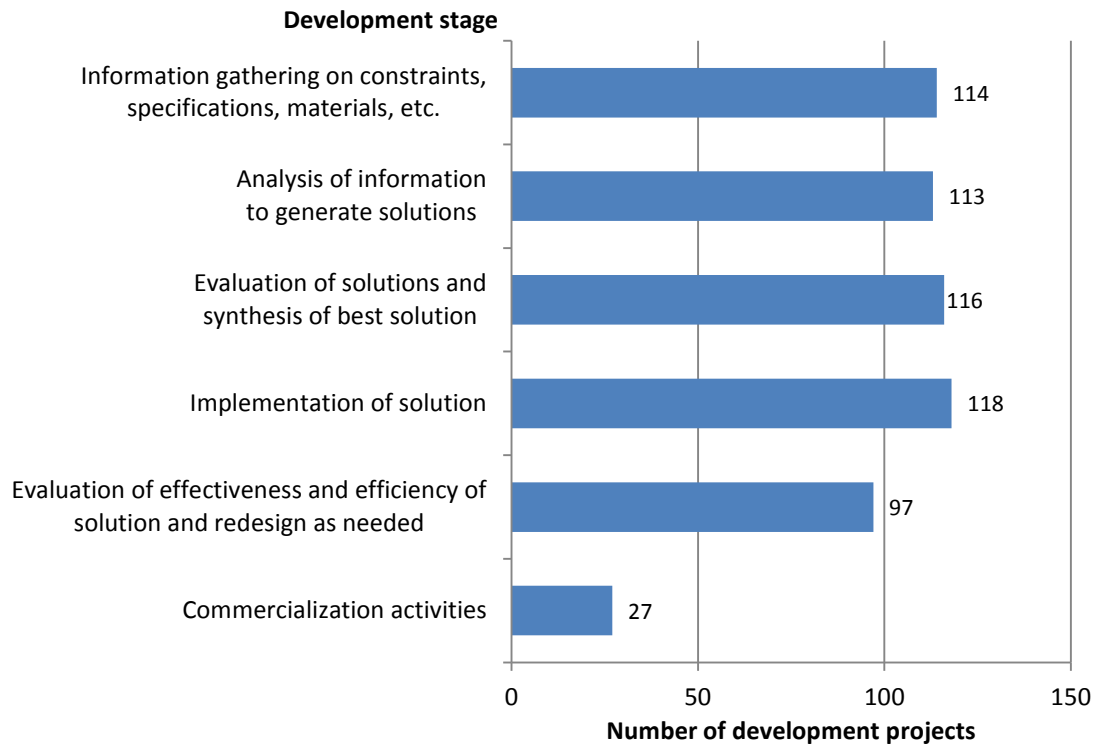


SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- Grantees that identified their development projects as *Cross-cutting* were asked to specify which two or more domains applied. Exhibit 16 shows the domains associated with the development projects identified as *Cross-cutting* for 2009 through 2013.
- The most commonly specified domain for the *Cross-cutting* development projects in every year was *Technology*. Interestingly, except for *Health and function*, the number of projects in both 2009 and 2013 were nearly identical for every domain despite increases in the intervening years.

## ***In what stage of the development process were development projects in 2013?***

**Exhibit 17. Number of development projects, by development stage: 2013**



NOTE: Grantees may select more than one development stage for each project. See the Appendix for the definition of each stage.

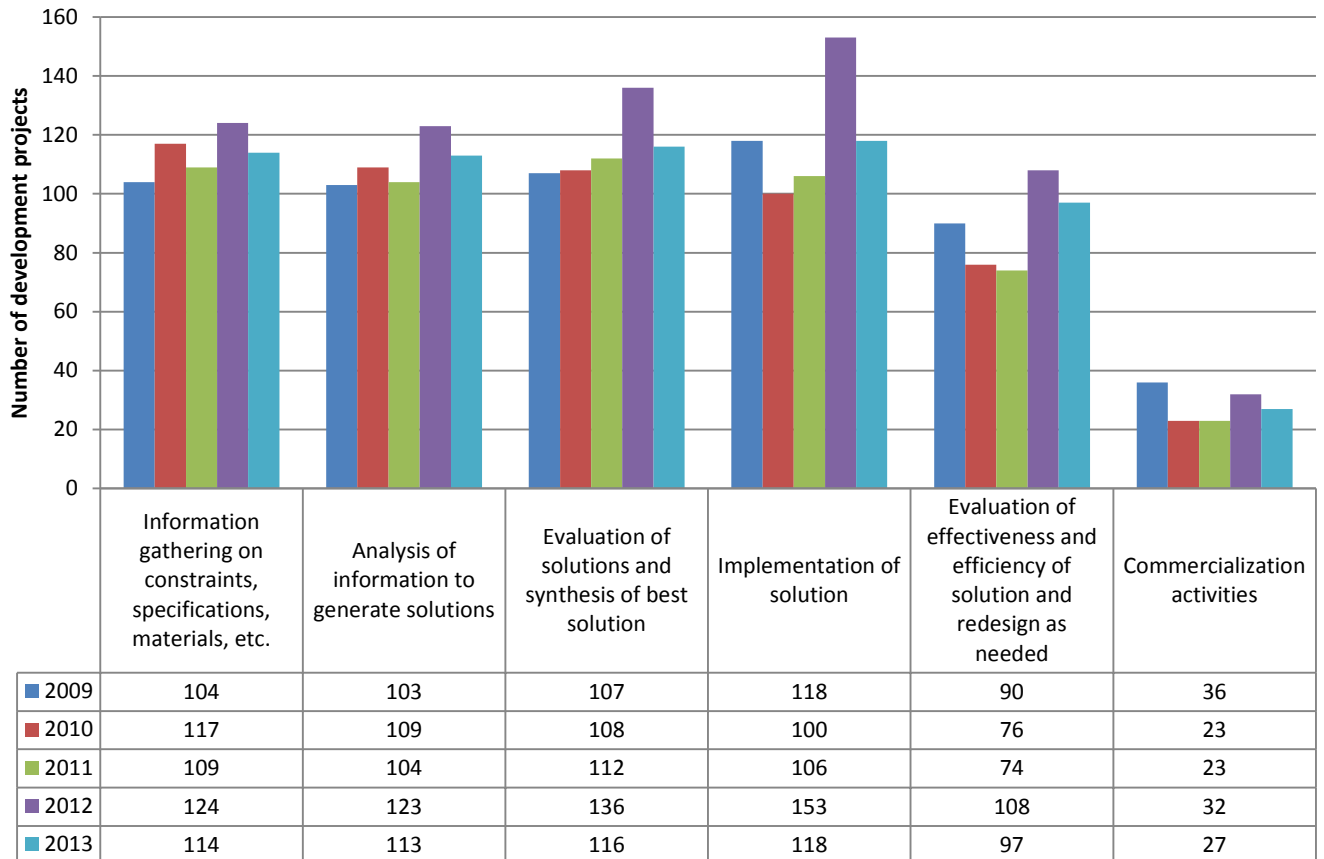
SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- Exhibit 17 shows the development stages for the 215 development projects in 2013. Grantees could select more than one development stage for each project.
- The most frequently cited development stage in 2013 was *Implementation of solution*, while the least common stage was *Commercialization activities*, which applied to 27 of the 215 development projects.



## How has development stage status changed from 2009 through 2013?

**Exhibit 18. Number of development projects, by development stage and year: 2009–2013**



NOTE: Grantees may select more than one development stage for each project. See the Appendix for the definition of each stage.

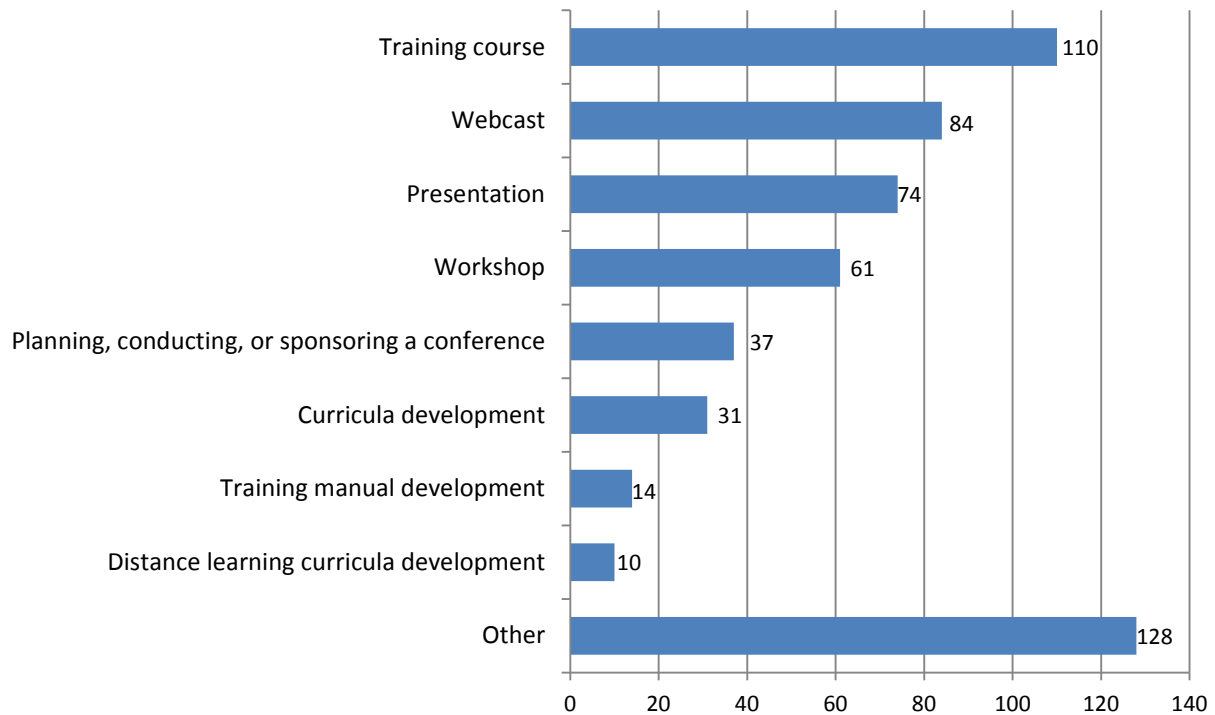
SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- Exhibit 18 displays the number of development projects reported in each development stage from 2009 through 2013. Grantees could select more than one development stage for each project.
- Development stages vary annually based on the number of years each development project has been funded. For example, when a cohort of grants is in the fourth year, there will be more projects that are in the last few stages of development.
- In 2013, the most frequently reported development stage was *Implementation of solution* with 118 projects, a decrease from the 153 projects in 2012. *Commercialization activities* was by far the least common stage in every year. However, the number of development projects decreased from 260 in 2012 to 215 in 2013 which may account for the decrease in every category of development stage from 2012 to 2013.

## Section 5. Training Projects

### *What types of training projects did grantees conduct in 2013?*

**Exhibit 19. Number of training projects conducted, by type of activity: 2013**

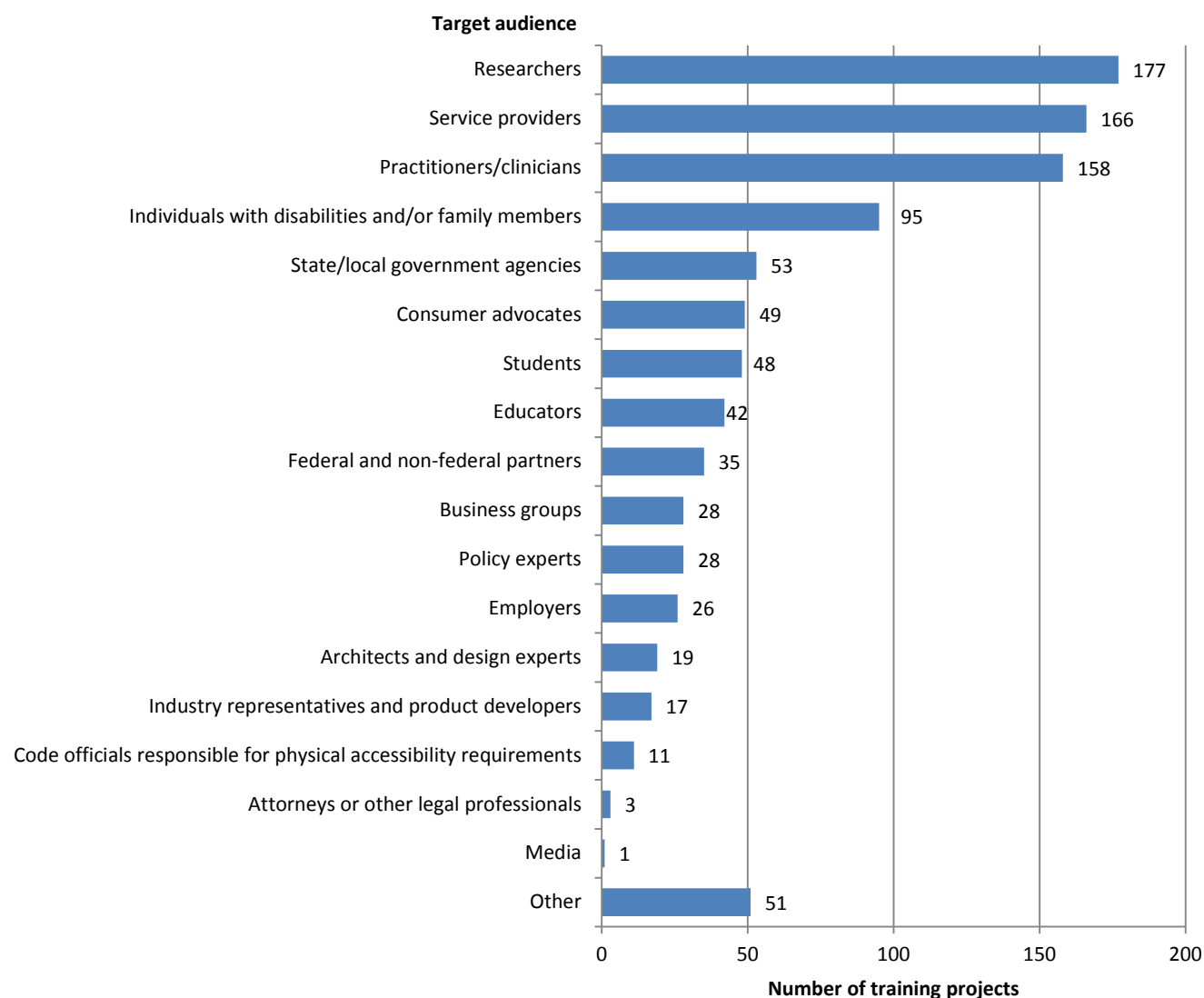


SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- Grantees were asked to specify the type of training project conducted. Grantees reported 549 training projects in 2013. As shown in Exhibit 19, the most common types were *Training course* (110) and *Webcast* (84).

## What audiences did NIDRR grants reach through training projects?

Exhibit 20. Number of training projects targeting specific audiences: 2013



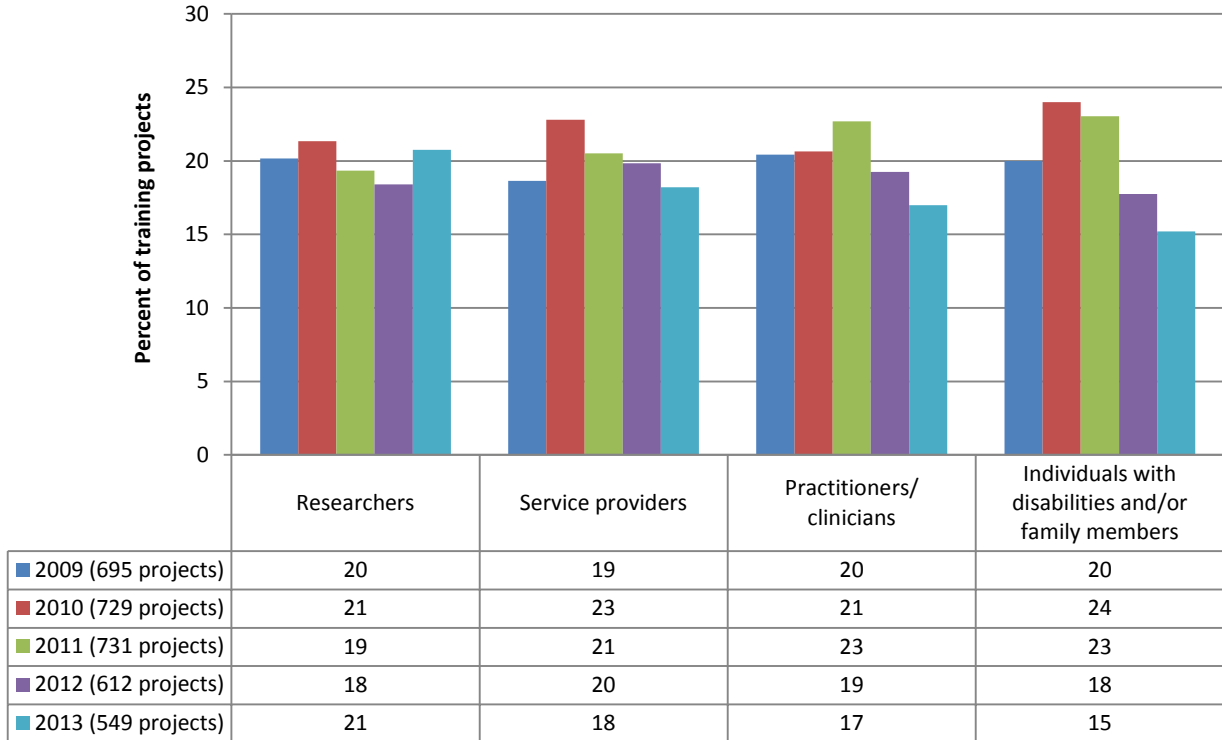
NOTE: Grantees may select up to two target audiences for each training project. This question is not applicable to RFP grants. Only ADA grants report the number of training activities targeting *State/local government agencies*, *Business groups*, *Architects and design professionals*, *Code officials responsible for physical accessibility requirements*, and *Attorneys or other legal professionals*.

SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- Grantees were asked to select no more than two primary target audiences for each training project. As shown in Exhibit 20, the three most common target audiences for the 549 training projects in 2013 were *Researchers* (177 projects), *Service providers* (166 projects), and *Practitioners/clinicians* (158 projects).

**How have the top four audiences for training projects changed from 2009 to 2013?**

**Exhibit 21. Percentage of training projects, by top four audiences and year: 2009–2013**



NOTE: Grantees may select up to two target audiences for each training project.

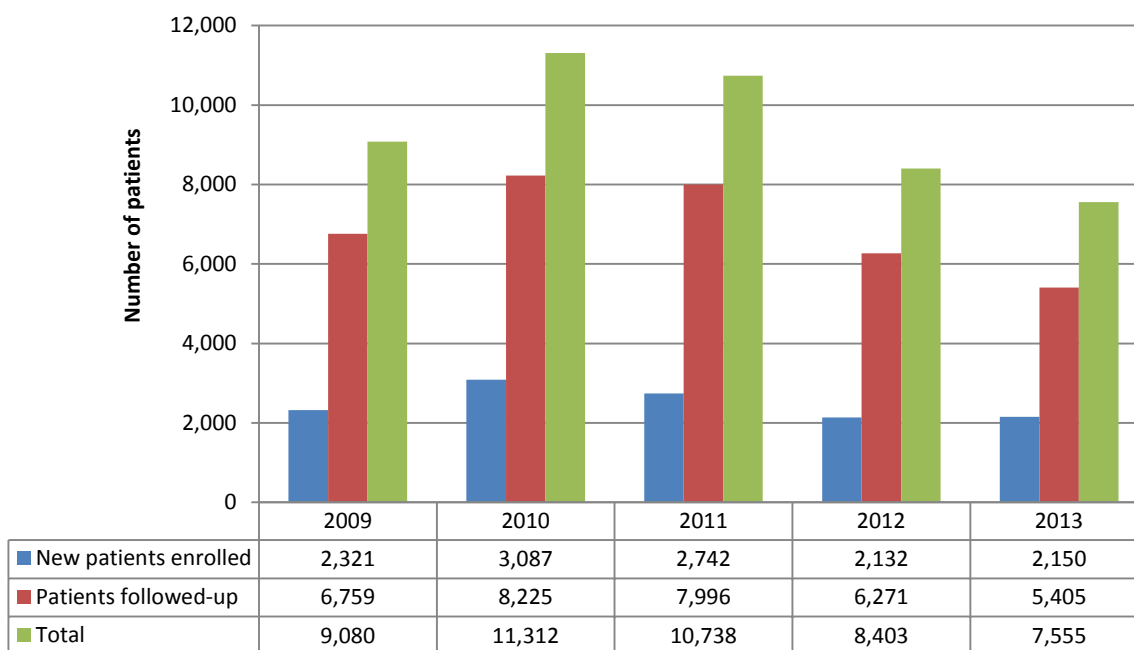
SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- Exhibit 21 shows the percentage of training projects for the top four audiences.
- In 2013 the top four audiences were: *Researchers, Service providers, Practitioners/clinicians, and Individuals with disabilities and/or family members.*
- When comparing 2009 and 2013, the percentage of training projects that targeted the top four audiences remained fairly constant from year to year. The largest spread was for *Individuals with disabilities and/or family members*, with a 5 percentage point decrease between 2009 and 2013.

## Section 6. Model Systems Data Sets

*How many new patients were enrolled or provided follow-up by model systems in 2009 through 2013?*

**Exhibit 22. Number of model systems patients enrolled or provided follow-up: 2009–2013**



SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

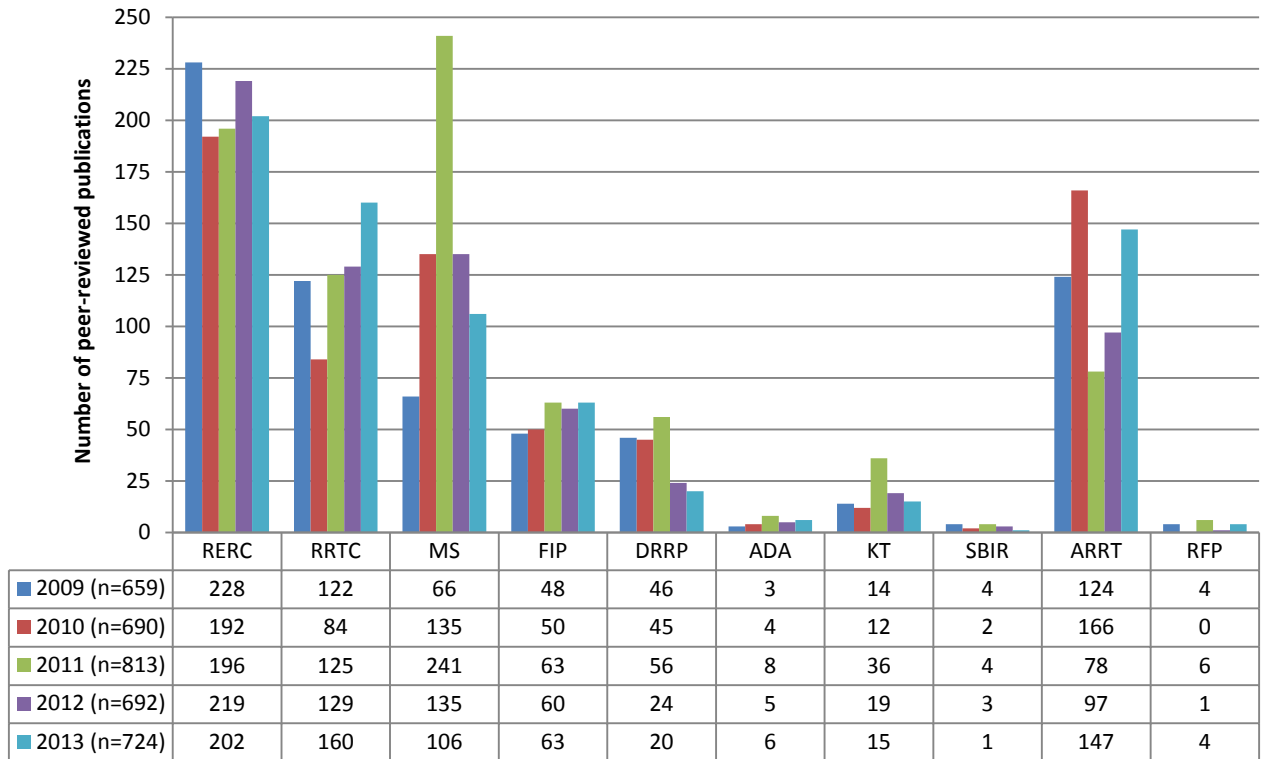
- Exhibit 22 displays the number of model systems patients enrolled or provided follow-up in 2009 through 2013. NIDRR funds three model systems: Spinal Cord Injury, Traumatic Brain Injury, and Burn. As part of their research activities, model systems collect and contribute data on patient characteristics, diagnoses, causes of injury, interventions, outcomes, and costs to a uniform national database. In the APR, each MS grantee was asked to provide the following information for the grant: (1) number of new patients enrolled and added to the database during the reporting period; and (2) number of patients followed up during the reporting period.
- In 2013 the number of new patients was almost the same as 2012. The number of new patients enrolled in the model systems increased from 2009 through 2010, then decreased slightly in 2011 and more substantially in 2012.
- The number of patients who were followed up in the model systems increased from 2009 through 2010, but has decreased substantially since then from 8,225 patients in 2010 to 5,405 in 2013.

## Section 7. Products

In the *Outputs* section of the APR, grantees reported four types of outputs: Type 1, *Publications*; Type 2, *Tools, measures, and intervention protocols*; Type 3, *Technology products and devices*; and Type 4, *Informational products*. Grantees were also asked to identify their *most important* outputs: those that contribute the most to achieving the outcome-oriented goals for the award by advancing knowledge; increasing capacity for research, training or knowledge translation; or facilitating changes in policy, practice or system capacity.

### How many publications (type 1 outputs) were produced from 2009 through 2013?

**Exhibit 23. Number of peer-reviewed publications, by program mechanism and year: 2009–2013**



NOTE: SBIR Phase I grants not included. DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; KT and ADA are presented as separate categories. TBI and burn model systems are combined with SCI model systems under the category MS.

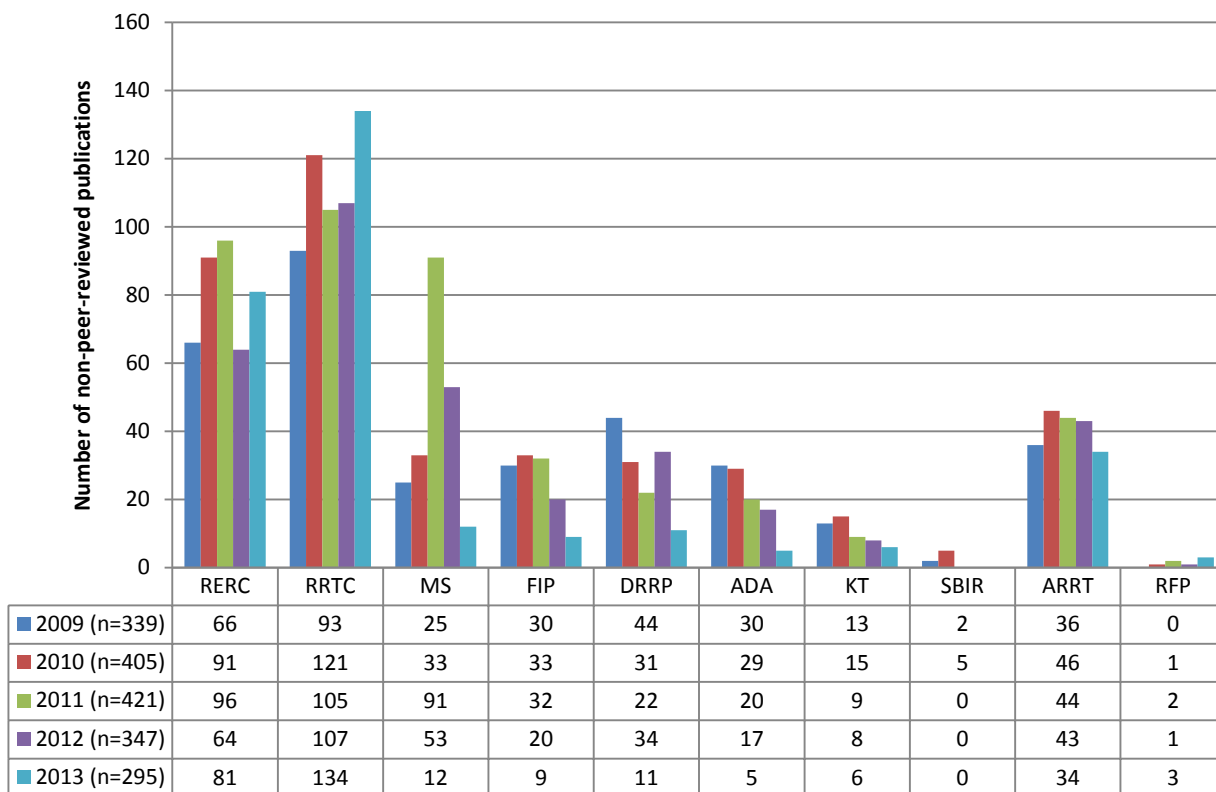
SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- Grantees reported all peer-reviewed publications produced during the current reporting period that were directly funded by the grant, excluding documents currently in review, accepted for publication, in press, or self-published. Publications can be based on research and related activities conducted in a previous reporting period or NIDRR funding cycle as long as they are related to the objectives of the current award and are

delivered or disseminated during the current reporting period to external audiences. Exhibit 23 shows the distribution of those publications among program mechanisms.

- Grantees reported 724 peer-reviewed publications in 2013, an increase from the 659 reported in 2009, but lower than the 813 publications reported in 2011.
- Among program mechanisms, RERC grants accounted for the largest number of peer-reviewed publications in all years except 2011 when MS grantees reported 241 publications. RRTCs have reported an increasing number of peer-reviewed publications beginning in 2010.

**Exhibit 24. Number of non-peer-reviewed publications, by program mechanism and year: 2009–2013**



NOTE: SBIR Phase I grants not included. DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; KT and ADA are presented as separate categories. TBI and burn model systems are combined with SCI model systems under the category MS.

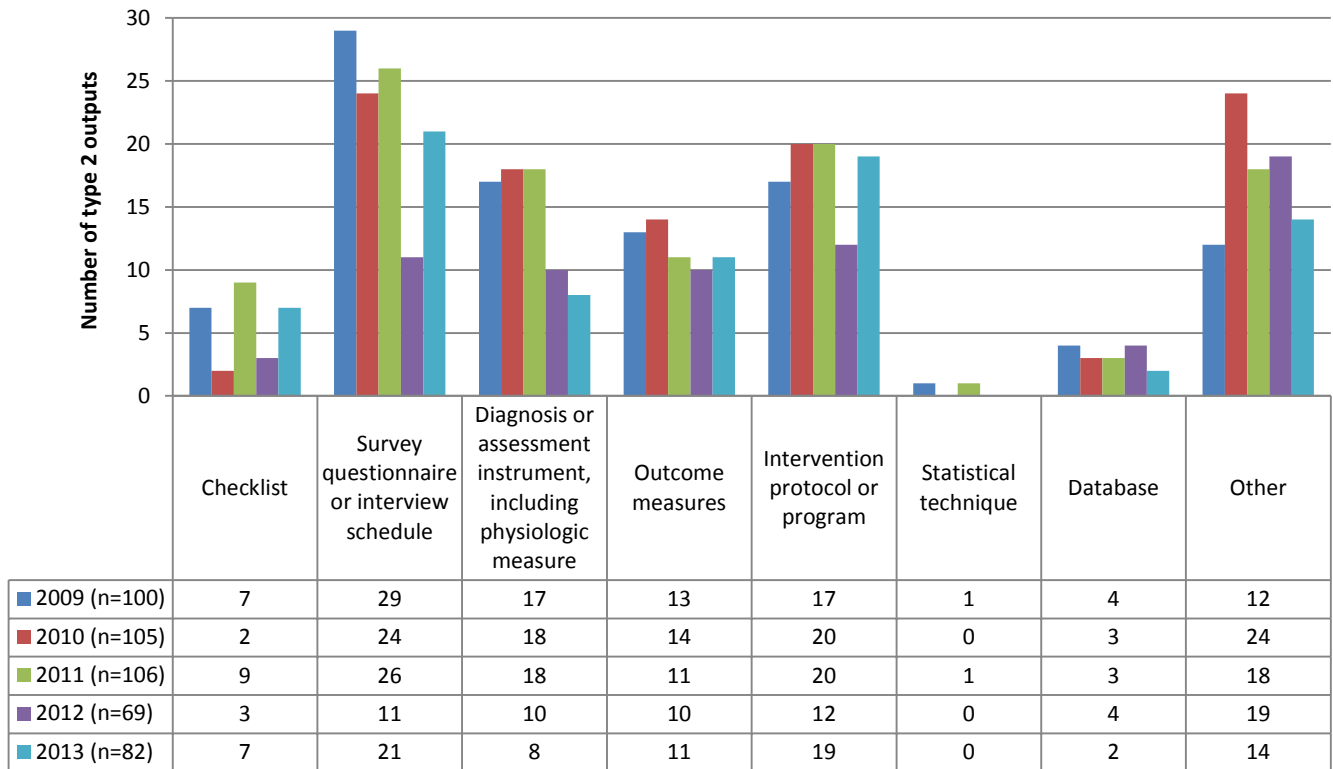
SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- Grantees reported all non-peer-reviewed publications produced during the current reporting period that were directly funded by the grant, excluding documents currently in review, accepted for publication, in press, or self-published. Publications can be based on research and activities conducted in a previous reporting period or NIDRR funding cycle as long as they are related to the objectives of the current award and are delivered or disseminated during the current reporting period to external audiences. Exhibit 24 shows the distribution of those publications among program mechanisms.

- Grantees reported 295 non-peer-reviewed publications in 2013, the lowest number in the 5-year period.
- Across all years and program mechanisms, the RRTC grants produced the largest number of non-peer-reviewed publications.

***How many tools, measures, and intervention protocols (type 2 outputs) were produced from 2009 through 2013?***

**Exhibit 25. Number of most important tools, measures, and intervention protocols (type 2 outputs), by type of output and year: 2009–2013**



NOTE: Grantees may report a maximum of two *most important* Type 2 outputs.

SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- Exhibit 25 presents the number of type 2 outputs reported by grantees in 2009 through 2013. Type 2 outputs focus on the *most important* tools, measures, or intervention protocols directly funded by the grant during the reporting period. *Tool* is defined as an instrument or process created to acquire quantitative or qualitative information, knowledge, or data on a specific disability or rehabilitation issue. Tool includes measures and intervention protocols. Grantees reported up to two type 2 outputs that represent the *most important* accomplishments for the current reporting period, including an explanation of how the tool was validated or tested. *Most important* tools refer to those that contribute the most to achieving the outcome oriented goals for this grant by

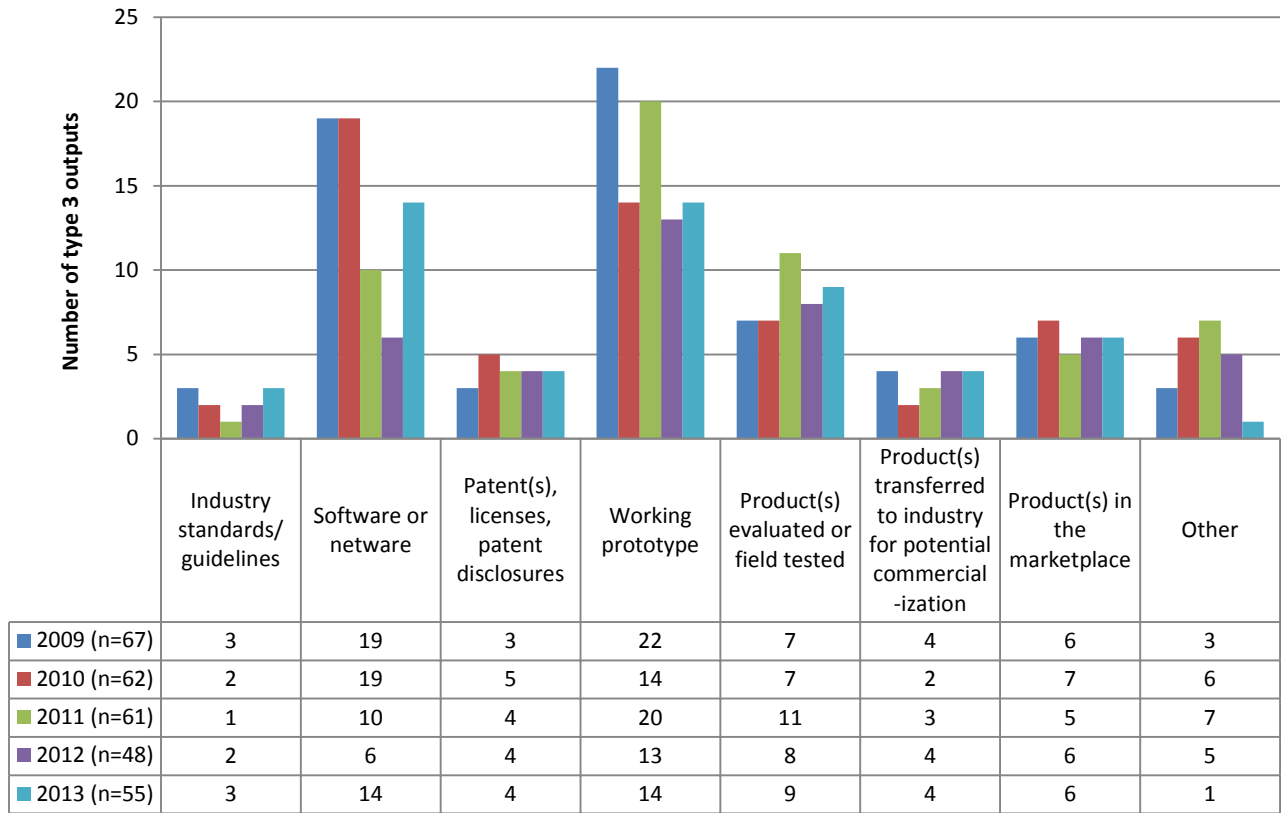


advancing knowledge; increasing capacity for research, training or knowledge translation; or facilitating changes in policy, practice, or system capacity.

- In 2013, *Survey questionnaire or interview schedule* was the most frequently reported type 2 output, followed closely by *Intervention protocol or program*.
- The total number of type 2 outputs was fairly constant from 2009 through 2011, but declined to 69 in 2012 then increased slightly to 82 in 2013.
- Most type 2 output categories did not vary much over the 5-year period, but *Diagnosis or assessment instrument* declined from 17 in 2009 to eight in 2013.

**How many technology products and devices (type 3 outputs) were produced from 2009 through 2013?**

**Exhibit 26. Number of most important technology products and devices (type 3 outputs), by type of output and year: 2009–2013**



NOTE: Grantees may report a maximum of two *most important* Type 3 outputs.

SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

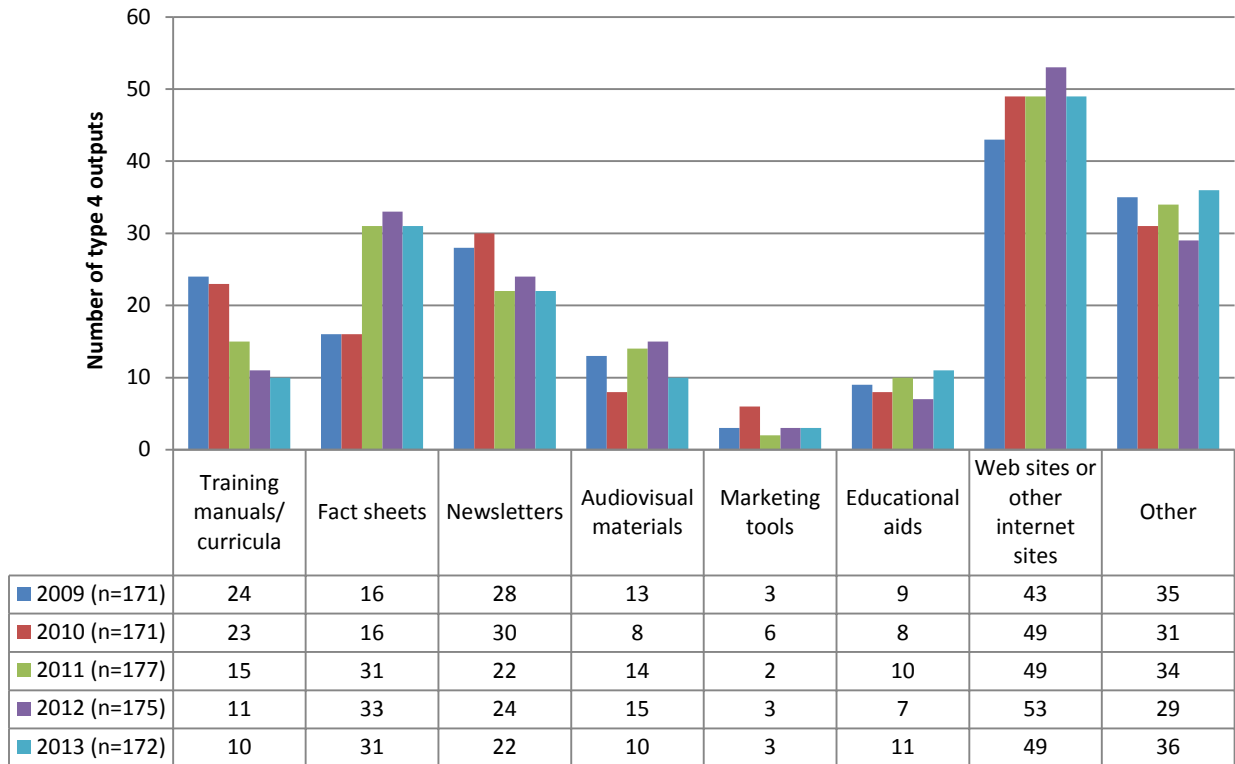
- Exhibit 26 presents the number of type 3 outputs reported by grantees in 2009 through 2013. Grantees reported up to two type 3 outputs that represent the *most important* technology products and devices for the current reporting period, including an explanation of how the product or device was validated or tested. *Most important* technology products and devices refer to those that contribute the most to achieving

the outcome oriented goals for this grant by advancing knowledge; increasing capacity for research, training or knowledge translation; or facilitating changes in policy, practice, or system capacity.

- In 2013, *Software or netware* and *Working prototype* were the most frequently reported type 3 outputs.
- The total number of type 3 outputs steadily declined from 67 in 2009 to 48 in 2012, then increased slightly in 2013 to 55.
- *Software or netware* declined from 2009 through 2012, but then recovered in 2013. All other categories remained about the same over the 5-year period.

### **How many informational products (type 4 outputs) were produced from 2009 through 2013?**

**Exhibit 27. Number of most important informational products (type 4 outputs), by type of output and year: 2009–2013**



NOTE: Grantees may report a maximum of two *most important* Type 4 outputs.

SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- Exhibit 24 presents the number of type 4 outputs reported by grantees in 2009 through 2013. Grantees reported up to two type 4 outputs that represent the *most important* informational products in the current reporting period, including an explanation of how the informational product was validated or tested. *Most important* informational products refer to those that contribute the most to achieving the outcome oriented

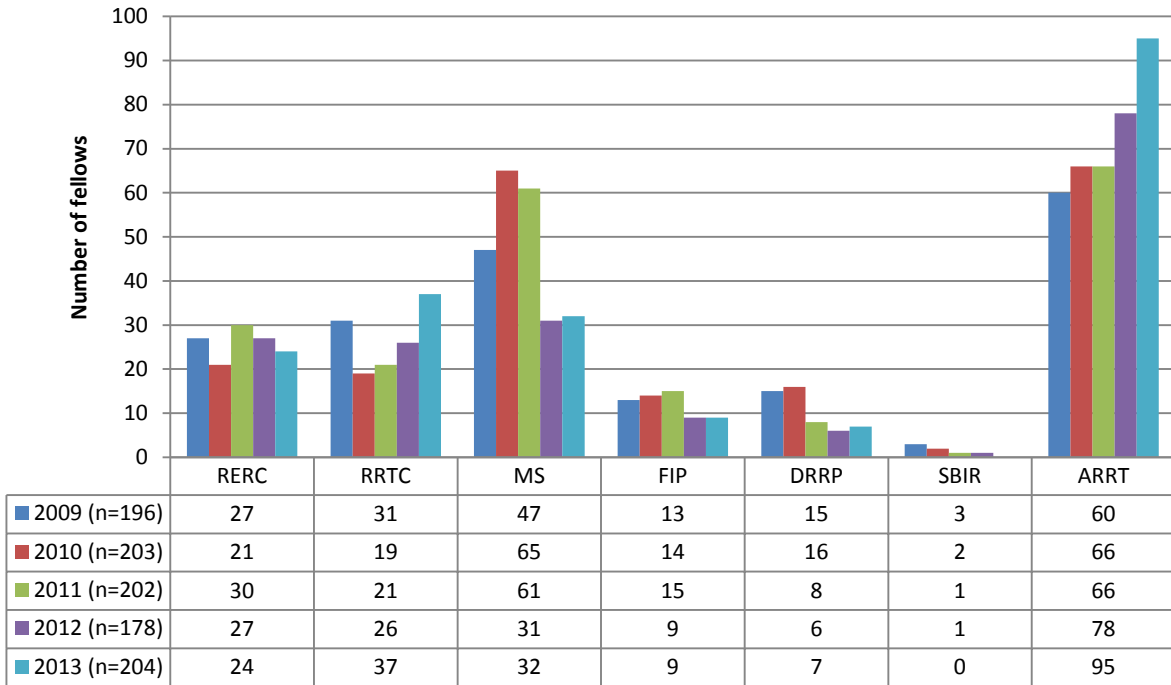
goals for this grant by advancing knowledge; increasing capacity for research, training or knowledge translation; or facilitating changes in policy, practice, or system capacity.

- In 2013, grantees reported 49 *Web sites or other internet sites*, making this category the most frequently reported.
- The total number of type 4 outputs remained remarkably consistent from 2009 through 2013. *Web sites or other Internet sites* were by far the most common type of output over the 5-year period. *Training manuals/curricula* have declined since 2009.

## Section 8. Fellows and Graduate Students

### *How many fellows were supported by NIDRR grants from 2009 through 2013?*

**Exhibit 28. Number of fellows supported by NIDRR grants, by program mechanism and year: 2009–2013**



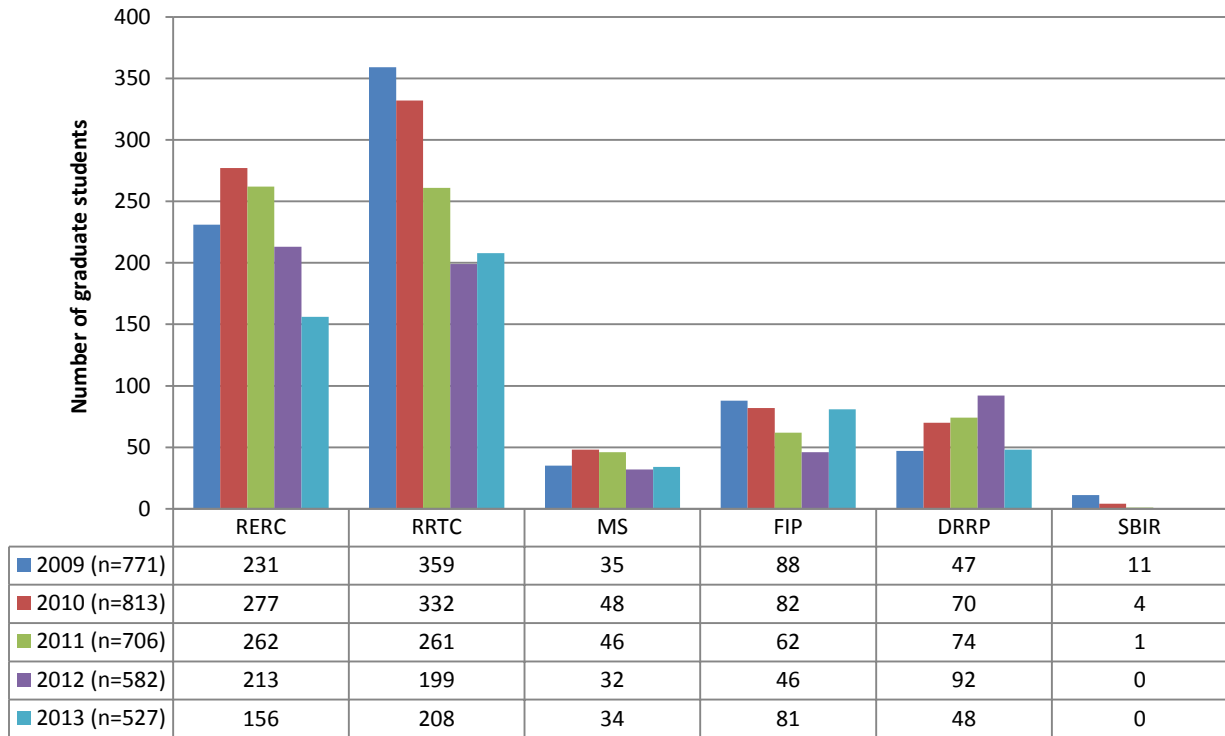
NOTE: SBIR Phase I grants not included. DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; TBI and burn model systems are combined with SCI model system under the category MS. ADA and KT grants do not support fellows. This question is not applicable to RFP grants.

SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- Exhibit 28 shows the number of fellows supported by NIDRR grants in the various program mechanisms. All grantees, except ADA and KT which do not support fellows, reported the number of fellows who worked on a grant at any time during the current reporting period.
- In 2013, NIDRR grants supported 204 research fellows, a number fairly consistent since 2009.
- In all years, fellows were concentrated in the MS and ARRT program mechanisms.

**How many graduate students were supported by NIDRR grants from 2009 through 2013?**

**Exhibit 29. Number of graduate students supported by NIDRR grants, by program mechanism and year: 2009–2013**



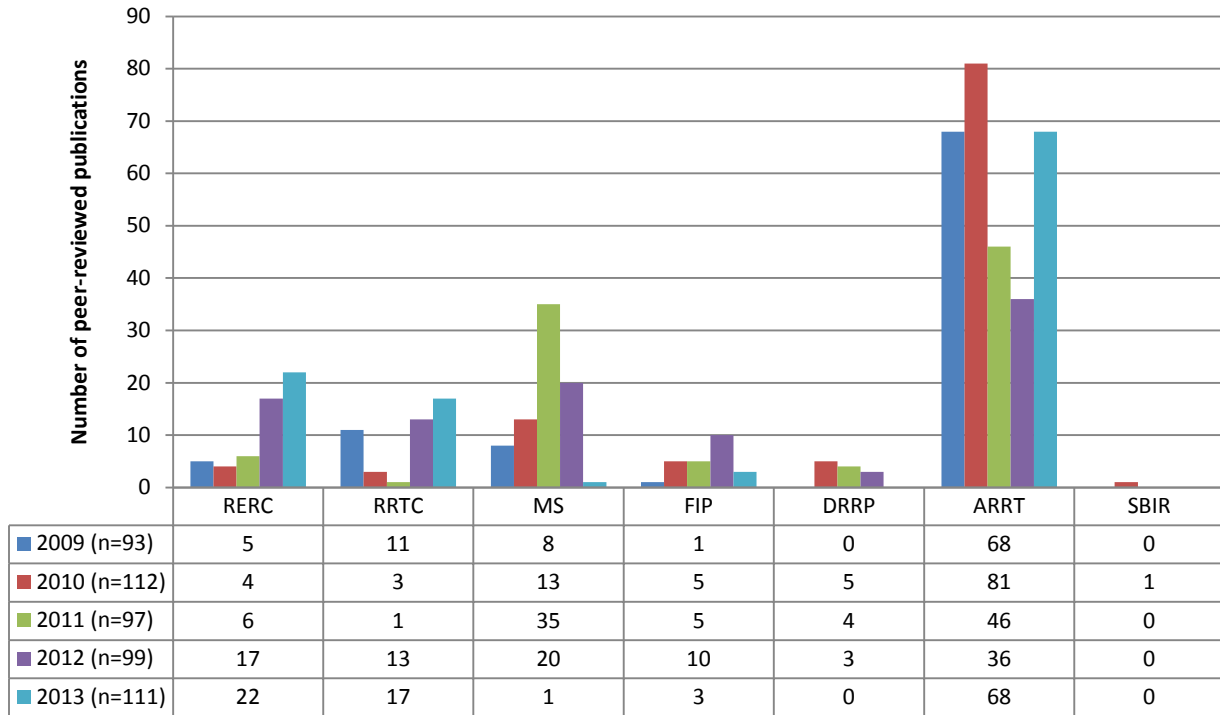
NOTE: DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; TBI and burn model systems are combined with SCI model systems under the category MS. ADA, KT and ARRT grants do not support graduate students. This question is not applicable to RFP grants.

SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- Exhibit 29 shows the number of graduate students supported by NIDRR grants in the various program mechanisms. All grantees, except ARRT, ADA and KT which do not support graduate students, reported the number of graduate students who worked on a grant in the current reporting period and who are receiving training or satisfying requirements in conjunction with an advanced degree. The reporting does not include graduate students working on a grant for pay only.
- In 2013, NIDRR grants supported 527 graduate students, the lowest number of the five years presented and a substantial decrease from the high of 813 graduate students supported in 2010.
- In all years, graduate students were concentrated in the RERC and RRTC program mechanisms.

## How many peer-reviewed publications were authored by fellows?

**Exhibit 30. Number of peer-reviewed publications authored by fellows, by program mechanism and year: 2009–2013**



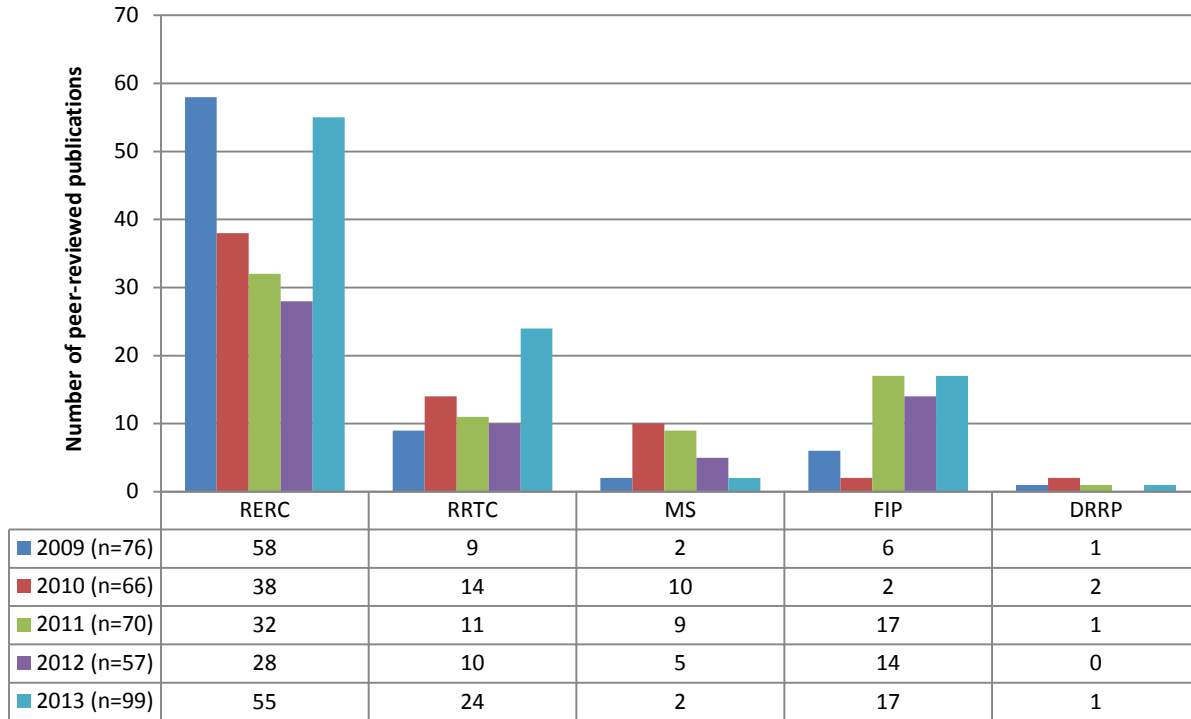
NOTE: DRRP includes three grants under Section 21. The DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; TBI and burn model systems are combined with SCI model systems under the category MS. ADA and KT grants do not support fellows. This question is not applicable to RFP grants.

SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- Exhibit 30 displays the number of peer-reviewed publications that were authored by fellows in each program mechanism. All grantees, except ADA and KT which do not support fellows, reported the peer-reviewed publications based on NIDRR-funded research, published in the current reporting period, that were authored by fellows who were part of a grantee’s training program in the current reporting period or had been in the past three years. The fellow need not have been the first author, so long as he or she was listed among the authors of the publication.
- In 2013, grantees reported 111 peer-reviewed publications authored by fellows. This number has remained fairly constant over the five years.
- Over the period 2009 through 2013, ARRT fellows produced by far the greatest share of peer-reviewed publications. Of the 111 peer-reviewed publications authored by fellows in 2013, ARRT fellows produced 68 of those publications. The next closest contribution came from RERC fellows (22 publications) who showed an increase in publications over the 5-year period.

***How many peer-reviewed publications were authored by graduate students?***

**Exhibit 31. Number of peer-reviewed publications authored by graduate students, by program mechanism and year: 2009–2013**



NOTE: TBI and burn model systems are combined with SCI model systems under the category MS. ADA, KT and ARRT grants do not support graduate students. This question is not applicable to RFP grants.

SOURCE: NIDRR Annual Performance Reports database, Oct. 24, 2013.

- Exhibit 31 displays the number of peer-reviewed publications that were authored by graduate students in each program mechanism. All grantees, except ARRT, ADA and KT which do not support graduate students, reported the peer-reviewed publications based on NIDRR-funded research, published in the current reporting period, that were authored by graduate students who were part of a grantee’s training program during the current reporting period or had been in the past three years. The graduate student need not have been the first author, so long as he or she was listed among the authors of the publication.
- In 2013, grantees reported 99 peer-reviewed publications authored by graduate students, an increase over the 57 reported in 2012.
- Of the 99 peer-reviewed publications produced by graduate students in 2013, over half originated at RERCs. Since 2009, this program mechanism has been the leading producer of the peer-reviewed publications authored by NIDRR-supported graduate students.

### Project Types

**Research project** is defined 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." This definition was derived from the regulations governing the DRRP program (34 CFR 350.13).

**Development project** is defined as "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." This definition was derived from the regulations governing the DRRP program (34 CFR 350.16).

### Program Mechanisms as Used in This Report

**Advanced Rehabilitation Research Training Projects (ARRT)** provide funding to institutions of higher education to recruit qualified post-doctoral candidates with clinical, management, basic or engineering research experience and prepare them to conduct independent research on disability and rehabilitation issues.

**Americans with Disabilities Act National Network (ADA)** is a subcategory of DRRP, but is presented as a separate category in this report. The ADA network was formerly known as Disability and Business Technical Assistance Centers (DBTAC).

**Disability and Rehabilitation Research Projects (DRRP)** emphasize research and development projects, training, and knowledge translation on rehabilitation topics. DRRP subcategories are: Knowledge Translation (KT), Americans with Disabilities Act National Network (ADA), Traumatic Brain Injury Model Systems Centers (TBI), Burn Model Systems Centers, and "general" DRRPs. In this report, the DRRP subcategories of KT, ADA, TBI model system, and burn model system are excluded from the DRRP category; KT and ADA are presented as separate categories. TBI and burn model systems are combined with SCI model systems under the category MS.

**Field-Initiated Projects (FIP)** address rehabilitation issues in promising and innovative ways. As the name implies, topics for these projects are chosen by the applicants. Awards are based upon merit and potential impact on the field of rehabilitation.

**Knowledge Translation (KT) Projects** are a subcategory of DRRP, but are presented as a separate category in this report.

**Model Systems (MS)** study the course of recovery and outcomes following the delivery of a coordinated system of care. MS centers provide comprehensive rehabilitation services and conduct research, including clinical research. There are three model systems: Spinal Cord Injury (SCI), Traumatic Brain Injury (TBI), and Burn. The TBI and Burn model systems are funded as a subcategory of DRRP, but are combined with SCI for this report.



**Rehabilitation Engineering Research Centers (RERC)** conduct programs of advanced engineering and technical research designed to apply technology, scientific achievement, and psychological and social knowledge to solve rehabilitation problems and remove environmental barriers. RERCs are affiliated with institutions of higher education or non-profit organizations.

**Rehabilitation Research and Training Centers (RRTC)** conduct coordinated and integrated advanced research to alleviate or stabilize disabling conditions, promote maximum social and economic independence of people with disabilities, or improve rehabilitation methodology or service delivery systems. RRTCs operate in collaboration with institutions of higher education and providers of rehabilitation services and serve as national centers of excellence in rehabilitation research.

**Research Fellows Program (RFP)**, also known as the Mary E. Switzer Fellowship, gives individual researchers an opportunity to develop new ideas and gain research experience. Fellows design and work for one year on an independent research project. RFP grants began reporting through the APR in 2009. These grants are also known as Mary E. Switzer Fellowships.

**Small Business Innovation Research (SBIR)** grants, as administered by NIDRR as a part of the larger mandatory SBIR program, help support the production of new assistive and rehabilitation technology. This two-phase program takes a rehabilitation-related product from development to market readiness. SBIR Phase I grants do not report through the APR.

## Domains

Domains come from the NIDRR Long-range Plan, 2005-2009.

**Health and function** encompasses research to achieve outcomes at the individual level—improved functioning, fitness, and health, including mental health. This domain also addresses goals at the system level, such as more effective service delivery systems, better access (financial and logistical) to healthcare services, and the assessment of rehabilitation effectiveness.

**Employment** represents research on employment-related activities and strategies to improve employment outcomes and labor force participation.

**Participation and community living** represents the interaction with the social and built environment in a way that maximizes full inclusion and integration of people with disabilities. This domain focuses on direct supports that increase the availability of acceptable options and opportunities to make choices and enhance participation in everyday activities.

**Technology for access and function** is essential to community integration, employment, and health and function, and plays a major role in enabling a good fit between individuals with disabilities and the environment.

**Demographics** emphasizes describing and characterizing people with disabilities to provide a better understanding of the phenomenon of disability.

**Cross-cutting**, while not a Long-range Plan domain, is used in the APR when two or more domains apply to a project.

## Research Methods

These are the definitions contained in the APR instructions.

**Survey.** In a sample survey, data are collected from a sample of a population to determine the incidence, distribution, and interrelation of naturally occurring events and conditions. The overriding concern in the sample survey strategy is to collect information in such a way that conclusions can be drawn about elements of the population that are not in the sample as well as about elements that are in the sample.

**Observation.** Observation, or naturalistic study, is a study where no explicit intervention is given but organizations or groups or individuals are observed naturally carrying out their business or practices and this is documented in a detailed way.

**Case study.** A case study is an analytic description of an event, a process, an institution, or a program.

**Focus groups.** Focus groups combine both interviewing and observation skills and allow the observation of a large amount of interaction on a topic in a short time.

**Secondary analysis.** This is an approach rather than a design because the data that are involved have already been acquired under an original design for data collection, using some technique such as self-administered questionnaires.

**Meta-analysis.** This is a way of averaging “effect sizes” from several studies. Effect size is proportional to the difference in outcome between a treatment group and a comparison group.

**Intervention study—Experimental design or randomized control design.** Some units of study are randomly assigned to a treatment group and some are assigned to one or more comparison groups. Random assignment means that every unit available to the experiment has a known probability of being assigned to each group and that the assignment is made by chance, as in the flip of a coin. The program’s or intervention’s effects are estimated by comparing outcomes for the treatment group with outcomes for each comparison group.

**Intervention study—Quasi-experimental design.** Similar to a true experimental design/randomized control trial in that both designs consist of a treatment group and one or more comparison groups. However, with a quasi-experimental design, membership in a treatment group or comparison group is not randomly assigned. This difference is important because it implies that, since the groups will not be equivalent, causal statements about treatment effects may be substantially weakened.

**Intervention study—Single-subject design.** May involve only one participant but typically include multiple participants (e.g., 3 to 8) in a single study. Each participant serves as his or her own control. Performance prior to intervention is compared to performance during and/or after intervention. In most cases, a research participant is an individual, but it is possible for each participant to be a group whose performance generates a single score per measurement period, i.e., the rate of problem behavior performed by all children within a classroom during a 20-minute period.

**Qualitative Interview.** Structured or unstructured interviews where the goal is understand something from the respondent’s point of view and to understand the meaning of their experiences. This category was added to the APR in 2011.

**Other.** Select ‘other’ only if none of the listed categories apply.

## **Development Stages**

**Information gathering on constraints, specifications, materials, etc.** Searching for pertinent information and facts and developing reasonable forecasts or making assumptions where information is not possible or reliable. All the measurable factors, constraints, and features that might be of importance to filter out the best solution must be localized and analyzed.

**Analysis of information to generate solutions.** Separating the problem from the general problem solution, clarifying the real problem from the apparent ones, and stating the independent-to-dependent relationships.

**Evaluation of solutions and synthesis of best solution.** Combining elementary components to build up multiple families of alternatives before yielding a detailed solution. This phase also requires detailed analysis, which involves defining and setting up criteria to test results, verifying and validating a system, and optimizing component features.

**Implementation of solution.** Implementation encompasses all the processes involved in getting a new product operating properly in its environment, including installation, configuration, running, testing, and making necessary changes.

**Evaluation of effectiveness and efficiency of solution and redesign as needed.** New tools, methods, and procedures, which were previously unknown or develop over time.

**Commercialization activities.** The product or device has been built, evaluated, and field-tested. Grantee has identified an industry partner (e.g., company or organization) and is engaged in discussions about the feasibility of producing and marketing the product or device for distribution to customers.