Disability Research and Dissemination Center
Cycle 1 Evaluation

Jeremy French-Lawyer, MPH, CAS, CHES
Telisa Stewart, DrPH
February 5, 2019

Executive Summary

The Disability Research and Dissemination Center (DRDC) was established September 30, 2012. The mission of the DRDC is to establish a Disability Research and Dissemination Center (DRD) that will expand National Center on Birth Defects and Developmental Disabilities' (NCBDDD's) capacity to conduct research and training, and to disseminate evidence-based practice related to birth defects and developmental and other disabilities. The DRDC has five cores: the Administrative Core, Research Core, Training/Evidence Based Core, Dissemination Core and Evaluation Core. The five-year grant cycle was completed September 29, 2017, with an additional no-cost extension year ending in 2018. This evaluation will cover the first five-year cycle of the DRDC, and includes information about publications from the no-cost extension year.

In the first five-year cycle of the DRDC, there were twenty-two requests for application (RFAs) solicited, and twenty-five projects funded. RFAs were initially reviewed using an extensive review process, which was revised in Year 2 to a more simplified triage process. The DRDC primarily funded projects located in the eastern United States; one international project (Tanzania) was funded. Forty-nine publications resulted from internally and externally funded projects of the DRDC.

In addition to funded RFAs, the DRDC also funds fellowship opportunities. There were four fellows hired through the Training/ Evidence Based Core who were located at two different institutions. In total the fellows can be credited for seven publications (as first author) and two separate health education dissemination projects.

Dissemination of research from the DRDC funded activities was evaluated using data from Scopus Metrics, which include information related to citation and media dissemination of published articles indexed in Scopus. Thirty-six publications were indexed on Scopus and evaluated using Scopus Metrics. Google Analytics was used to evaluate the DRDC website usage. Website usage was typically highest in January of each year, when RFAs are solicited on the website.

The DRDC has applied for and received funding for its second cycle. Cycle 2 of the DRDC began on September 30, 2017.

Table of Content

Table of Figure

Table of Table

Table of Appendix

Introduction

DRDC Description

Cooperative Agreement #1U01DD001007 was initiated on September 30, 2012, with the University of South Carolina acting as the administrative home of the Disability Research and Dissemination Center (DRDC). Subcontracts were established at the American Association on Health and Disability (AAHD) and SUNY Upstate Medical University. This five-year report presents results of the initial five-year cycle of the project (September 30, 2012 - September 29, 2017). For more detailed information about the DRDC see Appendix A: Disability Research and Dissemination Center Logic Model. This logic model incorporates aims and activities agreed upon during post-award negotiation with the CDC's National Center for Birth Defects and Developmental Disabilities (NCBDDD).

Mission

Establish a Disability Research and Dissemination Center (DRDC) that will expand NCBDDD's capacity to conduct research and training, and to disseminate evidence-based practice related to birth defects and developmental and other disabilities.

Evaluation Areas

Overview

The evaluation section below explores outcomes for Cycle 1 of the DRDC. These include the RFA process, funded projects (geographic spread and dissemination), fellowship and training products, annual evaluations, and DRDC dissemination.

RFAs

Overview

This section addresses the RFA review process, output of RFAs solicited, and funded projects. In the five-year cycle of the DRDC there were four years of RFA solicitations and reviews. There were twenty-five funded projects, twenty of which were funded from open RFAs[a] and five projects were funded from limited RFAs[b]. For a summary of the number of projects funded in each year of Cycle 1 of the DRDC, please refer to Table 1: Summary of RFA Process for Cycle 1 of the DRDC.

Year 1

There were four open RFAs in Year 1. These four RFAs included six opportunities for funding, all of which were open RFAs. There were thirteen applications which underwent a full review process by the DRDC. Nine applications were passed on to the CDC for secondary review. Of these, seven were funded. This method of full review by both the DRDC and CDC was eliminated after Year 1, as it was deemed to be inefficient. Please see Table 1: Summary of RFA Process for Cycle 1 of the DRDC.[1]

[a] Open RFAs are opportunities for funding that are not limited to a certain applicant
[b] Limited RFAs are opportunities for funding targeted to specific research groups

Year 2

In Year 2, there were seven funding opportunities. These RFAs generated forty-seven applications; thirty-eight applications were reviewed. A new triage review system was adopted by the DRDC (see Substantial Changes to DRDC RFA Process). Twenty applications were sent to the CDC for review. Six of these projects were funded in Year 3 and the seventh project was funded in Year 4. Please see Table 1: Summary of RFA Process for Cycle 1 of the DRDC.[2]

Year 3

In Year 3, there were six total RFAs (three open and three limited RFAs). One of the three open RFAs included two opportunities for funding. Thus, there were a total of four open opportunities for funding and three limited opportunities. There were seven total opportunities for funding. There were twenty-two applications submitted for review, nineteen of which were reviewed in the triage process (see Substantial Changes to DRDC RFA Process). Ten applications were sent to the CDC for full review, four of which were funded. There were three limited RFAs for Year 3, all of which were funded. Therefore, there were seven funded projects resulting from applications in Year 3. Please see Table 1: Summary of RFA Process for Cycle 1 of the DRDC.[3]

Year 4

In Year 4, there were five RFAs, with six opportunities for funding. Three were open RFAs that totaled 4 opportunities for funding. The remaining two RFAs were limited eligibility. Sixteen applications were received for the open RFAs and fifteen were reviewed in the triage process. Of the 15, eight were sent to the CDC and reviewed; two of these projects were funded. As previously reported in the annual evaluation for Year 4, due to lack of available funds from the NCBDDD, one funding opportunity[c] was retracted.[4] Therefore, there were two open RFAs solicited and two limited RFAs, all of which were funded. Thus, four projects were accepted to be funded from the Year 4 RFA cycle. Please see Table 1: Summary of RFA Process for Cycle 1 of the DRDC.[4]

Year 5

There were no new RFAs in Year 5. Year 5 was the final year of the 5-year cycle and no new RFAs were planned. Resources were focused on the completion of already funded projects and evaluation.[4,5]

[c] One of the Early Hearing Detection and Intervention opportunities was retracted.

Table 1. Summary of RFA Process for Cycle 1 of the DRDC

	Number RFA[a]	Number Funding Opp[b]	Number Open RFA[c]	Number Open RFA Funding Opp[d]	Number App Open[e]	After Full Review[f]	Triage Review[g]	CDC Review[h]	Funded[i]	Number App Limited[j]	Number Solicited[k]	Funded[l]	Total Funded (Previous Year Cycle)[m]
Year 1	4	6	6	6	13	9	NA	9	7	NA	NA	NA	NA
Year 2	7	7	7	7	47	NA	38	20	7	NA	NA	NA	7
Year 3	6	7	3	4	22	NA	19	10	4	3	3	3	6*
Year 4	5	6	3	4	16	NA	15	8	2	2	2	2	8*
Year 5	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4

a. Number RFA – the total number of RFAs solicited in that year by the DRDC
b. Number Funding Opp – number of funding opportunities for both limited and open RFAS
c. Number Open RFA – number of open RFAs solicited
d. Number Open RFA Funding Opp – number of funding opportunities for only open RFAS
e. Number App Open – the total number of applications submitted for open RFAs for that year
f. Full Review – the total number of applications that were reviewed through a full review process by the DRDC
g. Triage Review – the number of applications that were reviewed using a triage review process by the DRDC (triage review was initiated in Year 2)
h. CDC Review – The number of applications that were reviewed by the DRDC, then sent to the CDC for secondary review
i. Funded – the number of projects funded from open RFAs
j. Number App Limited – number of RFAs solicited that are limited eligibility
k. Number Solicited – number of RFAs solicited from research groups for limited eligibility RFAs
l. Funded – number of projects funded from limited eligibility RFAs
m. Total Funded – Total number of projects funded through the DRDC for that year. These represent the funded projects that in the RFA process from the previous year.

*One project that was intended to be funded from the Year 2 RFA process was not funded beginning in Year 3, but rather was funded beginning in Year 4.

Substantial Changes to DRDC RFA Process

Overview

This section outlines the substantial changes to the DRDC RFA review process made after Year 1.

Implementation of Triage Review Process

After Year 1, the DRDC replaced the full review process with a triage review process. This process was described in previous evaluations.[3] In summary, the triage process scored applications using a Likert scale. The triage review included four categories. Low scoring applications were eliminated and remaining RFAs were submitted to the CDC. For more information and the triage rubric see Appendix B: Triage Review Rubric and Process Description.

Geographic Spread of Projects Funded in the United States

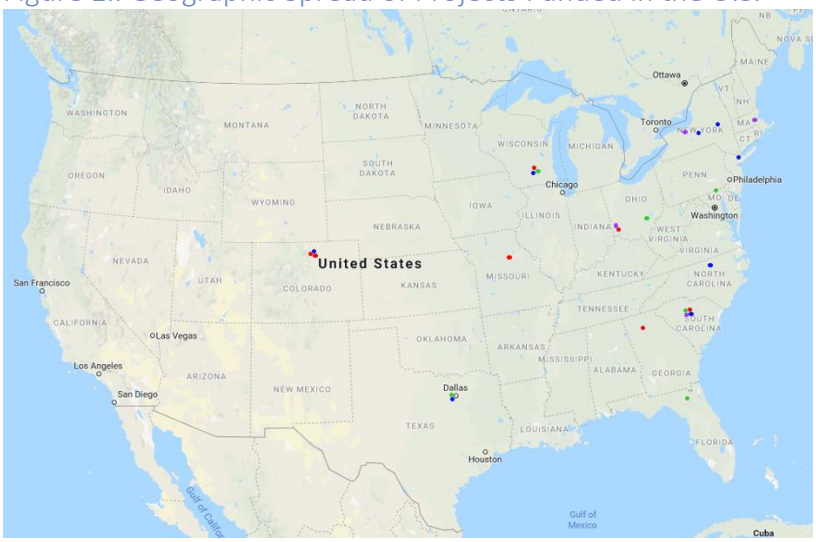
Overview

This section will address the geographic spread of projects funded by the DRDC through the RFA process.

Geographic Spread

The DRDC funded projects in twelve states. The majority of funded projects were located on the east coast, with some projects in the Midwest. No funded projects were located on the west coast of the United States. Five locations hosted funded projects for more than one year: University of South Carolina, Cincinnati Children's Hospital Medical Center, University of Colorado – Boulder, and University of Wisconsin. There was only on international project funded through the DRDC RFA process which was located in Massachusetts and Tanzania. This was the only international project funded through the DRDC RFA process. Please refer to Figure 1: Geographic Spread of Projects Funded in the U.S. for a visual representation of this information. Please refer to Appendix C: List of Funded Projects and their Locations for a summary of information of the funded sites.

Figure 1.. Geographic Spread of Projects Funded in the U.S.



Key
- Year 1
- Year 2
- Year 3
- Year 4

Fellowship and Training

Overview

This section will briefly summarize the fellowship opportunities (N=4) funded by the DRDC. In addition, this section outlines the dissemination of their work.

University of South Carolina

Brian Barger, PhD

Dr. Brian Barger was hired as the NCBDDD "Learn the Signs. Act Early" (LTSAE). Fellow during Year 1 of the Cooperative Agreement, in June 2013. Dr. Barger's received guidance and oversight primarily from Catherine Rice, PhD, and Rebecca Wolf, MA, of the CDC/NCBDDD. His work has resulted in four peer reviewed publications. Brian Barger, PhD,

completed the LTSAE Fellowship in July 2015 (Year 3). His work is summarized in more depth in the Cycle 1, Year 2 and Year 3 Evaluations of the DRDC.[2,3] Dr. Barger has since begun a position as a research Assistant Professor at Georgia State University School of Public Health.

SUNY Upstate Medical University

Michael Ioerger, PhD, MPH, CSCS

Michael Ioerger was hired for the DRDC Work/Study Training program in May of 2016. His work was primarily overseen by Dr. Margaret Turk. Dr. Ioerger completed his fellowship in January of 2017 and was hired full time at SUNY Upstate as a Research Specialist. The projects completed in his fellowship and subsequent employment include research to explore disability related topics and developed teaching curriculum (media and educational tools) for medical students and clinicians about people with disability. Research areas include educational interventions with medical students, online information pertaining to medical care for people with disability, and self-other overlap and disability. Curriculum design includes the development of the Disability Integration Toolkit and contribution to continuing medical education. His work at SUNY Upstate Medical University is summarized in more depth in the Cycle 1, Year 5 Evaluation of the DRDC.[5]

Jeremy French-Lawyer, MPH, CHES

Jeremy French-Lawyer was hired for the DRDC Work/Study Training program in January of 2017. Her work was primarily overseen by Dr. Margaret Turk. Ms. French-Lawyer completed her fellowship when she was hired full time at SUNY Upstate as an Instructional Design and Research Specialist in August of 2017. In her fellowship, she collaborated with Michael Ioerger to develop the Disability Integration Toolkit and Practical Recommendations for Enhancing the Care of Patients with Disability and worked on other projects to develop teaching curriculum (media and educational tools) for medical students and clinicians about people with disability. She was later hired as a full time employee to continue work on the Disability Integration Toolkit, ongoing research projects and to work as a part of the Evaluation Core for the DRDC. Her work at SUNY Upstate Medical University is summarized in more depth in the Cycle 1, Year 5 Evaluation of the DRDC.[5]

Katherine Goss, BA, MPH Candidate

Katherine Goss was hired for the DRDC Work/Study Training program in December of 2016. Her work has been primarily overseen by Dr. Margaret Turk. Ms. Goss has continued her fellowship in subsequent years, and will continue to work as a fellow for the DRDC in Cycle 2. The projects completed during her fellowship include research to explore disability related topics including online information pertaining to medical care for people with disability. The fellowship also included the development of media and educational tools to teach clinicians and medical students work with people with disability and collaboration on Practical Recommendations for Enhancing the Care of Patients with Disability. Her work and that of the other two fellows at SUNY Upstate Medical University is summarized in more depth in the Year 5 Evaluation of Cycle 1 of the DRDC.[5]

Fellowship Publications

Five first author articles by the above fellows were published from 2014 to 2017. Two articles are currently under review for publication.

Peer Reviewed Publications

- **Ioerger M**, Flanders RM, **Goss KD**, Turk MA. (2018). Developing a systematic search strategy related to people with disability: A brief report testing the utility of proposed disability search terms in a search about opioid use. Disabil Health J. In press https://www.sciencedirect.com/science/article/pii/S1936657418302413?via%3Dihub
- **Barger, B.**, Campbell, J., & Simmons, C. (2017). The relationship between regression in autism spectrum disorder, epilepsy, and atypical epileptiform EEGs: A meta-analytic review. Journal of Intellectual & Developmental Disability, 42(1), 45-60.
- **Barger, B.**, Rice, C., Simmons, C. & Wolf, R. (2016). A Systematic Review of Part C Early Identification Studies. Topics on Early Childhood Special Education, 1-13.
- **Barger, B.**, Campbell, J., & Simmons, C. (2015). Personality in Autism During Middle Childhood: An analysis using the Inventory of Children's Individual Differences. Focus on Autism and Other Developmental Disabilities.
- **Barger, B.**, Campbell, J., & Simmons, C. (2014). Measuring Five Factor Personality Traits in Autism During Early Childhood. Journal of Developmental and Physical Disabilities, 26(6), 775-792.

Currently Under Peer Review

- **Goss, K. D.**, **Ioerger, M**., Young, V., Flanders, R. M., Turk, M. A. (under review). A systematic search and technical review of online information pertaining to medical care for patients with disability.
- **Ioerger, M.**, Flanders, R. M., **French-Lawyer, J. R.**, Turk, M. A. (under review). Interventions to teach medical students about disability: A systematic search and review.

Fellowship Health Education Projects

Two major online education projects were developed by DRDC fellows.

- **Practical Recommendations for Enhancing the Care of Patients with Disability** – This education project is a set of three modules that are approved by the CDC for continuing education for physicians, nurses and health professionals. The three modules are:
    - Module I: Establishing a Foundation for Access, Interaction and Mutual Understanding
    - Module II: Recommendations for Physical Examination & Clinical Management
    - Module III: Encouraging Partnerships Between Patients with Disability and Physicians

  All three modules can be accessed at http://www.upstate.edu/pmr/education/disability/index.php

- **Disability Integration Toolkit (DIT)** – http://www.upstate.edu/pmr/education/toolkit/index.php – This toolkit is a series of curriculum pieces designed to be incorporated into undergraduate medical education in order to integrate disability information into the curriculum. These tools are undergoing an evaluation process, and include small group activities, journal club activities and web-based clinical modules based on medical cases.

Research Impact

Overview

Research impact of the DRDC is summarized here through publications generated from internal and external research projects. Research impact was assessed using Scopus Metrics, which provided data on the dissemination of scholarly publications.

Both internal and external DRDC funded research projects have produced numerous publications. Please see Appendix D: Complete List of DRDC Publications for a list of all known publications resulting from DRDC projects.

Research Publications

One aspect of publication that can now be evaluated is the types of dissemination that occurs once an article is published. Web databases such as Scopus, have implemented systems to collected data metric on articles. Metrics are collected through internet data tracking.[6] These metrics can then be used to better understand how publications are accessed. For more information on the specific data collection used by Scopus Metrics please visit https://plumanalytics.com/learn/about-metrics/usage-metrics/. [7]

For this report, data was collected from Scopus including exports/saves, abstract views, clicks, full text views, links out and readers. Other included metrics were dissemination through other platforms, such as blog mentions; news mentions; shares, like and comments; and tweets. Finally, there are measures of citation such as citation indexes, clinical citations and field weighted citation impact. For further information about these metrics and dissemination of research please refer to Appendix E: Scopus Metrics Data.

Expansion of Research Projects

One of the DRDC outcomes has been the evolution of research ideas from projects funded by the DRDC. There have been instances of funded projects being completed and other related projects being funded as expansions of those projects.

The PLAY projects in South Carolina and Colorado in Year 1 and in Florida and Ohio in Year 2 have built upon each other. There was another related project at the University of Rochester: Improving Identification of Tics and Other Conditions in Children. There was also a related project to update a survey instrument.

Similarly, the LTSAE projects in University of Missouri and Georgia Institute of Technology in Year 1 and the LTSAE Monitoring project at the University of Wisconsin in Year 2 have been related. These and other instances of projects expanding may warrant further evaluation. Please refer to Appendix C: List of Funded Projects and their Locations for a list of these projects and their locations.

Evaluation Core

Overview

The Evaluation Core of the DRDC completed annual evaluations of the DRDC. Yearly, an annual evaluation which has been completed by the Evaluation Core of the DRDC. All of the previous evaluation reports are available on the DRDC website.[1,2,3,4,5]

Website Utilization

Overview

This section will discuss website visitation and Twitter for the DRDC. The website, www.disabilityresearchcenter.org, is a key outlet for the dissemination of RFAs and research funded by the DRDC. All data from Google analytics was collected in December, 2018.

Webpage Data from Google Analytics

The DRDC website was launched on January 17, 2013. The website acts as a platform for Requests for Funding Announcements (RFAs), dissemination of research, publications, and information about the DRDC. The utilization of the website was analyzed using Google Analytics. Google Analytics has been used in each of the previous year evaluations of the DRDC webpage. The following information is a summary of the entire five-year cycle of the DRDC. Google Analytics collects data about the users of the website, and the type of visits and users that occur on the website.

In Cycle 1 of the DRDC, there were 27,596 users of the DRDC Website. There were 92.6% new visitors to the DRDC webpage, and 7.4% returning visitors (Appendix F: Google Analytics Data; Visitors to www.disabilityresearchcenter.org Over Time from September 30, 2012 to September 29, 2017). This indicates that attracting new visitors to the website has been successful, and that further effort could be focused on returning visitors. This trend may warrant further investigation.

Users of the DRDC website visited the site in a total number of 37,614 sessions, and there were 86.026 pageviews. The visitor bounce rate was 63.77%.[d] There were 1.36 sessions per user, and 2.29 pages per session. The average session duration was 2 minutes and 6 seconds. The Website had users from every continent except Antarctica and Greenland. For a map overlay of the visitors to the DRDC webpage please refer to Appendix F Google Analytics Data; Map Overlay of www.disabilityresearchcenter.org Users from September 30, 2012 to September 29, 2017.

The majority of website users are from the United States (73.07%), Canada (3.24%), United Kingdom (3.19%) and France (3.09%). Other countries were noted using the website such as Germany, India, Brazil, China and represented less than 2% of the users. For more information, please refer to Appendix F: Google Analytics Data; Percentage of Visitors to www.disabilityresearchcenter.org from September 30, 2012 to September 29, 2017.

Peaks in webpage visitation occur each January. These peaks likely correspond to the release of new funding opportunities on the website. Users peaked in January of 2013, January of 2014, January of 2015 and January of 2018 corresponding to the release of RFAs on the website; no RFAs were released in Year 5. Presumably the dissemination of these funding opportunities led to the increased visitation to the site. Unfortunately, there are clear drop offs in webpage visitation, and very little webpage visitation between these funding-driven peaks. Notably, unlike

[d] Bounce rate refers to the number of users that visit only one page before exiting the site

in other years, there was a sustained amount of website visitation between January 2015 and January 2016. This apparent increase in visitation throughout the year may warrant further investigation to determine what attributed to the trend. Please refer to Appendix F: Google Analytics Data; Visitors to www.disabilityresearchcenter.org Over Time from September 30, 2012 to September 29, 2017 for a visual representation of these trends.

Twitter Account

The twitter account for the DRDC was initiated in January 2014, in Cycle 1,Year 2 of the DRDC. Since then there have been a total of 1,793 tweets. The account has 1,474 followers, and is following 897 other twitter accounts. The DRDC Twitter account has been used to disseminate information about RFAs, as well as information on research, disability facts and news.

There has consistently been a greater volume of Tweets between January and March of each year since its inception. In Cycle 1, Year 2, there was some concern regarding the possible impact of the Twitter account, due to a low number of posts and followers. The DRDC increased resources for the Twitter account.

Conclusion and Future Action

The DRDC has, and will continue, to fulfill its mission. The work of the DRDC to solicit and review RFAs is successful. The sponsored fellowships have created opportunities for training in the disability field. Both of these efforts have led to publications which have enhanced research and understanding about disability. Furthermore, the DRDC has acted as a platform for dissemination, especially through it's online presence.

In addition to manuscripts related to the DRDC that have already been published, there are several more that are under review or in other stages of the publication process.

This work will continue to contribute important information to the body of literature of disability. The website will continue to be utilized as a platform for the dissemination of RFAs, as well as the dissemination of research findings and other information about the DRDC, including evaluation.

The evaluation core of the DRDC will continue and evolve in Cycle 2 of the DRDC. The yearly evaluation timeline has shifted based on new CDC guidelines. Evaluation is now being completed via eRA Commons system through CDC for RFA application and processing. Thus, evaluation will be completed in the spring, which will allow the Evaluation Core to collect data at the same time that CDC evaluations are completed. Information from this report will be used to inform future decisions about the administration, research, training, dissemination and evaluation of the DRDC in Cycle 2.

Cycle 2 of the DRDC began on September 30 of 2017. The grant application for a second cycle was submitted on February 21, 2017 and was accepted on August 8, 2018. The first round of seven (7) RFAs was solicited via the website on January 22, 2018 and the application and review process has been implemented for Cycle 2 Year 1. A new series of RFAs will be solicited for Cycle 2 Year 2 beginning in January 2019. There is a new EAC comprised of new and returning members who will continue to perform the triage review of RFAs in Cycle 2. This is an exciting continuation of the work from the initial cycle of the DRDC.

References

1. Morley, C. & Mader, E. (2014). *Disability Research and Dissemination Center 2012-2013 Annual Report* (Report 1). Retrieved from the Disability Research and Dissemination Center website: https://www.disabilityresearchcenter.com/wp-content/uploads/2014/07/DRDC-Evaluation-Report-2012-2013.pdf
2. Morley, C., Mader, E. & Cameron, B. (2014). *Disability Research and Dissemination Center 2013-2014 Annual Report* (Report No. 2). Retrieved from the Disability Research and Dissemination Center website: https://www.disabilityresearchcenter.com/wp-content/uploads/2015/03/DRDC-Evaluation-Report_2013-2014.pdf
3. Mader, E. & Morley, C. (2016). *Disability Research and Dissemination Center 2014-2015 Annual Report* (Report 3). Retrieved from the Disability Research and Dissemination Center website: https://www.disabilityresearchcenter.com/wp-content/uploads/2016/03/DRDC_AnnualReport_2014-2015_FINAL.pdf
4. Pratte, M. & Morley, C. (2017). *Disability Research and Dissemination Center 2015-2016 Annual Report* (Report 4). Retrieved from the Disability Research and Dissemination Center website: https://www.disabilityresearchcenter.com/wp-content/uploads/2017/03/DRDC-Annual-Report-2015-2016_FINAL.pdf
5. French-Lawyer, J. & Stewart, T. (2018). *Disability Research and Dissemination Center 2016-2017 Annual Report* (Report 5). Retrieved from the Disability Research and Dissemination Center website: https://www.disabilityresearchcenter.com/wp-content/uploads/2018/04/DRDC-Annual-Report-2016-2017.pdf
6. "PlumX Metrics," (2019). *Plum Analytics*, Retrieved from https://plumanalytics.com/learn/about-metrics/
7. "Usage Metrics," (2019). *Plum Analytics*, Retrieved from https://plumanalytics.com/learn/about-metrics/usage-metrics/
8. "Capture Metrics," (2019). *Plum Analytics*, Retrieved from https://plumanalytics.com/learn/about-metrics/capture-metrics/
9. "Mention Metrics," (2019). *Plum Analytics*, Retrieved from https://plumanalytics.com/learn/about-metrics/mention-metrics/
10. "Social Media Metrics" (2019). *Plum Analytics*, Retrieved from https://plumanalytics.com/learn/about-metrics/social-media-metrics/
11. "How are Article Metrics used in Scopus?" (2019). *Scopus: Access and use Support Center*, Retrieved from https://service.elsevier.com/app/answers/detail/a_id/12031/supporthub/scopus/
12. "Citation Metrics," (2019). *Plum Analytics*, Retrieved from https://plumanalytics.com/learn/about-metrics/citation-metrics/

Appendix A. Disability Research and Dissemination Center Logic Model

Mission: Establish a Disability Research and Dissemination Center (DRD) that will expand NCBDDD's capacity to conduct research and training, and to disseminate evidence-based practice related to birth defects and developmental and other disabilities

Core Component	Activities	Planning Outputs	Program Outcomes	Distal Outcomes
Administrative Core [Specific Aim 1]	▪ Manage & coordinate Core activities and programs [Target 1a] ▪ Form advisory board (EAC) [Target 1b] ▪ Establish partnerships [Target 1c] ▪ Establish Center agenda	▪ Management & administrative structures in place ▪ Center priorities defined ▪ Procedures for internal monitoring established ▪ Content areas identified	▪ Filled positions ▪ Arranged MOAs ▪ Established networks and partnerships	▪ Sound yet flexible multi-disciplinary administrative system established through sustainable and responsible partnerships
Research Core [Specific Aim 2]	▪ Conduct internal research [Target 2a] ▪ Set research priorities [Target 2b] ▪ Solicit and award research projects [Target 2c] ▪ Provide research support	▪ Research priorities defined ▪ Mechanisms for solicitation and evaluation of research project applications established	▪ Number of research grants awarded by Center ▪ Number and type of research projects initiated by Center ▪ Number of completed studies related to developmental disabilities	▪ Dissemination of research findings through conferences and scholarly journals ▪ Increased number of PIs managing independent disability studies
Training/ Evidence Based Core [Specific Aim 3] [Specific Aim 4]	▪ Develop evaluation strategy & maintain evidence-based programs [Target 3a] ▪ Disseminate promising practices supported by research [Target 3b] ▪ Develop research fellowship [Target 4a] ▪ Conduct learners' needs analysis (LNA) [Target 4b] ▪ Identify, catalog, maintain collection professionals' education materials [Target 4c] ▪ Develop/promote teaching materials to medical/public health schools [Target 4d]	▪ Mechanisms for solicitation and evaluation of research fellowship applications established ▪ Teaching modules and programs developed from LNA ▪ Web-based information system devised and managed ▪ Research uploaded and reviewed	▪ Awarded research fellowships ▪ Manuscripts published by research fellows ▪ Number of individuals participating in teaching modules and programs ▪ Evaluations of program effectiveness	▪ Increased dissemination of evidence-based programs and policies ▪ Increased knowledge of evidence-based programs and policies among health professionals working with people with disabilities
Dissemination Core [Specific Aim 5]	▪ Establish and maintain web and social media strategy [Target 5a] ▪ Organize stakeholder network & conduct coalition meetings [Target 5b; 5c] ▪ Provide technical assistance [Target 5d] ▪ Support EB health promotion activities [Target 5e] ▪ Distribute policy & legislation [target 5f]	▪ Dissemination strategies identified and prioritized through dissemination meeting ▪ Project website established ▪ Technical assistance provided where needed ▪ Media campaigns developed	▪ Information disseminated through a variety of media approaches ▪ Launched media campaigns ▪ Continual evaluation of dissemination strategies and media campaign effectiveness	▪ Progressive dissemination mechanisms implemented and continually updated to effectively communicate knowledge surrounding evidence-based practice
Evaluation Core [Specific Aim 6]	▪ Conduct needs assessment [Target 6a] ▪ Organize and implement routine evaluations for all processes, research, training, dissemination strategies, and other activities related to the grant [Target 6b]	▪ Concept mapping conducted ▪ Mixed-methods evaluation plans established ▪ Mechanisms to monitor stakeholder engagement established	▪ Findings from process and effect data collection and analysis ▪ Targets for intervention identified ▪ Program database ▪ Annual report	▪ Strong program fidelity and continual quality improvement within research and training programs
Inputs		**Immediate Outputs**	**Proximal and Distal Outcomes**	

Appendix B. Triage Review Rubric and Process Description

INSTRUCTIONS

A. TYPE YOUR NAME HERE: _____

B. Link to the password protected website where you will find the applications (see email for URL and password).

C. For each application, ASSIGN SCORES as shown by the example in the table below.

SCALE (WHOLE NUMBERS ONLY!)

1 = Superior
2 = Very Good, minor issues
3 = Adequate, some concerns
4 = Major issues
5 = Poor

D. Please add a BULLETED LIST of STRENGTHS and/or WEAKNESSES, as appropriate, associated with each score in the space provided.

E. After you finish scoring all assigned applications and listing all comments, please make this into a PDF document and email to salzberd@mailbox.sc.edu.

Name	Review Category	Score (1-5, whole #s only)	Comments
EXAMPLE	Responsiveness to the RFA / Significance / Innovation	3	(1) Response to RFA requirement #4 was underdeveloped/not enough detail; (2) App developed to aid exercise tracking was innovative
	Merit of the Methods/ Approach	4	(1) Recruitment efforts may not capture a fully representative samples of the target population; (2) Power calculations not included, and sampling pln seems overly optimistic
	Evaluation Plan	3	Application adequately describes evaluation process for using evaluation to inform phase 2 of study to be conducted in year 3
	Principal Investigator & Team's Ability to Carry out the Work	2	(1) PI is experienced, has a solid track record, and has assembled an excellent team. (2) Institution and department have a solid record of community based participatory research like the proposed study.

1 = Superior; 2 = Very Good, minor issues, 3 = Adequate, some concerns, 4 = Major issues, 5 = Poor

The triage review process involved "triage panels consisting of members of the DRDC External Advisory Committee (EAC) and other selected experts in the RFA subject areas. The triage panels scored applications using a Likert scale (1-5, whole numbers only: 1=superior, 2=very good, minor issues, 3=adequate, some concerns, 4=major issues, 5=poor) for four categories: (1) Responsiveness to the RFA/Significance/Innovation, (2) Merit of the Methods/Approach, (3) Evaluation Plan, and (4) Principal Investigator & Team's Ability to Carry out the Work. An example of the scoring rubric can be found in Figure 2. All reviewers were instructed to recuse themselves from reviewing any applications where the reviewer had a conflict of interest, and were also required to sign a Reviewer Confidentiality and Conflict of Interest statement. The DRDC eliminated low-scoring applications and submitted the top proposals for each RFA to the CDC for further review and selection."[3]

Appendix C. List of Funded Projects and their Locations

Year 1 (Red Dots)

1. EHDI-Developmental Outcomes: University of Colorado – Boulder, Christie Yoshinaga-Itano, PI
2. EHDI-WIC: Cincinnati Children's Hospital Medical Center, Lisa Hunter, PI
3. EHDI-WIC: University of Wisconsin, Anne Harris, PI
4. PLAY: Mental Health – University of S. Carolina, Kate Flory, PI
5. PLAY: Mental Health – University of Colorado–Denver, Lorraine Kubicek, PI
6. LTSAE: University of Missouri, Janet Farmer, PI
7. LTSAE: Georgia Institute of Technology, Rosa Arriaga, PI

Year 2 (Green Dots)

1. PLAY-MH: University of Florida, Steven Cuffe, PI
2. PLAY-MH: Ohio University, Julie Owens, PI
3. GENOTYPING ANALYSIS: Johns Hopkins University, M. Daniele Fallin, PI
4. LTSAE MONITORING : University of Wisconsin, Gail Chodron, PI
5. EMR-RARE CONDITIONS: University of S Carolina, Kevin Bennett, PI
6. HEALTHY WEIGHT: University of Texas, Katherine Froehlich-Grobe, PI

Year 3 (Blue Dots Dots)

1. Assessing the Impact of Early Hearing Detection and Intervention (EHDI) – University of Colorado Boulder, Christine Yoshinaga-Itano, PhD
2. Assessing the Impact of Early Hearing Detection and Intervention (EHDI) – University of Wisconsin, Anne Harris, PhD
3. Development of an Epidemiological Tool for Assessing Mental Disorders in Children Based on DSM5 Criteria – Research Foundation for Mental Hygiene, Prudence Fisher, PhD
4. Early Hearing Detection and Intervention (EHDI) Quality Measures – OZ Systems, Terese Finitzo, PhD
5. Learn the Signs. Act Early. (LTSAE) Book Testing – Family Health International, Rebecca Ledsky, MBA
6. Learn the Signs. Act Early. (LTSAE) Impact on Parents – Bassett Healthcare Network, Anne Gadomski, MD
7. Periconceptual Surveillance for Prevention of Anemia and Birth Defects in India – Cornell Unviersity, Julia Finkelstein, ScD
8. Project to Learn About Youth – Mental Health II (Re-PAY) – University of South Carolina, Kate Flory, PhD

Year 4 (Purple Dots)

1. Using Early Hearing Detection and Intervention (EHDI) to Assess Outcomes – Cincinnati Children's Hospital Medical Center, Jareen Meinzen-Derr, PhD
2. Improving Identification of Tics and Other Conditions in Children – University of Rochester, Heather Adams, PhD
3. Small Scale Grain Fortification in Tanzania – Project Healthy Children/Sanku, Felix Brooks-Church, BA*
4. Identifying Opportunities to Improve the Care of People with Intellectual and Developmental Disabilities – University of South Carolina, Suzanne McDermott, PhD

*Small Scale Grain Fortification Project is based in Massachusetts and in Dar es Salaam, Tanzania which is not represented on this map

Appendix D. Complete List of DRDC Publications

1. [+]Stevens AC, Royer J, Carroll DD, Courtney-Long EA, McDermott S, Turk MA. (2018). Anti-hypertensive medication use and factors related to adherence among adults with intellectual disability in South Carolina. American Journal of Intellectual and Developmental Disabilities. In Press.
2. Hong Y, Geraci M, Love B, Turk MA, McDermott S. (2018). Opioid prescription patterns for adults with longstanding disability and inflammatory conditions compared to other users, using a nationally representative sample. Arch Phys Med Rehabil. Aug 10. doi: 10.1016/j.apmr.2018.06.034. Epub ahead of print.
3. [+]McDermott S, Royer J, Cope T, Lindgren S, Momany E, Lee JC, McDuffie MJ, Lauer E, Kurtz S, Armour BS. Using Medicaid Data to Characterize Persons With Intellectual and Developmental Disabilities in Five U.S. States. Am J Intellect Dev Disabil. 2018 Jul;123(4):371-381.
4. [+]Xu X, Ozturk O, Turk MA, McDermott S. (2018). Physical activity and disability: An analysis of how activity might lower medical expenditures. Human Kinetics Journal. 15(8), 564-571.
5. McDermott S, Royer J, Mann JR, Armour BS. (2018). Factors associated with ambulatory care sensitive emergency department visits for South Carolina Medicaid members with intellectual disability. J Intellect Disabil Res. Mar;62(3):165-178.
6. Xu X, McDermott S, Mann JR, Hardin JW, Deroche CB. Carroll, DC, Courtney-Long EA (2017). A longitudinal assessment of adherence to breast and cervical cancer screening recommendations among women with and without intellectual disability. Prev Med. Jul;100:167-172.
7. Deroche CB, McDermott S, Mann JR, Hardin JW. (2017). Colorectal cancer screening adherence in selected disabilities over 10 years. American Journal of Preventive Medicine 52(6), June, 735-741.
8. Bennett K, McDermott S, Mann JR, Hardin J. (2017). Receipt of Recommended Services among patients with selected disabling conditions and diabetes. Disability and Health Journal. 10 (1), 58–64.
9. Xu X, Mann JR, McDermott S, Deroche CB, Gustafson E, Hardin JW. (2016). Women with visual impairment and insured by Medicaid or Medicare are less likely to receive recommended screening for breast and cervical cancers. Ophthalmic Epidemiology, Vol. 24, No 3, 168-173.
10. Xu X, Mann JR, Hardin JW, Gustafson E, McDermott S, Deroche CB. (2016). Adherence to US Preventive Services Task Force recommendations for breast and cervical screening for women who have spinal cord injury. The Journal of Spinal Cord Medicine. 40(1),76-84.

11. +Bennett, KJ, McDermott S, Mann JR (2016). Preventive service utilization among people who are blind or have low vision. Journal of Visual Impairment and Blindness, 110(2), 89–102.

12. Ioerger M, Flanders RM, Goss KD, Turk MA. (2018). Developing a systematic search strategy related to people with disability: A brief report testing the utility of proposed disability search terms in a search about opioid use. Disabil Health J. In press https://www.sciencedirect.com/science/article/pii/S1936657418302413?via%3Dihub

13. Barger, BD, Campbell J, & Simmons C. (2017). The relationship between regression in autism spectrum disorder, epilepsy, and atypical epileptiform EEGs: A meta-analytic review. Journal of Intellectual & Developmental Disability, 42(1), 45-60.

14. Barger, B, Rice C, Simmons C & Wolf R. (2016). A Systematic Review of Part C Early Identification Studies. Topics on Early Childhood Special Education, 1-13.

15. +Barger, B, Campbell J & Simmons C. (2015). The Five Factor Personality Model in Children with ASD During Middle Childhood. Focus on Autism and Other Developmental Disabilities, 31(3), 174.183.

16. Barger, B, Campbell J & Simmons C. (2014). Measuring Five Factor Personality Traits in Autism During Early Childhood. Journal of Developmental and Physical Disabilities, 26(6), 775-792.

17. Bennett KJ, Mann J, Ouyang L. (2018). 30-day All-Cause Readmission Rates among a Cohort of Individuals with Rare Conditions. Disabil Health J. Sep 12, doi:10.1016/ j.dhjo.2018.08.009. [Epub ahead of print]

18. Bennett KJ, Mann J, Ouyang L. (2018). Utilizing Combined Claims and Clinical Datasets for Research Among Potential Cases of Rare Diseases. International Journal of Healthcare Information Systems and Informatics. 13(2), 1-12.

19. Andrews SV, Sheppard B, Windham GC, Schieve LA, Schendel DE, Croen LA, Chopra P, Alisch RS, Newschaffer CJ, Warren ST, Feinberg AP, Fallin MD, Ladd-Acosta C. (2018). Case-control meta-analysis of blood DNA methylation and autism spectrum disorder. Mol Autism. Jun 28;9:40.

20. Andrews SV, Ellis SE, Bakulski KM, Sheppard B, Croen LA, Hertz-Picciotto I, Newschaffer CJ, Feinberg AP, Arking DE, Ladd-Acosta C, Fallin MD. (2017). Cross tissue integration of genetic and epigenetic data offers insight into autism spectrum disorder. Nat Commun. 2017 Oct 24;8(1):1011.

21. Autism Spectrum Disorders Working Group of The Psychiatric Genomics Consortium. (2017). Meta-analysis of GWAS of over 16,000 individuals with autism spectrum disorder highlights a novel locus at 10q24.32 and a significant overlap with schizophrenia. Mol Autism. May 22;8:21.

22. Weiner DJ, Wigdor EM, Ripke S, Walters RK, Kosmicki JA, Grove J, Samocha KE, Goldstein JI, Okbay A, Bybjerg-Grauholm J, Werge T, Hougaard DM, Taylor J; iPSYCHBroad Autism Group; Psychiatric Genomics Consortium Autism Group, Skuse

D, Devlin B, Anney R, Sanders SJ, Bishop S, Mortensen PB, Børglum AD, Smith GD, Daly MJ, Robinson EB. (2017). Polygenic transmission disequilibrium confirms that common and rare variation act additively to create risk for autism spectrum disorders. Nat Genet. Jul;49(7):978-985.

23. Mitra I, Tsang K, Ladd-Acosta C, Croen LA, Aldinger KA, Hendren RL, Traglia M, Lavillaureix A, Zaitlen N, Oldham MC, Levitt P, Nelson S, Amaral DG, Hertz-Picciotto I, Fallin MD, Weiss LA. (2016). Pleiotropic Mechanisms Indicated for Sex Differences in Autism. PLoS Genet. Nov 15;12(11):e1006425.

24. Ladd-Acosta C, Fallin MD. (2016). The role of epigenetics in genetic and environmental epidemiology. Epigenomics. Feb;8(2):271-83.

25. [+]Deng, X, Finitzo, T and Aryal, S. (2018). Measuring Early Hearing Detection and Intervention (EHDI) Quality across the Continuum of Care. eGEMs (Generating Evidence & Methods to improve patient outcomes), 6(1): 18, pp. 1–8.

26. [+]Siceloff, ER, Bradley, WJ, & Flory, K. (2017). Universal behavioral/emotional health screening in schools: Overview and feasibility. Report on Emotional and Behavioral Disorders in Youth, 17, 32-38.

27. [+]Froehlich-Grobe K, Driver S, Kramer K, Carlton D, Jaehoon L. (2017). Feasibility and Effectiveness of Delivering an Adapted Weight Loss Program to People with Mobility Impairment. Archives of Physical Medicine and Rehabilitation. 98(10), e69.

28. Betts AC, Froehlich-Grobe K, Driver S, Carlton D, Kramer MK. (2017). Reducing barriers to healthy weight: Planned and responsive adaptations to a lifestyle intervention to serve people with impaired mobility. Disabil Health J. 2018 Apr;11(2):315-323.

29. [+]Seeliger, EL, Martin, RA, Gromoske, AN, Harris, AB. (2016). WIC Participation as a Risk Factor for Loss to Follow-Up in the Wisconsin EHDI System. Journal of Early Hearing Detection and Intervention. 1(1), 57-65.

30. Hunter, LL, Meinzen-Derr, J, Wiley, S, Horvath, C L, Kothari, R, & Wexelblatt, S. (2016). Influence of the WIC Program on Loss to Follow-Up for Newborn Hearing Screening. Pediatrics. Jul;138(1).

31. Thomson V, Yoshinaga-Itano C. (2018). The Role of Audiologists in Assuring Follow-Up to Outpatient Screening in Early Hearing Detection and Intervention Systems. American Journal of Audiology. Sep 12;27(3):283-293.

32. Yoshinaga-Itano C, Sedey AL, Wiggin M, Chung W. (2017). Early Hearing Detection and Vocabulary of Children With Hearing Loss. Pediatrics. Aug;140(2).

33. Yoshinaga-Itano C & Wiggin M. (2016). A Look into the Crystal Ball for Children Who Are Deaf or Hard of Hearing: Needs, Opportunities, and Challenges. Semin Speech Lang. 2016 Nov;37(4):252-258.

34. Han MK, Storkel HL, Hoon-Lee J, & Yoshinaga-Itano C. (2015). The influence of word characteristics on the vocabulary of children with cochlear implants. J Deaf Stud Deaf Educ. 20(3):242-51.

35. Yoshinaga-Itano, C. (2015). The missing link in language learning of children who are deaf or hard of hearing: Pragmatics. Cochlear Implants International. 16(S2), S53-S54.

36. [+]De Diego-Lazaro B, Restrepo MA, Sedey AL, Yoshinaga-Itano, C. (2018). Predictors of Vocabulary Outcomes in Children Who Are Deaf or Hard of Hearing from SpanishSpeaking Families. Language, Speech, Hearing Services in Schools. In Press.

37. Yoshinaga-Itano C, Sedey AL, Wiggin M, Mason, CA. (2018). Language outcomes improved through early hearing detection and earlier cochlear implantation. Otology & Neurotology. In Press.

38. [+]Thomson V & Yoshinaga-Itano C. (2018). Audiologists as Key to EHDI programs. The Hearing Journal. In Press.

39. [+]Leach S, Aldridge P, McKeown RE, Robertson Blackmore E, Cuffe SP. 1.56 The impact of student race and socioeconomic status on teacher ratings of student behavior: An epidemiological study. *J Am Acad Child Adolesc Psychiatry*. 2016;55(10, Supplement): S117-8.

40. [+]Phillips NG, Girma MD, Leung K, Aldridge P, Robertson Blackmore E, McKeown RE, & Cuffe SP. 1.50 Effects of teacher gender on child emotional and behavioral ratings: an epidemiological study. *J Am Acad Child Adolesc Psychiatry.* 2016;55(10, Supplement): S115-6.

41. Alford, R.L., Arnos, K.S., Fox, M., Lin, J.W., Palmer, C.G., Pandya, A., Rehm, H.L., Robin, N.H., Scott, D.A., & Yoshinaga-Itano, C. (2014). American College of Medical Genetics and Genomics guideline for the clinical evaluation and etiologic diagnosis of hearing loss. Genetics in Medicine, 16, 347-355.

42. [+]Szarkowski, A., Mood, D., Shield, A., Wiley, S., & Yoshinaga-Itano, C. (2014). A summary of current understanding regarding children with Autism Spectrum Disorder who are deaf or hard of hearing. Seminars in Speech and Language, 35, 241-259. 12

43. Kellogg, E.C., Thrasher, A., & Yoshinaga-Itano, C. (2014). Early predictors of autism in young children who are deaf or hard of hearing: Three longitudinal case studies. Seminars in Speech and Language, 35, 276-287.

44. Carr, J.C., Xu, Dongxin, Yoshinaga-Itano, C. (2014). Language ENvironment Analysis (LENA) Language and Autism Screen (LLAS) and the Child Development Inventory Social Subscale as a possible autism screen for children who are deaf or hard of hearing. Seminars in Speech and Language, 35.

45. Thompson, N., & Yoshinaga-Itano, C. (2014). Enhancing the development of infants and toddlers with dual diagnosis of autism spectrum disorder and deafness. Seminars in Speech and Language, 321-330.

46. [+]Barger, B., Campbell, J., & Simmons, C. (2015). Personality in Autism During Middle Childhood: An analysis using the Inventory of Children's Individual Differences. Focus on Autism and Other Developmental Disabilities.

47. Raspa, M., Levis, D., Doto, J., Wallace, I., Rice, C., Barger, B., Green, K., & Wolf, R. (2015). Examining parents' experiences and information needs regarding early identification of developmental delays: Qualitative research to inform a public health campaign. Developmental and Behavioral Pediatrics, 36(8), 575-585.

48. Uhler, K., Thomson, V., Cyr, N., Gabbard, S.A., Yoshinaga-Itano, C. (2013). State and Territory EHDI Databases: What We Do and Don't Know About the Hearing or Audiological Data From Identified Children. American Journal of Audiology. 1-10. DOI: 10.1044/1059-0889(2013/13-0015)

49. Wiggin, M., Sedey, A.L., Awad, R., Bogle, J.M., Yoshinaga-Itano, C. (2013). Emergence of Consonants in Young Children with Hearing Loss The Volta Review, 113(2), 127–148.

[+]articles not indexed in Scopus and not included in Scopus analysis

Appendix E. Scopus Metrics Data*

Included in this Appendix is a summary of the data collected via Scopus metrics for the thirty-six publications indexed in Scopus produced by projects funded through the DRDC in the first five-year cycle of that organizations funding. The final data from Scopus was collected on December 12, 2018.

Scopus Metrics include data on the types of access to the article, such as abstract views and times that the full text article was viewed. Twenty-one articles reported Exports/Saves. Export/saves are defined as "This includes the number of times an artifact's citation has been exported direct to bibliographic management tools or as file downloads, and the number of times an artifact's citation/abstract and HTML full text (if available) have been saved, emailed or printed."[8] Twenty-two articles had reported Abstract Views, which are "The number of times the abstract of an article has been viewed."[7]

Exports/Saves

Articles	Exports/Saves
Xu, 2017	5
Deroche, 2017	6
Bennett, 2017	6
Xu, 2016	4
Xu, 2016	5
Barger, 2017	25
Barger, 2014	97
Autism Spectrum Disorders Working Group of The Psychiatric Genomics Consortium, 2017	10
Weiner, 2017	4
Mitra, 2016	31
Hunter, 2016	41
Yoshinaga-Itano, 2017	23
Yoshinaga-Itano, 2016	13
Han, 2015	53
Yoshinaga-Itano, 2015	54
Alford, 2014	1
Kellogg, 2014	75
Carr, 2014	88
Thompson, 2014	133
Raspa, 2015	81
Uhler, 2013	61

Abstract Views

Articles	Abstract Views
Xu, 2017	363
Deroche, 2017	254
Bennett, 2017	77
Xu, 2016	24
Xu, 2016	32
Barger, 2017	1130
Barger, 2014	1121
Andrews, 2017	1
Autism Spectrum Disorders Working Group of The Psychiatric Genomics Consortium, 2017	135
Weiner, 2017	62
Mitra, 2016	459
Ladd-Acosta, 2016	17
Hunter, 2016	804
Yoshinaga-Itano, 2017	722
Yoshinaga-Itano, 2016	154
Han, 2015	399
Yoshinaga-Itano, 2015	410
Alford, 2014	32
Kellogg, 2014	479
Carr, 2014	453
Thompson, 2014	971
Raspa, 2015	226

Three article had reported Clicks, which are "The number of clicks of a URL."[7] Six articles reported Full Text Views, which are "The number of times the full text of an article has been viewed."[7] Twenty-one articles reported Links Out, which are defined as "The number of times an outbound link has been clicked to a library catalog or link resolver."[7] Finally, thirty articles had reported Readers, which are defined as "The number of people who have added the artifact to their library/briefcase."[8]

Clicks

Article	Clicks
Weiner, 2017	2
Mitra, 2016	18
Alford, 2014	13

Full Text Views

Articles	Full Text Views
Barger, 2014	551
Autism Spectrum Disorders Working Group of The Psychiatric Genomics Consortium, 2017	57
Mitra, 2016	4961
Han, 2015	60
Yoshinaga-Itano, 2015	245
Uhler, 2013	165

Links Out

Articles	Link-outs
Xu, 2017	23
Deroche, 2017	11
Bennett, 2017	6
Xu, 2016	5
Barger, 2017	30
Barger, 2014	211
Autism Spectrum Disorders Working Group of The Psychiatric Genomics Consortium, 2017	1
Weiner, 2017	2
Mitra, 2016	2
Ladd-Acosta, 2016	4
Hunter, 2016	71
Yoshinaga-Itano, 2017	52
Yoshinaga-Itano, 2016	51
Han, 2015	54
Yoshinaga-Itano, 2015	68
Alford, 2014	13
Kellogg, 2014	111
Carr, 2014	107
Thompson, 2014	229
Raspa, 2015	96
Uhler, 2013	2

Readers

Articles	Readers
McDermott, 2018	11
Deroche, 2017	20
Bennett, 2017	20
Xu, 2016	14
Bennett, 2016	18
Ioerger, 2018	1
Barger, 2017	5
Barger, 2016	9
Barger, 2014	17
Bennett, 2018	1
Bennett, 2018	2
Andrews, 2018	10
Andrews, 2017	54
Autism Spectrum Disorders Working Group of The Psychiatric Genomics Consortium, 2017	2
Weiner, 2017	244
Mitra, 2016	57
Betts, 2017	50
Hunter, 2016	47
Yoshinaga-Itano, 2017	62
Yoshinaga-Itano, 2016	13
Han, 2015	47
Yoshinaga-Itano, 2015	11
Yoshinaga-Itano, 2018	2
Alford, 2014	112
Kellogg, 2014	31
Carr, 2014	29
Thompson, 2014	31
Raspa, 2015	26
Uhler, 2013	19
Wiggin, 2013	24

Another section of Scopus metric data includes dissemination of the articles, such as blog mentions and tweets. Three article had reported a Blog Mentions, which is defined as "The number of blog posts written about the artifact."[9] Six articles reported News Mentions, which are defined as "The number of news articles written about the artifact."[9] Eight articles reported Shares, Likes & Comments, which are defined as "The number of times a link was shared, liked or commented on."[10] Finally, nineteen articles reported Tweets, which are defined as "The number of tweets and retweets that mention the artifact."[10]

Blog Mentions

Article	Blog Mentions
Andrews, 2017	1
Weiner, 2017	1
Betts, 2017	1

News Mentions

Article	News Mentions
McDermott, 2018	2
Deroche, 2017	4
Andrews, 2017	1
Weiner, 2017	2
Mitra, 2016	3
Yoshinaga-Itano, 2017	1

Shares, Likes & Comments

Article	Shares, Likes & Comments
Deroche, 2017	1
Barger, 2014	1
Andrews, 2017	3
Autism Spectrum Disorders Working Group of The Psychiatric Genomics Consortium, 2017	26
Mitra, 2016	78
Yoshinaga-Itano, 2017	13
Kellogg, 2014	1
Uhler, 2013	5

Tweets

Article	Tweets
Hong, 2018	2
Xu, 2018	31
McDermott, 2018	3
Xu, 2017	1
Deroche, 2017	8
Bennett, 2017	2
Xu, 2016	8
Xu, 2016	1
Andrews, 2018	9
Andrews, 2017	6

Autism Spectrum Disorders Working Group of The Psychiatric Genomics Consortium, 2017	37
Weiner, 2017	135
Mitra, 2016	19
Ladd-Acosta, 2016	3
Yoshinaga-Itano, 2018	1
Han, 2015	2
Yoshinaga-Itano, 2015	2
Alford, 2014	8
Uhler, 2013	2

Scopus Metrics also report the indexes in which an article has been archived or referenced. Twenty-six articles reported citations in Scopus which are the "total number of times this document has been cited in Scopus."[11] Nine articles had reported Citation Indexes, which are defined as the number of articles that cite the artifact in, Scopus, and SSRN. One article had reported Clinical Citations, which are defined as the number of Dynamed Plus Topics that reference the artifact, or the number of Clinical Guidelines from PubMed and Clinical Guidelines from NICE that reference the artifact. Finally, twenty-one articles reported a Field Weighted Citation Impact which "shows how well this document is cited when compared to similar documents. A value greater than 1.00 means the document is more cited than expected."[12]

Citations in Scopus

Article	Citations in Scopus
Hong, 2018	1
Xu, 2018	1
McDermott, 2018	1
Xu, 2017	1
Deroche, 2017	4
Bennett, 2017	1
Xu, 2016	1
Barger, 2017	1
Barger, 2016	2
Barger, 2014	5
Bennett, 2018	1
Andrews, 2017	6
Autism Spectrum Disorders Working Group of The Psychiatric Genomics Consortium, 2017	21
Weiner, 2017	47
Mitra, 2016	14
Ladd-Acosta, 2016	31
Betts, 2017	1

Hunter, 2016	3
Yoshinaga-Itano, 2017	7
Han, 2015	3
Yoshinaga-Itano, 2015	2
Alford, 2014	47
Kellogg, 2014	6
Carr, 2014	6
Raspa, 2015	9
Wiggin, 2013	4

Citation Indexes

Articles	Citation Indexes
Hong, 2018	2
Xu, 2017	1
Deroche, 2017	3
Bennett, 2017	2
Barger, 2016	2
Barger, 2014	2
Andrews, 2017	4
Autism Spectrum Disorders Working Group of The Psychiatric Genomics Consortium, 2017	31
Weiner, 2017	28
Mitra, 2016	12
Ladd-Acosta, 2016	21
Hunter, 2016	2
Han, 2015	3
Yoshinaga-Itano, 2015	1
Alford, 2014	36
Kellogg, 2014	1
Raspa, 2015	6
Uhler, 2013	1

Clinical Citations

Article	Clinical Citations
Alford, 2014	2

Field Weighted Citation Impact

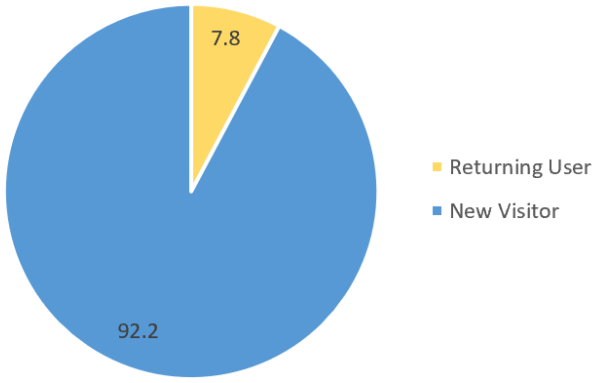
Article	Field Weighted Citation Impact
Xu, 2018	1.91
Xu, 2017	0.43
Deroche, 2017	1.73
Bennett, 2017	0.57
Barger, 2016	5.03
Barger, 2014	0.43
Bennett, 2018	1.4
Andrews, 2017	1.63
Autism Spectrum Disorders Working Group of The Psychiatric Genomics Consortium, 2017	6.98
Weiner, 2017	12.12
Mitra, 2016	2
Ladd-Acosta, 2016	2.29
Hunter, 2016	0.65
Yoshinaga-Itano, 2017	3.86
Han, 2015	0.23
Yoshinaga-Itano, 2015	9.93
Alford, 2014	3.23
Kellogg, 2014	1.77
Carr, 2014	1.18
Raspa, 2015	1.34
Wiggin, 2013	1.37

It is important to note that there are limitations to this type of data collection. Although information is recorded about the number of each occurrence for each article, there is no way to evaluate the quality of the occurrence. For example, news mentions and tweets may not reference the article accurately. Similarly, statements about the value of citations in an index with only limited subscribers cannot be made. Rather, this information acts as a benchmark for what type of dissemination is occurring, without providing information on the quality or importance of that dissemination.

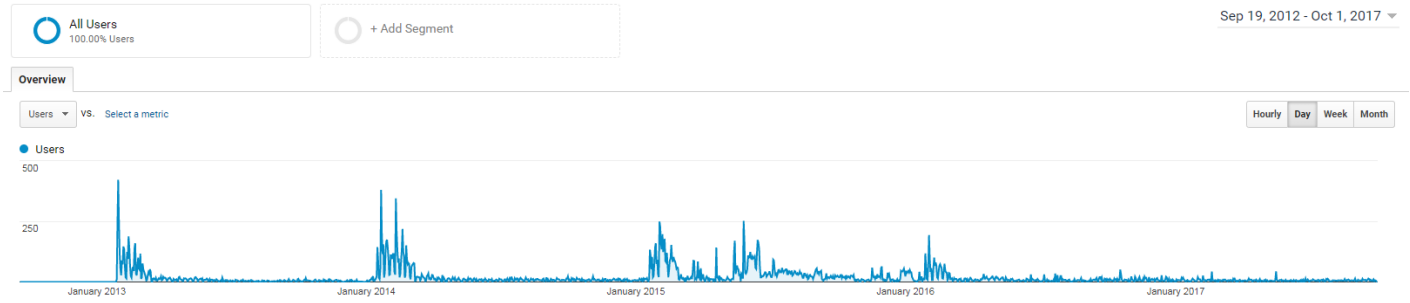
* Includes both publications resulting from internal (not funded through RFA process) and external projects.

Appendix F. Google Analytics Data

Percentage of New and Returning Visitors to www.disabilityresearchcenter.org from September 30, 2012 to September 29, 2017



Visitors to www.disabilityresearchcenter.org Over Time from September 30, 2012 to September 29, 2017



Percentage of Visitors to www.disabilityresearchcenter.org from September 30, 2012 to September 29, 2017

County	Users	% Users
United States	7,481	73.07%
Canada	332	3.24%
United Kingdom	327	3.19%
France	316	3.09%
Germany	153	1.49%
India	141	1.38%
Brazil	126	1.23%
China	103	1.01%

Map Overlay of www.disabilityresearchcenter.org Users from September 30, 2012 to September 29, 2017